

CONTENTS

- 1. SUMMARY**
- 2. LOCATION, LAND TENURE**
- 3. GEOGRAPHY**
- 4. GEOLOGY**
- 5. WORK COMPLETED DURING YEAR**
- 6. PROPOSED FURTHER EVALUATION**

Maps:

- 1. Location Plan**

1. SUMMARY

At Grieves zinc mineralisation is hosted by a steep dipping, moderately faulted sequence of Ordovician limestones. Deep weathering has severely modified the nature of the zinc mineralisation to a complex mixture of zinc sulfides, silicates and carbonates.

This complexity of mineralisation has inhibited development of the deposits.

The prospect is assessed as having a resource potential of 650,000-750,000 tonnes 7-9% Zn hosted by limestone and a further 150,000-200,000 tonnes 4-6% Zn hosted by surficial clays developed from the underlying limestone.

The zinc in the clays was thought to be present as low iron sphalerite. Metallurgical test work on several samples resulted in very poor recoveries. This result may reflect the old and, therefore, oxidised nature of the samples tested.

Recommended future work should include:

- further metallurgical work on fresh surficial clays
- evaluation of pyrometallurgical options for treatment of the deeper hard-rock deposits

During the year, the licence was reduced to one (1) square kilometre, transferred to Allegiance Mining NL, and application made to replace it with a Retention Licence.

2. LOCATION and LAND TENURE

EL 38/89 of one square kilometre lies astride the Strahan-Zeehan highway, 10 km south of Zeehan (Map 1).

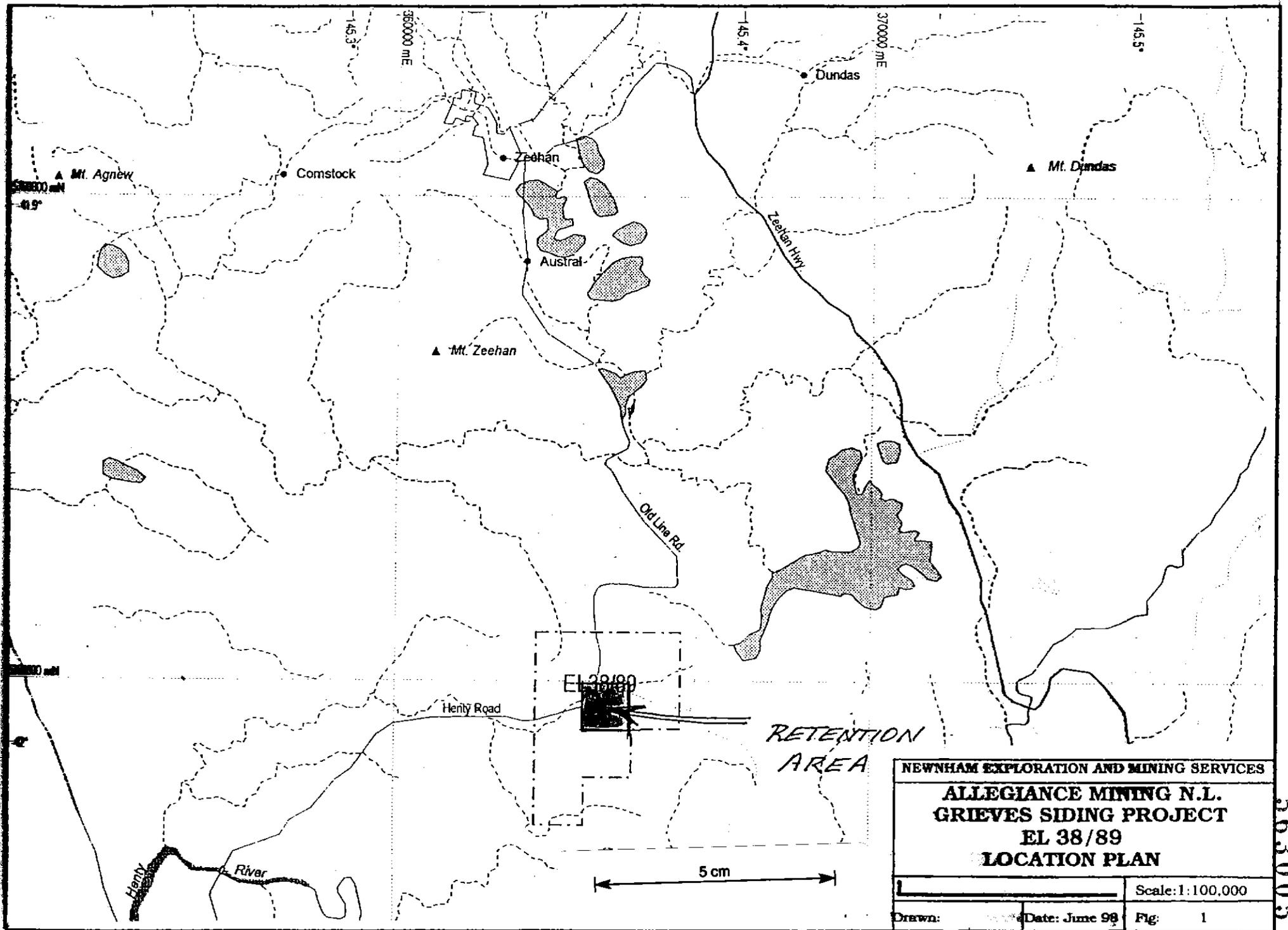
Prior to 24 September 1998, the area was explored under a joint venture agreement between Allegiance Mining NL (10% free carried interest) and Rio Tinto Exploration Pty Limited.

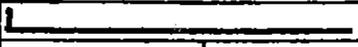
During the year, this agreement was re-negotiated whereby Allegiance will hold a 100% interest and pay Rio Tinto a 2% net smelter royalty on any minerals produced.

Application was also made during the year to reduce the licence area from nine (9) square kilometres to one (1) square kilometre, and to convert this reduced area from an Exploration Licence to a Retention Licence.

Reduction was granted on 08 October 1998. Granting of Retention Licence 9804 to replace EL 38/89 is awaiting formal Government approval.

That section of the licence north of the highway is currently classified as State Forest-Multiple Use Forest Land, whilst the area south of the highway has been recommended as a Regional Reserve under the recently-signed Regional Forest Agreement.



NEWNHAM EXPLORATION AND MINING SERVICES		
ALLEGIANCE MINING N.L.		
GRIEVES SIDING PROJECT		
EL 38/89		
LOCATION PLAN		
		Scale: 1:100,000
Drawn:	Date: June 98	Fig: 1

563005

3. GEOGRAPHY

The northern section of the licence area consists of a flat, boggy button grass plain developed over Gordon Limestone.

This gives way abruptly to the south to a sparsely vegetated, elevated peneplain developed on Ordovician shales and quartzites.

The Zeehan-Strahan sealed highway cuts through the north of the licence. The poor quality gravel road to the Queensberry Mine branches off this highway and cuts through the north-east corner of the licence.

Tracks from the Queensberry Mine road lead south through an area of gravel pits to a rock quarry developed in the Ordovician quartzites. These features were developed to provide materials for construction of the adjacent highway.

The area is generally open, with only minor areas of low eucalypt scrub developed along the base of the peneplain escarpment.

4. GEOLOGY

The area is underlain by a sequence of Ordovician sediments (limestones overlying quartzite). These sediments have been folded about a north-west trending, north plunging synclinal axis. The prospect area lies on the eastern flank of this syncline.

Drilling has defined zinc deposits formed in the basal section of the limestone. This mineralisation is thought to have originated from the cooling phases of the underlying Mt Read volcanics, ascending along fractures into the overlying limestones and selectively replacing several limestone units.

Subsequent to emplacement of mineralisation, the sequence has been folded and further faulted. The known mineralisation is steeply dipping to the north-west and cut by a series of small north-west trending faults.

Deep weathering, accompanied by circulation of acidic ground water, has resulted in substantial modification of the primary sulfides, resulting in the development of zinc rich siderite, zinc rich aluminosilicates (clays) in the deeper sections of the deposits.

Near surface, the limestones have been totally degraded to black and dark gray clays (pug), and zinc has been possibly reformed as sphalerite.

5. WORK COMPLETED DURING YEAR

The following major work programs were completed during the year:

(a) **Mineral Resource Potential Assessment:**

All available geological and drilling data was replotted and assessed.

The results of this study are presented in the following report:

"Grieves Siding Project EL 38/89. Report in Support of Retention Licence Application", by LA Newnham, 30 June 1998

TCR: 98-4193

A copy of this report was submitted to Mineral Resources Tasmania.

(b) **Evaluation of Surficial Clay Resources:**

All data on the zinc rich surficial clays was collated in detail in order to more fully appreciate the economic potential of this resource.

The results were presented in the following report:

"Grieves Siding Project EL 38/89 Western Tasmania. Surficial Clay Zinc Deposits. Resource & Economic Potential", by LA Newnham, 24 August 1998

TCR: 99-4290A

A copy of that report accompanies this report.

(c) **Metallurgical Test Work on Clay Samples:**

The economic potential of the zinc rich surficial clays is dependent upon the zinc being present as readily recoverable sphalerite. In order to ascertain if the zinc was so present, a number of old samples from previous drilling programs were submitted to Metcon for flotation test work.

Results were disappointing.

The Metcon work was reported in:

**"Zinc Flotation of Old Grieves Siding Drill
Samples"**, Metcon Report 98624 dated 12
November 1998

TCR: 99-42908

A copy of this report is attached.

6. PROPOSED FURTHER EVALUATION

Development of the Grieves zinc deposits may take place in two directions:

- treatment of the surficial clay deposits
- treatment of the deeper hard rock hosted deposits

Development of the **surficial clays** depends upon the identification of a simple treatment route; viz, sphalerite flotation. Work to date in this regard has been disappointing but this may reflect the old and oxidised nature of the samples. Further test work on fresher, larger samples is recommended.

Development of the **deeper hard-rock** hosted zinc deposits will probably depend upon identifying a commercial route of producing a low-grade concentrate from these complex and variable styles of mineralisation, and then having access for these concentrates to an upgrading facility such as a pyrometallurgical plant. This route requires further investigation.

.....

NEUNHAM EXPLORATION & MINING SERVICES

MAR 1993
TASMANIA

SEARCHED	INDEXED
SERIALIZED	FILED
EL38/89	
PTB	
See folio 42	

GRIEVES SIDING PROJECT

EL 38/89 - WESTERN TASMANIA

MICROFILMED
FICHE No.014882-85

SURFICIAL CLAY ZINC DEPOSITS

RESOURCE & ECONOMIC POTENTIAL

Prepared For:

Allegiance Mining NL
Level 1, 55 York Street
Sydney, NSW, 2000

By:

L A Newnham, B.Sc., F.A.I.M.M.
PO Box 132
Riverside, Tas 7250
Ph: (03) 6394 3434
Fax: (03) 6394 3435

24 August, 1998

99-4290

ANNUAL REPORT - EL 38/89
ALLEGIANE MINING - GRIEVES PROJECT
L A NEUNHAM

va 2 of 3

FORWARD & DISCLAIMER

This report was prepared to assist with the conceptual assessment of a small mining operation, based on the zinc bearing surficial clays at Grieves Siding, as a cash flow generator for Allegiance.

It is based on a substantial amount of technical data contained within Annual Reports on EL 38/89, prepared by Rio Tinto.

Whilst every reasonable effort was made to not overlook, or omit comment on, significant technical information the writer cannot accept responsibility for, or guarantee completeness of, technical information. Readers requiring more detailed information are referred to the EL 38/89 data base.

The stated resource potential is not an identified mineral resource. Metallurgical assumptions are based on inference and assumption rather than actual test work. Financial criteria are indicative only and based on experience and conceptual thinking, rather than specifically acquired information.

Because the resource potential at Grieves is not classified in this report as a Mineral Resource or an Ore Reserve, as defined by the *Australasian Code for Reporting of Mineral Resources and Ore Reserves* (the JORC Code), the potential tonnage and grade estimates cannot be publically reported under the Australian Stock Exchange Listing Rules.

This report was prepared to assist the Directors of Allegiance Mining with their decisions on the future of the project. It was not prepared as a basis for valuation of the property, nor was it prepared for inclusion in a prospectus or any other capital-raising instrument.

CONTENTS

1. SUMMARY
2. INTRODUCTION
3. LAND TENURE, ACCESS, GEOMORPHOLOGY
4. PREVIOUS WORK
5. DATA BASE
6. GEOLOGY
7. MINING
8. METALLURGY
9. ENVIRONMENTAL ISSUES
10. RESOURCE POTENTIAL
11. ECONOMIC ASSESSMENT
 - 11.1 Pre-development Expenditure
 - 11.2 Development Capital
 - 11.3 Operating Costs
 - 11.4 Revenue
 - 11.5 Economic Model
12. RECOMMENDED WORK PROGRAM

- Appendix 1: Aircore Drill Logs
 Appendix 2: Zn Distribution by Assay
 Appendix 3: Amdel Mineralogy
 Appendix 4: CRA Mineralogical Studies
 Appendix 5: Remaining Aircore Samples

- Table 1: Stratigraphic Column
 Table 2: Zn Minerals Distribution

- Fig 1: Location Plan
 Fig 2: Panoramic Photo of Licence Area Looking South
 Fig 3: Panoramic Photo of Licence Area Looking North
 Fig 4: District Geology 1:25,000 State Maps
 Fig 5: Resource Plan 1:2,000
 Fig 6: Resource Plan 1:1,000 Sections 1:500

1. SUMMARY

- (a) Potential exists for a mineral resource of 300,000 tonnes 5% Zn on the Grieves Siding Retention Licence (under application) in western Tasmania.
- (b) Further drilling and trenching are required to quantify an identified mineral resource.
- (c) The deposit occurs as a long trough shaped secondary deposit in surficial clays. It may be amenable to open-cut mining, using either hydraulic or mechanical techniques.
- (d) Limited mineralogical studies suggest >90% of the Zn may be present as low Fe sphalerite. Metallurgical studies are required to determine the recovery of Zn by low cost conventional means; eg, flotation.
- (e) **If confirmed**, the resource could form the basis for a small mining operation, producing 2,000-4,000 tpa Zn in saleable concentrates over a three-six year period.

Scoping estimates indicate this operation has the potential to produce a positive cash flow of \$1.4M pa, over a three year period, before pre-development costs of \$0.4M, and development capital of approximately \$1M. These estimates assume 90% Zn recoveries into 55% Zn concentrates.

- (f) Pre-development costs of \$0.4M are attributed to:

- resource definition	\$100,000
- mine design	\$30,000
- metallurgical studies and flow sheet design	\$100,000
- environmental study	\$80,000
- commercial studies	\$20,000
- feasibility study	\$20,000
- project management	\$50,000

- (g) The pre-development studies could be staged over a 12-month period, with critical decision points at the end of each stage.

Stage 1, involving preliminary metallurgical test work and an initial program of drilling, would cost \$75,000.

- (h) Development capital costs of **approximately \$1M** would be associated with:

-	infrastructure development	\$225,000
-	mill construction	\$700,000
-	waste management	\$75,000

- (i) This would be a small operation. To be profitable, it would have to be run as a lean operation from Day 1. The pre-development and development "guesstimates" above reflect this philosophy.

- (j) **It is recommended** that the first step should be to undertake preliminary metallurgical test work on available samples to see if the basic Zn recovery assumptions above are reasonable.

- (k) If this test work supports these basic assumptions, it is recommended that the remainder of the pre-development program be implemented.

- (l) If the test work indicates poor recoveries or low grade concentration by conventional means, there would be little scope for an operation as outlined above.

In this circumstance, future work should be directed towards a larger operation producing low grade concentrates as a feedstock to a pyrometallurgical facility based on the adjacent Zeehan Smelter slag dumps.

2. INTRODUCTION

Exploration at Grieves Siding has located a limestone hosted stratabound zinc deposit.

Deep weathering and subsequent alteration has resulted in variable modification of the primary mineralisation into a complex mixture of zinc sulfides, carbonates and silicates.

In the near surface environment, the deposit has been altered to a clay zone and the Zn redeposited as low iron sphalerite.

Such a resource may represent an opportunity to develop a low cost mining operation producing high grade Zn concentrates by conventional flotation techniques.

Below this surficial clay zone, the deposit is variably altered and more complex from both mining and metallurgical aspects.

This report considers the commercial opportunities which the surficial Zn-clay resources may present to Allegiance.

3. LAND TENURE, ACCESS, GEOMORPHOLOGY (Fig 1)

EL 38/89 is a nine square kilometre licence lying astride the Zeehan-Strahan Highway, approximately 10 km south of Zeehan (Fig 1).

Under a joint venture agreement signed on 22 January 1994, the licence is held jointly by Rio Tinto Exploration Pty Limited (90%) and Allegiance Mining NL (10%).

All exploration to date has been managed by RTE.

In November 1997 the J/V partners agreed to firstly relinquish the EL, subject to grant of a one square kilometre Retention Licence over the Grieves Siding zinc resource, and secondly, to reorganise the agreement so that Allegiance became the manager and RTE's interest was converted to a 2% nett smelter royalty.

Application for a Retention Licence was lodged with Mineral Resources Tasmania on 05 August 1998.

The major portion of the Retention Licence falls just within an area recently classified as the Henty River Reserve under the *Tasmanian Regional Forest Agreement*. The land status of this reserve has not yet been determined but the final tenure will permit exploration and mining, and will preserve all existing rights under the *Mineral Resources Development Act 1995* for at least the next 20 years.

Any work programs within the Retention Licence will require approval by the Government interdepartmental Mineral Exploration Working Group (MEWG).

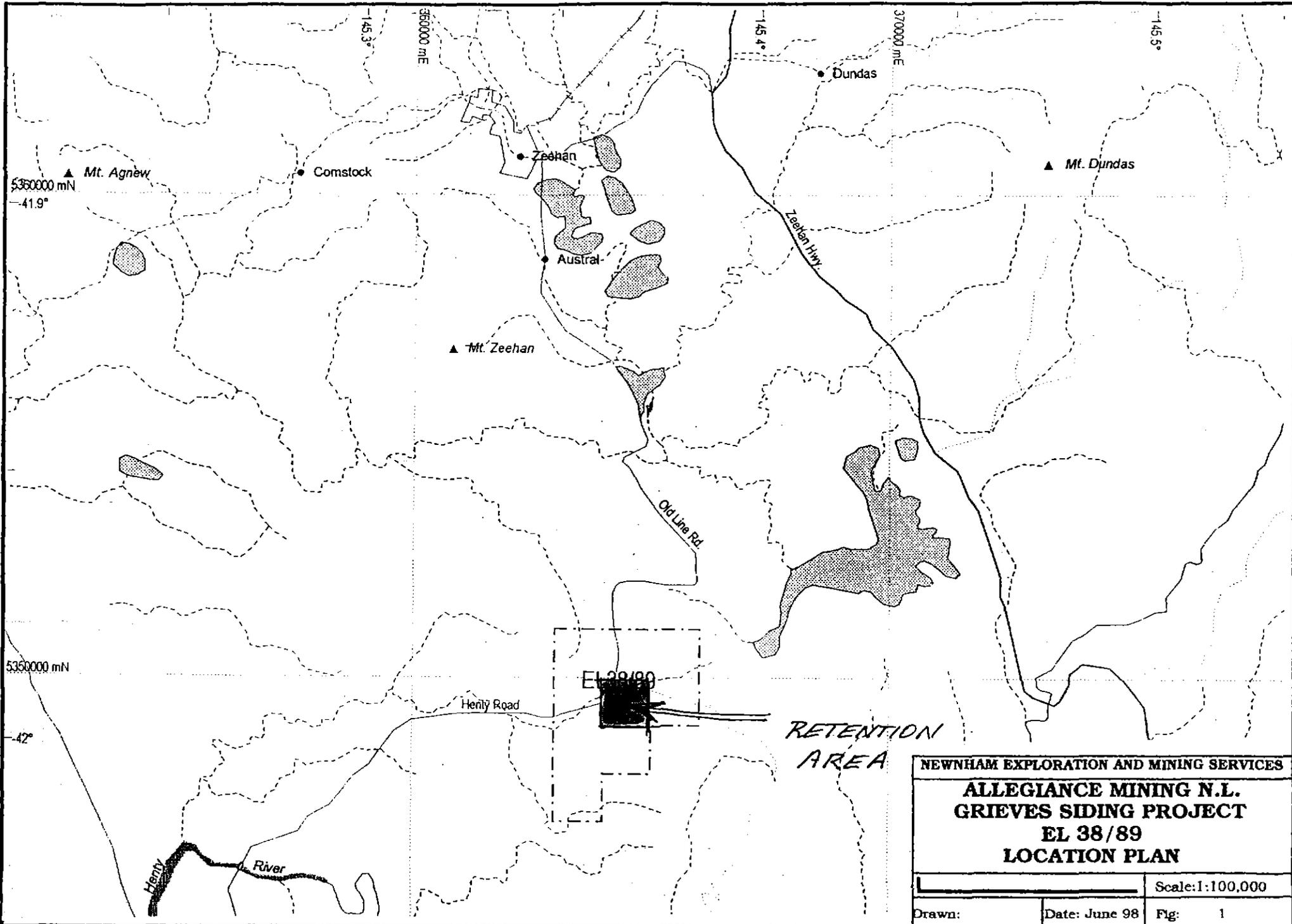
Access to the area is via the sealed Zeehan-Strahan Highway which passes through the north-west corner of the tenement.

Two panoramic photos of the licence area are included as Figs 2, 3.

Fig 2 looks south across the button grass flats which overlie Gordon Limestone to the more resistant hills of Moina Sandstone, which suffered peneplanation during the Quaternary.

Fig 3 looks north from the Moina Sandstone hills across the button grass covered Gordon Limestone to a series of hills of Crotty Quartzite.

The flat, low lying Gordon Limestone is typically deeply weathered with development of thick clays and peat layers, variably overlain by 0-6 m quartzite scree (or gravel) shed from the Moina Sandstone hills. This profile supports button grass, low scrub and patches of juvenile eucalypts.



*RETENTION
AREA*

NEWNHAM EXPLORATION AND MINING SERVICES
ALLEGIANCE MINING N.L.
GRIEVES SIDING PROJECT
EL 38/89
LOCATION PLAN

Scale: 1:100,000	
Drawn:	Date: June 98 Fig: 1

563015

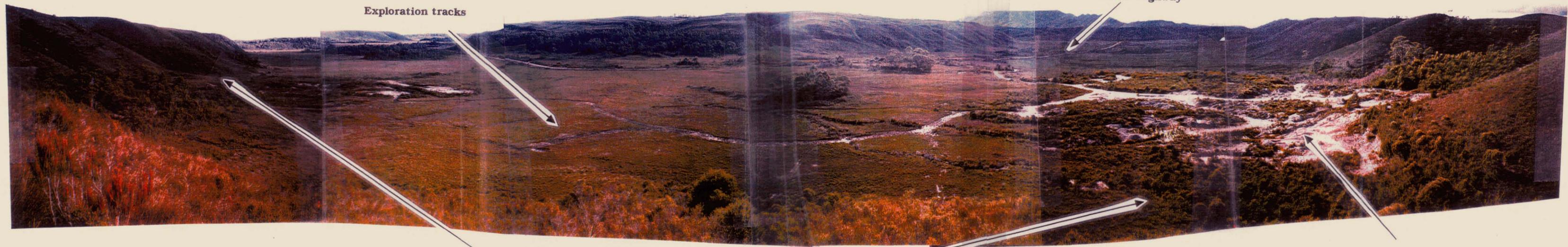
The Moina Sandstone hills are covered by a very thin and patchy layer of sandy-organic rich soils which support various grasses and low scrub.

On Fig 3, the Zeehan-Strahan Highway can be seen in the background. The Queensberry Mine track leaves this highway and cuts across the north-east corner of the Retention Licence. During construction of the highway, a series of gravel pits were developed in the quartzite gravel layer on the Gordon Limestone (right hand side of Fig 3). Immediately to the east of these pits, a quarry was also developed in Moina Sandstone. Its design is such that it is not visible from the highway (Fig 2).

A series of tracks can be seen on Fig 3 which lead from the Queensberry Mine track across the button grass to various drill sites and other associated exploration works.

The area is one of high rainfall, and movement over the button grass flats is difficult in high rainfall periods.

Fig 3: Looking north from on top of Moina Sandstone hills, across Gordon Limestone flats to Crotty Quartzite Hills;



Exploration tracks

Zeehan Strahan Highway

Government road construction borrow pits

Grieves Siding mineralisation



Fig 2: Looking south across peat covered Gordon Limestone flats, to Moina Sandstone hills;

NEWNHAM EXPLORATION AND MINING SERVICE:

ALLEGIANCE MINING N.L.
GRIEVES SIDING PROJECT

PANORAMIC VIEWS OF AREA

Scale:	
Drawn: LAN	Date: Aug 98
Fig 2.3	

4. PREVIOUS WORK

Prior to 1989, EZ-Amoco J/V explored the area for zinc deposits principally of the Mississippi Valley style. They developed and sampled several shallow trenches across the area and drilled a number of percussion and cored drill holes.

Between 1992 and 1997 the area was intensively explored by the CRA (now Rio Tinto)-Allegiance J/V. CRA managed all of this work and undertook the following:

(a) Data Collation:

All previous mapping and geochemical sampling (mainly by Amoco-EZ) was collated and evaluated. Significant Zn anomalous zones were identified near the top, middle and lower sections of the Gordon Limestone. These were considered worthy of further evaluation by aircore drilling.

(b) Aircore Drilling 1992-1993:

In order to evaluate the zinc potential of the surficial black clay (pug), 103 aircore holes, totalling 1,070 m, were completed at 25 m intervals along nine (9) traverse lines each 300 m long.

Initial mineralogical studies on high grade zinc samples indicated the zinc was present as both sphalerite and smithsonite, (Fe-Mg) Zn CO₃.

(c) Aircore Drilling 1993-1994:

Two programs of aircore drilling were completed in this year - 284 holes totalling 4,115 m.

The first program of 249 holes totalling 3,803 m was drilled on a 50 m x 10 m grid along a 500 m zone over the basal section of the limestone near its contact with the Molna Sandstone.

The second program of 35 holes totalling 312 m further tested this basal zone together with other zones in the middle of the limestone and the upper section close to its contact with Crotty Quartzite.

This aircore drilling confirmed that:

- most interest lay along the basal section of the limestone in an area known as Grieves Siding
- Zn was present in the surficial black pug as sphalerite

- Zn was present in underlying primary stratabound deposits associated both with a zone of ankerite alteration of the carbonate and a clay zone adjacent to the ankerite alteration zone.

(d) Core Drilling 1993-1994:

Eighteen (18) cored holes were completed to test the lower limestone zone shown to be zinc anomalous by the aircore drilling.

These holes confirmed that most zinc mineralisation was confined to a 50 m wide zone of altered limestones adjacent to the Gordon Limestone-Moina sandstone contact.

(e) Core Drilling 1994-1995:

A further two (2) cored holes were completed into Grieves prospect and confirmed the Grieves zone as extending over a 550 m strike length.

(f) Mineralogical Studies 1994-1995:

Further mineralogical studies were undertaken on drill samples, and confirmed that most of the zinc in the clays was present as sphalerite and in the primary zone as a mixture of sphalerite, zinc carbonates and zinc silicates.

(g) Development Studies 1994-1995:

CRAE undertook various indicative ("back of envelope") studies to gain an idea of the commercial potential of Grieves Siding. Their views were that a sulfide deposit of 10 Mt 10% Zn or 16 Mt 8% Zn would be a minimum requirement for them at Grieves. Alternatively, a 1 Mtpa 4% Zn operation in clays might be feasible.

(h) Core Drilling 1995-1996:

A total of 15 cored holes totalling 2,245 m were completed to test, firstly, the main footwall zones at Grieves (8 holes) and, secondly, the middle zone at Grieves South (7 holes). These holes were designed in such a way as to investigate the potential of the area to meet CRAE's minimum resource requirements.

(i) Mineralogical Studies 1995-1996:

Further mineralogical studies were conducted on cores from ZG 406 and showed the zinc was present as silicates and carbonates.

(j) Helimag Survey:

A high resolution helimag survey was flown in early 1997, with the intention of defining the extent of sideritic alteration associated with the zinc mineralisation. Results of this survey are illustrated on Map 5, attached.

(k) Basin Analysis Study:

A comprehensive analysis of the depositional environment of the Gordon Limestone was undertaken in 1996-1997.

(l) Honours Mapping Project:

An Honours project was undertaken in 1996-1997 to assist, firstly, with stratigraphic correlations at Grieves Siding and, secondly, with an understanding of the mineralisation paragenesis.

This study suggested most of the zinc mineralisation was of Cambrian origin, but extensively mobilised and remobilised by later processes.

(n) Core Drilling 1996-1997:

One 243 m cored hole (ZG 416) was completed to test the down-dip extension of previously intersected zinc mineralisation. Only modest intersections were obtained, and it was interpreted that the Zn was present as sphalerite, Zn siderite and silicate.

(n) Metallurgical Test Work 1996-1997:

Further Zn recovery test work was undertaken on drill cores with results indicating poor recoveries due to:

- oxidation coating of sulfide grains
- fine grain size of sphalerite
- presence of smithsonite and Zn rich siderite
- presence of zinc silicates

It was suggested that Zn carbonates (smithsonite and siderite) may be weathering products of sphalerite.

5. DATA BASE

CRA drilled approximately 400 aircore holes, totalling 5,000 m, to test the Zn potential of the surficial clays.

They also completed a number of "wacker" percussion holes which essentially give one bottom hole sample whose usefulness is restricted to geological and geochemical knowledge.

A number of deeper cored holes were also completed to test the primary zone. Washing problems in the surficial clay zone resulted in severe core losses. Thus, the cored holes are considered of limited value to an evaluation of the clays.

Aircore drilling has been demonstrated as the most effective means of sampling the surficial clays. Logs of the holes are attached as Appendix 1.

Samples were collected on 2 m intervals and a 1-2 kg sample sent for AAS assaying to Analabs for Ag-Cu-Pb-Zn, Fe-Mn.

Unfortunately, sample weights were not recorded during drilling so the effectiveness of clay recovery cannot be determined.

Those samples with >1% Zn were also assayed for sulfur, and these results used to give a basic estimate for the proportion of Zn present as sphalerite on the basis of sulfur partitioning itself to pyrite, galena and sphalerite. These results are presented in Appendix 2. **They are a useful, but approximate, guide only to Zn mineralogy.**

Mineralogical studies were completed by Amdel on 14 surficial clay and decomposed limestone samples and results are presented in Appendix 3.

CRA undertook several other mineralogical studies of clays in house, but only a few of these refer to the Grieves Clays (Appendix 4).

They also completed a size-by-grade study on one composite sample from ZG 54 (6-16 m). This suggested most of the Zn was present as silicates (clay), whereas the sulfur assays were interpreted as suggesting most Zn was present as sphalerite.

This apparent discrepancy highlights the need for great caution in assessing the recovery of Zn from the surficial clay resource.

It would appear that no metallurgical test work was undertaken on surficial clay samples.

Only a small number of aircore samples remain in storage. A list of these is presented as Appendix 5. A number of have been highlighted as possibly being suitable for metallurgical test work.

All aircore hole locations were surveyed by CRA. Most hole collars remain identifiable in the field by way of tagged pegs.

Drill hole locations, results and interpretations are presented in this report as Figs 5 (1:2,000 plan) and 6 (1:1,000 plan and 1:500 sections).

6. GEOLOGY

In the Grieves Siding area, the Ordovician Gordon Limestone is 500-600 m thick. It is conformably overlain and underlain by Crotty Quartzite and Moina Sandstone, respectively.

This package of sediments has been regionally folded along a north-west trending axis and dips generally north to north-west at 45°. The Grieves siding prospect lies on the east limb of this syncline, close to the nose of the north-west plunging axis.

The prospect is disrupted by several north-west trending faults, the largest of which is Grieves Fault, interpreted as a normal fault dipping south-west at 45°, with the western block downthrown approximately 50-80 m. These faults probably represent strain adjustment during Devonian folding.

Whilst there are several known zones of primary zinc mineralisation in the limestone column (Table 1), most primary mineralisation at Grieves is concentrated in the basal 50 m of the limestone along a strike length of 700-800 m.

The primary mineralisation has been interpreted as late Cambrian-early Ordovician, having percolated into the shallow marine Ordovician basin from the underlying (still cooling) Mt Read Volcanics, and forming in a "pool" like deposit close to the base of the limestone. The mineralised zone was later disrupted by Devonian folding and faulting.

Zinc was probably present in the primary mineralisation as sphalerite. However, the sulfides and their host carbonates have been extensively modified to considerable depths by weathering and associated leaching by acid ground waters.

At depth, the limestone was partially altered to clay, and zinc partially taken into solution and redeposited in clays and carbonates. **In these deeper partially altered zones**, CRA determined two basic styles of mineralisation with the following estimated distribution of zinc:

	Zn as sphalerite	Zn in siderite	Zn in clays
Sideritic zone:	30%	58%	12%
Stratabound clays:	35%	0%	62%

(See Table 2)

Closer to the surface, weathering of the limestone by acid waters was more intense and resulted in the total decarbonatisation of the limestone and the formation of a 5-20 m thick zone of dark gray-black clays.

This style of weathering of sulfidic Gordon Limestone is well known in Tasmania and is locally known as "black pug".

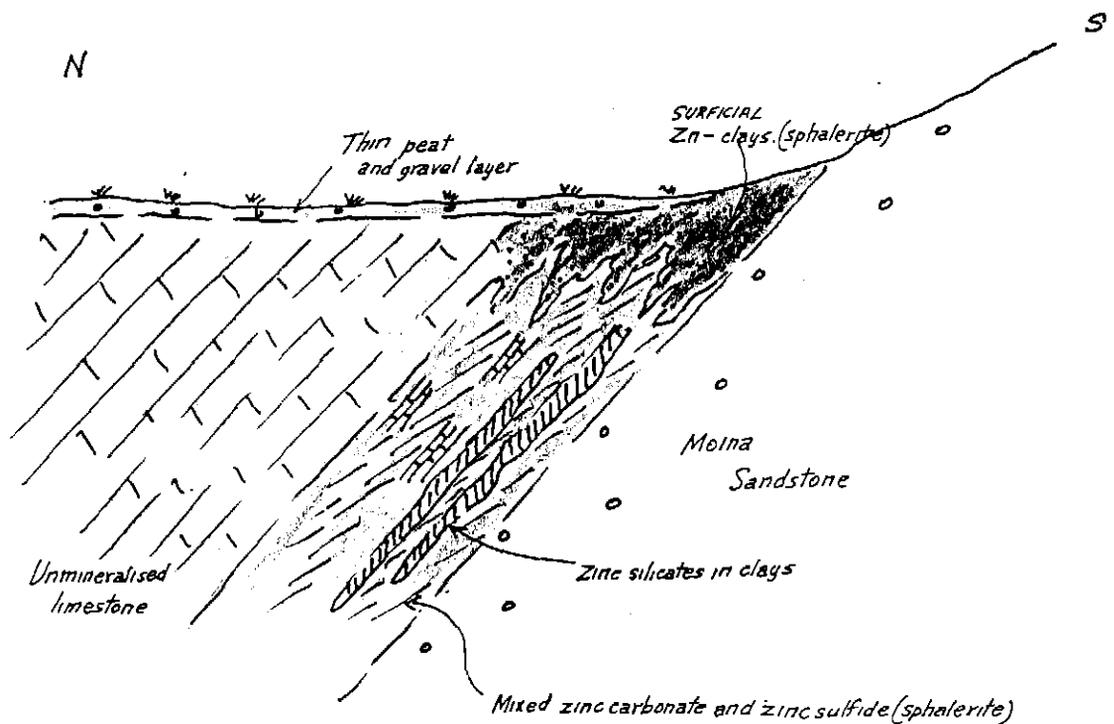
The process of surficial clay formation at Grievess appears to have been accompanied by the re-precipitation of Zn as low Fe sphalerite, often accompanied by pyrite.

CRA estimated the approximate Zn distribution in the surficial clays as:

- 92% as sphalerite
- 2% in siderite
- 5% in clays

Because the development of the surficial clays is a weathering/leaching process, it follows that they developed post Devonian faulting. If these faults promoted and focused alteration and weathering by providing access to the carbonates by acidic waters, it follows that the development of surficial clays may be maximised adjacent to these faults. **An improved understanding of the distribution of these faults could be an important factor in the future assessment of the surficial clay resources.**

The depth of surficial clay development is extremely variable, resulting in a zone of intermixed surficial clays and partially weathered limestone (see sketch below). This, in turn, affects the distribution of the relative proportions of the different Zn minerals present. An understanding of this pattern is clearly of key importance to the economic assessment of the surficial clay resource.

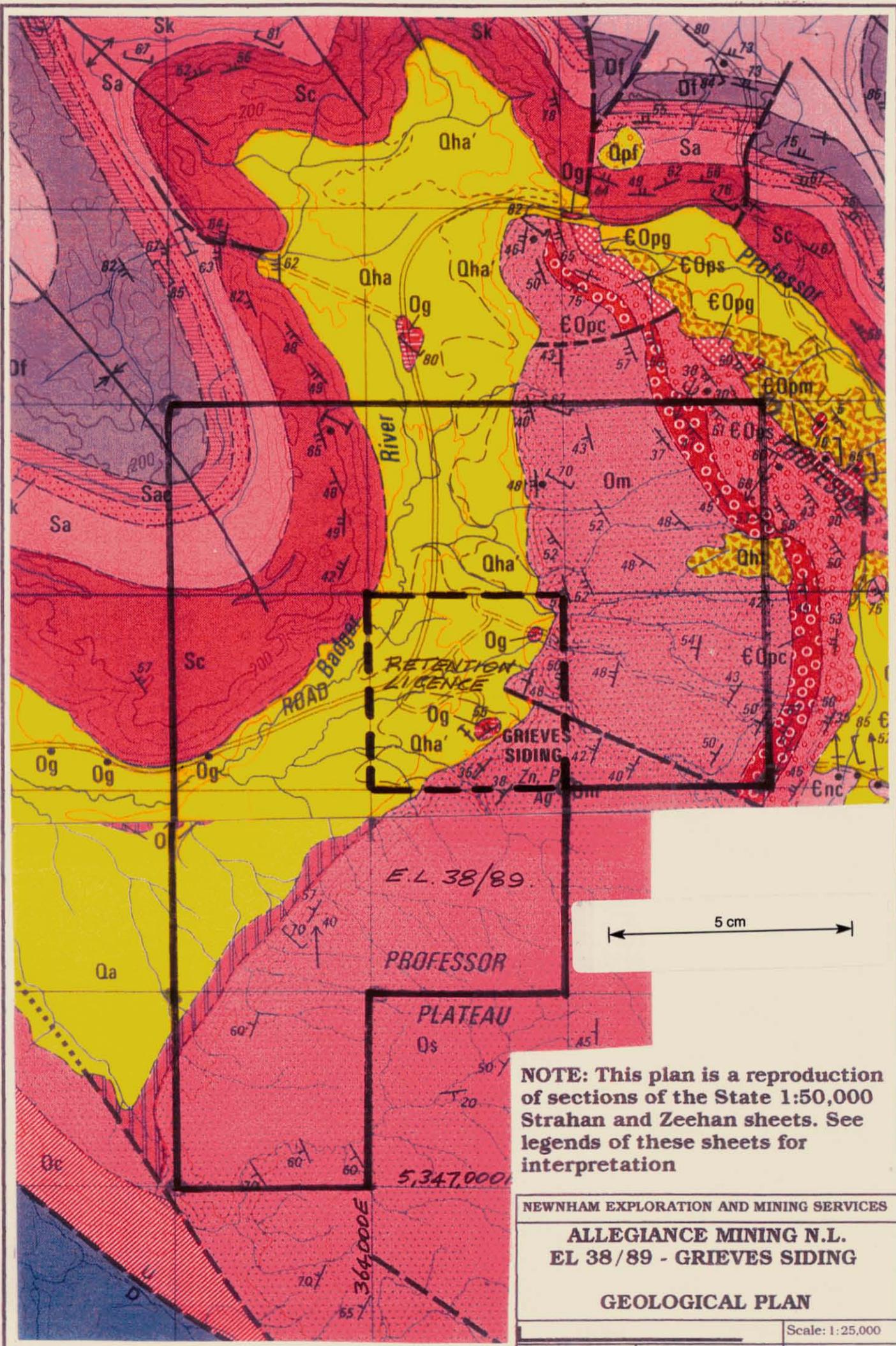


SCHEMATIC SECTION THROUGH VARIOUS ZINC STYLES.

Whilst 400 aircore holes have been completed in the general Grieves Siding area, only approximately 50 of these actually fall within the potential surficial clay zinc resource zone. The remainder constituted an exploration pattern designed to test a much broader area for further deposits.

The potential resource zone so defined is approximately 700 m long, 30-50 m wide, 4-16 m thick and covered by 0-8 m of gravels and peat. The zone is cut by possibly as many as four north to north-west trending faults. Each of these faults has the effect of displacing the mineralised zone by 20-100 m laterally as shown on Fig 6.

More specific characterisation of the zone requires additional drilling and this is commented upon further in Sections 10, 11, 12 below.



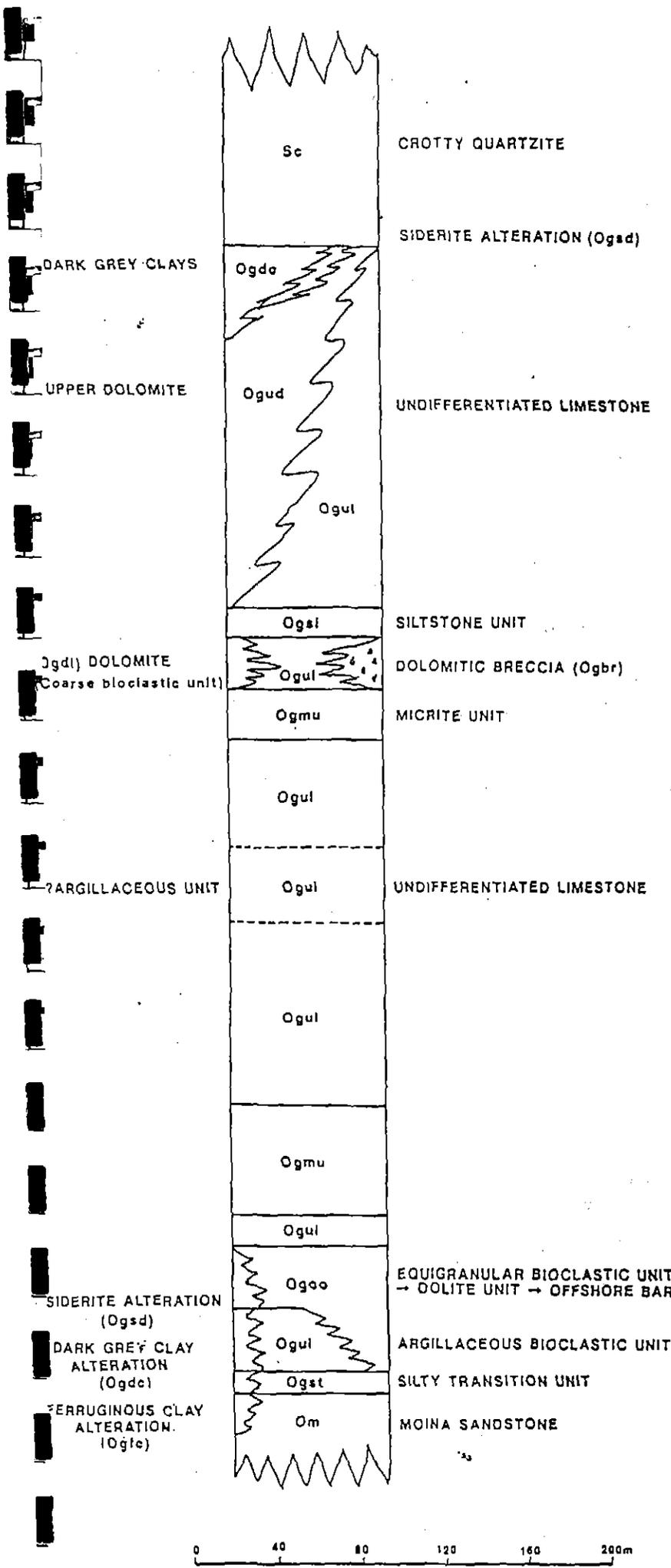
NOTE: This plan is a reproduction of sections of the State 1:50,000 Strahan and Zeehan sheets. See legends of these sheets for interpretation

NEWNHAM EXPLORATION AND MINING SERVICES
ALLEGIANCE MINING N.L.
EL 38/89 - GRIEVES SIDING
GEOLOGICAL PLAN

Scale: 1:25,000
 Drawn: LAN Date: Jul 98 Fig 4

563029

563030



MINERALISATION
(WEAK)

MINERALISATION

MINERALISATION

MINERALISATION

CRA EXPLORATION PTY. LIMITED	
SEMI-SCHEMATIC	
GORDON LIMESTONE STRATIGRAPHY	
Ref.:	Scale:
Author: S.J. TEAR	Report No.:
Drawn: A. JELEN	Plan No.: <i>Table 1</i>

Table 2: Ore types and Zn distribution.

Table 2: Summary of ore types, average Zn-Fe-S analyses, and calculated Zn mineralogy										
ORE TYPE	LITHOLOGY	Number	Zn%	Fe%	S%	Calculated from analyses		Calculated from XRD		
						Zn as sphal	Zn as other mlns	Zn as sphal	Zn as siderite	Zn as clay
TYPE 1	Surficial clays and decomposed limestone	126	3.26	4.6	5.3	100%	0%	92%	2%	5%
TYPE 2	siderite zone	157	4.29	21.7	3.5	24%	76%	29%	58%	12%
TYPE 3	stratabound clays	74	4.89	12.3	4.4	46%	54%	35%	0%	62%
TYPE 4	middle zone	40	5.58	5.7	2.3	38%	62%	-	-	-
TYPE 5	upper dolomite zone	4	1.77	3.1	4.8	100%	0%	-	-	-

Table taken from CRA Report.

563031

7. MINING

The surficial clays would be amenable to open-cut mining of a long (600-700 m) narrow (20-50 m) zone to a variable but relatively shallow depth (5-50 m).

A thin veneer of gravels and peat would have to be stripped off to expose the clays.

The southern footwall side would be defined by broken Moina sandstone. The northern hangingwall would be defined by assay; ie, a clay wall.

Depth would be very variable and defined by an irregular pinnacle like interface between surficial clay and weathered limestone.

Due to the effects of cross faulting, the operation would not be one continuous pit but rather a series of smaller pits, possibly with no physical interconnection. Such an arrangement could be beneficial for waste management procedures.

Two basic mining methods should be considered:

- hydraulic (sluicing)
- mechanical (excavator and trucks)

A **sluicing operation** would involve high pressure monitors breaking up the clay, washing to a gravel pump which would pump directly to the mill. Thickened tailings would be returned to the mine. The operation would be similar to a conventional alluvial tin gravel pump mine. Advantages exist with this style of operation where wet ground conditions make mechanical operations difficult and where irregular limestone floors make maximum ore extraction difficult.

A **mechanical operation** would involve an excavator loading ore directly into trucks for transport to the mill. The operation would be similar to a small scale strip mining operation with tailings being returned to mined out areas. The advantages are the ready availability of conventional equipment and better grade control. Disadvantages may arise with soft wet ground conditions for truck operations and irregular floors in the pits.

The resource is not considered large enough for dredging.

Once the deposit is better defined and ground conditions better interpreted from future drilling, specific mining options can be better evaluated.

8. METALLURGY

As outlined above, some limited mineralogical work has been undertaken on the surficial clays but no metallurgical test work to determine actual recovery of zinc.

The **small amount** of available data suggests the following:

- 90% by weight of the clay is <1 mm
- >90% of Zn may be present as sphalerite
- the remaining Zn probably occurs in Zn-clays
- sphalerite is a low iron variety (0.5-1% Fe)
- pyrite may be associated with sphalerite
- sphalerite may occur in all size fractions below 1 mm

The hope for a relatively small resource such as Grieves is that metallurgical test work will show that the sphalerite is recoverable into a high grade Zn concentrate by application of conventional, straightforward, low cost techniques; eg. disaggregation of the clay in a trommel followed by sulfide flotation and drying.

Some aircore samples remain in the Zeehan shed (see Appendix 5). Whilst these samples are neither sufficient in number nor representative of the whole surficial clay deposit, they are adequate for some initial test work.

9. ENVIRONMENTAL ISSUES

An open-cut mining operation would be confronted with several significant environmental issues:

- (a) **Visual Impact:** The operation would be highly visible from the Zeehan-Strahan Highway. Appropriate consideration would have to be given in the design process to visual screening.
- (b) **Surface water management:** A number of substantial creeks flow off the Moina Sandstone plateau to the south and across the resource area. Diversion systems would be required to manage these water courses.
- (c) **Waste water management:** The operation would be developed on a black clay resource and, without careful management of both mill and mine waste water, substantial discoloration impacts in adjacent natural water courses could be anticipated. Issues relating to possible acid mine drainage would also have to be considered although, being a surficial resource, it could be argued that it already contributes acid to the natural environment.

A range of environmental issues will also emerge should further resource definition drilling be undertaken. A number of the drill sites will occur part way up the foothills of the Moina Sandstone ridge. Short excavated tracks will be required to reach these and such tracks will be visible from the highway. Again, careful planning should resolve any such issues.

10. RESOURCE POTENTIAL

Rio Tinto drilling and geological data has been replotted onto plans and sections attached as Figs 5, 6.

From the aircore drill logs, intervals of surficial clays with Zn >1% have been identified and plotted on sections. As far as was possible from these logs, a clear distinction was made between zinc mineralisation in surface clays as compared with zinc in limestone.

The reason for this was the current belief that most of the Zn in the surficial clays is present as low Fe sphalerite, whilst the Zn in the limestone is present as a variable mixture of sphalerite, Zn rich siderite, and zinc clays.

This division between surficial clays and limestone is often not clear cut because of a transitional zone of weathered (clayey) limestones. No adequate data was recorded to indicate the relative proportions of clay and weathered limestones.

Further, no sample interval weights were recorded as an indication of clay recovery.

Thus, the aircore data acquired to date has limitations and can be used only to indicate a resource potential rather than an identified mineral resource.

This sectional data was then transferred to 1:2,500 and 1:1,000 plans.

On each section, a zone of >1% Zn was defined and the area calculated. This calculation exercise was done very simply with a ruler because the resource boundaries are not well known.

To estimate resource volumes, the sectional area was extended along strike in both east and west directions, to points half way to the adjacent sections. If there was no adjacent section, the data was extended to the nearest interpreted cross-cutting fault.

Tonnages for each of these volumes were estimated using a density factor of 1.7 dry tonnes to the cubic metre of in-situ clay.

Grades were estimated for each section by determining the simple arithmetic mean of the bulked drill hole intersections >1% Zn on that section. That grade was then assigned to the tonnage previously estimated for the section.

All volumes were then totalled and a weighted mean grade determined.

The resource potential so estimated is not classified as a mineral resource (JORC Code) for the following reasons:

- no sample weights (recoveries)
- insufficient holes
- some holes prematurely stopped
- no consistent metallurgical test work

The potential resource has been subdivided into three blocks by interpreted cross faulting, and can be summarised as follows:

	tonnes	% Zn
South block	133,000	6.6
Central block	34,000	3.6
North block	127,000	4.6
TOTAL	294,000	5.3

Reflecting the shortcomings of the existing data, the potential resource tonnes could be rounded up and the grade rounded down.

In summary, drilling to date suggests a potential resource of 300,000 t 5.0% Zn.

Additional drilling is required to more accurately define this resource and facilitate estimation of an identified mineral resource.

Additional drilling may either downgrade or upgrade this potential resource.

Downgrading may occur as a result of:

- infill and extension drilling not confirming depths of clay
- lateral drilling not supporting estimated width of zones

- drilling along strike not supporting proposed strike lengths
- more detailed analyses lower than existing analyses

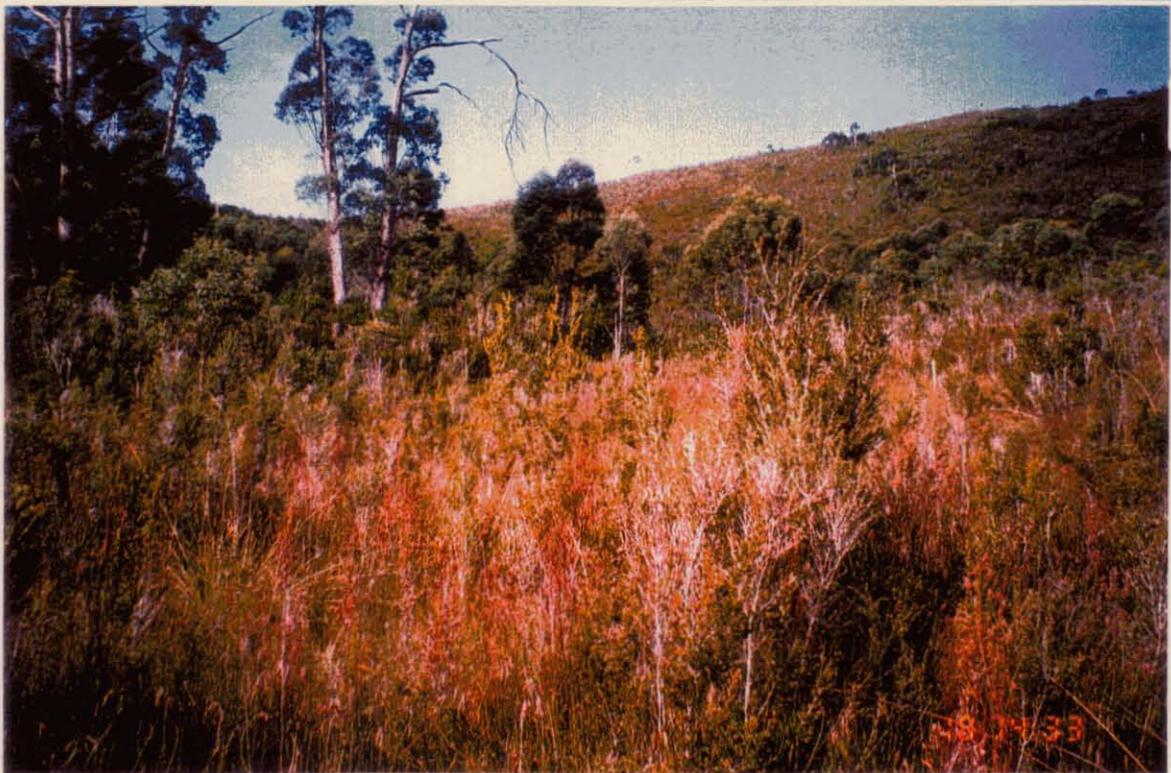
Potential exists to **upgrade** the resource in a number of key areas:

- Extensions west along strike of the fault which is currently shown as terminating the deposit.
- Extensions north-east along strike of the northern block. Strike of the limestone stratigraphy swings more northerly in this area and the current drilling pattern stops south of the Queensberry Mine track.
- Lateral extensions of the mineralised clay both up-dip to the north and more particularly down-dip to the south. Ground inspections suggest that the reason CRA did not drill further south towards the Moina Sandstone contact was because of difficult drill access conditions. To drill further south will not be easy in most cases without special track access development for the drill.

Additional drilling is required to better quantify the mineral resource potential of the surficial clays.

The probability that the resource lies in the 200,000-400,000 tonne 4-6% Zn range is rated as high.

The probability that the resource will lie outside these combined tonnage and grade ranges is rated as low.



View looking south-east along Grieves Fault; this area west of the fault is untested, and extensions of the central zone are possible;



Dumps of pyritic clays adjacent to a series of old trenches and pits; it is uncertain whether these are old workings or more "recent" costeans;

NEWNHAM EXPLORATION AND MINING SERVICES

**ALLEGIANCE MINING N.L.
GRIEVES SIDING PROJECT**

563038

		Scale:
Drawn: LAN	Date: Aug 98	Fig



View from south end of southern zone, standing on mineralised zone looking south west along strike across a fault which displaces Moina Sandstone against mineralisation and offsets the zone to the north



View from south end of mineralised zone directly along strike to the north east; mineralisation occurs close to or at the break of slope

NEWNHAM EXPLORATION AND MINING SERVICES

**ALLEGIANCE MINING N.L.
GRIEVES SIDING PROJECT**

563039

		Scale:
Drawn: LAN	Date: Aug 98	Fig

11. ECONOMIC ASSESSMENT

563040

To assist with decisions on the future of the surficial clay project, some form of economic assessment is required.

Because of the limitations of the existing technical data base with reference to resources, metallurgy and mining characteristics, it is inappropriate to undertake anything more than a "back of the envelope" economic assessment, based on a range of basic income and expense factors.

Expenditure can be divided into 3 groups:

- pre-development studies
- development capital
- operating costs

Revenue is derived from the sale of zinc concentrates.

11.1 Pre-development Expenditure: (\$0.4M)

(a) Resource Definition:

Two programs of aircore drilling are recommended. The first program of 50 holes would fill in large gaps in the current pattern, test the north-east and south-west strike extensions and extend the existing pattern to the south. Metreage would be 1,000 m, and total cost approximately \$50,000.

On the basis of this drilling, an inferred resource could be estimated.

If the results were encouraging, a second program of aircore drilling accompanied by deep pitting would be required to infill the existing pattern, provide bulk samples for metallurgical testing and define likely mining characteristics.

This data would permit estimation of a proven resource and mining reserve.

Approximately 40 holes will be required, together with appropriate data presentation and reporting, for an estimated cost of \$50,000.

Total cost of 2 stages of resource definition: \$100,000

(b) Mine Design:

Various mining methods will require investigation, followed by detailed design and costing of selected method. A mining engineer will have to be engaged as part of an integrated project team.

Mine evaluation and design: \$30,000

(c) Metallurgical Studies and Flow Sheet Design:

Three stages of work are required. A first stage of metallurgical test work on samples currently available is recommended. This will identify potential recovery routes and problems. It will lay the foundations for a second round of more detailed testing. A small but competent organisation is recommended to avoid cost blow-outs.

Budget estimate: \$25,000.

The second stage would require more detailed testwork on composite samples from the above recommended drilling and pitting programs. The end result of this stage would be to acquire adequate data for flow sheet design.

Budget estimate: \$40,000

The third stage would involve flow sheet design accompanied by engineering design and equipment specification and identification.

Budget estimate: \$35,000

Total estimate for 3 stages of metallurgical testing: \$100,000

(d) Environmental Study:

Following positive encouragement from the above resource definition, mine design and metallurgical programs, an Environment Management Plan will have to be developed. This EMP must be in a form acceptable to Government to permit consideration of the overall Development Plan leading to development approval.

An environmental firm would be required to join the project team to complete this study and they are not inexpensive.

Budget estimate for EMP: \$80,000

(e) Commercial Study:

This study would be undertaken largely by the Project Manager

assisted by various engineers, etc, as required. It would involve detailed quantification of development plans, capital estimates, operating costs and sales contracts. This is not a big item on a small project.

Budget estimate: \$20,000

(f) Feasibility Study:

This study would be prepared by the Project Manager using all of the above information and with extensive liaison with the project team. The project is small and by its very nature not complex. The end result would be a comprehensive document on which the Allegiance Board could make a go/no- go decision on the project.

Budget estimate: \$20,000

(g) Project Manager:

At a point following the initial resource definition and metallurgical test programs, a Project Manager would be required to co-ordinate all on-going work, dealings with Government and the Allegiance Board.

For a small project, this would probably be a part time job over a six-month period.

Budget estimate: \$50,000

Summary:

Pre-development studies are estimated to cost \$400,000.

11.2 Development Capital:

Development capital would be required for:

- infrastructure development
- mill construction
- waste management

At this very early conceptual stage, it is only possible to make educated guesses at these expenditures.

Infrastructure Development:

This would be principally associated with access road development, power and water supply.

On the assumption that the plant was developed close to the mine, road construction would be minimal and relatively easy to construct using locally available gravel and rock.

Estimate: \$25,000

Site works and a modest office, first aid and ablutions facility, together with water supply tanks.

Estimate: \$50,000

Power would be transmitted to site via a new feeder from Zeehan, a distance of 10 km. Power consumption should be relatively low - say 1 MW. A substation using second hand transformers would be required.

Estimate: \$150,000

Total infrastructure costs: \$225,000

Mill Construction:

For this operation to be viable, the mill will have to be small, technically very simple, and built largely from used equipment.

The process might involve:

- trommel and screening
- flotation
- drying
- bagging

Metallurgical tests might indicate a small ball mill is necessary.

This equipment would be installed in a single building.

Depending on equipment availability, estimate: \$700,000

Waste Management:

Mill waste water which contains all the clay should be recycled to the mine. However, an initial holding dam (tailings or settling dam) would be required until such time as the first open-cut void was available to receive tailings.

An allowance to develop such a dam, water recirculating facility.

Estimate: \$75,000

Summary:

Total development capital is estimated at this early conceptual stage as \$1M. This appears very low for a new mining operation. But the project is small and would not support higher costs.

11.3 Operating Costs:

Operating costs assume an open-cut mine (either hydraulic or mechanical), feeding a small mill located adjacent to the mine. The mill would essentially involve disaggregation of the clay, sulfide flotation, drying and bagging concentrates for freighting to Risdon smelter.

Costs can be allocated to:

- mining
- processing
- administration
- concentrates transport

Mining:

A simple excavator operation, loading directly to trucks for 1-2 km trip to mill should operate at around \$4/m³ or \$2.50/dry tonne.

Allow \$1/t of ore for overburden removal.

Total: \$3.50/t

Sluicing to a gravel pump may be less.

Processing:

A 50,000 tpa operation equates to about 10 tph on a continuous 6 days/week basis. This is a very small throughput and would have to be carefully managed to control costs - probably a 1-2 person operation. Consumable usage would be low. A 100,000 tpa operation would allow more efficient use of equipment.

Total: \$4.50/t ore

Administration:

To cover management, insurances, etc. an operation of this size could not support a full time professional manager. The site manager would probably also be the mill operator.

Total: \$3/t ore

Total site operating costs: \$11/t ore

Note: These operating costs would be lower, **say \$10/t ore**, if the throughput was increased to, say, 100,000 tpa. The two most efficient ways of doing this are:

- find more ore
- shorten the life of mine

Concentrates Transport:

The most likely buyer of concentrates is the Risdon refinery in Hobart.

Best freight options are:

- road to Hobart via Queenstown
- road to Hobart via Burnie
- road to Melba Flats then rail to Hobart
- road to Burnie then rail to Hobart

Freight costs will be approximately: \$40/t concentrate.

Total Operating Costs:

Assume the following:

Head grade:	5% Zn
90% of Zn as sphalerite	
90% of sphalerite recovered	
80% overall zinc recovery	
Recovered head grade:	4% Zn
Grade of concentrates:	55% Zn
Tonnes of ore to produce 1 t concentrate:	13.75 t
Operating costs/t concentrate delivered to Risdon:	$\$(13.75 \times 11) + 40 = \192

**In summary:
Operating costs to deliver concentrates to
Risdon: approx. \$192/t concentrate for
50,000 t. ore p.a. operation, and \$180/t
concentrate for 100,000 t. ore p.a.
operation**

11.4 Revenue:

The price received for sale of Zn concentrates varies with a range of factors:

- concentrate grade
- tonnes
- impurities
- Zn market
- smelter factors ('hungry' or 'not hungry')

Normally a Zn smelter contract includes a treatment charge of approximately \$300/t, payment for only 85% of the contained Zn, and other treatment charges.

These terms broadly equate to payment equivalent of approximately 55% of the contained Zn.

Assume the following:

Zinc price:	\$1,800/t
Concentrate grade:	55% Zn
Payment equivalent:	55% of contained Zn
Revenue/t concentrate:	\$544

In summary:

The price received for concentrates delivered to Risdon: approximately \$544/t concentrate

11.5 Economic Model:

Two operational scenarios are listed below; one with 50,000 tpa throughput, the other 100,000 tpa.

The 50,000 tpa operation is small and does not represent efficient utilisation of capital equipment or personnel.

The 100,000 tpa operation reduces the life-of-mine to about three years. However, the capital cost would remain about the same and the operating costs would reduce slightly.

Assumption	Throughput	
	50,000 tpa	100,000 tpa
Resource	300,000 t 5% Zn	300,000 t 5% Zn
Recovered head grade	4% Zn	4% Zn
Concentrates produced	3,636 t	7,272 t
Unit operating costs	\$192/t conc	\$180/t conc
Annual operating costs	\$698,000	\$1,309,000
Unit Revenue	\$544/t conc	\$544/t conc
Annual Revenue	\$1,978,000	\$3,956,000
Operating Margin	\$1,280,000 pa	\$2,647,000 pa
Pre-development costs	\$400,000	\$400,000
Development Capital	\$1,000,000	\$1,000,000
Other costs	Royalties	Royalties
Life-of-mine	6 years	3 years

The project would be most sensitive to:

- resource tonnes
- resource grade
- mill recovery

12. RECOMMENDED WORK PROGRAM

Provided all of the basic economic assumptions made above were of the right order, this surficial clay resource could support a small operation for a period of 3 years (recommended option).

To be successful it would have to be highly efficient and very lean.

If a decision is made to further advance the project, the pre-development projects outlined in section 11.1 above will have to be completed. This could be achieved in a sequential program over a 12-month period, with go/no-go decisions to be made at three critical points after cumulative expenditures of \$75,000, \$200,000 and \$400,000.

The two components necessary to reach the first critical decision point are:

- metallurgical test work on available samples (\$25,000)
- first program of aircore drilling (\$50,000)

Pre-development Schedule and Budget:

Item	1st Q	2nd Q	3rd Q	4th Q	Totals
Resource definition	◀▶	◀▶			100,000
Mine design		◀▶			30,000
Met. test work	◀▶	◀▶	◀▶		100,000
Environ. study		◀▶	◀▶	◀▶	80,000
Commercial study			◀▶		20,000
Feasibility study				◀▶	20,000
Project management		◀▶	◀▶	◀▶	50,000
Budget	150,000	100,000	90,000	60,000	400,000
	*	**		***	

* First decision point after spending \$75,000 on a first program of drilling and initial metallurgical testing of currently available samples

** Second decision point after completion of a second drilling program, more detailed metallurgical test work and a mine design study. Cumulative expenditure at this point would be \$200,000.

*** Third decision point occurs when all the recommended pre-development programs have been completed. This is the point at which a decision to develop the project is made. Cumulative expenditure at this point is \$400,000.

APPENDIX 1

**AIRCORE
DRILL LOGS**

APPENDIX 2

Drill-hole collar survey data

Appendix 2: Grieves prospect. Drillhole collar information.

APPENDIX 2: Grieves prospect. Drillhole collar information.												
HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
ZG1001	ZG1001	EZ	363550.9	5349070.6	61066	47066	149.5	149.40	144	-50		YES
ZG1002	ZG1002	EZ	364509.2	5349405.3	61198	47891	143.3	150.00	142	-50		YES
ZG1007	ZG1007	EZ	363835.0	5349821.4	60460	47603	170.0	737.30	147	-70		YES
ZG1009	ZG1009	EZ	364199.2	5349663.8	60805	47799	134.1	151.00	142	-60		YES
ZG1010	ZG1010	EZ	364012.4	5349523.6	60815	47565	130.5	170.00	137	-60	YES	YES
ZG1011	ZG1011	EZ	363718.1	5349334.4	60871	47310	127.5	300.00	140	-60		YES
ZG1012	ZG1012	EZ	363924.1	5349708.2	60604	47606	130.6	348.90	142	-70		YES
ZG1013	ZG1013	EZ	364684.7	5349760.5	61020	48245	150.0	138.50	127	-60		YES
ZG1014	ZG1014	EZ	364667.8	5349894.7	60900	48315	150.8	292.30	142	-60	YES	YES
ZG1015	ZG1015	EZ	364780.7	5349889.1	60975	48399	156.0	177.60	122	-60		YES
ZG1016	ZG1016	EZ	364592.4	5349727.7	60985	48145	147.2	187.50	142	-60	YES	YES
ZWG1	ZWG1	EZ	363615.5	5348993.5	61160	47102	122.8	22.75	159	-60		
ZWG2	ZWG2	EZ	363613.2	5349003.2	61150	47103	122.8	30.70	158	-70		
ZWG3	ZWG3	EZ	363590.6	5348982.8	61162	47075	122.0	17.00	169	-60		
ZWG4	ZWG4	EZ	363593.9	5348973.3	61172	47075	122.0	18.80	164	-60		
ZWG5	ZWG5	EZ	363529.5	5348930.0	61192	47000	121.0	33.55	161	-60		
ZWG6	ZWG6	EZ	363519.7	5348958.4	61162	47000	121.0	13.95	161	-60		
ZWG7	ZWG7	EZ	363523.9	5348946.1	61175	47000	121.0	31.40	161	-60		
ZWG8	ZWG8	EZ	363730.1	5348959.1	61225	47200	128.3	29.25	161	-60		
ZWG9	ZWG9	EZ	363677.4	5349422.0	60775	47300	127.7	19.55	161	-60		
ZWG10	ZWG10	EZ	363682.9	5349405.9	60792	47300	125.0	16.00	161	-60		
ZWG11	ZWG11	EZ	363913.4	5349047.8	61125	47200	127.5	26.65	142	-60		
ZWG12	ZWG12	EZ	363928.4	5349027.8	61150	47200	127.5	15.70	142	-60		
ZWG20	ZWG20	EZ	363649.5	5349042.2	61125	47150	124.2	14.90	161	-60		
ZWG21	ZWG21	EZ	363654.4	5349028.0	61140	47150	124.6	35.60	161	-80		
ZWG22	ZWG22	EZ	363663.4	5348994.3	61170	47150	125.2	16.00	161	-80	YES	
ZWG23	ZWG23	EZ	363840.2	5348949.2	61275	47300	128.7	29.40	161	-70		
ZWG24	ZWG24	EZ	363845.0	5348935.0	61290	47300	130.0	13.00	161	-70		
ZWG25	ZWG25	EZ	363849.9	5348920.8	61305	47300	131.4	24.20	0	-90		
ZWG26	ZWG26	EZ	363667.7	5348980.5	61185	47150	126.6	22.40	0	-90	YES	
AC93ZG1	ZG1	CRAE	363551.5	5348865.9	61250	47000	122.6	0.90	0	-90	YES	
AC93ZG2	ZG2	CRAE	363557.9	5348841.9	61275	47000	123.0	1.20	0	-90		

563053

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG3	ZG3	CRAE	363564.3	5348817.8	61300	47000	128.1	6.10	0	-90	YES	
AC93ZG4	ZG4	CRAE	363572.8	5348794.3	61325	47000	127.2	5.80	0	-90		
AC93ZG5	ZG5	CRAE	363580.9	5348770.6	61350	47000	126.4	11.00	0	-90		
AC93ZG6	ZG6	CRAE	363589.1	5348747.0	61375	47000	126.7	16.00	0	-90		
AC93ZG7	ZG7	CRAE	363597.2	5348723.3	61400	47000	127.0	13.00	0	-90		
AC93ZG8	ZG8	CRAE	363605.3	5348699.7	61425	47000	129.1	15.00	0	-90		
AC93ZG9	ZG9	CRAE	363683.6	5348789.5	61375	47100	130.3	17.00	0	-90		
AC93ZG10	ZG10	CRAE	363691.8	5348765.9	61400	47100	131.4	7.40	0	-90	GRAVITY RL	
AC93ZG11	ZG11	CRAE	363699.9	5348742.3	61425	47100	133.6	4.00	0	-90		
AC93ZG12	ZG12	CRAE	363675.5	5348813.2	61350	47100	129.2	14.00	0	-90	GRAVITY RL	
AC93ZG13	ZG13	CRAE	363667.3	5348836.8	61325	47100	126.1	7.00	0	-90		
AC93ZG14	ZG14	CRAE	363659.2	5348860.4	61300	47100	122.9	15.50	0	-90	GRAVITY RL	
AC93ZG15	ZG15	CRAE	363724.3	5348671.3	61500	47100	139.5	18.00	0	-90	GRAVITY RL	
AC93ZG16	ZG16	CRAE	363810.7	5348722.5	61475	47200	137.0	15.00	0	-90		
AC93ZG17	ZG17	CRAE	363802.6	5348746.2	61450	47200	135.0	8.00	0	-90		
AC93ZG18	ZG18	CRAE	363794.4	5348769.8	61425	47200	133.2	10.00	0	-90		
AC93ZG19	ZG19	CRAE	363786.3	5348793.5	61400	47200	131.4	10.00	0	-90		
AC93ZG20	ZG20	CRAE	363778.2	5348817.1	61375	47200	130.2	7.00	0	-90		
AC93ZG21	ZG21	CRAE	363770.0	5348840.7	61350	47200	129.0	2.50	0	-90		
AC93ZG22	ZG22	CRAE	363761.9	5348864.4	61325	47200	126.9	6.00	0	-90		
AC93ZG23	ZG23	CRAE	363753.7	5348888.0	61300	47200	124.7	6.00	0	-90		
AC93ZG24	ZG24	CRAE	363745.6	5348911.6	61275	47200	127.1	4.50	0	-90		
AC93ZG25	ZG25	CRAE	363737.9	5348934.7	61250	47200	129.5	3.50	0	-90	YES	
AC93ZG26	ZG26	CRAE	363730.1	5348959.1	61225	47200	128.3	4.50	0	-90		
AC93ZG27	ZG27	CRAE	363722.2	5348983.6	61200	47200	127.1	3.00	0	-90	YES	
AC93ZG28	ZG28	CRAE	363713.1	5349006.2	61175	47200	125.4	3.00	0	-90		
AC93ZG29	ZG29	CRAE	363704.9	5349029.8	61150	47200	123.6	2.50	0	-90		
AC93ZG30	ZG30	CRAE	363696.8	5349053.5	61125	47200	123.5	2.10	0	-90		
AC93ZG31	ZG31	CRAE	363688.6	5349077.1	61100	47200	123.3	1.80	0	-90		
AC93ZG32	ZG32	CRAE	363609.9	5349079.3	61075	47120	122.9	2.30	0	-90	YES	
AC93ZG33	ZG33	CRAE	363617.4	5349054.8	61100	47120	123.1	1.80	0	-90	YES	
AC93ZG34	ZG34	CRAE	363624.2	5349032.1	61125	47120	123.6	2.20	0	-90	YES	
AC93ZG35	ZG35	CRAE	363631.6	5349007.9	61150	47120	124.0	3.00	0	-90		
AC93ZG36	ZG36	CRAE	363639.1	5348983.6	61175	47120	124.3	12.20	0	-90	YES	
AC93ZG37	ZG37	CRAE	363638.6	5348961.3	61200	47110	123.5	3.00	0	-90	YES	

563054

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG38	ZG38	CRAE	363634.8	5348931.4	61225	47100	124.0	9.00	0	-90		
AC93ZG39	ZG39	CRAE	363643.6	5348905.6	61250	47100	129.3	7.50	0	-90	YES	
AC93ZG40	ZG40	CRAE	363651.1	5348884.1	61275	47100	126.1	9.80	0	-90		
AC93ZG41	ZG41	CRAE	364297.6	5349368.6	61100	47700	137.7	21.30	0	-90	GRAVITY RL	
AC93ZG42	ZG42	CRAE	364282.6	5349388.6	61075	47700	137.0	19.50	0	-90		
AC93ZG43	ZG43	CRAE	364267.5	5349408.6	61050	47700	136.2	13.50	0	-90	GRAVITY RL	
AC93ZG44	ZG44	CRAE	364312.7	5349348.7	61125	47700	138.5	9.00	0	-90		
AC93ZG45	ZG45	CRAE	364327.7	5349328.7	61150	47700	139.2	18.50	0	-90	GRAVITY RL	
AC93ZG46	ZG46	CRAE	364342.8	5349308.7	61175	47700	140.8	15.00	0	-90		
AC93ZG47	ZG47	CRAE	364357.8	5349288.8	61200	47700	142.3	16.50	0	-90	GRAVITY RL	
AC93ZG48	ZG48	CRAE	364372.9	5349268.8	61225	47700	143.9	2.00	0	-90		
AC93ZG49	ZG49	CRAE	364387.9	5349248.8	61250	47700	145.4	15.80	0	-90	GRAVITY RL	
AC93ZG50	ZG50	CRAE	364403.0	5349228.9	61275	47700	147.2	20.00	0	-90		
AC93ZG51	ZG51	CRAE	364418.0	5349208.9	61300	47700	148.9	54.00	0	-90	GRAVITY RL	
AC93ZG52	ZG52	CRAE	364409.1	5349170.9	61325	47670	151.0	4.00	0	-90		
AC93ZG53	ZG53	CRAE	364424.1	5349150.9	61350	47670	152.9	3.00	0	-90		
AC93ZG54	ZG54	CRAE	364516.1	5349224.6	61350	47785	154.7	35.50	0	-90	YES	
AC93ZG55	ZG55	CRAE	364512.9	5349249.1	61325	47800	148.8	18.00	0	-90		
AC93ZG56	ZG56	CRAE	364497.9	5349269.1	61300	47800	147.6	9.50	0	-90	GRAVITY RL	
AC93ZG57	ZG57	CRAE	364482.8	5349289.1	61275	47800	146.0	14.50	0	-90		
AC93ZG58	ZG58	CRAE	364467.8	5349309.0	61250	47800	144.3	10.30	0	-90	GRAVITY RL	
AC93ZG59	ZG59	CRAE	364452.7	5349329.0	61225	47800	143.9	21.50	0	-90		
AC93ZG60	ZG60	CRAE	364437.7	5349349.0	61200	47800	143.5	19.00	0	-90	GRAVITY RL	
AC93ZG61	ZG61	CRAE	364422.6	5349368.9	61175	47800	142.2	16.00	0	-90		
AC93ZG62	ZG62	CRAE	364407.6	5349388.9	61150	47800	140.9	13.50	0	-90	GRAVITY RL	
AC93ZG63	ZG63	CRAE	364389.5	5349412.8	61120	47800	141.3	11.50	0	-90		
AC93ZG64	ZG64	CRAE	364377.5	5349428.8	61100	47800	141.6	5.50	0	-90	GRAVITY RL	
AC93ZG65	ZG65	CRAE	364252.5	5349428.5	61025	47700	136.0	3.00	0	-90		
AC93ZG66	ZG66	CRAE	364237.5	5349448.5	61000	47700	135.8	3.70	0	-90	GRAVITY RL	
AC93ZG67	ZG67	CRAE	364457.4	5349489.0	61100	47900	138.7	6.80	0	-90	GRAVITY RL	
AC93ZG68	ZG68	CRAE	364472.4	5349469.0	61125	47900	140.2	8.50	0	-90		
AC93ZG69	ZG69	CRAE	364487.5	5349449.1	61150	47900	141.6	4.10	0	-90	GRAVITY RL	
AC93ZG70	ZG70	CRAE	364502.5	5349429.1	61175	47900	142.3	7.00	0	-90		
AC93ZG71	ZG71	CRAE	364517.5	5349409.1	61200	47900	143.0	7.00	0	-90	GRAVITY RL	
AC93ZG72	ZG72	CRAE	364532.6	5349389.2	61225	47900	144.5	4.80	0	-90		

563053

Appendix 2: Grievs prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMGE	AMGN	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG73	ZG73	CRAE	364547.6	5349369.2	61250	47900	145.9	12.80		0	-90	GRAVITY RL
AC93ZG74	ZG74	CRAE	364733.4	5349629.3	61150	48200	152.7	14.50		0	-90	
AC93ZG75	ZG75	CRAE	364716.0	5349650.6	61125	48200	151.6	14.00		0	-90	
AC93ZG76	ZG76	CRAE	364701.0	5349670.5	61100	48200	150.5	8.40		0	-90	GRAVITY RL
AC93ZG77	ZG77	CRAE	364685.9	5349690.5	61075	48200	149.6	5.30		0	-90	
AC93ZG78	ZG78	CRAE	364670.9	5349710.5	61050	48200	148.6	4.90		0	-90	GRAVITY RL
AC93ZG79	ZG79	CRAE	364655.8	5349730.4	61025	48200	148.8	9.60		0	-90	
AC93ZG80	ZG80	CRAE	363886.8	5349747.7	60550	47600	132.6	19.70		0	-90	GRAVITY RL
AC93ZG81	ZG81	CRAE	363901.8	5349727.7	60575	47600	131.6	9.50		0	-90	
AC93ZG82	ZG82	CRAE	363916.9	5349707.8	60600	47600	130.6	9.50		0	-90	GRAVITY RL
AC93ZG83	ZG83	CRAE	363931.9	5349687.8	60625	47600	129.4	2.50		0	-90	
AC93ZG84	ZG84	CRAE	363947.0	5349667.8	60650	47600	128.2	10.50		0	-90	GRAVITY RL
AC93ZG85	ZG85	CRAE	363962.0	5349647.9	60675	47600	127.9	6.40		0	-90	
AC93ZG86	ZG86	CRAE	363977.0	5349627.9	60700	47600	127.5	12.00		0	-90	GRAVITY RL
AC93ZG87	ZG87	CRAE	363992.1	5349607.9	60725	47600	129.4	9.30		0	-90	
AC93ZG88	ZG88	CRAE	364007.1	5349588.0	60750	47600	131.2	16.00		0	-90	GRAVITY RL
AC93ZG89	ZG89	CRAE	364022.2	5349568.0	60775	47600	131.0	34.00		0	-90	
AC93ZG90	ZG90	CRAE	364037.2	5349548.0	60800	47600	130.8	10.30		0	-90	GRAVITY RL
AC93ZG91	ZG91	CRAE	364026.5	5349878.0	60530	47790	131.4	18.00		0	-90	
AC93ZG92	ZG92	CRAE	364061.5	5349848.1	60575	47800	130.3	9.00		0	-90	
AC93ZG93	ZG93	CRAE	364076.6	5349828.1	60600	47800	131.0	4.50		0	-90	GRAVITY RL
AC93ZG94	ZG94	CRAE	364091.6	5349808.2	60625	47800	131.3	1.80		0	-90	
AC93ZG95	ZG95	CRAE	364106.7	5349788.2	60650	47800	131.5	3.00		0	-90	GRAVITY RL
AC93ZG96	ZG96	CRAE	364121.7	5349768.2	60675	47800	133.2	8.00		0	-90	
AC93ZG97	ZG97	CRAE	364136.8	5349748.3	60700	47800	134.9	13.00		0	-90	GRAVITY RL
AC93ZG98	ZG98	CRAE	364151.4	5349731.0	60725	47800	135.5	25.80		0	-90	YES
AC93ZG99	ZG99	CRAE	364165.2	5349708.4	60750	47800	134.9	23.80		0	-90	YES
AC93ZG100	ZG100	CRAE	364181.9	5349688.4	60775	47800	134.5	2.40		0	-90	
AC93ZG101	ZG101	CRAE	364197.0	5349668.4	60800	47800	134.1	3.50		0	-90	GRAVITY RL
AC93ZG102	ZG102	CRAE	364860.0	5349828.7	61071	48426	161.0	20.00		0	-90	
AC93ZG103	ZG103	CRAE	364833.4	5349832.5	61052	48407	160.5	4.70		0	-90	
DD93ZG104	ZG104	CRAE	364713.7	5349646.4	61125	48200	151.1	36.70		142	-50	YES
DD93ZG105	ZG105	CRAE	364512.9	5349249.4	61325	47800	148.8	40.90		142	-52	YES
DD93ZG106	ZG106	CRAE	364637.5	5349751.8	60997	48200	149.0	161.00		142	-50	YES
DD93ZG107	ZG107	CRAE	364565.9	5349512.0	61142.5	48000	142.8	175.00		145	-50	YES

563050

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG108	ZG108	CRAE	364695.5	5349602.2	61150	48150	148.5	31.00	0	-90	YES	
AC93ZG109	ZG109	CRAE	364688.3	5349610.4	61140	48150	148.6	6.00	0	-90		
AC93ZG109a	ZG109a	CRAE	364693.1	5349615.0	61140	48160	148.9	5.00	0	-90	YES	
AC93ZG110	ZG110	CRAE	364681.1	5349618.6	61130	48150	148.6	13.00	0	-90	YES	
AC93ZG111	ZG111	CRAE	364674.6	5349625.1	61120	48150	148.5	8.50	0	-90	YES	
AC93ZG112	ZG112	CRAE	364667.7	5349632.5	61110	48150	148.5	4.00	0	-90	YES	
AC93ZG113	ZG113	CRAE	364661.4	5349639.6	61100	48150	148.3	12.50	0	-90	YES	
AC93ZG114	ZG114	CRAE	364655.0	5349647.2	61090	48150	148.4	9.00	0	-90	YES	
AC93ZG115	ZG115	CRAE	364729.3	5349634.4	61145	48200	152.1	28.50	0	-90	YES	
AC93ZG116	ZG116	CRAE	364733.4	5349629.3	61150	48200	152.8	35.00	135	-58	YES	
AC93ZG117	ZG117	CRAE	364724.5	5349639.3	61137	48200	151.8	19.00	0	-90	YES	
AC93ZG118	ZG118	CRAE	364710.9	5349658.3	61115	48200	151.2	7.50	0	-90	YES	
AC93ZG118a	ZG118a	CRAE	364710.9	5349658.3	61115	48200	151.2	13.00	0	-90		
AC93ZG119	ZG119	CRAE	364788.9	5349633.4	61180	48250	157.7	7.50	142	-60	YES	
AC93ZG120	ZG120	CRAE	364780.5	5349644.0	61167	48250	156.5	24.00	0	-90	YES	
AC93ZG121	ZG121	CRAE	364776.0	5349649.7	61160	48250	156.0	4.00	0	-90		
AC93ZG122	ZG122	CRAE	364767.6	5349660.9	61146	48250	155.0	4.00	0	-90		
AC93ZG123	ZG123	CRAE	364759.3	5349684.5	61125	48260	154.2	24.00	0	-90	YES	
AC93ZG124	ZG124	CRAE	364736.6	5349695.0	61100	48250	152.6	6.00	0	-90	YES	
AC93ZG125	ZG125	CRAE	364677.6	5349541.3	61190	48100	147.7	16.00	0	-90	YES	
AC93ZG126	ZG126	CRAE	364670.2	5349551.4	61180	48100	147.3	8.00	0	-90	YES	
AC93ZG127	ZG127	CRAE	364663.7	5349559.1	61170	48100	147.3	23.00	0	-90	YES	
AC93ZG128	ZG128	CRAE	364658.6	5349565.3	61160	48100	146.7	10.00	0	-90	YES	
AC93ZG129	ZG129	CRAE	364651.8	5349573.6	61150	48100	145.7	12.00	0	-90	YES	
AC93ZG130	ZG130	CRAE	364634.5	5349596.2	61125	48100	146.4	14.00	0	-90	YES	
AC93ZG131	ZG131	CRAE	364621.3	5349613.5	61100	48100	146.7	6.50	0	-90	YES	
AC93ZG132	ZG132	CRAE	364606.0	5349633.3	61075	48100	146.0	6.00	0	-90		
AC93ZG133	ZG133	CRAE	364708.5	5349427.5	61300	48050	148.2	28.00	0	-90	YES	
AC93ZG134	ZG134	CRAE	364701.8	5349435.6	61290	48050	147.1	15.00	0	-90	YES	
AC93ZG135	ZG135	CRAE	364696.4	5349441.3	61280	48050	146.8	10.00	0	-90	YES	
AC93ZG136	ZG136	CRAE	364686.7	5349450.4	61270	48050	145.5	7.00	0	-90	YES	
AC93ZG137	ZG137	CRAE	364680.6	5349457.4	61260	48050	145.0	7.00	0	-90	YES	
AC93ZG138	ZG138	CRAE	364674.1	5349464.0	61250	48050	144.7	1.70	0	-90	YES	
AC93ZG139	ZG139	CRAE	364656.9	5349484.0	61225	48050	144.6	8.00	0	-90	YES	
AC93ZG140	ZG140	CRAE	364642.7	5349502.4	61200	48050	144.3	8.00	0	-90	YES	

563057

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG141	ZG141	CRAE	364627.6	5349523.1	61175	48050	144.1	13.00	0	-90	YES	
AC93ZG142	ZG142	CRAE	364611.6	5349543.2	61150	48050	144.8	11.00	0	-90	YES	
AC93ZG143	ZG143	CRAE	364597.0	5349562.8	61125	48050	144.8	3.50	0	-90	YES	
AC93ZG144	ZG144	CRAE	364581.4	5349581.4	61100	48050	144.7	6.00	0	-90	YES	
AC93ZG145	ZG145	CRAE	364566.6	5349601.1	61075	48050	144.8	4.00	0	-90	YES	
AC93ZG146	ZG146	CRAE	364551.1	5349621.2	61050	48050	144.7	4.00	0	-90		
AC93ZG147	ZG147	CRAE	364536.0	5349641.2	61025	48050	144.7	3.50	0	-90		
AC93ZG148	ZG148	CRAE	364521.0	5349661.1	61000	48050	144.7	4.00	0	-90		
AC93ZG149	ZG149	CRAE	364680.7	5349351.4	61340	48000	152.8	16.00	0	-90	YES	
AC93ZG150	ZG150	CRAE	364676.0	5349360.3	61330	48000	151.4	14.00	0	-90		
AC93ZG151	ZG151	CRAE	364671.3	5349369.3	61320	48000	149.9	11.50	0	-90		
AC93ZG152	ZG152	CRAE	364666.5	5349378.3	61310	48000	148.4	20.00	0	-90	YES	
AC93ZG153	ZG153	CRAE	364654.6	5349393.4	61290	48000	146.3	44.00	0	-90		
AC93ZG154	ZG154	CRAE	364648.6	5349401.4	61280	48000	145.3	34.00	0	-90		
AC93ZG155	ZG155	CRAE	364642.5	5349409.4	61270	48000	144.3	39.00	0	-90		
AC93ZG156	ZG156	CRAE	364636.5	5349417.4	61260	48000	143.3	27.00	0	-90		
AC93ZG157	ZG157	CRAE	364617.5	5349439.4	61230	48000	142.5	3.00	0	-90	YES	
AC93ZG158	ZG158	CRAE	364601.5	5349459.4	61204	48000	142.0	8.00	0	-90	YES	
AC93ZG159	ZG159	CRAE	364584.5	5349485.0	61175	48000	142.1	8.00	0	-90	YES	
AC93ZG160	ZG160	CRAE	364554.3	5349524.6	61125	48000	142.2	9.00	0	-90	YES	
AC93ZG161	ZG161	CRAE	364543.1	5349548.2	61100	48000	142.4	13.00	0	-90	YES	
AC93ZG162	ZG162	CRAE	364527.1	5349567.6	61075	48000	143.3	3.20	0	-90	YES	
AC93ZG163	ZG163	CRAE	364509.7	5349585.4	61050	48000	142.6	7.00	0	-90	YES	
AC93ZG164	ZG164	CRAE	364492.1	5349609.1	61025	48000	141.8	10.00	0	-90		
AC93ZG165	ZG165	CRAE	364477.0	5349629.0	61000	48000	140.9	8.00	0	-90	GRAVITY RL	
AC93ZG166	ZG166	CRAE	364599.6	5349383.3	61270	47950	146.5	6.00	0	-90		
AC93ZG167	ZG167	CRAE	364585.9	5349397.2	61250	47950	145.6	5.00	0	-90	YES	
AC93ZG168	ZG168	CRAE	364576.7	5349410.7	61235	47950	144.5	12.00	0	-90	YES	
AC93ZG169	ZG169	CRAE	364536.0	5349228.0	61355	47800	155.4	36.00	0	-90	YES	
AC93ZG170	ZG170	CRAE	364524.6	5349234.2	61343	47795	152.3	7.00	0	-90	YES	
AC93ZG171	ZG171	CRAE	364518.5	5349240.4	61335	47795	151.2	22.00	0	-90	YES	
AC93ZG172	ZG172	CRAE	364517.9	5349245.8	61330	47800	150.0	22.00	0	-90	YES	
AC93ZG173	ZG173	CRAE	364512.9	5349249.1	61325	47800	148.8	24.00	0	-90		
AC93ZG174	ZG174	CRAE	364509.9	5349253.1	61320	47800	148.5	34.00	0	-90		
AC93ZG175	ZG175	CRAE	364506.9	5349257.1	61315	47800	148.2	44.00	0	-90		

563058

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG176	ZG176	CRAE	364503.9	5349261.1	61310	47800	147.9	4.00	0	-90		
AC93ZG177	ZG177	CRAE	364500.9	5349265.1	61305	47800	147.6	57.00	0	-90		
AC93ZG178	ZG178	CRAE	364562.2	5349280.9	61330	47850	157.7	17.50	0	-90	YES	
AC93ZG179	ZG179	CRAE	364569.1	5349272.4	61340	47850	156.9	5.00	0	-90	YES	
AC93ZG180	ZG180	CRAE	364574.7	5349263.6	61350	47850	158.7	29.50	0	-90	YES	
AC93ZG181	ZG181	CRAE	364495.0	5349206.0	61350	47750	151.6	31.50	0	-90	YES	
AC93ZG182	ZG182	CRAE	364489.0	5349213.2	61340	47750	152.6	13.00	0	-90	YES	
AC93ZG183	ZG183	CRAE	364484.2	5349221.1	61330	47750	152.2	21.00	0	-90	YES	
AC93ZG184	ZG184	CRAE	364479.9	5349229.1	61320	47750	151.6	39.00	0	-90	YES	
AC93ZG185	ZG185	CRAE	364468.8	5349247.1	61300	47750	149.1	60.00	0	-90	YES	
AC93ZG186	ZG186	CRAE	364448.1	5349260.3	61275	47745	146.2	42.00	0	-90	YES	
AC93ZG187	ZG187	CRAE	364434.0	5349284.3	61250	47750	144.9	14.00	0	-90	YES	
AC93ZG188	ZG188	CRAE	364442.2	5349147.6	61360	47680	153.0	4.00	0	-90	YES	
AC93ZG189	ZG189	CRAE	364426.6	5349161.5	61340	47680	151.3	3.00	0	-90	YES	
AC93ZG190	ZG190	CRAE	364418.6	5349189.6	61315	47690	150.4	9.00	0	-90	YES	
AC93ZG191	ZG191	CRAE	364328.1	5349152.1	61290	47595	145.4	36.00	0	-90	YES	
AC93ZG192	ZG192	CRAE	364323.2	5349157.1	61280	47595	144.9	41.00	0	-90	YES	
AC93ZG193	ZG193	CRAE	364316.2	5349165.1	61270	47595	144.3	30.00	0	-90	YES	
AC93ZG194	ZG194	CRAE	364309.8	5349172.2	61260	47595	144.1	4.00	0	-90	YES	
AC93ZG195	ZG195	CRAE	364387.2	5349169.5	61315	47650	148.6	48.00	0	-90	YES	
AC93ZG196	ZG196	CRAE	364380.1	5349179.7	61300	47645	147.7	32.00	0	-90	YES	
AC93ZG197	ZG197	CRAE	364285.9	5349138.3	61277	47550	142.6	32.00	0	-90	YES	
AC93ZG198	ZG198	CRAE	364281.7	5349144.4	61270	47550	142.0	32.50	0	-90	YES	
AC93ZG199	ZG199	CRAE	364250.1	5349091.2	61280	47495	141.2	20.00	0	-90	YES	
AC93ZG200	ZG200	CRAE	364251.0	5349098.9	61270	47495	140.3	30.00	0	-90	YES	
AC93ZG201	ZG201	CRAE	364244.9	5349108.5	61260	47500	139.5	36.00	0	-90	YES	
AC93ZG202	ZG202	CRAE	364239.0	5349118.4	61250	47500	139.0	30.00	0	-90	YES	
AC93ZG203	ZG203	CRAE	364220.5	5349043.9	61310	47450	146.0	4.00	0	-90	YES	
AC93ZG204	ZG204	CRAE	364225.7	5349036.7	61320	47450	146.6	3.00	0	-90	YES	
AC93ZG205	ZG205	CRAE	364213.8	5349051.4	61300	47450	145.1	23.00	0	-90	YES	
AC93ZG206	ZG206	CRAE	364304.2	5349181.3	61250	47590	143.6	5.50	0	-90	YES	
AC93ZG207	ZG207	CRAE	364283.2	5349208.8	61215	47590	141.5	12.00	0	-90	YES	
AC93ZG208	ZG208	CRAE	364268.6	5349146.2	61260	47540	141.1	3.70	0	-90	YES	
DD93ZG209	ZG209	CRAE	364441.4	5349349.5	61198	47802	143.2	124.20	145	-50	YES	YES
AC93ZG210	ZG210	CRAE	364268.2	5349162.9	61245	47550	141.7	23.00	0	-90	YES	

563059

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG211	ZG211	CRAE	364256.1	5349178.4	61225	47550	140.7	4.00	0	-90	YES	
AC93ZG212	ZG212	CRAE	364239.9	5349198.2	61200	47550	139.8	4.90	0	-90	YES	
AC93ZG213	ZG213	CRAE	364230.9	5349126.9	61240	47500	139.0	32.80	0	-90	YES	
AC93ZG214	ZG214	CRAE	364225.2	5349133.8	61230	47500	139.1	50.00	0	-90	YES	
AC93ZG215	ZG215	CRAE	364205.6	5349157.3	61200	47500	138.2	18.90	0	-90	YES	
AC93ZG216	ZG216	CRAE	364190.9	5349177.0	61175	47500	137.7	16.80	0	-90	YES	
AC93ZG217	ZG217	CRAE	364209.1	5349059.9	61290	47450	144.6	21.20	0	-90	YES	
AC93ZG218	ZG218	CRAE	364201.8	5349068.2	61280	47450	143.1	30.00	0	-90	YES	
AC93ZG219	ZG219	CRAE	364183.5	5349084.6	61255	47450	140.0	30.00	0	-90	YES	
AC93ZG220	ZG220	CRAE	364173.4	5349108.9	61230	47450	136.6	10.70	0	-90	YES	
AC93ZG221	ZG221	CRAE	364181.6	5349016.0	61308	47400	146.9	23.70	142	-80	YES	
AC93ZG222	ZG222	CRAE	364178.2	5349022.9	61300	47400	145.2	24.20	0	-90	YES	
AC93ZG223	ZG223	CRAE	364172.9	5349031.3	61290	47400	144.2	28.00	0	-90	YES	
AC93ZG224	ZG224	CRAE	364166.4	5349040.6	61280	47400	142.9	38.00	0	-90	YES	
AC93ZG225	ZG225	CRAE	364160.2	5349048.0	61270	47400	141.5	36.00	0	-90	YES	
AC93ZG226	ZG226	CRAE	364148.4	5349062.8	61250	47400	139.2	16.20	0	-90	YES	
AC93ZG227	ZG227	CRAE	364133.3	5349083.2	61225	47400	136.6	20.80	0	-90	YES	
AC93ZG228	ZG228	CRAE	364148.5	5348990.2	61307	47350	145.9	16.80	0	-90	YES	
AC93ZG229	ZG229	CRAE	364151.1	5348981.1	61317	47350	147.8	32.70	0	-90	YES	
AC93ZG230	ZG230	CRAE	364143.7	5348996.1	61299	47350	144.4	12.20	0	-90	YES	
AC93ZG231	ZG231	CRAE	364135.3	5349005.8	61286	47350	140.1	18.70	0	-90	YES	
AC93ZG232	ZG232	CRAE	364128.2	5349013.7	61275	47350	138.5	24.50	0	-90	YES	
AC93ZG233	ZG233	CRAE	364112.5	5349033.9	61250	47350	136.0	28.80	0	-90	YES	
AC93ZG234	ZG234	CRAE	364095.8	5349053.0	61225	47350	133.8	8.00	0	-90	YES	
AC93ZG235	ZG235	CRAE	364067.4	5348965.3	61280	47280	135.4	9.70	0	-90	YES	
AC93ZG236	ZG236	CRAE	364061.8	5348974.1	61270	47280	134.3	17.60	0	-90	YES	
AC93ZG237	ZG237	CRAE	364055.0	5348981.9	61260	47280	133.0	22.20	0	-90	YES	
AC93ZG238	ZG238	CRAE	364048.8	5348989.3	61250	47280	131.6	3.00	0	-90	YES	
AC93ZG239	ZG239	CRAE	364033.7	5349009.3	61225	47280	130.5	2.50	0	-90	YES	
AC93ZG240	ZG240	CRAE	364018.9	5349029.6	61200	47280	130.5	3.50	0	-90	YES	
AC93ZG241	ZG241	CRAE	364117.9	5349107.0	61200	47400	134.2	7.20	0	-90	YES	
AC93ZG242	ZG242	CRAE	364105.8	5349125.4	61175	47400	134.1	3.90	0	-90	YES	
AC93ZG243	ZG243	CRAE	364090.7	5349145.9	61150	47400	134.1	17.80	0	-90	YES	
AC93ZG244	ZG244	CRAE	364075.4	5349165.7	61125	47400	133.5	3.90	0	-90	YES	
AC93ZG245	ZG245	CRAE	364061.0	5349185.6	61100	47400	133.0	13.70	0	-90	YES	

563060

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG246	ZG246	CRAE	364044.8	5349206.6	61075	47400	132.1	8.20	0	-90	YES	
AC93ZG247	ZG247	CRAE	364030.0	5349226.8	61050	47400	131.9	6.50	0	-90	YES	
AC93ZG248	ZG248	CRAE	364014.4	5349247.7	61025	47400	131.7	3.70	0	-90	YES	
AC93ZG249	ZG249	CRAE	363999.5	5349267.4	61000	47400	131.1	14.80	0	-90	YES	
AC93ZG250	ZG250	CRAE	363984.9	5349286.9	60975	47400	130.5	5.50	0	-90	YES	
AC93ZG251	ZG251	CRAE	363969.6	5349306.9	60950	47400	130.2	2.90	0	-90	YES	
AC93ZG252	ZG252	CRAE	363957.8	5349324.8	60925	47400	129.5	4.90	0	-90	YES	
AC93ZG253	ZG253	CRAE	363939.0	5349348.1	60900	47400	129.2	16.60	0	-90	YES	
AC93ZG254	ZG254	CRAE	363927.2	5349369.7	60875	47400	130.6	26.10	0	-90	YES	
AC93ZG255	ZG255	CRAE	363911.1	5349389.9	60850	47400	128.1	14.50	0	-90	YES	
AC93ZG256	ZG256	CRAE	363896.6	5349408.1	60825	47400	127.8	4.20	0	-90	YES	
AC93ZG257	ZG257	CRAE	363878.6	5349428.2	60800	47400	127.7	18.00	0	-90	YES	
AC93ZG258	ZG258	CRAE	364222.4	5349468.5	60975	47700	135.0	3.10	0	-90		
AC93ZG259	ZG259	CRAE	364207.4	5349488.4	60950	47700	134.2	3.50	0	-90	GRAVITY RL	
AC93ZG260	ZG260	CRAE	364192.3	5349508.4	60925	47700	133.7	4.10	0	-90		
AC93ZG261	ZG261	CRAE	364179.7	5349529.6	60900	47700	133.1	2.10	0	-90	YES	
AC93ZG262	ZG262	CRAE	364839.1	5349679.5	61177	48315	159.2	8.90	0	-90	YES	
AC93ZG263	ZG263	CRAE	364827.9	5349681.8	61165	48315	157.9	12.20	0	-90	YES	
AC93ZG264	ZG264	CRAE	364838.2	5349715.8	61150	48350	156.4	39.00	0	-90	YES	
AC93ZG265	ZG265	CRAE	364834.9	5349731.1	61138	48350	157.0	20.80	0	-90	YES	
AC93ZG266	ZG266	CRAE	364832.8	5349741.6	61127	48350	156.8	12.00	0	-90	YES	
AC93ZG267	ZG267	CRAE	364826.8	5349751.8	61115	48350	156.2	14.10	0	-90	YES	
AC93ZG268	ZG268	CRAE	364816.6	5349761.8	61100	48350	153.9	3.50	0	-90	YES	
AC93ZG269	ZG269	CRAE	364809.7	5349772.4	61090	48350	153.8	8.70	0	-90	YES	
AC93ZG270	ZG270	CRAE	364792.7	5349789.2	61065	48350	153.7	5.10	0	-90	YES	
AC93ZG271	ZG271	CRAE	364778.6	5349805.1	61040	48350	153.4	10.90	0	-90	YES	
AC93ZG272	ZG272	CRAE	364788.2	5349696.3	61134	48300	154.7	4.00	0	-90	YES	
AC93ZG273	ZG273	CRAE	364782.2	5349708.6	61124	48300	154.0	12.70	0	-90	YES	
AC93ZG274	ZG274	CRAE	364778.6	5349721.4	61107	48300	153.4	5.50	0	-90	YES	
AC93ZG275	ZG275	CRAE	364774.3	5349727.2	61100	48300	153.0	4.00	0	-90		
AC93ZG276	ZG276	CRAE	364759.2	5349747.4	61075	48300	152.1	6.00	0	-90	YES	
AC93ZG277	ZG277	CRAE	364873.9	5349765.9	61130	48400	164.5	8.50	0	-90	YES	
AC93ZG278	ZG278	CRAE	364874.8	5349779.0	61120	48407	163.3	6.00	0	-90	YES	
AC93ZG279	ZG279	CRAE	364862.9	5349783.1	61110	48400	160.8	7.00	0	-90	YES	
AC93ZG280	ZG280	CRAE	364854.9	5349789.2	61100	48400	159.5	10.20	0	-90	YES	

563061

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG281	ZG281	CRAE	364846.3	5349802.0	61085	48400	156.5	2.40	0	-90	YES	
AC93ZG282	ZG282	CRAE	364834.0	5349817.9	61064	48400	157.0	10.80	0	-90	YES	
AC93ZG283	ZG283	CRAE	364624.9	5349769.4	60975	48200	149.5	7.30	0	-90	YES	
AC93ZG284	ZG284	CRAE	364610.1	5349789.7	60950	48200	148.3	2.30	0	-90	YES	
AC93ZG285	ZG285	CRAE	364580.3	5349830.5	60900	48200	149.6	2.50	0	-90	YES	
AC93ZG286	ZG286	CRAE	364565.5	5349850.2	60875	48200	148.7	3.10	0	-90		
AC93ZG287	ZG287	CRAE	364550.5	5349870.2	60850	48200	147.7	3.10	0	-90	GRAVITY RL	
AC93ZG288	ZG288	CRAE	364535.5	5349890.2	60825	48200	147.0	1.10	0	-90		
AC93ZG289	ZG289	CRAE	364520.4	5349910.1	60800	48200	146.4	3.60	0	-90	GRAVITY RL	
AC93ZG290	ZG290	CRAE	364505.4	5349930.1	60775	48200	146.2	10.90	0	-90		
AC93ZG291	ZG291	CRAE	364490.3	5349950.1	60750	48200	145.9	4.30	0	-90	GRAVITY RL	
AC93ZG292	ZG292	CRAE	364475.3	5349970.0	60725	48200	145.2	8.10	0	-90		
AC93ZG293	ZG293	CRAE	364460.2	5349990.0	60700	48200	144.5	4.10	0	-90	GRAVITY RL	
AC93ZG294	ZG294	CRAE	364432.0	5349994.5	60681	48184	144.5	3.40	0	-90		
AC93ZG295	ZG295	CRAE	364407.8	5350000.1	60662	48168	144.5	4.00	0	-90		
AC93ZG296	ZG296	CRAE	364383.6	5350005.6	60643	48152	144.5	5.00	0	-90		
AC93ZG297	ZG297	CRAE	364359.4	5350011.2	60624	48136	144.5	2.50	0	-90		
AC93ZG298	ZG298	CRAE	363834.5	5349489.5	60725	47400	127.8	6.10	0	-90	YES	
AC93ZG299	ZG299	CRAE	363819.3	5349509.5	60700	47400	127.0	5.50	0	-90	GRAVITY RL	
AC93ZG300	ZG300	CRAE	363804.3	5349529.5	60675	47400	126.2	13.10	0	-90		
AC93ZG301	ZG301	CRAE	363795.2	5349541.5	60660	47400	125.8	4.80	0	-90		
AC93ZG302	ZG302	CRAE	363927.3	5349527.8	60750	47500	130.4	22.00	0	-90	GRAVITY RL	
AC93ZG303	ZG303	CRAE	363912.2	5349547.8	60725	47500	128.4	4.00	0	-90		
AC93ZG304	ZG304	CRAE	363897.2	5349567.7	60700	47500	126.3	1.50	0	-90	GRAVITY RL	
AC93ZG305	ZG305	CRAE	363789.2	5349549.5	60650	47400	125.4	4.10	0	-90	GRAVITY RL	
AC93ZG306	ZG306	CRAE	363774.2	5349569.4	60625	47400	124.3	1.50	0	-90		
AC93ZG307	ZG307	CRAE	363768.2	5349577.4	60615	47400	123.8	5.20	0	-90		
AC93ZG308	ZG308	CRAE	363759.1	5349589.4	60600	47400	123.1	10.60	0	-90	GRAVITY RL	
AC93ZG309	ZG309	CRAE	363882.1	5349587.7	60675	47500	126.4	6.50	0	-90		
AC93ZG310	ZG310	CRAE	363867.1	5349607.7	60650	47500	126.4	8.90	0	-90	GRAVITY RL	
AC93ZG311	ZG311	CRAE	363852.0	5349627.6	60625	47500	126.7	0.00	0	-90		
AC93ZG312	ZG312	CRAE	363837.0	5349647.6	60600	47500	126.9	7.00	0	-90	GRAVITY RL	
AC93ZG313	ZG313	CRAE	364011.8	5349748.0	60625	47700	129.4	3.00	0	-90		
AC93ZG314	ZG314	CRAE	363996.7	5349768.0	60600	47700	128.9	6.00	0	-90	GRAVITY RL	
AC93ZG315	ZG315	CRAE	363981.7	5349787.9	60575	47700	129.5	6.00	0	-90		

563062

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG316	ZG316	CRAE	363966.6	5349807.9	60550	47700	130.1	12.00	0	-90	GRAVITY RL	
AC93ZG317	ZG317	CRAE	364026.8	5349728.0	60650	47700	129.9	4.00	0	-90	GRAVITY RL	
AC93ZG318	ZG318	CRAE	364041.9	5349708.1	60675	47700	131.1	4.20	0	-90		
AC93ZG319	ZG319	CRAE	364056.9	5349688.1	60700	47700	132.3	4.00	0	-90	GRAVITY RL	
AC93ZG320	ZG320	CRAE	364072.0	5349668.1	60725	47700	133.7	13.50	0	-90		
AC93ZG321	ZG321	CRAE	364087.0	5349648.2	60750	47700	134.0	2.40	0	-90	GRAVITY RL	
AC93ZG322	ZG322	CRAE	364102.0	5349628.2	60775	47700	133.0	8.40	0	-90		
AC93ZG323	ZG323	CRAE	364118.8	5349610.2	60800	47700	132.0	15.50	0	-90	YES	
AC93ZG324	ZG324	CRAE	364133.0	5349588.9	60825	47700	131.9	13.20	0	-90	YES	
AC93ZG325	ZG325	CRAE	364186.5	5349848.4	60650	47900	137.5	6.00	0	-90	GRAVITY RL	
AC93ZG326	ZG326	CRAE	364171.5	5349868.3	60625	47900	134.0	26.20	0	-90		
AC93ZG327	ZG327	CRAE	364156.5	5349888.3	60600	47900	130.5	11.20	0	-90	GRAVITY RL	
AC93ZG328	ZG328	CRAE	364241.1	5349942.1	60608	48000	138.8	6.50	0	-90		
AC93ZG329	ZG329	CRAE	364221.3	5349968.5	60575	48000	135.2	28.00	0	-90		
AC93ZG330	ZG330	CRAE	364144.4	5349904.3	60580	47900	130.6	27.60	0	-90		
AC93ZG331	ZG331	CRAE	364126.4	5349928.2	60550	47900	130.8	19.10	0	-90	GRAVITY RL	
AC93ZG332	ZG332	CRAE	364111.3	5349948.2	60525	47900	132.8	21.30	0	-90		
AC93ZG333	ZG333	CRAE	364096.3	5349968.2	60500	47900	134.9	16.20	0	-90	GRAVITY RL	
AC93ZG334	ZG334	CRAE	364081.2	5349988.1	60475	47900	138.2	11.50	0	-90		
AC93ZG335	ZG335	CRAE	364061.4	5350014.5	60442	47900	141.6	24.50	0	-90		
AC93ZG336	ZG336	CRAE	364191.2	5350008.4	60525	48000	131.5	6.50	0	-90		
AC93ZG337	ZG337	CRAE	364176.1	5350028.4	60500	48000	131.5	18.70	0	-90	GRAVITY RL	
AC93ZG338	ZG338	CRAE	364161.1	5350048.3	60475	48000	132.2	14.80	0	-90		
AC93ZG339	ZG339	CRAE	364146.0	5350068.3	60450	48000	132.9	11.00	0	-90	GRAVITY RL	
AC93ZG340	ZG340	CRAE	364131.0	5350088.3	60425	48000	134.2	19.00	320	-73		
AC93ZG341	ZG341	CRAE	364216.9	5350398.5	60275	48600	137.3	13.90	0	-90		
AC93ZG342	ZG342	CRAE	364241.9	5350399.0	60300	48600	139.0	10.60	0	-90	GRAVITY RL	
AC93ZG343	ZG343	CRAE	364266.9	5350399.5	60325	48600	138.8	11.70	0	-90		
AC93ZG344	ZG344	CRAE	364291.9	5350400.0	60350	48600	138.6	43.20	0	-90	GRAVITY RL	
AC93ZG345	ZG345	CRAE	364316.9	5350400.5	60375	48600	138.9	19.00	0	-90		
AC93ZG346	ZG346	CRAE	364688.2	5349623.0	61130	48160	149.2	9.00	0	-90	YES	
AC93ZG347	ZG347	CRAE	364762.3	5349675.7	61133	48250	154.4	4.00	0	-90	YES	
AC93ZG348	ZG348	CRAE	364750.9	5349690.6	61115	48255	153.5	31.00	0	-90	YES	
AC93ZG349	ZG349	CRAE	364768.0	5349665.8	61144	48253	155.0	7.00	0	-90	YES	
AC93ZG350	ZG350	CRAE	364771.3	5349654.5	61155	48251	155.6	10.00	0	-90	YES	

263063

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC93ZG351	ZG351	CRAE	364753.7	5349664.3	61135	48245	154.2	5.50	0	-90	YES	
AC93ZG352	ZG352	CRAE	364697.1	5349580.2	61172	48138	154.8	28.70	0	-90	YES	
AC93ZG353	ZG353	CRAE	364752.9	5349384.6	61365	48050	165.8	25.00	142	-80	YES	
AC93ZG354	ZG354	CRAE	364744.5	5349393.6	61350	48050	162.0	29.30	142	-80	YES	
AC93ZG355	ZG355	CRAE	364737.8	5349401.3	61340	48050	159.6	39.20	142	-85	YES	
AC93ZG356	ZG356	CRAE	364731.3	5349408.3	61330	48050	156.9	51.00	0	-90	YES	
AC93ZG357	ZG357	CRAE	364726.1	5349424.6	61317	48050	153.1	56.80	0	-90	YES	
DD93ZG358	ZG358	CRAE	364353.2	5349283.1	61200	47690	142.3	121.50	142	-50	YES	YES
DD93ZG359	ZG359	CRAE	364492.8	5349295.7	61269	47805	145.5	79.00	143	-45	YES	YES
DD93ZG360	ZG360	CRAE	364492.0	5349296.4	61268	47805	145.5	85.30	143	-70	YES	YES
DD93ZG361	ZG361	CRAE	364563.9	5349375.0	61253	47914	146.2	99.00	142	-45	YES	YES
DD93ZG362	ZG362	CRAE	364643.1	5349421.6	61259	48008	143.3	99.20	142	-60	YES	
DD93ZG363	ZG363	CRAE	364642.7	5349422.1	61258	48008	143.3	129.60	0	-90	YES	YES
DD93ZG364	ZG364	CRAE	364692.5	5349675.4	61090	48200	150.1	88.50	142	-45	YES	
DD93ZG365	ZG365	CRAE	364692.0	5349676.4	61089	48200	150.1	113.00	142	-75	YES	YES
AC94ZG366	ZG366	CRAE	364476.6	5349160.7	61371	47719	160.0	7.50	0	-90	YES	
AC94ZG367	ZG367	CRAE	364470.7	5349169.2	61361	47719	157.8	16.50	0	-90	YES	
AC94ZG368	ZG368	CRAE	364459.7	5349175.2	61350	47719	155.2	12.10	0	-90	YES	
AC94ZG369	ZG369	CRAE	364451.2	5349182.3	61340	47719	154.0	3.50	0	-90	YES	
AC94ZG370	ZG370	CRAE	364442.6	5349189.6	61330	47700	153.4	46.50	0	-90	YES	
AC94ZG371	ZG371	CRAE	364435.7	5349196.3	61320	47700	152.2	30.50	0	-90	YES	
AC94ZG372	ZG372	CRAE	364428.3	5349201.7	61310	47700	151.3	39.60	0	-90	YES	
AC94ZG373	ZG373	CRAE	363612.1	5348991.9	61160	47100	122.8	2.10	0	-90	YES	
AC94ZG374	ZG374	CRAE	363614.9	5348982.8	61170	47100	122.9	4.80	0	-90	YES	
AC94ZG375	ZG375	CRAE	363619.1	5348972.6	61180	47100	122.9	2.50	0	-90	YES	
AC94ZG376	ZG376	CRAE	363622.6	5348964.0	61190	47100	123.0	3.00	0	-90	YES	
AC94ZG377	ZG377	CRAE	363625.6	5348954.1	61200	47100	123.1	2.50	0	-90	YES	
AC94ZG378	ZG378	CRAE	363629.6	5348944.6	61210	47100	123.3	2.10	0	-90	YES	
AC94ZG379	ZG379	CRAE	363633.6	5348936.7	61220	47100	123.8	8.70	0	-90	YES	
AC94ZG380	ZG380	CRAE	363638.0	5348924.1	61235	47100	127.4	4.00	0	-90	YES	
AC94ZG381	ZG381	CRAE	363605.4	5348895.0	61250	47060	128.2	5.50	0	-90	YES	
AC94ZG382	ZG382	CRAE	363600.4	5348903.0	61240	47060	128.1	5.10	0	-90	YES	
AC94ZG383	ZG383	CRAE	363597.8	5348912.0	61230	47060	127.7	8.10	0	-90	YES	
AC94ZG384	ZG384	CRAE	363596.8	5348921.2	61220	47060	125.2	5.20	0	-90	YES	
AC94ZG385	ZG385	CRAE	363593.3	5348930.3	61210	47060	123.4	13.80	0	-90	YES	

563064

Appendix 2: Grieves prospect. Drillhole collar information.

HOLE	PLOTNAME	COMPANY	AMG E	AMG N	LOCAL E	LOCAL N	RL	DEPTH	AZIM (AMG)	INCL	SURVEYED	DH SURVEYS
AC94ZG386	ZG386	CRAE	363589.7	5348942.5	61200	47060	122.4	2.40	0	-90	YES	
AC94ZG387	ZG387	CRAE	363588.9	5348952.9	61190	47060	122.1	1.20	0	-90	YES	
AC94ZG388	ZG388	CRAE	363588.3	5348960.3	61180	47060	122.2	1.80	0	-90	YES	
AC94ZG389	ZG389	CRAE	363619.8	5348873.7	61275	47060	129.3	14.80	0	-90	YES	
AC94ZG390	ZG390	CRAE	363686.1	5348946.7	61225	47150	129.2	7.40	0	-90	YES	
AC94ZG391	ZG391	CRAE	363677.2	5348960.0	61210	47150	128.1	5.90	0	-90	YES	
AC94ZG392	ZG392	CRAE	363675.1	5348968.9	61200	47150	127.8	7.80	0	-90	YES	
AC94ZG393	ZG393	CRAE	363672.7	5348983.0	61190	47150	125.7	7.50	0	-90	YES	
AC94ZG394	ZG394	CRAE	363668.5	5348991.7	61180	47150	125.4	4.80	0	-90	YES	
AC94ZG395	ZG395	CRAE	363666.8	5349002.1	61170	47150	125.2	12.30	0	-90	YES	
AC94ZG396	ZG396	CRAE	363660.6	5349009.3	61160	47150	124.7	9.30	0	-90	YES	
AC94ZG397	ZG397	CRAE	363658.8	5349018.5	61150	47150	124.6	5.70	0	-90	YES	
AC94ZG398	ZG398	CRAE	363661.6	5349027.6	61140	47150	124.6	2.50	0	-90	YES	
AC94ZG399	ZG399	CRAE	363661.0	5349037.5	61130	47150	124.4	2.60	0	-90	YES	
AC94ZG400	ZG400	CRAE	363660.0	5349048.0	61120	47150	124.1	2.30	0	-90	YES	

563065

APPENDIX 1: GRIEVES PROSPECT, ALL EZ AND CRAE DRILLHOLE COLLAR LOCATIONS									
FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
ZG1001	ZG1001	61066	47066	363532.9	5349111.6	149.5	149.4	144	-50
ZG1002	ZG1002	61198	47891	364508.2	5349445.4	153.3	150	142	-50
ZG1007	ZG1007	60460	47603	363826.9	5349849.6		737.3	147	-70
ZG1009	ZG1009	60805	47799	364193.7	5349698.4	150	151	142	-60
ZG1010	ZG1010	60815	47565	364015.5	5349546.5	150	170	137	-60
ZG1011	ZG1011	60871	47310	363700.1	5349375.4	151	300	140	-60
ZG1012	ZG1012	60604	47606	363917.9	5349738.0	151.5	348.9	142	-70
ZG1013	ZG1013	61020	48245	364677.6	5349803.6		138.5	127	-60
ZG1014	ZG1014	60900	48315	364658.8	5349941.2	150	292.3	142	-60
ZG1015	ZG1015	60975	48399	364771.2	5349933.8		177.6	122	-60
ZG1016	ZG1016	60985	48145	364577.2	5349769.6		187.5	142	-60
ZWG1	ZWG1	61160	47102	363597.5	5349034.5		22.75	142	-60
ZWG2	ZWG2	61150	47103	363595.2	5349044.2		30.7	142	-70
ZWG3	ZWG3	61162	47075	363572.6	5349023.8		17	142	-60
ZWG4	ZWG4	61172	47075	363575.9	5349014.3		18.8	142	-60
ZWG5	ZWG5	61192	47000	363511.5	5348971.0		33.55	142	-60
ZWG6	ZWG6	61162	47000	363501.7	5348999.4		13.95	142	-60
ZWG7	ZWG7	61175	47000	363505.9	5348987.1		31.4	142	-60
ZWG8	ZWG8	61225	47200	363711.3	5349004.9		29.25	142	-60
ZWG9	ZWG9	60775	47300	363659.4	5349463.0		19.55	142	-60
ZWG10	ZWG10	60792	47300	363664.9	5349446.9		16	142	-60
ZWG11	ZWG11	61125	47300.1	363918.7	5349077.5		26.65	142	-60
ZWG12	ZWG12	61150	47300.1	363934.1	5349057.8		15.7	142	-60
ZWG20	ZWG20	61125	47150	363631.5	5349083.2		14.9	161	-60
ZWG21	ZWG21	61140	47150	363636.4	5349069.0		35.6	161	-80
ZWG22	ZWG22	61170	47150	363646.1	5349040.6		16	161	-80
ZWG23	ZWG23	61275	47300	363822.2	5348990.2		29.4	161	-70
ZWG24	ZWG24	61290	47300	363827.0	5348976.0		13	161	-70
ZWG25	ZWG25	61305	47300	363831.9	5348961.8		24.2	0	-90
ZWG26	ZWG26	61185	47150	363651.0	5349026.5		22.4	0	-90
AC93ZG1	ZG1	61250	47000	363530.4	5348916.2		0.9	0	-90
AC93ZG2	ZG2	61275	47000	363538.5	5348892.5		1.2	0	-90
AC93ZG3	ZG3	61300	47000	363546.6	5348868.9		6.1	0	-90
AC93ZG4	ZG4	61325	47000	363554.8	5348845.3		5.8	0	-90
AC93ZG5	ZG5	61350	47000	363562.9	5348821.6		11.0	0	-90
AC93ZG6	ZG6	61375	47000	363571.1	5348798.0		16.0	0	-90
AC93ZG7	ZG7	61400	47000	363579.2	5348774.3		13.0	0	-90
AC93ZG8	ZG8	61425	47000	363587.3	5348750.7		15.0	0	-90
AC93ZG9	ZG9	61375	47100	363665.6	5348830.5		17.0	0	-90
AC93ZG10	ZG10	61400	47100	363673.8	5348806.9		7.4	0	-90
AC93ZG11	ZG11	61425	47100	363681.9	5348783.3		4.0	0	-90
AC93ZG12	ZG12	61350	47100	363657.5	5348854.2		14.0	0	-90
AC93ZG13	ZG13	61325	47100	363649.3	5348877.8		7.0	0	-90
AC93ZG14	ZG14	61300	47100	363641.2	5348901.4		15.5	0	-90
AC93ZG15	ZG15	61500	47100	363706.3	5348712.3		18.0	0	-90
AC93ZG16	ZG16	61475	47200	363792.7	5348768.5		15.0	0	-90
AC93ZG17	ZG17	61450	47200	363784.6	5348792.2		8.0	0	-90
AC93ZG18	ZG18	61425	47200	363776.4	5348815.8		10.0	0	-90
AC93ZG19	ZG19	61400	47200	363768.3	5348839.5		10.0	0	-90
AC93ZG20	ZG20	61375	47200	363760.2	5348863.1		7.0	0	-90
AC93ZG21	ZG21	61350	47200	363752.0	5348886.7		2.5	0	-90
AC93ZG22	ZG22	61325	47200	363743.9	5348910.4		6.0	0	-90
AC93ZG23	ZG23	61300	47200	363735.7	5348934.0		6.0	0	-90
AC93ZG24	ZG24	61275	47200	363727.6	5348957.6		4.5	0	-90
AC93ZG25	ZG25	61250	47200	363719.5	5348981.3		3.5	0	-90
AC93ZG26	ZG26	61225	47200	363711.3	5349004.9		4.5	0	-90
AC93ZG27	ZG27	61200	47200	363703.2	5349028.6		3.0	0	-90
AC93ZG28	ZG28	61175	47200	363695.1	5349052.2		3.0	0	-90

APPENDIX 1: All CRAE and EZ drillhole locations

563067

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG29	ZG29	61150	47200	363686.9	5349075.8		2.5	0	-90
AC93ZG30	ZG30	61125	47200	363678.8	5349099.5		2.1	0	-90
AC93ZG31	ZG31	61100	47200	363670.6	5349123.1		1.8	0	-90
AC93ZG32	ZG32	61075	47120	363586.9	5349120.7		2.3	0	-90
AC93ZG33	ZG33	61100	47120	363595.0	5349097.1		1.8	0	-90
AC93ZG34	ZG34	61125	47120	363603.1	5349073.4		2.2	0	-90
AC93ZG35	ZG35	61150	47120	363611.3	5349049.8		3.0	0	-90
AC93ZG36	ZG36	61175	47120	363619.4	5349026.1		12.2	0	-90
AC93ZG37	ZG37	61200	47110	363618.1	5348999.3		3.0	0	-90
AC93ZG38	ZG38	61225	47100	363616.8	5348972.4		9.0	0	-90
AC93ZG39	ZG39	61250	47100	363624.9	5348948.7		7.5	0	-90
AC93ZG40	ZG40	61275	47100	363633.1	5348925.1		9.8	0	-90
AC93ZG41	ZG41	61100	47700	364297.3	5349405.0		21.3	0	-90
AC93ZG42	ZG42	61075	47700	364282.0	5349424.7		19.5	0	-90
AC93ZG43	ZG43	61050	47700	364266.6	5349444.4		13.5	0	-90
AC93ZG44	ZG44	61125	47700	364312.7	5349385.3		9.0	0	-90
AC93ZG45	ZG45	61150	47700	364328.1	5349365.6		18.5	0	-90
AC93ZG46	ZG46	61175	47700	364343.5	5349345.9		15.0	0	-90
AC93ZG47	ZG47	61200	47700	364358.9	5349326.2		16.5	0	-90
AC93ZG48	ZG48	61225	47700	364374.3	5349306.5		2.0	0	-90
AC93ZG49	ZG49	61250	47700	364389.7	5349286.8		15.8	0	-90
AC93ZG50	ZG50	61275	47700	364405.1	5349267.1		20.0	0	-90
AC93ZG51	ZG51	61300	47700	364420.5	5349247.4		54.0	0	-90
AC93ZG52	ZG52	61325	47670	364412.2	5349209.2		4.0	0	-90
AC93ZG53	ZG53	61350	47670	364427.6	5349189.5		3.0	0	-90
AC93ZG54	ZG54	61350	47785	364518.2	5349260.3		35.5	0	-90
AC93ZG55	ZG55	61325	47800	364514.7	5349289.3		18.0	0	-90
AC93ZG56	ZG56	61300	47800	364499.3	5349309.0		9.5	0	-90
AC93ZG57	ZG57	61275	47800	364483.9	5349328.7		14.5	0	-90
AC93ZG58	ZG58	61250	47800	364468.5	5349348.4		10.3	0	-90
AC93ZG59	ZG59	61225	47800	364453.1	5349368.1		21.5	0	-90
AC93ZG60	ZG60	61200	47800	364437.7	5349387.8		19.0	0	-90
AC93ZG61	ZG61	61175	47800	364422.3	5349407.5		16.0	0	-90
AC93ZG62	ZG62	61150	47800	364406.9	5349427.2		13.5	0	-90
AC93ZG63	ZG63	61120	47800	364388.5	5349450.8		11.5	0	-90
AC93ZG64	ZG64	61100	47800	364376.1	5349466.6		5.5	0	-90
AC93ZG65	ZG65	61025	47700	364251.2	5349464.1		3.0	0	-90
AC93ZG66	ZG66	61000	47700	364235.8	5349483.8		3.7	0	-90
AC93ZG67	ZG67	61100	47900	364454.9	5349528.1		6.8	0	-90
AC93ZG68	ZG68	61125	47900	364470.3	5349508.4		8.5	0	-90
AC93ZG69	ZG69	61150	47900	364485.7	5349488.7		4.1	0	-90
AC93ZG70	ZG70	61175	47900	364501.1	5349469.0		7.0	0	-90
AC93ZG71	ZG71	61200	47900	364516.5	5349449.3		7.0	0	-90
AC93ZG72	ZG72	61225	47900	364531.9	5349429.6		4.8	0	-90
AC93ZG73	ZG73	61250	47900	364547.3	5349409.9		12.8	0	-90
AC93ZG74	ZG74	61150	48200	364722.1	5349673.4		14.5	0	-90
AC93ZG75	ZG75	61125	48200	364706.7	5349693.1		14.0	0	-90
AC93ZG76	ZG76	61100	48200	364691.4	5349712.8		8.4	0	-90
AC93ZG77	ZG77	61075	48200	364676.0	5349732.5		5.3	0	-90
AC93ZG78	ZG78	61050	48200	364660.6	5349752.2		4.9	0	-90
AC93ZG79	ZG79	61025	48200	364645.2	5349771.9		9.6	0	-90
AC93ZG80	ZG80	60550	47600	363879.9	5349776.8		19.7	0	-90
AC93ZG81	ZG81	60575	47600	363895.3	5349757.1		9.5	0	-90
AC93ZG82	ZG82	60600	47600	363910.7	5349737.4		9.5	0	-90
AC93ZG83	ZG83	60625	47600	363926.1	5349717.7		2.5	0	-90
AC93ZG84	ZG84	60650	47600	363941.5	5349698.0		10.5	0	-90
AC93ZG85	ZG85	60675	47600	363956.9	5349678.3		6.4	0	-90
AC93ZG86	ZG86	60700	47600	363972.3	5349658.6		12.0	0	-90
AC93ZG87	ZG87	60725	47600	363987.7	5349638.9		9.3	0	-90
AC93ZG88	ZG88	60750	47600	364003.1	5349619.2		16.0	0	-90

APPENDIX 1: All CRAE and EZ drillhole locations

563068

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG89	ZG89	60775	47600	364018.5	5349599.5		34.0	0	-90
AC93ZG90	ZG90	60800	47600	364033.8	5349579.8		10.3	0	-90
AC93ZG91	ZG91	60530	47790	364017.3	5349909.6		18.0	0	-90
AC93ZG92	ZG92	60575	47800	364052.9	5349880.3		9.0	0	-90
AC93ZG93	ZG93	60600	47800	364068.3	5349860.6		4.5	0	-90
AC93ZG94	ZG94	60625	47800	364083.7	5349840.9		1.8	0	-90
AC93ZG95	ZG95	60650	47800	364099.1	5349821.2		3.0	0	-90
AC93ZG96	ZG96	60675	47800	364114.5	5349801.5		8.0	0	-90
AC93ZG97	ZG97	60700	47800	364129.9	5349781.8		13.0	0	-90
AC93ZG98	ZG98	60725	47800	364145.3	5349762.1		25.8	0	-90
AC93ZG99	ZG99	60750	47800	364160.7	5349742.4		23.8	0	-90
AC93ZG100	ZG100	60775	47800	364176.1	5349722.7		2.4	0	-90
AC93ZG101	ZG101	60800	47800	364191.4	5349703.0		3.5	0	-90
AC93ZG102	ZG102	61071	48426	364851.6	5349874.8		20.0	0	-90
AC93ZG103	ZG103	61052	48407	364824.9	5349878.1		4.7	0	-90
DD93ZG104	ZG104	61125	48200	364706.7	5349693.1		36.7	142	-50
DD93ZG105	ZG105	61325	47800	364514.7	5349289.3		40.9	142	-52
DD93ZG106	ZG106	60997	48200	364627.9	5349794.0		161.0	142	-50
DD93ZG107	ZG107	61142.5	48000	364559.9	5349556.2		175.0	145	-50
AC93ZG108	ZG108	61150	48150	364682.7	5349642.6		31	0	-90
AC93ZG109	ZG109	61140	48150	364676.6	5349650.5		6	0	-90
AC93ZG109a	ZG109a	61140	48160	364684.5	5349656.7		5	0	-90
AC93ZG110	ZG110	61130	48150	364670.4	5349658.4		13	0	-90
AC93ZG111	ZG111	61120	48150	364664.3	5349666.3		8.5	0	-90
AC93ZG112	ZG112	61110	48150	364658.1	5349674.2		4	0	-90
AC93ZG113	ZG113	61100	48150	364652.0	5349682.0		12.5	0	-90
AC93ZG114	ZG114	61090	48150	364645.8	5349689.9		9	0	-90
AC93ZG115	ZG115	61145	48200	364719.1	5349677.4		28.5	0	-90
AC93ZG116	ZG116	61150	48200	364722.1	5349673.4		35	135	-58
AC93ZG117	ZG117	61137	48200	364714.1	5349683.7		19	0	-90
AC93ZG118	ZG118	61115	48200	364700.6	5349701.0		7.5	0	-90
AC93ZG118a	ZG118a	61115	48200	364700.6	5349701.0		13	0	-90
AC93ZG119	ZG119	61180	48250	364780.0	5349680.6		7.5	142	-60
AC93ZG120	ZG120	61167	48250	364772.0	5349690.8		24	0	-90
AC93ZG121	ZG121	61160	48250	364767.7	5349696.3		4	0	-90
AC93ZG122	ZG122	61146	48250	364759.1	5349707.4		4	0	-90
AC93ZG123	ZG123	61125	48260	364754.0	5349730.1		24	0	-90
AC93ZG124	ZG124	61100	48250	364730.8	5349743.6		6	0	-90
AC93ZG125	ZG125	61190	48100	364668.0	5349580.3		16	0	-90
AC93ZG126	ZG126	61180	48100	364661.8	5349588.2		8	0	-90
AC93ZG127	ZG127	61170	48100	364655.6	5349596.1		23	0	-90
AC93ZG128	ZG128	61160	48100	364649.5	5349604.0		10	0	-90
AC93ZG129	ZG129	61150	48100	364643.3	5349611.9		12	0	-90
AC93ZG130	ZG130	61125	48100	364627.9	5349631.6		14	0	-90
AC93ZG131	ZG131	61100	48100	364612.6	5349651.3		6.5	0	-90
AC93ZG132	ZG132	61075	48100	364597.2	5349671.0		6	0	-90
AC93ZG133	ZG133	61300	48050	364696.3	5349462.9		28	0	-90
AC93ZG134	ZG134	61290	48050	364690.1	5349470.8		15	0	-90
AC93ZG135	ZG135	61280	48050	364684.0	5349478.6		10	0	-90
AC93ZG136	ZG136	61270	48050	364677.8	5349486.5		7	0	-90
AC93ZG137	ZG137	61260	48050	364671.7	5349494.4		7	0	-90
AC93ZG138	ZG138	61250	48050	364665.5	5349502.3		1.7	0	-90
AC93ZG139	ZG139	61225	48050	364650.1	5349522.0		8	0	-90
AC93ZG140	ZG140	61200	48050	364634.7	5349541.7		8	0	-90
AC93ZG141	ZG141	61175	48050	364619.3	5349561.4		13	0	-90
AC93ZG142	ZG142	61150	48050	364603.9	5349581.1		11	0	-90
AC93ZG143	ZG143	61125	48050	364588.5	5349600.8		3.5	0	-90
AC93ZG144	ZG144	61100	48050	364573.2	5349620.5		6	0	-90
AC93ZG145	ZG145	61075	48050	364557.8	5349640.2		4	0	-90
AC93ZG146	ZG146	61050	48050	364542.4	5349659.9		4	0	-90

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG147	ZG147	61025	48050	364527.0	5349679.6		3.5	0	-90
AC93ZG148	ZG148	61000	48050	364511.6	5349699.3		4	0	-90
AC93ZG149	ZG149	61340	48000	364681.5	5349400.6		16	0	-90
AC93ZG150	ZG150	61330	48000	364675.4	5349408.5		14	0	-90
AC93ZG151	ZG151	61320	48000	364669.2	5349416.3		11.5	0	-90
AC93ZG152	ZG152	61310	48000	364663.0	5349424.2		20	0	-90
AC93ZG153	ZG153	61290	48000	364650.7	5349440.0		44	0	-90
AC93ZG154	ZG154	61280	48000	364644.6	5349447.9		34	0	-90
AC93ZG155	ZG155	61270	48000	364638.4	5349455.7		39	0	-90
AC93ZG156	ZG156	61260	48000	364632.3	5349463.6		27	0	-90
AC93ZG157	ZG157	61230	48000	364613.8	5349487.3		3	0	-90
AC93ZG158	ZG158	61204	48000	364597.8	5349507.7		8	0	-90
AC93ZG159	ZG159	61175	48000	364579.9	5349530.6		8	0	-90
AC93ZG160	ZG160	61125	48000	364549.1	5349570.0		9	0	-90
AC93ZG161	ZG161	61100	48000	364533.8	5349589.7		13	0	-90
AC93ZG162	ZG162	61075	48000	364518.4	5349609.4		3.2	0	-90
AC93ZG163	ZG163	61050	48000	364503.0	5349629.1		7	0	-90
AC93ZG164	ZG164	61025	48000	364487.6	5349648.8		10	0	-90
AC93ZG165	ZG165	61000	48000	364472.2	5349668.5		8	0	-90
AC93ZG166	ZG166	61270	47950	364599.0	5349425.0		6	0	-90
AC93ZG167	ZG167	61250	47950	364586.7	5349440.7		5	0	-90
AC93ZG168	ZG168	61235	47950	364577.5	5349452.5		12	0	-90
AC93ZG169	ZG169	61355	47800	364533.1	5349265.6		36	0	-90
AC93ZG170	ZG170	61343	47795	364521.8	5349272.0		7	0	-90
AC93ZG171	ZG171	61335	47795	364516.9	5349278.3		22	0	-90
AC93ZG172	ZG172	61330	47800	364517.8	5349285.3		22	0	-90
AC93ZG173	ZG173	61325	47800	364514.7	5349289.3		24	0	-90
AC93ZG174	ZG174	61320	47800	364511.6	5349293.2		34	0	-90
AC93ZG175	ZG175	61315	47800	364508.5	5349297.1		44	0	-90
AC93ZG176	ZG176	61310	47800	364505.4	5349301.1		4	0	-90
AC93ZG177	ZG177	61305	47800	364502.4	5349305.0		57	0	-90
AC93ZG178	ZG178	61330	47850	364557.2	5349316.1		17.5	0	-90
AC93ZG179	ZG179	61340	47850	364563.3	5349308.2		5	0	-90
AC93ZG180	ZG180	61350	47850	364569.5	5349300.3		29.5	0	-90
AC93ZG181	ZG181	61350	47750	364490.7	5349238.8		31.5	0	-90
AC93ZG182	ZG182	61340	47750	364484.5	5349246.7		13	0	-90
AC93ZG183	ZG183	61330	47750	364478.4	5349254.5		21	0	-90
AC93ZG184	ZG184	61320	47750	364472.2	5349262.4		39	0	-90
AC93ZG185	ZG185	61300	47750	364459.9	5349278.2		60	0	-90
AC93ZG186	ZG186	61275	47745	364440.5	5349294.8		42	0	-90
AC93ZG187	ZG187	61250	47750	364429.1	5349317.6		14	0	-90
AC93ZG188	ZG188	61360	47680	364441.7	5349187.8		4	0	-90
AC93ZG189	ZG189	61340	47680	364429.3	5349203.6		3	0	-90
AC93ZG190	ZG190	61315	47690	364421.8	5349229.4		9	0	-90
AC93ZG191	ZG191	61290	47595	364331.6	5349190.6		36	0	-90
AC93ZG192	ZG192	61280	47595	364325.4	5349198.5		41	0	-90
AC93ZG193	ZG193	61270	47595	364319.3	5349206.4		30	0	-90
AC93ZG194	ZG194	61260	47595	364313.1	5349214.3		4	0	-90
AC93ZG195	ZG195	61315	47650	364390.3	5349204.8		48	0	-90
AC93ZG196	ZG196	61300	47645	364377.1	5349213.5		32	0	-90
AC93ZG197	ZG197	61277	47550	364288.1	5349173.2		32	0	-90
AC93ZG198	ZG198	61270	47550	364283.8	5349178.7		32.5	0	-90
AC93ZG199	ZG199	61280	47495	364246.6	5349136.9		20	0	-90
AC93ZG200	ZG200	61270	47495	364240.5	5349144.8		30	0	-90
AC93ZG201	ZG201	61260	47500	364238.3	5349155.8		36	0	-90
AC93ZG202	ZG202	61250	47500	364232.1	5349163.7		30	0	-90
AC93ZG203	ZG203	61310	47450	364229.6	5349085.6		4	0	-90
AC93ZG204	ZG204	61320	47450	364235.8	5349077.7		3	0	-90
AC93ZG205	ZG205	61300	47450	364223.5	5349093.5		23	0	-90
AC93ZG206	ZG206	61250	47590	364303.0	5349219.1		5.5	0	-90

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG207	ZG207	61215	47590	364281.5	5349246.7		12	0	-90
AC93ZG208	ZG208	61260	47540	364269.8	5349180.4		3.7	0	-90
DD93ZG209	ZG209	61198	47802	364438.1	5349390.6		124.2	145	-50
AC93ZG210	ZG210	61245	47550	364268.4	5349198.4		23	0	-90
AC93ZG211	ZG211	61225	47550	364256.1	5349214.1		4	0	-90
AC93ZG212	ZG212	61200	47550	364240.7	5349233.8		4.9	0	-90
AC93ZG213	ZG213	61240	47500	364225.9	5349171.5		32.8	0	-90
AC93ZG214	ZG214	61230	47500	364219.8	5349179.4		50	0	-90
AC93ZG215	ZG215	61200	47500	364201.3	5349203.1		18.9	0	-90
AC93ZG216	ZG216	61175	47500	364185.9	5349222.8		16.8	0	-90
AC93ZG217	ZG217	61290	47450	364217.3	5349101.4		21.2	0	-90
AC93ZG218	ZG218	61280	47450	364211.2	5349109.2		30	0	-90
AC93ZG219	ZG219	61255	47450	364195.8	5349128.9		30	0	-90
AC93ZG220	ZG220	61230	47450	364180.4	5349148.6		10.7	0	-90
AC93ZG221	ZG221	61308	47400	364189.0	5349056.4		23.7	142	-80
AC93ZG222	ZG222	61300	47400	364184.1	5349062.7		24.2	0	-90
AC93ZG223	ZG223	61290	47400	364177.9	5349070.6		28	0	-90
AC93ZG224	ZG224	61280	47400	364171.8	5349078.5		38	0	-90
AC93ZG225	ZG225	61270	47400	364165.6	5349086.3		36	0	-90
AC93ZG226	ZG226	61250	47400	364153.3	5349102.1		16.2	0	-90
AC93ZG227	ZG227	61225	47400	364137.9	5349121.8		20.8	0	-90
AC93ZG228	ZG228	61307	47350	364149.0	5349026.4		16.8	0	-90
AC93ZG229	ZG229	61317	47350	364155.1	5349018.5		32.7	0	-90
AC93ZG230	ZG230	61299	47350	364144.1	5349032.7		12.2	0	-90
AC93ZG231	ZG231	61286	47350	364136.1	5349042.9		18.7	0	-90
AC93ZG232	ZG232	61275	47350	364129.3	5349051.6		24.5	0	-90
AC93ZG233	ZG233	61250	47350	364113.9	5349071.3		28.8	0	-90
AC93ZG234	ZG234	61225	47350	364098.5	5349091.0		8	0	-90
AC93ZG235	ZG235	61280	47280	364077.2	5349004.6		9.7	0	-90
AC93ZG236	ZG236	61270	47280	364071.0	5349012.5		17.6	0	-90
AC93ZG237	ZG237	61260	47280	364064.9	5349020.3		22.2	0	-90
AC93ZG238	ZG238	61250	47280	364058.7	5349028.2		3	0	-90
AC93ZG239	ZG239	61225	47280	364043.3	5349047.9		2.5	0	-90
AC93ZG240	ZG240	61200	47280	364027.9	5349067.6		3.5	0	-90
AC93ZG241	ZG241	61200	47400	364122.5	5349141.5		7.2	0	-90
AC93ZG242	ZG242	61175	47400	364107.1	5349161.2		3.9	0	-90
AC93ZG243	ZG243	61150	47400	364091.7	5349180.9		17.8	0	-90
AC93ZG244	ZG244	61125	47400	364076.3	5349200.6		3.9	0	-90
AC93ZG245	ZG245	61100	47400	364060.9	5349220.3		13.7	0	-90
AC93ZG246	ZG246	61075	47400	364045.6	5349240.0		8.2	0	-90
AC93ZG247	ZG247	61050	47400	364030.2	5349259.7		6.5	0	-90
AC93ZG248	ZG248	61025	47400	364014.8	5349279.4		3.7	0	-90
AC93ZG249	ZG249	61000	47400	363999.4	5349299.1		14.8	0	-90
AC93ZG250	ZG250	60975	47400	363984.0	5349318.8		5.5	0	-90
AC93ZG251	ZG251	60950	47400	363968.6	5349338.5		2.9	0	-90
AC93ZG252	ZG252	60925	47400	363953.2	5349358.2		4.9	0	-90
AC93ZG253	ZG253	60900	47400	363937.8	5349377.9		16.6	0	-90
AC93ZG254	ZG254	60875	47400	363922.4	5349397.6		26.1	0	-90
AC93ZG255	ZG255	60850	47400	363907.0	5349417.3		14.5	0	-90
AC93ZG256	ZG256	60825	47400	363891.6	5349437.0		4.2	0	-90
AC93ZG257	ZG257	60800	47400	363876.2	5349456.7		18	0	-90
AC93ZG258	ZG258	60975	47700	364220.4	5349503.5		3.1	0	-90
AC93ZG259	ZG259	60950	47700	364205.0	5349523.2		3.5	0	-90
AC93ZG260	ZG260	60925	47700	364189.6	5349542.9		4.1	0	-90
AC93ZG261	ZG261	60900	47700	364174.2	5349562.6		2.1	0	-90
AC93ZG262	ZG262	61177	48315	364829.4	5349723.0		8.9	0	-90
AC93ZG263	ZG263	61165	48315	364822.0	5349732.4		12.2	0	-90
AC93ZG264	ZG264	61150	48350	364840.3	5349765.8		39	0	-90
AC93ZG265	ZG265	61138	48350	364832.9	5349775.2		20.8	0	-90
AC93ZG266	ZG266	61127	48350	364826.2	5349783.9		12	0	-90

APPENDIX 2:

CRAE AIR-CORE DRILL LOGS AND GEOCHEMISTRY

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG267	ZG267	61115	48350	364818.8	5349793.4		14.1	0	-90
AC93ZG268	ZG268	61100	48350	364809.6	5349805.2		3.5	0	-90
AC93ZG269	ZG269	61090	48350	364803.4	5349813.1		8.7	0	-90
AC93ZG270	ZG270	61065	48350	364788.0	5349832.8		5.1	0	-90
AC93ZG271	ZG271	61040	48350	364772.6	5349852.5		10.9	0	-90
AC93ZG272	ZG272	61134	48300	364791.1	5349747.6		4	0	-90
AC93ZG273	ZG273	61124	48300	364784.9	5349755.5		12.7	0	-90
AC93ZG274	ZG274	61107	48300	364774.5	5349768.9		5.5	0	-90
AC93ZG275	ZG275	61100	48300	364770.2	5349774.4		4	0	-90
AC93ZG276	ZG276	61075	48300	364754.8	5349794.1		6	0	-90
AC93ZG277	ZG277	61130	48400	364867.4	5349812.3		8.5	0	-90
AC93ZG278	ZG278	61120	48407	364866.8	5349824.5		6	0	-90
AC93ZG279	ZG279	61110	48400	364855.1	5349828.1		7	0	-90
AC93ZG280	ZG280	61100	48400	364849.0	5349836.0		10.2	0	-90
AC93ZG281	ZG281	61085	48400	364839.7	5349847.8		2.4	0	-90
AC93ZG282	ZG282	61064	48400	364826.8	5349864.3		10.8	0	-90
AC93ZG283	ZG283	60975	48200	364614.4	5349811.3		7.3	0	-90
AC93ZG284	ZG284	60950	48200	364599.0	5349831.0		2.3	0	-90
AC93ZG285	ZG285	60900	48200	364568.2	5349870.4		2.5	0	-90
AC93ZG286	ZG286	60875	48200	364552.8	5349890.1		3.1	0	-90
AC93ZG287	ZG287	60850	48200	364537.4	5349909.8		3.1	0	-90
AC93ZG288	ZG288	60825	48200	364522.0	5349929.5		1.1	0	-90
AC93ZG289	ZG289	60800	48200	364506.7	5349949.2		3.6	0	-90
AC93ZG290	ZG290	60775	48200	364491.3	5349968.9		10.9	0	-90
AC93ZG291	ZG291	60750	48200	364475.9	5349988.6		4.3	0	-90
AC93ZG292	ZG292	60725	48200	364460.5	5350008.3		8.1	0	-90
AC93ZG293	ZG293	60700	48200	364445.1	5350028.0		4.1	0	-90
AC93ZG294	ZG294	60681	48184	364420.8	5350033.2		3.4	0	-90
AC93ZG295	ZG295	60662	48168	364396.5	5350038.3		4	0	-90
AC93ZG296	ZG296	60643	48152	364372.2	5350043.4		5	0	-90
AC93ZG297	ZG297	60624	48136	364347.9	5350048.5		2.5	0	-90
AC93ZG298	ZG298	60725	47400	363830.1	5349515.8		6.1	0	-90
AC93ZG299	ZG299	60700	47400	363814.7	5349535.5		5.5	0	-90
AC93ZG300	ZG300	60675	47400	363799.3	5349555.2		13.1	0	-90
AC93ZG301	ZG301	60660	47400	363790.1	5349567.0		4.8	0	-90
AC93ZG302	ZG302	60750	47500	363924.3	5349557.7		22	0	-90
AC93ZG303	ZG303	60725	47500	363908.9	5349577.4		4	0	-90
AC93ZG304	ZG304	60700	47500	363893.5	5349597.1		1.5	0	-90
AC93ZG305	ZG305	60650	47400	363783.9	5349574.9		4.1	0	-90
AC93ZG306	ZG306	60625	47400	363768.5	5349594.6		1.5	0	-90
AC93ZG307	ZG307	60615	47400	363762.3	5349602.5		5.2	0	-90
AC93ZG308	ZG308	60600	47400	363753.1	5349614.3		10.6	0	-90
AC93ZG309	ZG309	60675	47500	363878.1	5349616.8		6.5	0	-90
AC93ZG310	ZG310	60650	47500	363862.7	5349636.5		8.9	0	-90
AC93ZG311	ZG311	60625	47500	363847.3	5349656.2		0	0	-90
AC93ZG312	ZG312	60600	47500	363831.9	5349675.9		7	0	-90
AC93ZG313	ZG313	60625	47700	364004.9	5349779.3		3	0	-90
AC93ZG314	ZG314	60600	47700	363989.5	5349799.0		6	0	-90
AC93ZG315	ZG315	60575	47700	363974.1	5349818.7		6	0	-90
AC93ZG316	ZG316	60550	47700	363958.7	5349838.4		12	0	-90
AC93ZG317	ZG317	60650	47700	364020.3	5349759.6		4	0	-90
AC93ZG318	ZG318	60675	47700	364035.7	5349739.9		4.2	0	-90
AC93ZG319	ZG319	60700	47700	364051.1	5349720.2		4	0	-90
AC93ZG320	ZG320	60725	47700	364066.5	5349700.5		13.5	0	-90
AC93ZG321	ZG321	60750	47700	364081.9	5349680.8		2.4	0	-90
AC93ZG322	ZG322	60775	47700	364097.3	5349661.1		8.4	0	-90
AC93ZG323	ZG323	60800	47700	364112.6	5349641.4		15.5	0	-90
AC93ZG324	ZG324	60825	47700	364128.0	5349621.7		13.2	0	-90
AC93ZG325	ZG325	60650	47900	364177.9	5349882.7		6	0	-90
AC93ZG326	ZG326	60625	47900	364162.5	5349902.4		26.2	0	-90

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC93ZG327	ZG327	60600	47900	364147.1	5349922.1		11.2	0	-90
AC93ZG328	ZG328	60608	48000	364230.8	5349977.4		6.5	0	-90
AC93ZG329	ZG329	60575	48000	364210.5	5350003.4		28	0	-90
AC93ZG330	ZG330	60580	47900	364134.8	5349937.9		27.6	0	-90
AC93ZG331	ZG331	60550	47900	364116.3	5349961.5		19.1	0	-90
AC93ZG332	ZG332	60525	47900	364100.9	5349981.2		21.3	0	-90
AC93ZG333	ZG333	60500	47900	364085.6	5350000.9		16.2	0	-90
AC93ZG334	ZG334	60475	47900	364070.2	5350020.6		11.5	0	-90
AC93ZG335	ZG335	60442	47900	364049.8	5350046.6		24.5	0	-90
AC93ZG336	ZG336	60525	48000	364179.7	5350042.8		6.5	0	-90
AC93ZG337	ZG337	60500	48000	364164.4	5350062.5		18.7	0	-90
AC93ZG338	ZG338	60475	48000	364149.0	5350082.2		14.8	0	-90
AC93ZG339	ZG339	60450	48000	364133.6	5350101.9		11	0	-90
AC93ZG340	ZG340	60425	48000	364118.2	5350121.6		19	320	-73
AC93ZG341	ZG341	60275	48600	364222.9	5350416.5		13.9	0	-90
AC93ZG342	ZG342	60300	48600	364247.9	5350417.0		10.6	0	-90
AC93ZG343	ZG343	60325	48600	364272.9	5350417.4		11.7	0	-90
AC93ZG344	ZG344	60350	48600	364297.9	5350417.8		43.2	0	-90
AC93ZG345	ZG345	60375	48600	364322.9	5350418.3		19	0	-90
AC93ZG346	ZG346	61130	48160	364678.3	5349664.6		9	0	-90
AC93ZG347	ZG347	61133	48250	364751.1	5349717.6		4	0	-90
AC93ZG348	ZG348	61115	48255	364743.9	5349734.9		31	0	-90
AC93ZG349	ZG349	61144	48253	364760.2	5349710.8		7	0	-90
AC93ZG350	ZG350	61155	48251	364765.4	5349700.9		10	0	-90
AC93ZG351	ZG351	61135	48245	364748.4	5349713.0		5.5	0	-90
AC93ZG352	ZG352	61172	48138	364686.8	5349617.9		28.7	0	-90
AC93ZG353	ZG353	61365	48050	364736.3	5349411.7		25	142	-80
AC93ZG354	ZG354	61350	48050	364727.1	5349423.5		29.3	142	-80
AC93ZG355	ZG355	61340	48050	364720.9	5349431.4		39.2	142	-85
AC93ZG356	ZG356	61330	48050	364714.8	5349439.2		51	0	-90
AC93ZG357	ZG357	61317	48050	364706.7	5349449.5		56.8	0	-90
DD93ZG358	ZG358	61200	47690	364351.0	5349320.0		121.5	142	-50
DD93ZG359	ZG359	61269	47805	364484.1	5349336.5		79	143	-45
DD93ZG360	ZG360	61268	47805	364483.5	5349337.3		85.3	143	-70
DD93ZG361	ZG361	61253	47914	364560.2	5349416.2		99	142	-45
DD93ZG362	ZG362	61259	48008	364637.9	5349469.3		99.2	142	-60
DD93ZG363	ZG363	61258	48008	364637.3	5349470.1		129.6	0	-90
DD93ZG364	ZG364	61090	48200	364685.2	5349720.7			142	-45
DD93ZG365	ZG365	61089	48200	364684.6	5349721.5			142	-75
AC94ZG366	ZG366	61371	47719	364479.2	5349203.1		7.5	0	-90
AC94ZG367	ZG367	61361	47719	364473.0	5349211.0		16.5	0	-90
AC94ZG368	ZG368	61350	47719	364466.2	5349219.7		12.1	0	-90
AC94ZG369	ZG369	61340	47719	364460.1	5349227.6		3.5	0	-90
AC94ZG370	ZG370	61330	47700	364438.9	5349223.8		46.5	0	-90
AC94ZG371	ZG371	61320	47700	364432.8	5349231.6		30.5	0	-90
AC94ZG372	ZG372	61310	47700	364426.6	5349239.5		39.6	0	-90
AC94ZG373	ZG373	61160	47100	363595.6	5349033.8		2.1	0	-90
AC94ZG374	ZG374	61170	47100	363598.9	5349024.4		4.8	0	-90
AC94ZG375	ZG375	61180	47100	363602.1	5349014.9		2.5	0	-90
AC94ZG376	ZG376	61190	47100	363605.4	5349005.5		3	0	-90
AC94ZG377	ZG377	61200	47100	363608.6	5348996.0		2.5	0	-90
AC94ZG378	ZG378	61210	47100	363611.9	5348986.5		2.1	0	-90
AC94ZG379	ZG379	61220	47100	363615.2	5348977.1		8.7	0	-90
AC94ZG380	ZG380	61235	47100	363620.0	5348962.9		4	0	-90
AC94ZG381	ZG381	61250	47060	363587.1	5348935.7		5.5	0	-90
AC94ZG382	ZG382	61240	47060	363583.8	5348945.2		5.1	0	-90
AC94ZG383	ZG383	61230	47060	363580.6	5348954.6		8.1	0	-90
AC94ZG384	ZG384	61220	47060	363577.3	5348964.1		5.2	0	-90
AC94ZG385	ZG385	61210	47060	363574.1	5348973.5		13.8	0	-90
AC94ZG386	ZG386	61200	47060	363570.8	5348983.0		2.4	0	-90

FULL	SHORT							AZIM	
HOLE NAME	NAME	LOCALE	LOCALN	AMG EAST	AMG NORTH	RL	DEPTH	(AMG)	DIP
AC94ZG387	ZG387	61190	47060	363567.6	5348992.4		1.2	0	-90
AC94ZG388	ZG388	61180	47060	363564.3	5349001.9		1.8	0	-90
AC94ZG389	ZG389	61275	47060	363595.2	5348912.1		14.8	0	-90
AC94ZG390	ZG390	61225	47150	363664.1	5348988.6		7.4	0	-90
AC94ZG391	ZG391	61210	47150	363659.2	5349002.8		5.9	0	-90
AC94ZG392	ZG392	61200	47150	363655.9	5349012.3		7.8	0	-90
AC94ZG393	ZG393	61190	47150	363652.7	5349021.7		7.5	0	-90
AC94ZG394	ZG394	61180	47150	363649.4	5349031.2		4.8	0	-90
AC94ZG395	ZG395	61170	47150	363646.1	5349040.6		12.3	0	-90
AC94ZG396	ZG396	61160	47150	363642.9	5349050.1		9.3	0	-90
AC94ZG397	ZG397	61150	47150	363639.6	5349059.6		5.7	0	-90
AC94ZG398	ZG398	61140	47150	363636.4	5349069.0		2.5	0	-90
AC94ZG399	ZG399	61130	47150	363633.1	5349078.5		2.6	0	-90
AC94ZG400	ZG400	61120	47150	363629.9	5349087.9		2.3	0	-90

BMLITH

Rock code as per published geological map

For time designation use:-

Q	Quaternary	M	Permian	P	Proterozoic
T	Tertiary	C	Carboniferous	A	Archaean
		S	Silurian		
K	Cretaceous	D	Devonian		
R	Triassic	O	Ordovician		
J	Jurassic	E	Cambrian		

FIELD ID

Field term for rock type

Broad groupings are:-

S	Sedimentary	I	Intrusive	C	Surficial
M	Metamorphic	E	Extrusive	O	Others

SEDIMENTARY

Sqg	Conglomerate	Sl	Limestone	Sw	Wacke
Sss	Sandstone	Sd	Dolomite	Sag	Agglomerate/mixtite
Ssi	Siltstone	Sch	Chert	Sbx	Breccia
Ssh	Shale	Sif	BF		
Sbs	Black shale				

METAMORPHIC

Msl	Slate	Mq	Quartzite	Mmg	Migmatite
Mpn	Phyllite	Mm	Marble		
Mec	Schist	Ma	Amphibolite	Msk	Skarn
Mbs	Graphitic schist	Mcs	Calcsilicate		
Mgn	Gneiss	Mh	Hornfels		

INTRUSIVE IGNEOUS

If	Felsic undiff.	Ii	Intermed undiff.	Iu	Ultramafic
Ifp	Felsic porphyry	Iip	Intermed porph	Ius	Serpentinite
Iap	Aplite	Iim	Mafic undiff.	Ipg	Pegmatite
Igr	Granite	Iid	Dolente		
Igd	Granodiorite	Igb	Gabbro		

EXTRUSIVE IGNEOUS

Ery	Rhyolite	Ean	Andesite	Ei	Tuff undiff
Edc	Dacite	Eb	Basalt	Eit	Felsic tuff
				Emt	Mafic tuff

SURFICIAL (COVER) MATERIAL

Ca	Alluvium	Cil	Laterite	Csg	Gossan
Cco	Colluvium	Csp	Pisolites	Coy	Clay
Ca	Sand	Csf	Ironstone	Cv	Vegetation/peat
Cbs	Black soil	Csi	Silcrete		
Cg	Gravel	Cd	Calcrete		

OTHERS

Ovq	Vein quartz	Omy	Mylonite	Oms	Massive sulphide
Ovc	Vein carbonate	Obx	Breccia	Ozc	Contamination
Ovs	Vein sulphide	Of	Fault gouge	Ox	Unknown

TEXTURAL CODES

WEATHERING/SURFICIAL FEATURES

We	Weathered	Fe	Ferruginous
Et	Bleached	Fo	Fe ox in fract
Le	Leached		

MINERALISATION/ALTERATION FEATURES

Ga	Gossanous	Vs	Vein sulphide	Al	Altered
Vn	Veined	Ds	Dissem sulph	S	Silicified
Vc	Vein carbonate	Fs	Fracture sulph		
Vq	Vein quartz	Bs	Banded sulph	Di	Disseminated

GEOLOGICAL FEATURES

Bd	Bedded	Fr	Fractured	Po	Porphyritic
Bn	Banded	lb	Interbedded	Sc	Schistose
Bx	Brecciated	Lm	Laminated	Sh	Sheared
F	Fissile (slatey)	Ma	Massive	Vu	Vuggy

DIAGNOSTIC MINERALOGY

PRIMARY MINERALISATION

Ga	Galena	Py	Pyrite	Ni	Ni sulphides
Sp	Sphalerite	Po	Pyrrhotite		
Cp	Chalcopyrite	Sr	Unknown sulph		

SECONDARY MINERALISATION

Ls	Lead secondaries	Cs	Copper sec.	Ni	Ni secondaries
Zs	Zinc "	Us	Uranium "		

ALTERATION/DIAGNOSTIC MINERALS

Cy	Clay	He	Haematite	Gt	Garnet
Ep	Epidote	Mt	Magnetite	Ky	Kyanite
Cc	Carbonate	Js	Jarosite	To	Tourmaline
Sd	Siderite/Ankerite	Mn	Manganese mins	Cl	Chlorite
Dl	Dolomite				

COLOUR CODES

L	Light	A	Banded	M	Mottled
D	Dark				
N	Black	P	Purple	V	Green
G	Grey	R	Red	K	Pink
B	Brown	O	Orange	E	Blue
W	White	Y	Yellow	S	Silver

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

APPENDIX 2: GRIEVES PROSPECT - CRAE AIR-CORE DRILLING LOGS AND ASSAYS																	
Results in ppm (Fe, S in %)																	
HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG1	0.0	0.9	3523301	71531	Og	Sls			OG		16	68	337	-1	0.98	326	
ZG2	0.0	1.2	3523302	71531	OhaOg	CvCgSls			OG		9	49	295	-1	0.96	144	
ZG3	0.0	2.0	3523303	71531	Oha	CvCoy			B		8	92	226	-1	0.65	77	
ZG3	2.0	4.0	3523304	71531	Og	Coy			OGB		19	100	119	-1	0.35	23	
ZG3	4.0	6.1	3523305	71531	Og	Coy			OGB	EOH in cc veined lsl.	17	250	480	-1	1.33	28	
ZG4	0.0	2.0	3523306	71531	Oha	CvCg			LB		9	18	20	-1	0.39	28	
ZG4	2.0	4.0	3523307	71531	Og	Sls	We	Cy	LBG		22	69	53	-1	0.39	17	
ZG4	4.0	5.8	3523308	71531	Og	Sls	We	Cy	OG	EOH in cc veined lsl.	40	103	56	-1	0.69	40	
ZG5	0.0	2.0	3523309	71531	Oha	CvCg			LB		3	7	19	-1	0.25	18	
ZG5	2.0	4.0	3523310	71531	OhaOg	CgCoy			LBGG		11	51	21	-1	0.37	25	
ZG5	4.0	6.0	3523311	71531	Og	Sls	We	Cy	DB		12	98	31	-1	0.22	14	
ZG5	6.0	8.0	3523312	71531	Og	Sls	WeDs	CyPy	OG		20	175	240	-1	1.20	22	
ZG5	8.0	10.0	3523313	71531	Og	Sls	WeDs	CyPy	OG		19	104	120	-1	1.52	22	
ZG5	10.0	11.0	3523314	71531	Og	Sls	WeDs	CyPy	OG	EOH in LGB lsl	16	69	137	-1	1.70	42	
ZG6	0.0	2.0	3523315	71531	Oha	CvCoy			N		16	73	282	-1	1.24	66	
ZG6	2.0	4.0	3523316	71531	OhaOg	CgCoy			LBN		5	13	36	-1	0.50	34	
ZG6	4.0	6.0	3523317	71531	OhaOg	CgCoy			LBN		5	21	12	-1	0.27	14	
ZG6	6.0	8.0	3523318	71531	Og	Sls	WeDs	Py	OG		11	101	60	-1	0.47	25	
ZG6	8.0	10.0	3523319	71531	Og	Sls	We	Cy	OG		11	170	142	-1	0.42	17	
ZG6	10.0	12.0	3523320	71531	Og	Sls	WeDs	Py	OG		16	693	680	-1	1.53	33	
ZG6	12.0	14.0	3523321	71531	Og	Sls	Vu		LG		6	94	94	-1	0.37	109	
ZG6	14.0	16.0	3523322	71531	Og	Sls			G		5	42	69	-1	0.35	92	
ZG7	0.0	2.0	3523323	71531	Oha	Cg			LBK		4	4	15	-1	0.37	30	
ZG7	2.0	4.0	3523324	71531	Oha	Cg			LBK		5	6	8	-1	0.42	31	
ZG7	4.0	6.0	3523325	71531	Oha	Cg			LBK		2	4	8	-1	0.27	20	
ZG7	6.0	8.0	3523326	71531	Oha	Cg			LBK		4	6	20	-1	0.39	28	
ZG7	8.0	10.0	3523327	71531	OhaOg	CgSls	We		LBKB		12	33	57	-1	0.43	14	
ZG7	10.0	12.0	3523328	71531	Og	Sls	We	Cy	B		20	69	236	-1	1.22	20	
ZG7	12.0	13.0	3523329	71531	Og	Sls			G		9	90	119	-1	0.60	42	
ZG8	0.0	10.0	3523330	71531	Oha	Cg			LK		5	6	26	-1	0.43	30	
ZG8	10.0	12.0	3523331	71531	Oha	CgCoy			LKB		2	5	17	-1	0.25	17	
ZG8	12.0	14.0	3523332	71531	OgOha	CoySlsCg	We		DGN		14	22	42	-1	0.91	42	
ZG8	14.0	15.0	3523333	71531	Og	Sls			G		6	41	77	-1	2.07	37	
ZG9	0.0	2.0	3523334	71531	Oha	Cg			LK		10	7	25	-1	0.70	42	
ZG9	2.0	4.0	3523335	71531	Og	Coy			B		13	34	51	-1	0.47	24	
ZG9	4.0	6.0	3523336	71531	Og	CoySls			BOG		38	103	103	-1	1.11	17	
ZG9	6.0	8.0	3523337	71531	Og	Sls	We	Cy	OG		31	242	304	-1	1.17	17	
ZG9	8.0	12.0	3523338	71531	Og	SlsOx	We	Cy	OG	Cavity ~2m.	30	242	323	-1	1.36	19	
ZG9	12.0	14.0	3523339	71531	Og	Sls	We	Cy	OG		24	209	319	-1	1.63	45	
ZG9	14.0	16.0	3523340	71531	Og	Sls	Ds	Py	OG		16	83	409	-1	1.62	108	
ZG9	16.0	17.0	3523341	71531	Og	Sls	Ds	Py	OG		20	115	700	-1	1.58	242	
ZG10	0.0	2.0	3523342	71531	Oha	Cg			LK		5	6	25	-1	0.31	20	
ZG10	2.0	4.0	3523343	71531	Og	Coy			DEN		18	125	127	-1	0.62	13	
ZG10	4.0	6.0	3523344	71531	Og	Coy			N		21	71	283	-1	1.51	34	
ZG10	6.0	7.4	3523345	71531	Og	Sls	We	Cy	N		17	60	540	-1	1.62	53	
ZG11	0.0	2.0	3523346	71531	Oha	Cg			LK		8	6	16	-1	0.45	33	
ZG11	2.0	4.0	3523347	71531	OhaOg	CgCoy			LKDG		7	18	125	-1	0.57	28	
ZG12	0.0	2.0	3523348	71531	OhaOg	CgCoy			LKN		6	4	26	-1	0.40	27	
ZG12	2.0	4.0	3523349	71531	Og	Coy			DB		10	23	34	-1	0.24	14	
ZG12	4.0	6.0	3523350	71531	Og	Coy			DB		18	138	98	-1	0.30	15	

563076

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG12	6.0	8.0	3523351	71531	Og	Ccy			DBG		26	109	300	-1	0.82	16	
ZG12	8.0	10.0	3523352	71531	Og	Ccy			DBG		20	54	356	-1	1.80	25	
ZG12	10.0	12.0	3523353	71531	Og	Ccy			DBG		17	43	306	-1	2.16	25	
ZG12	12.0	14.0	3523354	71531	Og	CcySlts			DBG	EOH in fresh lst	14	33	236	-1	2.33	66	
ZG13	0.0	2.0	3523355	71531	Qha	Cg			LK		3	7	15	-1	0.33	20	
ZG13	2.0	4.0	3523356	71531	Og	Ccy			DB		11	17	22	-1	0.47	23	
ZG13	4.0	6.0	3523357	71531	Og	Ccy			DBG		20	37	67	-1	0.44	15	
ZG13	6.0	7.0	3523358	71531	Og	Ccy			DB	EOH in DG fine g/s lst	25	52	120	-1	0.55	24	
ZG15	0.0	2.0	3523359	71531	Qha	Cg			LK		3	9	32	-1	0.40	31	
ZG15	2.0	4.0	3523360	71531	Qha	Cg			LK		7	7	22	-1	0.54	40	
ZG15	4.0	6.0	3523361	71531	Og	Ccy			DB		12	58	92	-1	1.97	42	
ZG15	6.0	8.0	3523362	71531	Og	Ccy			DBG		21	89	280	-1	65300.00	620	
ZG15	8.0	10.0	3523363	71531	OgOm	CcyMq			GB		6	45	224	-1	3.72	1060	
ZG15	10.0	12.0	3523364	71531	Og	CcySlts			DBG		8	102	359	-1	3.02	760	
ZG15	12.0	14.0	3523365	71531	Og	Slts			DGB		4	36	181	-1	2.92	760	
ZG15	14.0	16.0	3523366	71531	Og	Slts			DB		3	43	211	-1	4.09	1220	
ZG15	16.0	18.0	3523367	71531	Og	Slts			DB		11	359	630	-1	3.93	1110	
ZG16	0.0	2.0	3523368	71531	Qha	OvCg			BLK		4	11	24	-1	0.27	29	
ZG16	2.0	3.0	3523369	71531	Qha	Cg			LK		10	38	115	-1	1.12	33	
ZG16	3.0	4.0	3523369	71531	Og	Ccy			LK		10	38	115	-1	1.12	33	
ZG16	4.0	6.0	3523370	71531	Og	Ccy			GB		12	108	383	-1	2.91	40	
ZG16	6.0	8.0	3523371	71531	Og	Ccy			GB		17	197	600	-1	3.70	112	
ZG16	8.0	10.0	3523372	71531	Og	Slts			DB	Fossiliferous muddy lst	6	76	240	-1	1.28	195	
ZG16	10.0	12.0	3523373	71531	Og	Slts			DB	Fossiliferous muddy lst	6	23	70	-1	2.83	1160	
ZG16	12.0	14.0	3523374	71531	Og	Slts				Oolitic lst	4	54	262	-1	2.55	1170	
ZG16	14.0	15.0	3523375	71531	Og	Slts				Oolitic lst	3	33	183	-1	1.14	248	
ZG17	0.0	2.0	3523376	71531	Og	Ccy			B		8	18	8	-1	0.29	20	
ZG17	2.0	4.0	3523377	71531	Og	Ccy			GB		120	504	465	-1	0.90	12	
ZG17	4.0	6.0	3523378	71531	Og	Ccy			GB		33	224	2040	-1	60600.00	30	
ZG17	6.0	8.0	3523379	71531	Og	CcySlts			GN		13	56	630	-1	3.85	170	
ZG18	0.0	2.0	3523380	71531	Qha	OvCg			BLK		5	6	16	-1	0.67	36	
ZG18	2.0	4.0	3523381	71531	Og	Ccy			DGB		19	42	316	-1	2.62	28	
ZG18	4.0	6.0	3523382	71531	Og	Ccy			DGB		22	55	265	-1	2.88	179	
ZG18	6.0	8.0	3523383	71531	Og	Ccy			DGB		16	64	184	-1	3.80	224	
ZG18	8.0	10.0	3523384	71531	Og	Slts			N		9	21	49	-1	2.11	292	
ZG19	0.0	2.0	3523385	71531	Qha	Cg			LK		-2	5	6	-1	0.21	16	
ZG19	2.0	4.0	3523386	71531	Qha	Cg			LK		5	4	20	-1	0.51	36	
ZG19	4.0	6.0	3523387	71531	Og	Slts	We	Cy	B	Fossiliferous	3	15	401	-1	0.38	45	
ZG19	6.0	8.0	3523388	71531	Og	Slts	Vn	Cc	DB	Fossiliferous	-2	20	96	-1	0.45	150	
ZG19	8.0	10.0	3523389	71531	Og	Slts					3	12	85	-1	0.61	72	
ZG20	0.0	2.0	3523390	71531	Qha	Cg			LK		5	3	6	-1	0.45	31	
ZG20	2.0	4.0	3523391	71531	Og	Ccy			GB		14	57	1100	-1	4.16	26	
ZG20	4.0	6.0	3523392	71531	Og	Ccy			GB		15	64	178	-1	2.01	29	
ZG20	6.0	7.0	3523393	71531	Og	Slts	Ds	Py	KN		12	44	189	-1	1.59	54	
ZG21	0.0	2.0	3523394	71531	Qha	Cg			LK		-2	4	12	-1	0.22	13	
ZG21	2.0	2.5	3523395	71531	Og	Slts			BK		2	5	16	-1	0.43	34	
ZG22	0.0	2.0	3523396	71531	Qha	OvCg			BLK		3	5	8	-1	0.39	26	
ZG22	2.0	4.0	3523397	71531	Og	CcySlts	We		GB		7	36	426	-1	0.65	47	
ZG22	4.0	6.0	3523398	71531	Og	Slts			KN		3	39	481	-1	0.55	91	
ZG23	0.0	2.0	3523399	71531	Qha	OvCg			DBLK		2	5	11	-1	0.37	23	
ZG23	2.0	4.0	3523400	71531	Og	Ccy			DB		4	14	40	-1	0.53	24	
ZG23	4.0	6.0	3523401	71531	Og	Slts	We	Cy	DG	EOH in G lst	3	10	18	-1	0.83	72	
ZG24	0.0	2.0	3523402	71531	Qha	Cg			LK		-2	3	11	-1	0.20	12	

563077

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMR/LITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG24	2.0	4.0	3523403	71531	OhaOg	CgCoy			LKB		3	15	67	-1	0.46	28	
ZG24	4.0	4.5	3523404	71531	Og	Sls			G	Oolitic lst	3	64	484	-1	0.51	35	
ZG25	0.0	2.0	3523405	71531	Oha	Cg			LK		2	-3	7	-1	0.36	23	
ZG25	2.0	3.5	3523406	71531	OhaOg	CgCoySls				EOH in G fine g/s lst	2	62	155	-1	0.38	24	
ZG26	0.0	2.0	3523407	71531	Oha	Cg			LK		3	3	8	-1	0.42	27	
ZG26	2.0	4.0	3523408	71531	Og	Coy			N		3	48	427	-1	0.55	25	
ZG26	4.0	4.5	3523409	71531	Og	Coy			N	EOH in LG fine g/s lst	5	59	1540	-1	1.47	53	
ZG27	0.0	2.0	3523410	71531	OhaOg	CgCoy			LKN		-2	-3	20	-1	0.25	17	
ZG27	2.0	3.0	3523411	71531	Og	Coy			N	EOH in cc veined fine g/s lst. Caving gravels	7	9	55	-1	0.94	87	
ZG28	0.0	2.0	3523412	71531	Oha	Cg			LK		-2	3	7	-1	0.26	18	
ZG28	2.0	3.0	3523413	71531	Og	Coy			DGN	EOH in G fine g/s lst	10	69	510	-1	0.82	49	
ZG29	0.0	2.0	3523414	71531	Oha	OvCgCs					-2	3	10	-1	0.27	18	
ZG29	2.0	2.5	3523415	71531	Og	Sls			LB		3	20	47	-1	0.38	63	
ZG30	0.0	2.0	3523416	71531	Oha	OvCgCs					-2	5	7	-1	0.28	20	
ZG30	2.0	2.1	3523417	71531	Og	Sls			DG		11	16	42	-1	0.62	58	
ZG31	0.0	1.7	3523418	71531	OhaOg	OvCgCoySls					-2	3	10	-1	0.35	57	
ZG31	1.7	1.8	3523419	71531	Og	Sls			G		17	13	64	-1	0.51	195	
ZG32	0.0	2.0	3523420	71531	OhaOg	OvCgCoy			LKB		2	7	17	-1	0.49	62	
ZG32	2.0	2.3	3523421	71531	Og	CoySls			DG		3	14	22	-1	1.04	139	
ZG33	0.0	1.8	3523422	71531	OhaOg	OvCgCoySls					2	7	18	-1	0.49	47	
ZG34	0.0	2.0	3523423	71531	Oha	CgOv			LKB		-2	12	23	-1	0.27	18	
ZG34	2.0	2.2	3523424	71531	Og	CoySls			DGN		4	12	29	-1	0.49	51	
ZG35	0.0	2.0	3523425	71531	OhaOg	OvCgCoy			LKB		12	348	107	-1	0.61	14	
ZG35	2.0	3.0	3523426	71531	Og	Coy			N	EOH in DG fine g/s lst	12	1800	810	-1	0.39	79	
ZG36	0.0	2.0	3523427	71531	OhaOg	CgCoy			LKB		-2	63	78	-1	0.31	26	
ZG36	2.0	4.0	3523428	71531	Og	Coy			DB		9	800	6700	1	0.59	44	
ZG36	4.0	6.0	3523429	71531	Ox					Cavity + minor clay and gravel	11	1400	5500	1	0.45	36	
ZG36	6.0	8.0	3523430	71531	Og	Coy			LBG		20	15400	93500	5	81800.00	59	
ZG36	8.0	10.0	3523431	71531	Og	Sls	We	Oy	DG		12	3100	6800	1	1.83	179	
ZG36	10.0	12.0	3523432	71531	Og	Sls	WeDs	Py	DG		8	11100	56500	3	65200.00	1420	
ZG36	12.0	12.2	3523433	71531	Og	Sls	Ds	Py	DG	Bioturbated lime mudstone	9	20400	90000	6	82700.00	2180	
ZG37	0.0	2.0	3523434	71531	Oha	CgOv			LKB		5	1550	6000	1	0.57	30	
ZG37	2.0	3.0	3523435	71531	Og	Coy			DGB	EOH in DG fine g/s lst	7	266	2750	-1	0.85	138	
ZG38	0.0	2.0	3523436	71531	Og	Coy			LDGG		12	101	368	-1	0.41	37	
ZG38	2.0	4.0	3523437	71531	Og	Coy			DG		24	186	620	-1	0.69	15	
ZG38	4.0	6.0	3523438	71531	Og	Coy			DG		18	327	1750	-1	1.89	50	
ZG38	6.0	8.0	3523439	71531	Og	CoySls			DG		21	107	530	-1	2.87	27	
ZG38	8.0	9.0	3523440	71531	Og	Sls			DG	EOH in G med g/s lst	17	62	1260	-1	1.85	50	
ZG39	0.0	2.0	3523441	71531	Oha	OvCg			DBLK		4	3	36	-1	0.32	16	
ZG39	2.0	4.0	3523442	71531	Og	Coy			DB		5	30	16	-1	0.18	7	
ZG39	4.0	6.0	3523443	71531	Og	Coy			DG		17	109	550	-1	0.49	13	
ZG39	6.0	7.5	3523444	71531	Og	Coy			DG	EOH in G med g/s lst	12	223	1160	-1	1.78	20	
ZG40	0.0	2.0	3523445	71531	Oha	OvCs			LB		4	-3	8	-1	0.45	28	
ZG40	2.0	4.0	3523446	71531	Og	Coy			DB		12	384	325	-1	0.25	10	
ZG40	4.0	6.0	3523447	71531	Og	Coy			DB		27	259	1190	-1	1.04	19	
ZG40	6.0	8.0	3523448	71531	Og	Coy			DB		17	309	3220	-1	1.84	23	
ZG40	8.0	9.8	3523449	71531	Og	Coy			DB		15	2500	12900	1	2.52	34	
ZG14	0.0	2.0	3523450	71531	Oha	OvOv					2	76	506	-1	0.44	25	
ZG14	2.0	4.0	3523451	71531	Oha	OvCs			B		3	13	83	-1	0.37	23	
ZG14	4.0	6.0	3523452	71531	OhaOg	OvCoy			DB		4	43	100	-1	0.25	11	
ZG14	6.0	8.0	3523453	71531	Og	Coy			LB		13	138	119	1	0.46	20	
ZG14	8.0	10.0	3523454	71531	Og	Coy			DEG		21	273	1200	-1	0.46	12	
ZG14	10.0	12.0	3523455	71531	Og	Coy			DEG		16	156	700	-1	1.34	30	

563078

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Q _v	Pb	Zn	Ag	Fe%	Mn	S%
ZG14	12.0	14.0	3523456	71531	Og	Ccy			DBG		16	274	2160	-1	1.72	23	
ZG14	14.0	15.5	3523457	71531	Og	Sls	We	Oy	DG	EOH in laminated shaley lst	12	135	1230	-1	1.43	40	
ZG41	0.0	2.0	3523458	71531	Cha	Cg			LK		4	4	10	-1	0.30	19	
ZG41	2.0	4.0	3523459	71531	Og	Ccy			DBN		12	21	30	-1	0.35	17	
ZG41	4.0	6.0	3523460	71531	Og	Ccy			DGN		15	20	94	-1	0.78	18	
ZG41	6.0	8.0	3523461	71531	Og	Ccy			DGN		17	20	81	-1	2.84	25	
ZG41	8.0	10.0	3523462	71531	Og	Ccy			DGN		15	19	41	-1	1.97	24	
ZG41	10.0	12.0	3523463	71531	Og	Ccy			DGN		14	20	1610	-1	3.04	25	
ZG41	12.0	14.0	3523464	71531	Og	Ccy			DGN		12	19	78	-1	1.32	21	
ZG41	14.0	16.0	3523465	71531	Og	CcySls			DGN		9	13	163	-1	1.43	85	
ZG41	16.0	18.0	3523466	71531	Og	CcySls			G		5	9	102	-1	0.91	93	
ZG41	18.0	20.0	3523467	71531	Og	CcySls			G		7	8	91	-1	2.28	76	
ZG41	20.0	21.3	3523468	71531	Og	CcySls			G	EOH in G lime mudstone	5	6	32	-1	1.26	107	
ZG42	0.0	2.0	3523469	71531	Og	Ccy			B		5	9	20	-1	0.64	41	
ZG42	2.0	4.0	3523470	71531	Og	Ccy			DBG		22	31	13	-1	0.29	12	
ZG42	4.0	6.0	3523471	71531	Og	Ccy			DGN		28	23	37	-1	0.40	19	
ZG42	6.0	8.0	3523472	71531	Og	Ccy			N		28	27	404	-1	2.77	17	
ZG42	8.0	10.0	3523473	71531	Og	Ccy			DGN		22	22	239	-1	3.09	24	
ZG42	10.0	12.0	3523474	71531	Og	Sls	We	Oy	DG		18	18	35	-1	2.92	19	
ZG42	12.0	14.0	3523475	71531	Og	Sls	We	Oy	DG		20	15	18	-1	2.21	68	
ZG42	14.0	16.0	3523476	71531	Og	Sls	We	Oy	DG		24	17	164	-1	2.25	74	
ZG42	16.0	18.0	3523477	71531	Og	Sls	We	Oy	DG		19	15	259	-1	4.47	49	
ZG42	18.0	19.5	3523478	71531	Og	Sls	We	Oy	DG	EOH in G cc veined lst	15	13	147	-1	4.77	112	
ZG43	0.0	2.0	3523479	71531	Cha	O/Cg			BLK		6	-3	18	-1	0.77	54	
ZG43	2.0	4.0	3523480	71531	ChaOg	CsCcy			B		3	5	35	-1	0.44	31	
ZG43	4.0	6.0	3523481	71531	Og	Ccy			DG		22	28	140	-1	1.42	23	
ZG43	6.0	8.0	3523482	71531	Og	Ccy			DG		24	21	57	-1	2.07	23	
ZG43	8.0	10.0	3523483	71531	Og	Ccy			DG		16	14	62	-1	2.28	58	
ZG43	10.0	12.0	3523484	71531	Og	Sls	We	Oy	LG		6	8	120	-1	1.18	100	
ZG43	12.0	13.5	3523485	71531	Og	Sls	Vn	Cc	LG		6	4	32	-1	0.80	225	
ZG44	0.0	2.0	3523486	71531	Cha	Cg			LK		4	-3	5	-1	0.39	29	
ZG44	2.0	4.0	3523487	71531	Og	Ccy			DB		6	-3	12	-1	0.42	22	
ZG44	4.0	6.0	3523488	71531	Og	Ccy			DBG		16	18	70	-1	1.67	17	
ZG44	6.0	8.0	3523489	71531	Og	Ccy			DG		22	23	68	-1	2.37	29	
ZG44	8.0	9.0	3523490	71531	Og	CcySls			DG		18	15	36	-1	2.78	57	
ZG45	0.0	2.0	3523491	71531	Cha	CgCs			LK		5	-3	5	-1	0.49	32	
ZG45	2.0	4.0	3523492	71531	Og	Ccy			DB		23	56	191	-1	1.31	27	
ZG45	4.0	6.0	3523493	71531	Og	Ccy			DBG		18	36	660	-1	2.45	23	
ZG45	6.0	8.0	3523494	71531	Og	Ccy			DG		13	22	202	-1	1.84	25	
ZG45	8.0	10.0	3523495	71531	Og	Ccy			DG		16	23	168	-1	2.10	23	
ZG45	10.0	12.0	3523496	71531	Og	Ccy			DG		21	28	76	-1	2.87	32	
ZG45	12.0	14.0	3523497	71531	Og	Ccy			DBG		19	23	104	-1	2.45	29	
ZG45	14.0	16.0	3523498	71531	Og	Ccy			DB		17	17	268	-1	3.73	26	
ZG45	16.0	18.0	3523499	71531	Og	CcyCs			BG	Caving sands	12	10	31	-1	1.61	43	
ZG45	18.0	18.5	3523500	71531	Og	SlsCs			G	Lst + caving sands	5	3	13	-1	0.92	48	
ZG46	0.0	2.0	3523501	71531	Cha	Cg			LK		10	-3	11	-1	0.40	35	
ZG46	2.0	4.0	3523502	71531	Cha	Os			LK		6	9	18	-1	0.43	24	
ZG46	4.0	6.0	3523503	71531	Og	Ccy			DBG		13	19	61	-1	1.34	29	
ZG46	6.0	8.0	3523504	71531	Og	Ccy			DBG		18	20	97	-1	1.51	19	
ZG46	8.0	10.0	3523505	71531	Og	Sls	We	Oy	DG		22	22	595	-1	3.25	37	
ZG46	10.0	12.0	3523506	71531	Og	Sls	We	Oy	G		19	17	68	-1	2.43	34	
ZG46	12.0	14.0	3523507	71531	Og	Ccy			DG		15	25	83	-1	3.30	134	
ZG46	14.0	15.0	3523508	71531	Og	Sls			MLDG		6	9	21	-1	1.80	335	

563079

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	SP%
ZG47	0.0	1.0	3523509	71531	Oha	Cg			LK		12	9	260	-1	1.14	33	
ZG47	1.0	2.0	3523509	71531	Og	Ccy			DBN								
ZG47	2.0	4.0	3523510	71531	Og	Ccy			DEG		22	25	450	-1	2.71	35	
ZG47	4.0	6.0	3523511	71531	Og	Ccy			DG		17	22	445	-1	2.13	28	
ZG47	6.0	8.0	3523512	71542	Og	Ccy			DG								
ZG47	8.0	10.0	3523513	71531	Og	Ccy			DEG		17	33	290	-1	3.34	40	
ZG47	10.0	12.0	3523514	71531	Og	CcySch			DG		16	20	265	-1	3.43	48	
ZG47	12.0	14.0	3523515	71531	Og	CcySch			BOG		10	31	2350	-1	7.41	38	
ZG47	14.0	16.0	3523516	71531	Og	Ss			MDG		5	9	640	-1	3.77	471	
ZG47	16.0	16.5	3523517	71531	Og	Ss			G		6	7	490	-1	4.78	1218	
ZG48	0.0	2.0			Oha	Cg				Abandoned due to gravels							
ZG49	0.0	4.0			Oha	Cg			LK								
ZG49	4.0	6.0	3523518	71531	Og	Ccy			B		6	22	77	-1	0.32	30	
ZG49	6.0	8.0	3523519	71531	Og	Ccy			DB		8	16	300	-1	0.63	26	
ZG49	8.0	10.0	3523520	71531	Og	Ccy			DB		10	24	160	-1	0.95	19	
ZG49	10.0	12.0	3523521	71531	Og	Ccy			DG		20	52	975	-1	2.92	34	
ZG49	12.0	14.0	3523522	71531	Og	Ccy			DG		13	36	575	-1	3.90	48	
ZG49	14.0	15.8	3523523	71531	Og	CcySls	We	Cy	DDG	EOH in sandy lst + bivalve fossit	8	46	215	-1	3.50	164	
ZG50	0.0	3.0			Oha	Cg			LK								
ZG50	3.0	5.0	3523524	71531	Og	Ccy			DB		13	44	735	-1	0.94	16	
ZG50	5.0	7.0	3523525	71531	Og	Ccy			DB		13	85	2350	-1	1.29	10	
ZG50	7.0	9.0	3523526	71531	Og	Ccy			DGB		14	62	3366	-1	2.00	15	
ZG50	9.0	11.0	3523527	71531	Og	Ccy			DEG		10	42	655	-1	2.55	13	
ZG50	11.0	13.0	3523528	71531	Og	Ccy			DEG		16	50	540	-1	3.45	31	
ZG50	13.0	15.0	3523529	71531	Og	Ccy			DB		17	38	885	-1	4.49	56	
ZG50	15.0	17.0	3523530	71531	Og	Ccy			DFG		13	40	1220	-1	3.81	52	
ZG50	17.0	19.0	3523531	71531	Og	Ccy			DFG		7	37	840	-1	2.38	45	
ZG50	19.0	20.0	3523532	71531	Og	CcySls			MLDG		4	10	130	-1	1.03	147	
ZG51	0.0	4.0			Oha	Cg			LK								
ZG51	4.0	6.0	3523533	71531	Og	Ccy			DG		19	32	620	-1	3.26	35	
ZG51	6.0	8.0	3523534	71531	Og	Ccy			DG		20	28	315	-1	3.15	48	
ZG51	8.0	10.0	3523535	71531	Og	Ccy			N		24	30	180	-1	2.55	60	
ZG51	10.0	12.0	3523536	71531	Og	Ccy			DG		17	20	67	-1	3.62	611	
ZG51	12.0	14.0	3523537	71531	Og	Ccy			DGN		9	12	69	-1	4.82	1479	
ZG51	14.0	16.0	3523538	71531	Og	Ccy			DGB		10	15	73	-1	4.47	985	
ZG51	16.0	18.0	3523539	71531	Og	Ccy			DGB		11	21	280	-1	5.00	705	
ZG51	18.0	20.0	3523540	71531	Og	CcySls			DG		6	11	78	-1	15.30	5500	
ZG51	20.0	22.0	3523541	71531	Og	CcySls			DG		8	13	160	-1	11.20	3646	
ZG51	22.0	24.0	3523542	71531	Og	Ss			G	Med g/s oolitic lst?	4	3	315	-1	4.96	1771	
ZG51	24.0	26.0	3523543	71531	Og	CcySls			DFB		4	13	590	-1	7.02	2148	
ZG51	26.0	28.0	3523544	71531	Og	Ccy			DGLBR		9	48	1350	-1	12.60	4449	
ZG51	28.0	30.0	3523545	71531	Og	Ccy			DG		10	27	2000	-1	20.08	6700	
ZG51	30.0	32.0	3523546	71531	Og	CcySls			DG		4	13	3323	-1	20.18	5500	
ZG51	32.0	34.0	3523547	71531	Og	Ss			DG	Carbonate sand	4	13	2250	-1	13.39	4202	
ZG51	34.0	36.0	3523548	71531	Og	Ss	We	Cy	G		5	19	3588	-1	16.29	6000	
ZG51	36.0	38.0	3523549	71531	Og	Ss			G	Sandy lst with bivalve fossil	3	13	1750	-1	14.20	5600	
ZG51	38.0	40.0	3523550	71531	Og	Ccy			DGLBFB		10	38	2150	-1	18.13	6500	
ZG51	40.0	42.0	3523551	71531	Og	Ss			G	Carbonate sand	4	21	1950	-1	14.13	5500	
ZG51	42.0	44.0	3523552	71531	Og	Ss	VuAl	Sd	G	Siderite altn	3	15	1550	-1	12.65	4760	
ZG51	44.0	46.0	3523553	71531	Og	Ss	VuAl	Sd	G	Siderite altn	2	8	1600	-1	8.74	3205	
ZG51	46.0	48.0	3523554	71531	Og	Ss	VuAl	Sd	LOG	Siderite altn	2	7	1750	-1	16.64	6900	
ZG51	48.0	50.0	3523555	71531	Og	Ss	VuAl	Sd	G	Siderite altn	2	6	1700	-1	18.79	7300	
ZG51	50.0	52.0	3523556	71531	Og	Ss	VuAl	Sd	BG	Siderite altn	2	26	12900	-1	26.92	9700	

563080

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG51	52.0	54.0	3523557	71531	Og	Sts	Al	Sd	YG	Siderite altn	3	16	3755	-1	15.68	6500	
ZG52	0.0	3.0			Qha	Cg			LK								
ZG52	3.0	4.0	3523558	71531	Og	Sts			G		3	25	375	-1	1.87	883	
ZG53	0.0	3.0			Qha	Cg			LK	EOH in quartzite?							
ZG54	0.0	2.0	3523559	71531	Og	Ccy			GG		24	795	3339	1	1.06	45	
ZG54	2.0	4.0	3523560	71531	Og	Ccy	Ds	Py	GG		39	2250	6100	1	1.47	42	
ZG54	4.0	6.0	3523561	71531	Og	Ccy			GG		23	805	7600	1	1.45	39	
ZG54	6.0	8.0	3523562	71531	Og	Ccy			LOB		28	21900	258000	26	3.06	16	
ZG54	8.0	10.0	3523563	71531	Og	Ccy			LOBOG		30	26100	280000	28	4.66	20	
ZG54	10.0	12.0	3523564	71531	Og	Sts	We	Cy	LOG		14	11000	269000	22	9.82	27	
ZG54	12.0	14.0	3523565	71531	Og	Ccy			G		270	31600	181000	41	4.64	25	
ZG54	14.0	16.0	3523566	71531	Og	Sts	We	Cy	LOGG		44	7700	56100	2	1.90	37	
ZG54	16.0	18.0	3523567	71531	Og	Sts	We	Cy	GG		20	760	23000	-1	2.23	48	
ZG54	18.0	20.0	3523568	71531	Og	Ccy			N		32	1300	10200	-1	1.65	38	
ZG54	20.0	22.0	3523569	71531	Og	Ccy			G		20	251	15300	-1	1.56	42	
ZG54	22.0	24.0	3523570	71531	Og	Sts	We	Cy	GG		17	97	9000	-1	1.64	39	
ZG54	24.0	26.0	3523571	71531	Og	Sts	We	Cy	GG		19	279	4366	-1	1.27	41	
ZG54	26.0	28.0	3523572	71531	Og	Ccy			N		20	580	2600	2	2.30	56	
ZG54	28.0	30.0	3523573	71531	Om	MqCcy			WG		9	426	845	-1	1.13	39	
ZG54	30.0	32.0	3523574	71531	Om	MqStsCcy			WG		18	180	570	-1	1.07	36	
ZG54	32.0	34.0	3523575	71531	Om	MqCcy			LG		125	545	530	7	0.81	26	
ZG54	34.0	35.5	3523576	71531	Om	Mq	Ds	Py	LG		15	438	1375	8	0.40	27	
ZG55	0.0	2.0	3523577	71531	QhaOg	CgCcy			LKB		11	1300	3442	2	1.00	169	
ZG55	2.0	4.0	3523578	71531	OgQha	CcyCg			DBLK		24	1700	17900	12	1.60	52	
ZG55	4.0	6.0	3523579	71531	Og	Ccy			GG		31	1100	13900	1	1.88	72	
ZG55	6.0	8.0	3523580	71542	Og	Ccy			GG								
ZG55	8.0	10.0	3523581	71531	Og	Ccy			GG		26	590	9300	-1	9.19	2400	
ZG55	10.0	12.0	3523582	71531	Og	CcySts	We	Cy	DGLG		15	220	6200	-1	15.42	4922	
ZG55	12.0	14.0	3523583	71531	Og	Sts	VuAlDs	SdPy	YG		6	131	15300	-1	31.60	8900	
ZG55	14.0	16.0	3523584	71531	Og	Sts	VuAl	Sd	YG		11	156	11200	-1	22.43	6600	
ZG55	16.0	18.0	3523585	71531	Og	Sts	VuAl	Sd	DYG		6	131	9200	-1	23.29	7100	
ZG56	0.0	1.5	3523586	71531	Qha	Cg			LK		12	16	400	-1	0.77	72	
ZG56	1.5	2.0	3523586	71531	Og	Ccy			B		12	16	400	-1	0.77	72	
ZG56	2.0	4.0	3523587	71531	Og	Ccy			DB		20	64	1650	-1	1.75	40	
ZG56	4.0	6.0	3523588	71531	Og	Ccy			GG		16	95	4470	-1	2.26	104	
ZG56	6.0	8.0	3523589	71531	Og	Sts			GG		5	26	1500	-1	2.85	576	
ZG56	8.0	9.5	3523590	71531	Og	Sts			GG		4	19	430	-1	1.56	414	
ZG57	0.0	2.5			Qha	Cg			LK								
ZG57	2.5	4.0	3523591	71531	Og	Ccy			OBN		17	98	340	-1	2.36	44	
ZG57	4.0	6.0	3523592	71531	Og	CcySts			GG		12	87	640	-1	2.56	30	
ZG57	6.0	8.0	3523593	71531	Og	Sts			GG	Sandy lst	12	64	720	-1	8.69	28	
ZG57	8.0	10.0	3523594	71531	Og	Ccy			GG		14	40	3100	-1	8.40	34	
ZG57	10.0	12.0	3523595	71531	Og	Ccy			GG		20	39	660	-1	4.11	39	
ZG57	12.0	14.0	3523596	71531	Og	Ccy			GG		18	84	1500	-1	3.76	69	
ZG57	14.0	14.5	3523597	71531	Og	Sts			LOGG	Fine g/s lst with shaley wisps	4	12	135	-1	1.15	135	
ZG58	0.0	2.0	3523598	71531	Qha	Cg			LK		5	3	80	-1	0.38	33	
ZG58	2.0	4.0	3523599	71531	QhaOg	CgCcy			LKDB		16	27	140	-1	1.81	27	
ZG58	4.0	6.0	3523600	71531	Og	Ccy			GG		16	30	240	-1	12.01	24	
ZG58	6.0	8.0	3523601	71531	Og	Ccy			GG		16	41	355	-1	13.89	24	
ZG58	8.0	10.0	3523602	71531	Og	Ccy			DGLOB		21	73	750	-1	4.58	35	
ZG58	10.0	10.3	3523603	71531	Og	Sts	Ma		LG	Fine g/s lst	9	38	335	-1	3.36	51	
ZG59	0.0	2.0	3523604	71531	QhaOg	CgCcy			LKDB		10	9	58	-1	0.95	32	
ZG59	2.0	4.0	3523605	71531	Og	Sts	We	Cy	DB		13	28	715	-1	2.24	15	

563081

APPENDIX 2: Grievies Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG59	4.0	6.0	3523606	71531	Og	Ss	We	Cy	DBG		21	32	1350	-1	2.88	20	
ZG59	6.0	8.0	3523607	71531	Og	Ss	We	Cy	DB		18	33	1150	-1	2.74	22	
ZG59	8.0	10.0	3523608	71531	Og	Ss	We	Cy	DBG		21	26	560	-1	4.99	27	
ZG59	10.0	12.0	3523609	71531	Og	Ss	We	Cy	DBG		21	30	1370	-1	8.17	27	
ZG59	12.0	14.0	3523610	71531	Og	Ccy			DBG		15	26	290	-1	10.46	19	
ZG59	14.0	16.0	3523611	71531	Og	CcySs	Al	Sd	GYB		13	28	443	-1	6.53	45	
ZG59	16.0	18.0	3523612	71531	Og	Ss			DG		10	5	49	-1	0.86	122	
ZG59	18.0	20.0	3523613	71531	Og	Ss			DG		12	20	1138	-1	3.36	83	
ZG59	20.0	21.5	3523614	71531	Og	Ss			DG		15	28	911	-1	8.61	83	
ZG60	0.0	2.0	3523615	71531	Oha	Cg			LK		5	-3	18	-1	0.37	32	
ZG60	2.0	4.0	3523616	71531	Og	Ss	We	Cy	DB		21	21	45	-1	0.42	28	
ZG60	4.0	6.0	3523617	71531	Og	Ss	We		DB		23	44	265	-1	1.51	19	
ZG60	6.0	8.0	3523618	71531	Og	SsCcy	We		DBG		18	23	460	-1	4.80	34	
ZG60	8.0	10.0	3523619	71531	Og	Ccy			DGP		15	18	200	-1	4.99	26	
ZG60	10.0	12.0	3523620	71531	Og	Ccy			DGB		18	23	215	-1	3.40	41	
ZG60	12.0	14.0	3523621	71531	Og	Ccy			DGB		18	18	105	-1	3.20	40	
ZG60	14.0	16.0	3523622	71531	Og	Ss			G		15	15	155	-1	3.23	40	
ZG60	16.0	18.0	3523623	71531	Og	CcySs			G	Bioturbated lst	8	7	65	-1	1.25	245	
ZG60	18.0	19.0	3523624	71531	Og	Ss			LG	Bioturbated lst	7	7	50	-1	1.67	219	
ZG61	0.0	2.0	3523625	71531	Oha	Cg			LK		3	-3	11	-1	0.25	22	
ZG61	2.0	4.0	3523626	71531	OhaOg	CsCcy			DB		73	96	45	-1	1.14	27	
ZG61	4.0	6.0	3523627	71531	Og	Ccy			G	Plus caving sands	13	10	85	-1	1.64	29	
ZG61	6.0	8.0	3523628	71531	Og	Ccy			DGDB	Plus caving sands	24	10	50	-1	3.79	47	
ZG61	8.0	10.0	3523629	71531	Og	Ccy			DGDB	Plus caving sands	13	13	41	-1	2.23	38	
ZG61	10.0	12.0	3523630	71531	Og	Ccy			DFG	Plus caving sands	14	12	30	-1	3.59	48	
ZG61	12.0	14.0	3523631	71531	Og	Ccy			DFG	Plus caving sands	16	16	76	-1	2.35	31	
ZG61	14.0	16.0	3523632	71531	Og	CcySs			DG	EOH in Bioturbated lst	17	19	58	-1	3.20	76	
ZG62	0.0	2.0	3523633	71542	Oha	Cg			LK								
ZG62	2.0	4.0	3523634	71542	OhaOg	CsCcy			DB								
ZG62	4.0	6.0	3523635	71542	Og	Ccy			DG								
ZG62	6.0	8.0	3523636	71542	Og	Ccy			DG								
ZG62	8.0	10.0	3523637	71542	Og	Ccy			DG								
ZG62	10.0	12.0	3523638	71542	Og	Ccy			DG								
ZG62	12.0	13.5	3523639	71542	Og	Ss			DG	Bioturbated lst							
ZG63	0.0	2.0	3523640	71531	Og	Ccy			DGN	base of gravel pit	18	25	35	-1	0.31	18	
ZG63	2.0	4.0	3523641	71531	Og	Ccy			DB		13	24	365	-1	2.31	19	
ZG63	4.0	6.0	3523642	71531	Og	Ccy			DG		15	20	295	-1	4.71	21	
ZG63	6.0	8.0	3523643	71531	Og	Ccy			DGB		17	20	235	-1	2.27	27	
ZG63	8.0	10.0	3523644	71531	Og	Ccy			DGN		16	19	290	-1	3.51	27	
ZG63	10.0	11.5	3523645	71531	Og	CcySs	Ma		DG	Fine g/s lst	17	16	53	-1	2.40	182	
ZG64	0.0	2.0	3523646	71531	Oha	CsCg			LK		3	-3	20	-1	0.27	24	
ZG64	2.0	4.0	3523647	71531	Og	Ccy			DG	Soupy	18	6	46	-1	0.64	20	
ZG64	4.0	5.5	3523648	71531	Og	CcySs			DG		14	10	125	-1	3.17	36	
ZG65	0.0	2.0	3523649	71531	OhaOg	CgOvCcy			B		7	9	28	-1	0.39	28	
ZG65	2.0	3.0	3523650	71531	Og	CcySs			DG		23	33	170	-1	1.24	30	
ZG66	0.0	2.0	3523651	71531	OgOha	CcyCg			DGB		11	11	58	-1	0.73	31	
ZG66	2.0	3.7	3523652	71531	Og	CcySs			DGN		24	17	895	-1	2.13	54	
ZG67	0.0	2.0	3523653	71531	OgOha	CcyCg			LB		2	-3	18	-1	0.29	19	
ZG67	2.0	4.0	3523654	71531	Og	Ccy			DG		21	22	105	-1	2.03	32	
ZG67	4.0	6.0	3523655	71531	Og	Ccy			DGB		18	19	495	-1	3.36	37	
ZG67	6.0	6.8	3523656	71531	Og	Ss	Vn	Cc	G		9	9	320	-1	2.68	66	
ZG68	0.0	1.0	3523657	71531	Oha	Cg			LK		6	-3	25	-1	1.81	37	
ZG68	1.0	2.0	3523657	71531	Og	Ccy			B		6	-3	25	-1	1.81	37	

503082

APPENDIX 2: Grieves Prospect - GRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG68	2.0	4.0	3523658	71531	Og	Ccy			DB		12	14	54	-1	7.37	35	
ZG68	4.0	6.0	3523659	71531	Og	Ccy			DB		19	38	995	-1	4.74	28	
ZG68	6.0	8.0	3523660	71531	Og	Ccy			DG		12	22	465	-1	2.77	66	
ZG68	8.0	8.5	3523661	71531	Og	Ccy			LG	Coarse sandy lst	6	4	1507	-1	13.16	81	
ZG69	0.0	2.0	3523662	71531	Qha	Cg			LK		3	-3	30	-1	0.35	27	
ZG69	2.0	4.0	3523663	71531	Og	Ccy			DB		6	6	53	-1	8.45	27	
ZG69	4.0	4.1	3523664	71531	Og	Ccy			DBG	EOH in cherty lst	10	21	46	-1	2.36	43	
ZG70	0.0	1.0	3523665	71531	Qha	Cg			LK		7	4	21	-1	0.54	24	
ZG70	1.0	2.0	3523665	71531	Og	Ccy			DB		7	4	21	-1	0.54	24	
ZG70	2.0	4.0	3523665	71531	Og	Ccy			DBDG		18	25	675	-1	9.37	32	
ZG70	4.0	6.0	3523667	71531	Og	Ccy			DG		22	21	165	-1	4.15	37	
ZG70	6.0	7.0	3523668	71531	Og	SlS			LG	Lime mudstone with shaley wisps	8	7	35	-1	2.93	109	
ZG71	0.0	1.0	3523669	71531	Qha	Cg			LK		12	12	110	-1	1.16	22	
ZG71	1.0	2.0	3523669	71531	Og	Ccy			DB		12	12	110	-1	1.16	22	
ZG71	2.0	4.0	3523670	71531	Og	Ccy			DG		18	19	175	-1	3.60	27	
ZG71	4.0	6.0	3523671	71531	Og	Ccy			DG		20	14	73	-1	8.75	31	
ZG71	6.0	7.0	3523672	71531	Og	Ccy			DG	EOH in DG fine g/s lst	10	9	93	-1	6.65	82	
ZG72	0.0	2.0	3523673	71531	Qha	Cg			LB		7	16	625	-1	2.51	25	
ZG72	2.0	4.0	3523674	71531	Og	Ccy			DB	Minor sand	17	74	3830	-1	4.66	21	
ZG72	4.0	4.8	3523675	71531	Og	CcySlS			BLG	Coarse g/s lst	15	155	2200	-1	2.67	81	
ZG73	0.0	3.0			Qha	Cg			LK								
ZG73	3.0	5.0	3523676	71531	OgQha	CcyCs			DBG	Minor sand	14	40	200	-1	1.97	30	
ZG73	5.0	7.0	3523677	71531	Og	Ccy			DG	Minor caving sand	19	38	260	-1	3.49	44	
ZG73	7.0	9.0	3523678	71531	Og	SlS	We	Cy	DB		16	62	720	-1	3.42	36	
ZG73	9.0	11.0	3523679	71531	Og	Ccy			G		15	55	1325	-1	4.19	39	
ZG73	11.0	12.8	3523680	71531	Og	CcySlS	Ma		G	Fine g/s massive lst	21	24	590	-1	2.67	49	
ZG74	0.0	2.0	3523681	71531	Qha	Cg			LK		3	15	141	-1	0.35	27	
ZG74	2.0	3.0	3523682	71531	Qha	Cg			LK		15	331	15000	-1	16.54	2002	
ZG74	3.0	4.0	3523682	71531	Og	Ccy			G		15	331	15000	-1	16.54	2002	
ZG74	4.0	6.0	3523683	71531	Og	Ccy			G		24	670	13400	1	4.39	501	
ZG74	6.0	8.0	3523684	71531	Og	Ccy			G		29	750	26000	1	12.00	1082	
ZG74	8.0	10.0	3523685	71531	Og	Ccy			G		19	257	26000	1	15.32	1794	
ZG74	10.0	12.0	3523686	71531	Og	Ccy			G		28	840	39300	1	11.84	1431	
ZG74	12.0	14.0	3523687	71531	Og	CcySlS			G	Minor sandy lst	170	2150	42600	5	18.46	2615	
ZG74	14.0	14.5	3523688	71531	Og	SlS	Ma		G	Massive sandy lst + minor clay	29	990	30900	1	19.33	1761	
ZG75	0.0	1.5	3523689	71532	Qha	Cg			LK		2	-3	50	-1	0.37	31	
ZG75	1.5	2.5			Qha	Cg			LK								
ZG75	2.5	4.0	3523690	71532	Qha	Cg			LK		4	-3	48	-1	0.29	24	
ZG75	4.0	6.0	3523691	71532	OgQha	CcyCs			EG	Lot of caving sand	6	72	2951	-1	0.34	27	
ZG75	6.0	8.0	3523692	71532	OgQha	CcyCs			EG	Lot of caving sand	8	79	6400	-1	0.42	32	
ZG75	8.0	10.0	3523693	71532	OgQha	CcyCs			EG	Lot of caving sand	6	56	4674	1	0.49	34	
ZG75	10.0	12.0	3523694	71532	Og	Ccy			EG	Minor caving sand	9	168	7400	-1	0.70	48	
ZG75	12.0	14.0	3523695	71532	Og	CcySlS			EGLG	Fine g/s massive lst	20	236	34400	-1	3.18	676	
ZG76	0.0	3.0			Qha	Cg			LK								
ZG76	3.0	4.0	3523696	71532	Qha	Cg			LK		10	38	929	-1	0.62	37	
ZG76	4.0	5.0	3523696	71532	Og	Ccy			EG		10	38	929	-1	0.62	37	
ZG76	5.0	7.0	3523697	71532	OgQha	CcyCs			LB DG	Caving sand and grit	12	88	3329	-1	1.37	367	
ZG76	7.0	8.4	3523698	71532	Og	CcySlS			BLG	Fine g/s massive lst	5	15	1648	-1	1.60	533	
ZG77	0.0	4.7			Qha	Cg			LK								
ZG77	4.7	5.0	3523699	71532	Og	Ccy			DBG		19	246	3734	1	2.59	91	
ZG77	5.0	5.3	3523700	71532	Og	CcySlS			G	Minor massive med g/s lst	11	211	2128	1	1.40	158	
ZG78	0.0	4.0			Qha	Cg			LK								
ZG78	4.0	4.9	3523701	71532	Og	CcySlS			G	G fine g/s lst	9	19	748	-1	1.03	100	

563083

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG79	0.0	2.0			Oha	Cg			LK								
ZG79	2.0	3.0	3523702	71532	Oha	Cg			LK		13	131	965	-1	2.75	30	
ZG79	3.0	4.0	3523702	71532	Og	Ccy			GG		13	131	965	-1	2.75	30	
ZG79	4.0	6.0	3523703	71532	Og	Ccy			GG		18	67	1120	-1	4.49	53	
ZG79	6.0	8.0	3523704	71532	Og	CcySls			GLO	DG fine g/s lst	17	38	270	-1	2.19	56	
ZG79	8.0	9.6	3523705	71532	Og	Sls	Ma		GG	DG fine g/s lst	9	21	230	-1	1.72	124	
ZG80	0.0	2.0	3523706	71532	Og	CcyCv			LGB	Minor veg/peat	47	695	41	-1	0.41	24	
ZG80	2.0	4.0	3523707	71532	Og	Ccy			DGOBLB		140	815	81	1	2.23	32	
ZG80	4.0	6.0	3523708	71532	Og	CcySls			LG	WG sandy lst	11	690	28	-1	0.46	23	
ZG80	6.0	8.0	3523709	71532	Og	Sls			LGDG	Sandy lst	37	356	41	1	0.49	26	
ZG80	8.0	10.0	3523710	71532	Og	SlsCcy			LGDG	Sandy lst	77	695	861	2	1.43	34	
ZG80	10.0	12.0	3523711	71532	Og	Ccy			N		31	423	3040	1	3.06	50	
ZG80	12.0	14.0	3523712	71532	Og	Ccy	Ds	Py	N	Abundant Py	23	464	4280	1	11.34	45	
ZG80	14.0	16.0	3523713	71532	Og	Ccy	Ds	Py	G	Abundant Py	30	715	2299	2	23.95	30	
ZG80	16.0	18.0	3523714	71532	Og	Sls	Ds	Py	G	Sandy lst + Py washing in?	20	510	708	-1	17.64	102	
ZG80	18.0	19.7	3523715	71532	Og	Sls	Ds	Py	G	Sandy lst + Py washing in?	7	487	682	-1	2.52	160	
ZG81	0.0	2.0	3523716	71532	OhaOg	CcyCvCg			EG		8	46	35	-1	0.52	33	
ZG81	2.0	4.0	3523717	71532	OgOha	CcyCg			LB	Minor gravel	3	39	25	-1	0.35	26	
ZG81	4.0	6.0	3523718	71532	Og	Ccy			EG		27	300	3378	-1	3.64	30	
ZG81	6.0	8.0	3523719	71532	Og	Sls			G	Sandy lst	16	84	460	-1	3.89	236	
ZG81	8.0	9.5	3523720	71532	Og	Sls			G	Med-line g/s lst	9	44	215	-1	2.02	378	
ZG82	0.0	2.0	3523721	71532	Oha	Cg			LK		5	32	85	-1	0.53	37	
ZG82	2.0	4.0	3523722	71532	OhaOg	CgCcy			LKGB		12	68	623	-1	1.28	47	
ZG82	4.0	6.0	3523723	71532	Og	Ccy			DGB		26	123	2186	-1	3.79	43	
ZG82	6.0	8.0	3523724	71532	Og	Sls			G		10	344	1464	-1	2.03	288	
ZG82	8.0	9.5	3523725	71532	Og	Sls	Vn	Sd	G		3	276	911	-1	1.07	328	
ZG83	0.0	2.0	3523726	71532	Oha	CvCg			B		16	321	2461	1	1.28	56	
ZG83	2.0	2.6	3523727	71532	Og	Sls	We	Cy	DGDB		14	1700	7000	-1	0.99	163	
ZG84	0.0	2.0	3523728	71532	OhaOg	CvCcyCg			B		7	92	140	-1	0.45	34	
ZG84	2.0	4.0	3523729	71532	Og	Ccy			DB		20	505	3266	-1	2.34	35	
ZG84	4.0	6.0	3523730	71532	Og	Ccy			DEG		21	1950	4412	1	3.68	56	
ZG84	6.0	8.0	3523731	71532	Og	Ccy			DB		30	3600	15400	2	4.87	105	
ZG84	8.0	10.0	3523732	71532	Og	Sls	We	Cy	DB		20	1800	7200	1	4.91	140	
ZG84	10.0	10.5	3523733	71532	Og	Sls	Ma		G	Med g/s lst	7	335	1370	-1	2.99	210	
ZG85	0.0	2.0	3523734	71532	OhaOg	CgCcy			LKB		10	289	471	-1	0.76	37	
ZG85	2.0	4.0	3523735	71532	Og	Ccy			DB		29	2250	4117	1	1.70	38	
ZG85	4.0	6.0	3523736	71532	Og	Sls	Ma		G		7	409	535	-1	0.99	244	
ZG85	6.0	6.4	3523737	71532	Og	Sls	Ma		G	Med g/s lst	7	209	370	-1	1.08	202	
ZG86	0.0	8.0	3523738	71532	Oha	CgCs			LK		6	18	34	-1	0.43	31	
ZG86	8.0	8.5	3523739	71532	Oha	Cg			LK		75	5400	2547	4	2.30	51	
ZG86	8.5	10.0	3523739	71532	Og	Ccy			DG	Minor caving sand	75	5400	2547	4	2.30	51	
ZG86	10.0	12.0	3523740	71532	Og	Ccy			DG	EOH in med-fine g/s massive lst	46	5700	1303	5	1.36	63	
ZG87	0.0	2.0	3523741	71532	OhaOg	CvCcyCg			B		5	20	22	-1	0.53	31	
ZG87	2.0	4.0	3523742	71532	OgOha	CcyCg			DB	Minor gravels	17	555	855	-1	2.35	28	
ZG87	4.0	6.0	3523743	71532	Og	SlsCcy	At	Sd	BYG		12	94	430	-1	1.78	39	
ZG87	6.0	8.0	3523744	71532	Og	Ccy			CB		16	174	676	-1	3.01	36	
ZG87	8.0	9.3	3523745	71532	Og	Sls	Ma		G	Minor G clay	17	97	822	-1	2.88	41	
ZG88	0.0	2.0	3523746	71532	OhaOg	CgCcy			LKGB		13	70	32	-1	0.47	28	
ZG88	2.0	4.0	3523747	71532	Og	CcySls			GEN		36	645	295	-1	1.57	28	
ZG88	4.0	6.0	3523748	71532	Og	CcySls			GEN		20	240	873	-1	2.92	35	
ZG88	6.0	8.0	3523749	71532	Og	CcySls			GEN		15	426	705	1	2.22	39	
ZG88	8.0	10.0	3523750	71532	Og	CcySls			CB		18	227	300	-1	1.28	34	
ZG88	10.0	12.0	3523751	71532	Og	SlsCcy			GELB		14	70	150	-1	0.63	26	

563084

APPENDIX 2. Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DEPTH	DTO	SAMPNO	DPO	BMRLTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG88	12.0	14.0	3523752	71532	Og	StsCoy			GB		18	73	130	-1	0.87	31	
ZG88	14.0	16.0	3523753	71532	Og	Sts			N		20	61	160	-1	1.35	47	
ZG89	0.0	2.0	3523754	71532	Qha	Cg			LK		9	11	23	-1	0.67	30	
ZG89	2.0	4.0	3523755	71532	Og	CoySts			LBG		8	19	31	-1	0.74	29	
ZG89	4.0	6.0	3523756	71532	Og	CoySts			LBG		11	31	27	-1	0.79	28	
ZG89	6.0	8.0	3523757	71532	Og	CoySts			LBG		10	12	27	-1	0.81	29	
ZG89	8.0	10.0	3523758	71532	Og	StsCoy			GB		62	10	130	-1	1.40	31	
ZG89	10.0	12.0	3523759	71532	Og	StsCoy			GBLG		26	6	79	-1	1.81	29	
ZG89	12.0	14.0	3523760	71532	Og	StsCoy			GB		25	10	42	-1	2.53	36	
ZG89	14.0	16.0	3523761	71532	Og	StsCoy			GB		16	10	33	-1	1.26	33	
ZG89	16.0	18.0	3523762	71532	Og	StsCoy			GB		40	25	63	-1	2.58	41	
ZG89	18.0	20.0	3523763	71532	Og	StsCoy			GB		49	44	1054	-1	4.79	50	
ZG89	20.0	22.0	3523764	71532	Og	StsCoy			GB		21	52	285	-1	2.63	51	
ZG89	22.0	24.0	3523765	71532	Og	StsCoy			GB		20	51	110	-1	2.36	48	
ZG89	24.0	26.0	3523766	71532	Og	StsCoy			GB		25	63	145	-1	3.12	44	
ZG89	26.0	28.0	3523767	71532	Og	Coy	Ds	Py	G		26	92	175	-1	3.99	46	
ZG89	28.0	30.0	3523768	71532	Og	Coy	Ds	Py	G		15	118	540	-1	26.17	66	
ZG89	30.0	32.0	3523769	71532	Og	StsCoy	Ds	Py	GB		7	68	425	-1	22.77	129	
ZG89	32.0	34.0	3523770	71532	Og?	Mq					6	31	230	-1	8.78	288	
ZG90	0.0	2.0	3523771	71532	Qha	Cg			LK		5	-3	16	-1	0.58	38	
ZG90	2.0	4.0	3523772	71532	Og	Coy			GB		20	84	652	-1	2.55	35	
ZG90	4.0	6.0	3523773	71532	Og	Coy			GB		19	203	950	1	3.20	52	
ZG90	6.0	8.0	3523774	71532	Og	StsCoy			BG	Fossiliferous	8	38	450	-1	1.73	492	
ZG90	8.0	10.0	3523775	71532	Og	Sts			LGB		5	24	200	-1	1.93	552	
ZG90	10.0	10.3	3523776	71532	Og	Sts			LGB		5	24	215	-1	1.39	563	
ZG91	0.0	2.0	3523777	71532	Qha	CgCv			B		5	11	27	-1	0.64	39	
ZG91	2.0	4.0	3523778	71532	Og	Coy			GB		20	315	1844	-1	2.30	47	
ZG91	4.0	6.0	3523779	71532	Og	Coy			GB		22	187	4921	1	9.05	57	
ZG91	6.0	8.0	3523780	71532	Og	Coy			GB		27	1200	5300	1	12.14	52	
ZG91	8.0	10.0	3523781	71532	Og	StsCoy			GB		11	850	1691	-1	13.20	178	
ZG91	10.0	12.0	3523782	71532	Og	StsCoy	Ds	Py	GB		5	370	695	-1	0.76	319	
ZG91	12.0	14.0	3523783	71532	Og	Sts			GB		3	246	195	-1	0.50	271	
ZG91	14.0	16.0	3523784	71532	Og	Sts			GN		4	416	285	-1	0.61	293	
ZG91	16.0	18.0	3523785	71532	Og	Sts			GN		4	464	270	-1	0.83	313	
ZG92	0.0	2.0	3523786	71532	QhaOg	CgCvCoy			B		9	432	603	-1	1.09	36	
ZG92	2.0	4.0	3523787	71532	Og	Coy			GB		34	15200	12900	5	9.97	51	
ZG92	4.0	6.0	3523788	71532	Og	Coy			GB		41	13100	10600	5	10.66	62	
ZG92	6.0	8.0	3523789	71532	Og	StsCoy			GB		13	2400	2335	1	2.05	151	
ZG92	8.0	9.0	3523790	71532	Og	Sts			G		5	550	460	-1	0.91	151	
ZG93	0.0	2.0	3523791	71532	QhaOg	CgCvCoy			B		4	59	55	-1	0.34	23	
ZG93	2.0	4.0	3523792	71532	Og	Coy			VB		12	378	793	1	3.87	51	
ZG93	4.0	4.5	3523793	71532	Og	Sts			G		3	40	94	-1	0.34	139	
ZG94	0.0	1.8	3523794	71532	QhaOg	CgCoySts			BG		6	26	57	-1	0.49	37	
ZG95	0.0	2.0	3523795	71532	QhaOg	CgCvCoy			B		7	190	165	-1	0.31	21	
ZG95	2.0	3.0	3523796	71532	Og	Sts			G		9	775	707	-1	1.18	111	
ZG96	0.0	2.0	3523797	71532	QhaOg	CgCoy			LKB		8	161	270	-1	0.77	23	
ZG96	2.0	4.0	3523798	71532	Og	StsCoy			DGB		9	338	1007	-1	15.42	25	
ZG96	4.0	6.0	3523799	71532	Og	StsCoy			DGB		13	640	800	1	4.49	30	
ZG96	6.0	8.0	3523800	71532	Og	Sts			GN		10	60	1373	-1	2.28	74	
ZG97	0.0	2.0	3523801	71532	QhaOg	CgCoy			B		4	32	20	-1	0.46	25	
ZG97	2.0	4.0	3523802	71532	Og	Coy			LB		9	70	150	-1	0.79	22	
ZG97	4.0	6.0	3523803	71532	Og	Coy			LB		14	36	799	-1	1.57	30	
ZG97	6.0	8.0	3523804	71532	Og	StsCoy			GNGB		14	27	395	-1	1.74	48	

563087

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMR/LITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG97	8.0	10.0	3523805	71532	Og	SlsCoy			GNGB		14	16	98	1	1.68	57	
ZG97	10.0	12.0	3523806	71532	Og	SlsCoy			GNLG		12	14	145	1	1.42	56	
ZG97	12.0	13.0	3523807	71532	Og	Sls			GN		11	13	94	1	1.97	193	
ZG98	0.0	2.0	3523808	71532	OhaOg	CgCoy			LKB		4	11	37	1	0.80	39	
ZG98	2.0	4.0	3523809	71532	Og	Coy			G		23	11	32	-1	0.85	35	
ZG98	4.0	6.0	3523810	71532	Og	Coy			G		33	9	55	-1	1.00	38	
ZG98	6.0	8.0	3523811	71532	Og	SlsCoy			G		21	12	105	-1	1.29	39	
ZG98	8.0	10.0	3523812	71532	Og	SlsCoy			G		17	20	100	-1	1.58	39	
ZG98	10.0	12.0	3523813	71532	Og	SlsCoy			G		19	20	130	-1	1.67	36	
ZG98	12.0	14.0	3523814	71532	Og	SlsCoy			G		17	22	110	-1	1.51	40	
ZG98	14.0	16.0	3523815	71532	Og	SlsCoy			G		15	47	170	-1	1.76	48	
ZG98	16.0	18.0	3523816	71532	Og	SlsCoy			G		20	49	300	-1	2.04	55	
ZG98	18.0	20.0	3523817	71532	Og	SlsCoy			G		21	80	732	-1	2.04	49	
ZG98	20.0	22.0	3523818	71532	Og	Coy			LBG		22	119	390	-1	1.96	137	
ZG98	22.0	24.0	3523819	71532	Og	Coy			LB		18	71	450	-1	1.57	70	
ZG98	24.0	25.6	3523820	71532	Og	CoySls			LBN		12	100	485	-1	10.13	174	
ZG99	0.0	2.0	3523821	71532	Oha	Cg			LK		9	26	100	-1	1.43	37	
ZG99	2.0	4.0	3523822	71532	Og	Coy			GB		16	65	505	-1	2.22	36	
ZG99	4.0	6.0	3523823	71532	Og	Coy			VB		24	429	1641	1	6.59	83	
ZG99	6.0	8.0	3523824	71532	Og	Coy			VB		6	269	370	-1	2.22	455	
ZG99	8.0	10.0	3523825	71532	Og	SlsCoy			GB		4	79	160	-1	2.29	664	
ZG99	10.0	12.0	3523826	71532	Og	SlsCoy			GVB		4	92	150	-1	0.94	342	
ZG99	12.0	14.0	3523827	71532	Og	SlsCoy			GVB		6	84	130	-1	0.97	307	
ZG99	14.0	16.0	3523828	71532	Og	SlsCoy	Ds	Fy	GB		5	107	99	-1	1.47	345	
ZG99	16.0	18.0	3523829	71532	Og	SlsCoy	Ds	Fy	GB		12	248	240	-1	2.82	369	
ZG99	18.0	20.0	3523830	71532	Og	Coy			LGB		25	489	769	-1	3.83	173	
ZG99	20.0	22.0	3523831	71532	Og	Coy			LB		14	275	815	-1	3.05	166	
ZG99	22.0	23.8	3523832	71532	Og	Sls			G		3	51	195	-1	2.81	212	
ZG100	0.0	2.0	3523833	71532	Oha	CgCoy			B		5	27	150	-1	0.43	29	
ZG100	2.0	2.4	3523834	71532	Og	CoySls			B		6	27	150	-1	0.73	85	
ZG101	0.0	2.0	3523835	71532	Oha	Cg			LK		3	3	8	-1	0.35	28	
ZG101	2.0	3.5	3523836	71532	Og	CoySls			B		11	16	49	-1	0.85	38	
ZG102	0.0	2.0	3523837	71532	Og	SshCoy	We		B		14	271	205	1	1.17	12	
ZG102	2.0	4.0	3523838	71532	Og	SshCoy	We		B		10	92	445	-1	4.59	21	
ZG102	4.0	6.0	3523839	71532	Og	SshCoy	We		B		18	150	885	-1	2.53	23	
ZG102	6.0	8.0	3523840	71532	Og	SshCoy	We		B		29	130	375	-1	1.73	40	
ZG102	8.0	10.0	3523841	71532	Og	Coy			VB		22	282	1003	1	4.83	108	
ZG102	10.0	12.0	3523842	71532	Og	Coy			VB		21	397	1095	1	2.69	167	
ZG102	12.0	14.0	3523843	71532	Og	Coy			VB		31	530	1115	1	8.93	148	
ZG102	14.0	16.0	3523844	71532	Og	Coy			VB		18	500	857	1	8.40	147	
ZG102	16.0	18.0	3523845	71532	Og	Sls	Vn	Cc	B		2	30	98	-1	0.45	238	
ZG102	18.0	20.0	3523846	71532	Og	Sls	Vn	Cc	B		5	105	230	-1	1.01	696	
ZG103	0.0	2.0	3523847	71532	OhaOg	CgCoy			LKB		12	65	155	-1	1.00	59	
ZG103	2.0	4.0	3523848	71532	Og	Coy			GB		16	53	155	-1	2.93	45	
ZG103	4.0	4.7	3523849	71532	Og	CoySls			GB		12	44	250	-1	3.43	121	
ZG108	0.0	2.0			Oha	Cg											
ZG108	2.0	4.0	3758001	77120	Og	Coy			MDGB	gritty	129	2473	4109	1	0.54	25	
ZG108	4.0	6.0	3758002	77120	Og	Coy			DB	decomposed Sls frags	124	2200	21100	1	1.09	29	2.50
ZG108	6.0	8.0	3758003	77120	Og	Coy			DB	gritty	90	1500	11700	1	0.91	22	1.55
ZG108	8.0	10.0	3758004	77120	Og	Sls			LB	decomposed	28	600	103000	1	3.43	24	9.40
ZG108	10.0	12.0	3758005	77120	Og	Coy			DB	decomposed Sls frags	26	500	53800	1	2.55	135	5.50
ZG108	12.0	14.0	3758006	77120	Og	Coy			B	Sls frags	9	200	10700	1	0.96	212	1.20
ZG108	14.0	16.0	3758007	77120	Og	Coy			DB	calc arenite Sls frags	8	28	1621	-1	0.61	183	

363086

APPENDIX 2: Grievs Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG108	16.0	18.0	3758008	77120	Og	Ccy			DG	W-G carbonaceous Sls frags	7	37	1796	-1	1.25	366	
ZG108	18.0	20.0	3758009	77120	Og	Sls			LG	with qtz, + vein calcite - fault?	6	81	4794	-1	1.34	273	
ZG108	20.0	21.0	3758010	77120	Og	Sls			LG	with qtz, + vein calcite - fault?	6	78	3105	-1	0.88	196	
ZG108	21.0	24.0	3758011	77120	Og	Sls				broken, prominent calcite + qtz veining	5	60	3334	-1	1.90	824	
ZG108	24.0	26.0	3758012	77120	Og	Sls				broken, prominent calcite + qtz veining	4	221	3001	-1	0.72	201	
ZG108	26.0	28.0	3758013	77120	Og	Sls	Ds	Fy	DG	prominent vein calcite, minor clay	52	2500	7200	2	0.94	380	
ZG108	28.0	30.0	3758014	77120	Og	Ccy			DG	lesser Sls with prominent calcite & qtz veining	9	300	17300	1	4.25	1205	0.57
ZG108	30.0	31.0	3758015	77120	Og	Sls			DG	foliated, calcite veined	9	200	10900	-1	2.86	947	0.69
ZG109a	0.0	3.0			Cha	Cg											
ZG109a	3.0	4.0			Og	Ccy			B								
ZG109a	4.0	5.0	3909067	77130	Og	Sls			G	calc-arenite	3	38	3573	-1	0.68	188	
ZG109	0.0	6.0			Cha	Cg											
ZG110	0.0	12.0			Cha	Cg											
ZG110	12.0	13.0	3758016	77120	Og	Sls			C	calcite veined, lesser B Ccy	3	51	5800	-1	2.41	113	
ZG111	0.0	3.0			Cha	Cg											
ZG111	3.0	4.0	3758017	77120	Og	Ccy			B		10	34	544	-1	1.29	42	
ZG111	4.0	6.0	3758018	77120	Og	Ccy			BN	minor Sls frags	10	68	1313	-1	1.35	117	
ZG111	6.0	8.0	3758019	77120	Og	Ccy			DG	prominent vein calcite + Sls	4	16	325	-1	0.56	87	
ZG111	8.0	8.5	3758020	77120	Og	Sls			DG	prominent calcite veining	6	27	829	-1	0.80	108	
ZG112	0.0	4.0			Cha	Cg											
ZG113	0.0	4.3			Cha	Cg											
ZG113	4.3	6.0	3758021	77120	Og	Ccy			DB		10	58	1789	-1	1.38	29	
ZG113	6.0	8.0	3758022	77120	Og	Ccy			DB		10	43	1402	1	2.58	41	
ZG113	8.0	10.0	3758023	77120	Og	Ccy			DB		17	70	2192	-1	3.13	41	
ZG113	10.0	12.0	3758024	77120	Og	Ccy			DB		19	128	5600	1	6.36	50	
ZG113	12.0	12.5	3758025	77120	Og	Ccy			DB	bottomed in oolitic Sls with calcite veining	7	25	964	1	2.26	51	
ZG114	0.0	6.0			Cha	Cg											
ZG114	6.0	8.0	3758026	77120	Og	Ccy			DGB	DG calcite veined calc-arenite frags	21	112	7400	2	4.98	69	
ZG114	8.0	9.0	3758027	77120	Og	Ccy			NDB	hole finished when rod string parted	15	57	1632	-1	2.58	86	
ZG115	0.0	2.8			Cha	Cg											
ZG115	2.8	4.0	3758028	77120	Og	Ccy			LGLB		41	2300	93200	2	1.48	131	4.60
ZG115	4.0	6.0	3758029	77120	Og	Ccy			LB		65	4400	41600	3	1.84	83	2.25
ZG115	6.0	8.0	3758030	77120	Og	Ccy			LGLB		72	3200	49600	3	3.67	493	2.55
ZG115	8.0	10.0	3758031	77120	Og	Ccy			LBLG	lesser sandy Sls	21	600	30200	1	4.24	1427	2.50
ZG115	10.0	12.0	3758032	77120	Og	Sls				minor G-B clay	7	172	52300	1	9.53	5300	0.90
ZG115	12.0	14.0	3758033	77120	Og	Ccy			DG	lesser sandy Sls	21	600	26800	1	3.75	910	2.90
ZG115	14.0	16.0	3758034	77120	Og	Ccy			DG	lesser sandy Sls	25	4400	15400	3	2.35	507	1.55
ZG115	16.0	18.0	3758035	77120	Og	Ccy			DG	lesser sandy Sls	1369	4200	41700	24	8.06	2092	1.80
ZG115	18.0	20.0	3758036	77120	Og	Ccy	Al	Sd	DG	minor bands of YG sideritic carbonate	2623	24100	71900	69	12.30	1829	3.50
ZG115	20.0	22.0	3758037	77120	Og	Ccy	Al	Sd	LGDG	rare YB carbonate with Sd	167	6100	32000	7	7.25	620	3.00
ZG115	22.0	24.0	3758038	77120	Og	Ccy	Al	Sd	G	minor Sd carbonate frag.	53	4300	35800	4	9.37	2872	2.45
ZG115	24.0	26.0	3758039	77120	Og	Sls			DG	sandy, lesser DG clay	23	400	43900	1	17.80	5500	2.80
ZG115	26.0	28.0	3758040	77120	Og	Sls	Al	SdSu?		honeycombed, heavy, broken, lesser N clay	33	300	69700	1	29.40	8800	1.05
ZG115	28.0	28.5	3758041	77120	Og	Sls	Al	SdSu?		honeycombed, heavy, broken, lesser N clay	82	700	72300	2	21.10	8800	0.83
ZG116	0.0	3.1			Cha	Cg											
ZG116	3.1	3.5			Og	Ccy											
ZG116	3.5	6.0	3758042	77120	Og	Ccy			MDGLB		56	2000	13200	2	3.33	602	1.15
ZG116	6.0	8.0	3758043	77120	Og	Ccy	AIDs	SdPy	DG	lesser Sls	35	1200	84500	1	8.29	3982	1.80
ZG116	8.0	10.0	3758044	77120	Og	Ccy	AIDs	SdPy	MG	lesser Sls	27	900	114000	1	9.39	6200	1.65
ZG116	10.0	12.0	3758045	77120	Og	Ccy			MGO	lesser Sls	228	13000	63700	4	13.10	4839	1.35
ZG116	12.0	14.0	3758046	77120	Og	Ccy			MFLB	sim. to clays in DDH106 at same strat. level	60	2500	21900	3	9.71	2010	0.99
ZG116	14.0	16.0	3758047	77120	Og	Ccy			MER	with qtz	47	5900	9500	1	9.14	659	
ZG116	16.0	18.0	3758048	77120	Og	Ccy			O	trace highly reflective W banding	56	3520	2697	1	10.20	221	

503087

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG116	18.0	20.0	3758049	77120	Og	Ccy			O	trace highly reflective W banding	50	2008	4456	1	10.10	362	
ZG116	20.0	22.0	3758050	77120	Og	Ccy			FB		69	2000	7600	1	19.80	993	
ZG116	22.0	24.0	3758051	77120	Og	Ccy			FB		73	1700	7100	1	15.40	1010	
ZG116	24.0	26.0	3758052	77120	Og	Ccy			FB	heamaitic	40	634	3249	1	15.80	583	
ZG116	26.0	28.0	3758053	77120	Og	Ccy			FB	heamaitic	82	6700	6700	1	19.40	858	
ZG116	28.0	30.0	3758054	77120	Og	Ccy			LB		68	10400	3900	-1	11.50	378	
ZG116	30.0	32.0	3758055	77120	Og	Ccy			LB	lessor chert (Om)	40	6700	2300	1	7.36	231	
ZG116	32.0	34.0	3758056	77120	Og	Ccy			LB	lessor chert (Om)	25	2803	1398	1	4.53	178	
ZG116	34.0	35.0	3758057	77120	Om	Sch				prominent LB clay	34	3625	1812	1	6.16	226	
ZG117	0.0	4.0			Oha	Cg											
ZG117	4.0	6.0	3908998	77129	Og	Ccy			B	peaty	68	3500	78600	-1	1.39	52	5.68
ZG117	6.0	8.0	3908999	77129	Og	Ccy			MUBDG		15	162	73200	-1	1.70	110	5.47
ZG117	8.0	10.0	3909000	77129	Og	Ccy			MUBDG		22	600	112000	-1	2.39	110	8.09
ZG117	10.0	12.0	3909058	77129	Og	Ccy			DG	lessor K fine Sst	66	9400	13800	2	2.95	351	0.91
ZG117	12.0	14.0	3909059	77129	Og	Sls			DG	calc-arenite, lessor K fine Sst + DG clay	15	516	18100	-1	2.23	421	1.56
ZG117	14.0	16.0	3909060	77129	Og	Sls			DG	granular calc-arenite, lessor DG clay	10	238	15500	-1	2.19	336	1.75
ZG117	16.0	18.0	3909061	77129	Og	Sls	Vn		DG	granular calc-arenite, lessor DG clay	11	333	14100	1	1.97	705	1.20
ZG117	18.0	19.0	3909062	77129	Og	Sls	Fs	Py	DG	granular calc-arenite, lessor DG clay	12	179	8300	-1	2.09	626	
ZG118a	0.0	5.6			Oha	Cg											
ZG118a	5.6	8.0	3909063	77129	Og	Ccy			B		10	41	1212	-1	0.38	25	
ZG118a	8.0	10.0	3909064	77129	Og	Ccy			B	prominent qtzite gravel redrill	8	37	1848	-1	0.61	38	
ZG118a	10.0	12.0	3909065	77129	Og	Ccy			B	lessor LG Sls	11	63	6800	-1	1.04	72	
ZG118a	12.0	13.0	3909066	77129	Og	Sls			MDLG	coarse-line calc-arenite	7	18	2695	-1	0.66	102	
ZG118	0.0	5.0			Oha	Cg											
ZG118	5.0	6.0	3758058	77121	Og	Ccy			DB		8	113	3641	-1	0.85	61	
ZG118	6.0	7.5	3758059	77121	Og	Sls				broken + cored calc-arenite, calcite veins, minor Ccy	2	32	2068	-1	0.93	365	
ZG119	0.0	3.5			Oha	Cg											
ZG119	3.5	5.0	3758060	77121	Og	Sls				qtzite chips from Om?	40	42	428	-1	0.85	32	
ZG119	5.0	7.5	3758061	77121	Om	Mq				lessor Sls	25	31	145	-1	0.29	18	
ZG120	0.0	4.0			Oha	Cg											
ZG120	4.0	6.0	3758062	77121	Og	Ccy			BDG		65	7800	2900	1	4.53	118	
ZG120	6.0	8.0	3758063	77121	Og	Ccy	Ds	Py	DGB		89	3419	1414	3	4.68	181	
ZG120	8.0	10.0	3758064	77121	Og	Ccy			MFO	heamitic, minor qtzite ? (Om)	867	7200	7200	6	13.10	491	
ZG120	10.0	12.0	3758065	77121	Og	Ccy			LB		35	3342	2446	-1	7.94	321	
ZG120	12.0	14.0	3758066	77121	Og	Ccy			LB		65	2901	2220	-1	9.41	405	
ZG120	14.0	16.0	3758067	77121	Og	Ccy			LB	gritty	30	510	880	-1	6.96	341	
ZG120	16.0	18.0	3758068	77121	Om	Sss				decomposed, lessor LB clay, trace vein qtz	40	245	532	-1	8.15	208	
ZG120	18.0	20.0	3758069	77121	Og	Ccy			LBDG	lessor decomposed Sss (Om)	28	348	710	-1	2.25	76	
ZG120	20.0	22.0	3758070	77121	Og	Ccy			DG	lessor calc-arenite frag.	54	861	1778	1	2.62	37	
ZG120	22.0	24.0	3758071	77121	Om	Sss				qtz Sss, minor LB clay	45	182	232	-1	2.26	46	
ZG121	0.0	4.0			Oha	Cg											
ZG122	0.0	4.0			Oha	Cg											
ZG123	0.0	5.5			Oha	Cg											
ZG123	5.5	8.0	3758072	77121	Og	Ccy			DB	gritty	7	48	4811	-1	1.75	50	
ZG123	8.0	10.0	3758073	77121	Og	Ccy			B	lessor N decomposed Sls	16	700	60900	-1	3.90	58	7.70
ZG123	10.0	12.0	3758074	77121	Og	Ccy			B	lessor N decomposed Sls	18	200	33800	-1	4.06	498	5.10
ZG123	12.0	14.0	3758075	77121	Og	Sls				prominent vein dol, lessor DG clay	4	57	4005	-1	1.03	995	
ZG123	14.0	16.0	3758076	77121	Og	Ccy			MBG		23	300	27600	1	3.24	534	1.95
ZG123	16.0	18.0	3758077	77121	Og	Ccy			DGB	lessor DG Sss	9	137	28100	-1	15.50	3581	1.90
ZG123	18.0	20.0	3758078	77121	Og	Sls				hard with prominent calcite veining, lessor G clay	5	97	37500	-1	24.70	6000	1.35
ZG123	20.0	22.0	3758079	77121	Og	Ccy			DG	lessor hard Sss with prominent calcite veining	16	4100	68500	1	13.90	2987	2.50
ZG123	22.0	24.0	3758080	77121	Og	Ccy	Ds	Py	MBG	lessor hard, silicified? Sls	19	1500	97800	1	18.10	9600	2.95
ZG124	0.0	4.0			Oha	Cg											

3758078

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG124	4.0	6.0	3758081	77121	Og	Ccy			B	hole ended in DG calc-arenite	11	37	1860	-1	1.16	216	
ZG125	0.0	2.0			Qha	Cg											
ZG125	2.0	4.0	3758082	77121	Og	Ccy			B	gritty	26	300	8400	-1	1.38	33	
ZG125	4.0	6.0	3758083	77121	Og	Ccy			MWLB	calc-arenite frags with prominent dol veining	17	100	4377	-1	1.30	67	
ZG125	6.0	8.0	3758084	77121	Og	Ss				brecciated + dol veined, lesser kaki clay	7	41	1146	-1	0.74	131	
ZG125	8.0	10.0	3758085	77121	Og	Ss				brecciated + dol veined, lesser kaki clay	7	52	1143	-1	0.67	139	
ZG125	10.0	12.0	3758086	77121	Og	Ss				brecciated + dol veined, lesser kaki clay	7	74	1029	-1	0.57	160	
ZG125	12.0	14.0	3758087	77121	Og	Ss				brecciated + dol veined, minor kaki clay	4	36	577	-1	0.26	171	
ZG125	14.0	16.0	3758088	77121	Og	Ss				broken micritic 1st with prominent calcite veining	2	27	665	-1	0.13	146	
ZG126	0.0	2.0	3758089	77121	Og	Ccy			B	peat	7	163	145	-1	0.30	35	
ZG126	2.0	4.0	3758090	77121	Og	Ccy			MGLB		24	182	3312	-1	1.40	50	
ZG126	4.0	6.0	3758091	77121	Og	Ccy			MGLB	minor altered, ankhoritic? calc-arenite frags	16	167	3815	-1	1.86	120	
ZG126	6.0	8.0	3758092	77121	Og	Ss	Ds	Py	G	prominent dol veining + carbonaceous partings	3	11	387	-1	0.97	236	
ZG127	0.0	2.0	3758093	77121	Og	Ccy			B	peat	26	182	327	-1	0.22	21	
ZG127	2.0	4.0	3758094	77121	Og	Ccy			B	peat	26	252	4996	-1	1.20	29	
ZG127	4.0	6.0	3758095	77121	Og	Ccy			MGW		16	36	2723	1	2.04	18	
ZG127	6.0	8.0	3758096	77121	Og	Ccy			MGLB	minor calc-arenite frags	19	103	2138	-1	1.14	83	
ZG127	8.0	10.0	3758097	77121	Og	Ss			G	prominent dol veining + lesser M beige-G clay	7	52	810	-1	0.53	153	
ZG127	10.0	12.0	3758098	77121	Og	Ss			G	prominent dol veining + lesser M beige-G clay	5	55	914	-1	0.32	225	
ZG127	12.0	14.0	3758099	77121	Og	Ss	Ds	Py	MGW	calc-arenite with prominent dol veining, lesser clay	6	46	1383	-1	0.60	117	
ZG127	14.0	16.0	3758100	77121	Og	Ss	Ds	Py	MGW	calc-arenite with prominent dol veining, lesser clay	2	32	2075	-1	0.73	108	
ZG127	16.0	18.0	3758101	77121	Og	Ss			G	calc-arenite with prominent dol veining + B clay	5	60	9500	-1	2.55	112	
ZG127	18.0	20.0	3758102	77121	Og	Ss			G	calc-arenite with prominent dol veining + B clay	7	66	1550	-1	0.74	119	
ZG127	20.0	22.0	3758103	77121	Og	Ss			G	calc-arenite with prominent dol veining + B clay	4	90	1288	-1	0.33	144	
ZG127	22.0	23.0	3758104	77121	Og	Ss			DG	calc-arenite with prominent dol veining	-2	25	1107	-1	0.34	161	
ZG128	0.0	2.0	3758105	77121	Og	Ccy			W	banded, pallid	4	25	207	-1	0.56	22	
ZG128	2.0	4.0	3758106	77121	Og	Ccy			LB	black decomposed 1st frags	142	638	4120	-1	0.84	20	
ZG128	4.0	6.0	3758107	77121	Og	Ccy			LBLG	lesser LG micritic 1st frags with dol veining	34	261	4885	-1	2.08	34	
ZG128	6.0	8.0	3758108	77121	Og	Ss			LG	micritic 1st with prominent dol veining + lesser clay	6	60	2652	-1	1.17	106	
ZG128	8.0	10.0	3758109	77121	Og	Ss				calc-arenite with moderate foliation	4	27	1301	-1	0.84	106	
ZG129	0.0	2.0	3758110	77121	Og	Ccy			B	peat + decomposed N 1st	11	147	25000	-1	1.36	15	3.50
ZG129	2.0	4.0	3758111	77121	Og	Ss			B	decomposed 1st	12	100	28900	-1	3.39	24	6.55
ZG129	4.0	6.0	3758112	77121	Og	Ccy			G		28	132	11200	-1	3.70	30	4.65
ZG129	6.0	8.0	3758113	77121	Og	Ccy			MGLB		28	118	6400	-1	2.30	26	
ZG129	8.0	10.0	3758114	77121	Og	Ss			B	decomposed 1st with dol veining + lesser MG-B clay	9	69	2143	-1	1.84	120	
ZG129	10.0	12.0	3758115	77121	Og	Ss			LG	micritic 1st with prominent dol veining + lesser G clay	6	49	1059	-1	0.68	109	
ZG130	0.0	4.0			Qha	Cg											
ZG130	4.0	6.0	3758116	77121	Og	Ccy			B	peat with decomposed 1st frags	4	16	307	-1	0.30	22	
ZG130	6.0	8.0	3758117	77121	Og	Ccy			MBN		32	185	897	-1	0.99	33	
ZG130	8.0	10.0	3758118	77121	Og	Ccy			DGB		28	157	4231	-1	2.40	33	
ZG130	10.0	12.0	3758119	77121	Og	Ccy			G	lesser pallid dol veined 1st	18	141	2805	-1	1.60	88	
ZG130	12.0	14.0	3758120	77121	Og	Ss				oolitic 1st with prominent dol veining with slickensides	2	21	243	-1	0.17	121	
ZG131	0.0	3.0			Qha	Cg											
ZG131	3.0	4.0			Og	Ccy											
ZG131	4.0	6.0	3758121	77121	Og	Ccy	Ds	Py	DGB	lesser pallid 1st frags + vein dol, trace Py	16	154	3035	-1	2.47	171	
ZG131	6.0	6.5	3758122	77121	Og	Ss			W	recrystallised?	4	37	387	-1	0.80	87	
ZG132	0.0	2.0			Qha	Cg											
ZG132	2.0	4.0	3758123	77121	Og	Ccy			B	peat, + calcite veined calc-arenite	9	41	1269	-1	0.58	81	
ZG132	4.0	6.0	3758124	77121	Og	Ss			G	calc-arenite + lesser DB clay	5	11	289	-1	0.30	96	
ZG133	0.0	4.0			Qha	Cg											
ZG133	4.0	6.0	3758125	77121	Og	Ccy			DG		20	88	2639	-1	2.45	158	
ZG133	6.0	8.0	3758126	77121	Og	Ccy			DG		17	70	1268	-1	4.08	1201	
ZG133	8.0	10.0	3758127	77121	Og	Ccy			DG		10	142	1172	-1	7.58	571	

68089

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	SP%
ZG133	10.0	12.0	3758128	77121	Og	Coy	Ds	Py	DG	minor massive Py frags	13	89	1248	-1	6.52	290	
ZG133	12.0	14.0	3758129	77121	Og	Coy	Ds	Py	DG	massive Py, possibly Sp frags	12	73	3039	-1	15.10	633	
ZG133	14.0	16.0	3758130	77121	Og	Coy	Ds	Py	DG	minor massive Py frags + G calc-arenite frags	7	77	8100	-1	18.10	383	
ZG133	16.0	18.0	3758131	77121	Og	Sls	Ds	Py	DG	Skeletal 1st + lesser DG clay with minor massive Py	5	43	3298	-1	5.55	845	
ZG133	18.0	20.0	3758132	77121	Og	Coy			DGLB	lesser sideritic, pitted G 1st	3	19	969	-1	20.70	5400	
ZG133	20.0	22.0	3758133	77121	Og	Coy			DGLB	lesser sideritic, pitted G 1st	15	136	6300	-1	15.90	3588	
ZG133	22.0	24.0	3758134	77121	Og	Coy			N	lesser pitted hard cream-B 1st? frags	8	121	2883	-1	31.80	7700	
ZG133	24.0	26.0	3758135	77121	Og	Coy	Ds	Py	BDG	pitted DG 1st with trace Py, possible quartzite?	5	45	2104	-1	33.10	7100	
ZG133	26.0	28.0	3758136	77121	Og	Sls			DG	pitted, altered, yellow ankhoritic? skeletal 1st	3	16	1537	-1	37.40	8500	
ZG134	0.0	2.0			Oha	Cg											
ZG134	2.0	4.0	3758137	77121	Og	Coy			B	lesser N decomposed Sls	5	28	70	-1	0.30	41	
ZG134	4.0	6.0	3758138	77121	Og	Coy			DG	lesser B decomposed Sls	5	17	592	-1	0.94	57	
ZG134	6.0	8.0	3758139	77121	Og	Coy			DG	lesser B decomposed Sls	8	49	9400	-1	13.10	48	
ZG134	8.0	10.0	3758140	77121	Og	Coy			DG	lesser B decomposed Sls	11	56	8400	-1	4.27	60	
ZG134	10.0	12.0	3758141	77121	Og	Coy			DG	lesser LG calc-arenite	11	58	7200	-1	4.09	68	
ZG134	12.0	14.0	3758142	77121	Og	Sls			LG	broken calc-arenite	2	11	1324	-1	2.43	91	
ZG134	14.0	15.0	3758143	77121	Og	Sls				calc-arenite with prominent Sdl veining	3	9	1623	-1	3.30	156	
ZG135	0.0	1.0			Oha	Cg											
ZG135	1.0	2.0	3758144	77121	Og	Coy			B	peaty	5	13	52	-1	0.66	47	
ZG135	2.0	4.0	3758145	77121	Og	Coy			B	peaty	6	29	93	-1	0.28	26	
ZG135	4.0	6.0	3758146	77121	Og	Coy			DGB	decomposed Sls	16	216	2315	-1	2.05	54	
ZG135	6.0	8.0	3758147	77121	Og	Coy			MGB	lesser Sls	16	221	4598	-1	4.27	83	
ZG135	8.0	10.0	3758148	77121	Og	Sls			MG		3	67	611	-1	0.86	200	
ZG136	0.0	1.5			Oha	Cg											
ZG136	1.5	4.0	3758149	77121	Og	Coy			DG		17	51	2238	-1	3.86	53	
ZG136	4.0	6.0	3758150	77121	Og	Coy			DG		12	58	6600	-1	4.65	62	
ZG136	6.0	7.0	3758151	77121	Og	Sls	Ds	Py		pitted calc-arenite	10	23	3333	-1	10.50	255	
ZG137	0.0	1.5			Oha	Cg											
ZG137	1.5	4.0	3758152	77121	Og	Coy			DG		15	26	4013	-1	2.50	41	
ZG137	4.0	6.0	3758153	77121	Og	Coy			DG	lesser DG Sdl	12	24	6100	-1	6.48	259	
ZG137	6.0	7.0	3758154	77121	Og	Dls	Ds	Py	MDLG	calc-arenite, minor Sdl veining	3	10	2105	-1	3.65	214	
ZG138	0.0	1.0			Oha	Cg											
ZG138	1.0	1.7	3758155	77121	Og	Sls	Al	Sd	W	pallid banded (ankhoritic?) Sls	4	6	691	-1	0.21	125	
ZG139	0.0	2.0	3758156	77121	Og	Coy			DBW	peaty	12	34	892	-1	1.16	51	
ZG139	2.0	4.0	3758157	77121	Og	Coy			MDGW		19	39	1861	-1	2.91	161	
ZG139	4.0	6.0	3758158	77121	Og	Coy			DG	lesser G calc-arenite	8	5	921	-1	3.36	191	
ZG139	6.0	8.0	3758159	77121	Og	Coy			DG	lesser DG calc-arenite with calcite veining	5	11	1650	-1	4.37	203	
ZG140	0.0	2.0	3758160	77121	Og	Coy			DB	peaty	14	46	572	-1	4.76	25	
ZG140	2.0	4.0	3758161	77121	Og	Coy			DB	peaty	24	36	2434	-1	10.20	43	
ZG140	4.0	6.0	3758162	77121	Og	Sls			G	with minor calcite veining, lesser DG clay	12	13	315	-1	2.38	156	
ZG140	6.0	8.0	3758163	77121	Og	Sls					6	14	348	-1	2.76	151	
ZG141	0.0	0.5			Oha	Cg											
ZG141	0.5	2.0	3758164	77121	Og	Sls			DG	skeletal frags, lesser DG clay	8	18	1331	-1	1.75	82	
ZG141	2.0	4.0	3758165	77121	Og	Coy			MDGLB		22	52	1625	-1	1.66	50	
ZG141	4.0	6.0	3758166	77121	Og	Coy			MDGLB		19	42	4684	-1	3.19	102	
ZG141	6.0	8.0	3758167	77121	Og	Coy			LBG	lesser LB-G clay	5	15	1163	-1	3.27	272	
ZG141	8.0	10.0	3758168	77121	Og	Sls			G	calc-arenite with calcite veining, lesser DG clay	4	6	691	-1	2.33	359	
ZG141	10.0	12.0	3758169	77121	Og	Sls			G	calc-arenite with calcite veining, lesser DG clay	4	11	178	-1	0.92	213	
ZG141	12.0	13.0	3758170	77121	Og	Sls			G	calc-arenite with calcite veining, lesser DG clay	5	8	1048	-1	2.45	267	
ZG142	0.0	2.0	3758171	77121	Og	Coy			DG		24	43	2475	-1	6.77	35	
ZG142	2.0	4.0	3758172	77121	Og	Coy			DG		25	70	1413	-1	1.84	32	
ZG142	4.0	6.0	3758173	77121	Og	Coy			LB		24	77	1026	-1	2.25	66	
ZG142	6.0	8.0	3758174	77121	Og	Sls			DG	prominent calcite veining, broken, minor clay	7	14	324	-1	0.73	181	

563090

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG142	8.0	10.0	3758175	77121	Og	Sls			DG	prominent calcite veining, broken	4	7	1000	-1	1.66	246	
ZG142	10.0	11.0	3758176	77121	Og	Sls			DG	prominent calcite veining, broken	4	4	596	-1	1.38	289	
ZG143	0.0	2.0			Qha	Cg											
ZG143	2.0	3.5	3758177	77121	Og	Sls			DG	calc-arenite, lesser LB clay	19	17	887	-1	1.05	44	
ZG144	0.0	3.0			Qha	Cg											
ZG144	3.0	4.0	3758178	77121	Og	Ccy			DGB	lesser B decomposed Sls	15	20	1038	-1	2.49	41	
ZG144	4.0	6.0	3758179	77121	Og	Sls	Ds	Py	LG	calc-arenite with prominent calcite veining	6	9	293	-1	1.23	139	
ZG145	0.0	2.0			Qha	Cg											
ZG145	2.0	4.0	3758180	77121	Og	Ccy			DB	bottomed in calc-arenite	6	16	309	-1	0.98	33	
ZG146	0.0	1.5			Qha	Cg											
ZG146	1.5	4.0	3758181	77121	Og	Ccy			DGN	bottomed in calcite veined DG calc-arenite	15	52	1079	-1	0.64	76	
ZG147	0.0	3.0			Qha	Cg											
ZG147	3.0	3.5	3758182	77121	Og	Sls			LB		4	7	85	-1	0.27	30	
ZG148	0.0	2.0			Qha	Cg											
ZG148	2.0	4.0	3758183	77121	Og	Sls			DG	calc-arenite, lesser DG clay	5	4	41	-1	0.59	44	
ZG149	0.0	2.0			Qha	Cg											
ZG149	2.0	4.0	3758184	77121	Og	Sls					5	43	52	-1	0.25	28	
ZG149	4.0	6.0	3758185	77121	Og	Ccy			EDG		26	4214	1966	1	1.83	48	
ZG149	6.0	8.0	3758186	77121	Og	Sls			N	decomposed Sls	61	3289	4409	3	0.82	31	
ZG149	8.0	10.0	3758187	77121	Og	Ccy			MWDG	lesser decomposed Sls	87	6800	25100	2	9.26	51	11.10
ZG149	10.0	12.0	3758188	77121	Og	Ccy			MCGW	W - sphalerite, lesser decomposed banded & mottled Sls	17	4600	46200	2	23.50	65	28.70
ZG149	12.0	14.0	3758189	77121	Og	Sls	Ds	Py	DG	decomposed Sls, lesser DG clay	23	5900	67500	2	21.70	145	28.50
ZG149	14.0	16.0	3758190	77121	Og	Sls				broken oolitic Sls	9	560	10500	-1	3.53	506	3.90
ZG150	0.0	1.0			Qha	Cg											
ZG150	1.0	2.0	3758191	77121	Og	Ccy			B	peat	8	96	73	-1	0.60	49	
ZG150	2.0	4.0	3758192	77121	Og	Ccy			B	peat	15	346	3257	-1	1.61	47	
ZG150	4.0	6.0	3758193	77121	Og	Ccy			DG		51	2100	12100	2	15.60	3574	6.05
ZG150	6.0	8.0	3758194	77121	Og	Sls	Ds	Py	LG	oolitic Sls, lesser DG clay	31	1400	14400	1	17.60	5200	3.10
ZG150	8.0	10.0	3758195	77121	Og	Sls			LG	oolitic Sls, broken	8	1500	10300	-1	6.70	1695	2.80
ZG150	10.0	12.0	3758196	77121	Og	Sls			LG	oolitic Sls, broken	2	303	1942	-1	1.63	560	
ZG150	12.0	14.0	3758197	77121	Og	Sls				oolitic Sls	3	356	2750	-1	1.92	522	
ZG151	0.0	1.5			Qha	Cg											
ZG151	1.5	4.0	3758198	77121	Og	Ccy			DB	peat	32	168	1991	-1	3.81	269	
ZG151	4.0	6.0	3758199	77121	Og	Ccy			DB	lesser DG Sls frags	13	56	1327	-1	12.40	4615	
ZG151	6.0	8.0	3758200	77121	Og	Ccy			EG	granular	6	27	1513	-1	18.20	7300	
ZG151	8.0	10.0	3758201	77121	Og	Ccy			EG	granular	7	32	1982	-1	21.30	7800	
ZG151	10.0	11.5	3758202	77121	Og	Sls				fine calc-arenite	4	98	3419	-1	8.31	2859	
ZG152	0.0	3.0			Qha	Cg											
ZG152	3.0	4.0	3758203	77121	Og	Ccy			B	rdd qtz - costean redrill or hole collapse?	12	86	3282	-1	3.23	119	
ZG152	4.0	6.0	3758204	77121	Og	Ccy			B		17	146	2420	-1	4.99	271	
ZG152	6.0	8.0	3758205	77121	Og	Sls				pitted, ankortic?. lesser LG clay + qtz pebbles	7	81	1181	-1	10.10	2495	
ZG152	8.0	10.0	3758206	77121	Og	Sls				pitted, ankortic?. lesser LG clay + qtz pebbles	12	149	1968	-1	4.56	1000	
ZG152	10.0	12.0	3758207	77121	Og	Sls				pitted, ankortic?. lesser LG clay + qtz pebbles	8	150	3792	-1	4.85	1454	
ZG152	12.0	14.0	3758208	77121	Og	Sls				pitted, ankortic?. lesser LG clay + qtz pebbles	6	130	2025	-1	8.68	2992	
ZG152	14.0	16.0	3758209	77121	Og	Sls				pitted, ankortic?. lesser clay	4	566	2559	-1	8.92	3424	
ZG152	16.0	18.0	3758210	77121	Og	Sls				oolitic, rare skeletal frags	6	138	2487	-1	8.58	3516	
ZG152	18.0	20.0	3758211	77121	Og	Sls			R	oolitic, with hematite staining	10	7100	59800	2	4.51	1338	2.35
ZG153	0.0	5.0			Qha	Cg											
ZG153	5.0	6.0	3758212	77121	Og	Ccy			DG		18	87	18000	-1	3.46	639	2.85
ZG153	6.0	8.0	3758213	77121	Og	Ccy			DG	lesser pitted oolitic/skeletal Sls	3	26	2284	-1	2.18	196	
ZG153	8.0	10.0	3758214	77121	Og	Ccy			DG	lesser altered pitted skeletal Sls	5	38	7900	-1	5.00	1831	
ZG153	10.0	12.0	3758215	77121	Og	Ccy			DG	lesser DG granular Sls	16	34	2920	-1	3.46	480	
ZG153	12.0	14.0	3758216	77121	Og	Ccy			DG	lesser DG granular Sls	9	29	7100	-1	3.70	1117	

563091

APPENDIX 2: Grievies Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG153	14.0	16.0	3758217	77121	Og	Coy			DG	lesser DG granular Sls	7	21	3975	-1	2.14	333	
ZG153	16.0	18.0	3758218	77121	Og	Coy			DG	lesser DG granular Sls	8	22	4613	-1	2.32	594	
ZG153	18.0	20.0	3758219	77121	Og	Sls	Ds	Py	DG	lesser DG clay, 5% Py	7	47	25200	-1	10.80	1401	9.95
ZG153	20.0	22.0	3758220	77121	Og	Sls	Ds	Py	DG	lesser DG clay, 5% Py	7	62	42200	-1	16.20	1125	16.30
ZG153	22.0	24.0	3758221	77121	Og	Sls	Ds	Py	DG	lesser DG clay, 5% Py	5	22	8000	-1	8.69	2839	
ZG153	24.0	26.0	3758222	77121	Og	Sls	Ds	Py	DG	3-5% Py	5	38	5900	-1	10.40	3981	
ZG153	26.0	28.0	3758223	77121	Og	Sls	Ds	Py	DG	3-5% Py	10	700	10800	-1	16.20	6400	1.70
ZG153	28.0	30.0	3758224	77121	Og	Sls	Ds	Py	DG	granular Sls, lesser DG clay	5	800	11500	1	14.70	5100	2.35
ZG153	30.0	32.0	3758225	77121	Og	Sls	Ms	Py	LG	R(heamaltic) staining, rdd qtz pebbles	6	500	14000	1	12.60	2113	7.10
ZG153	32.0	34.0	3758226	77121	Og	Sls	Ms	Py	LG	R(heamaltic) staining, rdd qtz pebbles	7	2400	16300	2	8.37	2991	1.20
ZG153	34.0	36.0	3758227	77121	Og	Sls	Ms	Py	LG	R(heamaltic) staining, rdd qtz pebbles	8	800	10300	1	3.89	1383	1.20
ZG153	36.0	38.0	3758228	77121	Og	Sls	Ms	Py	LG	R(heamaltic) staining, 5% Py	5	4000	55300	4	12.80	5500	2.40
ZG153	38.0	40.0	3758229	77121	Og	Sls	Ds	Py	LG	R(heamaltic) staining	6	1700	12600	1	10.80	5600	1.40
ZG153	40.0	42.0	3758230	77121	Og	Sls	Ds	Py	DG	pitted, lesser DG clay	12	2400	44900	1	24.70	3050	22.90
ZG153	42.0	44.0	3758231	77121	Og	Coy			DG	lesser R(heamaltic) oolitic Sls	16	1200	32200	-1	9.77	1510	7.65
ZG154	0.0	4.5			Cha	Og											
ZG154	4.5	6.0	3758232	77121	Og	Coy			DG	lesser DG granular Sls	9	78	20000	-1	2.85	415	2.65
ZG154	6.0	8.0	3758233	77121	Og	Coy			DG	lesser DG granular Sls	4	24	6400	-1	2.27	820	
ZG154	8.0	10.0	3758234	77121	Og	Coy			DG	lesser DG granular Sls	5	12	3886	-1	2.61	731	
ZG154	10.0	12.0	3758235	77121	Og	Coy			DG	lesser DG granular Sls	7	19	3971	-1	3.86	1092	
ZG154	12.0	14.0	3758236	77121	Og	Coy	Ds	Py	DG	lesser DG granular Sls	10	23	2936	-1	2.27	443	
ZG154	14.0	16.0	3758237	77121	Og	Coy	Ds	Py	DG	lesser DG granular Sls	5	21	3171	-1	2.47	857	
ZG154	16.0	18.0	3758238	77121	Og	Coy	Ds	Py	DG	lesser DG granular Sls	9	26	8400	-1	6.68	249	
ZG154	18.0	20.0	3758239	77121	Og	Sls			DG	granular Sls, lesser clay	6	6	4319	-1	6.12	1094	
ZG154	20.0	22.0	3758240	77121	Og	Sls			DG	granular Sls	5	6	3737	-1	3.60	1285	
ZG154	22.0	24.0	3758241	77121	Og	Coy			DG	lesser DG granular Sls	11	65	9800	-1	7.53	2697	
ZG154	24.0	26.0	3758242	77121	Og	Coy	Ds	Py	DG	lesser DG granular Sls	9	26	12800	-1	13.00	3736	5.00
ZG154	26.0	28.0	3758243	77121	Og	SlsCa			DG	Sand, poor recovery - cavity?	7	10	12900	-1	11.80	4531	1.80
ZG154	28.0	30.0	3758244	77121	Og	Sls	Ds	Py	MG		5	20	11400	-1	11.20	4577	1.40
ZG154	30.0	32.0	3758245	77121	Og	Sls	Ds	Py	MG		5	38	7600	-1	9.65	4085	
ZG154	32.0	34.0	3758246	77121	Og	Sls			MG	granular Sls	4	44	6600	-1	9.60	4631	
ZG155	0.0	3.0			Cha	Og											
ZG155	3.0	6.0	3758247	77122	Og	Sls			DG	granular Sls, lesser B&G clay	4	16	7100	-1	3.03	584	
ZG155	6.0	8.0	3758248	77122	Og	Coy			DG	lesser DG granular Sls	7	2900	15200	2	2.41	522	1.95
ZG155	8.0	10.0	3758249	77122	Og	Coy			DG	lesser DG granular Sls	4	329	3335	-1	1.57	405	
ZG155	10.0	12.0	3758250	77122	Og	Coy			DG	lesser DG granular Sls	7	31	6100	-1	4.90	1901	
ZG155	12.0	14.0	3758251	77122	Og	Coy			DG	lesser DG granular Sls	10	20	8600	-1	3.61	1125	
ZG155	14.0	16.0	3758252	77122	Og	Coy	Ds	Py	DG	lesser DG granular Sls	11	52	8500	-1	3.39	579	
ZG155	16.0	18.0	3758253	77122	Og	Sls			DG	granular Sls, lesser DG clay	5	18	6000	-1	3.51	1223	
ZG155	18.0	20.0	3758254	77122	Og	Sls			MG	granular Sls	4	29	17400	-1	3.40	1163	1.70
ZG155	20.0	22.0	3758255	77122	Og	Sls			MG	granular Sls, lesser DG clay	5	48	17600	-1	2.55	806	1.75
ZG155	22.0	24.0	3758256	77122	Og	Sls			MG	granular Sls, lesser DG clay	4	20	6600	-1	2.31	683	
ZG155	24.0	26.0	3758257	77122	Og	Sls	Ds	Py	MDG	granular Sls, lesser B clay	5	83	14100	-1	6.41	1145	4.65
ZG155	26.0	28.0	3758258	77122	Og	Coy			DG	lesser MDG granular Sls	13	900	11200	-1	5.10	1412	2.65
ZG155	28.0	30.0	3758259	77122	Og	Coy			DG	lesser MDG granular Sls	17	74	17600	-1	3.90	1291	9.70
ZG155	30.0	32.0	3758260	77122	Og	Coy	Ds	Py	DG	lesser MDG granular Sls, 5% Py	8	124	16100	1	1.59	3466	20.70
ZG155	32.0	34.0	3758261	77122	Og	Coy	Ds	Py	DGB	lesser pitted, altered DG Sls	5	35	20500	-1	2.72	3024	21.70
ZG155	34.0	36.0	3758262	77122	Og	Sls	Ds	Py	MG		7	24	17600	-1	19.30	6500	4.00
ZG155	36.0	38.0	3758263	77122	Og	Sls	Ds	Py	MG	5%Py	6	9	13500	-1	23.00	7900	6.50
ZG155	38.0	39.0	3758264	77122	Og	Sls	Ds	Py	MG	pitted G Sls	6	9	12000	-1	16.80	9200	0.75
ZG156	0.0	2.5			Cha	Og											
ZG156	2.5	4.0	3758265	77122	Og	Coy			W	lesser W Sls chips	4	7	3617	-1	1.08	128	
ZG156	4.0	6.0	3758266	77122	Og	Coy			W	lesser fine DG Sls	9	19	2437	-1	4.04	288	

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG156	6.0	8.0	3758267	77122	Og	Ccy			LB	lesser Sls	39	130	2472	-1	2.91	256	
ZG156	8.0	9.0	3758268	77122	Og	Ccy			LG	lesser Sls	11	93	1704	1	1.42	303	
ZG156	9.0	12.0	3758269	77122	Og	Ccy			LG	lesser Sls	12	85	4909	-1	3.47	340	
ZG156	12.0	14.0	3758270	77122	Og	Ccy	Ds	Py	G	lesser DG granular Sls	12	111	3150	-1	3.89	1040	
ZG156	14.0	16.0	3758271	77122	Og	Ccy			DG	lesser DG granular Sls with prominent calcite veining	8	85	2705	-1	2.95	1019	
ZG156	16.0	18.0	3758272	77122	Og	Ccy	Ds	Py	W	lesser W granular Sls	5	90	6900	1	1.89	256	
ZG156	18.0	20.0	3758273	77122	Og	Sls	Ds	Py		vein calcite returned only - cavity	3	108	13900	1	12.60	254	11.30
ZG156	20.0	22.0	3758274	77122	Og	Sls	Ds	Py	MG	granular Sls, calcite veined	7	65	4813	-1	4.84	328	
ZG156	22.0	24.0	3758275	77122	Og	Sls	Ds	Py	MG	granular Sls, calcite veined	4	87	28400	-1	7.26	629	8.35
ZG156	24.0	26.0	3758276	77122	Og	Sls	Ds	Py	MG	granular Sls, calcite veined	4	60	21000	-1	12.00	2930	6.70
ZG156	26.0	27.0	3758277	77122	Og	Sls	Ds	Py	LG DG	fine Sls with calcite veining	3	22	6400	-1	3.14	1081	
ZG157	0.0	1.5			Qha	Cg											
ZG157	1.5	3.0	3758278	77122	Og	Sls			LG	fine Sls, lesser peaty clay	10	38	22600	-1	4.16	121	9.80
ZG158	0.0	1.5			Qha	Cg											
ZG158	1.5	4.0	3758279	77122	Og	Sls		Su?	LDG	banded fine Sls, lesser DG clay	9	14	96	-1	1.64	119	
ZG158	4.0	6.0	3758280	77122	Og	Ccy			DG	lesser DG granular Sls	6	14	280	-1	1.50	129	
ZG158	6.0	8.0	3758281	77122	Og	Sls			DG	banded fine Sls	15	10	181	-1	1.68	161	
ZG159	0.0	1.3			Qha	Cg											
ZG159	1.3	4.0	3758282	77122	Og	Ccy			DG	lesser skeletal Sls	16	20	158	-1	1.42	82	
ZG159	4.0	6.0	3758283	77122	Og	Ccy			DG	lesser DG skeletal Sls + DB peaty clay	9	13	67	-1	6.36	130	
ZG159	6.0	8.0	3758284	77122	Og	Sls			DLG	banded skeletal Sls	5	11	43	-1	2.31	131	
ZG160	0.0	1.0			Qha	Cg											
ZG160	1.0	4.0	3758285	77122	Og	Ccy			DB	peat	13	30	389	-1	1.75	35	
ZG160	4.0	6.0	3758286	77122	Og	Ccy			DG		10	26	743	-1	3.52	84	
ZG160	6.0	8.0	3758287	77122	Og	Sls	Ds	Py	Og		9	13	237	-1	4.37	101	
ZG160	8.0	9.0	3758288	77122	Og	Sls			DLG	calc-arenite with calcite veining	7	16	103	-1	6.22	95	
ZG161	0.0	3.0			Qha	Cg											
ZG161	3.0	6.0	3758289	77122	Og	Ccy			B	peat, lesser DG clay + DG Sls	14	16	264	-1	2.35	43	
ZG161	6.0	8.0	3758290	77122	Og	Sls			DCB	decomposed Sls	13	24	260	-1	2.50	52	
ZG161	8.0	10.0	3758291	77122	Og	Ccy			DG	lesser fine Sls	8	20	1054	-1	4.21	91	
ZG161	10.0	12.0	3758292	77122	Og	Ccy			DG	lesser fine Sls	5	5	77	-1	1.57	169	
ZG161	12.0	13.0	3758293	77122	Og	Sls			LDG	fine, lesser DG clay	6	3	63	-1	6.20	136	
ZG162	0.0	2.7			Qha	Cg											
ZG162	2.7	3.2	3758294	77122	Og	Sls			DG	fine calc-arenite, lesser DG clay	9	21	2013	-1	2.10	70	
ZG163	0.0	2.5			Qha	Cg											
ZG163	2.5	4.0	3758295	77122	Og	Ccy			B		14	28	163	1	1.10	45	
ZG163	4.0	6.0	3758296	77122	Og	Ccy			B	lesser G Sls	14	18	188	-1	2.30	54	
ZG163	6.0	7.0	3758297	77122	Og	Sls			DG	fine	3	-3	60	-1	0.60	118	
ZG164	0.0	2.0			Qha	Cg											
ZG164	2.0	4.0	3758298	77122	Og	Ccy			DG		7	7	75	-1	1.59	35	
ZG164	4.0	6.0	3758299	77122	Og	Ccy			DG		18	16	116	-1	1.60	32	
ZG164	6.0	8.0	3758300	77122	Og	Ccy			DG		24	23	732	1	1.55	44	
ZG164	8.0	10.0	3758301	77122	Og	Ccy	Ds	Py	DG	lesser granular, calcite veined Sls	12	20	852	-1	1.77	69	
ZG165	0.0	5.0			Qha	Cg											
ZG165	5.0	6.0	3758302	77122	Og	Ccy			DB	peat	5	4	20	-1	0.59	26	
ZG165	6.0	8.0	3758303	77122	Og	Sls			G	fine, calcite veined, lesser clay	7	8	48	-1	1.21	131	
ZG166	0.0	3.0			Qha	Cg											
ZG166	3.0	6.0	3758304	77122	Og	Ccy			G	lesser pallid G Sls	14	104	1152	-1	1.29	43	
ZG167	0.0	2.0			Qha	Cg											
ZG167	2.0	4.0	3758305	77122	Og	Ccy			N	lesser decomposed Sls	11	67	755	-1	1.79	62	
ZG167	4.0	5.0	3758306	77122	Og	Ccy			N	lesser G fine Sls	13	45	386	-1	1.50	76	
ZG168	0.0	2.0			Qha	Cg											
ZG168	2.0	4.0	3758307	77122	Og	Ccy			B		13	44	1554	-1	1.33	34	

563093

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDD	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	SP%
ZG168	4.0	6.0	3758308	77122	Og	Ccy			B		32	21	1234	-1	2.22	34	
ZG168	6.0	8.0	3758309	77122	Og	Sls			MLDG	calc-arenite, lesser DG clay	7	18	743	-1	3.00	60	
ZG168	8.0	10.0	3758310	77122	Og	Ccy			DG	lesser G Sls	11	39	587	-1	1.85	108	
ZG168	10.0	12.0	3758311	77122	Og	Sls			LG	prominent calcite veining	15	58	818	-1	1.95	77	
ZG169	0.0	2.0	3758312	77122	Og	Ccy			MGW		78	221	4341	1	0.85	30	
ZG169	2.0	4.0	3758313	77122	Og	Ccy			MGW		73	600	7800	1	0.93	39	
ZG169	4.0	6.0	3758314	77122	Og	Ccy			MWGB		76	1100	33000	1	1.17	42	4.75
ZG169	6.0	8.0	3758315	77122	Og	Ccy			G		34	500	8600	1	1.55	49	
ZG169	8.0	10.0	3758316	77122	Og	Ccy			MDGW		30	306	6900	1	1.35	40	
ZG169	10.0	12.0	3758317	77122	Og	Ccy			DG		23	194	1779	-1	1.12	34	
ZG169	12.0	14.0	3758318	77122	Og	Ccy			DG		19	312	1942	-1	1.30	32	
ZG169	14.0	16.0	3758319	77122	Og	Ccy			DG		21	246	2216	-1	1.86	31	
ZG169	16.0	18.0	3758320	77122	Og	Ccy			DG		28	308	1052	-1	0.87	29	
ZG169	18.0	20.0	3758321	77122	Og	Ccy			DG		21	234	1322	-1	1.90	43	
ZG169	20.0	22.0	3758322	77122	Og	Ccy			DG		23	356	1689	-1	1.28	75	
ZG169	22.0	24.0	3758323	77122	Og	Ccy			DG		22	1046	1749	1	1.57	29	
ZG169	24.0	26.0	3758324	77122	Og	Sls			DG		76	265	468	-1	1.26	28	
ZG169	26.0	28.0	3758325	77122	Og	Ccy			LB		189	103	198	1	0.92	23	
ZG169	28.0	30.0	3758326	77122	Og	Ccy			B		55	74	142	-1	0.46	20	
ZG169	30.0	32.0	3758327	77122	Og	Ccy			B	lesser coarse qtz Sss (Om)	57	53	89	-1	0.39	26	
ZG169	32.0	34.0	3758328	77122	Om	Mq			LB		19	56	206	-1	0.52	98	
ZG169	34.0	36.0	3758329	77122	Om	Mq			LB	bedded	8	46	115	-1	0.69	21	
ZG170	0.0	2.0	3758330	77122	Og	Ccy			B	peaty	10	521	330	5	0.60	30	
ZG170	2.0	4.0	3758331	77122	Og	Ccy			MBG		124	18800	30900	6	1.24	33	2.70
ZG170	4.0	6.0	3758332	77122	Og	Ccy			B	lesser decomposed Sls	44	12000	73400	2	0.73	48	6.05
ZG170	6.0	7.0	3758333	77122	Og	Sls	Ds	Py		oolitic Sls	91	28600	30700	3	1.72	197	3.30
ZG171	0.0	2.0	3758334	77122	Og	Ccy			LB		13	2000	8900	1	0.71	40	
ZG171	2.0	4.0	3758335	77122	Og	Ccy			G		30	703	1350	5	0.59	30	
ZG171	4.0	6.0	3758336	77122	Og	Ccy			MDGW		105	12100	30700	3	1.94	55	3.35
ZG171	6.0	8.0	3758337	77122	Og	Ccy			MDGW		62	1400	33700	2	3.92	585	5.30
ZG171	8.0	10.0	3758338	77122	Og	Ccy			MDGW		43	800	134000	1	1.50	1200	13.90
ZG171	10.0	12.0	3758339	77122	Og	Ccy			MDGW	lesser decomposed Sls	42	221	19200	1	17.60	4240	3.10
ZG171	12.0	14.0	3758340	77122	Og	Sls			LB	plited	14	304	29700	1	31.50	11000	3.40
ZG171	14.0	16.0	3758341	77122	Og	Sls	Al	Sd	MWG	heavy, honeycombed skeletal Sls	5	131	23300	-1	27.80	10500	1.05
ZG171	16.0	18.0	3758342	77122	Og	Sls	Al	Sd	MWG	heavy, honeycombed skeletal Sls	5	160	22700	1	29.30	11100	0.95
ZG171	18.0	20.0	3758343	77122	Og	Sls	Al	Sd	MWG	heavy, honeycombed skeletal & oolitic Sls	10	900	11900	1	12.10	3560	0.87
ZG171	20.0	22.0	3758344	77122	Og	Sls	Al	Sd	MWG	heavy, honeycombed skeletal & oolitic Sls	9	1400	12600	2	10.90	3386	0.74
ZG172	0.0	1.0			Cha	Cg											
ZG172	1.0	4.0	3758345	77122	Og	Ccy			MCB		97	2816	1012	1	0.93	60	
ZG172	4.0	6.0	3758346	77122	Og	Ccy			MDGW		50	1300	33100	-1	1.69	46	4.30
ZG172	6.0	8.0	3758347	77122	Og	Ccy			MDGW		32	1000	11500	1	2.43	405	3.10
ZG172	8.0	10.0	3758348	77122	Og	Ccy			MDGW		19	300	6900	-1	11.60	3069	
ZG172	10.0	12.0	3758349	77122	Og	Ccy	Al	Sd	MDGW	lesser altered/ankeritic oolitic Sls	10	163	12000	-1	25.60	8000	1.10
ZG172	12.0	14.0	3758350	77122	Og	Sls	Ds	Py	MG	oolitic	9	171	12100	1	16.90	4134	0.45
ZG172	14.0	16.0	3758351	77122	Og	Sls	Ds	Py	MG	oolitic	9	179	8500	-1	9.75	2829	
ZG172	16.0	18.0	3758352	77122	Og	Sls	Ds	Py	MG	oolitic, with R heamitic staining	6	187	10300	-1	12.70	3777	0.32
ZG172	18.0	20.0	3758353	77122	Og	Sls	Al	Sd		heavy/ankeritic?, honeycombed oolitic Sls	8	169	11300	-1	20.40	6100	0.48
ZG172	20.0	22.0	3758354	77122	Og	Sls	Al	Sd		heavy/ankeritic?, honeycombed oolitic Sls	7	132	11200	-1	16.00	4593	0.33
ZG173	0.0	2.0	3758355	77122	Og	Ccy			DG		29	314	3765	-1	1.80	120	
ZG173	2.0	4.0	3758356	77122	Og	Ccy			DG		35	246	7700	-1	3.58	838	
ZG173	4.0	6.0	3758357	77122	Og	Ccy			DG		38	362	7600	1	15.80	3971	
ZG173	6.0	8.0	3758358	77122	Og	Ccy			DG		23	481	4329	-1	10.10	2714	
ZG173	8.0	10.0	3758359	77122	Og	Ccy			DG		13	2072	3929	1	11.70	3216	

563094

APPENDIX 2: Gieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDD	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG173	10.0	12.0	3758360	77122	Og	Sls	Ds	Py		with rdd qtz pebbles, lesser DG clay	16	554	4464	1	18.80	4245	
ZG173	12.0	14.0	3758361	77122	Og	Sls	AIDs	SdPy		honeycombed, ankoritic Sls + rdd qtz pebbles, lesser Ccy	7	208	14600	-1	28.50	10000	1.80
ZG173	14.0	16.0	3758362	77122	Og	Sls	AIDs	SdPy		honeycombed, ankoritic Sls + rdd qtz pebbles, lesser Ccy	14	151	10700	-1	25.20	8300	0.97
ZG173	16.0	18.0	3758363	77122	Og	Sls	AIDs	SdPy		honeycombed, ankoritic Sls + rdd qtz pebbles, lesser Ccy	14	127	11800	-1	23.10	7700	0.66
ZG173	18.0	20.0	3758364	77122	Og	Sls			LB	oolitic Sls	15	278	8800	-1	14.10	3868	
ZG173	20.0	22.0	3758365	77122	Og	Sls			LB	oolitic Sls	6	304	7200	-1	17.40	4900	
ZG173	22.0	24.0	3758366	77122	Og	Sls			LB	oolitic Sls	7	252	4689	-1	9.39	2692	
ZG174	0.0	2.0	3758367	77122	Og	Ccy				peaty	24	510	9300	-1	1.64	141	
ZG174	2.0	4.0	3758368	77122	Og	Ccy			DB		30	288	8200	1	1.89	81	
ZG174	4.0	6.0	3758369	77122	Og	Ccy			DG		32	370	10500	-1	1.41	88	3.40
ZG174	6.0	8.0	3758370	77122	Og	Ccy			DG		31	123	6500	-1	1.74	48	
ZG174	8.0	10.0	3758371	77122	Og	Ccy			DG		31	137	6600	1	3.50	847	
ZG174	10.0	12.0	3758372	77122	Og	Ccy			DG	lesser DG granular Sls	21	86	4876	-1	15.70	4994	
ZG174	12.0	14.0	3758373	77122	Og	Sls			DG	granular, DG clay	22	91	4591	-1	12.40	3954	
ZG174	14.0	16.0	3758374	77122	Og	Sls			DG	granular, DG clay	17	132	4775	-1	21.50	7200	
ZG174	16.0	18.0	3758375	77122	Og	Sls	AIDs	SdPy	DG		5	23	15300	-1	28.50	8800	1.85
ZG174	18.0	20.0	3758376	77122	Og	Sls	AIDs	SdPy		with rdd qtz pebbles	6	66	7600	1	22.80	7300	
ZG174	20.0	22.0	3758377	77122	Og	Sls					8	91	6500	1	17.20	4969	
ZG174	22.0	24.0	3758378	77122	Og	Sls			DG		6	54	8500	-1	22.90	7700	
ZG174	24.0	26.0	3758379	77122	Og	Sls			DG	pitted + heavy	21	260	6800	-1	16.70	4419	
ZG174	26.0	28.0	3758380	77122	Og	Sls	AI	Sd	LB	pitted + heavy	6	298	10600	-1	24.10	7600	0.34
ZG174	28.0	30.0	3758381	77122	Og	Sls	AI	Sd	LB	oolitic	5	227	8200	-1	10.70	2997	
ZG174	30.0	32.0	3758382	77122	Og	Sls			W	oolitic	5	195	4211	1	4.43	1604	
ZG174	32.0	34.0	3758383	77122	Og	Sls	AIDs	SdPy	W	heavy, oolitic Sls	13	270	7200	-1	8.92	2691	
ZG175	0.0	3.0			Oha	Cg				coastal redrill?							
ZG175	3.0	6.0	3758384	77122	Og	Ccy				lesser B decomposed Sls	22	217	14700	1	1.15	55	4.65
ZG175	6.0	8.0	3758385	77122	Og	Ccy			B		27	229	13000	1	1.08	67	5.20
ZG175	8.0	10.0	3758386	77122	Og	Ccy			DG		29	125	6800	1	1.19	77	
ZG175	10.0	12.0	3758387	77122	Og	Ccy			DG		20	130	4770	-1	15.80	4214	
ZG175	12.0	14.0	3758388	77122	Og	Ccy			DG		27	669	6500	-1	10.60	2957	
ZG175	14.0	16.0	3758389	77122	Og	Ccy			DG	lesser DG Sls	15	167	4042	-1	10.50	2923	
ZG175	16.0	18.0	3758390	77122	Og	Ccy			DG	lesser DG Sls	15	170	4693	1	10.10	2608	
ZG175	18.0	20.0	3758391	77122	Og	Ccy			DG	lesser DG Sls	14	251	8000	-1	15.90	4891	
ZG175	20.0	22.0	3758392	77122	Og	Ccy			DG	lesser DG Sls	18	174	6600	-1	12.40	3521	
ZG175	22.0	24.0	3758393	77122	Og	Sls	AIDs	SdPy	DG	pitted, lesser DG clay	11	167	6800	-1	11.90	3720	
ZG175	24.0	26.0	3758394	77122	Og	Sls	AIDs	SdPy	LB	pitted, lesser DG clay	16	157	8100	-1	16.40	5700	
ZG175	26.0	28.0	3758395	77122	Og	Sls	AIDs	SdPy	LB		16	144	6400	-1	11.30	3383	
ZG175	28.0	30.0	3758396	77122	Og	Ccy			LB		25	193	6100	-1	8.60	2200	
ZG175	30.0	32.0	3758397	77122	Og	Sls			DG	with rdd qtz pebbles, lesser DG clay	13	112	6300	-1	12.40	3590	
ZG175	32.0	34.0	3758398	77122	Og	Sls			B	with rdd qtz pebbles, lesser DG clay	7	65	3568	-1	13.10	3785	
ZG175	34.0	36.0	3758399	77122	Og	Sls			B	with rdd qtz pebbles, lesser DG clay	8	59	4067	-1	11.10	3381	
ZG175	36.0	38.0	3758400	77122	Og	Sls			B	with rdd qtz pebbles	9	52	3739	-1	10.40	2801	
ZG175	38.0	40.0	3758401	77122	Og	Ccy			B	lesser LG oolitic Sls	13	151	4991	-1	8.71	2384	
ZG175	40.0	42.0	3758402	77122	Og	Ccy			LDG	lesser LG oolitic Sls	22	281	13900	-1	17.10	4595	2.15
ZG175	42.0	44.0	3758403	77122	Og	Sls			LDG	pitted oolitic Sls	5	106	9200	-1	29.40	12000	
ZG176	0.0	4.0			Oha	Cg											
ZG177	0.0	2.5			Oha	Cg											
ZG177	2.5	4.0	3758404	77122	Og	Ccy				peaty, at 61300E peg	20	66	2513	-1	1.10	55	
ZG177	4.0	6.0	3758405	77122	Og	Ccy			N		23	154	3264	-1	1.07	67	
ZG177	6.0	8.0	3758406	77122	Og	Ccy			N		26	192	4845	1	0.94	57	
ZG177	8.0	10.0	3758407	77122	Og	Ccy			N		24	67	2244	-1	1.15	79	
ZG177	10.0	12.0	3758408	77122	Og	Ccy			DG		28	155	3937	-1	0.85	55	
ZG177	12.0	14.0	3758409	77122	Og	Ccy			DG		24	49	4816	-1	0.95	75	

563095

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qz	Pb	Zn	Ag	Fe%	Mn	S%
ZG177	14.0	16.0	3758410	77122	Og	Ccy			DG		32	124	9600	-1	0.98	71	
ZG177	16.0	18.0	3758411	77122	Og	Ccy			DG		34	205	9900	-1	3.91	1250	
ZG177	18.0	20.0	3758412	77122	Og	Sls			DG	foliated, lesser DG clay	10	36	9400	-1	28.90	11600	
ZG177	20.0	22.0	3758413	77122	Og	Sls	Ds	Py	DG	foliated, lesser DG clay	17	123	10300	-1	15.50	4231	2.00
ZG177	22.0	24.0	3758414	77122	Og	Ccy			DG	lesser G granular Sls	9	38	12300	-1	20.70	6600	1.40
ZG177	24.0	26.0	3758415	77122	Og	Ccy			DG	lesser G granular Sls	23	162	8300	-1	11.80	2761	
ZG177	26.0	28.0	3758416	77122	Og	Ccy			DG	G foliated granular Sls	24	124	7800	-1	12.00	2936	
ZG177	28.0	30.0	3758417	77122	Og	Ccy			DG	G foliated granular Sls	33	89	7600	-1	12.70	2932	
ZG177	30.0	32.0	3758418	77122	Og	Sls			DG	granular, lesser DG clay, pitted	16	78	6300	-1	13.90	3652	
ZG177	32.0	34.0	3758419	77122	Og	Sls			G	granular, lesser DG clay, pitted	13	105	6100	-1	11.50	2724	
ZG177	34.0	36.0	3758420	77122	Og	Sls			G	granular, lesser DG clay, pitted	10	70	7200	1	20.20	6000	
ZG177	36.0	38.0	3758421	77122	Og	Sls			G	granular, pitted	15	46	7300	-1	17.90	4665	
ZG177	38.0	40.0	3758422	77122	Og	Sls			G	granular, pitted	9	17	7500	-1	11.00	2635	
ZG177	40.0	42.0	3758423	77122	Og	Sls			G	granular, pitted	7	5	8900	-1	13.20	2834	
ZG177	42.0	44.0	3758424	77122	Og	Sls			G	granular, lesser DG clay, pitted	16	86	4896	1	11.90	2921	
ZG177	44.0	46.0	3758425	77122	Og	Sls			G	granular, lesser DG clay, pitted	13	84	8500	-1	16.50	4193	
ZG177	46.0	48.0	3758426	77122	Og	Ccy			G	lesser granular Sls, pitted	15	53	7600	-1	17.10	3855	
ZG177	48.0	50.0	3758427	77122	Og	Sls			DG	granular, lesser DG clay, pitted	9	98	12000	-1	25.50	7800	1.05
ZG177	50.0	52.0	3758428	77122	Og	Ccy	Ds	Py	LG	lesser DG Sls	20	700	10500	1	19.10	4288	1.00
ZG177	52.0	54.0	3758429	77122	Og	Ccy			LBG	lesser pitted LB Sls	10	141	27400	-1	31.30	10900	1.05
ZG177	54.0	56.0	3758430	77122	Og	Sls	Al	Sd	DG	honeycombed	8	343	39000	-1	39.60	16200	0.32
ZG177	56.0	57.0	3758431	77122	Og	Sls	Al	Sd	LB	honeycombed	28	1000	41800	1	34.40	13700	1.70
ZG178	0.0	2.0			Cha	Cg			LB								
ZG178	2.0	4.0	3758432	77122	Og	Ccy					20	426	32700	1	1.34	49	3.45
ZG178	4.0	6.0	3758433	77122	Og	Ccy			G		24	122	43200	-1	1.01	139	5.30
ZG178	6.0	8.0	3758434	77122	Og	Ccy			DG		24	145	29900	-1	22.00	6500	3.60
ZG178	8.0	10.0	3758435	77122	Og	Sls			MLB		4	40	29600	-1	39.50	14800	1.15
ZG178	10.0	12.0	3758436	77122	Og	Sls			DG	granular Sls	4	119	29900	-1	35.50	12900	1.40
ZG178	12.0	14.0	3758437	77122	Og	Sls	Al	Sd	MWG	oolitic Sls	7	259	36300	-1	29.20	9900	3.20
ZG178	14.0	16.0	3758438	77122	Og	Sls	Al	Sd	MWG	oolitic Sls, lesser B clay	6	198	31300	-1	29.00	9300	2.60
ZG178	16.0	17.5	3758439	77122	Og	Sls	Al	Sd	MWG	oolitic, heavy	4	75	22100	-1	29.90	10700	1.00
ZG179	0.0	2.0			Cha	Cg											
ZG179	2.0	4.0	3758440	77122	Og	Ccy			B	pealy	16	1300	10600	1	1.19	85	1.70
ZG179	4.0	5.0	3758441	77122	Og	Sls			R	oolitic, hematite stained	3	300	13300	-1	3.08	977	1.80
ZG180	0.0	2.5			Cha	Cg											
ZG180	2.5	4.0	3758442	77122	Og	Ccy					20	1700	28200	1	1.01	47	2.85
ZG180	4.0	6.0	3758443	77122	Og	Ccy			B	pealy	18	1500	76400	1	0.67	60	6.00
ZG180	6.0	8.0	3758444	77122	Og	Ccy			B	pealy	15	1100	66900	1	0.68	78	5.60
ZG180	8.0	10.0	3758445	77122	Og	Ccy			B	pealy	16	1800	135000	1	1.03	727	9.55
ZG180	10.0	12.0	3758446	77122	Og	Ccy			G		20	800	148000	1	18.70	3773	9.80
ZG180	12.0	14.0	3758447	77122	Og	Ccy			B		14	700	108000	1	22.30	5800	6.70
ZG180	14.0	16.0	3758448	77122	Og	Ccy			B	lesser R(heamitic) oolitic Sls	20	400	33100	1	34.10	10500	3.40
ZG180	16.0	18.0	3758449	77122	Og	Ccy			B		24	400	7300	-1	2.91	333	
ZG180	18.0	20.0	3758450	77122	Og	Ccy	Ds	Py	DG		23	247	3263	-1	2.39	316	
ZG180	20.0	22.0	3758451	77122	Og	Ccy			DGW		22	294	1354	-1	1.74	70	
ZG180	22.0	24.0	3758452	77122	Og	Ccy			DG	lesser DG Sls with rdd qtz pebbles	37	95	711	-1	1.84	33	
ZG180	24.0	26.0	3758453	77122	Og	Ccy			DG	lesser DG Sls with rdd qtz pebbles	87	86	284	-1	1.25	28	
ZG180	26.0	28.0	3758454	77122	Om	Mq			DG	lesser DG Sls	37	61	201	-1	0.61	39	
ZG180	28.0	29.5	3758455	77122	Om	Mq			LB	with rdd qtz pebbles, lesser B decomposed Sls	16	56	70	-1	0.52	40	
ZG181	0.0	1.5			Cha	Cg											
ZG181	1.5	4.0	3758456	77123	Og	Ccy			B	pealy	52	20200	78100	2	2.90	24	7.60
ZG181	4.0	6.0	3758457	77123	Og	Ccy			DG		51	8500	29600	3	2.34	47	4.10
ZG181	6.0	8.0	3758458	77123	Og	Ccy			DG		61	4300	7600	2	1.65	32	

563090

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG181	8.0	10.0	3758459	77123	Og	Ccy			DG	friable	44	2246	4605	1	2.26	38	
ZG181	10.0	12.0	3758460	77123	Og	Ccy			DG		73	4000	9900	2	1.65	32	
ZG181	12.0	14.0	3758461	77123	Og	Ccy			DG		62	6900	12000	3	1.62	36	2.20
ZG181	14.0	16.0	3758462	77123	Og	Ccy			DG		45	4400	11700	2	1.69	32	2.40
ZG181	16.0	18.0	3758463	77123	Og	Ccy			DG		44	4800	67900	3	9.88	35	13.60
ZG181	18.0	20.0	3758464	77123	Og	Ccy			MDGLB		83	17200	88600	5	6.13	33	9.65
ZG181	20.0	22.0	3758465	77123	Og	Ccy			DG		20	1000	6900	-1	2.15	44	
ZG181	22.0	24.0	3758466	77123	Og	Ccy			DG		18	674	3257	-1	1.51	31	
ZG181	24.0	26.0	3758467	77123	Og	Ccy			DG		15	453	3631	-1	1.53	38	
ZG181	26.0	28.0	3758468	77123	Og	Ccy			DG	lesser DG granular Sls	22	1000	7400	-1	2.22	38	
ZG181	28.0	30.0	3758469	77123	Og	Ccy			DG	lesser DG granular Sls	18	408	3079	-1	2.47	30	
ZG181	30.0	31.5	3758470	77123	Og	Sls			DG	granular Sls + rdd qtz pebbles, lesser Ccy + Molna Sst	53	355	3608	-1	1.88	26	
ZG182	0.0	4.0			Cha	Cg											
ZG182	4.0	6.0	3758471	77123	Og	Ccy			B	peaty	22	714	50000		0.52	63	9.10
ZG182	6.0	8.0	3758472	77123	Og	Ccy			B	peaty, lesser N decomposed Sls	14	418	74300	-1	0.57	68	9.40
ZG182	8.0	10.0	3758473	77123	Og	Ccy			B	peaty, lesser N decomposed Sls	19	1100	103000	1	4.70	92	10.60
ZG182	10.0	12.0	3758474	77123	Og	Sls			B	oolitic	8	110	16500	-1	1.34	560	1.35
ZG182	12.0	13.0	3758475	77123	Og	Sls			B	oolitic	6	163	16700	-1	1.55	351	1.90
ZG183	0.0	2.5			Cha	Cg											
ZG183	2.5	6.0	3758476	77123	Og	Ccy			B	peaty	20	85	19100	-1	2.75	123	3.80
ZG183	6.0	8.0	3758477	77123	Og	Ccy			GB		19	77	19700	-1	2.46	123	3.50
ZG183	8.0	10.0	3758478	77123	Og	Ccy			GB		24	217	26200	-1	4.37	608	3.80
ZG183	10.0	12.0	3758479	77123	Og	Ccy			GB		13	123	29200	-1	25.40	8500	2.85
ZG183	12.0	14.0	3758480	77123	Og	Sls			B	granular, lesser GB clay, pitted	9	269	21900	-1	33.30	11200	1.85
ZG183	14.0	16.0	3758481	77123	Og	Sls			B	granular, lesser GB clay, pitted	23	949	35300	-1	23.20	6900	4.10
ZG183	16.0	18.0	3758482	77123	Og	Sls				poor recovery, cavity?	7	233	19100	-1	38.30	13200	1.80
ZG183	18.0	20.0	3758483	77123	Og	Sls			LB	lesser B clay, honeycombed	6	370	37300	-1	34.70	11300	6.00
ZG183	20.0	21.0	3758484	77123	Og	Sls			MWG	oolitic	4	220	23600	-1	20.70	6800	3.55
ZG184	0.0	2.0			Cha	Cg											
ZG184	2.0	4.0	3758485	77123	Og	Ccy			DG		23	1000	20700	-1	2.52	154	3.40
ZG184	4.0	6.0	3758486	77123	Og	Ccy			DG	lesser LB pitted Sls	17	212	11000	-1	20.40	7300	1.75
ZG184	6.0	8.0	3758487	77123	Og	Ccy			DG	lesser LB pitted Sls	14	690	7900	-1	10.00	3159	
ZG184	8.0	10.0	3758488	77123	Og	Ccy			DG	lesser LB pitted Sls	35	500	4541	-1	16.30	4136	
ZG184	10.0	12.0	3758489	77123	Og	Ccy			DG		30	184	4026	-1	16.80	4325	
ZG184	12.0	14.0	3758490	77123	Og	Ccy			DG	lesser pitted LB + DG granular Sls	24	229	3177	-1	10.80	2729	
ZG184	14.0	16.0	3758491	77123	Og	Sls	Ds	Py	DG	granular with sulphidic vein qtz, lesser DG clay	17	290	4659	-1	18.60	6400	
ZG184	16.0	18.0	3758492	77123	Og	Sls			DG	granular, lesser DG clay	9	371	8400	-1	18.50	6200	
ZG184	18.0	20.0	3758493	77123	Og	Sls			MG	pitted, granular	4	113	8100	-1	12.50	3817	
ZG184	20.0	22.0	3758494	77123	Og	Sls			MG	pitted oolitic Sls	4	130	7500	-1	13.10	3877	
ZG184	22.0	24.0	3758495	77123	Og	Sls			MG	pitted oolitic Sls	6	147	9600	-1	13.90	3938	
ZG184	24.0	26.0	3758496	77123	Og	Sls	Ds	Py	MG	pitted oolitic Sls, lesser DG clay	8	46	11600	-1	22.10	6700	1.30
ZG184	26.0	28.0	3758497	77123	Og	Sls			MG	pitted oolitic Sls, lesser DG clay	13	54	17000	-1	30.50	10200	0.88
ZG184	28.0	30.0	3758498	77123	Og	Sls			MG	pitted oolitic Sls, lesser G clay	7	140	16700	-1	29.10	10200	1.20
ZG184	30.0	32.0	3758499	77123	Og	Sls			MG	pitted oolitic Sls, lesser G clay	10	113	11900	-1	23.80	7900	1.15
ZG184	32.0	34.0	3758500	77123	Og	Sls			MLB	pitted, lesser B-G clay	5	72	15700	-1	21.60	7400	1.15
ZG184	34.0	36.0	3758501	77123	Og	Sls			MLB	pitted, lesser B-G clay	13	300	34100	-1	15.50	4455	3.30
ZG184	36.0	38.0	3758502	77123	Og	Sls			MWG	oolitic	6	75	11000	-1	12.90	3941	0.89
ZG184	38.0	39.0	3758503	77123	Og	Sls			MWG	pitted oolitic Sls	13	93	21400	-1	13.10	3991	1.75
ZG185	0.0	4.0			Cha	Cg											
ZG185	4.0	6.0	3758504	77123	Og	Sls			N	decomposed	12	56	10000	-1	7.62	22	9.20
ZG185	6.0	8.0	3758505	77123	Og	Ccy			DG	lesser N decomposed Sls	18	62	9100	-1	11.60	45	
ZG185	8.0	10.0	3758506	77123	Og	Ccy			N		16	73	12200	-1	9.22	46	10.30
ZG185	10.0	12.0	3758507	77123	Og	Ccy			N		16	140	10700	-1	8.58	72	9.40

563097

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG185	12.0	14.0	3758508	77123	Og	Ccy			N		17	98	8900	-1	10.00	153	
ZG185	14.0	16.0	3758509	77123	Og	Sls			MG	granular	8	11	774	-1	1.69	196	
ZG185	16.0	18.0	3758510	77123	Og	Sls	Ds	Py	MG	granular	5	4	2109	-1	3.90	189	
ZG185	18.0	20.0	3758511	77123	Og	Ccy			DG	lesser MG granular Ssl	15	21	3938	-1	4.14	375	
ZG185	20.0	22.0	3758512	77123	Og	Sls			G	granular	6	8	1111	-1	4.35	1350	
ZG185	22.0	24.0	3758513	77123	Og	Sls			G	granular	6	4	1897	-1	8.21	2530	
ZG185	24.0	26.0	3758514	77123	Og	Sls			G	granular	6	-3	3000	-1	6.72	1779	
ZG185	26.0	28.0	3758515	77123	Og	Sls			G	granular, lesser DG clay	9	-3	3293	-1	13.60	4354	
ZG185	28.0	30.0	3758516	77123	Og	Ccy			DG	lesser foliated G granular Sls	12	21	4871	-1	19.90	7000	
ZG185	30.0	32.0	3758517	77123	Og	Ccy			DG		24	28	2424	-1	7.45	1605	
ZG185	32.0	34.0	3758518	77123	Og	Ccy			DG		21	26	2845	-1	10.30	2622	
ZG185	34.0	36.0	3758519	77123	Og	Ccy			DG	poor recovery	12	20	2769	-1	11.10	2996	
ZG185	36.0	38.0	3758520	77123	Og	Ccy			DG	lesser MG Sls	12	19	3244	-1	11.30	2907	
ZG185	38.0	40.0	3758521	77123	Og	Sls			MG	fossilif.	7	-3	2239	-1	7.42	2131	
ZG185	40.0	42.0	3758522	77123	Og	Sls			MG	fossilif.	5	-3	6100	-1	20.00	6900	
ZG185	42.0	44.0	3758523	77123	Og	Sls			LG	granular	6	6	4712	-1	14.95	4928	
ZG185	44.0	46.0	3758524	77123	Og	Sls			MG	granular, lesser DG clay	8	10	4086	-1	14.47	4301	
ZG185	46.0	48.0	3758525	77123	Og	Sls			MG	granular	5	8	3524	-1	13.30	3728	
ZG185	48.0	50.0	3758526	77123	Og	Sls			MG	fossilif.	10	13	7100	-1	19.90	6700	
ZG185	50.0	52.0	3758527	77123	Og	Sls			MG	with rdd qtz pebbles	4	14	4539	-1	17.00	4454	
ZG185	52.0	54.0	3758528	77123	Og	Sls			MG	with rdd qtz pebbles, fossilif.	5	25	3962	-1	19.20	5900	
ZG185	54.0	56.0	3758529	77123	Og	Sls			MG	with rdd qtz pebbles, fossilif., lesser MDG-W clay	10	73	10600	-1	25.60	8400	1.30
ZG185	56.0	58.0	3758530	77123	Og	Sls			LB	with rdd qtz pebbles, fossilif., lesser MDG-W clay	18	48	8600	-1	14.70	3545	
ZG185	58.0	60.0	3758531	77123	Og	Sls	Al	Sd	LB	honeycombed, with rdd qtz pebbles, lesser DG clay	11	56	13500	-1	27.70	9500	1.70
ZG186	0.0	2.0			Oha	Cg											
ZG186	2.0	4.0	3758532	77123	Og	Ccy			DB	peaty	16	89	2310	-1	6.95	51	
ZG186	4.0	6.0	3758533	77123	Og	Ccy			DB	peaty	13	46	2368	-1	5.90	65	
ZG186	6.0	8.0	3758534	77123	Og	Ccy			DB	peaty	12	34	3256	-1	6.09	57	
ZG186	8.0	10.0	3758535	77123	Og	Ccy			DG	lesser B decomposed Sls	12	28	1616	-1	6.45	93	
ZG186	10.0	12.0	3758536	77123	Og	Ccy			DG		20	25	1987	-1	4.58	49	
ZG186	12.0	14.0	3758537	77123	Og	Ccy			DB		17	45	1125	-1	9.64	72	
ZG186	14.0	16.0	3758538	77123	Og	Sls			MG	calc-arenite, lesser B clay	13	53	8200	-1	2.81	104	
ZG186	16.0	18.0	3758539	77123	Og	Sls			MG	calc-arenite, lesser B clay	7	10	313	-1	1.24	213	
ZG186	18.0	20.0	3758540	77123	Og	Sls			MG	calc-arenite, lesser B clay	9	15	2419	-1	4.29	112	
ZG186	20.0	22.0	3758541	77123	Og	Ccy			B		8	36	3770	-1	9.23	134	
ZG186	22.0	24.0	3758542	77123	Og	Sls			B	decomposed	9	108	3799	-1	0.91	63	
ZG186	24.0	26.0	3758543	77123	Og	Sls			MG	skeletal	7	14	997	-1	3.03	301	
ZG186	26.0	28.0	3758544	77123	Og	Sls			MG	skeletal	5	15	1094	-1	2.72	351	
ZG186	28.0	30.0	3758545	77123	Og	Sls			W	lesser B clay	21	61	1201	-1	2.38	239	
ZG186	30.0	32.0	3758546	77123	Og	Ccy			MBW		11	54	2305	-1	3.76	228	
ZG186	32.0	34.0	3758547	77123	Og	Sls			LG	fine	6	9	1201	-1	2.74	151	
ZG186	34.0	36.0	3758548	77123	Og	Sls	Ds	Py	LG		5	6	559	-1	3.38	294	
ZG186	36.0	38.0	3758549	77123	Og	Sls	Ds	Py	LG	with rdd qtz + N decomposed Sls	9	76	2393	-1	4.10	182	
ZG186	38.0	40.0	3758550	77123	Og	Sls	Ds	Py	LG	with rdd qtz + N decomposed Sls	7	12	1972	-1	5.10	776	
ZG186	40.0	42.0	3758551	77123	Og	Sls			DG	granular	5	-3	972	-1	5.49	1525	
ZG187	0.0	3.0			Oha	Cg											
ZG187	3.0	6.0	3758552	77123	Og	Ccy			B	peaty	18	155	301	-1	0.60	30	
ZG187	6.0	8.0	3758553	77123	Og	Ccy			DG		19	43	1802	-1	0.61	49	
ZG187	8.0	10.0	3758554	77123	Og	Ccy			LB		10	5	239	-1	7.35	88	
ZG187	10.0	12.0	3758555	77123	Og	Ccy			LB		11	10	394	-1	6.59	168	
ZG187	12.0	14.0	3758556	77123	Og	Ccy			G	lesser LG skeletal Sls	7	10	462	-1	0.51	26	
ZG188	0.0	4.0			Oha	Cg											
ZG189	0.0	3.0			Oha	Cg											

563098

APPENDIX 2: Gieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG190	0.0	4.0			Qha	Cg											
ZG190	4.0	6.0	3758557	77123	Og	Ccy			DG	lesser DG granular Sls	21	83	1114	4	14.60	4156	
ZG190	6.0	8.0	3758558	77123	Og	Sls			MLDG	pitted, granular Sls	8	75	731	-1	17.50	7900	
ZG190	8.0	9.0	3758559	77123	Og	Sls			MG	oolitic Sls	7	248	1556	-1	15.80	7000	
ZG191	0.0	2.0			Qha	Cg											
ZG191	2.0	4.0	3758560	77123	Og	Ccy			B	peaty	26	324	561	-1	1.35	48	
ZG191	4.0	6.0	3758561	77123	Og	Ccy			B	peaty	26	263	1003	1	1.81	35	
ZG191	6.0	8.0	3758562	77123	Og	Ccy			B		23	151	2667	-1	0.88	23	
ZG191	8.0	10.0	3758563	77123	Og	Ccy			B		38	356	1840	1	1.07	26	
ZG191	10.0	12.0	3758564	77123	Og	Ccy			B		22	147	986	-1	0.86	23	
ZG191	12.0	14.0	3758565	77123	Og	Ccy			MNG		40	308	3578	1	0.60	51	
ZG191	14.0	16.0	3758566	77123	Og	Ccy			MNLB		25	611	2445	-1	0.80	381	
ZG191	16.0	18.0	3758567	77123	Og	Ccy			MNLB		16	924	2854	2	1.41	668	
ZG191	18.0	20.0	3758568	77123	Og	Ccy			B		22	973	3383	1	1.03	173	
ZG191	20.0	22.0	3758569	77123	Og	Ccy			DB	"oily"	41	808	3351	1	0.75	130	
ZG191	22.0	24.0	3758570	77123	Og	Ccy			DB	"oily"	27	642	3287	1	0.53	155	
ZG191	24.0	26.0	3758571	77123	Og	Ccy			DB	"oily"	28	782	4579	1	0.51	90	
ZG191	26.0	28.0	3758572	77123	Og	Ccy			CG		32	1900	6100	1	0.44	80	
ZG191	28.0	30.0	3758573	77123	Og	Ccy	Ds	Py	CG	with massive Py sheets	12	746	720	-1	0.95	7	
ZG191	30.0	32.0	3758574	77123	Og	Sls	Ds	Py	MG	oolitic Sls, broken	10	99	448	-1	1.58	288	
ZG191	32.0	34.0	3758575	77123	Og	Sls	Ds	Py	MG	oolitic Sls, broken	9	57	253	-1	3.34	510	
ZG191	34.0	36.0	3758576	77123	Og	Sls	Ds	Py	MG	oolitic Sls, broken	5	31	159	-1	2.89	864	
ZG192	0.0	3.5			Qha	Cg											
ZG192	3.5	6.0	3758601	77124	Og	Ccy			B		16	88	893	-1	0.77	44	
ZG192	6.0	8.0	3758602	77124	Og	Ccy			B		16	88	1199	-1	1.36	29	
ZG192	8.0	10.0	3758603	77124	Og	Ccy			B		14	79	924	-1	0.78	41	
ZG192	10.0	12.0	3758604	77124	Og	Ccy			N		15	227	988	-1	1.04	76	
ZG192	12.0	14.0	3758605	77124	Og	Ccy			G		23	334	682	-1	1.07	238	
ZG192	14.0	16.0	3758606	77124	Og	Ccy			DG	lesser MG Sls	13	110	290	-1	9.81	2455	
ZG192	16.0	18.0	3758607	77124	Og	Sls			MG	oolitic, lesser DG clay	9	571	1819	-1	8.89	1955	
ZG192	18.0	20.0	3758608	77124	Og	Sls			MG	oolitic	7	234	413	-1	4.66	1607	
ZG192	20.0	22.0	3758609	77124	Og	Ccy			MGLB	minor MG oolitic Sls	20	194	882	-1	10.60	2656	
ZG192	22.0	24.0	3758610	77124	Og	Ccy			MG	lesser G granular Sls	12	151	619	-1	9.03	2115	
ZG192	24.0	26.0	3758611	77124	Og	Sls			MG	skeletal?	3	21	91	-1	2.41	732	
ZG192	26.0	28.0	3758612	77124	Og	Ccy			MGLB	lesser MLG pitted Sls	18	154	661	1	14.30	3804	
ZG192	28.0	30.0	3758613	77124	Og	Sls			MLG	oolitic, lesser B clay	5	173	350	-1	3.60	1106	
ZG192	30.0	32.0	3758614	77124	Og	Sls			MG	broken, oolitic	3	39	148	-1	1.57	650	
ZG192	32.0	34.0	3758615	77124	Og	Sls	Ds	Py		oolitic, trace rdd qtz, lesser B clay	3	95	290	-1	2.82	778	
ZG192	34.0	36.0	3758616	77124	Og	Sls			MG	oolitic	2	38	174	-1	1.85	569	
ZG192	36.0	38.0	3758617	77124	Og	Sls			MG	oolitic, minor B clay	3	36	160	-1	3.40	1237	
ZG192	38.0	40.0	3758618	77124	Og	Sls			MG	oolitic, minor B clay	8	59	250	-1	3.47	1226	
ZG192	40.0	41.0	3758619	77124	Og	Sls	BxAl	So		brecc. oolitic Sls, ankritic. Minor Ccy	2	22	120	-1	7.05	2805	
ZG193	0.0	4.0			Qha	Cg											
ZG193	4.0	6.0	3758620	77124	Og	Ccy			B		16	21	14	-1	0.23	19	
ZG193	6.0	8.0	3758621	77124	Og	Ccy			N		23	73	94	-1	0.69	39	
ZG193	8.0	10.0	3758622	77124	Og	Ccy			N		23	47	205	-1	1.31	35	
ZG193	10.0	12.0	3758623	77124	Og	Ccy			N		24	50	660	-1	0.68	44	
ZG193	12.0	14.0	3758624	77124	Og	Ccy			DG		19	103	1084	-1	2.12	449	
ZG193	14.0	16.0	3758625	77124	Og	Ccy			MNLB	minor MG granular Sls	50	49	258	-1	4.10	1256	
ZG193	16.0	18.0	3758626	77124	Og	Ccy			B	lesser DG Sls	7	26	114	-1	3.84	1205	
ZG193	18.0	20.0	3758627	77124	Og	Sls			MG	granular with rdd qtz pebbles, lesser B clay	6	15	66	-1	4.46	1552	
ZG193	20.0	22.0	3758628	77124	Og	Sls			MG	granular with rdd qtz pebbles, lesser B clay	6	17	88	-1	5.74	1807	
ZG193	22.0	24.0	3758629	77124	Og	Sls			MG	granular with rdd qtz pebbles, lesser B clay	8	10	40	-1	19.10	8200	

663099

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG193	24.0	26.0	3758630	77124	Og	Coy			MB		10	80	290	-1	21.70	8500	
ZG193	26.0	28.0	3758631	77124	Og	Coy			DG	lesser oolitic Sls	21	103	414	-1	17.50	6400	
ZG193	28.0	30.0	3758632	77124	Og	Sls			LGW	oolitic	6	30	216	-1	13.40	4986	
ZG194	0.0	4.0			Oha	Og											
ZG195	0.0	3.5			Oha	Og											
ZG195	3.5	6.0	3758577	77124	Og	Sls			MG	oolitic, commonly R (heamtitle) stained	8	63	860	-1	3.04	1433	
ZG195	6.0	8.0	3758578	77124	Og	Sls	Ds	Py	MG	oolitic, broken	7	107	1100	-1	6.04	2676	
ZG195	8.0	10.0	3758579	77124	Og	Sls	Ds	Py	MG	oolitic, broken, minor black clay	6	70	567	-1	4.60	2041	
ZG195	10.0	12.0	3758580	77124	Og	Sls	Ds	Py	MG	oolitic, broken, minor qtzite (Om)	4	49	398	-1	2.30	1025	
ZG195	12.0	14.0	3758581	77124	Og	Sls	Ds	Py	MG	oolitic, broken, minor qtzite (Om)	4	23	221	-1	1.32	578	
ZG195	14.0	16.0	3758582	77124	Og	Sls	Ds	Py	MG	oolitic Sls	4	23	212	-1	1.22	621	
ZG195	16.0	18.0	3758583	77124	Og	Sls	Ds	Py	MG	oolitic Sls, weak Y&R Fe alteration, minor B clay	3	40	279	-1	1.92	511	
ZG195	18.0	20.0	3758584	77124	Og	Sls	Ds	Py	MG	oolitic Sls, weak Y&R Fe alteration, minor B clay	3	42	324	-1	1.41	550	
ZG195	20.0	22.0	3758585	77124	Og	Sls			MG	oolitic, minor clay	4	25	157	-1	1.02	500	
ZG195	22.0	24.0	3758586	77124	Og	Sls			MG		11	29	209	-1	1.01	559	
ZG195	24.0	26.0	3758587	77124	Og	Sls			MG	broken	3	33	226	-1	1.52	793	
ZG195	26.0	28.0	3758588	77124	Og	Sls			MG	broken	3	72	302	-1	1.79	882	
ZG195	28.0	30.0	3758589	77124	Og	Sls			MG	oolitic, minor clay	6	92	538	-1	12.30	5500	
ZG195	30.0	32.0	3758590	77124	Og	Sls				decomposed oolitic Sls, lesser B clay	9	67	247	-1	9.44	3433	
ZG195	32.0	34.0	3758591	77124	Og	Sls	AI	Sd	W	oolitic ankortitic Sls	6	43	169	-1	14.40	6800	
ZG195	34.0	36.0	3758592	77124	Og	Sls	AI	Sd	W	oolitic ankortitic Sls, minor B clay	5	34	139	-1	22.80	10900	
ZG195	36.0	38.0	3758593	77124	Og	Coy			LG	lesser MG pitted oolitic Sls	8	52	371	-1	9.94	3956	
ZG195	38.0	40.0	3758594	77124	Og	Sls	AI	Sd	MWLB	ankortitic heavy oolitic Sls	4	35	86	-1	19.80	10000	
ZG195	40.0	42.0	3758595	77124	Og	Sls	AI	Sd	MWLB	ankortitic heavy oolitic Sls	8	47	108	-1	28.30	13800	
ZG195	42.0	44.0	3758596	77124	Og	Sls	AI	Sd	MWLB	ankortitic heavy oolitic Sls, lesser DG skeletal? Sls	12	104	147	-1	40.10	18400	
ZG195	44.0	46.0	3758597	77124	Og	Sls	AI	Sd	Y	ankortitic Sls, lesser DG Sls + DG clay	6	44	141	-1	41.40	19500	
ZG195	46.0	48.0	3758598	77124	Og	Coy	Ds	Py	DG	lesser LB ankortitic Sls	16	84	299	-1	22.50	10000	
ZG196	0.0	3.0			Oha	Og											
ZG196	3.0	6.0	3758599	77124	Og	Coy			DG	lesser DG Sls	20	79	172	-1	17.40	7000	
ZG196	6.0	8.0	3758600	77124	Og	Coy			DG	lesser DG Sls + R fine sediment	13	68	261	-1	18.80	3177	
ZG196	8.0	10.0	3758633	77124	Og	Coy			R	lesser R fine sandstone + DG granular Sls	11	60	209	-1	15.30	6400	
ZG196	10.0	12.0	3758634	77124	Og	Coy			MLBG	lesser granular Sls	9	51	232	-1	10.60	3600	
ZG196	12.0	14.0	3758635	77124	Og	Sls	AI	Sd	LB	lesser DG&LB clay	10	76	200	-1	19.10	8700	
ZG196	14.0	16.0	3758636	77124	Og	Sls			DGLB	granular Sls, lesser B clay	6	27	122	-1	19.80	9500	
ZG196	16.0	18.0	3758637	77124	Og	Sls	AI	Sd	LBY	ankortitic Sls, lesser LB clay	14	32	120	-1	20.80	9100	
ZG196	18.0	20.0	3758638	77124	Og	Sls	AI	Sd	DGY	heavy, strongly ankortitic Sls, lesser DG clay	21	61	202	-1	12.20	3472	
ZG196	20.0	22.0	3758639	77124	Og	Sls		Py	RG	bedded, graded, fine Sss, lesser R clay	35	40	335	-1	8.06	2835	
ZG196	22.0	24.0	3758640	77124	Og	Coy			G		29	41	189	-1	4.58	1524	
ZG196	24.0	26.0	3758641	77124	Og	Sls			Sd	very broken	7	13	72	-1	12.10	6000	
ZG196	26.0	28.0	3758642	77124	Og	Sls			DG	granular Sls	5	18	89	-1	9.91	4699	
ZG196	28.0	30.0	3758643	77124	Og	Sls	AI	Sd	MLBG	honeycombed heavy, ankortitic Sls	5	48	236	-1	6.85	2989	
ZG196	30.0	32.0	3758644	77124	Og	Sls				oolitic	4	62	339	-1	4.78	2010	
ZG197	0.0	3.0			Oha	Og											
ZG197	3.0	6.0	3758645	77124	Og	Coy			N	irritable	22	44	42	-1	1.18	56	
ZG197	6.0	8.0	3758646	77124	Og	Coy			N	irritable	19	46	133	-1	0.52	44	
ZG197	8.0	10.0	3758647	77124	Og	Coy			N	irritable	18	61	263	-1	0.56	38	
ZG197	10.0	12.0	3758648	77124	Og	Coy			NG		66	78	316	-1	1.10	32	
ZG197	12.0	14.0	3758649	77124	Og	Coy			N	irritable	23	43	257	-1	0.84	40	
ZG197	14.0	16.0	3758650	77124	Og	Coy			N	irritable	17	51	629	-1	0.87	43	
ZG197	16.0	18.0	3758651	77124	Og	Coy			N	irritable	25	68	332	-1	0.87	289	
ZG197	18.0	20.0	3758652	77124	Og	Coy			N	irritable	10	45	145	-1	3.77	618	
ZG197	20.0	22.0	3758653	77124	Og	Coy			N	irritable	16	64	135	-1	1.70	1286	
ZG197	22.0	24.0	3758654	77124	Og	Sls			DG	granular	6	14	46	-1	3.37	1135	

563100

APPENDIX 2: Grievs Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ca	Pb	Zn	Ag	Fe%	Mn	S%
ZG197	24.0	26.0	3758655	77124	Og	Sls			DG	granular	11	51	598	-1	7.26	2396	
ZG197	26.0	28.0	3758656	77124	Og	Ccy	Al	Sd	N	minor Y ankortitic Ssl	12	78	518	-1	3.24	1832	
ZG197	28.0	30.0	3758657	77124	Og	Sls	Al	Sd	MDGY		7	15	97	-1	4.03	1367	
ZG197	30.0	32.0	3758658	77124	Og	Sls			MG	oolitic	6	30	4981	-1	2.96	1000	
ZG198	0.0	2.8			Oha	Cg											
ZG198	2.8	6.0	3758659	77124	Og	Ccy			N	friable	29	58	67	-1	1.40	36	
ZG198	6.0	8.0	3758660	77124	Og	Ccy			N	friable	26	61	39	-1	1.14	44	
ZG198	8.0	10.0	3758661	77124	Og	Ccy			N	friable	22	38	120	-1	1.34	73	
ZG198	10.0	12.0	3758662	77124	Og	Ccy			N		25	39	322	-1	2.31	64	
ZG198	12.0	14.0	3758663	77124	Og	Ccy			N		25	68	381	-1	0.96	53	
ZG198	14.0	16.0	3758664	77124	Og	Ccy			N		25	55	249	-1	0.75	50	
ZG198	16.0	18.0	3758665	77124	Og	Ccy			N		23	41	301	-1	0.60	49	
ZG198	18.0	20.0	3758666	77124	Og	Ccy			N		24	122	641	1	0.51	50	
ZG198	20.0	22.0	3758667	77124	Og	Sls			DG	granular, lesser DG clay	12	62	348	-1	1.35	213	
ZG198	22.0	24.0	3758668	77124	Og	Sls			DG	granular, lesser DG clay	10	112	446	-1	3.30	307	
ZG198	24.0	26.0	3758669	77124	Og	Sls			DG	granular, lesser DG clay	7	43	166	-1	2.89	496	
ZG198	26.0	28.0	3758670	77124	Og	Sls			MDG		13	16	61	-1	4.73	1603	
ZG198	28.0	30.0	3758671	77124	Og	Ccy			DG		14	47	225	-1	2.54	557	
ZG198	30.0	32.0	3758672	77124	Og	Ccy			B	minor ankortitic Sls	11	24	117	-1	3.38	498	
ZG198	32.0	32.5	3758673	77124	Og	Sls			MG		7	14	77	-1	2.33	528	
ZG199	0.0	1.0			Oha	Cg											
ZG199	1.0	2.0	3758674	77124	Og	Ccy			N	friable	32	127	33	-1	2.20	36	
ZG199	2.0	4.0	3758675	77124	Og	Ccy			N	friable	31	140	403	-1	2.53	35	
ZG199	4.0	6.0	3758676	77124	Og	Ccy			N	friable	41	116	778	-1	0.95	44	
ZG199	6.0	8.0	3758677	77124	Og	Ccy			N		22	163	683	-1	3.08	40	
ZG199	8.0	10.0	3758678	77124	Og	Ccy			N		15	102	265	-1	0.76	158	
ZG199	10.0	12.0	3758679	77124	Og	Ccy			N		18	153	252	-1	0.66	248	
ZG199	12.0	14.0	3758680	77124	Og	Ccy			N		16	113	397	1	14.60	3511	
ZG199	14.0	16.0	3758681	77124	Og	Ccy			N	minor DG granular Sls	15	98	273	-1	16.70	5600	
ZG199	16.0	18.0	3758682	77124	Og	Ccy			N	lesser DG granular Sls	13	66	230	-1	24.60	9100	
ZG199	18.0	20.0	3758683	77124	Og	Sls	Al	Sd	Y	strongly altered/ankortitic Sls	7	42	635	-1	4.51	1675	
ZG200	0.0	2.0			Oha	Cg											
ZG200	2.0	4.0	3758684	77124	Og	Ccy			DG	friable	83	216	113	-1	1.82	94	
ZG200	4.0	6.0	3758685	77124	Og	Ccy			DG	friable	24	130	311	-1	2.14	56	
ZG200	6.0	8.0	3758686	77124	Og	Sls			DG	granular	14	27	325	-1	0.66	54	
ZG200	8.0	10.0	3758687	77124	Og	Sls			DG	granular	14	18	315	-1	1.16	76	
ZG200	10.0	12.0	3758688	77124	Og	Ccy			DG		19	23	126	-1	0.73	62	
ZG200	12.0	14.0	3758689	77124	Og	Ccy			DG		19	32	139	-1	0.75	85	
ZG200	14.0	16.0	3758690	77124	Og	Ccy			DG		24	62	157	-1	2.34	64	
ZG200	16.0	18.0	3758691	77124	Og	Ccy			DG		19	101	207	-1	0.78	81	
ZG200	18.0	20.0	3758692	77124	Og	Ccy			DG		12	92	245	-1	0.97	570	
ZG200	20.0	22.0	3758693	77124	Og	Sls			DG	very fine, poor recovery	6	19	60	-1	13.80	4452	
ZG200	22.0	24.0	3758694	77124	Og	Sls	Al	Sd	Y	strongly altered, ankortitic Sls, minor clay	11	55	194	-1	16.90	6000	
ZG200	24.0	26.0	3758695	77124	Og	Sls	Al	Sd	Y	strongly altered, ankortitic Sls, minor clay	7	18	63	-1	10.20	3524	
ZG200	26.0	28.0	3758696	77124	Og	Sls	Al	Sd	Y	strongly altered, ankortitic Sls, minor clay	11	53	244	-1	12.50	3709	
ZG200	28.0	30.0	3758697	77124	Og	Sls	Al	Sd	Y	strongly altered, ankortitic Sls, minor clay	11	144	583	-1	2.94	902	
ZG201	0.0	2.0			Oha	Cg											
ZG201	2.0	4.0	3758698	77124	Og	Ccy			LG		35	10	11	-1	1.66	16	
ZG201	4.0	6.0	3758699	77124	Og	Ccy			LG		26	31	7	-1	0.68	37	
ZG201	6.0	8.0	3758700	77124	Og	Ccy			DG		47	234	109	-1	2.66	68	
ZG201	8.0	10.0	3908301	77124	Og	Ccy			DG		23	45	206	-1	1.17	67	
ZG201	10.0	12.0	3908302	77124	Og	Ccy			DG	minor DG clay	16	35	104	-1	0.55	68	
ZG201	12.0	14.0	3908303	77124	Og	Ccy			DG		16	38	421	-1	2.20	1375	

563101

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	5%
ZG201	14.0	16.0	3908304	77124	Og	Ccy			DG	minor DG granular Sls	16	21	99	-1	4.99	2317	
ZG201	16.0	18.0	3908305	77124	Og	Sls			DG	granular, lesser DG clay	6	12	32	-1	2.77	757	
ZG201	18.0	20.0	3908306	77124	Og	Sls			DG	granular, lesser DG clay	10	32	253	-1	3.59	919	
ZG201	20.0	22.0	3908307	77124	Og	Sls			DG	granular	8	42	161	-1	6.68	1558	
ZG201	22.0	24.0	3908308	77124	Og	Sls			DG	granular	6	42	124	-1	3.64	555	
ZG201	24.0	26.0	3908309	77124	Og	Sls			DG	granular	13	74	275	-1	4.09	670	
ZG201	26.0	28.0	3908310	77124	Og	Sls	Al	Sd	MG	granular	6	33	88	-1	3.36	976	
ZG201	28.0	30.0	3908311	77124	Og	Ccy			DG	DG granular Sls	18	56	133	-1	11.60	2904	
ZG201	30.0	32.0	3908312	77124	Og	Ccy			DG	minor strongly Sd altered Sls	25	170	464	-1	20.00	4065	
ZG201	32.0	34.0	3908313	77124	Og	Ccy			DG	minor strongly Sd altered Sls	28	104	620	-1	20.20	5900	
ZG201	34.0	36.0	3908314	77124	Og	Sls	Al	Sd	MG	oolitic	10	35	273	-1	19.60	7500	
ZG202	0.0	2.0			Cha	Cg											
ZG202	2.0	4.0	3908315	77124	Og	Cg			MB		3	6	17	-1	0.34	45	
ZG202	4.0	6.0	3908316	77124	Og	Ccy			MG		17	15	29	-1	0.52	14	
ZG202	6.0	8.0	3908317	77124	Og	Ccy			MG		31	29	16	-1	0.64	17	
ZG202	8.0	10.0	3908318	77124	Og	Ccy			DG		112	93	385	-1	2.48	29	
ZG202	10.0	12.0	3908319	77124	Og	Ccy			DG		21	36	300	-1	2.78	61	
ZG202	12.0	14.0	3908320	77124	Og	Ccy	Ds	Py	DG		19	28	324	-1	1.19	65	
ZG202	14.0	16.0	3908321	77124	Og	Sls			DG	decomposed, granular, lesser DG clay	15	23	220	-1	1.64	59	
ZG202	16.0	18.0	3908322	77124	Og	Ccy			DG		17	21	100	-1	0.89	57	
ZG202	18.0	20.0	3908323	77124	Og	Ccy			DG		12	32	228	-1	3.50	42	
ZG202	20.0	22.0	3908324	77124	Og	Sls			DG	granular, trace fossil material	13	21	36	-1	2.93	206	
ZG202	22.0	24.0	3908325	77124	Og	Sls	Ds	Py	DG	granular	6	8	13	-1	1.88	370	
ZG202	24.0	26.0	3908326	77124	Og	Sls			DG	granular, minor DG clay	5	9	107	-1	2.28	518	
ZG202	26.0	28.0	3908327	77124	Og	Sls			DG	granular, minor DG clay, calcite veined	6	18	89	-1	3.87	1027	
ZG202	28.0	30.0	3908328	77124	Og	Sls			MG	oolitic, calcite veined	5	19	102	-1	3.18	797	
ZG203	0.0	1.5			Cha	Cg											
ZG203	1.5	4.0	3908329	77124	Og	Sls				oolitic Sls, lesser B decomposed Sls	13	174	2230	1	1.89	94	
ZG204	0.0	1.5			Cha	Cg											
ZG204	1.5	3.0	3908330	77124	Og	Sls			MG	oolitic	2	17	117	-1	1.02	430	
ZG205	0.0	1.5			Cha	Cg											
ZG205	1.5	4.0	3908331	77124	Og	Ccy			DG		14	178	317	-1	1.70	46	
ZG205	4.0	6.0	3908332	77124	Og	Ccy			DG	decomposed Sls	13	117	540	-1	1.44	39	
ZG205	6.0	8.0	3908333	77124	Og	Ccy			DGB		12	143	537	-1	2.27	49	
ZG205	8.0	10.0	3908334	77124	Og	Ccy			DGB		25	174	547	-1	1.00	41	
ZG205	10.0	12.0	3908335	77124	Og	Ccy			DG	plastic	20	143	438	-1	2.38	74	
ZG205	12.0	14.0	3908336	77124	Og	Ccy			DG	plastic	18	167	694	-1	11.90	2317	
ZG205	14.0	16.0	3908337	77124	Og	Ccy			LB	lesser MG granular Sls	17	161	483	-1	7.00	1780	
ZG205	16.0	18.0	3908338	77124	Og	Ccy			LB		22	179	524	-1	3.57	725	
ZG205	18.0	20.0	3908339	77124	Og	Ccy			LB		28	237	700	-1	2.42	250	
ZG205	20.0	22.0	3908340	77124	Og	Ccy	Ds	Py	LB	lesser oolitic Sls	11	98	333	-1	17.40	8200	
ZG205	22.0	23.0	3908341	77124	Og	Ccy	Ds	Py	LB	sand, minor LB clay	5	44	216	-1	18.30	8900	
ZG206	0.0	5.5			Cha	Cg											
ZG207	0.0	3.5			Cha	Cg											
ZG207	3.5	6.0	3908342	77124	Og	Ccy			N		14	47	24	-1	0.29	29	
ZG207	6.0	8.0	3908343	77124	Og	Ccy			DGB		18	66	416	-1	1.14	23	
ZG207	8.0	10.0	3908344	77124	Og	Ccy			DGB		14	49	694	-1	0.93	42	
ZG207	10.0	12.0	3908345	77124	Og	Ccy	Ds	Py	DG	lesser fine G Sls	17	26	283	-1	1.86	37	
ZG208	0.0	3.7			Cha	Cg											
ZG210	0.0	4.0			Cha	Cg											
ZG210	4.0	6.0	3908346	77124	Og	Ccy			B	Peaty	4	9	13	-1	0.40	37	
ZG210	6.0	8.0	3908347	77124	Og	Ccy			DG	gritty	28	37	18	-1	0.50	35	
ZG210	8.0	10.0	3908348	77124	Og	Ccy			DG	gritty	31	71	253	-1	2.08	48	

563102

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG210	10.0	12.0	3908349	77124	Og	Ccy			DG	gritty	22	30	563	-1	1.07	41	
ZG210	12.0	14.0	3908350	77124	Og	Ccy			DG	gritty	18	21	1396	-1	1.62	36	
ZG210	14.0	16.0	3908351	77124	Og	Ccy	Ds	Py	DG	gritty	17	23	548	-1	2.23	39	
ZG210	16.0	18.0	3908352	77124	Og	Ccy			DG	Plastic	16	27	36	-1	1.59	66	
ZG210	18.0	20.0	3908353	77124	Og	Ccy			DG	Plastic	19	23	53	-1	2.02	579	
ZG210	20.0	22.0	3908354	77124	Og	Ccy			DG	Plastic	14	23	53	-1	4.50	714	
ZG210	22.0	23.0	3908355	77124	Og	Sls	Al	Sd?	NG		10	19	116	-1	8.90	1954	
ZG211	0.0	4.0			Cha	Cg											
ZG212	0.0	4.9			Cha	Cg											
ZG213	0.0	4.0			Cha	Cg											
ZG213	4.0	6.0	3908356	77125	Og	Sls	We		DGB	Decomposed + carbonaceous	65	123	150	-1	1.56	29	
ZG213	6.0	8.0	3908357	77125	Og	Sls	We		DGB	Decomposed + carbonaceous	22	79	337	-1	3.53	32	
ZG213	8.0	10.0	3908358	77125	Og	Sls	We		DGB	Decomposed + carbonaceous	17	53	609	-1	4.25	39	
ZG213	10.0	12.0	3908359	77125	Og	Sls	We		DG	Decomposed + carbonaceous	17	27	542	-1	3.03	44	
ZG213	12.0	14.0	3908360	77125	Og	Sls	We		DG	Decomposed + carbonaceous	21	25	447	-1	5.97	41	
ZG213	14.0	16.0	3908361	77125	Og	Sls	We		DG	Decomposed + carbonaceous	20	26	471	-1	4.26	44	
ZG213	16.0	18.0	3908362	77125	Og	Sls	We		DG	Decomposed + carbonaceous	18	71	602	-1	3.25	35	
ZG213	18.0	20.0	3908363	77125	Og	Sls	We		DG	Decomposed + carbonaceous	19	25	325	-1	6.88	68	
ZG213	20.0	22.0	3908364	77125	Og	Ccy			DG	Plastic	19	35	103	-1	4.69	54	
ZG213	22.0	24.0	3908365	77125	Og	Sls	We		DG	Decomposed + carbonaceous	15	19	95	-1	2.72	44	
ZG213	24.0	26.0	3908366	77125	Og	Sls	We		DG	Decomposed + carbonaceous	18	17	80	-1	3.63	49	
ZG213	26.0	28.0	3908367	77125	Og	Sls	We		DG	Decomposed + carbonaceous	19	21	88	-1	8.11	50	
ZG213	28.0	30.0	3908368	77125	Og	SlsCcy	WeVu		DG	Decomposed + carbonaceous	11	22	234	-1	12.90	881	
ZG213	30.0	32.0	3908369	77125	Og	Sls			DG	Granular	4	6	103	-1	1.93	465	
ZG213	32.0	32.8	3908370	77125	Og	Sls			DG	Granular	5	5	68	-1	1.42	355	
ZG214	0.0	4.0			Cha	Cg											
ZG214	4.0	6.0	3908371	77125	Og	Ccy			OBDG		10	11	54	-1	0.26	19	
ZG214	6.0	8.0	3908372	77125	Og	Ccy			DG		26	34	50	-1	0.37	21	
ZG214	8.0	10.0	3908373	77125	Og	Ccy			DG		42	68	56	-1	0.26	12	
ZG214	10.0	12.0	3908374	77125	Og	Sls	We		DG	Decomposed + carbonaceous	31	65	761	-1	1.44	15	
ZG214	12.0	14.0	3908375	77125	Og	Sls	We		DG	Decomposed + carbonaceous	17	34	315	-1	1.32	12	
ZG214	14.0	16.0	3908376	77125	Og	CcySls	We		DG	Decomposed + carbonaceous	18	33	692	-1	1.97	18	
ZG214	16.0	18.0	3908377	77125	Og	Ccy			DG		13	30	1151	-1	6.17	34	
ZG214	18.0	20.0	3908378	77125	Og	Sls	We		DG	Decomposed + carbonaceous	13	23	185	-1	6.80	29	
ZG214	20.0	22.0	3908379	77125	Og	Sls	We		DG	Decomposed + carbonaceous	27	26	87	-1	3.90	43	
ZG214	22.0	24.0	3908380	77125	Og	Ccy			DG		22	22	58	-1	3.21	154	
ZG214	24.0	26.0	3908381	77125	Og	Sls			DG	Granular. Minor Ccy	13	12	61	-1	9.65	2315	
ZG214	26.0	28.0	3908382	77125	Og	Sls	Fr		DG	Granular	7	6	43	-1	6.02	2003	
ZG214	28.0	30.0	3908383	77125	Og	Sls	Fr		DG	Granular, fresh	10	6	40	-1	3.26	838	
ZG214	30.0	32.0	3908384	77125	Og	Sls	Fr		G	Granular, fresh	7	5	35	-1	2.31	602	
ZG214	32.0	34.0	3908385	77125	Og	Sls	Fr		G	Granular, fresh	11	4	39	-1	2.32	787	
ZG214	34.0	36.0	3908386	77125	Og	SlsCcy			GLOB	Minor LOB clay	10	45	154	-1	4.33	1370	
ZG214	36.0	38.0	3908387	77125	Og	Sls	VuVn		LB		12	22	138	-1	2.43	621	
ZG214	38.0	40.0	3908388	77125	Og	Sls	Vu		LGB		4	6	56	-1	6.13	2233	
ZG214	40.0	42.0	3908389	77125	Og	SlsCcy			G	Granular. Minor Ccy	12	55	201	-1	2.25	755	
ZG214	42.0	44.0	3908390	77125	Og	Ccy			LB	Coarse cc	12	36	159	-1	1.09	377	
ZG214	44.0	46.0	3908391	77125	Og	Sls			DG	Granular	7	5	41	-1	3.02	1079	
ZG214	46.0	48.0	3908392	77125	Og	Sls	Vn		DG	Granular. Coarse cc	5	4	40	-1	1.02	365	
ZG214	48.0	50.0	3908393	77125	Og	Sls			DG	Granular. Could have continued	5	5	42	-1	1.40	571	
ZG215	0.0	6.0			Cha	Cg											
ZG215	6.0	8.0	3908394	77125	Og	Ccy			DB		19	44	86	-1	2.10	23	
ZG215	8.0	10.0	3908395	77125	Og	CcySls	We		DG	Decomposed + carbonaceous	22	52	86	-1	2.88	42	
ZG215	10.0	12.0	3908396	77125	Og	Ccy			DGB		22	30	86	-1	2.37	32	

563103

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG215	12.0	14.0	3908397	77125	Og	Coy			DGB	Plastic clay	21	28	88	-1	3.89	37	
ZG215	14.0	16.0	3908398	77125	Og	Coy			DGB	Plastic clay	19	32	161	-1	7.23	32	
ZG215	16.0	18.0	3908399	77125	Og	Coy			DGB	Plastic clay	24	33	187	-1	7.97	34	
ZG215	18.0	18.9	3908400	77125	Og	Coy			DGB	Sudden stop on hard bedrock	11	16	98	-1	3.99	75	
ZG216	0.0	4.0			Cha	Cg											
ZG216	4.0	6.0	3908401	77125	Og	Coy			DB	Peaty	55	41	40	-1	0.27	18	
ZG216	6.0	8.0	3908402	77125	Og	Coy			DB		42	43	56	-1	0.27	12	
ZG216	8.0	10.0	3908403	77125	Og	Coy			MGB		40	62	110	-1	0.34	10	
ZG216	10.0	12.0	3908404	77125	Og	SlsCoy	We		DGB	Decomposed lst	29	48	232	-1	1.14	26	
ZG216	12.0	14.0	3908405	77125	Og	CoySls	We		DG	Decomposed lst	21	32	229	-1	6.99	24	
ZG216	14.0	16.0	3908406	77125	Og	CoySls			DG	Coralline lst?	19	31	167	-1	6.34	32	
ZG216	16.0	16.8	3908407	77125	Og	SlsCoy			G	Coralline lst?	10	22	53	-1	3.31	89	
ZG217	0.0	3.0			Cha	Cg											
ZG217	3.0	6.0	3908408	77125	Og	Coy			DB	Peaty	16	37	477	-1	6.65	38	
ZG217	6.0	8.0	3908409	77125	Og	Coy			DGB		19	60	448	-1	3.98	35	
ZG217	8.0	10.0	3908410	77125	Og	Coy			DGB		20	128	674	-1	5.09	32	
ZG217	10.0	12.0	3908411	77125	Og	Coy			KG		20	233	498	-1	6.69	1494	
ZG217	12.0	14.0	3908412	77125	Og	CoySls			DG	Med g/s granular lst	13	127	334	-1	6.98	1872	
ZG217	14.0	16.0	3908413	77125	Og	SlsCoy			DG	Med g/s granular lst	18	192	510	-1	8.14	2681	
ZG217	16.0	18.0	3908414	77125	Og	SlsCoy	Vu		LB	"Spongey" lst	13	107	359	-1	17.40	7600	
ZG217	18.0	20.0	3908415	77125	Og	Sls			LGB	Oolitic	5	38	229	-1	3.57	1512	
ZG217	20.0	21.2	3908416	77125	Og	Sls			G	Oolitic	4	30	229	-1	3.74	1449	
ZG218	0.0	4.0			Cha	Cg											
ZG218	4.0	6.0	3908417	77125	Og	SlsCoy	We		GB		11	22	465	-1	2.95	31	
ZG218	6.0	8.0	3908418	77125	Og	SlsCoy	We		GB		25	114	343	-1	1.28	23	
ZG218	8.0	10.0	3908419	77125	Og	SlsCoy	We		GB	Decomposed lst	31	201	651	-1	1.22	27	
ZG218	10.0	12.0	3908420	77125	Og	SlsCoy	We		DGB	Decomposed lst	23	130	1259	-1	3.06	43	
ZG218	12.0	14.0	3908421	77125	Og	Coy			DG		29	112	783	-1	4.24	100	
ZG218	14.0	16.0	3908422	77125	Og	CoySls			DGOB	Shaley lst	27	180	633	-1	4.26	69	
ZG218	16.0	18.0	3908423	77125	Og	SlsCoy			DGOB	Shaley lst	18	161	489	-1	7.56	311	
ZG218	18.0	20.0	3908424	77125	Og	CoySls			LGB	"Spongey" lst	18	265	503	-1	3.20	516	
ZG218	20.0	22.0	3908425	77125	Og	SlsCoy			LGB	"Spongey" lst	11	242	348	-1	8.37	3314	
ZG218	22.0	24.0	3908426	77125	Og	Sls			LB	Oolitic?	22	582	768	-1	8.43	3537	
ZG218	24.0	26.0	3908427	77125	Og	Sls	Fr		LGB	Oolitic	4	42	131	-1	2.22	1101	
ZG218	26.0	28.0	3908428	77125	Og	Sls	Fr		LGB	Oolitic	3	67	263	-1	3.14	1599	
ZG218	28.0	30.0	3908429	77125	Og	Sls			G	Oolitic	2	144	324	-1	4.76	2256	
ZG219	0.0	4.0			Cha	Cg											
ZG219	4.0	6.0	3908430	77125	Og	Coy			B	Peaty	6	14	38	-1	0.50	27	
ZG219	6.0	8.0	3908431	77125	Og	Coy			B	Peaty	24	19	53	-1	0.34	27	
ZG219	8.0	10.0	3908432	77125	Og	Coy			B	Peaty	36	91	325	-1	2.16	38	
ZG219	10.0	12.0	3908433	77125	Og	Coy			DGLB		29	84	267	-1	1.42	29	
ZG219	12.0	14.0	3908434	77125	Og	CoySls	We		DG	Decomposed + carbonaceous	29	100	533	-1	4.40	42	
ZG219	14.0	16.0	3908435	77125	Og	Sls			DGLG		29	59	216	-1	3.81	33	
ZG219	16.0	18.0	3908436	77125	Og	Sls			DG	Carbonaceous	16	47	192	-1	4.05	908	
ZG219	18.0	20.0	3908437	77125	Og	Sls			DG	Fine g/s	18	34	170	-1	5.14	687	
ZG219	20.0	22.0	3908438	77125	Og	Sls			DG	Fine g/s	28	83	280	-1	4.25	210	
ZG219	22.0	24.0	3908439	77125	Og	Sls			DG	Fine g/s. Minor vuggy lst	15	77	510	-1	8.28	414	
ZG219	24.0	26.0	3908440	77125	Og	Sls			G	fossilif.?	4	16	130	-1	2.47	391	
ZG219	26.0	28.0	3908441	77125	Og	Sls			DGLG		5	13	57	-1	3.17	509	
ZG219	28.0	30.0	3908442	77125	Og	Sls	Fr		DG	Could have old drilling	4	6	38	-1	2.56	856	
ZG220	0.0	3.0			Cha	Cg											
ZG220	3.0	6.0	3908443	77125	Og	SlsCoy	Fe		DBR	Ferrug lst frags	25	261	453	-1	1.03	28	
ZG220	6.0	8.0	3908444	77125	Og	Coy			MGLB		34	131	362	-1	1.61	53	

563104

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG220	8.0	10.0	3908445	77125	Og	Coy			G		33	119	402	-1	2.03	42	
ZG220	10.0	10.7	3908446	77125	Og	CoySls			DGLBG	Plastic clay, massive Isl	28	100	374	-1	2.60	65	
ZG221	0.0	2.0			Oha	Cg											
ZG221	2.0	4.0	3908447	77125	Og	Coy			MLDB	Peaty	9	26	38	-1	0.36	18	
ZG221	4.0	6.0	3908448	77125	Og	Coy			MLDB	Peaty	48	302	1525	-1	2.38	18	
ZG221	6.0	8.0	3908449	77125	Og	SlsCoy			LYG	Oolitic	9	524	2543	-1	4.35	1100	
ZG221	8.0	10.0	3908450	77125	Og	Sls			LYG	Oolitic	3	34	350	-1	1.34	424	
ZG221	10.0	12.0	3908451	77125	Og	Sls			LYG	Oolitic	6	73	749	-1	1.96	488	
ZG221	12.0	14.0	3908452	77125	Og	Coy			MLDG	Plastic clay	18	181	1850	-1	5.10	407	
ZG221	14.0	16.0	3908453	77125	Og	Coy			MGLB	Plastic clay	37	370	2342	-1	4.32	142	
ZG221	16.0	18.0	3908454	77125	OgOha	CoyCg			MGLB	Plastic clay + minor caving gravels	43	506	718	-1	2.32	41	
ZG221	18.0	20.0	3908455	77125	OgOha	CoyCg			MGLB	Plastic clay + minor caving gravels	39	421	1755	-1	4.15	113	
ZG221	20.0	22.0	3908456	77125	Og	Coy			LKG	Plastic clay	23	133	852	-1	1.45	42	
ZG221	22.0	23.7	3908457	77125	Og	SlsCoy			LYG	Oolitic, minor clay	9	59	342	-1	1.32	326	
ZG222	0.0	2.0			Oha	Cg											
ZG222	2.0	4.0	3908458	77125	Og	Sls	We		DG	Decomposed + carbonaceous	14	167	705	-1	1.47	24	
ZG222	4.0	6.0	3908459	77125	Og	SlsCoy	We		DG	Decomposed + carbonaceous	45	165	988	-1	5.08	31	
ZG222	6.0	8.0	3908460	77125	Og	Coy			DG		41	217	834	-1	2.39	39	
ZG222	8.0	10.0	3908461	77125	Og	Coy			MLDG	Plastic clay	32	415	2334	-1	4.70	481	
ZG222	10.0	12.0	3908462	77125	Og	Coy			MLDGG		17	233	1461	-1	6.00	586	
ZG222	12.0	14.0	3908463	77125	Og	CoySls			MLDG	Oolitic	15	238	834	-1	6.50	1288	
ZG222	14.0	16.0	3908464	77125	Og	Sls			LYG	Oolitic	4	44	228	-1	1.29	570	
ZG222	16.0	18.0	3908465	77125	Og	Sls			LYG	Oolitic	3	41	336	-1	0.71	446	
ZG222	18.0	20.0	3908466	77125	Og	Sls			LYG	Oolitic	2	34	466	-1	1.06	513	
ZG222	20.0	22.0	3908467	77125	Og	Sls			LYG	Oolitic	2	46	229	-1	0.69	396	
ZG222	22.0	24.2	3908468	77125	Og	Sls			LYG	Oolitic	2	110	268	-1	1.04	557	
ZG223	0.0	2.0			Oha	Cg											
ZG223	2.0	4.0	3908469	77125	Og	Coy			DEG	Peaty	30	121	605	-1	2.96	36	
ZG223	4.0	6.0	3908470	77125	Og	Coy			MDBG		37	154	1028	-1	4.02	35	
ZG223	6.0	8.0	3908471	77125	Og	Coy			MLDG	Minor veg contam.	27	151	641	-1	2.44	31	
ZG223	8.0	10.0	3908472	77125	Og	Coy			LGB	Plastic clay	28	45	344	-1	3.26	31	
ZG223	10.0	12.0	3908473	77125	Og	CoySls	Vu		DG		20	202	964	-1	4.17	350	
ZG223	12.0	14.0	3908474	77125	Og	SlsCoy	Vu		LG	"Spongy" Isl	10	66	315	-1	4.45	1482	
ZG223	14.0	16.0	3908475	77125	Og	SlsCoy	Vu		LG	"Spongy" Isl	9	66	355	-1	4.57	1331	
ZG223	16.0	18.0	3908476	77125	Og	Coy			MBG		14	127	696	-1	5.55	1296	
ZG223	18.0	20.0	3908477	77125	Og	Coy			MLDB		17	156	583	-1	5.11	1010	
ZG223	20.0	22.0	3908478	77125	Og	SlsCoy			YG	Oolitic	8	127	309	-1	7.03	2340	
ZG223	22.0	24.0	3908479	77125	Og	Sls			LG	Oolitic	6	91	434	-1	3.04	1213	
ZG223	24.0	26.0	3908480	77125	Og	Sls			LG	Oolitic	6	135	402	-1	2.23	973	
ZG223	26.0	28.0	3908481	77125	Og	Sls			LG	Oolitic	3	137	437	-1	1.15	579	
ZG224	0.0	2.0			Oha	Cg											
ZG224	2.0	4.0	3908482	77125	Og	Coy			DG		22	71	192	-1	2.23	41	
ZG224	4.0	6.0	3908483	77125	Og	Coy			DGN		24	59	316	-1	3.15	53	
ZG224	6.0	8.0	3908484	77125	Og	Coy			DG		23	54	417	-1	4.27	60	
ZG224	8.0	10.0	3908485	77125	Og	Coy			DG		25	121	957	-1	4.60	55	
ZG224	10.0	12.0	3908486	77125	Og	Coy			DG		34	164	981	-1	4.45	62	
ZG224	12.0	14.0	3908487	77125	Og	Coy			DGB		19	45	269	-1	6.45	1192	
ZG224	14.0	16.0	3908488	77125	Og	Coy			DG		21	43	180	-1	5.90	1038	
ZG224	16.0	18.0	3908489	77125	Og	CoySls			MLDG	Shaley Isl	32	140	560	-1	6.37	1278	
ZG224	18.0	20.0	3908490	77125	Og	Sls			LG	Shaley + "spongy" Isl	12	36	255	-1	5.06	1314	
ZG224	20.0	22.0	3908491	77125	Og	Coy			MDBG		8	71	281	-1	5.30	779	
ZG224	22.0	24.0	3908492	77125	Og	CoySls			MDBG	"spongy" Isl	9	66	333	-1	4.49	1064	
ZG224	24.0	26.0	3908493	77125	Og	CoySls	Ds	Py	DG	"spongy" Isl. Trace py.	18	162	447	-1	6.80	1386	

563105

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG224	26.0	28.0	3908494	77125	Og	CcySls			MDGG	Granular + oolitic? lsts	20	111	459	-1	8.24	2255	
ZG224	28.0	30.0	3908495	77125	Og	SlsCcy			LGLB	Oolitic?	11	236	344	-1	7.02	2510	
ZG224	30.0	32.0	3908496	77125	Og	Sls	We		LYG	Oolitic	7	113	405	-1	2.80	1354	
ZG224	32.0	34.0	3908497	77125	Og	Sls	AI?	He	HG	Oolitic	4	84	242	-1	2.19	1012	
ZG224	34.0	36.0	3908498	77125	Og	Sls			LYG	Oolitic. Minor clay	9	83	366	-1	1.76	725	
ZG224	36.0	38.0	3908499	77125	Og	Sls	Fr		G	Oolitic	4	46	252	-1	1.85	646	
ZG225	0.0	1.0	3908500	77125	Oha	Cg					8	9	14	-1	0.28	21	
ZG225	1.0	2.0	3908500	77125	Og	Ccy			B	Peaty	8	9	14	-1	0.28	21	
ZG225	2.0	4.0	3908501	77125	Og	Ccy			DGN		34	45	94	-1	1.72	27	
ZG225	4.0	6.0	3908502	77125	Og	Ccy			DGN		26	45	663	-1	3.61	32	
ZG225	6.0	8.0	3908503	77125	Og	Ccy			DGN		42	86	611	-1	4.18	29	
ZG225	8.0	10.0	3908504	77125	Og	Ccy			MDGLB	Plastic clays	23	91	509	-1	3.78	44	
ZG225	10.0	12.0	3908505	77125	Og	Ccy			MDGLB	Plastic clays	32	91	337	-1	3.85	56	
ZG225	12.0	14.0	3908506	77125	Og	CcySsh			DGP	Purple shale?	37	43	172	-1	2.98	151	
ZG225	14.0	16.0	3908507	77125	Og	Ccy			FG		16	73	324	-1	3.76	520	
ZG225	16.0	18.0	3908508	77125	Og	SlsCcy			DG	Minor clay	9	26	86	-1	2.54	697	
ZG225	18.0	20.0	3908509	77125	Og	Sls			DG		11	87	145	-1	4.63	1428	
ZG225	20.0	22.0	3908510	77125	Og	Sls			DG		9	47	137	-1	3.52	1165	
ZG225	22.0	24.0	3908511	77125	Og	Ccy			LVB		15	93	301	-1	2.50	646	
ZG225	24.0	26.0	3908512	77125	Og	Sls			DG	Granular	8	14	65	-1	8.16	2993	
ZG225	26.0	28.0	3908513	77125	Og	Sls			DG	Granular	6	8	39	-1	12.40	4203	
ZG225	28.0	36.0			Og	Ox				Cavity. Bottom not reached.							
ZG226	0.0	2.0			Oha	Cg											
ZG226	2.0	4.0	3908514	77125	Og	Ccy			DBG		20	54	851	-1	3.19	60	
ZG226	4.0	6.0	3908515	77125	Og	Ccy			DBG		19	57	724	-1	4.76	38	
ZG226	6.0	8.0	3908516	77125	Og	Ccy			DBG		16	43	445	-1	4.22	88	
ZG226	8.0	10.0	3908517	77125	Og	Ccy			DBG		19	31	153	-1	6.21	52	
ZG226	10.0	12.0	3908518	77125	Og	CcySls	Fe		DGOB	Shaley lst?	21	35	256	-1	4.48	56	
ZG226	12.0	14.0	3908519	77125	Og	Ccy			DG	Plastic clays	24	50	235	-1	5.51	61	
ZG226	14.0	16.2	3908520	77125	Og	Sls	Ma		DG		9	14	42	-1	2.31	490	
ZG227	0.0	5.2			Oha	Cg											
ZG227	5.2	8.0	3908521	77125	Og	Ccy			DB		15	50	192	-1	0.97	22	
ZG227	8.0	10.0	3908522	77125	Og	Ccy			DB		54	178	228	-1	1.81	29	
ZG227	10.0	12.0	3908523	77125	Og	CcySls	We		DB		30	220	644	-1	3.78	27	
ZG227	12.0	14.0	3908524	77125	Og	SlsCcy			G	Granular. Minor clay	11	25	145	-1	2.50	114	
ZG227	14.0	16.0	3908525	77125	Og	Sls			G	Granular lst	8	10	69	-1	1.02	142	
ZG227	16.0	18.0	3908526	77125	Og	Ccy			DGB		24	57	205	-1	2.40	56	
ZG227	18.0	20.0	3908527	77125	Og	Ccy			DGB		18	42	125	-1	4.33	71	
ZG227	20.0	20.8	3908528	77125	Og	Ccy			G	Lime mudstone	9	12	56	-1	2.35	269	
ZG228	0.0	2.0	3908529	77125	Og	Ccy			LG	Clay + veg	16	132	123	-1	0.27	16	
ZG228	2.0	4.0	3908530	77125	Og	Ccy			LB		25	727	2247	-1	3.40	27	
ZG228	4.0	6.0	3908531	77125	Og	Ccy			BLB	Plastic clays	38	1363	593	2	1.39	29	
ZG228	6.0	8.0	3908532	77125	Og	Ccy			MLDB		59	3300	21900	2	10.80	28	14.70
ZG228	8.0	10.0	3908533	77125	Og	CcySls	Fe		MGB	Plastic clays. Minor ferrug lst	26	510	15900	1	9.43	125	10.80
ZG228	10.0	12.0	3908534	77125	Og	CcySls	Fe		G	Plastic clays. Minor ferrug lst	25	365	24500	1	13.20	140	14.60
ZG228	12.0	14.0	3908535	77125	Og	Sls	AI?	He	G	Oolitic	5	64	7200	-1	2.86	423	
ZG228	14.0	16.0	3908536	77125	Og	Sls	AI	He	HG	Oolitic. Weak haem altn.	8	47	3627	-1	1.89	529	
ZG228	16.0	16.8	3908537	77125	Og	Sls	AI	He	HG	Oolitic. Weak haem altn.	10	49	2727	-1	1.94	496	
ZG229	0.0	2.0	3908538	77125	Og	Ccy			LGW	Clay + veg	12	218	210	-1	0.57	23	
ZG229	2.0	4.0	3908539	77125	Og	Ccy			G	Plastic clays. Minor lst	27	1859	1332	2	1.04	27	
ZG229	4.0	6.0	3908540	77125	Og	Ccy			DG	Plastic clays	45	1281	3717	1	4.07	37	
ZG229	6.0	8.0	3908541	77125	Og	Ccy			MWDGN	Plastic clays	44	723	2702	1	3.08	61	
ZG229	8.0	10.0	3908542	77125	Og	Ccy			MLDB	Plastic clays	51	1900	6200	2	8.86	88	

563106

APPENDIX 2: Gnieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG229	10.0	12.0	3908543	77125	Og	Coy			MLDBG	Plastic clays	66	3700	7500	3	9.70	80	
ZG229	12.0	14.0	3908544	77125	Og	Coy			MLDBG	Plastic clays	58	2500	7600	2	12.00	78	
ZG229	14.0	16.0	3908545	77125	Og	CoySls			MLDBG	Plastic clays. Minor oolitic lst	35	801	3399	2	16.50	1228	
ZG229	16.0	18.0	3908546	77125	Og	CoySls			MLBKG	Plastic clays. Minor lst	23	246	2640	1	11.30	3939	
ZG229	18.0	20.0	3908547	77125	Og	Coy			MLDBG	Plastic clays	38	328	1470	-1	3.88	1207	
ZG229	20.0	22.0	3908548	77125	Og	Coy			MLDBG	Plastic clays	24	259	2464	-1	0.84	82	
ZG229	22.0	24.0	3908549	77125	Og	Coy			MLDBG	Plastic clays	19	210	1920	-1	1.32	56	
ZG229	24.0	26.0	3908550	77125	Og	CoySls			MLBKG	Plastic clays. Minor carbonaceous lst	20	222	2901	-1	1.53	72	
ZG229	26.0	28.0	3908551	77125	Og	CoySls			DG	Plastic clays. Minor carbonaceous lst	22	206	2622	-1	2.17	94	
ZG229	28.0	30.0	3908552	77125	Og	SlsCoy			DG	Minor plastic clays. carbonaceous lst	20	126	1114	-1	2.23	188	
ZG229	30.0	32.0	3908553	77125	Og	SlsCoy			DG	Minor plastic clays. carbonaceous lst	22	137	826	-1	2.19	141	
ZG229	32.0	32.7	3908554	77125	Og	Coy			DG	Bottom In Moina sst.	24	127	1856	-1	3.56	61	
ZG230	0.0	2.0	3908555	77125	Og	Coy			LG	Clay + veg	5	92	51	-1	0.32	22	
ZG230	2.0	4.0	3908556	77125	Og	CoySls	Fe		G	Minor ferrug lst	18	658	157	2	0.53	21	
ZG230	4.0	6.0	3908557	77125	Og	Coy			LYG	Plastic clays	32	631	671	1	2.36	64	
ZG230	6.0	8.0	3908558	77125	Og	Coy			LMDBG	Plastic clays	44	974	3925	1	4.81	899	
ZG230	8.0	10.0	3908559	77125	Og	Coy			DMBG	Plastic clays	31	1600	15500	1	16.70	3740	6.88
ZG230	10.0	12.2	3908560	77125	Og	SlsCoy	We		LG	Oolitic. Minor clay	9	310	11700	-1	6.90	817	5.68
ZG231	0.0	2.0	3908561	77125	Og	Coy			EG	Clay + veg	27	323	124	2	0.65	27	
ZG231	2.0	4.0	3908562	77125	Og	Coy			MDGLB		62	1758	553	1	2.18	30	
ZG231	4.0	6.0	3908563	77125	Og	Coy			MDGLB		25	1768	1455	-1	14.80	5400	
ZG231	6.0	8.0	3908564	77125	Og	Sls	Al?	Sd?	LYG	Granular lst	7	24	853	-1	36.80	15000	
ZG231	8.0	10.0	3908565	77125	Og	Sls			G	"spongy" lst	6	37	1155	-1	35.30	13800	
ZG231	10.0	12.0	3908566	77125	Og	SlsCoy			DG	"spongy" lst	7	35	886	-1	28.60	11100	
ZG231	12.0	14.0	3908567	77125	Og	Sls			G	Granular + "spongy" lst	5	19	667	-1	33.30	13300	
ZG231	14.0	16.0	3908568	77125	Og	Sls	Al?	Sd?	G	Minor atn?	10	54	612	-1	29.10	11000	
ZG231	16.0	18.0	3908569	77125	Og	Sls	Al	Sd	MDGY	Minor atn/replacement	10	50	429	-1	24.90	11100	
ZG231	18.0	20.0	3908570	77125	Og	Sls	Al	Sd	LYG		8	48	412	-1	24.40	11000	
ZG232	0.0	2.0			Oha	Gg											
ZG232	2.0	4.0	3908571	77125	Og	Coy			DCB	Peaty?	31	633	2325	-1	2.96	91	
ZG232	4.0	6.0	3908572	77125	Og	Coy			DG		32	499	2277	-1	3.25	69	
ZG232	6.0	8.0	3908573	77125	Og	Coy			DG	Plastic clays	24	95	1088	-1	5.68	84	
ZG232	8.0	10.0	3908574	77125	Og	Coy			DCB	Plastic clays	19	111	963	-1	16.30	6700	
ZG232	10.0	12.0	3908575	77125	Og	SlsCoy	Al	Sd	YG	"spongy" lst	7	59	679	-1	34.00	14500	
ZG232	12.0	14.0	3908576	77125	Og	SlsCoy			G	"spongy" lst	9	15	506	-1	34.50	15200	
ZG232	14.0	16.0	3908577	77125	Og	CoySls			DG	Plastic clays. spongy lst	15	59	562	-1	23.20	11100	
ZG232	16.0	18.0	3908578	77125	Og	CoySls			MDGLB	Plastic clays. granular lst	24	221	3433	-1	18.90	8100	
ZG232	18.0	20.0	3908579	77125	Og	SlsCoy			G	Granular lst, minor clay	13	125	2138	-1	21.80	9100	
ZG232	20.0	22.0	3908580	77125	Og	Sls			WLG	"spongy" lst	5	29	708	-1	10.20	2679	
ZG232	22.0	24.0	3908581	77125	Og	Sls			G	Oolitic?	5	668	989	-1	8.03	2414	
ZG232	24.0	24.5	3908582	77125	Og	Sls	Al?	Sd?	YG	Minor ankerite atn? Oolitic?	6	195	602	-1	6.61	2120	
ZG233	0.0	3.0			Oha	Gg											
ZG233	3.0	6.0	3908583	77125	Og	Coy			DB	Peaty	48	93	132	-1	1.29	37	
ZG233	6.0	8.0	3908584	77125	Og	Coy			DB	Peaty	24	31	157	-1	2.84	53	
ZG233	8.0	10.0	3908585	77125	Og	Coy			DCB		23	39	241	-1	2.12	37	
ZG233	10.0	12.0	3908586	77125	Og	Coy			DCB		23	42	197	-1	2.73	54	
ZG233	12.0	14.0	3908587	77125	Og	Sls?	We		DCB	Decomposed lst?	22	26	194	-1	2.00	58	
ZG233	14.0	16.0	3908588	77125	Og	Sls?	We		DB	Decomposed lst?	23	30	264	-1	1.67	97	
ZG233	16.0	18.0	3908589	77125	Og	Sls?	We		DB	Decomposed lst?	22	52	230	-1	1.27	126	
ZG233	18.0	20.0	3908590	77125	Og	Sls?	We		DCB	Decomposed lst?	23	37	387	-1	2.28	212	
ZG233	20.0	22.0	3908591	77125	Og	Sls?	We		DG	Decomposed lst?	27	46	301	-1	1.00	118	
ZG233	22.0	24.0	3908592	77125	Og	CoySls	We		DB	Decomposed lst?	20	38	326	-1	1.30	142	
ZG233	24.0	26.0	3908593	77125	Og	CoySls	We		DB	Decomposed lst?	19	51	413	-1	0.94	178	

563107

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG233	26.0	28.0	3908594	77125	Og	Coy			DBG		20	65	487	-1	0.63	173	
ZG233	28.0	28.8	3908595	77125	Og	Sls			G	Granular lst	8	17	129	-1	3.01	312	
ZG234	0.0	3.0			Oha	Cg											
ZG234	3.0	6.0	3908596	77125	Og	Coy			DB	Peaty	12	14	55	-1	0.54	39	
ZG234	6.0	8.0	3908597	77125	Og	Coy			DB		13	29	200	-1	0.95	31	
ZG235	0.0	2.0	3908598	77125	Og	Coy			DG	Plastic clays, minor veg	17	20	66	-1	18.70	8800	
ZG235	2.0	4.0	3908599	77125	Og	CoySls			DG	Plastic clays, carbonaceous lst	18	36	150	-1	20.60	9700	
ZG235	4.0	6.0	3908600	77125	Og	CoySls			DG	Plastic clays, carbonaceous lst	12	41	245	-1	30.60	14100	
ZG235	6.0	8.0	3908601	77125	Og	SlsCoy	We		DG		16	41	243	-1	21.30	10000	
ZG235	8.0	9.7	3908602	77125	Og	Sls	Vn	Sl	DG	Granular lst, minor ankerite veins	11	12	148	-1	38.20	16000	
ZG236	0.0	2.0	3908603	77125	Og	Coy			DG	Clay + veg	15	130	840	-1	1.86	263	
ZG236	2.0	4.0	3908604	77125	Og	Coy			DBG		16	88	589	-1	1.39	93	
ZG236	4.0	6.0	3908605	77125	Og	Coy			DBG	Plastic clays	19	69	647	-1	4.61	2445	
ZG236	6.0	8.0	3908606	77125	Og	CoySls			DG	Granular lst	10	30	209	-1	28.80	11800	
ZG236	8.0	10.0	3908607	77125	Og	SlsCoy			DG	Granular lst	8	29	175	-1	34.50	13700	
ZG236	10.0	12.0	3908608	77125	Og	CoySls			DG	Granular lst	10	13	104	-1	32.00	13700	
ZG236	12.0	14.0	3908609	77125	Og	CoySls			DG	Granular lst	21	47	212	-1	19.00	8200	
ZG236	14.0	16.0	3908610	77125	Og	SlsCoy			DG	Granular, carbonaceous lst	12	35	275	-1	28.40	12300	
ZG236	16.0	17.6	3908611	77125	Og	SlsCoy			DG	Granular, carbonaceous lst	13	124	607	-1	33.10	15600	
ZG237	0.0	2.0	3908612	77125	Og	Coy			DB	Peaty	12	103	875	-1	9.74	3124	
ZG237	2.0	4.0	3908613	77125	Og	Coy			DB		13	113	1167	-1	2.44	963	
ZG237	4.0	6.0	3908614	77125	Og	Coy			DB		17	109	1394	-1	1.90	601	
ZG237	6.0	8.0	3908615	77125	Og	Coy			DBG		26	539	2996	3	4.54	439	
ZG237	8.0	10.0	3908616	77125	Og	CoySls	Vu		DGLG	Vuggy lst	16	326	1702	1	16.30	6400	
ZG237	10.0	12.0	3908617	77125	Og	CoySls			DGLG		13	83	610	-1	13.80	4757	
ZG237	12.0	14.0	3908618	77125	Og	SlsCoy			G	Granular lst	9	68	506	-1	23.30	9800	
ZG237	14.0	16.0	3908619	77125	Og	SlsCoy			G	Granular lst	10	65	572	-1	32.50	10800	
ZG237	16.0	18.0	3908620	77125	Og	CoySls	Ma		G	Plastic clays, granular lst	15	19	73	-1	23.50	8800	
ZG237	18.0	20.0	3908621	77125	Og	CoySls	Ma		G	Plastic clays, granular lst	22	57	100	-1	15.40	4562	
ZG237	20.0	22.2	3908622	77125	Og	Sls	MaDs	Py	DG	Granular lst, py 2%	18	34	173	-1	23.60	9700	
ZG238	0.0	2.0	3908623	77125	OhaOg	CoyCg			DB	Peaty clay, gravel, veg	13	59	252	-1	1.23	242	
ZG238	2.0	3.0	3908624	77125	Og	Sls			LG	Fine gs carbonate mudstone	5	5	36	-1	1.84	520	
ZG239	0.0	2.0	3908625	77125	OhaOg	CgCoySls					12	33	94	-1	0.94	102	
ZG239	2.0	2.5	3908626	77125	OhaOg	CgCoySls					7	17	68	-1	1.17	252	
ZG240	0.0	2.5			Oha	Cg											
ZG240	2.5	3.5	3908627	77125	Og	CoySls			MLDB	Massive lst	17	83	428	-1	1.16	130	
ZG241	0.0	2.3			Oha	Cg											
ZG241	2.3	4.0	3908628	77125	Og	Coy			DB	Peaty	11	55	97	-1	0.51	39	
ZG241	4.0	6.0	3908629	77125	Og	Coy			DB	Peaty	17	56	156	-1	1.66	63	
ZG241	6.0	7.2	3908630	77125	Og	CoySls	Ma		MLDB	Fine gs massive lst	14	69	214	-1	1.39	205	
ZG242	0.0	2.5			Oha	Cg											
ZG242	2.5	3.9	3908631	77125	Og	Sls	Ma		LLG	Fine gs massive lst	6	3	25	-1	0.67	60	
ZG243	0.0	2.5			Oha	Cg											
ZG243	3.0	6.0	3908632	77125	Og	Coy			DB	Peaty	42	99	122	-1	0.87	22	
ZG243	6.0	8.0	3908633	77125	Og	Sls	We		DGYB	Granular lst	196	519	682	-1	0.71	23	
ZG243	8.0	10.0	3908634	77125	Og	Sls	We		DG	Carbonaceous	32	117	884	-1	1.34	24	
ZG243	10.0	12.0	3908635	77125	Og	Sls	We		DG	Carbonaceous	23	22	917	-1	2.52	37	
ZG243	12.0	14.0	3908636	77125	Og	Coy			DBG	Plastic clays	23	28	605	-1	2.70	31	
ZG243	14.0	16.0	3908637	77125	Og	Coy			DBG	Plastic clays	22	23	326	-1	3.63	40	
ZG243	16.0	17.8	3908638	77125	Og	CoySls	Lm		DG	Banded carbonate mudstone	19	16	247	-1	2.40	69	
ZG244	0.0	3.9			Oha	Cg				Could not get through gravel							
ZG245	0.0	6.0			Oha	Cg											
ZG245	6.0	8.0	3908639	77125	Og	StOms	WeFeBs	Py	DG	Abundant Py	19	31	146	-1	1.30	35	

R63108

APPENDIX 2: Grievies Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDIO	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Q _i	Pb	Zn	Ag	Fe%	Mn	S%
ZG245	8.0	10.0	3908640	77125	Og	CoySls	WeFeDs	Py	DG		16	15	125	-1	1.65	22	
ZG245	10.0	12.0	3908641	77125	Og	Ccy			G	Plastic clays	24	18	61	-1	2.28	39	
ZG245	12.0	13.7	3908642	77125	Og	Ccy			DG	Plastic clays, rare carbonate mudstone	16	25	133	-1	1.12	137	
ZG246	0.0	4.0			Oha	Cg											
ZG246	4.0	6.0	3908643	77125	Og	CoySls			DBG	Minor carbonate mudstone	14	19	147	-1	0.79	46	
ZG246	6.0	8.2	3908644	77125	Og	Sls			ALDG	Carbonate mudstone	7	9	32	-1	1.15	132	
ZG247	0.0	4.0			Oha	Cg											
ZG247	4.0	6.5	3908645	77125	Og	SlsCoy			MODG	Carbonate mudstone	6	15	85	-1	1.39	266	
ZG248	0.0	2.7			Oha	Cg											
ZG248	2.7	3.7	3908646	77125	Og	CoySls			DBG	Carbonate mudstone	62	7	101	-1	1.36	94	
ZG249	0.0				Oha	Cg											
ZG249	3.5	6.0	3908647	77125	Og	Ccy					25	39	524	-1	2.13	38	
ZG249	6.0	8.0	3908648	77125	Og	Ccy					24	25	317	-1	1.27	31	
ZG249	8.0	10.0	3908649	77125	Og	Ccy					23	34	280	-1	2.08	36	
ZG249	10.0	12.0	3908650	77125	Og	Ccy					13	15	350	-1	2.73	194	
ZG249	12.0	14.0	3908651	77125	Og	Ccy					27	25	248	-1	1.88	90	
ZG249	14.0	14.8	3908652	77125	Og	Ccy					11	10	55	-1	1.71	158	
ZG250	3.5	5.5	3908653	77125	Og	Sls					16	20	144	-1	1.54	49	
ZG252	1.8	4.0	3908654	77125	Og	Ccy					17	45	67	-1	0.59	146	
ZG252	4.0	4.9	3908655	77125	Og	Sls	Vn	Cc	GW	Mottled clay Coral Isl	10	32	79	-1	0.82	3474	
ZG253	0.0	2.0	3908656	77125	Og	Ccy			W		4	40	23	-1	0.32	407	
ZG253	2.0	4.0	3908657	77125	Og	Ccy			LG		10	141	25	-1	0.67	47	
ZG253	4.0	6.0	3908658	77125	Og	Ccy			BK		56	30	125	-1	1.20	25	
ZG253	6.0	8.0	3908659	77125	Og	Ccy			DG		63	24	40	-1	0.50	20	
ZG253	8.0	10.0	3908660	77125	Og	Ccy			DG		113	135	445	-1	1.45	30	
ZG253	10.0	12.0	3908661	77125	Og	Ccy			GB	Ferruginous clay	33	47	696	-1	3.56	40	
ZG253	12.0	14.0	3908662	77125	Og	Ccy	Os	Py	DG		24	31	135	-1	3.20	41	
ZG253	14.0	16.0	3908663	77125	Og	SlsSsl	We		DG		17	20	117	-1	1.58	65	
ZG254	0.0	2.0	3908664	77125	Og	Ccy			W		2	44	21	-1	0.28	15	
ZG254	2.0	4.0	3908665	77125	Og	Ccy			LB		9	46	30	-1	0.42	19	
ZG254	4.0	6.0	3908666	77125	Og	SlsCoy				CO3 Lst.	18	64	41	-1	0.55	21	
ZG254	6.0	8.0	3908667	77125	Og	CoySls			DB		15	37	61	-1	0.60	27	
ZG254	8.0	10.0	3908668	77125	Og	Sls			DG		14	32	151	-1	1.20	63	
ZG254	10.0	12.0	3908669	77125	Og	Ccy			DG	Carbonaceous clay	N/L						
ZG254	12.0	14.0	3908670	77125	Og	Ccy			DG	Carbonaceous clay	20	41	162	-1	1.46	36	
ZG254	14.0	16.0	3908671	77125	Og	Ccy			DG	Carbonaceous clay	19	25	86	-1	1.74	167	
ZG254	16.0	18.0	3908672	77125	Og	Ccy			DG	Carbonaceous clay	14	21	56	-1	1.78	339	
ZG254	18.0	20.0	3908673	77125	Og	CoySls			DG		10	18	138	-1	1.54	214	
ZG254	20.0	22.0	3908674	77125	Og	SlsOvc			LG		8	14	134	-1	1.66	390	
ZG254	22.0	24.0	3908675	77125	Og	CoyOvc			G	Calcite frags within carbonaceous clay	7	12	157	-1	1.37	415	
ZG254	24.0	26.0	3908676	77125	Og	Sls			DG	Calcite veined Carb. mudstone	8	16	198	-1	2.02	429	
ZG255	0.0	2.0			Oha	Cg											
ZG255	2.0	4.0	3908677	77125	Og	Ccy			W		11	51	291	-1	0.39	21	
ZG255	4.0	6.0	3908678	77125	Og	Ccy			LB		49	212	1326	-1	1.49	38	
ZG255	6.0	8.0	3908679	77125	Og	Ccy			M	Mottled clay	38	199	1367	-1	1.97	29	
ZG255	8.0	10.0	3908680	77125	Og	Ccy			M		35	197	1667	-1	1.47	29	
ZG255	10.0	12.0	3908681	77125	Og	Ccy			M		35	142	639	-1	1.38	17	
ZG255	12.0	14.0	3908682	77125	Og	Ccy			LG		29	83	686	-1	1.66	42	
ZG255	14.0	14.5	3908683	77125	Og	SlsCoy			DG		13	75	749	-1	1.20	92	
ZG256	0.0	2.0			Oha	Cg											
ZG256	2.0	4.0	3908684	77125	Og	Ccy			M		32	199	2605	-1	1.04	36	
ZG256	4.0	4.2	3908685	77125	Og	Sls	Le		LG	Porous lst	20	98	2204	-1	2.33	231	
ZG257	0.0	2.0			Oha	Cg											

563109

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DFO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qz	Pb	Zn	Ag	Fe%	Mn	S%
ZG257	2.0	4.0	3908686	77125	Og	CoyCg					12	35	775	-1	1.07	38	
ZG257	4.0	6.0	3908687	77125	Og	Sls			DG	Carbonaceous lst	16	18	95	-1	1.27	35	
ZG257	6.0	8.0	3908688	77125	Og	CoySls			WG		21	53	301	-1	0.77	30	
ZG257	8.0	10.0	3908689	77125	Og	Coy			M		40	180	2044	-1	1.26	48	
ZG257	10.0	12.0	3908690	77125	Og	Sls	Ds	Py	DG		17	73	765	-1	2.83	442	
ZG257	12.0	14.0	3908691	77125	Og	Sls			DG		7	38	269	-1	3.24	703	
ZG257	14.0	16.0	3908692	77125	Og	Sls			LG		5	31	153	-1	1.55	318	
ZG257	16.0	18.0	3908693	77125	Og	Sls	Bx		DG	Angular clasts set in FG. carb. matrix	3	30	148	-1	1.59	551	
ZG258	0.0	2.0			Oha	Cg											
ZG258	2.0	3.1	3908694	77126	Og	Sls			DG		4	3	23	-1	0.50	40	
ZG259	0.0	2.0			Oha	Cg											
ZG259	2.0	3.5	3908695	77126	Og	Sls			DG		6	6	13	-1	0.89	115	
ZG260	0.0	2.0	3908696	77126	Og	Coy			DB		4	7	15	-1	0.51	36	
ZG260	2.0	4.1	3908697	77126	Og	Sls	Ds	Py	DG	Abundant pyrite	15	17	95	-1	4.48	82	
ZG261	0.0	2.1	3908698	77126	Og	Sls			DG		3	-3	7	-1	0.35	23	
ZG262	0.0	4.0			Og	Sls											
ZG262	4.0	6.0	3908699	77126	Og	SlsCoy			WG	Coarse grained carbonate sst.	51	20	69	-1	4.53	37	
ZG262	6.0	8.0	3908700	77126	Og	Sls			GW		28	8	43	-1	2.98	19	
ZG262	8.0	8.9	3908701	77126	Om	Sss	Ma		W	Medium grained Moena Sst	20	38	12	-1	0.65	13	
ZG263	0.0	4.5			Oha	Cg											
ZG263	4.5	6.0	3908702	77126	Og	Coy			M		25	378	1346	-1	7.57	278	
ZG263	6.0	8.0	3908703	77126	Og	Coy			M	Pale mottled clay with remnant granular texture	20	214	401	-1	4.29	210	
ZG263	8.0	10.0	3908704	77126	Og	Coy			M		16	66	211	-1	2.36	77	
ZG263	10.0	12.2	3908705	77126	Om	SssCoy			YB	Weathered Sst.	31	69	159	-1	5.41	59	
ZG264	0.0	3.0			Oha	Cg											
ZG264	3.0	6.0	3908706	77126	OgOha	CoyCg					13	700	35800	-1	1.87	201	3.20
ZG264	6.0	8.0	3908707	77126	Om	Sss			YW	Feldspathic Sst.	4	47	2864	-1	0.82	336	
ZG264	8.0	10.0	3908708	77126	Og	SssCoy			YW		4	102	6700	-1	1.38	856	
ZG264	10.0	12.0	3908709	77126	Om	Sss			W		3	129	4780	-1	1.15	745	
ZG264	12.0	14.0	3908710	77126	Og	Coy			GB		38	5700	31700	5	6.60	927	2.12
ZG264	14.0	16.0	3908711	77126	Og	Coy			GB		90	3800	10700	27	7.83	104	0.86
ZG264	16.0	18.0	3908712	77126	Og	Coy			GB		242	5600	10800	29	11.10	240	0.53
ZG264	18.0	20.0	3908713	77126	Om	CoySss			LG		19	378	1170	-1	2.90	181	
ZG264	20.0	22.0	3908714	77126	Og	Coy			M		16	386	675	-1	2.90	186	
ZG264	22.0	24.0	3908715	77126	Og	Coy			LB		16	666	846	-1	3.24	256	
ZG264	24.0	26.0	3908716	77126	Og	Coy			M		18	400	1114	-1	4.63	240	
ZG264	26.0	28.0	3908717	77126	Og	CoySss			YW		18	368	2119	-1	9.05	250	
ZG264	28.0	30.0	3908718	77126	Om	Sss			YW		19	201	1725	-1	1.82	112	
ZG264	30.0	32.0	3908719	77126	Og	CoySss			BW		18	182	2211	-1	0.79	55	
ZG264	32.0	34.0	3908720	77126	Og	CoySss			M		26	117	498	-1	1.32	31	
ZG264	34.0	36.0	3908721	77126	Om	Sss			LB		36	133	1001	-1	0.66	18	
ZG264	36.0	38.0	3908722	77126	Om	Sss			G		24	18	187	-1	0.50	20	
ZG264	38.0	39.0	3908723	77126	Om	Sss			LB	Massive coarse grained Sst.	19	18	192	-1	0.41	13	
ZG265	0.0	4.0			Oha	Cg											
ZG265	4.0	6.0	3908724	77126	Og	Coy			DB		13	700	17100	-1	3.39	284	4.22
ZG265	6.0	8.0	3908725	77126	Og	CoySss			DB		5	110	7700	-1	1.56	300	
ZG265	8.0	10.0	3908726	77126	Om	Sss			LG		3	35	1455	-1	0.66	299	
ZG265	10.0	12.0	3908727	77126	Om	Sss			LG		3	65	1171	-1	0.65	344	
ZG265	12.0	14.0	3908728	77126	Og	CoySss			LB		22	1400	31900	-1	7.19	1871	5.77
ZG265	14.0	16.0	3908729	77126	Om	Sss			LG		4	268	2703	-1	1.51	776	
ZG265	16.0	18.0	3908730	77126	Om	Sss			LG		4	161	4027	-1	2.99	1525	
ZG265	18.0	20.0	3908731	77126	Om	Sss	We		LG		3	127	3690	-1	0.87	516	
ZG265	20.0	20.8	3908732	77126	Og	Sls			LG		3	223	3321	-1	0.99	535	

503110

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMR/LTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG266	0.0	4.0			Oha	Cg											
ZG266	4.0	6.0	3908733	77126	Og	Ss			LG		3	100	883	-1	1.19	727	
ZG266	6.0	8.0	3908734	77126	Og	SsSs			WP		2	37	1155	-1	1.41	900	
ZG266	8.0	10.0	3908735	77126	Og	SsCcy			BW		2	78	2321	-1	2.10	1122	
ZG266	10.0	12.0	3908736	77126	Og	Ss			LG	Oolitic lst	2	49	1723	-1	1.43	858	
ZG267	0.0	3.5			OhaOg	CgCcy											
ZG267	3.5	6.0	3908737	77126	Og	Ss			LG		16	178	7000	-1	3.53	1374	
ZG267	6.0	8.0	3908738	77126	Og	SsCcy			GW		15	1102	3058	-1	4.78	1790	
ZG267	8.0	10.0	3908739	77126	Og	Ss			GW	Minor coral content	9	987	2696	-1	5.39	1686	
ZG267	10.0	12.0	3908740	77126	Og	Ss			LG		5	533	2706	-1	5.56	1781	
ZG267	12.0	14.1	3908741	77126	Og	Ss			LG	Minor oolite content	5	257	1499	-1	3.65	1335	
ZG268	0.0	3.5	3908742	77126	Og	SsOvc			DG		8	36	323	-1	1.52	641	
ZG269	0.0	2.0			Oha	Cg											
ZG269	2.0	4.0	3908743	77126	Og	Ccy			DB		37	510	2693	-1	1.62	47	
ZG269	4.0	6.0	3908744	77126	Og	SsCcy			LG		9	113	1389	-1	0.85	332	
ZG269	6.0	8.0	3908745	77126	Og	Ss			LG	Fine grained pale grey CO3 mudstone.	8	33	441	-1	0.30	358	
ZG269	8.0	8.7	3908746	77126	Og	Ss			LG		4	24	431	-1	0.27	315	
ZG270	0.0	2.5			Oha	Cg											
ZG270	2.5	4.0	3908747	77126	Og	Ccy			DB		6	19	39	-1	0.91	23	
ZG270	4.0	5.1	3908748	77126	Og	Ss			DG	Fine grained dark grey CO3 mudstone.	10	17	35	-1	1.32	153	
ZG271	0.0	2.0			Og	Cg											
ZG271	2.0	4.0	3908749	77126	Og	Ccy			DB		13	83	247	-1	0.58	22	
ZG271	4.0	6.0	3908750	77126	Og	Ccy			NB		29	80	484	-1	4.25	38	
ZG271	6.0	8.0	3908751	77126	Og	Ss			LG		11	52	252	-1	1.08	293	
ZG271	8.0	10.0	3908752	77126	Og	Ss	Ds	Py	DG		9	28	140	-1	0.72	386	
ZG271	10.0	10.9	3908753	77126	Og	Ss			DG		7	27	96	-1	0.85	234	
ZG272	0.0	4.0			Oha					Hole abandoned, could not penetrate clays.							
ZG273	0.0	4.5			Oha	Cg											
ZG273	4.5	6.0	3908754	77126	Og	Ccy			DB		11	20	1676	-1	0.68	40	
ZG273	6.0	8.0	3908755	77126	Og	Ccy			DB		41	100	28900	-1	2.50	43	5.58
ZG273	8.0	10.0	3908756	77126	Og	Ss			LG		5	45	10800	-1	1.31	454	1.58
ZG273	10.0	12.0	3908757	77126	Og	SsOvc			LG		3	11	1939	-1	0.92	510	
ZG273	12.0	12.7	3908758	77126	Og	SsOvc			LG		5	21	4027	-1	0.93	354	
ZG274	0.0	3.5			Oha	Cg											
ZG274	3.5	4.0	3908759	77126	Og	Ccy			NB		5	24	305	-1	0.28	23	
ZG274	4.0	5.5	3908760	77126	Og	Ss			DG		15	69	3385	-1	2.18	69	
ZG275	0.0	2.0			Oha	Cg											
ZG275	2.0	4.0			Og	Ss			LG	Not sampled, hammered to 4m.							
ZG276	0.0	4.0			Oha	CgCos											
ZG276	4.0	6.0	3908761	77126	Og	Ss			LG		5	43	771	-1	0.33	287	
ZG277	0.0	2.0	3908762	77126	Oha	CgCos					35	221	165	-1	0.42	33	
ZG277	2.0	4.0	3908763	77126	Og	Ccy			NB		192	2700	10600	-1	1.90	28	3.59
ZG277	4.0	6.0	3908764	77126	Og	Ccy			NB		30	397	19600	-1	3.73	52	5.67
ZG277	6.0	8.0	3908765	77126	Og	Ccy			NB		38	1100	10700	-1	3.29	85	4.95
ZG277	8.0	8.5	3908766	77126	Og	Ss	Bx		LG	Oolitic brecciated lst.	4	260	1327	-1	1.41	428	
ZG278	0.0	2.0	3908767	77126	OgOha	CcyCg			DB		17	1037	10500	-1	2.24	775	1.58
ZG278	2.0	4.0	3908768	77126	Og	Ss			LG	Oolitic lst, minor CO3 sst.	3	66	1202	-1	1.14	586	
ZG278	4.0	6.0	3908769	77126	Og	Ss			LG		3	58	1168	-1	0.94	417	
ZG279	0.0	2.0	3908770	77126	Og	Ccy			M		73	1239	207	-1	0.48	21	
ZG279	2.0	4.0	3908771	77126	Og	Ccy			NDB		68	5500	13600	-1	1.59	32	1.56
ZG279	4.0	6.0	3908772	77126	Og	Ccy			B		33	1600	13500	-1	6.26	1378	4.04
ZG279	6.0	7.0	3908773	77126	Og	Ss			OG		6	189	1379	-1	3.65	1461	
ZG280	0.0	2.0	3908774	77126	OgOha	CcyCg			DB	Peaty dark brown clay, minor gravel	9	69	1343	-1	1.07	28	

563111

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG280	2.0	4.0	3908775	77126	Og	Ccy			NDB		15	103	10900	-1	4.16	52	5.26
ZG280	4.0	6.0	3908776	77126	Og	Ccy/Sls			N		7	43	1901	-1	2.10	599	
ZG280	6.0	8.0	3908777	77126	Og	SlsCcy			OG		6	24	279	-1	1.47	425	
ZG280	8.0	10.2	3908778	77126	Og	SlsCcy			OG	Coral frags present.	5	20	343	-1	1.23	433	
ZG281	0.0	2.0	3908779	77126	Og	CcyObs			N		22	457	1675	2	3.07	47	
ZG281	2.0	2.4			Og	Sls			LG								
ZG282	0.0	4.0			Oha	CgObs											
ZG282	4.0	6.0	3908780	77126	OgOha	CgCcy			DB		3	6	40	-1	0.24	15	
ZG282	6.0	8.0	3908781	77126	OgOha	CgCcy			DB		5	-3	71	-1	0.39	22	
ZG282	8.0	10.0	3908782	77126	Og	Ccy			DBN		13	50	667	-1	4.79	55	
ZG282	10.0	10.8	3908783	77126	Og	Sls			LG	Minor interstitial clays.	11	28	182	-1	2.94	220	
ZG283	0.0	3.0			Oha	Cg											
ZG283	3.0	4.0	3908784	77126	Og	Ccy			DB		11	8	33	-1	0.87	22	
ZG283	4.0	6.0	3908785	77126	Og	Ccy			N		19	27	63	-1	1.37	27	
ZG283	6.0	7.3			Og	Sls			LG								
ZG284	0.0	2.0			Oha	Cg				Hammered into basement							
ZG284	2.0	2.3			Og	Sls			LG	No clay.							
ZG285	0.0	2.2			Oha	Cg											
ZG285	2.2	2.5			Og	Sls			OG	No clay.							
ZG286	0.0	2.0			Oha	Cg											
ZG286	2.0	3.0	3908786	77126	Og	Ccy			N		9	10	24	-1	0.98	31	
ZG286	3.0	3.1			Og	Sls			LG								
ZG287	0.0	2.0			Oha	Cg											
ZG287	2.0	3.1	3908787	77126	Og	Sls			OG		26	19	48	-1	1.59	40	
ZG288	0.0	1.0			Oha	Cg											
ZG288	1.0	1.1			Og	Sls			OG	No clay.							
ZG289	0.0	2.0			Oha	Cg											
ZG289	2.0	3.5	3908788	77126	Og	Ccy					21	403	438	-1	1.01	18	
ZG289	3.5	3.6			Og	Sls			OG								
ZG290	0.0	2.5			Oha	Cg											
ZG290	2.5	4.0	3908789	77126	Og	Ccy			OG		34	260	570	-1	2.59	28	
ZG290	4.0	6.0	3908790	77126	Og	SlsCcy			OG		19	69	40	-1	1.75	31	
ZG290	6.0	8.0	3908791	77126	Og	Sls	We		OG		37	299	191	-1	2.10	43	
ZG290	8.0	10.0	3908792	77126	Og	Sls			OG		10	21	55	-1	1.79	182	
ZG290	10.0	10.9	3908793	77126	Og	SlsOvc	Bx		LG		15	26	58	-1	2.39	152	
ZG291	0.0	2.0			Oha	Cg											
ZG291	2.0	4.0	3908794	77126	Og	Ccy			DCB		15	33	156	-1	1.59	25	
ZG291	4.0	4.3			Og	SlsOvc			OG								
ZG292	0.0	2.0			Oha	Cg											
ZG292	2.0	4.0	3908795	77126	Og	Ccy			DGN		12	8	164	-1	0.94	51	
ZG292	4.0	6.0	3908796	77126	Og	Ccy			DB		17	22	91	-1	1.16	20	
ZG292	6.0	8.0	3908797	77126	Og	Ccy			DB		19	27	81	-1	3.35	29	
ZG292	8.0	8.1			Og	Sls			DB								
ZG293	0.0	2.0	3908798	77126	Oha	ObsCg			DB		6	7	15	-1	0.51	21	
ZG293	2.0	4.0	3908799	77126	Og	Ccy			DCB		20	246	1733	-1	2.41	41	
ZG293	4.0	4.1			Og	Sls			DB								
ZG294	0.0	2.0			Oha	Cg											
ZG294	2.0	3.3	3908800	77126	Og	Ccy			DB		10	78	1937	-1	2.56	54	
ZG294	3.3	3.4			Og	Sls			DB								
ZG295	0.0	2.0			Oha	Cg											
ZG295	2.0	3.9	3908801	77126	Og	Ccy			OG		16	11	57	-1	1.23	33	
ZG295	3.9	4.0			Og	Sls			OG								
ZG296	0.0	2.0	3908802	77126	Oha	ObsCg					19	24	49	-1	1.24	27	

563112

APPENDIX 2: Grievs Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG296	2.0	4.0	3908803	77126	Og	Ccy			BN		17	16	86	-1	3.63	37	
ZG296	4.0	5.0	3908804	77126	Og	Sts			DG		12	15	68	-1	7.26	89	
ZG297	0.0	2.0			Oha	Cg											
ZG297	2.0	2.5	3908805	77126	Og	Sts			DG		10	4	17	-1	0.95	71	
ZG298	0.0	2.0			Oha	CgObs											
ZG298	2.0	4.0	3908806	77126	Og	Sts	Wa				17	37	183	-1	1.33	37	
ZG298	4.0	6.0	3908807	77126	Og	Sts					11	262	346	-1	2.29	78	
ZG298	6.0	6.1			Og	Sts			DG								
ZG299	0.0	2.0	3908808	77126	OgOha	CgCcy			LB		9	356	326	-1	0.67	19	
ZG299	2.0	4.0	3908809	77126	Og	Ccy			DG		19	316	1974	-1	4.18	49	
ZG299	4.0	5.5	3908810	77126	Og	StsOvc			DG		15	199	2611	-1	4.98	50	
ZG300	0.0	2.0	3908811	77126	Og	Ccy			DG		21	145	13400	-1	7.40	31	8.36
ZG300	2.0	4.0	3908812	77126	Og	Ccy			DB		19	59	1303	-1	4.22	53	
ZG300	4.0	6.0	3908813	77126	Og	Ccy			N		20	60	588	-1	3.19	69	
ZG300	6.0	8.0	3908814	77126	Og	Ccy			MB		14	1100	10800	2	1.70	102	2.37
ZG300	8.0	10.0	3908815	77126	Og	Ccy			BN		15	327	2738	-1	2.49	82	
ZG300	10.0	12.0	3908816	77126	Og	Ccy			DB		19	409	2244	-1	1.86	64	
ZG300	12.0	13.0	3908817	77126	Og	CcySts			DB		14	88	981	-1	2.47	78	
ZG300	13.0	13.1			Og	Sts											
ZG301	0.0	2.0	3908818	77126	OgOha	CcyCg			DG		20	121	1496	-1	2.20	49	
ZG301	2.0	4.0	3908819	77126	Og	Ccy			DGN		20	191	1055	-1	3.80	47	
ZG301	4.0	4.8	3908820	77126	Og	Sts			DB		16	294	1094	-1	3.28	83	
ZG302	0.0	2.0			Oha	CgObs			B								
ZG302	2.0	4.0	3908821	77126	Og	CcyCg			YB		10	21	277	-1	2.10	19	
ZG302	4.0	6.0	3908822	77126	Og	Ccy			M	Pale mottled clay.	14	25	381	-1	1.81	30	
ZG302	6.0	8.0	3908823	77126	Og	Ccy			DG								
ZG302	8.0	10.0	3908824	77126	Og	Ccy			DG		14	23	903	-1	5.88	33	
ZG302	10.0	12.0	3908825	77126	Og	Ccy			DG		13	24	774	-1	6.60	30	
ZG302	12.0	14.0	3908826	77126	Og	Ccy			DG		14	24	300	-1	6.58	28	
ZG302	14.0	16.0	3908827	77126	Og	Ccy			DG		17	31	251	-1	6.95	34	
ZG302	16.0	18.0	3908828	77126	Og	Sts			DG		16	19	142	-1	1.43	40	
ZG302	18.0	20.0	3908829	77126	Og	Sts			DG		18	38	1124	-1	1.73	39	
ZG302	20.0	22.0	3908830	77126	Og	Sts			DG		18	28	413	-1	1.96	33	
ZG303	0.0	2.0			Oha	Og											
ZG303	2.0	4.0	3908831	77126	Og	Sts			DG		25	29	190	-1	1.59	49	
ZG304	0.0	1.5			Og	Sts			DG	No clay.							
ZG305	0.0	2.0			Og	Obs											
ZG305	2.0	4.0	3908832	77126	Og	Ccy			DG		19	118	301	-1	1.64	38	
ZG305	4.0	4.1			Og	Sts			LG								
ZG306	0.0	1.5			Og	Sts			DG	Clay < 20cm thick.							
ZG307	0.0	2.0			Oha	Cg											
ZG307	2.0	4.0	3908833	77126	Og	CcySts			DG		22	133	888	-1	3.42	52	
ZG307	4.0	5.2	3908834	77126	Og	Sts	Ps	Py		Carbonaceous, pyritic st.	13	86	152	-1	9.03	236	
ZG308	0.0	2.0			Oha	CgObs											
ZG308	2.0	4.0	3908835	77126	Og	Ccy			M		10	19	40	-1	0.64	45	
ZG308	4.0	6.0	3908836	77126	Og	Ccy			DB		23	604	267	-1	0.57	31	
ZG308	6.0	8.0	3908837	77126	Og	Ccy			DG		24	616	1780	-1	7.00	37	
ZG308	8.0	10.5	3908838	77126	Og	Ccy			DG		22	143	563	-1	5.84	50	
ZG308	10.5	10.6			Og	Sts			DG								
ZG309	0.0	2.0			Oha	CgObs											
ZG309	2.0	4.0	3908839	77126	Og	Ccy			G		21	176	1293	-1	5.26	40	
ZG309	4.0	6.0	3908840	77126	Og	Ccy			DG		25	130	1629	-1	5.43	48	
ZG309	6.0	6.5			Og	Sts			DG								

503113

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRUTH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG310	0.0	2.0			Qha	Cg											
ZG310	2.0	4.0	3908841	77126	Og	Coy			OG		20	327	2137	-1	2.17	53	
ZG310	4.0	6.0	3908842	77126	Og	Coy			OG		18	171	1254	-1	5.10	64	
ZG310	6.0	8.8	3908843	77126	Og	Coy			OG		20	843	2895	-1	4.08	58	
ZG310	8.8	8.9			Og	Sls			OG								
ZG311	0.0	0.0			Qha	Cg				Hole abandoned - could not penetrate gravel.							
ZG312	0.0	2.0			Qha	Cg											
ZG312	2.0	4.0	3908844	77126	Og	Sls	De	Py	OG		12	251	1054	-1	22.20	50	
ZG312	4.0	6.0	3908845	77126	Og	Sls	De	Py	OG		7	144	1476	-1	1.84	170	
ZG312	6.0	7.0	3908846	77126	Og	Sls			OG		6	42	1044	-1	1.85	231	
ZG313	0.0	2.0			Qha	Cg											
ZG313	2.0	3.0	3908847	77126	Og	Sls			LG		4	878	513	-1	0.54	256	
ZG314	0.0	4.0			Og	Sls			LG	1st at surface.							
ZG314	4.0	6.0	3908848	77126	Og	Sls			G		3	150	221	-1	0.38	213	
ZG315	0.0	2.0			Qha	Cg											
ZG315	2.0	4.0	3908849	77126	Og	Coy			OG		17	897	1747	-1	4.07	54	
ZG315	4.0	6.0	3908850	77126	Og	Sls			LG		8	275	569	-1	1.54	252	
ZG316	0.0	1.5			Qha	Cg											
ZG316	1.5	4.0	3908851	77126	Og	CoySls			OG		24	213	905	-1	3.32	38	
ZG316	4.0	6.0	3908852	77126	Og	Sls			G		22	277	2001	-1	4.37	54	
ZG316	6.0	8.0	3908853	77126	Og	Sls	We		OG		20	174	2117	-1	6.31	55	
ZG316	8.0	10.0	3908854	77126	Og	Sls			OG		13	222	678	-1	4.05	124	
ZG316	10.0	12.0	3908855	77126	Og	Sls			OG		18	9900	6000	2	5.61	153	
ZG317	0.0	2.0			Qha	Cg											
ZG317	2.0	4.0	3908856	77126	Og	Sls	De	Py	LG	Pyritic 1st.	25	3800	33200	9	1.79	72	3.77
ZG318	0.0	2.0	3908857	77126	Og	Coy					14	286	2203	-1	1.64	23	
ZG318	2.0	4.0	3908858	77126	Og	Coy			M		26	433	4151	-1	4.77	67	
ZG318	4.0	4.2			Og	Sls			LG								
ZG319	0.0	4.0			Qha	Cg				Hole abandoned - could not penetrate gravel.							
ZG320	0.0	2.5	3908859	77126	QhaOg	CgCoy					14	129	1044	-1	1.36	45	
ZG320	2.5	4.0	3908860	77126	Og	Coy			M		17	130	1462	-1	1.34	27	
ZG320	4.0	6.0	3908861	77126	Og	Coy			M	Light-coloured mottled clays.	19	44	824	-1	1.20	30	
ZG320	6.0	8.0	3908862	77126	Og	Coy			LB		16	19	349	-1	1.24	42	
ZG320	8.0	10.0	3908863	77126	Og	Coy			M		16	19	385	-1	1.24	40	
ZG320	10.0	12.0	3908864	77126	Og	Coy			M		18	92	989	-1	1.18	40	
ZG320	12.0	13.5	3908865	77126	Og	Sls			LG		14	11	226	-1	1.53	44	
ZG321	0.0	2.0			Qha	Cg											
ZG321	2.0	2.4	3908866	77126	Og	Sls			LG		11	7	48	-1	1.04	43	
ZG322	0.0	2.0			Qha	Cg											
ZG322	2.0	4.0	3908867	77126	Og	SlsCoy	We		DV		17	19	177	-1	2.58	33	
ZG322	4.0	6.0	3908868	77126	Og	Coy			OGB		32	163	855	-1	15.20	29	
ZG322	6.0	8.0	3908869	77126	Og	Coy			OB		30	218	781	-1	14.70	45	
ZG322	8.0	8.4			Og	Sls	Bx		WG	W calcareous angular clasts in a G silty matrix.							
ZG323	0.0	4.0	3908870	77126	QhaOg	CgCoy			N								
ZG323	4.0	6.0	3908871	77126	QhaOg	CoyCoy			OG		20	65	1108	-1	4.22	34	
ZG323	6.0	8.0	3908872	77129	Og	SlsCoy			OG		29	46	651	-1	7.16	26	
ZG323	8.0	10.0	3908873	77129	Og	SlsCoy	We		OG		19	35	373	-1	7.39	53	
ZG323	10.0	12.0	3908874	77129	Og	CoySls			M		10	16	119	-1	1.63	83	
ZG323	12.0	14.0	3908875	77129	Og	CoySls			OB		15	35	150	-1	2.75	61	
ZG323	14.0	15.5	3908876	77129	Og	CoySls			OB		12	32	229	-1	3.93	84	
ZG323	15.5	16.0			Og	Sls			WG								
ZG324	0.0	2.0			Qha	Cg											
ZG324	2.0	4.0	3908877	77129	Og	Coy			BN		17	81	2601	-1	3.41	23	

563114

APPENDIX 2: Grievess Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMALITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	Sp%
ZG324	4.0	6.0	3908878	77129	Og	Ccy			DG		26	40	1651	-1	5.77	34	
ZG324	6.0	8.0	3908879	77129	Og	Ccy			M	Pale mottled clay	10	17	98	-1	2.00	136	
ZG324	8.0	10.0	3908880	77129	Og	Sls			DG		8	14	37	-1	1.73	208	
ZG324	10.0	12.0	3908881	77129	Og	Sls			DG		6	15	48	-1	2.05	192	
ZG324	12.0	13.2	3908882	77129	Og	SlsOvc			LG		6	10	27	-1	1.76	249	
ZG325	0.0	2.0			Oha	CgCbs											
ZG325	2.0	4.0	3908883	77129	Og	CcySls			M		9	86	27	-1	1.60	38	
ZG325	4.0	5.5	3908884	77129	Og	Ccy			LG		10	6	36	-1	1.65	56	
ZG325	5.5	6.0			Og	Sls			DG								
ZG326	0.0	2.0	3908885	77129	OhaOg	CbsCgCcy			CB		3	3	19	-1	0.65	24	
ZG326	2.0	4.0	3908886	77129	Og	SlsCcy	We		DG		10	29	85	-1	1.12	42	
ZG326	4.0	6.0	3908887	77129	Og	SlsCcy			DG		12	28	256	-1	1.78	46	
ZG326	6.0	8.0	3908888	77129	Og	SlsCcy	We		DG		10	26	199	-1	2.11	30	
ZG326	8.0	10.0	3908889	77129	Og	CcySls			NB		15	50	190	-1	2.24	28	
ZG326	10.0	12.0	3908890	77129	Og	Ccy			M		7	86	212	-1	2.12	23	
ZG326	12.0	14.0	3908891	77129	Og	Ccy			NB		12	118	775	-1	10.50	29	
ZG326	14.0	16.0	3908892	77129	Og	Ccy			N		11	352	1184	1	9.92	19	
ZG326	16.0	18.0	3908893	77129	Og	Ccy			M		16	418	1031	1	1.76	23	
ZG326	18.0	20.0	3908894	77129	Og	Sls			DG	Laminated dark grey CO3 siltstone	11	14	123	-1	1.22	29	
ZG326	20.0	22.0	3908895	77129	Og	Sls	We		DG		12	75	618	2	1.52	29	
ZG326	22.0	24.0	3908896	77129	Og	Sls	We		DG		13	37	497	-1	1.95	35	
ZG326	24.0	26.0	3908897	77129	Og	Sls			DG		17	29	241	-1	1.99	47	
ZG326	26.0	26.2			Og	Sls			DG								
ZG327	0.0	2.0			Oha	CbsCg											
ZG327	2.0	4.0	3908898	77129	OhaOg	CcyCg			B		2	15	19	-1	0.30	15	
ZG327	4.0	6.0	3908899	77129	Og	Ccy			M		14	47	61	-1	0.39	20	
ZG327	6.0	8.0	3908900	77129	Og	Ccy			N		22	161	9400	-1	4.10	38	
ZG327	8.0	10.0	3908901	77129	Og	Ccy			NB		15	150	2935	-1	10.00	51	
ZG327	10.0	11.0	3908902	77129	Og	Ccy			B		9	89	636	-1	1.25	94	
ZG327	11.0	11.2			Og	Sls			GW								
ZG328	0.0	2.5			Oha	Cg											
ZG328	2.5	4.0	3908903	77129	Og						19	10	43	-1	1.26	40	
ZG328	4.0	6.0	3908904	77129	Og	OvcSls			LG		29	24	55	-1	1.16	41	
ZG328	6.0	6.5	3908905	77129	Og	Sls			LG		35	33	78	-1	1.38	49	
ZG329	0.0	2.0			Oha	CbsCg											
ZG329	2.0	4.0	3908906	77129	Og	SlsCcy			LG	Fine grained light grey silty carbonate.	10	12	291	-1	1.11	26	
ZG329	4.0	6.0	3908907	77129	Og	SlsCcy	We		DG		13	17	941	-1	2.57	34	
ZG329	6.0	8.0	3908908	77129	Og	Ccy			NB		13	12	1598	-1	4.79	27	
ZG329	8.0	10.0	3908909	77129	Og	Sls	We		DG		16	55	1972	-1	2.55	28	
ZG329	10.0	12.0	3908910	77129	Og	Sls	We		DG		74	228	1399	-1	3.05	28	
ZG329	12.0	14.0	3908911	77129	Og	Sls	We		LG		641	75	198	2	9.59	24	
ZG329	14.0	16.0	3908912	77129	Og	Sls	We		LG		276	64	284	1	3.26	25	
ZG329	16.0	18.0	3908913	77129	Og	CcySls			M		42	28	542	-1	2.92	24	
ZG329	18.0	20.0	3908914	77129	Og	Ccy			DG		22	12	247	-1	3.57	34	
ZG329	20.0	22.0	3908915	77129	Og	Sls			DG		24	6	90	-1	1.60	40	
ZG329	22.0	24.0	3908916	77129	Og	SlsCcy			DG	Minor interstitial clays.	17	3	113	-1	1.57	36	
ZG329	24.0	26.0	3908917	77129	Og	Sls			LG		23	17	93	-1	2.58	62	
ZG329	26.0	28.0	3908918	77129	Og	Sls			DG	Massive, monotonous silty carbonate.	22	24	68	-1	2.45	61	
ZG330	0.0	2.0			Oha	CbsCg											
ZG330	2.0	4.0			Oha	Cg											
ZG330	4.0	6.0			Oha	Cg											
ZG330	6.0	8.0	3908919	77129	OhaOg	CgCcy			LB		4	28	9	-1	0.28	13	
ZG330	8.0	10.0	3908920	77129	OhaOg	CgCcy				Sandy gravel with minor clay.	4	14	7	-1	0.34	19	

503115

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG330	10.0	12.0	3908921	77129	Og				LB		23	31	27	-1	0.37	18	
ZG330	12.0	14.0	3908922	77129	Og				DBLB		68	206	829	1	1.47	31	
ZG330	14.0	16.0	3908923	77129	Og				DB		20	536	2420	-1	3.41	39	
ZG330	16.0	18.0	3908924	77129	Og				N		24	494	1729	1	6.78	50	
ZG330	18.0	20.0	3908925	77129	Og				DGN		23	861	1638	2	6.64	95	
ZG330	20.0	22.0	3908926	77129	Og				LG	Carbonate sand (degraded Sls)	3	338	440	-1	1.16	204	
ZG330	22.0	24.0	3908927	77129	Og				DG	As above.	3	119	224	-1	0.81	192	
ZG330	24.0	26.0	3908928	77129	Og		We		DG		2	126	143	-1	0.73	220	
ZG330	26.0	27.6	3908929	77129	Og				DG		3	125	243	-1	0.98	170	
ZG331	0.0	4.0			Oha				Cg								
ZG331	4.0	6.0	3908930	77129	OhaOg				OgCoy								
ZG331	6.0	8.0	3908931	77129	Og		We		N								
ZG331	8.0	10.0	3908932	77129	Og				DBN								
ZG331	10.0	12.0	3908933	77129	Og				DB								
ZG331	12.0	14.0	3908934	77129	Og				Coy								
ZG331	14.0	16.0	3908935	77129	Og				DBN								
ZG331	16.0	18.0	3908936	77129	Og				DBN								
ZG331	18.0	19.1	3908937	77129	Og				DG								
ZG332	0.0	4.0			Oha				Cg								
ZG332	4.0	6.0	3908938	77129	Og				M		22	261	41	-1	0.53	22	
ZG332	6.0	8.0	3908939	77129	Og				N		126	1646	2158	1	1.88	25	
ZG332	8.0	10.0	3908940	77129	Og				M		46	1121	3323	-1	2.64	46	
ZG332	10.0	12.0	3908941	77129	Og				NB		18	590	2712	-1	3.20	20	
ZG332	12.0	14.0	3908942	77129	Og				N		23	239	4843	-1	7.17	49	
ZG332	14.0	16.0	3908943	77129	Og				DGN		9	30	240	-1	2.10	134	
ZG332	16.0	18.0	3908944	77129	Og		We		DG		6	21	231	-1	1.67	169	
ZG332	18.0	20.0	3908945	77129	Og				DB		10	102	552	-1	2.16	127	
ZG332	20.0	21.3	3908946	77129	Og				LG		6	41	119	-1	1.60	104	
ZG333	0.0	5.5			Oha				Cg								
ZG333	5.5	8.0	3908947	77129	Og				DBN		53	213	61	-1	0.52	20	
ZG333	8.0	10.0	3908948	77129	Og				DB		48	490	230	-1	0.60	25	
ZG333	10.0	12.0	3908949	77129	Og				DBN		27	477	933	-1	1.42	35	
ZG333	12.0	14.0	3908950	77129	Og				DBN		28	827	4601	-1	3.33	33	
ZG333	14.0	16.0	3908951	77129	Og				DB		27	919	3358	-1	2.96	37	
ZG333	16.0	16.2			Og				LG								
ZG334	0.0	3.5			Oha				Cg								
ZG334	3.5	4.0	3908952	77129	Og				M		16	479	35	-1	0.57	22	
ZG334	4.0	6.0	3908953	77129	Og				M		36	868	83	1	0.69	23	
ZG334	6.0	8.0	3908954	77129	Og				M								
ZG334	8.0	10.0	3908955	77129	Og				M		95	309	69	-1	0.42	18	
ZG334	10.0	11.5	3908956	77129	Og				DGN		76	266	287	-1	1.69	35	
ZG335	0.0	4.0			Oha				Cg								
ZG335	4.0	6.0	3908957	77129	Og				W	White clay, minor unconsolidated sand.	49	244	19	-1	2.35	13	
ZG335	6.0	8.0	3908958	77129	Og				W		14	73	18	-1	0.78	18	
ZG335	8.0	10.0	3908959	77129	Og				WY		41	183	22	-1	2.44	20	
ZG335	10.0	12.0	3908960	77129	Og				M	Pale mottled clay.	88	372	69	2	3.09	23	
ZG335	12.0	14.0	3908961	77129	Og				N		20	97	799	-1	2.31	27	
ZG335	14.0	16.0	3908962	77129	Og				M		22	72	341	-1	3.02	33	
ZG335	16.0	18.0	3908963	77129	Og				M		27	33	259	-1	1.58	38	
ZG335	18.0	20.0	3908964	77129	Og				DG		39	89	693	-1	2.08	29	
ZG335	20.0	22.0	3908965	77129	Og				DG		27	161	2132	-1	7.39	40	
ZG335	22.0	24.5	3908966	77129	Og				DG	F.G. Dark grey CO3 Sst, sandy interbeds.	4	35	115	-1	0.52	178	
ZG336	0.0	2.0	3908967	77129	OhaOg				B		3	17	26	-1	0.25	12	

ZG311G

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG336	2.0	4.0	3908968	77129	OhaOg	OgCoy					5	-3	8	-1	0.38	22	
ZG336	4.0	6.0	3908969	77129	Og	Coy			DBN		24	567	1303	1	3.06	39	
ZG336	6.0	6.5	3908970	77129	Og	Sls			DG	Could not penetrate further.	10	35	102	-1	1.89	82	
ZG337	0.0	2.0			Oha	Cg											
ZG337	2.0	4.0	3908971	77129	Og	Coy			N		41	569	778	-1	2.36	25	
ZG337	4.0	6.0	3908972	77129	Og	Coy			N		23	510	2604	-1	6.59	46	
ZG337	6.0	8.0	3908973	77129	Og	Coy			DBN		15	104	250	-1	3.30	106	
ZG337	8.0	10.0	3908974	77129	Og	Coy			N		21	224	730	-1	3.57	98	
ZG337	10.0	12.0	3908975	77129	Og	SlsOvc			DG		5	9	51	-1	1.44	183	
ZG337	12.0	14.0	3908976	77129	Og	Coy			M		16	163	709	-1	3.12	46	
ZG337	14.0	16.0	3908977	77129	Og	SlsCoy			DBG	Interbedded lst + clay.	14	70	210	-1	1.90	107	
ZG337	16.0	18.0	3908978	77129	Og	SlsCoy			LG		4	30	119	-1	1.70	108	
ZG337	18.0	18.7	3908979	77129	Og	OvcSls			LG		3	25	65	-1	1.15	113	
ZG338	0.0	2.0	3908980	77129	OhaOg	OvcCoy					3	25	18	-1	0.36	22	
ZG338	2.0	4.0	3908981	77129	Og	Coy			N		15	105	1095	-1	2.99	29	
ZG338	4.0	6.0	3908982	77129	Og	Coy			N		17	52	448	-1	4.31	48	
ZG338	6.0	8.0	3908983	77129	Og	Coy			M		17	97	298	-1	2.70	33	
ZG338	8.0	10.0	3908984	77129	Og	Coy			M		20	94	380	-1	2.77	49	
ZG338	10.0	12.0	3908985	77129	Og	Coy			DGN		10	117	953	-1	2.74	70	
ZG338	12.0	14.0	3908986	77129	Og	SlsCoy			DG		3	16	101	-1	0.95	127	
ZG338	14.0	14.8	3908987	77129	Og	SlsOvc			DG		3	30	155	-1	0.84	148	
ZG339	0.0	2.0	3909001	77129	Og	Coy			wg	minor organics	5	160	201	-1	0.29	13	
ZG339	2.0	4.0	3909002	77129	Og	Coy			mgg	plastic	39	311	299	-1	0.51	17	
ZG339	4.0	6.0	3909003	77129	Og	Coy			mgg	plastic	30	437	446	-1	0.48	15	
ZG339	6.0	8.0	3909004	77129	Og	Coy			dgn	plastic	45	729	4685	-1	4.60	37	
ZG339	8.0	10.0	3909005	77129	Og	Coy			mdbg	plastic	39	770	4492	1	6.34	37	
ZG339	10.0	11.0	3909006	77129	Og	Sls				calc-arenite, heavily vlned, minor LB clay	16	338	969	1	1.59	177	
ZG340	0.0	2.0	3909007	77129	Oha	Cg				lesser gritty clay, organic material	8	64	56	-1	0.29	14	
ZG340	2.0	4.0	3909008	77129	Og	Coy			G		59	559	217	1	1.50	31	
ZG340	4.0	6.0	3909009	77129	Og	Coy			DG	plastic	68	777	682	-1	3.28	34	
ZG340	6.0	8.0	3909010	77129	Og	Coy			MLDGG	plastic	171	923	773	2	2.21	23	
ZG340	8.0	10.0	3909011	77129	Og	Coy			MDG	plastic	63	317	623	1	0.56	13	
ZG340	10.0	12.0	3909012	77129	Og	Coy			MLBDG	plastic	27	405	3606	-1	3.55	25	
ZG340	12.0	14.0	3909013	77129	Og	Coy			MLBDG	plastic, rare DG weathered calc-arenite	26	201	1741	-1	2.72	39	
ZG340	14.0	16.0	3909014	77129	Og	Sls			DG	granular carbonate, rare DG clay	6	43	708	-1	1.79	120	
ZG340	16.0	18.0	3909015	77129	Og	Coy			DG	lesser DG granular carbonate	12	122	1634	-1	3.13	98	
ZG340	18.0	19.0	3909016	77129	Og	Sls			DG	massive med. grained carbonate, minor DG clay	7	35	588	-1	2.01	123	
ZG341	0.0	2.0	3909017	77129	Og	Coy			DB	peaty	5	16	155	-1	0.62	20	
ZG341	2.0	4.0	3909018	77129	Og	Sls			DBG	weathered	14	19	681	-1	1.86	42	
ZG341	4.0	6.0	3909019	77129	Og	Sls			DG	weathered, minor B clay	17	24	263	-1	2.37	50	
ZG341	6.0	8.0	3909020	77129	Og	Coy			EG	minor DG granular carbonate	17	49	561	-1	2.06	37	
ZG341	8.0	10.0	3909021	77129	Og	Coy			DG	minor DG carbonate frags	24	92	761	-1	4.97	46	
ZG341	10.0	12.0	3909022	77129	Og	Coy			DG	plastic	26	122	803	-1	6.38	49	
ZG341	12.0	13.9	3909023	77129	Og	Coy			DG	lesser G med. massive carbonate	12	47	194	-1	2.54	155	
ZG342	0.0	2.0	3909024	77129	Oha	Cg				organic material	4	12	28	-1	0.41	21	
ZG342	2.0	4.0	3909025	77129	Oha	Cg				lesser B clay	13	142	696	-1	2.55	31	
ZG342	4.0	6.0	3909026	77129	Og	Coy			G		21	710	2603	-1	4.85	28	
ZG342	6.0	8.0	3909027	77129	Og	Coy			DG	plastic	21	180	1295	-1	7.36	44	
ZG342	8.0	10.0	3909028	77129	Og	Coy			DG	plastic, minor DG decomposed carbonate	18	203	1222	-1	4.41	46	
ZG342	10.0	10.6	3909029	77129	Og	Sls			G	med-coarse, minor DG clay	7	46	221	-1	2.00	89	
ZG343	0.0	2.0	3909030	77129	Og	Coy			B	peaty, minor Cg + organics	3	24	22	-1	0.32	17	
ZG343	2.0	4.0	3909031	77129	Og	Coy			B+G	minor DG decomposed carbonate	16	311	1977	-1	2.98	53	
ZG343	4.0	6.0	3909032	77129	Og	Coy			DG	plastic	20	601	1714	1	4.02	45	

563117

APPENDIX 2: Grievies Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qz	Pb	Zn	Ag	Fe%	Mn	S%
ZG343	6.0	8.0	3909033	77129	Og	Ccy		Py	MDGG	plastic	18	228	983	-1	9.86	51	
ZG343	8.0	10.0	3909034	77129	Og	Ccy			DG	minor DG granular carbonate	12	214	440	-1	6.79	63	
ZG343	10.0	11.7	3909035	77129	Og	Sls			MLGDG	fine-medium carbonate	6	103	739	-1	1.42	80	
ZG344	0.0	2.0	3909036	77129	Cha	Cq				lesser B pealy clay + organics							
ZG344	2.0	4.0	3909037	77129	Og	Sls			G	granular, lesser B clay							
ZG344	4.0	6.0	3909038	77129	Og	Sls			DG	granular							
ZG344	6.0	8.0	3909039	77129	Og	Ccy		Py	G	lesser granular carbonate							
ZG344	8.0	10.0	3909040	77129	Og	Sls				weathered/decomposed							
ZG344	10.0	12.0	3909041	77129	Og	Sls				weathered/decomposed, minor clay							
ZG344	12.0	14.0	3909042	77129	Og	Ccy			MLG	lesser MG carbonate							
ZG344	14.0	16.0	3909043	77129	Og	Ccy			MGLG								
ZG344	16.0	18.0	3909044	77129	Og	Ccy			G	plastic							
ZG344	18.0	20.0	3909045	77129	Og	Ccy			MGLG	lesser DG granular carbonate							
ZG344	20.0	22.0	3909046	77129	Og	Sls			G	medium, minor G clay							
ZG344	22.0	24.0	3909047	77129	Og	Sls			G	granular							
ZG344	24.0	26.0	3909048	77129	Og	Sls			G	medium, massive, granular							
ZG344	26.0	28.0	3909049	77129	Og	Sls			G	medium, massive, granular							
ZG344	28.0	30.0	3909050	77129	Og	Ccy		Py	DG								
ZG344	30.0	32.0	3909051	77129	Og	Ccy		Py	DG	plastic	14	3300	6700	15	6.77	18	
ZG344	32.0	34.0	3909052	77129	Og	Sls			DG	carbonaceous decomposed Sls	13	2996	3466	36	3.24	36	
ZG344	34.0	36.0	3909053	77129	Og	Ccy			LG	minor decomposed carbonate	16	882	1089	-1	4.56	65	
ZG344	36.0	38.0	3909054	77129	Og	Sls			G	medium granular calc-arenite, bedded 40 to CLA	18	149	396	-1	1.78	42	
ZG344	38.0	40.0	3909055	77129	Og	Sls			G	laminated fine-medium carbonate	10	25	70	-1	2.18	49	
ZG344	40.0	42.0	3909056	77129	Og	Sls			G	laminated carbonate	15	16	159	-1	3.67	175	
ZG344	42.0	43.2	3909057	77129	Og	Sls			DG	massive, medium calc-arenite	22	34	784	-1	3.33	171	
ZG345	0.0	2.0	3908988	77129	Og	Ccy					12	61	44	-1	0.57	15	
ZG345	2.0	4.0	3908989	77129	Og	Ccy			MDG		15	52	576	-1	3.12	20	
ZG345	4.0	6.0	3908990	77129	Og	Sls			DG	Tribitic? lst.	15	28	73	-1	1.97	24	
ZG345	6.0	8.0	3908991	77129	Og	Sls			DG		14	28	180	-1	1.95	21	
ZG345	8.0	10.0	3908992	77129	Og	Sls			DG	fine	11	39	234	-1	1.25	18	
ZG345	10.0	12.0	3908993	77129	Og	Sls			DG	fine	14	24	113	-1	1.28	17	
ZG345	12.0	14.0	3908994	77129	Og	Sls			DG	fine	13	10	70	-1	1.50	20	
ZG345	14.0	16.0	3908995	77129	Og	Sls			DG	fine	17	15	60	-1	1.81	29	
ZG345	16.0	18.0	3908996	77129	Og	Sls			DG	lesser LB clay	14	13	81	-1	1.48	27	
ZG345	18.0	19.0	3908997	77129	Og	Sls			LG	fine	12	20	101	-1	2.99	209	
ZG346	0.0	4.0			Cha	Cq											
ZG346	4.0	6.0	3909068	77130	Og	Og			B		20	107	8300	-1	1.89	25	
ZG346	6.0	8.0	3909069	77130	Og	Og			B		23	160	10200	-1	2.49	41	3.00
ZG346	8.0	9.0	3909070	77130	Og	Sls			LG	calc-arenite	4	13	1388	-1	0.71	102	
ZG347	0.0	4.0			Cha	Cq											
ZG348	0.0	5.0			Cha	Cq											
ZG348	5.0	8.0	3909071	77130	Og	Ccy		Py	B	prominent/massive Py, very poor recovery	11	103	5600	-1	11.31	61	
ZG348	8.0	10.0	3909072	77130	Og	Ccy		Py	B	prominent/massive Py, very poor recovery	28	181	8700	-1	3.79	52	
ZG348	10.0	12.0	3909073	77130	Og	Sls			N	decomposed Sls	20	180	13600	-1	3.70	47	4.70
ZG348	12.0	14.0	3909074	77130	Og	Sls	Vc			calc-arenite, prominent carbonate veining	4	30	1481	-1	0.62	990	
ZG348	14.0	16.0	3909075	77130	Og	Sls	Vc			calc-arenite, prominent Vc, lesser MG clay	75	208	7800	-1	1.88	284	
ZG348	16.0	18.0	3909076	77130	Og	Ccy			MG	lesser calc-arenite with prominent Vc	84	114	4778	-1	1.34	387	
ZG348	18.0	20.0	3909077	77130	Og	Sls	Vc		DG	carbonate veined granular Sls, lesser MG clay	33	96	4531	-1	1.81	745	
ZG348	20.0	22.0	3909078	77130	Og	Ccy	Vc		MG	lesser carbonate veined granular DG Sls	36	105	11500	-1	2.00	437	2.90
ZG348	22.0	24.0	3909079	77130	Og	Sls		Py	DG	granular Sls with 30% massive Py, minor MG clay	8	65	17000	-1	13.02	1598	9.65
ZG348	24.0	26.0	3909080	77130	Og	Sls		Py	DG	granular Sls with 30% massive Py	4	45	17600	-1	14.41	2080	10.90
ZG348	26.0	28.0	3909081	77130	Og	Sls		Py	DG	granular Sls with 2% massive Py	3	15	25700	-1	24.04	7400	4.30
ZG348	28.0	30.0	3909082	77130	Og	Sls		Py	DG	granular Sls with 30% massive Py, lesser GW clay	9	128	58000	-1	29.05	8000	15.90

563118

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Qu	Pb	Zn	Ag	Fe%	Mn	S%
ZG348	30.0	31.0	3909083	77130	Og	Sls		Py	DG	granular calc-arenite with 2% PY, lesser MG-W clay	13	124	34400	-1	24.59	11000	3.10
ZG349	0.0	4.4			Oha	Cq											
ZG349	4.4	6.0	3909084	77130	Og	Sls		He	MGK	oolitic Sls, minor clay	8	211	15400	-1	5.22	2126	0.27
ZG349	6.0	7.0	3909085	77130	Og	Sls		He	MLGLYK	oolitic Sls, hematite stained - K, minor clay	5	129	4078	-1	2.04	948	
ZG350	0.0	4.5			Oha	Cq											
ZG350	4.5	6.0	3909086	77130	Og	Sls		AlVu	LY	Spongy	25	2817	115300	-1	4.15	2087	0.74
ZG350	6.0	8.0	3909087	77130	Og	Sls		Al	YFG	Altered oolitic carbonate	5	663	16000	-1	1.35	800	0.11
ZG350	8.0	10.0	3909088	77130	Og	SlsCcy		Al	LY+B	Altered oolitic carbonate	7	1654	69500	-1	6.42	834	3.10
ZG351	0.0	4.6			Oha	Cq											
ZG351	4.6	5.5	3909089	77130	Og	Sls		Ma	DG	Granular carbonate	4	30	67100	-1	16.78	7400	0.64
ZG352	0.0	2.0	3909090	77130	OhaOg	CqCcy			B		4	66	109	-1	0.30	43	
ZG352	2.0	4.0	3909091	77130	Og	Ccy			B		11	84	248	-1	0.36	32	
ZG352	4.0	6.0	3909092	77130	Og	Ccy			B		45	379	328	1	0.52	30	
ZG352	6.0	8.0	3909093	77130	Og	Ccy			B		38	912	3337	1	0.78	33	
ZG352	8.0	10.0	3909094	77130	Og	Ccy			MBOG	Gritty	27	1045	49700	1	4.38	27	7.50
ZG352	10.0	12.0	3909095	77130	Og	CcySls		Fe	B	Minor ferrug carbonate	20	1868	61500	-1	5.90	24	10.00
ZG352	12.0	14.0	3909096	77130	Og	CcySls		Fe	B	Minor ferrug carbonate	24	747	55100	1	4.98	37	8.60
ZG352	14.0	16.0	3909097	77130	Og	SlsCcy		FeWa	G+DG	Ferrug carbonate	12	999	112700	-1	5.70	59	12.20
ZG352	16.0	18.0	3909098	77130	Og	Ccy			MLBOG		40	1281	40500	1	2.74	60	3.45
ZG352	18.0	20.0	3909099	77130	Og	Ccy			MLGOG	Plastic clay	26	841	15800	1	1.13	38	1.50
ZG352	20.0	22.0	3909100	77130	Og	SlsCcy		Ma	DG+LG	Granular carbonate	35	1563	25800	1	2.98	242	1.65
ZG352	22.0	24.0	3909101	77130	Og	SlsCcy		Vn	DG+LG	Granular carbonate	11	603	10600	-1	1.03	344	0.43
ZG352	24.0	26.0	3909102	77130	Og	SlsCcy		Vn	DG+V	Granular carbonate + green clay	18	749	12500	-1	1.37	373	0.31
ZG352	26.0	28.0	3909103	77130	Og	SlsCcy		Vn	DG+V	Granular carbonate + green clay	20	881	11600	1	2.37	858	0.46
ZG352	28.0	28.7	3909104	77130	Og	SlsCcy		Vn	DG+V	Granular carbonate + green clay	12	547	10300	1	1.25	498	0.31
ZG353	0.0	2.0			Oha	Cq											
ZG353	2.0	4.0	3909105	77130	Og	Ccy			DB	Peaty	22	129	568	-1	3.19	32	
ZG353	4.0	6.0	3909106	77130	Og	Ccy			DB	Peaty	22	100	657	-1	4.19	35	
ZG353	6.0	8.0	3909107	77130	Og	Ccy			G		26	201	1384	1	6.40	36	
ZG353	8.0	10.0	3909108	77130	Og	Ccy			MLG		21	146	454	1	1.92	33	
ZG353	10.0	12.0	3909109	77130	Og	Ccy			LGW	Plastic	16	72	84	-1	0.77	35	
ZG353	12.0	14.0	3909110	77130	Og	Ccy			LGW	Plastic	14	54	32	-1	0.55	37	
ZG353	14.0	16.0	3909111	77130	Og	Ccy			LGW	Plastic	17	53	27	-1	0.41	32	
ZG353	16.0	18.0	3909112	77130	Og	Ccy			LGW+LB	Plastic	21	54	92	-1	0.28	16	
ZG353	18.0	20.0	3909113	77130	Og	Ccy			W	Plastic	13	59	211	-1	0.23	11	
ZG353	20.0	22.0	3909114	77130	Og	Ccy			W	Plastic	17	46	40	-1	0.27	13	
ZG353	22.0	24.0	3909115	77130	Og	Ccy			LGW	Plastic clay + qtz grit	25	196	212	-1	0.68	19	
ZG353	24.0	25.0	3909116	77130	OmOg	SssCcy			G+LB		16	108	494	-1	0.65	40	
ZG354	0.0	4.0			Oha	Cq											
ZG354	4.0	6.0	3909117	77130	Og	Ccy			B	decomposed Sls	19	78	660	-1	2.62	66	
ZG354	6.0	8.0	3909118	77130	Og	Ccy			N		40	111	572	-1	5.64	531	
ZG354	8.0	10.0	3909119	77130	Og	Ccy			MBN		16	65	354	-1	19.30	3539	
ZG354	10.0	12.0	3909120	77130	Og	Ccy			DB	plastic	25	87	432	-1	6.80	515	
ZG354	12.0	14.0	3909121	77130	Og	Ccy			DB	plastic	26	100	567	-1	6.62	176	
ZG354	14.0	16.0	3909122	77130	Og	Ccy			DB	plastic	34	415	3042	1	4.63	74	
ZG354	16.0	18.0	3909123	77130	Og	Ccy			YG	plastic	27	177	528	1	3.73	90	
ZG354	18.0	20.0	3909124	77130	Og	Ccy			LB	plastic	15	104	155	-1	1.77	109	
ZG354	20.0	22.0	3909125	77130	Og	Ccy			LBLGW		16	103	134	-1	1.33	84	
ZG354	22.0	24.0	3909126	77130	Og	Ccy			LGW	minor chert frags	20	56	338	-1	0.34	23	
ZG354	24.0	26.0	3909127	77130	Og	Ccy			W		12	90	98	-1	0.29	14	
ZG354	26.0	28.0	3909128	77130	Og	Ccy			LB	plastic	16	82	56	-1	0.38	17	
ZG354	28.0	29.3	3909129	77130	Og	Ccy			LBW	minor coarse qtzite (Om)	32	112	300	1	3.24	25	
ZG355	0.0	4.2			Oha	Cq											

563110

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cr	Pb	Zn	Ag	Fe%	Mn	S%
ZG355	4.2	6.0	3909130	77130	Og	Ccy			N	peaty	24	98	630	-1	9.64	2637	
ZG355	6.0	8.0	3909131	77130	Og	Ccy			N		24	96	684	1	18.35	5400	
ZG355	8.0	10.0	3909132	77130	Og	Ccy			N	lesser LG medium granular Sls	26	105	819	-1	18.10	4085	
ZG355	10.0	12.0	3909133	77130	Og	Ccy			N	lesser LG medium granular Sls	31	111	732	-1	5.59	475	
ZG355	12.0	14.0	3909134	77130	Og	Ccy			DG		30	76	652	-1	4.87	365	
ZG355	14.0	16.0	3909135	77130	Og	Ccy			DG		28	72	382	-1	6.01	70	
ZG355	16.0	18.0	3909136	77130	Og	Ccy		Py	DG	with rdd qtz pebbles, prominent Py	24	81	535	-1	3.33	74	
ZG355	18.0	20.0	3909137	77130	Og	Ccy		Py	DG	with rdd qtz pebbles, prominent Py	22	114	786	1	4.56	51	
ZG355	20.0	22.0	3909138	77130	Og	Ccy		Py	DG	prominent Py	28	137	877	1	4.54	57	
ZG355	22.0	24.0	3909139	77130	Og	Ccy			DGO		31	192	675	1	3.50	69	
ZG355	24.0	26.0	3909140	77130	Og	Ccy			DGO		36	128	482	1	4.48	122	
ZG355	26.0	28.0	3909141	77130	Og	Ccy			DGO		27	87	499	-1	4.83	262	
ZG355	28.0	30.0	3909142	77130	Og	Ccy			DGO		30	163	475	1	4.82	259	
ZG355	30.0	32.0	3909143	77130	Og	Ccy			W		19	157	213	-1	1.43	122	
ZG355	32.0	34.0	3909144	77130	Og	Ccy			W		19	146	509	1	0.88	34	
ZG355	34.0	36.0	3909145	77130	Og	Ccy			W	minor chert	18	90	381	-1	0.86	109	
ZG355	36.0	38.0	3909146	77130	Og	Ccy			W	minor chert	17	66	86	-1	0.61	40	
ZG355	38.0	39.2	3909147	77130	Om	Mf				coarse with rdd qtz pebbles, lesser DG clay	28	176	109	-1	2.27	39	
ZG356	0.0	5.2			Cha	Cg											
ZG356	5.2	8.0	3909148	77130	Og	Ccy			N	lesser DG granular Sls	15	44	3380	-1	9.39	2545	
ZG356	8.0	10.0	3909149	77130	Og	Ccy			N	lesser DG granular Sls	19	35	1611	-1	17.85	6800	
ZG356	10.0	12.0	3909150	77130	Og	Ccy			DG		33	154	1155	-1	9.33	2843	
ZG356	12.0	14.0	3909151	77130	Og	Sls				granular Sls, minor DG clay	15	66	3076	-1	5.99	1907	
ZG356	14.0	16.0	3909152	77130	Og	Sls				poitic Sls, lesser DG clay	18	318	3031	1	6.92	1596	
ZG356	16.0	18.0	3909153	77130	Og	Ccy			DG	gritty	57	1279	6600	2	11.50	360	
ZG356	18.0	20.0	3909154	77130	Og	Ccy		Py	DG	prominent Py	93	4000	14400	5	11.33	236	12.00
ZG356	20.0	22.0	3909155	77130	Og	Ccy		Py	DG	prominent Py, gritty	171	4400	23600	11	12.01	90	13.60
ZG356	22.0	24.0	3909156	77130	Og	Ccy		Py	DG	carbonaceous, trace Py	69	3600	11800	4	7.58	68	8.90
ZG356	24.0	26.0	3909157	77130	Og	Ccy		Py	DG	carbonaceous, trace Py	51	1348	4392	2	7.14	82	
ZG356	26.0	28.0	3909158	77130	Og	Ccy		Py	DG	carbonaceous, prominent Py	50	1709	4658	2	8.14	50	
ZG356	28.0	30.0	3909159	77130	Og	Ccy		Py	DG	carbonaceous, prominent Py	32	278	718	1	3.79	44	
ZG356	30.0	32.0	3909160	77130	Og	Ccy		Py	DG	carbonaceous, trace Py	38	715	2565	1	4.92	42	
ZG356	32.0	34.0	3909161	77130	Og	Ccy			WK+DG		53	666	1776	1	4.48	33	
ZG356	34.0	36.0	3909162	77130	Og	Ccy			WK+DG		38	250	789	1	3.14	29	
ZG356	36.0	38.0	3909163	77130	Og	Ccy		Py	WK+DG	trace Py	40	467	2237	-1	2.86	33	
ZG356	38.0	40.0	3909164	77130	Og	Ccy		Py	MGWK	pyrite nodules	37	483	1331	-1	2.80	34	
ZG356	40.0	42.0	3909165	77130	Og	Ccy		Py	MGWK		32	207	326	1	2.53	33	
ZG356	42.0	44.0	3909166	77130	Og	Ccy		Py	MGWK		60	125	87	1	2.54	31	
ZG356	44.0	46.0	3909167	77130	Og	Ccy			DG	minor chert	55	220	486	1	2.78	33	
ZG356	46.0	48.0	3909168	77130	Og	Ccy		Py	MG	minor chert, trace Py	34	91	355	-1	1.25	34	
ZG356	48.0	50.0	3909169	77130	Og	Ccy		Py	MG	minor chert, trace Py	24	105	287	-1	1.32	38	
ZG356	50.0	51.0	3909170	77130	Og	Ccy		Py	DG	minor chert, trace pyrite	22	107	205	-1	1.41	34	
ZG357	0.0	5.3			Cha	Cg											
ZG357	5.3	8.0	3909171	77130	Og	Ccy			DB	gritty	16	80	2043	-1	1.86	85	
ZG357	8.0	10.0	3909172	77130	Og	Ccy			DB	gritty, lesser DG fine skeletal? Sls	11	62	2656	-1	9.43	418	
ZG357	10.0	12.0	3909173	77130	Og	Ccy			DB	gritty, lesser DG fine skeletal? Sls	12	40	1684	-1	7.62	1499	
ZG357	12.0	14.0	3909174	77130	Og	Ccy		Sd	DB	lesser fine granular ankortite Sls	7	10	2233	-1	22.99	4438	
ZG357	14.0	16.0	3909175	77130	Og	Ccy			DB	lesser fine granular Sls	10	24	3791	-1	21.38	4609	
ZG357	16.0	18.0	3909176	77130	Og	Ccy			B	lesser fine granular Sls	17	106	10200	-1	14.51	1550	8.65
ZG357	18.0	20.0	3909177	77130	Og	Sls				fine, granular, lesser B clay							
ZG357	20.0	22.0	3909178	77130	Og	Sls			MG	granular, minor B-LG clay	8	34	1360	-1	12.20	5500	
ZG357	22.0	24.0	3909179	77130	Og	Sls			MMG		8	54	2664	-1	12.95	1349	
ZG357	24.0	26.0	3909180	77130	Og	Sls		Py		granular	7	62	934	-1	24.59	1100	

563120

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG357	26.0	28.0	3909181	77130	Og	Ccy		Py	GB	minor Py	50	1853	14200	3	12.22	2252	9.70
ZG357	28.0	30.0	3909182	77130	Og	Ccy		Py	RDG	trace Py	186	2100	56100	8	15.99	921	14.50
ZG357	30.0	32.0	3909183	77130	Og	Ccy			MOY	minor Sss frags	334	450	1687	-1	27.09	924	
ZG357	32.0	34.0	3909184	77130	Og	Ccy			MBOR		1626	1179	1285	12	21.55	676	
ZG357	34.0	36.0	3909185	77130	Og	Ccy			O	minor rock frags	54	769	1877	1	14.31	907	
ZG357	36.0	38.0	3909186	77130	Og	Ccy			O	minor rock frags	37	339	1084	-1	10.30	767	
ZG357	38.0	40.0	3909187	77130	Og	Ccy			MFO		62	1316	3406	-1	22.74	1072	
ZG357	40.0	42.0	3909188	77130	Og	Ccy			MD	gritty	47	167	771	-1	8.02	447	
ZG357	42.0	44.0	3909189	77130	Og	Ccy			MYR	lesser rock frags	133	1746	1503	1	19.07	477	
ZG357	44.0	46.0	3909190	77130	Og	Ccy			MYFOG		358	6700	1459	7	17.71	235	
ZG357	46.0	48.0	3909191	77130	Og	Ccy			MYR		110	3056	4111	-1	28.91	1206	
ZG357	48.0	50.0	3909192	77130	Og	Ccy			MYR		121	5000	7100	-1	34.43	1527	
ZG357	50.0	52.0	3909193	77130	Og	Ccy			MYR	lesser rock frags	123	1748	4410	-1	29.04	949	
ZG357	52.0	54.0	3909194	77130	Og	Ccy			DG+R	lesser rock frags	469	3500	28900	6	14.64	423	6.15
ZG357	54.0	55.8	3909195	77130	Og	Ccy			MGY	drilling abandoned, rods light	255	5200	20900	11	20.01	548	8.85
ZG366	0.0	1.0			Oha	Cg			K+W	qtzite gravel, no sample							
ZG366	1.0	4.0	3983870	77148	Og	Sls	Fe		G	ferrug on fractures							
ZG366	4.0	6.0	3983871	77148	Oha	SlsMq	Fe	Py	DB+K	trace Py							
ZG366	6.0	7.5	3983872	77148	Oha	Mq			LCK								
ZG367	0.0	2.0			Oha	Cg			K+W	qtzite scree, no sample							
ZG367	2.0	4.0	3983873	77148	Og	Ccy	Fe		DBN	hard clay							
ZG367	4.0	6.0	3983874	77148	Og	Ccy			DCB	plastic							
ZG367	6.0	8.0	3983875	77148	Og	Ccy			DCB	slty							
ZG367	8.0	10.0	3983876	77148	Og	Ccy			DG	hard clay chips, carbonaceous							
ZG367	10.0	12.0	3983877	77148	Og	SlsSsh	Vg	Py	DG	some alteration, vein Py							
ZG367	12.0	14.0	3983878	77148	Og	CcySls		Sd	DG	abund free qtz							
ZG367	14.0	16.5	3983879	77148	Og	Sls	VgFe		LG	abund free qtz, hard drilling							
ZG368	0.0	2.0			Oha	Cg			DG	qtzite scree, no sample							
ZG368	2.0	4.0	3983880	77148	Og	Ccy			DB+N	sandy & carbonaceous clays							
ZG368	4.0	6.0	3983881	77148	Og	Ccy			LB								
ZG368	6.0	8.0	3983882	77148	Og	Ccy			LB+DG								
ZG368	8.0	10.0	3983883	77148	Og	Ccy			DG	plastic, smooth							
ZG368	10.0	12.1	3983884	77148	Og	CcySls	VcFe		DG+G	hematite staining							
ZG369	0.0	2.5			Oha	Cg			K+W	qtzite scree, no sample							
ZG369	2.5	3.5	3983885	77148	Og	CcySls		Sd?	DB+N	hard altered oolitic sls							
ZG370	0.0	2.5			Oha	Cg			K+W	qtzite scree, no sample							
ZG370	2.5	4.0	3983886	77148	Og	Ccy	Fe		B+BN	carbonaceous							
ZG370	4.0	6.0	3983887	77148	Og	Ccy	FeVg		LB	ferrug qtz, limonite veins							
ZG370	6.0	8.0	3983888	77148	Og	CcySls			DB	creamy sls - altered?							
ZG370	8.0	10.0	3983889	77148	Og	Ccy			B+N	gritty brn & smooth black							
ZG370	10.0	12.0	3983890	77148	Og	Ccy			DB	hard carbonaceous chips							
ZG370	12.0	14.0	3983891	77148	Og	Ccy	Fe		LB	ferrug veins							
ZG370	14.0	16.0	3983892	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly sideritic							
ZG370	16.0	18.0	3983893	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly ankeritic							
ZG370	18.0	20.0	3983894	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly ankeritic							
ZG370	20.0	22.0	3983895	77148	Og	Sls		Sd	B+YG	oolitic CO3							
ZG370	22.0	24.0	3983896	77148	Og	Sls		Sd	B+YG	oolitic CO3, possibly oolitic cave ln							
ZG370	24.0	26.0	3983897	77148	Og	Ccy			MB								
ZG370	26.0	28.0	3983898	77148	Og	Ccy			G+LB								
ZG370	28.0	30.0	3983899	77148	Og	SlsCcy	Fe	Sd	YG	altered CO3							
ZG370	30.0	32.0	3983900	77148	Og	SlsCcy		Sd	DG+LFB	strongly altered?							
ZG370	32.0	34.0	3984001	77148	Og	SlsOx	Fe	Sd	DG+LB	altered, veined with lt brn FeCO3?							
ZG370	34.0	36.0	3984002	77148	Og	SlsCcy	Vc		DG	carbonaceous							

363121

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG370	36.0	38.0	3984003	77148	Og	Coy			OG	carbonaceous, greasy							
ZG370	38.0	40.0	3984004	77148	Og	Coy			SDG	carbonaceous							
ZG370	40.0	42.0	3984005	77148	Og	Coy			SDG								
ZG370	42.0	44.0	3984006	77148	Og	Coy	Py		SG	gritty							
ZG370	44.0	46.0	3984007	77148	Og	SlsCoy			SG								
ZG370	46.0	46.5	3984008	77148	Oha	MqCoy			G	breccia with clay matrix							
ZG371	0.0	2.0			Oha	Cg			K+W	qtzite scree, no sample							
ZG371	2.0	4.0	3984009	77148	Og	Coy	Fe		DB+N	ferrug veins							
ZG371	4.0	6.0	3984010	77148	Og	Coy			BG	gritty							
ZG371	6.0	8.0	3984011	77148	Og	Coy			BG								
ZG371	8.0	10.0	3984012	77148	Og	Sls		Sr?	LG	spongy looking CO3 (altered?), skeletal CO3							
ZG371	10.0	12.0	3984013	77148	Og	Sls		Sd	G	spongy looking CO3, minor Sd alteration							
ZG371	12.0	14.0	3984014	77148	Og	CoySls		Sd	DG	spongy CO3							
ZG371	14.0	16.0	3984015	77148	Og	CoySls	Fe		DG	minor Fe							
ZG371	16.0	18.0	3984016	77148	Og	Sls	Fe		G+DG	minor clay							
ZG371	18.0	20.0	3984017	77148	Og	Sls		Sd	G+DG								
ZG371	20.0	22.0	3984018	77148	Og	Sls	Fe	Sd	YG	spongy CO3							
ZG371	22.0	24.0	3984019	77148	Og	Sls		Sd	LYG	oolitic CO3							
ZG371	24.0	26.0	3984020	77148	Og	Sls		Sd	LYG	oolitic CO3							
ZG371	26.0	28.0	3984021	77148	Og	SlsCoy		Sd	LYG+LB	oolitic CO3							
ZG371	28.0	30.0	3984022	77148	Og	Sls	Fe	Sd	LYG	oolitic CO3							
ZG371	30.0	30.5	3984023	77148	Og	Sls	Fe	Sd	LYG	hard oolitic CO3							
ZG372	0.0	2.0			Oha	Cg			K+W	qtzite scree, no sample							
ZG372	2.0	4.0	3984024	77148	Og	Coy			DB								
ZG372	4.0	6.0	3984025	77148	Og	Coy			DG+B	hard							
ZG372	6.0	8.0	3984026	77148	Og	Coy			DG+B	plastic							
ZG372	8.0	10.0	3984027	77148	Og	Coy			DG	minor grit & bn clay							
ZG372	10.0	12.0	3984028	77148	Og	Coy			DG								
ZG372	12.0	14.0	3984029	77148	Og	CoySls	Fe		DG+B	ferrug CO3 or veins							
ZG372	14.0	16.0	3984030	77148	Og	Sls		Sd	G+YG	minor Sd alteration							
ZG372	16.0	18.0	3984031	77148	Og	Coy			DG	minor grit							
ZG372	18.0	20.0	3984032	77148	Og	SlsCoy		Sd	G+YG	skeletal CO3 (coral/shells)							
ZG372	20.0	22.0	3984033	77148	Og	SlsCoy		Sd	G+YG	skeletal CO3 (coral/shells)							
ZG372	22.0	24.0	3984034	77148	Og	CoySls			DG+G	spongy CO3, gritty clay							
ZG372	24.0	26.0	3984035	77148	Og	Sls	Fe	Sd	DG+YG								
ZG372	26.0	28.0	3984036	77148	Og	Sls		Sd	LYG+G	skeletal CO3							
ZG372	28.0	30.0	3984037	77148	Og	Sls	Fe	Sd	DG+LYG	oolitic CO3							
ZG372	30.0	32.0	3984038	77148	Og	Sls	Fe	Sd	LYG+K	strongly altered, hematite stained							
ZG372	32.0	34.0	3984039	77148	Og	Sls	Fe	Sd	LYG+K	oolitic, altered, hematite stained							
ZG372	34.0	36.0	3984040	77148	Og	Sls	Fe	Sd	LYG+K	oolitic, strongly altered							
ZG372	36.0	38.0	3984041	77148	Og	Sls	Fe	Sd	LYG+DG	oolitic, hematite							
ZG372	38.0	39.6	3984042	77148	Og	Sls	Fe	Sd	LYG	oolitic, hematite, ferrug veins							
ZG373	0.0	2.1	3984043	77148	Og	CoySls			DBG	silty textured							
ZG374	0.0	2.0	3984044	77148	Oha	CgCoy		Sd	DB	weakly ankeritic							
ZG374	2.0	4.0	3984045	77148	Og	Sls	Di	SdPy	YG	5% Py							
ZG374	4.0	4.8	3984046	77148	Og	SlsOvc		PySd	DG	strongly altered							
ZG375	0.0	2.0	3984047	77148	Oha	CgCoy			B	Mq gravel & sandy clay							
ZG375	2.0	2.5	3984048	77148	Og	Sls	Vc		LG+G	shaley CO3							
ZG376	0.0	2.0	3984049	77148	Og	CoyCv			SG+B								
ZG376	2.0	3.0	3984050	77148	Og	CoySls		Py	MLDG	veg							
ZG377	0.0	2.0	3984051	77148	Og	CoyCv			DG+N								
ZG377	2.0	2.5	3984052	77148	Og	Sls		Py	DG	hard CO3							
ZG378	0.0	2.1	3984053	77148	Og	CvCoy			DB+G	minor CO3							

563122

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMLLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG379	0.0	2.0	3984054	77148	Og	CvCcy			DB								
ZG379	2.0	4.0	3984055	77148	Og	Ccy			DB								
ZG379	4.0	6.0	3984056	77148	Og	Ccy			DB	hard clay & grit							
ZG379	6.0	8.0	3984057	77148	Og	Sts	Fe	Sd	DG								
ZG379	8.0	8.7	3984058	77148	Og	StsOvc		PySd	DG	some alteration							
ZG380	0.0	2.0	3984059	77148	Og	CvCcy			MLBDB								
ZG380	2.0	4.0	3984060	77148	Og	CcySts			LG+B	gritty, minor sts, no E.O.H sample							
ZG381	0.0	2.0	3984062	77148	Og	CvCcy			B								
ZG381	2.0	4.0	3984063	77148	Og	Ccy			MDDG	vege							
ZG381	4.0	5.5	3984064	77148	Og	StsCcy	Vc		G+DG								
ZG382	0.0	2.0	3984065	77148	Oha	Cg			LB+DB	silly, some qtzite							
ZG382	2.0	4.0	3984066	77148	Og	Ccy			DB								
ZG382	4.0	5.1	3984067	77148	Og	CcySts	Vc		DG								
ZG383	0.0	2.0	3984068	77148	Oha	Cg			B+LB	silly, some qtzite							
ZG383	2.0	4.0	3984069	77148	Og	Ccy			DB	gritty							
ZG383	4.0	6.0	3984070	77148	Og	Ccy			DB	gritty							
ZG383	6.0	8.0	3984071	77148	Og	CcySts			DB+DG	minor CO3							
ZG383	8.0	8.1			Og	Sts	Vc	Py	DG	E.O.H. sample only							
ZG384	0.0	2.0	3984072	77148	Oha	CgCcy			DB	minor qtzite							
ZG384	2.0	4.0	3984073	77148	Og	CcySts			DG	graphitic							
ZG384	4.0	5.2	3984074	77148	Og	StsCcy	Vc	Sd	G+DG								
ZG385	0.0	2.0	3984075	77148	Og	CcyCv			DB+DG	silly grit							
ZG385	2.0	4.0	3984076	77148	Og	CcySts	Fe		DB+DG								
ZG385	4.0	6.0	3984077	77148	Og	CcySts			DG	med-grained CO3							
ZG385	6.0	8.0	3984078	77148	Og	CcySts			DG	carbonaceous							
ZG385	8.0	10.0	3984079	77148	Og	Sts	Vc		SDG								
ZG385	10.0	12.0	3984080	77148	Og	Sts	Vc		DG+LG	shaley CO3							
ZG385	12.0	13.8	3984081	77148	Og	Sts	Vc	PySd	DG+LG	shaley CO3							
ZG386	0.0	2.0	3984082	77148	Oha	CgCcy			DB								
ZG386	2.0	2.4			Og	Sts	Vc		DG	E.O.H. sample only							
ZG387	0.0	1.2			Og	StsOvc			DG	veg, E.O.H. sample only							
ZG388	0.0	1.8	3984083	77148	Og	CvCcySts	Vc		GB+WK								
ZG389	0.0	2.0	3984084	77148	Og	CvCcy			B								
ZG389	2.0	4.0	3984085	77148	Og	Ccy			DB	gritty, hard clay chips							
ZG389	4.0	6.0	3984086	77148	Og	CcySts	Fe		DB	ferrug clay chips							
ZG389	6.0	8.0	3984087	77148	Og	Ccy			DGB	hard							
ZG389	8.0	10.0	3984088	77148	Og	Ccy			DGB	hard							
ZG389	10.0	12.0	3984089	77148	Og	StsCcy	Vc		LG+DB								
ZG389	12.0	14.0	3984090	77148	Og	StsOvc			G+LG	slightly shaley CO3, altered?							
ZG389	14.0	14.8	3984091	77148	Og	Sts	Vc	Sd	G								
ZG390	0.0	2.0	3984092	77148	Oha	CgCcy			LB+B								
ZG390	2.0	4.0	3984093	77148	Og	Ccy			LB+DB	gritty							
ZG390	4.0	6.0	3984094	77148	Og	Ccy			DB	small hard clay chips							
ZG390	6.0	7.4	3984095	77148	Og	CcySts	Vc		DG+B								
ZG391	0.0	2.0	3984096	77148	Oha	CgCcy			DB	gravels & clays							
ZG391	2.0	4.0	3984097	77148	Og	Ccy			DBG								
ZG391	4.0	5.9	3984098	77148	Og	Sts	Vc	Py	DG								
ZG392	0.0	2.0	3984099	77148	Oha	Cg			B	silly with Mq gravel							
ZG392	2.0	4.0	3984100	77148	Og	Ccy			B+LB	sandy							
ZG392	4.0	6.0	3984101	77148	Og	Ccy			DGB								
ZG392	6.0	7.8	3984102	77148	Og	Sts	VcVs?	Ga?	DG								
ZG393	0.0	2.0	3984103	77148	OhaOg	CvCcy			DB								
ZG393	2.0	4.0	3984104	77148	Og	Ccy			DB	Gritty							

563123

APPENDIX 2: Grieves Prospect - CRAE air-core drillhole logs and assays

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Cu	Pb	Zn	Ag	Fe%	Mn	S%
ZG393	4.0	6.0	3984105	77148	Og	Ccy			DBG								
ZG393	6.0	7.5	3984106	77148	Og	SlsCcy	Vc		G+DG								
ZG394	0.0	2.0	3984107	77148	QhaOg	CgCcy			DB								
ZG394	2.0	4.0	3984108	77148	Og	Ccy			MOBG								
ZG394	4.0	4.8	3984109	77148	Og	Sls	VcFeDs	Py	DG								
ZG395	0.0	4.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG395	4.0	6.0	3984113	77148	Og	Ccy			DB								
ZG395	6.0	8.0	3984114	77148	Og	Ccy	Fe		DB								
ZG395	8.0	10.0	3984115	77148	Og	CcySls	Vc		DG+G								
ZG395	10.0	12.0	3984116	77148	Og	CcySls			DG								
ZG395	12.0	12.3			Og	Sls	VcFe		LG+DG								
ZG396	0.0	2.0	3984110	77148	Qha	CgCcy											
ZG396	2.0	4.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	4.0	6.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	6.0	8.0	3984111	77148	Og	Ccy			DB								
ZG396	8.0	9.3	3984112	77148	Og	Sls	Vc		DG	cave in, poor sample							
ZG397	0.0	3.5			Qha	Cg			K+B	qtzite gravels, no sample							
ZG397	3.5	5.7	3984117	77148	Og	Sls	VcFe		DG								
ZG398	0.0	2.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG398	2.0	2.5	3984118	77148	Og	Sls	Vc		DG								
ZG399	0.0	2.0			Qha	OvOg			K+B	qtzite gravels, no sample							
ZG399	2.0	2.6	3984119	77148	Og	Sls			DG								
ZG400	0.0	2.0			Qha	Cg			K+B	qtzite gravels, no sample							
ZG400	2.0	2.3	3984120	77148	Og	Sls	Vc		DG								

563124

APPENDIX 3: Grieves prospect. Air-core drill-hole logs and geochemistry - ZG366 to ZG400

APPENDIX 3: Grieves prospect. Air-core drill-hole logs and geochemistry - ZG366 to ZG400.											Ag	Cu	Fe%	Mn	Pb	S%	Zn
Results in ppm unless shown otherwise.																	
HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS							
ZG366	0	1			Qha	Cg			K+W	qtzite gravel, no sample	-1	38	1.77	30	73	1005	
ZG366	1	4	3983870	77148	Og	Sls	Fe		G	ferrug on fractures	-1	26	1.15	37	92	636	
ZG366	4	6	3983871	77148	Qha	SlsMq	Fe	Py	DB+K	trace Py	-1	5	0.28	15	15	95	
ZG366	6	7.5	3983872	77148	Qha	Mq			LGK		-1						
ZG367	0	2			Qha	Cg			K+W	qtzite scree, no sample	-1						
ZG367	2	4	3983873	77148	Og	Ccy	Fe		DBN	hard clay	-1	14	1.18	24	527	3055	
ZG367	4	6	3983874	77148	Og	Ccy			DCB	plastic	-1	17	2.62	38	370	1910	
ZG367	6	8	3983875	77148	Og	Ccy			DCB	silty	-1	17	1.55	36	137	725	
ZG367	8	10	3983876	77148	Og	Ccy			DCG	hard clay chips, carbonaceous	-1	19	2.53	45	293	1139	
ZG367	10	12	3983877	77148	Og	SlsSsh	Vg	Py	DCG	some alteration, vein Py	-1	17	2.23	24	115	1166	
ZG367	12	14	3983878	77148	Og	CcySls		Sd	DG	abund free qtz	-1	59	2.07	25	397	721	
ZG367	14	16.5	3983879	77148	Og	Sls	VqFe		LG	abund free qtz, hard drilling	-1	19	0.67	20	137	261	
ZG368	0	2			Qha	Cg			DG	qtzite scree, no sample							
ZG368	2	4	3983880	77148	Og	Ccy			DB+N	sandy & carbonaceous clays	10	394	1.24	40	4600	2.5	26700
ZG368	4	6	3983881	77148	Og	Ccy			LB		19	751	2.29	32	11900	5.9	104000
ZG368	6	8	3983882	77148	Og	Ccy			LB+DG		16	261	18.3	35	45600	29.4	182000
ZG368	8	10	3983883	77148	Og	Ccy			DG	plastic, smooth	20	103	4.99	74	49600	10.7	205000
ZG368	10	12.1	3983884	77148	Og	CcySls	VcFe		DG+G	hematite staining	7	31	23.7	9700	16900	3.9	126000
ZG369	0	2.5			Qha	Cg			K+W	qtzite scree, no sample							
ZG369	2.5	3.5	3983885	77148	Og	CcySls		Sd?	DB+N	hard altered oolitic sls	-1	6	1.02	385	436	2277	
ZG370	0	2.5			Qha	Cg			K+W	qtzite scree, no sample							
ZG370	2.5	4	3983886	77148	Og	Ccy	Fe		B+BN	carbonaceous	-1	19	4.9	1801	768	1.7	12100
ZG370	4	6	3983887	77148	Og	Ccy	FeVg		LB	ferrug qtz, limonite veins	-1	25	11.1	5400	507	1	11400
ZG370	6	8	3983888	77148	Og	CcySls			DB	creamy sls - altered?	-1	10	19.6	8800	139	3.7	29000
ZG370	8	10	3983889	77148	Og	Ccy			B+N	gritty brn & smooth black	1	41	16.7	6200	722	7.8	55300
ZG370	10	12	3983890	77148	Og	Ccy			DB	hard carbonaceous chips	1	24	5.53	388	2829	9.1	67200
ZG370	12	14	3983891	77148	Og	Ccy	Fe		LB	ferrug veins	2	21	7.08	595	1514	14.8	174000
ZG370	14	16	3983892	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly sideritic	-1	6	4.81	1789	259		4937
ZG370	16	18	3983893	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly ankeritic	-1	6	5.58	1984	201		4485
ZG370	18	20	3983894	77148	Og	Sls		Sd	LYG	oolitic CO3, weakly ankeritic	-1	5	4.24	1822	198		3160
ZG370	20	22	3983895	77148	Og	Sls		Sd	B+YG	oolitic CO3	-1	14	4.84	1496	975	6.2	91800
ZG370	22	24	3983896	77148	Og	Sls		Sd	B+YG	oolitic CO3, possibly oolitic cave in	-1	9	3.25	1046	361	2.8	32600
ZG370	24	26	3983897	77148	Og	Ccy			MB		3	18	16.4	6400	1443	8.9	106000
ZG370	26	28	3983898	77148	Og	Ccy			G+LB		7	60	20.6	4624	2172	14.2	81900
ZG370	28	30	3983899	77148	Og	SlsCcy	Fe	Sd	YG	altered CO3	-1	13	12.9	5700	318	2.75	18800
ZG370	30	32	3983900	77148	Og	SlsCcy		Sd	DG+LRB	strongly altered?	-1	20	23.4	9700	441	1.1	10400
ZG370	32	34	3984001	77148	Og	SlsOx	Fe	Sd	DG+LB	altered, veined with ll brn FeCO3?	-1	9	32.6	13500	77		1717
ZG370	34	36	3984002	77148	Og	SlsCcy	Vc		DG	carbonaceous	-1	8	30	12100	44		1075
ZG370	36	38	3984003	77148	Og	Ccy			DG	carbonaceous, greasy	-1	20	2.16	185	164		784
ZG370	38	40	3984004	77148	Og	Ccy			SDG	carbonaceous	-1	17	2.12	180	75		666
ZG370	40	42	3984005	77148	Og	Ccy			SDG		-1	17	2.11	92	86		708
ZG370	42	44	3984006	77148	Og	Ccy		Py	SS	gritty	-1	23	1.7	55	69		770

6-12

563125

APPENDIX 3: Grieves prospect. Air-core drill-hole logs and geochemistry - ZG366 to ZG400

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ag	Cu	Fe%	Mn	Pb	S%	Zn
ZG370	44	46	3984007	77148	Og	StsCcy			SG		-1	18	1.06	62	39		563
ZG370	46	46.5	3984008	77148	Qha	MqCcy			G	breccia with clay matrix	-1	15	0.85	46	25		356
ZG371	0	2			Qha	Cg			K+W	qtzite scree, no sample							
ZG371	2	4	3984009	77148	Og	Ccy	Fe		DB+N	ferrug veins	-1	23	4.88	49	383		3191
ZG371	4	6	3984010	77148	Og	Ccy			EG	gritty	-1	20	5.58	108	371		2984
ZG371	6	8	3984011	77148	Og	Ccy			EG		-1	13	7.5	878	133		3438
ZG371	8	10	3984012	77148	Og	Sts		Sd?	LG	spongy CO3 (altered?), skeletal CO3	-1	6	12.7	6000	105		1858
ZG371	10	12	3984013	77148	Og	Sts		Sd	G	spongy looking CO3, minor Sd alterm	-1	6	13.4	6000	71		2210
ZG371	12	14	3984014	77148	Og	CcySts		Sd	DG	spongy CO3	-1	14	17.1	7000	39		3621
ZG371	14	16	3984015	77148	Og	CcySts	Fe		DG	minor Fe	-1	19	18.3	7200	83		3573
ZG371	16	18	3984016	77148	Og	Sts	Fe		G+DG	minor clay	-1	7	36.2	12900	18		4084
ZG371	18	20	3984017	77148	Og	Sts		Sd	G+DG		-1	10	37.5	16500	59	2.8	16300
ZG371	20	22	3984018	77148	Og	Sts	Fe	Sd	YG	spongy CO3	-1	7	39.4	16400	387	3.8	24800
ZG371	22	24	3984019	77148	Og	Sts		Sd	LYG	oolitic CO3	-1	8	10.3	3580	143		8000
ZG371	24	26	3984020	77148	Og	Sts		Sd	LYG	oolitic CO3	-1	8	7.33	2500	252	2.1	13300
ZG371	26	28	3984021	77148	Og	StsCcy		Sd	LYG+LB	oolitic CO3	3	25	15.6	4129	2051	8.4	99000
ZG371	28	30	3984022	77148	Og	Sts	Fe	Sd	LYG	oolitic CO3	1	10	6.25	2103	568	2.4	16800
ZG371	30	30.5	3984023	77148	Og	Sts	Fe	Sd	LYG	hard oolitic CO3	1	12	7.53	2276	455	3.5	17200
ZG372	0	2			Qha	Cg			K+W	qtzite scree, no sample							247
ZG372	2	4	3984024	77148	Og	Ccy			DB		-1	20	1.59	52	127		1028
ZG372	4	6	3984025	77148	Og	Ccy			DG+B	hard	-1	31	2.53	76	47		1623
ZG372	6	8	3984026	77148	Og	Ccy			DG+B	plastic	-1	24	6.74	1100	121		2011
ZG372	8	10	3984027	77148	Og	Ccy			DG	minor grit & brn clay	-1	16	10.1	2886	67		1788
ZG372	10	12	3984028	77148	Og	Ccy			DG		-1	12	15.7	6600	29		1865
ZG372	12	14	3984029	77148	Og	CcySts	Fe		DG+B	ferrug CO3 or veins	-1	6	13.4	4990	32		3833
ZG372	14	16	3984030	77148	Og	Sts		Sd	G+YG	minor Sd alteration	-1	7	15	5800	44		2848
ZG372	16	18	3984031	77148	Og	Ccy			DG	minor grit	-1	9	11	3189	67		8300
ZG372	18	20	3984032	77148	Og	StsCcy		Sd	G+YG	skeletal CO3 (coral/shells)	-1	6	12.8	4013	30		4321
ZG372	20	22	3984033	77148	Og	StsCcy		Sd	G+YG	skeletal CO3 (coral/shells)	-1	3	12.1	4068	25		3373
ZG372	22	24	3984034	77148	Og	CcySts			DG+G	spongy CO3, gritty clay	-1	8	11.1	3693	37		6000
ZG372	24	26	3984035	77148	Og	Sts	Fe	Sd	DG+YG		-1	8	20	7800	418		4121
ZG372	26	28	3984036	77148	Og	Sts		Sd	LYG+G	skeletal CO3	-1	12	34.4	13100	484		7700
ZG372	28	30	3984037	77148	Og	Sts	Fe	Sd	DG+LYG	oolitic CO3	1	16	26.6	10900	837	2.75	23200
ZG372	30	32	3984038	77148	Og	Sts	Fe	Sd	LYG+K	strongly altered, hematite stained	1	26	18.1	3587	5600	14.3	70000
ZG372	32	34	3984039	77148	Og	Sts	Fe	Sd	LYG+K	oolitic, altered, hematite stained	-1	7	30.5	13400	871	1.8	12800
ZG372	34	36	3984040	77148	Og	Sts	Fe	Sd	LYG+K	oolitic, strongly altered	-1	8	8.9	3154	311		8000
ZG372	36	38	3984041	77148	Og	Sts	Fe	Sd	LYG+DG	oolitic, hematite	-1	6	11.6	4452	339		4163
ZG372	38	39.6	3984042	77148	Og	Sts	Fe	Sd	LYG	oolitic, hematite, ferrug veins	-1	6	11.6	4158	391		3938
ZG373	0	2.1	3984043	77148	Og	CcySts			DBG	silty textured	1	30	1.19	125	4224		1968
ZG374	0	2	3984044	77148	Qha	CgCcy		Sd	DB	weakly ankeritic	6	11	10.1	2809	36900	4.2	83000
ZG374	2	4	3984045	77148	Og	Sts		SdPy	YG	5% Py	5	10	20	6900	37400	4.4	180000
ZG374	4	4.8	3984046	77148	Og	StsOvc		PySd	DG	strongly altered	6	15	7.31	2467	35700	9.1	194000
ZG375	0	2	3984047	77148	Qha	CgCcy			B	Mq gravel & sandy clay	-1	5	0.57	131	1136		4118
ZG375	2	2.5	3984048	77148	Og	Sts	Vc		LG+G	shaley CO3	-1	6	0.62	197	216		678

363120

APPENDIX 3. Grievess prospect. Air-core drill-hole logs and geochemistry - ZG366 to ZG400

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ag	Cu	Fe%	Mn	Pb	S%	Zn
ZG376	0	2	3984049	77148	Og	CcyCv			SG+B		-1	6	0.5	50	105		271
ZG376	2	3	3984050	77148	Og	CcySlS		Py	MLGDG	veg	-1	23	3.19	74	277		2968
ZG377	0	2	3984051	77148	Og	CcyCv			DG+N		-1	40	1.06	49	457		1008
ZG377	2	2.5	3984052	77148	Og	SlS		Py	DG	hard CO3	-1	21	1.91	89	54		757
ZG378	0	2.1	3984053	77148	Og	CvCcy			DB+G	minor CO3	-1	35	0.78	38	415		271
ZG379	0	2	3984054	77148	Og	CvCcy			DB		-1	17	0.37	27	95		38
ZG379	2	4	3984055	77148	Og	Ccy			DB		-1	29	1.38	24	351		662
ZG379	4	6	3984056	77148	Og	Ccy			DB	hard clay & grit	-1	29	1.89	42	159		342
ZG379	6	8	3984057	77148	Og	SlS	Fe	Sd	DG		-1	20	2.15	39	68		641
ZG379	8	8.7	3984058	77148	Og	SlS>Ovc		PySd	DG	some alteration	-1	22	1.38	116	41		629
ZG380	0	2	3984059	77148	Og	CvCcy			MLBDB		-1	5	0.29	18	6		13
ZG380	2	4	3984060	77148	Og	CcySlS			LG+B	gritty, minor sls, no E.O.H sample	-1	9	0.34	26	21		28
ZG381	0	2	3984062	77148	Og	CvCcy			B		-1	6	0.28	16	8		18
ZG381	2	4	3984063	77148	Og	Ccy			MBOG	vege	-1	17	0.37	16	21		31
ZG381	4	5.5	3984064	77148	Og	SlS>Ccy	Vc		G+DG		-1	19	2	176	149		463
ZG382	0	2	3984065	77148	Qha	Cg			LB+DB	silty, some qtzite	-1	6	0.21	15	4		5
ZG382	2	4	3984066	77148	Og	Ccy			DB		-1	11	0.27	15	15		6
ZG382	4	5.1	3984067	77148	Og	CcySlS	Vc		DG		-1	28	1.33	24	102		240
ZG383	0	2	3984068	77148	Qha	Cg			B+LB	silty, some qtzite	-1	6	0.25	14	5		5
ZG383	2	4	3984069	77148	Og	Ccy			DB	gritty	-1	28	0.3	17	28		8
ZG383	4	6	3984070	77148	Og	Ccy			DB	gritty	-1	39	0.33	16	99		36
ZG383	6	8	3984071	77148	Og	CcySlS			DB+DG	minor CO3	-1	41	1.57	33	82		247
ZG383	8	8.1			Og	SlS	Vc	Py	DG	E.O.H. sample only							
ZG384	0	2	3984072	77148	Qha	CgCcy			DB	minor qtzite	-1	23	0.31	14	28		10
ZG384	2	4	3984073	77148	Og	CcySlS			DG	graphitic	-1	28	1.53	19	111		2917
ZG384	4	5.2	3984074	77148	Og	SlS>Ccy	Vc	Sd	G+DG		-1	27	1.78	29	32		521
ZG385	0	2	3984075	77148	Og	CcyCv			DB+DG	silty grit	-1	29	0.57	21	125		241
ZG385	2	4	3984076	77148	Og	CcySlS	Fe		DB+DG		-1	45	1.37	26	358		303
ZG385	4	6	3984077	77148	Og	CcySlS			DG	med-grained CO3	-1	25	2.28	29	35		354
ZG385	6	8	3984078	77148	Og	CcySlS			DG	carbonaceous	-1	30	4.57	39	44		2437
ZG385	8	10	3984079	77148	Og	SlS	Vc		SDG		-1	15	1.1	102	43		1766
ZG385	10	12	3984080	77148	Og	SlS	Vc		DG+LG	shaley CO3	-1	16	1.83	115	19		82
ZG385	12	13.8	3984081	77148	Og	SlS	Vc	PySd	DG+LG	shaley CO3	-1	17	3.24	154	20		64
ZG386	0	2	3984082	77148	Qha	CgCcy			DB		-1	12	0.36	20	78		45
ZG386	2	2.4			Og	SlS	Vc		DG	E.O.H. sample only							
ZG387	0	1.2			Og	SlS>Ovc			DG	veg, E.O.H. sample only							
ZG388	0	1.8	3984083	77148	Og	CvCcySlS	Vc		GB+WK		1	14	1	112	5300	1.6	16000
ZG389	0	2	3984084	77148	Og	CvCcy			B		-1	8	0.39	67	603		719
ZG389	2	4	3984085	77148	Og	Ccy			DB	gritty, hard clay chips	-1	21	0.82	25	324		1314
ZG389	4	6	3984086	77148	Og	CcySlS	Fe		DB	ferrug clay chips	-1	15	6.15	23	321		1349
ZG389	6	8	3984087	77148	Og	Ccy			DGB	hard	-1	19	1.84	22	812		1956
ZG389	8	10	3984088	77148	Og	Ccy			DGB	hard	-1	21	2.13	29	1446		1853
ZG389	10	12	3984089	77148	Og	SlS>Ccy	Vc		LG+DB		-1	15	2.1	72	1008		897
ZG389	12	14	3984090	77148	Og	SlS>Ovc			G+LG	slightly shaley CO3, altered?	-1	9	0.38	127	258		266
ZG389	14	14.8	3984091	77148	Og	SlS	Vc	Sd	G		-1	9	0.31	152	209		224

563127

APPENDIX 3: Grievies prospect. Air-core drill-hole logs and geochemistry - ZG366 to ZG400

HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ag	Cu	Fe%	Mn	Pb	S%	Zn
ZG390	0	2	3984092	77148	Qha	CgCcy			LB+B		-1	10	0.3	30	67		45
ZG390	2	4	3984093	77148	Og	Ccy			LB+DB	gritty	-1	18	0.25	31	186		58
ZG390	4	6	3984094	77148	Og	Ccy			DB	small hard clay chips	-1	17	1.03	37	172		330
ZG390	6	7.4	3984095	77148	Og	CcySlS	Vc		DG+B		-1	16	1.08	49	174		702
ZG391	0	2	3984096	77148	Qha	CgCcy			DB	gravels & clays	-1	7	0.33	22	20		42
ZG391	2	4	3984097	77148	Og	Ccy			DBG		1	16	0.3	20	157		45
ZG391	4	5.9	3984098	77148	Og	SlS	Vc	Py	DG		1	29	0.71	59	2846		854
ZG391	4	5.9	3984098	77148	Og	SlS	Vc	Py	B	silty with Mq gravel	-1	6	0.24	18	82		42
ZG392	0	2	3984099	77148	Qha	Cg			B+LB	sandy	2	30	0.63	29	3034		980
ZG392	2	4	3984100	77148	Og	Ccy			DBG		1	17	0.3	23	308		137
ZG392	4	6	3984101	77148	Og	Ccy			DGB		1	17	0.3	23	308		137
ZG392	6	7.8	3984102	77148	Og	SlS	VcVs?	Ga?	DG		-1	22	1.43	64	2424		3542
ZG393	0	2	3984103	77148	QhaOg	Cx/Ccy			DB		-1	8	0.3	20	126		212
ZG393	2	4	3984104	77148	Og	Ccy			DB	Gritty	10	25	0.39	18	22400	1.65	15600
ZG393	4	6	3984105	77148	Og	Ccy			DBG		4	28	1.65	33	11900	2.7	17700
ZG393	6	7.5	3984106	77148	Og	SlS/Ccy	Vc		G+DG		1	22	1.61	83	5000	2.45	20800
ZG394	0	2	3984107	77148	QhaOg	CgCcy			DB		-1	4	0.42	25	611	1.45	1747
ZG394	2	4	3984108	77148	Og	Ccy			MDBG		-1	29	0.36	12	510		1861
ZG394	4	4.8	3984109	77148	Og	SlS	VcFeDs	Py	DG		-1	14	1.9	165	2003		8200
ZG395	0	4			Qha	Cg			K+B	qtzite gravels, no sample	2	39	0.92	12	9000	1.3	16800
ZG395	4	6	3984113	77148	Og	Ccy			DB		2	19	2.01	15	17300	4.7	32000
ZG395	6	8	3984114	77148	Og	Ccy	Fe		DB		2	19	2.01	15	17300	4.7	32000
ZG395	8	10	3984115	77148	Og	CcySlS	Vc		DG+G		1	18	1.83	125	6300		12400
ZG395	10	12	3984116	77148	Og	CcySlS	Vc		DG		2	16	1.51	256	8900		19700
ZG395	12	12.3			Og	SlS	VcFe		LG+DG		-1	7	0.57	64	942		1848
ZG396	0	2	3984110	77148	Qha	CgCcy			K+B	qtzite gravels, no sample							
ZG396	2	4			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	4	6			Qha	Cg			K+B	qtzite gravels, no sample							
ZG396	6	8	3984111	77148	Og	Ccy			DB		-1	16	1.06	27	1395		2622
ZG396	8	9.3	3984112	77148	Og	SlS	Vc		DG	cave in, poor sample	-1	12	3.87	92	492		1125
ZG397	0	3.5			Qha	Cg			K+B	qtzite gravels, no sample							
ZG397	3.5	5.7	3984117	77148	Og	SlS	VcFe		DG		-1	10	1.1	61	39		505
ZG398	0	2			Qha	Cg			K+B	qtzite gravels, no sample							
ZG398	2	2.5	3984118	77148	Og	SlS	Vc		DG		-1	3	0.63	53	23		88
ZG399	0	2			Qha	Cx/Cg			K+B	qtzite gravels, no sample							
ZG399	2	2.6	3984119	77148	Og	SlS			DG		-1	9	1.93	41	154		346
ZG400	0	2			Qha	Cg			K+B	qtzite gravels, no sample							
ZG400	2	2.3	3984120	77148	Og	SlS	Vc		DG		-1	4	0.5	71	9		18

563128

563129

APPENDIX 2

**Zn DISTRIBUTION
BY ASSAY**

Grieves prospect - ore types and Zn as sphalerite calculations

GRIEVES PROSPECT																				
ALL DRILLHOLE SAMPLES WITH +1% Zn																				
Ore types and calculated Zn as sphalerite																				
ORETYPES	Type 1	sulfidic clay			(Type 1.5 - decomposed ls)						To calculate Zn wt% as sphalerite, divide mol% S by sum of mol% Zn-Pb-Fe, then multiply by total Zn wt%.									
	Type 2	Siderite zone			(Type 2.5 - oolitic)															
	Type 3	Stratabound clay									This assumes metal cations partition to S in proportion to their total abundance									
	Type 4	Middle of ls									i.e. ratio of Zn as Sphal : total Zn = ratio of mol% S : mol% total metal cations									
	Type 5	Top of ls																		
HOLE	DFROM	DTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS		Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp	
ZG36	6.00	8.00	3523430	Ccy			LAG			4.0	20	15400	93500	5	8.18	59				
ZG36	10.00	12.00	3523432	Sls	WeDs	Py	OG			4.0	8	11100	56500	3	6.52	1420	1.3	1.1	4.6	
ZG36	12.00	12.20	3523433	Sls	Ds	Py	OG	Bioturbated lime mudstone		4.0	9	20400	90000	6	8.27	2180	1.3	1.2	7.8	
ZG40	8.00	9.80	3523449	Ccy			OG			1.0	15	2500	12900	1	2.52	34	3.6	1.3	0.0	
ZG51	50.00	52.00	3523566	Sls	VuAl	Sd	EG	Siderite attn		2.0	2	26	12900	-1	26.92	9700	3	0.2	1.0	
ZG54	6.00	8.00	3523562	Ccy			LOB			3.0	28	21900	258000	26	3.06	16	18.6	25.8	0.0	
ZG54	8.00	10.00	3523563	Ccy			LOBOG			3.0	30	26100	280000	28	4.66	20	11.6	19.3	8.7	
ZG54	10.00	12.00	3523564	Sls	We	Cy	LOG			3.0	14	11000	269000	22	9.82	27	15.3	21.6	5.3	
ZG54	12.00	14.00	3523565	Ccy			G			3.0	270	31600	181000	41	4.64	25	8.05	12.1	6.0	
ZG54	14.00	16.00	3523566	Sls	We	Cy	LGOG			3.0	44	7700	56100	2	1.9	37	5.2	5.6	0.0	
ZG54	16.00	18.00	3523567	Sls	We	Cy	OG			3.0	20	760	23000	-1	2.23	40	4.1	2.3	0.0	
ZG54	18.00	20.00	3523568	Ccy			N			3.0	32	1300	10200	-1	1.65	38	2.6	1.0	0.0	
ZG54	20.00	22.00	3523569	Ccy			G			3.0	20	251	15300	-1	1.56	42	2.75	1.5	0.0	
ZG55	2.00	4.00	3523578	CcyCg			DBLK			1.0	24	1700	17900	12	1.6	52	3.25	1.8	0.0	
ZG55	4.00	6.00	3523579	Ccy			OG			1.0	31	1100	13900	1	1.88	72	2.9	1.4	0.0	
ZG55	6.00	8.00	3523580	Ccy			OG			1.0	28	323	16800	-1	2.53	50				
ZG55	12.00	14.00	3523583	Sls	VuAIDs	SdPy	YG			2.0	6	131	15300	-1	31.6	8900	1.95	0.2	1.4	
ZG55	14.00	16.00	3523584	Sls	VuAl	Sd	YG			2.0	11	156	11200	-1	22.43	6600	1.8	0.1	1.0	
ZG74	2.00	3.00	3523682	Cg			LK			1.0	15	331	15000	-1	16.54	2002				
ZG74	3.00	4.00	3523682	Ccy			G			1.0	15	331	15000	-1	16.54	2002				
ZG74	4.00	6.00	3523683	Ccy			G			1.0	24	670	13400	1	4.39	501	1.5	0.6	0.7	
ZG74	6.00	8.00	3523684	Ccy			G			1.0	29	750	26000	1	12	1082	1.95	0.6	2.0	
ZG74	8.00	10.00	3523685	Ccy			G			1.0	19	257	26000	1	15.32	1794	0.88	0.2	2.4	
ZG74	10.00	12.00	3523686	Ccy			G			1.0	28	840	39300	1	11.84	1431	2.95	1.3	2.6	
ZG74	12.00	14.00	3523687	CcySls			G	Minor sandy ls		2.0	170	2150	42600	5	18.46	2615	2.55	0.9	3.4	
ZG74	14.00	14.50	3523688	Sls	Ma		G	Massive sandy ls + minor clay		2.0	29	990	30900	1	19.33	1761	1.6	0.4	2.7	
ZG75	12.00	14.00	3523695	CcySls			BGLG	Fine g/s massive ls		1.5	20	236	34400	-1	3.18	676	3	2.9	0.5	
ZG84	6.00	8.00	3523731	Ccy			DB			1.0	30	3600	15400	2	4.87	105	7	1.5	0.0	
ZG92	2.00	4.00	3523787	Ccy			GB			1.0	34	15200	12900	5	9.97	51	10.3	1.3	0.0	
ZG92	4.00	6.00	3523788	Ccy			GB			1.0	41	13100	10600	5	10.66	62	11.1	1.1	0.0	
ZG108	4.00	6.00	3758002	Ccy			DB	decomposed Sls frags		1.0	124	2200	21100	1	1.09	29	2.5	2.1	0.0	
ZG108	6.00	8.00	3758003	Ccy			OG	gritty		1.0	90	1500	11700	1	0.91	22	1.53	1.2	0.0	
ZG108	8.00	10.00	3758004	Sls			LB	decomposed		1.5	28	600	103000	1	3.43	24	9.4	10.3	0.0	
ZG108	10.00	12.00	3758005	Ccy			DB	decomposed Sls frags		1.5	26	500	53600	1	2.55	135	5.5	5.4	0.0	
ZG108	12.00	14.00	3758006	Ccy			B	Sls frags		1.0	9	200	10700	1	0.96	212	1.2	1.1	0.0	
ZG108	28.00	30.00	3758014	Ccy			OG	lesser Sls with prominent calcite & qtz veining		3.0	9	300	17300	1	4.25	1205	0.57	0.3	1.4	
ZG108	30.00	31.00	3758015	Ss			OG	isolated, calcite veined		3.0	9	200	10900	-1	2.86	947	0.69	0.3	0.7	
ZG115	2.80	4.00	3758028	Ccy			LGLB			1.0	41	2300	92200	2	1.48	131	4.6	7.8	1.5	
ZG115	4.00	6.00	3758029	Ccy			LB			1.0	65	4400	41600	3	1.84	83	2.25	3.0	1.2	
ZG115	6.00	8.00	3758030	Ccy			LGLB			1.0	72	3200	49600	3	3.67	499	2.55	2.8	2.2	
ZG115	8.00	10.00	3758031	Ccy			LBG	lesser sandy Sls		1.5	21	600	30200	1	4.24	1427	2.5	1.9	1.1	
ZG115	10.00	12.00	3758032	Ss				minor G-B clay		1.0	7	172	52000	1	9.53	5300	0.9	0.6	4.6	

563130

Grievess prospect - ore types and Zn as Sphalerite calculations

HOLE	OFFROM	OTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG115	12.00	14.00	3758033	Ccy			OG	lesser sandy Sls	1.0	21	600	26800	1	3.75	910	2.9	2.2	0.4
ZG115	14.00	16.00	3758034	Ccy			OG	lesser sandy Sls	1.0	25	4400	15400	3	2.35	507	1.55	1.1	0.4
ZG115	16.00	18.00	3758035	Ccy			OG	lesser sandy Sls	1.0	1369	4200	41700	24	8.06	2092	1.8	1.1	3.1
ZG115	18.00	20.00	3758036	Ccy	AI	Sd	OG	minor bands of YG sideritic carbonate	2.0	2623	24100	71900	69	12.3	1829	3.5	2.3	4.9
ZG115	20.00	22.00	3758037	Ccy	AI	Sd	LGOG	rare YB carbonate with Sd	2.0	167	6100	32000	7	7.25	620	3	1.6	1.6
ZG115	22.00	24.00	3758038	Ccy	AI	Sd	G	minor Sd carbonate frag.	2.0	53	4300	35800	4	9.37	2872	2.45	1.2	2.4
ZG115	24.00	26.00	3758039	Sls			OG	sandy, lesser DG clay	2.0	23	400	43900	1	17.8	5500	2.8	1.0	3.4
ZG115	26.00	28.00	3758040	Sls	AI	SdSu?		honeycombed, heavy, broken, lesser N clay	2.0	33	300	69700	1	29.4	8800	1.05	0.4	6.6
ZG115	28.00	28.50	3758041	Sls	AI	SdSu?		honeycombed, heavy, broken, lesser N clay	2.0	82	700	72300	2	21.1	8800	0.83	0.4	6.8
ZG116	3.50	6.00	3758042	Ccy			MDGLB		1.0	56	2000	13200	2	3.33	602	1.15	0.6	0.7
ZG116	6.00	8.00	3758043	Ccy	AIDs	SdPy	OG	lesser Sls	2.0	35	1200	84500	1	8.29	3982	1.8	1.7	6.7
ZG116	8.00	10.00	3758044	Ccy	AIDs	SdPy	NG	lesser Sls	2.0	27	900	114000	1	9.39	6200	1.65	1.7	9.7
ZG116	10.00	12.00	3758045	Ccy			MGO	lesser Sls	3.0	228	13000	63700	4	13.1	4839	1.35	0.8	5.6
ZG116	12.00	14.00	3758046	Ccy			MRLB	sim. to clays in DDH106 at same strat. level	3.0	60	2500	21900	3	9.71	2010	0.09	0.0	2.2
ZG117	4.00	6.00	3908998	Ccy			B	pealy	1.0	68	3500	78600	-1	1.39	52	5.68	7.9	0.0
ZG117	6.00	8.00	3908999	Ccy			MLBOG		1.0	15	162	73200	-1	1.7	110	5.47	7.3	0.0
ZG117	8.00	10.00	3909000	Ccy			MLBOG		1.0	22	600	112000	-1	2.39	110	8.09	11.2	0.0
ZG117	10.00	12.00	3909058	Ccy			OG	lesser K line Sst	1.0	66	9400	13800	2	2.95	351	0.91	0.5	0.9
ZG117	12.00	14.00	3909059	Sls			OG	calc-arenite, lesser K line Sst + DG clay	1.5	15	516	18100	-1	2.23	4211	1.56	1.3	0.5
ZG117	14.00	16.00	3909060	Sls			OG	granular calc-arenite, lesser DG clay	1.5	10	238	15500	-1	2.19	3361	1.75	1.3	0.2
ZG117	16.00	18.00	3909061	Sls	Vn		OG	granular calc-arenite, lesser DG clay	1.5	11	333	14100	1	1.97	705	1.2	0.9	0.5
ZG123	8.00	10.00	3758073	Ccy			B	lesser N decomposed Sls	1.0	16	700	60900	-1	3.9	58	7.7	6.1	0.0
ZG123	10.00	12.00	3758074	Ccy			B	lesser N decomposed Sls	1.0	18	200	33800	-1	4.06	498	5.1	3.4	0.0
ZG123	14.00	16.00	3758076	Ccy			MGG		1.0	23	300	27600	1	3.24	534	1.95	1.7	1.1
ZG123	16.00	18.00	3758077	Ccy			OGB	lesser DG Sss	2.0	9	137	28100	-1	15.5	3581	1.9	0.5	2.3
ZG123	18.00	20.00	3758078	Sls				hard with prominent calcite veining, lesser G clay	2.0	5	97	37500	-1	24.7	6000	1.35	0.3	3.4
ZG123	20.00	22.00	3758079	Ccy			OG	lesser hard Sss with prominent calcite veining	2.0	16	4100	68500	1	13.9	2987	2.5	1.5	5.4
ZG123	22.00	24.00	3758080	Ccy	Ds	Py	MGG	lesser hard, silicified? Sls	2.0	19	1500	97800	1	18.1	9600	2.95	1.9	7.9
ZG129	0.00	2.00	3758110	Ccy			B	peat + decomposed N lst	1.5	11	147	25000	-1	1.36	15	3.5	2.5	0.0
ZG129	2.00	4.00	3758111	Sls			B	decomposed lst	1.5	12	100	28900	-1	3.39	24	6.55	2.9	0.0
ZG129	4.00	6.00	3758112	Ccy			G		1.0	28	132	11200	-1	3.7	30	4.65	1.1	0.0
ZG149	8.00	10.00	3758187	Ccy			MMOG	lesser decomposed Sls	1.0	87	6800	25100	2	9.26	51	11.1	2.5	0.0
ZG149	10.00	12.00	3758188	Ccy			MDGW	W - sphalerite, lesser decomposed banded & mottled Sls	2.0	17	4600	46200	2	23.5	65	28.7	4.6	0.0
ZG149	12.00	14.00	3758189	Sls	Ds	Py	OG	decomposed Sls, lesser DG clay	2.0	23	5900	67500	2	21.7	145	28.5	6.8	0.0
ZG149	14.00	16.00	3758190	Sls				broken oolitic Sls	2.5	9	560	10500	-1	3.53	506	3.9	1.1	0.0
ZG150	4.00	6.00	3758193	Ccy			OG		1.0	51	2100	12100	2	15.6	3574	6.05	0.8	0.4
ZG150	6.00	8.00	3758194	Sls	Ds	Py	LG	oolitic Sls, lesser DG clay	2.5	31	1400	14400	1	17.6	5200	3.1	0.4	1.0
ZG150	8.00	10.00	3758195	Sls			LG	oolitic Sls, broken	2.5	8	1500	10300	-1	6.7	1695	2.8	0.7	0.4
ZG152	18.00	20.00	3758211	Sls			R	oolitic, with hematitic staining	2.5	10	7100	59800	2	4.51	1338	2.35	2.5	3.5
ZG153	5.00	6.00	3758212	Ccy			OG		1.0	18	87	18000	-1	3.46	639	2.85	1.8	0.0
ZG153	18.00	20.00	3758219	Sls	Ds	Py	OG	lesser DG clay, 5% Py	1.5	7	47	25200	-1	10.8	1401	9.95	2.5	0.0
ZG153	20.00	22.00	3758220	Sls	Ds	Py	OG	lesser DG clay 5% Py	1.5	7	62	42200	-1	16.2	1125	16.3	4.2	0.0
ZG153	26.00	28.00	3758223	Sls	Ds	Py	OG	3-5% Py	2.0	10	700	10800	-1	16.2	6400	1.7	0.2	0.9
ZG153	28.00	30.00	3758224	Sls	Ds	Py	OG	granular Sls, lesser DG clay	2.0	5	800	11500	-1	14.7	5100	2.35	0.3	0.9
ZG153	30.00	32.00	3758225	Sls	Ms	Py	LG	R(hematitic) staining, rdd qtz pebbles	2.0	6	500	14000	1	12.6	2113	7.1	1.3	0.1
ZG153	32.00	34.00	3758226	Sls	Ms	Py	LG	R(hematitic) staining, rdd qtz pebbles	2.0	7	2400	16300	2	8.37	2991	1.2	0.3	1.3
ZG153	34.00	36.00	3758227	Sls	Ms	Py	LG	R(hematitic) staining, rdd qtz pebbles	2.0	8	800	10300	1	3.89	1383	1.2	0.4	0.6
ZG153	36.00	38.00	3758228	Sls	Ds	Py	LG	R(hematitic) staining, 5% Py	2.0	5	4000	55300	4	12.8	5500	2.4	1.3	4.2
ZG153	38.00	40.00	3758229	Sls	Ds	Py	LG	R(hematitic) staining	2.0	6	1700	12600	1	10.8	5600	1.4	0.3	1.0
ZG153	40.00	42.00	3758230	Sls	Ds	Py	OG	pitted, lesser DG clay	2.0	12	2400	44900	1	24.7	3050	22.9	4.5	0.0
ZG153	42.00	44.00	3758231	Ccy			OG	lesser R(hematitic) oolitic Sls	2.5	16	1200	32200	1	9.77	1510	7.65	3.2	0.0
ZG154	4.50	6.00	3758232	Ccy			OG	lesser DG granular Sls	1.0	9	78	20000	-1	2.85	415	2.65	2.0	0.0

563131

Gieves prospect - ore types and Zn as Sphalerite calculations

HOLE	FROM	TO	SAMP NO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG154	24.00	26.00	3758242	Ccy	Ds	Fy	DG	lesser DG granular Sls	2.0	9	26	12800	-1	13	3736	5	0.8	0.5
ZG154	26.00	28.00	3758243	SsCs			DG	Sand poor recovery - cavity?	2.0	7	10	12900	-1	11.8	4531	1.8	0.3	1.0
ZG154	28.00	30.00	3758244	Ss	Ds	Fy	MG		2.0	5	20	11400	-1	11.2	4577	1.4	0.2	0.9
ZG155	6.00	8.00	3758248	Ccy			DG	lesser DG granular Sls	1.0	7	2900	15200	2	2.41	522	1.95	1.4	0.2
ZG155	18.00	20.00	3758254	Ss			MG	granular Sls	1.5	4	29	17400	-1	3.4	1163	1.7	1.1	0.7
ZG155	20.00	22.00	3758255	Ss			MG	granular Sls, lesser DG clay	1.5	5	48	17600	-1	2.55	806	1.75	1.3	0.4
ZG155	24.00	26.00	3758257	Ss	Ds	Fy	MDG	granular Sls, lesser B clay	1.5	5	83	14100	-1	6.41	1145	4.65	1.4	0.0
ZG155	26.00	28.00	3758258	Ccy			DG	lesser MDG granular Sls	1.5	13	900	11200	-1	5.1	1412	2.65	0.8	0.3
ZG155	28.00	30.00	3758259	Ccy			DG	lesser MDG granular Sls	1.5	17	74	17600	-1	3.9	1291	9.7	1.8	0.0
ZG155	30.00	32.00	3758260	Ccy	Ds	Fy	DG	lesser MDG granular Sls, 5% Py	1.5	8	124	16100	-1	1.59	3466	20.7	1.6	0.0
ZG155	32.00	34.00	3758261	Ccy	Ds	Fy	DCB	lesser pitted, altered DG Sls	1.5	5	35	20500	-1	2.72	3024	21.7	2.1	0.0
ZG155	34.00	36.00	3758262	Ss	Ds	Fy	MG		2.0	7	24	17600	-1	19.3	6500	4	0.6	1.2
ZG155	36.00	38.00	3758263	Ss	Ds	Fy	MG	5%Py	2.0	6	9	13500	-1	2.3	7900	6.5	0.6	0.7
ZG155	38.00	39.00	3758264	Ss	Ds	Fy	MG	pitted G Sls	2.0	6	9	12000	-1	16.8	9200	0.73	0.1	1.1
ZG156	18.00	20.00	3758273	Ss	Ds	Fy		vein calcite returned only - cavity	1.5	3	108	13900	-1	12.6	254	11.3	1.4	0.0
ZG156	22.00	24.00	3758275	Ss	Ds	Fy	MG	granular Sls, calcite veined	1.5	4	87	28400	-1	7.28	629	8.35	2.8	0.0
ZG156	24.00	26.00	3758276	Ss	Ds	Fy	MG	granular Sls, calcite veined	1.5	4	60	21000	-1	12	2930	6.7	1.8	0.3
ZG157	1.50	3.00	3758278	Ss			LG	fine Sls, lesser peaty clay	1.5	10	38	22600	-1	4.16	121	9.8	2.3	0.0
ZG169	4.00	6.00	3758314	Ccy			MMGB		1.0	76	1100	33000	-1	1.17	42	4.75	3.3	0.0
ZG170	2.00	4.00	3758331	Ccy			MDG		1.0	124	18800	30900	6	1.24	33	2.7	3.1	0.0
ZG170	4.00	6.00	3758332	Ccy			B	lesser decomposed Sls	1.0	44	12000	73400	2	0.73	48	6.05	7.3	0.0
ZG170	6.00	7.00	3758333	Ss	Ds	Fy		oolitic Sls	2.5	91	28600	30700	3	1.72	197	3.3	3.1	0.0
ZG171	4.00	6.00	3758336	Ccy			MDGW		1.0	105	12100	30700	3	1.94	55	3.35	3.1	0.0
ZG171	6.00	8.00	3758337	Ccy			MDGW		1.0	62	1400	33700	2	3.92	585	5.3	3.4	0.0
ZG171	8.00	10.00	3758338	Ccy			MDGW		1.0	43	800	134000	1	1.5	1200	13.9	13.4	0.0
ZG171	10.00	12.00	3758339	Ccy			MDGW	lesser decomposed Sls	2.0	42	221	19200	-1	17.6	4240	3.1	0.5	1.4
ZG171	12.00	14.00	3758340	Ss			LB	pitted	2.0	14	304	29700	-1	31.5	11000	3.4	0.5	2.5
ZG171	14.00	16.00	3758341	Ss	AI	Sd	MMG	heavy, honeycombed skeletal Sls	2.0	5	131	23300	-1	27.8	10500	1.05	0.1	2.2
ZG171	16.00	18.00	3758342	Ss	AI	Sd	MMG	heavy, honeycombed skeletal Sls	2.0	5	160	22700	-1	29.3	11100	0.95	0.1	2.2
ZG171	18.00	20.00	3758343	Ss	AI	Sd	MMG	heavy, honeycombed skeletal & oolitic Sls	2.5	10	900	11900	-1	12.1	3560	0.87	0.1	1.1
ZG171	20.00	22.00	3758344	Ss	AI	Sd	MMG	heavy, honeycombed skeletal & oolitic Sls	2.5	9	1400	12600	-1	10.9	3386	0.74	0.1	1.1
ZG172	4.00	6.00	3758346	Ccy			MDGW		1.0	50	1300	33100	-1	1.69	46	4.3	3.3	0.0
ZG172	6.00	8.00	3758347	Ccy			MDGW		1.0	32	1000	11500	-1	2.43	405	3.1	1.2	0.0
ZG172	10.00	12.00	3758349	Ccy	AI	Sd	MDGW	lesser altered/ankhoritic oolitic Sls	2.5	10	163	12000	-1	25.6	8000	1.1	0.1	1.1
ZG172	12.00	14.00	3758350	Ss	Ds	Fy	MG	oolitic	2.5	9	171	12100	-1	16.9	4134	0.45	0.1	1.2
ZG172	16.00	18.00	3758352	Ss	Ds	Fy	MG	oolitic, with R hematitic staining	2.5	6	187	10300	-1	12.7	3777	0.32	0.0	1.0
ZG172	18.00	20.00	3758353	Ss	AI	Sd		heavy/ankhoritic?, honeycombed oolitic Sls	2.5	8	169	11300	-1	20.4	6100	0.18	0.0	1.1
ZG172	20.00	22.00	3758354	Ss	AI	Sd		heavy/ankhoritic?, honeycombed oolitic Sls	2.5	7	132	11200	-1	16	4593	0.33	0.0	1.1
ZG173	12.00	14.00	3758361	Ss	AIDs	SdPy		honeycombed, ankhoritic Sls + rdd qtz pebbles, lesser Ccy	2.0	7	208	14600	-1	28.5	10000	1.8	0.2	1.3
ZG173	14.00	16.00	3758362	Ss	AIDs	SdPy		honeycombed, ankhoritic Sls + rdd qtz pebbles, lesser Ccy	2.0	14	151	10700	-1	25.2	8300	0.97	0.1	1.0
ZG173	16.00	18.00	3758363	Ss	AIDs	SdPy		honeycombed, ankhoritic Sls + rdd qtz pebbles, lesser Ccy	2.0	14	127	11800	-1	23.1	7700	0.66	0.1	1.1
ZG174	4.00	6.00	3758369	Ccy			DG		1.0	32	370	10500	-1	1.41	88	3.4	1.1	0.0
ZG174	16.00	18.00	3758375	Ss	AIDs	SdPy	DG		2.0	5	23	15300	-1	28.5	8800	1.85	0.2	1.4
ZG174	26.00	28.00	3758380	Ss	AI	Sd	LB	pitted + heavy	2.0	6	298	10600	-1	24.1	7600	0.34	0.0	1.0
ZG175	3.00	6.00	3758384	Ccy				lesser B decomposed Sls	1.0	22	217	14700	-1	1.15	55	4.65	1.5	0.0
ZG175	6.00	8.00	3758385	Ccy			B		1.0	27	229	13000	-1	1.08	87	5.2	1.3	0.0
ZG175	40.00	42.00	3758402	Ccy			LDG	lesser LG oolitic Sls	2.5	22	281	13900	-1	17.1	4595	2.15	0.3	1.1
ZG177	20.00	22.00	3758413	Ss	Ds	Fy	DG	foliated, lesser DG clay	2.0	17	123	10300	-1	15.5	4231	2	0.2	0.8
ZG177	22.00	24.00	3758414	Ccy			DG	lesser G granular Sls	2.0	9	38	12300	-1	20.7	6600	1.4	0.1	1.1
ZG177	48.00	50.00	3758427	Ss			DG	granular, lesser DG clay, pitted	2.0	9	98	12000	-1	25.5	7800	1.05	0.1	1.1
ZG177	50.00	52.00	3758428	Ccy	Ds	Fy	LG	lesser DG Sls	2.0	20	700	10500	-1	19.1	4288	1	0.1	1.0
ZG177	52.00	54.00	3758429	Ccy			LBG	lesser pitted LB Sls	2.0	10	141	27400	-1	31.3	10900	1.05	0.1	2.6

563132

Gieves prospect - ore types and Zn as Sphalerite calculations

HOLE	DFROM	DTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG177	54.00	56.00	3758430	Sls	AI	Sd	DG	honeycombed	2.0	8	343	39000	-1	39.6	16200	0.32	0.1	3.8
ZG177	56.00	57.00	3758431	Sls	AI	Sd	LB	honeycombed	2.0	28	1000	41800	1	34.4	13700	1.7	0.3	3.9
ZG178	2.00	4.00	3758432	Ccy					1.0	20	426	32700	1	1.34	49	3.45	3.3	0.0
ZG178	4.00	6.00	3758433	Ccy			G		1.0	24	122	43200	-1	1.01	139	5.3	4.3	0.0
ZG178	6.00	8.00	3758434	Ccy			DG		1.0	24	145	29900	-1	22	6500	3.6	0.8	2.2
ZG178	8.00	10.00	3758435	Sls			MLB		2.0	4	40	29800	-1	39.5	14800	1.15	0.1	2.8
ZG178	10.00	12.00	3758436	Sls			DG	granular Sls	2.0	4	119	29900	-1	35.5	12900	1.4	0.2	2.8
ZG178	12.00	14.00	3758437	Sls	AI	Sd	MAG	oolitic Sls	2.5	7	259	36300	1	29.2	9900	3.2	0.6	3.0
ZG178	14.00	16.00	3758438	Sls	AI	Sd	MAG	oolitic Sls, lesser B clay	2.5	6	198	31300	1	29	9300	2.6	0.4	2.7
ZG178	16.00	17.50	3758439	Sls	AI	Sd	MAG	oolitic, heavy	2.5	4	75	22100	-1	29.9	10700	1	0.1	2.1
ZG179	2.00	4.00	3758440	Ccy			B	pealy	1.0	16	1300	10600	1	1.19	85	1.7	1.1	0.0
ZG179	4.00	5.00	3758441	Sls			R	oolitic, heamite stained	2.5	3	300	13300	-1	3.08	977	1.8	1.0	0.3
ZG180	2.50	4.00	3758442	Ccy					1.0	20	1700	26200	1	1.01	47	2.85	2.6	0.0
ZG180	4.00	6.00	3758443	Ccy			B	pealy	1.0	18	1500	76400	1	0.67	60	6	7.6	0.0
ZG180	6.00	8.00	3758444	Ccy			B	pealy	1.0	15	1100	66900	1	0.68	78	5.6	6.7	0.0
ZG180	8.00	10.00	3758445	Ccy			B	pealy	1.0	16	1800	135000	1	1.03	727	9.55	13.5	0.0
ZG180	10.00	12.00	3758446	Ccy			G		2.0	20	800	148000	1	18.7	3773	9.8	8.0	6.8
ZG180	12.00	14.00	3758447	Ccy			B		2.0	14	700	109000	1	22.3	5800	6.7	4.0	5.8
ZG180	14.00	16.00	3758448	Ccy			B	lesser R(heamite) oolitic Sls	2.5	20	400	33100	1	34.1	10300	3.4	0.5	2.8
ZG181	1.50	4.00	3758456	Ccy			B	pealy	1.0	52	20200	78100	2	2.9	24	7.6	7.8	0.0
ZG181	4.00	6.00	3758457	Ccy			DG		1.0	51	8500	29600	3	2.34	47	4.1	3.0	0.0
ZG181	12.00	14.00	3758461	Ccy			DG		1.0	62	6900	12000	3	1.62	36	2.2	1.2	0.0
ZG181	14.00	16.00	3758462	Ccy			DG		1.0	45	4400	11700	2	1.69	32	2.4	1.2	0.0
ZG181	16.00	18.00	3758463	Ccy			DG		3.0	44	4800	67900	3	9.88	35	13.6	6.8	0.0
ZG181	18.00	20.00	3758464	Ccy			MDGLB		3.0	83	17200	88600	5	6.13	33	9.65	8.9	0.0
ZG182	4.00	6.00	3758471	Ccy			B	pealy	1.0	22	714	50000	1	0.52	63	9.1	5.0	0.0
ZG182	6.00	8.00	3758472	Ccy			B	pealy, lesser N decomposed Sls	1.0	14	418	74300	-1	0.57	68	9.4	7.4	0.0
ZG182	8.00	10.00	3758473	Ccy			B	pealy, lesser N decomposed Sls	1.0	19	1100	103000	1	4.7	92	10.6	10.3	0.0
ZG182	10.00	12.00	3758474	Sls			B	oolitic	2.5	8	110	16500	-1	1.34	560	1.35	1.4	0.2
ZG182	12.00	13.00	3758475	Sls			B	oolitic	2.5	6	163	16700	-1	1.55	351	1.9	1.7	0.0
ZG183	2.50	6.00	3758476	Ccy			B	pealy	1.0	20	85	19100	-1	2.75	123	3.8	1.9	0.0
ZG183	6.00	8.00	3758477	Ccy			GB		1.0	19	77	19700	-1	2.46	123	3.5	2.0	0.0
ZG183	8.00	10.00	3758478	Ccy			GB		1.0	24	217	26200	-1	4.37	608	3.8	2.6	0.0
ZG183	10.00	12.00	3758479	Ccy			GB		1.0	13	123	29200	-1	25.4	8500	2.85	0.5	2.4
ZG183	12.00	14.00	3758480	Sls			B	granular, lesser GB clay, pitted	2.0	9	269	21900	-1	33.3	11200	1.85	0.2	2.0
ZG183	14.00	16.00	3758481	Sls			B	granular, lesser GB clay, pitted	2.0	23	949	35300	-1	23.2	6900	4.1	1.0	2.6
ZG183	16.00	18.00	3758482	Sls				poor recovery, cavity?	2.0	7	233	19100	-1	38.3	13200	1.8	0.1	1.8
ZG183	18.00	20.00	3758483	Sls			LB	lesser B clay, honeycombed	2.0	6	370	37300	-1	34.7	11300	6	1.0	2.7
ZG183	20.00	21.00	3758484	Sls			MAG	oolitic	2.5	4	220	23600	-1	20.7	6000	3.55	0.6	1.7
ZG184	2.00	4.00	3758485	Ccy			DG		1.0	23	1000	20700	-1	2.52	154	3.4	2.1	0.0
ZG184	4.00	6.00	3758486	Ccy			DG	lesser LB pitted Sls	2.0	17	212	11000	-1	20.4	7300	1.75	0.2	0.9
ZG184	24.00	26.00	3758496	Sls	Ds	Py	MG	pitted oolitic Sls, lesser DG clay	2.5	8	46	11600	-1	22.1	6700	1.3	0.1	1.0
ZG184	26.00	28.00	3758497	Sls			MG	pitted oolitic Sls, lesser DG clay	2.5	13	54	17000	-1	30.5	10200	0.88	0.1	1.6
ZG184	28.00	30.00	3758498	Sls			MG	pitted oolitic Sls, lesser G clay	2.5	7	140	16700	-1	29.1	10200	1.2	0.1	1.6
ZG184	30.00	32.00	3758499	Sls			MG	pitted oolitic Sls, lesser G clay	2.5	10	113	11900	-1	23.8	7900	1.15	0.1	1.0
ZG184	32.00	34.00	3758500	Sls			MLB	pitted, lesser B-G clay	2.0	5	72	15700	-1	21.6	7400	1.15	0.1	1.4
ZG184	34.00	36.00	3758501	Sls			MLB	pitted, lesser B-G clay	2.0	13	300	34100	-1	15.5	4455	3.3	1.1	2.3
ZG184	36.00	38.00	3758502	Sls			MAG	oolitic	2.5	6	75	11000	-1	12.9	3941	0.89	0.1	1.0
ZG184	38.00	39.00	3758503	Sls			MAG	pitted oolitic Sls	2.5	13	93	21400	-1	13.1	3991	1.75	0.4	1.7
ZG185	4.00	6.00	3758504	Sls			N	decomposed	1.5	12	56	10000	-1	7.62	22	9.2	1.0	0.0
ZG185	8.00	10.00	3758506	Ccy			N		1.0	16	73	12200	-1	9.22	46	10.3	1.2	0.0
ZG185	10.00	12.00	3758507	Ccy			N		1.0	16	140	10700	-1	8.58	72	9.4	1.1	0.0

262123

Grievs prospect - ore types and Zn as Sphalerite calculations

HOLE	DEPTH	DATE	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG185	54.00	56.00	3758529	Sls			MG	with rdd qtz pebbles, fossilif., lesser MDG-W clay	2.0	10	73	10600	-1	25.6	8400	1.3	0.1	1.0
ZG185	58.00	60.00	3758531	Sls	Al	Sd	LB	honeycombed, with rdd qtz pebbles, lesser DG clay	2.0	11	56	13500	-1	27.7	9500	1.7	0.1	1.2
ZG228	6.00	8.00	3908532	Coy			MLDB		3.0	59	3300	21900	2	10.8	26	14.7	2.2	0.0
ZG228	8.00	10.00	3908533	CoySls	Fe		MDG	Plastic clays. Minor ferrug lst	3.0	26	510	15900	1	9.43	125	10.8	1.6	0.0
ZG228	10.00	12.00	3908534	CoySls	Fe		G	Plastic clays. Minor ferrug lst	3.0	25	365	24500	1	13.2	140	14.6	2.5	0.0
ZG230	8.00	10.00	3908559	Coy			DMDG	Plastic clays	3.0	31	1600	15500	1	16.7	3740	6.88	1.0	0.5
ZG230	10.00	12.20	3908560	SlsCoy	We		LG	Oolitic. Minor clay	2.5	9	310	11700	-1	6.9	817	5.68	1.2	0.0
ZG264	3.00	6.00	3908706	CoyCg					1.0	13	700	35800	-1	1.87	201	3.2	3.6	0.0
ZG264	12.00	14.00	3908710	Coy			GB		3.0	38	5700	31700	5	6.6	927	2.12	1.2	1.9
ZG264	14.00	16.00	3908711	Coy			GB		3.0	90	3800	10700	27	7.83	104	0.86	0.2	0.9
ZG264	16.00	18.00	3908712	Coy			GB		3.0	242	5600	10800	29	11.1	240	0.53	0.1	1.0
ZG265	4.00	6.00	3908724	Coy			DB		1.0	13	700	17100	-1	3.39	284	4.22	1.7	0.0
ZG265	12.00	14.00	3908728	CoySss			LB		3.0	22	1400	31900	-1	7.19	1871	5.77	3.2	0.0
ZG273	6.00	8.00	3908755	Coy			DB		1.0	41	100	28900	-1	2.5	43	5.58	2.9	0.0
ZG273	8.00	10.00	3908756	Sls			LG		1.0	5	45	10900	-1	1.31	154	1.56	1.1	0.0
ZG277	2.00	4.00	3908763	Coy			NB		1.0	192	2700	10600	-1	1.9	28	3.59	1.1	0.0
ZG277	4.00	6.00	3908764	Coy			NB		1.0	30	397	19500	-1	3.73	52	5.67	2.0	0.0
ZG277	6.00	8.00	3908765	Coy			NB		1.0	38	1100	10700	-1	3.29	85	4.95	1.1	0.0
ZG278	0.00	2.00	3908767	CoyCg			DB		1.0	17	1037	10500	-1	2.24	775	1.58	0.9	0.1
ZG279	2.00	4.00	3908771	Coy			NDB		1.0	68	5500	13600	-1	1.59	32	1.56	1.3	0.1
ZG279	4.00	6.00	3908772	Coy			B		1.0	33	1600	13500	-1	6.26	1378	4.04	1.3	0.1
ZG280	2.00	4.00	3908775	Coy			NDB		1.0	15	103	10900	-1	4.16	52	5.26	1.1	0.0
ZG300	0.00	2.00	3908811	Coy			DG		5.0	21	145	13400	-1	7.4	31	8.36	1.3	0.0
ZG300	6.00	8.00	3908814	Coy			NB		5.0	14	1100	10800	2	1.7	102	2.37	1.1	0.0
ZG317	2.00	4.00	3908856	Sls	Da	Py	LG	Pyritic lst.	5.0	25	3800	33200	9	1.79	72	3.77	3.3	0.0
ZG346	6.00	8.00	3909069	Og			B		1.0	23	160	10200	-1	2.49	41	3	1.0	0.0
ZG348	10.00	12.00	3909073	Sls			N	decomposed Sls	1.5	20	180	13600	-1	3.7	47	4.7	1.4	0.0
ZG348	20.00	22.00	3909078	Coy	Vc		MG	lesser carbonate veined granular DG Sls	1.0	36	105	11500	-1	2	437	2.9	1.2	0.0
ZG348	22.00	24.00	3909079	Sls		Py	DG	granular Sls with 30% massive Py, minor MG clay	2.0	8	65	17000	-1	13.02	1598	9.65	1.7	0.0
ZG348	24.00	26.00	3909080	Sls		Py	DG	granular Sls with 30% massive Py	2.0	4	45	17600	-1	14.41	2080	10.9	1.8	0.0
ZG348	26.00	28.00	3909081	Sls		Py	DG	granular Sls with 2% massive Py	2.0	3	15	25700	-1	24.04	7400	4.3	0.7	1.8
ZG348	28.00	30.00	3909082	Sls		Py	DG	granular Sls with 30% massive Py, lesser GW clay	2.0	9	128	58000	-1	29.05	8000	15.9	4.7	1.1
ZG348	30.00	31.00	3909083	Sls		Py	DG	granular calc-arenite with 2% PY, lesser MG-W clay	2.0	13	124	34400	-1	24.59	11000	3.1	0.7	2.8
ZG349	4.40	6.00	3909084	Sls		He	MGK	oolitic Sls, minor clay	2.5	8	211	15400	-1	5.22	2126	0.27	0.1	1.4
ZG350	4.50	6.00	3909086	Sls	AlVu	Sd	LY	Spongy	2.0	25	2817	115300	-1	4.15	2087	0.74	1.1	10.5
ZG350	6.00	8.00	3909087	Sls	Al	SdHe	YRG	Altered oolitic carbonate	2.5	5	663	16000	-1	1.35	800	0.11	0.1	1.5
ZG350	8.00	10.00	3909088	SlsCoy	Al	Sd	LY+B	Altered oolitic carbonate	2.5	7	1654	69500	-1	6.42	834	3.1	3.0	3.9
ZG351	4.60	5.50	3909089	Sls	Ma		DG	Granular carbonate	2.0	4	30	67100	-1	16.78	7400	0.64	0.3	6.4
ZG352	8.00	10.00	3909094	Coy			MDG	Gritty	3.0	27	1045	49700	1	4.38	27	7.5	5.0	0.0
ZG352	10.00	12.00	3909095	CoySls	Fe		B	Minor ferrug carbonate	3.0	20	1868	61500	-1	5.9	24	10	6.2	0.0
ZG352	12.00	14.00	3909096	CoySls	Fe		B	Minor ferrug carbonate	3.0	24	747	55100	-1	4.98	37	8.6	5.5	0.0
ZG352	14.00	16.00	3909097	SlsCoy	FeWe		G+DG	Ferrug carbonate	3.0	12	999	112700	-1	5.7	59	12.2	11.3	0.0
ZG352	16.00	18.00	3909098	Coy			MLBDG		3.0	40	1281	40500	1	2.74	60	3.45	3.9	0.2
ZG352	18.00	20.00	3909099	Coy			MLDGG	Plastic clay	3.0	26	841	15800	1	1.13	38	1.5	1.6	0.0
ZG352	20.00	22.00	3909100	SlsCoy	Ma		DG+LG	Granular carbonate	3.0	35	1563	25800	1	2.98	242	1.65	1.4	1.2
ZG352	22.00	24.00	3909101	SlsCoy	Vn		DG+LG	Granular carbonate	3.0	11	603	10600	-1	1.03	344	0.43	0.4	0.7
ZG352	24.00	26.00	3909102	SlsCoy	Vn		DG+V	Granular carbonate + green clay	3.0	18	749	12500	-1	1.37	373	0.31	0.3	1.0
ZG352	26.00	28.00	3909103	SlsCoy	Vn		DG+V	Granular carbonate + green clay	3.0	20	881	11600	1	2.37	858	0.46	0.3	0.9
ZG352	28.00	28.70	3909104	SlsCoy	Vn		DG+V	Granular carbonate + green clay	3.0	12	547	10300	1	1.25	498	0.31	0.3	0.8
ZG356	18.00	20.00	3909154	Coy		Py	DG	prominent Py	3.0	93	4000	14400	5	11.33	236	1.2	1.4	0.0
ZG356	20.00	22.00	3909155	Coy		Py	DG	prominent Py, gritty	3.0	171	4400	23600	11	12.01	90	13.6	2.4	0.0
ZG356	22.00	24.00	3909156	Coy		Py	DG	carbonaceous, trace Py	3.0	69	3600	11800	4	7.58	68	8.9	1.2	0.0

563134

Grievess prospect - ore types and Zn as Sphalerite calculations

HOLE	DFROM	DTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Qu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp	Sp
ZG357	16.00	18.00	3909178	Ccy			B	lesser fine granular Sls	1.0	17	106	10200	-1	14.51	1550	8.65	1.0	0.0	0.0
ZG357	26.00	28.00	3909181	Ccy		Py	CB	minor Py	3.0	50	1853	14200	3	12.22	2252	9.7	1.4	0.0	0.0
ZG357	28.00	30.00	3909182	Ccy		Py	FDG	trace Py	3.0	186	2100	56100	8	15.99	921	14.5	5.6	0.0	0.0
ZG357	52.00	54.00	3909194	Ccy			OG+R	lesser rock frags	3.0	469	3500	28900	6	14.64	423	6.15	1.8	1.1	0.6
ZG357	54.00	55.80	3909195	Ccy			MGY	drilling abandoned, rods tight	3.0	255	5200	20900	11	20.01	548	8.85	1.5	0.6	0.0
ZG368	2.00	4.00	3983880	Ccy			DB+N	sandy & carbonaceous clays	1.0	394	4600	26700	10	1.24	40	2.5	2.7	0.0	0.0
ZG368	4.00	6.00	3983881	Ccy			LB		1.0	751	11900	104000	19	2.29	32	5.9	9.3	1.1	0.0
ZG368	6.00	8.00	3983882	Ccy			LB+DG		1.0	261	45600	182000	16	18.3	35	29.4	18.2	0.0	0.0
ZG368	8.00	10.00	3983883	Ccy			CG	plastic, smooth	1.0	103	49600	205000	20	4.99	74	10.7	16.0	4.5	0.0
ZG368	10.00	12.10	3983884	CcySls	VcFe		OG+G	hematite staining	2.0	31	16900	126000	7	23.7	9700	3.9	2.4	10.2	0.0
ZG370	2.50	4.00	3983886	Ccy	Fe		B+BN	carbonaceous	1.0	19	768	12100	-1	4.9	1801	1.7	0.6	0.6	0.0
ZG370	4.00	6.00	3983887	Ccy	FeVq		LB	ferrug qtz, limonite veins	2.0	25	507	11400	-1	11.1	5400	1	0.2	1.0	0.0
ZG370	6.00	8.00	3983888	CcySls			DB	creamy sls - altered?	2.0	10	139	29000	-1	19.6	8900	3.7	0.8	2.1	0.0
ZG370	8.00	10.00	3983889	Ccy			B+N	gritty brn & smooth black	2.0	41	722	55300	1	16.7	6200	7.8	3.5	2.0	0.0
ZG370	10.00	12.00	3983890	Ccy			DB	hard carbonaceous chips	2.0	24	2829	67200	1	5.53	388	9.1	6.7	0.0	0.0
ZG370	12.00	14.00	3983891	Ccy	Fe		LB	ferrug veins	2.0	21	1514	174000	2	7.08	595	14.8	17.4	0.0	0.0
ZG370	20.00	22.00	3983895	Sls		Sd	B+YG	oolitic CO3	2.5	14	975	91800	-1	4.84	1496	6.2	7.8	1.4	0.0
ZG370	22.00	24.00	3983896	Sls		Sd	S+YG	oolitic CO3, possibly oolitic cave in	2.5	9	361	32600	-1	3.25	1046	2.8	2.6	0.6	0.0
ZG370	24.00	26.00	3983897	Ccy			MG		3.0	18	1443	106000	3	16.4	6400	8.9	6.4	4.2	0.0
ZG370	26.00	28.00	3983898	Ccy			G+LB		3.0	60	2172	81900	7	20.6	4624	14.2	7.3	0.9	0.0
ZG370	28.00	30.00	3983899	SlsCcy	Fe	Sd	YG	altered CO3	2.0	13	318	18800	-1	12.9	5700	2.75	0.6	1.3	0.0
ZG370	30.00	32.00	3983900	SlsCcy		Sd	OG+LFB	strongly altered?	2.0	20	441	10400	-1	23.4	9700	1.1	0.1	1.0	0.0
ZG371	18.00	20.00	3984017	Sls		Sd	G+DG		2.0	10	59	16300	-1	37.5	16500	2.8	0.2	1.4	0.0
ZG371	20.00	22.00	3984018	Sls	Fe	Sd	YG	spongy CO3	2.0	7	387	24800	-1	39.4	16400	3.8	0.4	2.1	0.0
ZG371	24.00	26.00	3984020	Sls		Sd	LYG	oolitic CO3	2.5	8	252	13300	-1	7.33	2500	2.1	0.6	0.8	0.0
ZG371	26.00	28.00	3984021	SlsCcy		Sd	LYG+LB	oolitic CO3	2.5	25	2051	99000	3	15.6	4129	8.4	6.0	3.9	0.0
ZG371	28.00	30.00	3984022	Sls	Fe	Sd	LYG	oolitic CO3	2.5	10	568	16800	7	6.25	2103	2.4	0.9	0.8	0.0
ZG371	30.00	30.50	3984023	Sls	Fe	Sd	LYG	hard oolitic CO3	2.5	12	455	17200	1	7.53	2276	3.5	1.2	0.6	0.0
ZG372	28.00	30.00	3984037	Sls	Fe	Sd	OG+LYG	oolitic CO3	2.5	16	837	23200	1	26.6	10900	2.75	0.4	1.9	0.0
ZG372	30.00	32.00	3984038	Sls	Fe	Sd	LYG+K	strongly altered, hematite stained	2.0	26	5600	70000	7	18.1	3587	14.3	7.0	0.0	0.0
ZG372	32.00	34.00	3984039	Sls	Fe	Sd	LYG+K	oolitic, altered, hematite stained	2.5	7	871	12800	-1	30.5	13400	1.8	0.1	1.2	0.0
ZG374	0.00	2.00	3984044	CqCcy		Sd	DB	weakly ankeritic	4.0	11	36900	83000	6	10.1	2809	4.2	3.3	5.0	0.0
ZG374	2.00	4.00	3984045	Sls	Di	SdPy	YG	5% Py	4.0	10	37400	180000	5	20	6900	4.4	3.8	14.2	0.0
ZG374	4.00	4.80	3984046	SlsOvc		PySd	CG	strongly altered	4.0	15	35700	194000	6	7.31	2467	9.1	12.4	7.0	0.0
ZG388	0.00	1.80	3984083	CvCcySls	Vc		GB+WK		4.0	14	5300	16000	1	112	1	1.6	1.6	0.0	0.0
ZG393	2.00	4.00	3984104	Ccy			DB	Gritty	4.0	25	22400	15600	10	0.39	18	1.65	1.6	0.0	0.0
ZG393	4.00	6.00	3984105	Ccy			ODG		4.0	28	11900	17700	4	1.65	33	2.7	1.8	0.0	0.0
ZG393	6.00	7.50	3984106	SlsCcy	Vc		G+DG		4.0	22	5000	20800	1	1.61	83	2.45	2.1	0.0	0.0
ZG395	4.00	6.00	3984113	Ccy			DB		4.0	39	9000	18800	2	0.92	12	2.3	1.7	0.0	0.0
ZG395	6.00	8.00	3984114	Ccy	Fe		DB		4.0	19	17300	32000	2	2.01	15	4.7	3.2	0.0	0.0
ZG395	8.00	10.00	3984115	CcySls	Vc		OG+G		4.0	18	6300	12400	1	1.83	125				0.0
ZG395	10.00	12.00	3984116	CcySls			CG		4.0	16	8900	19700	2	1.51	256				0.0
ZG104	9.50	10.60	3753648	Ccy			CG	Poor Rec	1.0	71	752	13300	2	1.22	58	1.5	1.3	0.0	0.0
ZG104	10.60	12.25	3753649	Ccy			CG	Poor Rec	1.0	78	3800	27300	-1	1.22	91	2.55	2.7	0.0	0.0
ZG104	12.25	14.35	3753650	Ccy			CG	Poor Rec	1.0	81	3000	31100	-1	1.41	97	2.8	3.1	0.0	0.0
ZG104	27.30	29.10	3753659	Sls	Al	Sd	YB	Poor Rec	2.0	26	819	84200	-1	21.2	5600	7.6	3.9	4.5	0.0
ZG104	29.10	31.50	3753660	Sls	Al	Sd	YB	Poor Rec	2.0	13	510	53100	-1	37.7	3268	2.9	0.6	4.7	0.0
ZG104	31.50	32.60	3753661	Sls	Al	Sd	YB	Poor Rec	2.0	9	163	36200	-1	45	4749	1.4	0.2	3.4	0.0
ZG104	32.60	34.00	3753662	Sls	Al	Sd	YB	Poor Rec	2.0	6	40	92100	-1	38	13800	0.39	0.1	9.1	0.0
ZG104	34.00	35.10	3753663	Sls	Al	Sd	YB	Poor Rec	2.0	4	38	151000	-1	34.3	20300	0.23	0.1	15.0	0.0
ZG104	35.10	36.70	3753664	Sls	Al	Sd	YB	Poor Rec	2.0	5	49	123000	-1	34.9	15200	0.28	0.1	12.2	0.0
ZG105	3.20	4.40	3753665	Ccy			OG		1.0	36	9300	25000	-1	1.74	67	3.35	2.5	0.0	0.0

563135

Grievess prospect - ore types and Zn as Sphalerite calculations

HOLE	FROM	TO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG105	4.40	4.95	3753666	Ccy			BG		1.0	30	14500	30300	-1	2.43	45	4.55	3.0	0.0
ZG105	4.95	5.60	3753667	Ccy			BG	Poor Rec	1.0	26	39300	28700	-1	1.16	44	5.65	2.9	0.0
ZG105	5.60	6.65	3753668	Ccy			BG	Poor Rec	1.0	25	6100	13400	-1	1.52	42	3	1.3	0.0
ZG105	7.30	8.30	3753670	Ccy	Al	Sd	YB	Poor Rec	1.0	22	451	11000	-1	1.61	38	1.9	1.1	0.0
ZG105	10.30	11.80	3753673	CcySlis			BG	Poor Rec	2.0	13	299	10400	-1	38.4	12000	0.95	0.0	1.0
ZG105	13.90	14.60	3753676	CcySlis			BG	Poor Rec	2.0	4	4	16900	-1	53.5	16700	0.11	0.0	1.7
ZG105	14.60	15.10	3753676	Slis	Al	Sd	YB	Poor Rec	2.0	4	4	16900	-1	53.5	16700	0.11	0.0	1.7
ZG105	15.10	15.85	3753677	Slis	Al	Sd	YB	Poor Rec	2.0	42	115	19000	-1	50.4	13700	0.25	0.0	1.9
ZG105	15.85	16.90	3753679	Slis	Al	Sd	YB	Poor Rec	2.0	7	198	17800	-1	48.6	13600	0.83	0.1	1.7
ZG105	16.90	17.70	3753681	Slis	Al	Sd	YB	Poor Rec	2.0	7	313	17100	-1	48.1	14000	1.4	0.1	1.6
ZG105	17.70	18.90	3753683	Slis	Al	Sd	YB	Poor Rec	2.0	4	131	17900	-1	51.7	14500	0.12	0.0	1.8
ZG105	18.90	20.30	3753685	Slis	AlOs	SdGa	YB	Poor Rec	2.0	6	4500	14400	4	28.4	8800	0.25	0.0	1.4
ZG105	28.90	30.30	3753701	Slis			LG	Oolitic	2.5	10	1500	11900	-1	13	4050	0.38	0.1	1.1
ZG105	39.25	40.45	3753717	Slis			LG	Poor Rec	2.0	14	800	13500	-1	11.8	3185	0.22	0.0	1.3
ZG106	49.50	49.80	3757913	Qms		Py	YB	Low angle fault										
ZG106	128.20	129.20	3757941	Ccy			LGFDG		3.0	91	2340	11800	-5	9.4	505	1.15	0.2	1.0
ZG106	129.20	130.20	3757942	Ccy			LGFDG		3.0	123	3540	16000	11	12.3	30600	1.9	0.4	1.2
ZG106	138.10	139.30	3757951	CcyCsg	VuBn		AYB		3.0	255	5340	15700	-5	51.5	3410	0.016	0.0	1.6
ZG106	139.30	140.50	3757952	CcyCsg	VuBn		AYB		3.0	523	7380	14300	-5	50.7	4130	0.023	0.0	1.4
ZG107	123.95	125.00	3757999	Sd	Al	Sd	YG	Strongly ankerite altered	2.0	-5	-50	39600	-5	34.34	17710	0.25	0.0	3.9
ZG107	125.00	127.90	3758000	SdCcy	AIBx	Sd	DGY	Ankeritic breccia frags in sandy clay	2.0	8	1520	60000	-5	11.34	1969	7.77	4.9	1.1
ZG107	127.90	128.85	3908229	Sd	Al	Sd	YG	Strongly ankerite altered	2.0	-5	522	167000	-5	26.57	61000	0.65	0.5	16.2
ZG107	128.85	131.10	3908230	SdCcy	AIBx	Sd	DGY	Ankeritic breccia frags in sandy clay	2.0	74	20000	298000	7	15.33	7128	15.6	19.6	10.2
ZG107	131.10	131.10	3908231	Ccy			BG		3.0	74	9640	155000	6	3.78	239	8.97	14.0	1.5
ZG107	133.10	135.10	3908232	Ccy			BG		3.0	21	1250	23600	-5	1.68	45	2.71	2.4	0.0
ZG107	135.10	137.10	3908233	Ccy			YB		3.0	23	13800	61000	7	1.87	42	4.02	5.7	0.4
ZG107	137.10	139.10	3908234	Ccy			BG		3.0	27	1420	27500	-5	2.01	41	3.22	2.8	0.0
ZG107	148.40	150.50	3908240	Ccy	GsBxFe		MVFP	Gossanous clay breccia	3.0	216	6350	14100	-5	39.27	2332	0.135	0.0	1.4
ZG107	154.55	156.60	3908243	Ccy			DGN	Carbonaceous	3.0	434	79000	125000	30	4.38	20	2	2.5	10.0
ZG107	156.60	158.70	3908244	Ccy			DGN	Carbonaceous	3.0	479	95000	200000	46	4.19	-15	4.8	7.0	13.0
ZG107	158.70	160.80	3908245	Ccy			DGN	Carbonaceous	3.0	249	122000	174000	30	2.85	18	3.28	4.7	12.7
ZG107	160.80	162.90	3908246	Ccy			DGN	Carbonaceous	3.0	57	43000	56000	12	0.85	15	1.51	2.2	3.4
ZG209	109.50	110.70	3908288	CcySd	AlVuBx	Sd	DGY	Carbonaceous clay + brecciated ankerite rock	2.0	12	61	11000	-5	27.3	9540	0.96	0.1	1.0
ZG209	110.70	111.80	3908289	CcySd	AlVuBx	Sd	DGY	Carbonaceous clay + brecciated ankerite rock	2.0	7	-50	17200	-5	31.3	10500	0.9	0.1	1.6
ZG359	52.75	53.60	3914660	Sd	AlVuBx	Sd	YB	Ankerite altered. Oolites locally visible	2.5	15	245	12800	-5	32.7	12600	0.55	0.0	1.2
ZG359	53.60	55.50	3914661	Sd	AlVuBx	Sd	YB	Ankerite altered. Oolites locally visible	2.5	-5	137	12000	-5	27.6	10700	0.35	0.0	1.2
ZG359	55.50	56.80	3914662	Sd	AlVuBx	Sd	YB	Ankerite altered. Oolites locally visible	2.5	27	224	11000	-5	15.7	5400	0.54	0.1	1.0
ZG359	56.80	58.50	3914663	Sd	AlVuBx	Sd	YB	Ankerite altered. Oolites locally visible	2.5	8	163	15200	-5	30.5	12000	0.41	0.0	1.5
ZG359	58.50	59.90	3914664	Sd	AlVuBx	Sd	YB	Ankerite altered. Oolites locally visible	2.5	15	350	22800	-5	27.5	9340	1.02	0.1	2.1
ZG359	59.90	61.50	3914665	CcyCs	Al	Sd	MYLBOB	Clay and ankeritic sand	2.0	37	2140	97000	-5	14.5	851	19.2	9.7	0.0
ZG359	61.50	63.50	3914666	CcyCs	Al	Sd	MYLBOB	Clay and ankeritic sand	2.0	52	5430	86000	-5	12.1	96	18.7	8.6	0.0
ZG360	71.10	73.00	3914694	SdCcy	AIBx	Sd	Y+DG	Ankeritic carbonate and carbonaceous clay	2.0	31	441	14700	-5	22.6	5990	2.38	0.3	1.2
ZG360	73.00	74.75	3914695	SdCcy	AIBx	Sd	Y+DG	Ankeritic carbonate and carbonaceous clay	2.0	93	2970	31300	-5	32.8	12900	3.9	0.6	2.5
ZG361	46.40	48.40	3917616	CcySd				clay, carbonate sand and frags	2.0	11	287	19400	-5	6.45	3020	1.9	0.8	1.2
ZG361	48.40	50.60	3917617	CcySd				clay, carbonate sand and frags	2.0	12	612	37000	-5	12.1	5520	3.4	1.4	2.3
ZG361	50.60	52.40	3917618	CcySd				clay, carbonate sand and frags	2.0	15	410	24500	-5	5.63	1770	2.9	1.6	0.9
ZG361	52.40	54.50	3917619	CcySd				clay, carbonate sand and frags	2.0	18	317	12700	-5	12.8	5590	1.1	0.2	1.1
ZG361	78.60	80.60	3917634	SdCcy	Al	Sd		Ankerite atn. and clay	2.0	10	762	23300	-5	1.85	695	1.45	1.5	0.8
ZG361	80.60	82.40	3917635	SdCcy	Al	Sd		Ankerite atn. and clay	2.0	14	677	21100	-5	6.2	2360	2	0.9	1.2
ZG361	82.40	83.90	3917636	SdCcy	Al	Sd		Ankerite atn. and clay	2.0	10	1760	23300	-5	24.5	11600	0.39	0.1	2.3
ZG361	83.90	85.40	3917637	SdCcy	Al	Sd		Ankerite atn. and clay	2.0	10	1570	11300	-5	24.4	12400	0.56	0.0	1.1
ZG362	18.10	21.50	3917646	Slis	We		AGDG	Lime mudstone	1.5	8	2250	55000	-5	2.01	743	2.4	3.4	2.1

563130

Grievess prospect - ore types and Zn as Sphalerite calculations

HOLE	DFROM	DTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fe%	Mn	S%	Zn (Sp)	Zn not Sp
ZG362	21.50	23.00	3917647	Sls	We		AGDG	Lime mudstone	1.5	11	722	13500	-5	2.05	626	1.5	1.1	0.3
ZG362	23.00	24.90	3917648	Sls	We		AGDG	Lime mudstone	1.5	13	58	15500	-5	3.26	1410	1.7	1.0	0.6
ZG362	26.00	31.20	3917650	Sls	We		AGDG	Lime mudstone	1.5	21	436	22100	-5	6.19	3300	4.1	1.6	0.6
ZG362	31.20	38.00	3917651	Sls	We		AGDG	Lime mudstone	1.5	21	-50	16100	-5	22.6	5430	14.5	1.6	0.0
ZG362	38.00	39.90	3917652	SlsSls	AI	Scl	YG	Weakly ankerite altered lime mudstone	2.0	9	-50	16200	-5	9.59	5490	1.25	0.3	1.3
ZG362	39.90	41.00	3917653	SlsSls	AI	Scl	YG	Weakly ankerite altered lime mudstone	2.0	8	-50	10600	-5	15.8	9210	0.95	0.1	1.0
ZG362	41.00	43.20	3917654	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	10	140	17600	-5	27.8	15400	2	0.2	1.6
ZG362	43.20	45.50	3917655	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	11	1100	42700	-5	21	9300	6.5	2.0	2.3
ZG362	45.50	47.70	3917656	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	10	7620	47700	-5	15.9	14000	1.8	0.7	4.0
ZG362	47.70	49.60	3917657	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	9	7400	72000	5	19.8	16100	0.88	0.4	6.8
ZG362	49.60	51.00	3917658	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	8	1300	25000	-5	21.3	23100	1.05	0.2	2.3
ZG362	51.00	52.50	3917659	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	8	3200	25900	-5	20.5	21900	0.88	0.2	2.4
ZG362	52.50	54.00	3917660	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	26	5900	34600	-5	11.5	7730	1.45	0.6	2.9
ZG362	78.40	80.00	3917667	Scl		He	LFY	Oolitic, weakly haem, ank altered	2.5	14	2070	37900	-5	6.45	3730	0.57	0.4	3.4
ZG362	81.90	83.00	3917669	CcyCs				Very poor rec of sand and clay	2.0	36	3400	142000	5	15.7	5000	7.8	6.8	7.4
ZG362	83.00	86.00	3917670	Ccy			YG		3.0	18	1380	17900	-5	2.48	289	2.95	1.8	0.0
ZG363	41.30	43.80	3984306	SlsSls	AI	Scl	YG	Weakly ankerite altered lime mudstone	2.0	8	309	12800	-5	6.17	2930	1.3	0.4	0.9
ZG363	43.80	45.40	3984307	SlsSls	AI	Scl	YG	Weakly ankerite altered lime mudstone	2.0	7	739	14600	-5	14.9	7790	0.47	0.1	1.4
ZG363	45.40	47.00	3984308	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	11	1500	24400	-5	15	8510	1.35	0.3	2.1
ZG363	47.00	49.10	3984309	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	5	193	24100	-5	10.3	5000	2.5	0.8	1.6
ZG363	49.10	51.30	3984310	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	12	2640	32400	-5	18.8	10700	1.75	0.5	2.8
ZG363	51.30	53.00	3984311	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	14	362	23800	-5	14.1	6170	1.7	0.4	1.9
ZG363	53.00	54.50	3984312	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	-5	231	26900	-5	21	8060	2.7	0.5	2.1
ZG363	54.50	56.00	3984313	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	6	68	42800	-5	13.4	5030	7	3.1	1.2
ZG363	56.00	57.50	3984314	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	-5	-50	20900	-5	30.5	9870	0.8	0.1	2.0
ZG363	57.50	59.00	3984315	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	-5	-50	16900	-5	26.5	7120	1.75	0.2	1.5
ZG363	59.00	60.60	3984316	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	-5	-50	14000	-5	24.6	6680	2	0.2	1.2
ZG363	60.60	63.00	3984317	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	10	-50	14000	-5	21.9	10700	1.35	0.1	1.3
ZG363	63.00	65.00	3984318	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	8	-50	25700	-5	25.6	14900	0.79	0.1	2.4
ZG363	65.00	67.70	3984319	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	7	103	36100	-5	23	17700	1.35	0.3	3.3
ZG363	67.70	69.50	3984320	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	10	572	38500	-5	19	23100	1.6	0.5	3.4
ZG363	69.50	72.50	3984321	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	19	2640	77000	-5	14.7	14800	3.8	2.4	5.3
ZG363	72.50	73.40	3984322	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	9	271	78000	-5	26.6	36500	1.4	0.6	7.2
ZG363	73.40	76.10	3984323	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	7	76	80000	-5	27.9	42000	0.95	0.4	7.6
ZG363	76.10	77.60	3984324	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	5	616	118000	-5	30.5	24600	17.8	9.0	2.8
ZG363	77.60	78.90	3984325	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	-5	239	106000	-5	30.4	40600	1.3	0.6	10.0
ZG363	78.90	79.80	3984326	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	12	799	105000	-5	21.5	23000	5.95	3.6	6.9
ZG363	79.80	81.30	3984327	SclCcy	AIBx	Scl	YG	Total ankerite altn. + Ccy zones	2.0	8	1540	132000	-5	24.9	33300	3.55	2.2	11.0
ZG363	81.30	83.40	3984328	Ccy			DG	Carbonaceous clay + qtz sand	3.0	24	9590	66000	6	4.01	297	4.3	5.0	1.6
ZG363	83.40	85.50	3984329	Ccy			DG	Carbonaceous clay + qtz sand	3.0	48	11000	37500	6	2.34	44	3.85	3.8	0.0
ZG363	85.50	87.70	3984330	Ccy			DG	Carbonaceous clay + qtz sand	3.0	48	37000	45000	10	1.6	32	3.2	3.9	0.6
ZG363	87.70	89.85	3984331	Ccy			DG	Carbonaceous clay + qtz sand	3.0	202	34000	54000	18	5.02	46	3.3	2.9	2.5
ZG363	92.00	94.20	3984333	Ccy	GsFe		YR	Gossanous clay	3.0	182	7140	10400	-5	48.8	894	0.02	0.0	1.0
ZG363	94.20	95.40	3984334	Ccy	GsFe		YR	Gossanous clay	3.0	257	6760	12000	-5	44.4	1320	0.015	0.0	1.2
ZG363	98.60	101.00	3984336	Ccy			GDG	Partly carbonaceous, becomes sandier with depth	3.0	65	16000	27500	7	2.38	31	2.9	2.7	0.1
ZG364			3984926						2.0	19	-50	26000	-5	6.16	5600	0.37	0.2	2.4
ZG364			3984928						2.0	25	148	13000	-5	5.32	1060	1.65	0.6	0.7
ZG364			3984929						2.0	13	-50	30000	-5	12.11	7090	0.62	0.2	2.8
ZG364			3984930						2.0	8	67	59000	-5	25.7	24600	0.92	0.3	5.6
ZG364			3984931						2.0	15	197	54000	-5	15.5	23300	2.05	1.0	4.4
ZG364			3984932						2.0	8	262	74000	-5	15.5	137000	3.35	2.0	5.4
ZG364			3984935						3.0	254	5800	10200	-5	30.4	2730	0.035	0.0	1.0

563137

Grieves prospect - ore types and Zn as Sphalerite calculations

HOLE	OFFROM	DTO	SAMPNO	FIELDID	TEXTURE	ALT/MIN	COLOUR	COMMENTS	Ore type	Cu	Pb	Zn	Ag	Fc%	Mn	S%	Zn (Sp)	Zn not Sp
ZG364			3984937						3.0	293	9100	11000	-5	39.5	3780	0.02	0.0	1.1
ZG364			3984938						3.0	228	19300	10000	-5	32.2	2810	0.025	0.0	1.0
ZG365	79.10	81.60	3985970	Sd	AlBx	Sd	YG	Ankerite and carbonate and minor clay	2.0	24	63	11500	-5	1.94	1400	0.14	0.1	1.1
ZG365	82.30	84.20	3985971	Ccy	Al	Sd	YB	Ankeritic clay	2.0	16	756	104600	-5	15.9	23400	0.55	0.4	10.1
ZG365	84.20	86.00	3985972	Ccy	Al	Sd	YB	Ankeritic clay	2.0	25	2260	62000	-5	9.41	28400	1.5	1.1	5.1
ZG365	86.00	88.00	3985973	Ccy	Al	Sd	DGYB	Weakly ankeritic clay	2.0	176	1080	26200	-5	9.97	38000	1.6	0.6	2.0
ZG365	90.00	92.00	3985975	Ccy	FeGs?	He	MFB	Limonic and hematitic clay	3.0	206	4960	14000	6	35	3120	0.035	0.0	1.4
ZG1002	105.00	106.40	58571	SsSbx	AlLe	Sd	B	Poor rec	2.0	-25	50	11800	-2	32.98	5700			
ZG1002	106.40	107.40	58572	Ss	AlLe	Sd	B	Oolitic. Poor rec	2.5	-25	25	23200	-2	20.44	9500			
ZG1002	107.40	108.40	58573	Ss	AlLe	Sd	B	Oolitic. Poor rec	2.5	-25	25	36700	-2	30.52	15000			
ZG1002	108.40	109.40	58574	Ss	AlLe	Sd	B	Oolitic. Poor rec	2.5	-25	25	33300	-2	29.86	14800			
ZG1002	109.40	110.00	58575	Ss	AlLe	Sd	B	Oolitic. Poor rec	2.5	-25	50	36900	-2	32.88	15800			
ZG1002	110.00	110.20	58576	Ss	AlLe	Sd	B	Oolitic. Poor rec	2.5	-25	100	25900	-2	20.20	9500			
ZG1007	152.00	155.70	61946	SsSd	Lm	LG	LG		5.0	20	3150	13400		1.62	505			
ZG1007	415.50	417.50	65277	Ss	Al	Sd	LG		4.0	10	2145	55900	3.5	7.92	2450			
ZG1007	417.50	419.50	65278	Ss	Al	Sd	LG		4.0	5	3595	41900	2	3.92	1700			
ZG1007	422.50	425.50	65280	Ss	Al	Sd			4.0	10	1645	12400	0.5	2.32	570			
ZG1007	425.50	427.50	65281	Ss	Al	Sd			4.0	10	4545	60900	2	7.42	2400			
ZG1007	428.10	431.20	65282	Ss	Al	Sd	B		4.0	10	3195	53400	1	6.02	2100			
ZG1007	431.20	434.20	65283	Ss	Al	Sd	B		4.0	25	1695	34400	1	4.77	1550			
ZG1013	105.50	107.80	58271	SdOms	FrMs	Py	OB		2.0	-5	275	91000		29.06	31000			
ZG1013	107.80	110.80	58272	Ccy			OB		3.0	50	6700	38500		5.25	345			
ZG1013	110.80	112.50	3917677	Ccy			OB		3.0	53	2547	16200	-1	9.13	466	0.65	0.2	1.4
ZG1013	112.50	115.20	3917678	Ccy			OB		3.0	149	13100	16100	-1	34.3	2378	0.09	0.0	1.6
ZG1013	115.20	117.10	3917679	Ccy			OB		3.0	151	20900	11300	-1	24.94	1547	0.055	0.0	1.1
ZG1013	117.10	119.00	3917680	Ccy			OB		3.0	180	15000	10900	-1	42.1	3083	0.05	0.0	1.1
ZG1015	110.80	112.70	3917693	Ccy	Ds	Py	OB		3.0	20	426	15200	1	5.17	67	6.8	1.5	0.0
ZG1015	121.70	125.60	3917698	Ccy			OB		3.0	120	12400	10600	-1	34.4	1934	0.1	0.0	1.1
ZWG1	7.20	8.25	57427						4.0	20	16500	59500	1.5	5.65	2500	1.968	1.8	4.1
ZWG1	8.25	8.90	57428						4.0	20	25000	56000	3	5.40	2200	4.07	3.7	7.9
ZWG1	11.20	12.25	57430						4.0	20	3350	12000	-0.5	1.35	635	0.654	0.6	0.6
ZWG1	12.25	13.60	57251						4.0	15	16500	85600	2	11.00	4850	0.469	0.4	8.2
ZWG1	13.60	15.00	57252						4.0	15	9000	102600	2	13.50	5500	0.243	0.2	10.1
ZWG1	15.00	16.00	57253						4.0	20	20500	70000	1.5	9.25	3900	0.365	0.3	6.7
ZWG1	16.00	17.00	57254						4.0	25	17200	97400	5	10.50	4100	0.386	0.3	9.4
ZWG1	17.00	18.00	57255						4.0	20	24000	59000	4.5	6.95	2850	0.528	0.4	5.5
ZWG1	18.00	19.00	57256						4.0	20	10900	88200	-0.5	11.00	4400	0.459	0.4	8.4
ZWG3	9.90	11.45	57268						4.0	5	6300	30200	2	3.05	1700			
ZWG4	3.65	5.35	57270						4.0	5	11700	31600	4	2.65	1550			
ZWG4	14.90	15.55	57276						4.0	5	8600	10800	3	1.25	670			
ZWG4	16.85	18.80	57278						4.0	5	5600	12500	3	4.05	635			
ZWG22	9.40	11.40	65265						4.0	10	1985	11500		3.26	420			
ZWG22	11.40	12.20	65262						4.0	10	14900	174900		13.66	6045			
ZWG26	5.30	7.90	65254						4.0	15	9435	23000		2.25	1350			
ZWG26	10.00	11.90	65256						4.0	10	9535	72500		5.55	2250			
ZWG26	15.80	17.80	65259						4.0	5	18000	32000		4.70	1650			
ZWG26	20.40	21.40	65261						4.0	10	8485	68500		6.60	2500			
ZWG26	21.40	22.40	65262						4.0	5	4785	25500		2.85	1200			

563138

563139

APPENDIX 3

**AMDEL
MINERALOGICAL**



C R A EXPLORATION PTY. LIMITED

ACN 000 057 125

UNIT 1, 23 BELL STREET, PRESTON, VICTORIA 3072, AUSTRALIA

563140

P.O. BOX 3093

NORTHLAND CENTRE 3072

TELEPHONE: 480 1866

FAX: (03) 484 1375

28th March 1994

Mr M. Till,
Amdel Limited,
31 Flemington St,
FREWVILLE S.A. 5063

SAMPLES SUBMITTED FOR QUANTITATIVE XRD EXAMINATION

Dear Michael,

Please find enclosed 20 sample pulps that I would like examined by quantitative XRD (method XRD6). As discussed in our phone-call of 28/3/94, the aim is to identify the mineralogy of the samples, and specifically to determine the percentages (if possible) of the Zn-bearing phases.

Previous XRD work (see your report G52/94) has identified sphalerite and fraipontite as the main Zn minerals. Other work (optical microscopy) suggests a Zn-Fe-Mn carbonate may be present in some samples. To assist with quantifying the XRD results I have enclosed some microprobe analyses of sphalerite and fraipontite from the same prospect.

Also enclosed are analytical results for the sample pulps. Samples were assayed by AAS (aqua regia-perchloric acid digest) for Ag-Cu-Pb-Zn-Fe-Mn. Over-range samples were subsequently redetermined by AAS (aqua regia-perchloric acid-hydrofluoric acid digest). Samples exceeding 1% Zn were analysed for S by leco furnace.

If necessary, please analyse for carbonate in addition to the whole-rock silicate analysis.

The CRAE DPO number for this job is 77663.

Thankyou for your help.

Yours sincerely,

ROBERT PARKINSON
(Principal Geologist - Tasmania)

contains up to
16wt% Zn

563141

fraipontite. The results of XRD analysis suggest that structurally it is intermediate between fraipontite, baumite, and aluminian lizardite which are all members of the kaolinite-serpentine group. For the purposes of reporting, this phase will continue to be referred to as a Zn-aluminosilicate. The Zn-aluminosilicate occurs as discrete grains in all size fractions and fine grained Zn-aluminosilicate is present in agglomerates. A number of grains of Zn-aluminosilicate were analysed by microprobe at the University of Melbourne. These grains show a range of compositions from 10.1wt% Zn to 16.7wt% Zn with an average Zn content of around 13wt% (Table 2).

Table 2. Microprobe analyses of Zn-aluminosilicate

3753497 (-500+212um)					
(wt%)					
Zn	15.476	10.107	16.674	13.84	3.242
Fe	1.79	1.287	1.883	0.47	1.95
Si	12.544	14.847	12.239	18.832	14.794
Al	11.135	13.069	10.467	16.306	10.694
O (calc)	59.056	60.69	58.736	63.68	69.2
Total	100.001	100	99.999	100	100
(wt%)					
Zn	0.35	14.975	10.942	11.994	
Fe	0.09	2.376	3.191	4.961	
Si	15.1	12.774	13.114	12.425	
Al	17.1	10.79	12.956	11.526	
O (calc)	63.87	59.085	59.796	59.094	
Total	100.001	100	99.999	100	

Results of microprobe analysis at the University of Melbourne indicate that the average Fe content of the sphalerite is <1wt% (Table 3).

Table 3. Microprobe analyses of sphalerite

3753497 (-500+212um)					
(wt%)					
Zn	67.789	67.176	65.388	67.186	66.712
Fe	0.071	0.017	0.836	0.073	0.077
Mn	0.019	0	0	0	0
S	32.825	32.823	32.189	32.319	32.124
Total	100.704	100.016	98.413	99.578	98.913
(wt%)					
Zn	66.625	67.032	66.54	67.475	
Fe	0.071	0.051	0.178	0.066	
Mn	0.003	0	0	0.001	
S	31.977	31.967	31.997	31.89	
Total	98.676	99.05	98.715	99.432	

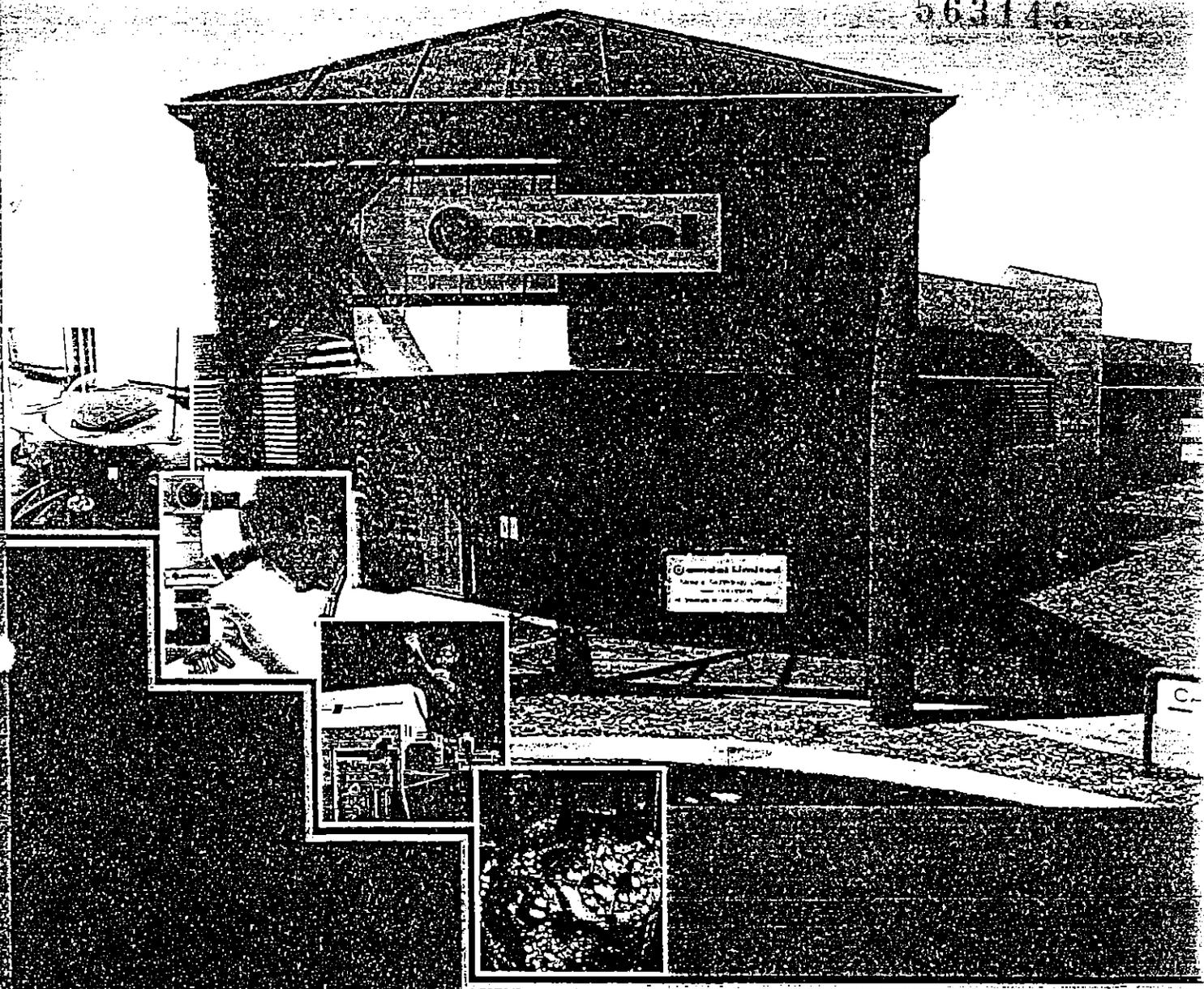
ANALYTICAL RESULTS FOR SAMPLES SUBMITTED FOR QUANTITATIVE XRD							
DPO 77663i							
SAMPNO	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe%	Mn ppm	S%
3758004	28	600	103000	1	3.43	24	9.40
3758028	41	2300	93200	2	1.48	131	4.60
3758036	2623	24100	71900	69	12.30	1829	3.50
3758041	82	700	72300	2	21.10	8800	0.83
3758073	16	700	60900	-1	3.90	58	7.70
3758080	19	1500	97800	1	18.10	9600	2.95
3758220	7	62	42200	-1	16.20	1125	16.30
3758228	5	4000	55300	4	12.80	5500	2.40
3758338	43	800	134000	1	1.50	1200	13.90
3758341	5	131	23300	-1	27.80	10500	1.05
3758431	28	1000	41800	1	34.40	13700	1.70
3758445	16	1800	135000	1	1.03	727	9.55
3758447	14	700	108000	1	22.30	5800	6.70
3758464	83	17200	88600	5	6.13	33	9.65
3753650	81	3000	31100	-1	1.41	97	2.8
3753659	26	819	84200	-1	21.2	5600	7.6
3753663	4	38	151000	-1	34.3	20300	0.23
3908229	-5	522	167000	-5	26.57	61000	0.65
3908230	74	20000	298000	7	15.33	7128	15.6
3908244	479	95000	200000	46	4.19	-15	4.8

ANALYTICAL RESULTS FOR SAMPLES SUBMITTED FOR QUANTITATIVE XRD

ANALYTICAL RESULTS FOR SAMPLES SUBMITTED FOR QUANTITATIVE XRD																	
DPO 77663																	
SAMPNO	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe%	Mn ppm	S%										
3758004	28	800	103000	1	3.43	24	9.40										
3758028	41	2300	93200	2	1.48	131	4.60										
3758036	2623	24100	71900	69	12.30	1829	3.50										
3758041	82	700	72300	2	21.10	8800	0.83										
3758073	16	700	60900	-1	3.90	58	7.70										
3758080	19	1500	97800	1	18.10	9600	2.95										
3758220	7	62	42200	-1	16.20	1125	16.30										
3758228	5	4000	55300	4	12.80	5500	2.40										
3758338	43	800	134000	1	1.50	1200	13.90										
3758341	5	131	23300	-1	27.80	10500	1.05										
3758431	28	1000	41800	1	34.40	13700	1.70										
3758445	16	1800	135000	1	1.03	727	9.55										
3758447	14	700	108000	1	22.30	5800	6.70										
3758464	83	17200	88600	5	6.13	33	9.65										
HOLE	DFROM	DTO	SAMPNO	DPO	BMRLITH	FIELDID	TEXTURE	ALTIMIN	COLOUR	COMMENTS	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe%	Mn ppm	S%
ZG104	12.25	14.35	3753650	77110	Og	Ccy			CG	Poor Rec	81	3000	31100	-1	1.41	97	2.8
ZG104	27.30	29.10	3753659	77110	Og	Sis	Al	Sd	YB	Poor Rec	26	819	84200	-1	21.2	5600	7.6
ZG104	34.00	35.10	3753663	77110	Og	Sis	Al	Sd	YB	Poor Rec	4	38	151000	-1	34.3	20300	0.23
ZG107	127.90	128.85	3908229	77127	Og	Sd	Al	Sd	YG	Strongly ankerite altered	5	522	167000	-5	26.57	61000	0.65
ZG107	128.85	131.10	3908230	77127	Og	Sd/Ccy	AlBx	Sd	DGY	Ankeritic breccia frags in sandy clay	74	20000	298000	?	15.33	7128	15.6
ZG107	156.60	158.70	3908244	77127	Og	Ccy			DGN	Carbonaceous	479	95000	200000	46	4.19	-15	4.8

Op
Sd
Sd
Op
Op

563144



AMDEL REPORT G838800G/94

QUANTITATIVE MINERALOGY OF 20 SAMPLES





A.C.N. 008 127 802

Amdel Limited
Mineral Services Laboratory
31 Flemington Street
Frewville SA 5063
AUSTRALIA

Telephone (08) 372 2883
Facsimile (08) 379 6623
Telex AA82520

PO Box 338 Torrensville SA 5031

563146

29 April 1994

Mr Robert Parkinson
CRA Exploration Pty Limited
PO Box 8093
NORTHLAND CENTRE VIC 3072

REPORT G838800G/94
QUANTITATIVE MINERALOGY OF 20 SAMPLES

YOUR REFERENCE: DPO 77663
SAMPLE IDENTIFICATION: 3758004-464, 375650-663, 3908229-244
MATERIAL: 20 pulps
DATE RECEIVED: 29 March 1994
WORK REQUIRED: Quantitative determination of mineralogy

Investigation and Report by: Michael Till

Dr Keith J Henley
Manager, Mineral Services Laboratory

*The results contained in this report relate only to the sample(s) submitted for testing.
Amdel Ltd accepts no responsibilities for the representivity of the sample(s) submitted.*

hk

cc Mr Craig Hayward
CRA Exploration Pty Limited
PO Box 8093
NORTHLAND CENTRE VIC 3072

CRAE Information Systems
CRA Exploration Pty Limited
PO Box 3709
MANUKA ACT 2603

563147

QUANTITATIVE MINERALOGY OF 20 SAMPLES

1. INTRODUCTION

Sample pulps were received from Mr R Parkinson of CRA Exploration Pty Limited, Preston, with a request for quantitative determination of their mineralogies. Base metal analyses (see Appendix A) and microprobe analyses were also provided. Of particular interest is the Zn-bearing minerals.

2. PROCEDURE

The samples were analysed by X-ray diffraction for detection of the crystalline phases, and analysed by ICP for major elements. The mineral contents were calculated using stoichiometric compositions (except where indicated) using the assay results according to the following sequence:

- (a) All K_2O was allocated to muscovite (assuming 10% K_2O).
- (b) All Pb was allocated to galena.
- (c) All MgO was allocated to dolomite (ignoring minor MgO in other minerals).
- (d) Residual CaO was allocated to calcite.
- (e) For samples in which sphalerite was the only Zn-bearing mineral, all Zn was allocated to sphalerite, and residual S to pyrite. The sphalerite composition used was 68% Zn, 32% S.
- (f) A chlorite composition of 26% ZnO, 21% Al_2O_3 , 29% SiO_2 , 9% FeO and 2% MgO was calculated from the analysis results of 3908244 (after subtraction of the other minerals and assuming all S is present in galena and sphalerite).
- (g) A siderite composition was calculated from the analysis results of 375663. Quartz was the only other mineral detected. The siderite composition (Sid A in Table 1) was used for all other samples except for those labelled under Siderite B below.

Sample	Calculated Composition (Wt %)					
	ZnO	FeO	MnO	MgO	CaO	Residual
Siderite A						
375663 and 9 other samples	20	40	3	0.3	1	36
Siderite B						
3758041	15	48	2	-	-	35
3758228 (average of two)	10	53	3	-	-	34
3758341	3	54	2	-	2	39
3758431	4	57	2	-	-	37
3908229	22	40	7	-	0.7	31

- (h) For samples where kaolinite or chlorite was the only Al-bearing mineral (except muscovite) residual Al_2O_3 was allocated to these minerals. In several samples the presence of which of kaolinite or chlorite was present could not be determined. In these samples the siderite content is high and the chlorite/kaolinite content low.
- (i) For sample 3758028 the kaolinite content was estimated to be no more than 2% (by comparison of XRD peak height with 3758036).
- (j) For samples with pyrite, sphalerite and siderite (but no chlorite) the contents of these minerals were calculated using a computer-based mixing program, using the Fe, Zn and S assays. This was not successful for the samples given under Siderite B in Section (g) above. This was partially due to siderite having a different composition to Siderite A. To get around this impasse, the pyrite and sphalerite contents were arbitrarily considered to be in a 1:1 ratio and the S distributed accordingly. The siderite compositions for these samples were subsequently calculated from the residual oxides.
- (k) For sample 3758464 the sphalerite, pyrite and chlorite and kaolinite contents were calculated using a computer-based mixing program using Zn, S, Fe and Al_2O_3 .
- (l) Residual SiO_2 was allocated to quartz.
- (m) The Zn distribution was calculated using the above compositions. Zn in Siderite A and Siderite B was combined.

3. RESULTS

The chemical analysis results are given overleaf. The calculated mineralogies (Wt %) are given in Table 1 and the residual oxides and LOI remaining after the calculations are given in Table 2.

Note that although the mineral contents and residual oxides are quoted to one unit or 0.01 for convenience, such a degree of accuracy is not implied; this is because the calculated values are dependent on the assumptions given in the 'Procedure' section and, if the assumed mineral compositions differ from the actual mineral compositions, the calculated values will differ from the true values.

The alumino-silicate mineral in 3908244 has been named a chlorite because it has a very similar XRD pattern to that recorded for a ferroan clinochlore (JCPDS No 16-362) except that the even-order basal peaks are very strong and the odd-order basal peaks are very weak. This may be due to the presence of a heavy element (e.g., Zn). The siderite minerals have an XRD pattern identical to siderite. This is surprising as some shift of the XRD peaks toward the $ZnCO_3$ XRD pattern would be expected. Sample 3758338 is unusual in that two carbonates are present, neither with an XRD pattern identical to siderite. Amorphous phases are probably present in samples with low totals and high residual LOI (e.g. sample 3758004). Sample 3908230 has a high total due to the assays summing to more than 100%.

TABLE 1: CALCULATED MINERALOGY AND ZN DISTRIBUTION OF 20 SAMPLES

Sample	Mineralogy, wt%											
	Galena	Sphalerite	Pyrite	Muscovite	Kaolinite	Chlorite	Quartz	Dolomite	Calcite	Sid A	Sid B	Total
3758004	0.07	15	9	9	-	-	22	-	-	-	-	54
3758028	0.27	13	1	24	2	-	39	-	-	5	-	83
3758036	3.03	3	4	20	2	-	20	12	6	33	-	103
3758041	0.08	1	1	6	1	-	24	8	2	-	56	100
3758073	0.08	9	9	12	-	-	47	-	-	-	-	77
3758080	0.17	2	4	16	-	-	18	7	-	51	-	99
3758220	0.07	4	28	7	-	2	13	15	17	9	-	96
3758228	0.46	3	3	1	-	8	3	52	5	-	26	100
3758338	0.09	13	18	29	-	18	4	-	-	3	-	86
3758341	0.02	1	1	-	-	-	1	30	-	-	66	100
3758431	0.12	2	2	7	3	-	3	3	-	-	79	100
3758445	0.21	19	7	2	-	-	17	19	1	5	-	68
3758447	0.08	5	10	17	10	-	2	3	-	47	-	93
3758464	1.99	13	10	34	11	-	18	-	-	-	-	88
3753650	0.35	4	3	11	5	1	37	9	5	-	-	75
3753659	0.09	3	12	5	-	0	11	24	9	38	-	103
3753663	0.00	-	-	-	-	-	5	-	-	93	-	98
3908229	0.06	1	1	-	-	6	2	4	-	-	86	99
3908230	2.31	30	11	8	-	19	11	-	-	32	-	114
3908244	10.97	10	-	12	-	60	5	-	-	-	-	98

Sample	Zn Distribution, %		
	Sphalerite	Chlorite	Siderite
3758004	100	-	-
3758028	91	-	8
3758036	26	-	74
3758041	9	-	91
3758073	100	-	-
3758080	16	-	84
3758220	65	10	36
3758228	34	29	37
3758338	68	28	3
3758341	35	-	64
3758431	33	-	67
3758445	94	-	5
3758447	29	-	71
3758464	100	-	-
3753650	93	7	-
3753659	27	1	73
3753663	-	-	100
3908229	3	8	89
3908230	69	13	18
3908244	35	62	-

TABLE 2: RESIDUAL OXIDES/LOI REMAINING AFTER CALCULATION OF MINERALOGY

Sample	TiO2	Al2O3	Fe2O3*	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total
3758004	0.26	9.7	-0.5	-	0.3	0.2	0.04	-	0.05	42.4	52.5
3758028	0.59	4.0	-	-	0.6	0.1	0.10	-	0.35	14.1	19.9
3758036	0.48	-	0.1	-0.7	-	-0.3	0.08	-	0.15	-0.2	-0.5
3758041	0.17	-	0.1	-	-	-	0.02	-	0.12	2.3	2.6
3758073	0.35	1.2	0.5	-	0.4	1.5	0.06	-	0.01	26.4	30.5
3758080	0.37	1.4	-	-	-0.2	-0.3	0.07	-	0.12	0.7	2.2
3758220	0.16	-	-0.2	-	-0.1	-0.1	0.03	-	0.03	15.4	15.2
3758228	0.12	-	-	-	-0.2	-	<0.01	-	0.06	-4.9	-4.9
3758338	0.78	-	-	0.1	0.3	0.7	0.09	-	0.28	20.3	22.5
3758341	0.03	0.7	-	-	-	1.4	<0.01	0.1	0.13	-0.5	1.8
3758431	0.24	-	-	-	-	0.3	<0.01	-	0.28	3.1	3.9
3758445	0.1	2.4	-	-	-	-	<0.01	-	0.26	34.9	37.6
3758447	0.46	-	-	-0.6	-0.1	-0.5	0.04	-	0.37	11.5	11.2
3758464	1.04	-	2.0	-	0.7	0.4	0.11	-	0.31	13.9	18.4
3753650	0.35	0.1	0.2	-	-	-	0.06	-	0.08	25.5	26.3
3753659	0.14	-	-	-0.3	-0.1	-0.4	0.02	-	0.11	2.1	1.5
3753663	0.06	1.2	-	-	0.1	-	<0.01	0.3	0.08	-1.7	0.0
3908229	0.07	-	-	-	-0.1	-	<0.01	0.2	0.11	3.2	3.5
3908230	0.38	-	-1.6	-	0.5	-	0.03	-	0.12	6.8	6.2
3908244	0.89	-	0.3	-	-	-	0.03	-	0.16	5.2	6.6

* Total Fe as Fe2O3

Analysis code IC 4

Report 4AD0767

Page 11

NATA Certificate

Results in percentages

3758004 3758028 3758036 3758041 3758073

SiO ₂	25.6	50.4	29.6	27.3	52.1
TiO ₂	0.26	0.59	0.48	0.17	0.35
Al ₂ O ₃	13.1	14.1	8.35	2.82	5.80
Fe ₂ O ₃	5.25	2.78	17.6	30.6	6.60
MnO	<0.01	0.02	0.25	1.23	<0.01
MgO	0.25	0.66	2.72	1.79	0.41
CaO	0.17	0.19	7.10	3.58	1.50
Na ₂ O	0.04	0.10	0.08	0.02	0.06
K ₂ O	0.88	2.40	1.96	0.63	1.19
P ₂ O ₅	0.05	0.35	0.15	0.12	0.01
LOI	42.8	17.0	20.9	24.2	26.9

3758080 3758220 3758228 3758338 3758341

SiO ₂	25.7	16.8	5.60	23.0	0.98
TiO ₂	0.37	0.16	0.12	0.78	0.03
Al ₂ O ₃	7.60	3.00	2.06	15.2	0.68
Fe ₂ O ₃	25.5	23.0	17.9	14.9	40.1
MnO	1.35	0.16	0.81	0.17	1.34
MgO	1.64	3.32	11.3	0.70	6.60
CaO	2.44	14.4	18.4	0.69	10.6
Na ₂ O	0.07	0.03	<0.01	0.09	<0.01
K ₂ O	1.59	0.67	0.11	2.94	0.08
P ₂ O ₅	0.12	0.03	0.06	0.28	0.13
LOI	22.7	34.1	30.8	25.1	33.6

 Total Fe as Fe₂O₃

Analysis code IC 4

Report AC 4AD0767

Page I2

NATA Certificate

Results in percentages

3758431 3758445 3758447 3758464 3758650

SiO2	7.55	17.6	13.8	38.1	43.9
TiO2	0.24	0.10	0.46	1.04	0.35
Al2O3	3.86	3.14	10.2	17.4	6.60
Fe2O3	51.3	6.45	27.7	8.55	2.10
MnO	1.74	0.10	0.77	<0.01	0.01
MgO	0.76	4.10	0.56	0.66	2.06
CaO	1.36	6.10	0.76	0.35	5.70
Na2O	<0.01	<0.01	0.04	0.11	0.06
K2O	0.65	0.20	1.66	3.42	1.14
P2O5	0.28	0.26	0.37	0.31	0.08
LOI	29.2	45.8	31.3	16.8	33.5

3758659 3758663 3908229 3908230 3908244

SiO2	13.4	5.30	3.66	20.5	27.8
TiO2	0.14	0.06	0.07	0.38	0.89
Al2O3	2.16	1.20	1.30	7.25	17.3
Fe2O3	25.2	41.6	38.9	21.6	6.05
MnO	0.73	2.58	6.25	0.89	<0.01
MgO	5.15	0.34	0.85	1.00	1.35
CaO	12.1	0.89	1.78	0.32	<0.01
Na2O	0.02	<0.01	<0.01	0.03	0.03
K2O	0.54	0.25	0.21	0.83	1.17
P2O5	0.11	0.08	0.11	0.12	0.16
LOI	30.7	30.9	31.8	21.2	14.6

Total Fe as Fe2O3

APPENDIX A

ANALYTICAL RESULTS FOR SAMPLES SUBMITTED FOR QUANTITATIVE XRD							
DPO 77663							
SAMPNO	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe%	Mn ppm	S%
3758004	28	600	103000	1	3.43	24	9.40
3758028	41	2300	93200	2	1.48	131	4.60
3758036	2623	24100	71900	69	12.30	1829	3.50
3758041	82	700	72300	2	21.10	8800	0.83
3758073	16	700	60900	-1	3.90	58	7.70
3758080	19	1500	97800	1	18.10	9600	2.95
3758220	7	62	42200	-1	16.20	1125	16.30
3758228	5	4000	55300	4	12.80	5500	2.40
3758338	43	800	134000	1	1.50	1200	13.90
3758341	5	131	23300	-1	27.80	10500	1.05
3758431	28	1000	41800	1	34.40	13700	1.70
3758445	16	1800	135000	1	1.03	727	9.55
3758447	14	700	108000	1	22.30	5800	6.70
3758464	83	17200	88600	5	6.13	33	9.65
3753650	81	3000	31100	-1	1.41	97	2.8
3753659	26	819	84200	-1	21.2	5600	7.6
3753663	4	38	151000	-1	34.3	20300	0.23
3908229	-5	522	167000	-5	26.57	61000	0.65
3908230	74	20000	298000	7	15.33	7128	15.6
3908244	479	95000	200000	46	4.19	-15	4.8

Zn mineralogy for three "ore" types.

SURFICIAL CLAYS

SAMPLE NO: 004

028

073

338

445

464

650

ONLY THESE
OF INTEREST

ave sphal 92%
chlorite 5%
siderite 2%

Zn = 9.23%
Fe = 2.70%
S = 8.22%

Zn as sph (prop of total Zn) calc from assays (= to % metal content as sulph)
= 2100%

SIDERITE ZONE

041

341

431

447

659

663

229

036

080

220

228

230

ave sphal 29%
chlorite 12%
siderite 58%

Zn = 10.11%
Fe = 20.8%
S = 4.96%

calc Zn as sph = 29%

STRATABOUND CLAY ZONE

244

sphal 35%
chlorite 62%
siderite -

Zn = 20.0%
Fe = 4.1%
S = 4.8%

calc Zn as sph = 40%

563156

APPENDIX 4

**CRA
MINERALOGICAL
STUDIES**

563157

SIZE-BY-GRADE MINERALOGICAL STUDIES



Advanced Technical Development
Melbourne

563158

A Report prepared for
CRAE, Preston

Chemical and Mineralogical Characteristics of a Tasmanian Resource

CONFIDENTIAL

1 October 1993

CONFIDENTIAL

This Report contains proprietary and confidential information of Technological Resources Pty Limited and its distribution is restricted to the persons named herein. This Report may not be copied or reproduced in any way whatsoever nor provided to any other person without the express permission in writing of Technological Resources Pty Limited.

Author: C E Halsall

Contributors: R Walker

Copy to: R Parkinson (CRAE, Preston)
T Dickson (CRAE, Preston)
M Lavery (R&PD)
J Box
S Roden/P Dudzinski/minfile
B C Kelley/P A O'Neill/File

Date: 1 October 1993

Ref: A857A/756ms
DPO 77109



SUMMARY

Project Focus

CRAE commissioned ATD to conduct a comprehensive size by grade chemical and mineralogical characterisation of two air-core composite samples from a Tasmanian zinc prospect. The aim of this characterisation was to establish more accurately the nature and distribution of valuable minerals in two contrasting samples.

What are the main chemical and mineralogical features of the two samples?

Research Conducted

Samples were sized at ATD. All of the size fractions were submitted for chemical analysis at ATD. Selected size fractions were sent to Genalysis (Perth) for trace element determinations. Five size fractions of each sample were selected for the mineralogical study. Their mineralogy was characterised using a combination of optical microscopy, X-ray diffraction (XRD) and scanning electron microscopy with energy dispersive X-ray capabilities (SEM/EDX).

Findings

- ~~The mineral distribution of the two samples is very different~~

Sample 3753497 is clay rich with >30% of its mass reporting in the -10µm size fraction. ~~Sample 3753499 is mineral rich with 70% of its mass reporting in the 20µm size fraction~~

- Sample 3753497 GRIEVES ZG-54 6-16m

This sample has the highest Zn and Pb assays. It's mineralogy is dominated by sericite, Zn-aluminosilicate, sphalerite, pyrite, quartz and galena. Up to 60% of the Zn may be contained in the Zn-aluminosilicate phase.

- ~~Sample 3753499 GRIEVES ZG-54 16-20m~~

~~The mineralogy of this sample is dominated by pyrite, sphalerite, sericite, and quartz.~~

- Implications

Up to 60% of the Zn in sample 3753497 may be unrecoverable by conventional flotation.



CONTENTS

Page

Project Focus		1
Research Conducted		1
Findings		1
Implications		7
Appendix 1	Results of Chemical Analysis - major and trace elements.	
Appendix 2	SEM Photomicrographs.	
Appendix 3	Summary of Mineralogical Information and XRD Reports from La Trobe University and AMDEL.	



563162

Project Focus

CRAE commissioned ATD to undertake a comprehensive size by grade chemical and mineralogical characterisation of two contrasting air-core composite samples from a Tasmanian zinc prospect. The aim of the characterisation was to establish more accurately the nature and distribution of the valuable minerals. Some work had been done previously on samples from this prospect (see reports by R Walker: A857A/603ms, and C Halsall/R Walker: A857A639ch). The focus of the previous work had been to try and determine whether the main zinc bearing mineral was sphalerite, a Zn-aluminosilicate, or smithsonite (Zn carbonate). The results suggested that both sphalerite and a Zn-aluminosilicate (possibly fraipontite) were present in varying amounts.

Research Conducted

Sizing

Samples were sized at ATD. Sample preparation was achieved by splitting the sample in half by cone and quartering and then wet screening at 38µm. Prior to wet screening the samples were disagglomerated to ensure a natural size distribution would be obtained. Following wet screening the +38µm size fraction was sized to 2mm by dry screening. The -38µm size fraction of the clay rich sample (3753497) was further sized in a cyclosizer down to 10µm.

Chemical and mineralogical analysis

All of the size fractions were submitted for chemical analysis at ATD. Selected size fractions were sent to Genalysis (Perth) for trace element determinations. Five size fractions of each sample were selected for the mineralogical study. Their mineralogy was characterised using a combination of optical microscopy, X-ray diffraction (XRD), and scanning electron microscopy with energy dispersive X-ray capabilities (SEM/EDX). SEM/EDX analysis was carried out at ATD. XRD analysis was carried out at La Trobe University with selected samples also sent to AMDEL in South Australia for more detailed XRD analysis of clay minerals.

Findings

[REDACTED]

The percentage size distribution by weight [REDACTED] is shown in Table 1. Sample 3753497 is clay rich with 34.6% of its mass reporting in the -10µm size fraction. Agglomerates of fine grained material are common throughout the coarser size fractions.

[REDACTED]



Table 1. Percentage size distribution by weight for each sample

	3753497	
+2mm	9.3	
-2+1mm	2.2	
-1+0.5mm	11.3	
-500+212um	13.4	
-212+106um	14.9	
-106+63um	4.5	
-63+38um	5.1	
-38um		
-38+20um	0.5	
-20+10um	4.2	
-10um	34.6	

• Sample 3753497

This sample has the highest Zn and Pb assays. Zn assays remain relatively constant through the size fractions

Results of chemical analysis of both samples are presented in Appendix 1 (Table A1.1) together with mean values for the major elements in all size fractions. In sample 3753497, the mean values for Zn and Pb are 23.02 wt% and 2.27 wt% respectively (compared to values of 10.15 wt% and 0.11 wt% respectively for sample 3753498). Zinc values range from 15.3wt% to 34wt% but there is no consistent variation through the size fractions. The lowest zinc assay corresponds to the finest size fraction (-10µm). The highest zinc assay corresponds to the -38+20µm size fraction.

A visual estimate of mineral abundances in this sample suggests an average modal composition (by volume) of 50% fine grained aluminosilicate (mainly sericite), 25% Zn-aluminosilicate, 10% pyrite, up to 10% sphalerite, 5% quartz, and <5% galena. Attempts at image analysis and optical point counting were largely unsuccessful in the coarser size fractions due to the presence of significant proportions of relatively fine grained Zn-bearing minerals in agglomerates. If image analysis is to be used successfully on similar samples in the future then the sizing process would have to be more rigorous or a certain amount of development work would be required to ensure that the fine grained material was not overlooked.

Sericite is the dominant K-aluminosilicate

A fine grained K-aluminosilicate phase is present in all of the size fractions. XRD analysis by AMDEL suggests that muscovite (sericite) is the main K-aluminosilicate phase present. In the +38µm size fractions sericite has a grain size of <10µm and mainly occurs in agglomerates.

Other minor phases detected by XRD are chlorite in the -1000+500µm fraction and possibly in the finer fractions, and smectite in the -63+38µm fraction.

The Zn-aluminosilicate contains up to 16wt% Zn

The most abundant zinc phase by volume is a Zn-aluminosilicate (Figure 2, Appendix 2). The high Zn content of this mineral led to an initial classification as fraipontite. The results of XRD analysis suggest that structurally it is intermediate between fraipontite, baumite, and aluminian lizardite which are all members of the kaolinite-serpentine group. For the purposes of reporting, this phase will continue to be referred to as a Zn-aluminosilicate. The Zn-aluminosilicate occurs as discrete grains in all size fractions and fine grained Zn-aluminosilicate is present in agglomerates. A number of grains of Zn-aluminosilicate were analysed by microprobe at the University of Melbourne. These grains show a range of compositions from 10.1wt% Zn to 16.7wt% Zn with an average Zn content of around 13wt% (Table 2). A standard HNO₃ extraction performed on the -63+38µm size fraction removed 96% of the Zn. This implies that both the Zn-aluminosilicate and sphalerite are soluble in HNO₃.

Table 2. Microprobe analyses of Zn-aluminosilicate

3753497 (-500+212µm)					
(wt%)					
Zn	15.476	10.107	16.674	1.084	3.342
Fe	1.79	1.287	1.883	0.41	1.35
Si	12.544	14.847	12.239	18.832	16.794
Al	11.135	13.069	10.467	16.206	16.094
O (calc)	59.056	60.69	58.736	63.468	62.42
Total	100.001	100	99.999	100	100
(wt%)					
Zn	0.335	14.975	10.942	11.994	
Fe	0.049	2.376	3.191	4.961	
Si	18.32	12.774	13.114	12.425	
Al	17.71	10.79	12.956	11.526	
O (calc)	63.587	59.085	59.796	59.094	
Total	100.001	100	99.999	100	

Pyrite contains inclusions of zinc sulphide

Pyrite is common in the +106µm size fractions and is present in all of the finer size fractions. Most of the pyrite is a mottled variety which contains disseminated inclusions of zinc sulphide (Figure 3, Appendix 2). These inclusions are generally <10µm in size and may represent exsolution features. Pyrite grains commonly have a thin surface coating of agglomerated material.



Sphalerite contains <1wt% Fe Sphalerite is present in all size fractions in this sample. In the +38µm fractions it is present as discrete grains and also in agglomerates. In the agglomerates it has a grain size of <20µm and is mostly associated with sericite and Zn-aluminosilicate. The sphalerite is relatively clean although there are occasional complex intergrowths of sphalerite with other sulphides/silicates particularly in the coarser size fractions (+63µm). Sphalerite grains commonly have a thin surface coating of agglomerated material. Results of microprobe analysis at the University of Melbourne indicate that the average Fe content of the sphalerite is <1wt% (Table 3).

Table 3. Microprobe analyses of sphalerite

3753497 (-500+212µm)					
(wt%)					
Zn	67.789	67.176	65.388	67.186	66.712
Fe	0.071	0.017	0.836	0.073	0.077
Mn	0.019	0	0	0	0
S	32.825	32.823	32.189	32.319	32.124
Total	100.704	100.016	98.413	99.578	98.913
(wt%)					
Zn	66.625	67.032	66.54	67.475	
Fe	0.071	0.051	0.178	0.066	
Mn	0.003	0	0	0.001	
S	31.977	31.967	31.997	31.89	
Total	98.676	99.05	98.715	99.432	

Discrete quartz grains are present in all of the size fractions.

Galena is much more abundant in this sample than in sample 3753498. This is reflected in the Pb assays for the two samples (Appendix 1, Table A1.1). Discrete grains of galena are present in the finest size fraction (10-20µm). In the coarser size fractions galena is intergrown with other sulphides, particularly sphalerite. The grain size of galena is commonly around 10µm.

Zinc sulphate was observed in one agglomerate in the -63+38µm size fraction.

No carbonate was observed Average values for Ca, Mg, and C in this sample are 0.04wt%, 0.37wt%, and 3.05wt% (Appendix 1, Table A1.1). These values are higher than the corresponding values for sample 3753498 (0.02 wt%, 0.12 wt%, and 1.49 wt%) but still suggest a low carbonate content. No carbonate was observed in the mineralogical study.

The results of trace element analysis of selected size fractions are included in Appendix 1 (Table A1.2). Values for all of the elements analysed are <500ppm. Values for Cu are slightly higher in this sample than in sample 3753498.



Implications

~~_____~~
~~_____~~

The physical characteristics and mineralogy of the clay sample 3753497 point to two factors that are likely to have an adverse effect on processing. The first is the high proportion of fine grained material present which may cause agglomeration problems. The second is the presence of up to 60% of the Zn as a Zn-aluminosilicate which will probably not respond to conventional flotation.



APPENDIX 1

Results of chemical analysis -
major and trace elements

Table A1.1 Results of major element analysis for all size fractions (wt%).

	Ca	Si	Al	K	Mg	C	S	Pb	Zn	Fe
3753497										
+2mm	0.10	6.03	4.22	0.36	0.33	3.17	25.00	2.28	19.30	17.70
-2mm+1mm	0.07	6.02	3.94	0.40	0.45	2.89	24.40	2.16	22.10	16.90
-1000+500um	0.03	11.50	7.24	0.96	0.39	4.23	12.70	2.29	21.60	5.86
-500+212um	0.03	12.00	7.27	1.01	0.39	4.54	11.10	2.70	23.50	4.23
-212+106um	0.01	12.80	6.16	0.71	0.37	3.48	10.40	3.64	21.90	3.45
-106+63um	0.03	13.50	5.76	0.76	0.39	3.45	9.65	3.05	22.00	3.28
-63+38um	0.03	14.20	6.00	1.00	0.40	3.14	10.40	2.95	24.40	3.26
CS1-3 (-38+20um)	0.06	11.60	3.25	0.24	0.28	0.73	16.70	2.31	34.00	2.77
CS4+5 (-20+10um)	0.03	14.40	5.88	0.65	0.32	1.53	11.60	1.02	26.10	1.87
-CS5 (-10um)	0.01	14.30	12.23	2.15	0.41	3.30	5.52	0.34	15.30	1.63
Mean	0.04	11.64	6.20	0.82	0.37	3.05	13.75	2.27	23.02	6.10
3753498										
+2mm	0.03	10.60	3.40	0.82	0.07	0.87	29.89	0.11	22.10	26.80
-2mm+1mm	<0.01	10.90	3.78	0.92	0.08	1.18	29.40	0.11	22.10	26.80
-1000+500um	0.03	10.80	3.75	0.93	0.10	1.30	28.50	0.09	22.10	19.80
-500+212um	<0.01	9.35	3.08	0.71	0.09	1.24	30.40	0.12	22.10	20.90
-212+106um	<0.01	11.70	4.11	1.00	0.09	1.35	27.40	0.11	22.10	21.90
-106+63um	0.01	13.10	4.00	1.14	0.12	1.41	25.90	0.12	22.10	20.70
-63+38um	<0.01	10.70	4.50	1.16	0.09	1.74	22.40	0.13	22.10	18.10
-38um	<0.01	17.50	6.71	1.58	0.29	2.80	14.10	0.10	22.10	11.40
Mean	0.02	12.20	4.50	1.00	0.12	1.47	26.27	0.11	22.10	16.10

Table A1.2 Results of trace element analysis of selected size fractions

	Mn	Ni	Cu	As	Ag	Cd	Bi
3753497							
-1000+500um	19	108	98	140	17	205	1
-212+106um	19	112	130	96	16	195	1.5
-63+38um	18	100	130	56	16	205	1
3753498							
-1000+500um	16	100	74	100	10	160	0.5
-212+106um	10	110	80	100	10	170	0.5
-63+38um	18	100	70	100	0	160	0.5

APPENDIX 3

Summary of mineralogical information
and XRD reports from La Trobe University
and AMDEL

SUMMARY OF MINERALOGICAL INFORMATION FOR
SAMPLES 3753497 AND 3753498

3753497

-1000+500 μ m (Assay: 21.6%Zn, 2.29%Pb, 5.86%Fe, 12.7%S.)

XRD: sphalerite, quartz, fraipontite, galena, muscovite/sericite, chlorite

SEM: K-aluminosilicate, quartz, Zn-aluminosilicate, pyrite, sphalerite, galena, chlorite

-500+212 μ m (Assay: 23.5%Zn, 2.70%Pb, 4.23%Fe, 11.1%S)

XRD: sphalerite, quartz, fraipontite, galena, muscovite/sericite

SEM: K-aluminosilicate, quartz, Zn-aluminosilicate, pyrite, sphalerite, galena

-212+106 μ m (Assay: 21.9%Zn, 3.64%Pb, 3.45%Fe, 10.4%S)

XRD sphalerite, quartz, fraipontite, galena, muscovite/sericite

SEM K-aluminosilicate, quartz, Zn-aluminosilicate, sphalerite, pyrite, galena

-63+38 μ m (Assay: 24.4%Zn, 2.95%Pb, 3.26%Fe, 10.4%S)

XRD quartz, sphalerite, fraipontite, galena, muscovite/sericite, smectite

SEM K-aluminosilicate, quartz, Zn-aluminosilicate, sphalerite, pyrite, galena, zinc sulphate

CS4+CS5 (-20+10 μ m approx.) (Assay: 26.1%Zn, 1.02%Pb, 1.87%Fe, 11.6%S)

XRD quartz, sphalerite, fraipontite, galena, muscovite/sericite

SEM K-aluminosilicate, quartz, sphalerite, Zn-aluminosilicate, pyrite, galena



amdel

Amdel Limited
A.C.N. 008 127 802

Mineral Services Laboratory
31 Flemington Street
Frewville SA 5063
AUSTRALIA

PO Box 338
Torrensville SA 5031
AUSTRALIA

563171

Telephone: (08) 372 2700
Facsimile: (08) 379 6623
Telex: AA82520

31 August 1993

Ms Carol Halsall
CRA-ATD
1 Research Avenue
BUNDOORA VIC 3083

REPORT G52/94
MINERALOGY OF ZN-BEARING ORE SAMPLES

YOUR REFERENCE: Letter dated 9/8/93

SAMPLE IDENTIFICATION: G1966-G2001

MATERIAL: 6 pulverised samples

DATE RECEIVED: 11 August 1993

WORK REQUIRED: Identification of minerals present

Investigation and Report by: Michael Till

Dr Keith J Henley
Manager, Mineral Services Laboratory

*The results contained in this report relate only to the sample(s) submitted for testing.
Amdel Ltd accepts no responsibilities for the representivity of the sample(s) submitted.*

hk

MINERALOGY OF ZN-BEARING ORE SAMPLES

1. INTRODUCTION

Six samples were received from Carol Halsall of CRA-ATD, Melbourne with a request for identification of the minerals present.

2. PROCEDURE

The samples were analysed by X-ray diffraction.

3. RESULTS

The minerals are listed according to the semi-quantitative abundances given below.

	G1966	G1968	G1970	G1997	G1999	G2001
Sphalerite	D	D	D	CD	CD	A
Quartz	A	A	A	A	A-SD	CD
7Å minerals	A	A	A	-	?Tr	Tr
Muscovite	A	A	A	A	A	A
Pyrite	Tr-A	Tr	Tr	CD	CD	CD
Galena	Tr	?Tr	Tr	-	-	-

The 7Å minerals include members of the chlorite, kandite and serpentine groups. Three XRD peaks which are free of mica interference are given for the respective minerals.

Mineral	7Å Peak	3.5Å Peak	2.65Å Peak
Chlorite (ferroan clinocllore)	7.10	3.55	2.66
Kaolinite	7.14	3.57	-
Lizardite	7.4	3.67	2.66
Lizardite, aluminian	7.25	3.62	2.66
Baumite	7.23	3.59	2.68
Fraipontite	7.00	3.52	2.63

The XRD peaks observed in samples G1966, G1958 and G1970 are as follows:

7Å - 7.09 and possibly 7.19 and 7.34

3.5Å - 3.55 (main) and 3.59 and 3.56, and possibly 3.62

2.65Å - 2.655 (central point of moderately broad peak)

Chlorite is considered to be present in G1966 and probably G1968 and G1970. Kaolinite is probably present in all three samples. Fraipontite cannot be confirmed as being present. It is possible that a serpentine mineral is present that is intermediate in composition between fraipontite and aluminian lizardite, or between baumite (a Mg, Mn, Fe, Zn, Al serpentine with ~7% ZnO) and fraipontite.

The mica detected in these samples is a moderately well-crystalline 2 M₁ type. Illite was not detected, but the presence of muscovite would obscure the presence of even a relatively moderate proportion of illite. There is a possibility of a smectite mineral in G1970 and possibly G1966 and G1968. Again, the presence of a chlorite peak in this region to some extent obscures the presence of smectite (also the detection limit for smectite in a bulk sample can be as much as 10 to 20%). Zinc phosphate minerals were not detected (detection limit may be 1 to 2% in these samples).

Semi-quantitative Abbreviations

- D = Dominant. Used for the component apparently most abundant, regardless of its probable percentage level.
- CD = Co-dominant. Used for two (or more) predominating components, both or all of which are judged to be present in roughly equal amounts.
- SD = Sub-dominant. The next most abundant component(s) providing its percentage level is judged above about 20.
- A = Accessory. Components judged to be present between the levels of roughly 5 and 20%.
- Tr = Trace. Components judged to be below about 5%.

3753497 -1000+500µm

IDENTIFIED PHASES

Intensities: Linear

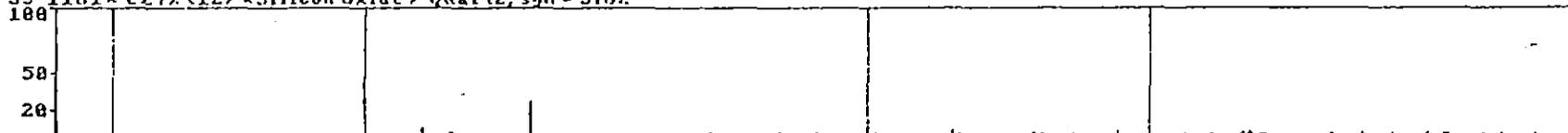
5-0566 33-1161 14-0366 5-0592 31-0966 26-0911



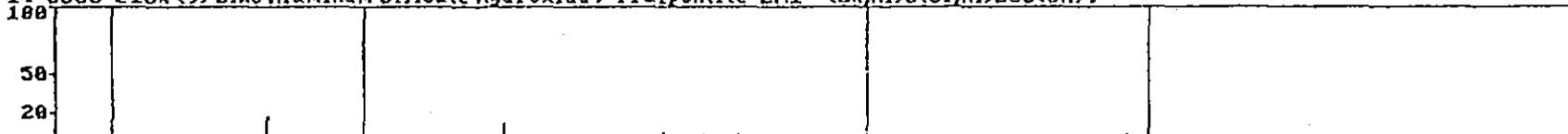
5-0566I 083x (09) *Zinc Sulfide / Sphalerite, syn = ZnS



33-1161 * 027x (12) *Silicon Oxide / Quartz, syn = SiO2



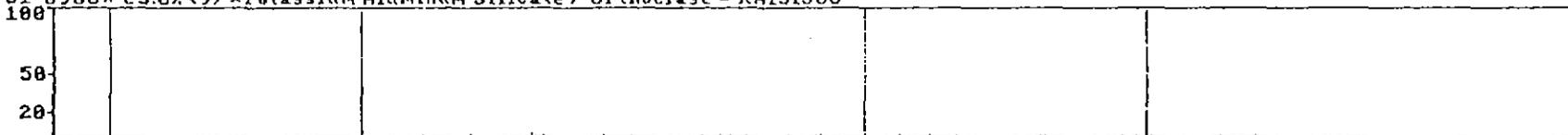
14-0366 016x (9) Zinc Aluminum Silicate Hydroxide / Fraipontite-2M1 = (Zn,Al)3(Si,Al)2O5(OH)4



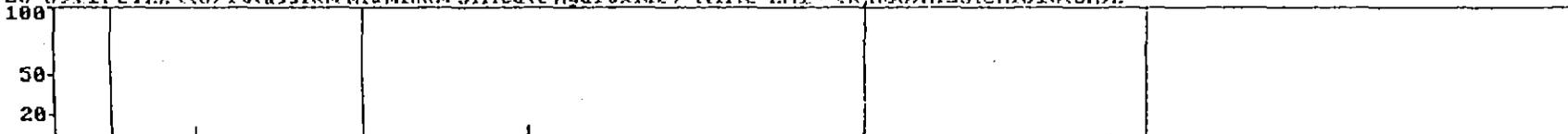
5-0592I 012x ((0)) *Lead Sulfide / Galena, syn = PbS



31-0966 * 03.0x (9) *Potassium Aluminum Silicate / Orthoclase = KAlSi3O8



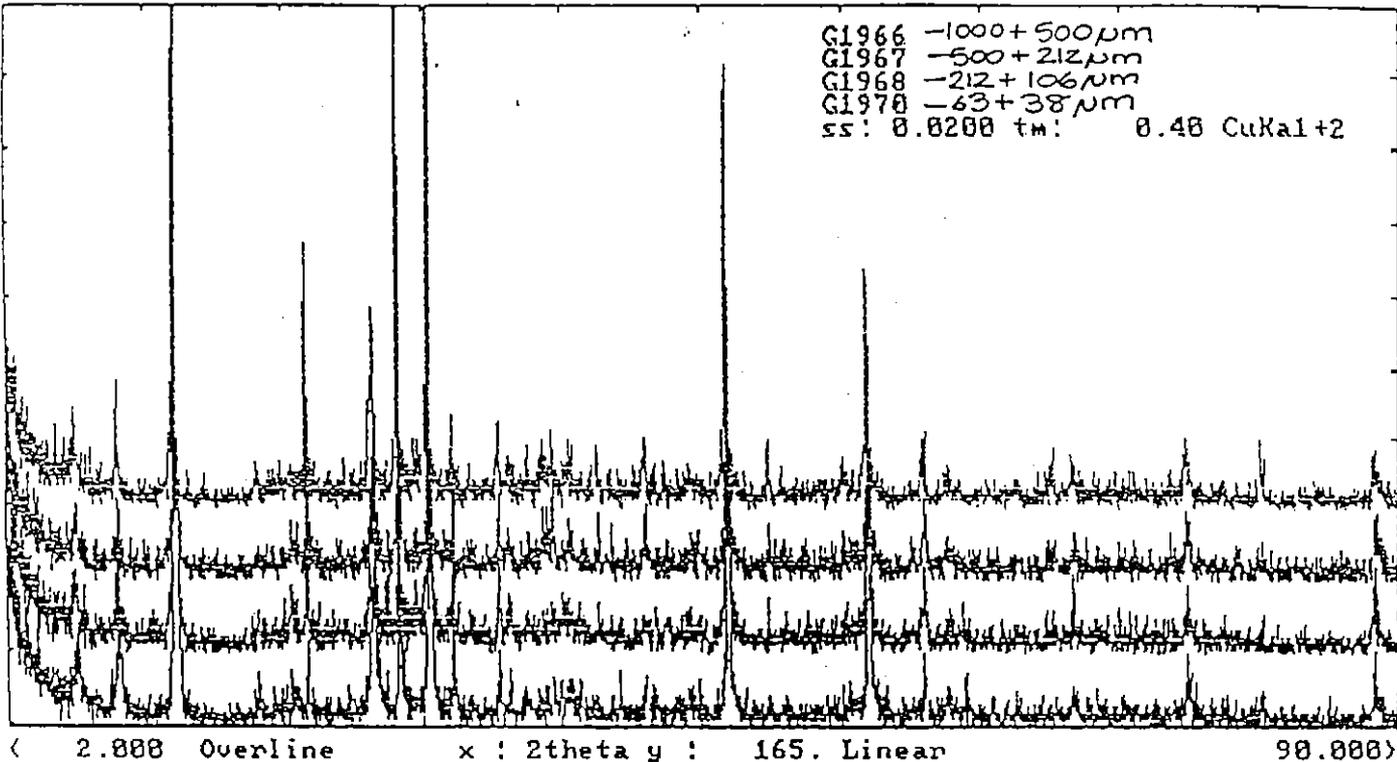
26-0911I 012x ((0)) Potassium Aluminum Silicate Hydroxide / Illite-2M1 = (K,H3O)Al2Si3AlO10(OH)2



563174

3753497

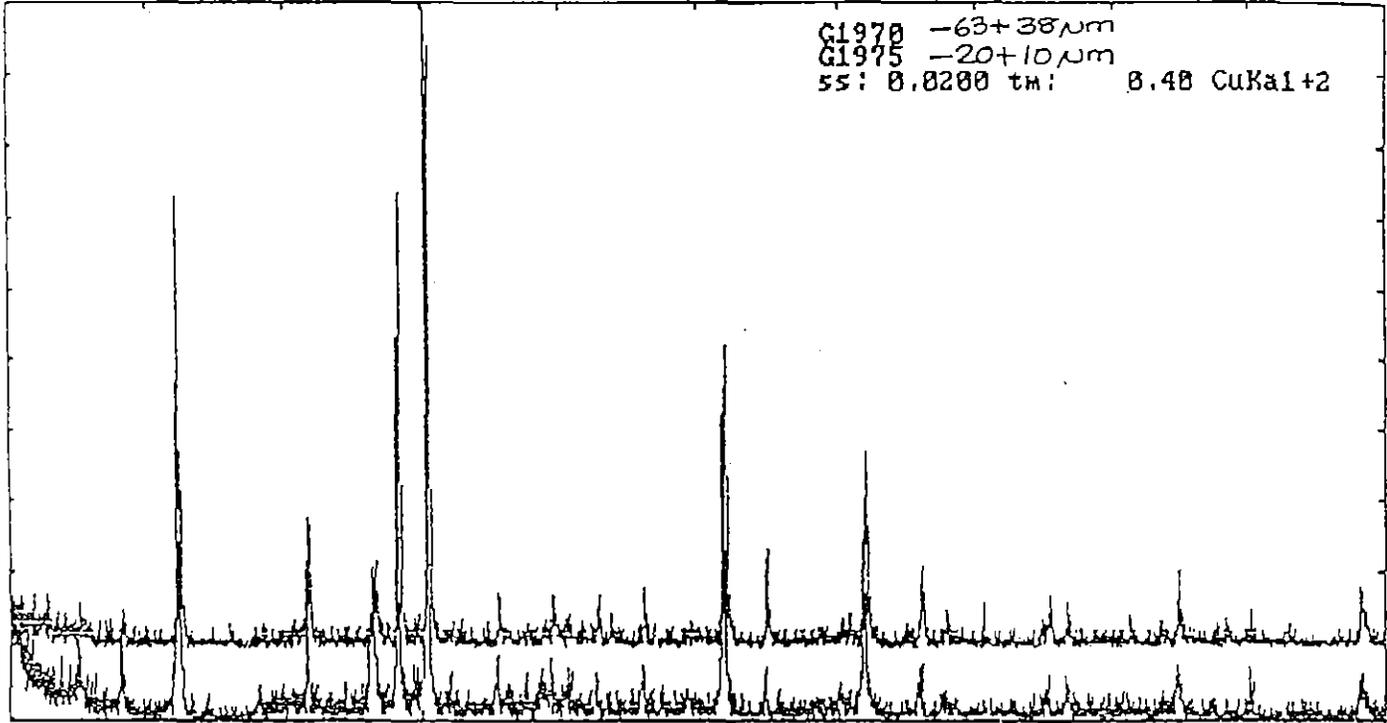
G1966 -1000+500 μ m
G1967 -500+212 μ m
G1968 -212+106 μ m
G1970 -63+38 μ m
ss: 0.0200 tm: 0.48 CuK α 1+2



?help Zoom Hatch File Clear Back. Null K a2 Peaks Smoo. Comp. Wfile -> F

563170

G1970 -63+38 μ m
G1975 -20+10 μ m
55: 0.0200 tm: 0.40 CuKa1+2



(2.800 Overline x : 2theta y : 225. Linear 90.000)

?heiy Zoom Hatch File Clear Back. Null K a2 Peaks Smoo. Comp. Wfile -> F

CRA
ADVANCED TECHNICAL DEVELOPMENT

Melbourne

**THE MINERALOGY OF A FURTHER SIX SAMPLES
FROM A TASMANIAN RESOURCE**

PROJECT REPORT PR93/A857A

Author: C Halsall/R Walker

Copies to: T Dickson (CRAE)
R Parkinson (CRAE)
M Lavery (R&PD)
J Box
S Roden/ minfile
B Kelley/P O'Neill/file

Date: 18 June 1993

Ref: A857A/639ch
DPO 77101

PROJECT SUMMARY

563178

FOCUS

CRAE commissioned ATD to identify the minerals present in a further six samples from a Tasmanian resource. The focus of the work was to determine if the zinc was present as sphalerite or as a zinc silicate species such as fraipontite.

FINDINGS

- The major Zn-bearing mineral in these samples is sphalerite.
- This sphalerite is a low Fe variety.
- A small amount of Zn is present in the silicate minerals fraipontite and hendricksite (samples 3523430 and 3527708).
- Some Pb may be present as the mineral kegelite (sample 3523430).

PROJECT DETAILS

563179

BACKGROUND

CRAE commissioned ATD to identify the minerals present in a further six samples from a Tasmanian resource. The focus of the work was to determine if the zinc was present as sphalerite or as the mineral fraipontite which had been detected previously.

The techniques used to define the mineralogy were X-ray diffraction (XRD), and scanning electron microscopy (SEM) together with energy dispersive X-ray analysis (EDX). Chemical assays were supplied with the samples.

RESULTS

Sample 3523430 ZG36 6-8m. Clay.

Both XRD and SEM/EDX identified the main sulphide minerals as pyrite and sphalerite. Galena was also detected. The main gangue minerals are quartz and muscovite. This muscovite is likely to be a fine grained form (sericite). XRD also identified the mineral kegelite - $Pb_{12}(Zn,Fe)_2Al_4(SO_4)_4Si_{11}O_{38}$. Small amounts of fraipontite, calcite and dolomite were detected by SEM but no kegelite was observed (see Table 1). EDX analysis of 4 grains of sphalerite gave Fe values ranging from 0.5 to 1.1 wt%.

Assay	Cu 20ppm, Pb 15400ppm, Zn 93500ppm, Ag 5ppm, Fe 8.18%, Mn 59ppm
XRD	Quartz (major); Sphalerite (minor); Pyrite (minor); Muscovite (minor); Galena (trace); Kegelite (trace)
SEM	Confirms major and minor XRD phases. Kegelite was not observed but a grain of fraipontite was. Small amounts of carbonate were also observed.

Table 1. Assay, XRD and SEM results for sample 3523430

563180

Sample 3527708 Dm10

XRD and SEM/EDX identified the sulphide minerals as pyrite, sphalerite and galena. A single grain of chalcopyrite was observed by SEM. The zinc minerals fraipontite and hendricksite were detected in minor amounts (see Table 2). The main gangue minerals are muscovite (sericite) and quartz. EDX analysis of two grains of sphalerite gave Fe values of 0.9 and 1.1 wt%.

Assay	Cu 236ppm, Pb 27100ppm, Zn 49000ppm, Ag 241ppm, Fe 9.87%, Mn 38ppm
XRD	Pyrite (major); Muscovite (minor); Sphalerite (minor); Quartz (minor); Galena (trace); Fraiporitite (trace); Hendricksite (trace)
SEM	Confirms XRD. Suggests that pyrite is only a minor constituent (<50% of sample - visual estimate). A grain of chalcopyrite was also observed.

Table 2. Assay, XRD and SEM results for sample 3527708

Sample 3528057 Zm13

XRD and SEM/EDX identified the main sulphide minerals as sphalerite and pyrite. In addition, small amounts of galena were observed by SEM (see Table 3). The gangue minerals are quartz and muscovite (sericite). Initial XRD analysis also identified some illite. EDX analysis of three grains of sphalerite gave Fe values ranging from 0.8 to 1.2 wt%.

Assay	Cu 66ppm, Pb 1200ppm, Zn 155000ppm, Ag 29ppm, Fe 4.76%, Mn 34ppm
XRD	Quartz (major); Sphalerite (minor); Pyrite (minor); Muscovite (trace)
SEM	Confirms XRD. Galena was also observed.

Table 3. Assay, XRD and SEM results for sample 2538057

563181

Sample 3528109 Zm18

XRD and SEM/EDX identified the main sulphide minerals as sphalerite and pyrite. In addition, small amounts of galena were observed by SEM (see Table 4). The main gangue mineral is quartz. Small amounts of muscovite (sericite) were also detected by SEM. EDX analysis of three grains of sphalerite gave Fe values ranging from 0.8 to 1.2 wt%.

Assay	Cu 90ppm, Pb 8800ppm, Zn 82900ppm, Ag 46ppm, Fe 11.5%, Mn 27ppm
XRD	Quartz (major); Sphalerite (minor); Pyrite (minor)
SEM	Confirms XRD. Small amounts of galena and muscovite were also observed.

Table 4. Assay, XRD and SEM results for sample 3528109

Sample 3528121 Zm18

XRD and SEM/EDX identified the main sulphide minerals as pyrite and sphalerite. In addition, small amounts of galena were observed by SEM. The main gangue minerals are quartz and muscovite (sericite). Small amounts of carbonate (calcite) were also observed by SEM. EDX analysis of four grains of sphalerite gave Fe values ranging from 1.1 to 1.8 wt%.

Assay	Cu 24ppm, Pb 6500ppm, Zn 65800ppm, Ag 5ppm, Fe 15.1%, Mn 56ppm.
XRD	Quartz (major); Pyrite (minor); Sphalerite (minor); Muscovite (trace)
SEM	Confirms XRD. Small amounts of galena and carbonate were also observed.

Table 5. Assay, XRD and SEM results for sample 3528121

563182

Sample 3528431 Zm57

XRD and SEM/EDX identified the main sulphide minerals as sphalerite, pyrite and galena (see Table 6). The main gangue minerals are quartz and muscovite. EDX analysis of three grains of sphalerite gave Fe values ranging from 0.6 to 1.2 wt%.

Assay	Cu 96ppm, Pb 2200ppm, Zn 49600, Ag -1ppm, Fe 6.24%, Mn 32ppm
XRD	Quartz (major); Muscovite (minor); Sphalerite (minor); Pyrite (trace); Galena (trace)
SEM	Confirms XRD. No other mineral observed.

Table 6. Assay, XRD and SEM results for sample 3528431

NEXT STEPS

- Conduct a comprehensive size by grade chemical and mineralogical investigation to establish more accurately the nature and distribution of Zn minerals, galena and chalcopyrite.

563183

CRA-ATD powdered samples for bulk
qualitative XRD phase analysis

La Trobe University-Geology: final XRD report

Date: 28/5/93

CRA-ATD officer: Carol Halsall
Sample identification: G1884 to G1889
Date sample received: 17/05/93

Sample information supplied:
Material type: Zinc minerals

Approximate composition: not given

Possible phases: Dolomite, sphalerite and quartz.

Sample preparation:

The pulverised powder was poured into the XRD sample holder and flattened. A straight glass edge was dragged over the surface of the powdered material before presentation to the XRD.

XRD information attached:

uDPSM search/match report with graphical representation.

Preliminary report submitted: 21/5/93

Summary/Conclusion:

In order of abundance-

G1884

33-1161	Quartz	SiO ₂	50-100
5-0566	Sphalerite	ZnS	5-50%
26-080	Pyrite	FeS ₂	5-50%
7-0042	Muscovite-3T	(K,Na)(Al,Mg,Fe) ₂ (Si _{3.1} Al _{0.9})O ₁₀ (OH) ₂	5-50%
5-0592	Galena	PbS	~5%
29-0790	Kegelite	Pb ₁₂ Zn ₂ Al ₄ Si ₁₁ S ₄ O ₅₄	~5%

G1885

26-080	Pyrite	FeS ₂	50-100%
6-0263	Muscovite-2M1	KAl ₂ (Si ₃ Al)O ₁₀ (OH,F) ₂	5-50%
5-0566	Sphalerite	ZnS	5-50%
33-1161	Quartz	SiO ₂	5-50%
5-0592	Galena	PbS	~5%
14-0388	Fraipontite-2M1	(Zn,Al) ₃ (Si,Al) ₂ O ₅ (OH) ₄	<5%
19-0544	Hendricksite-1M	K(Zn,Mn,Fe) ₃ (Si,Al) ₄ O ₁₀ (OH) ₂	<5%

G1886

33-1161	Quartz	SiO ₂	50-100%
5-0566	Sphalerite	ZnS	5-50%
26-080	Pyrite	FeS ₂	5-50%
7-0042	Muscovite-3T	(K,Na)(Al,Mg,Fe) ₂ (Si _{3.1} Al _{0.9})O ₁₀ (OH) ₂	~5%

G1887

33-1161	Quartz	SiO ₂	50-100%
5-0566	Sphalerite	ZnS	5-50%
26-080	Pyrite	FeS ₂	5-50%

G1888

33-1161	Quartz	SiO ₂	50-100%
26-080	Pyrite	FeS ₂	5-50%
5-0566	Sphalerite	ZnS	5-50%
7-0042	Muscovite-3T	(K,Na)(Al,Mg,Fe) ₂ (Si _{3.1} Al _{0.9})O ₁₀ (OH) ₂	~5%

G1889

33-1161	Quartz	SiO ₂	50-100%
7-0025	Muscovite-1M	KAl ₂ Si ₃ AlO ₁₀ (OH) ₂	5-50%
5-0566	Sphalerite	ZnS	5-50%
26-080	Pyrite	FeS ₂	~5%
5-0592	Galena	PbS	~5%

For all of the samples, the first four minerals listed account for about 95% of the intensity. After CRA personnel had checked the preliminary report it was suggested that dolomite, rutile, apatites and serpentines may be present. Although some of these minerals were possibilities in some of the samples, identification was not definite.

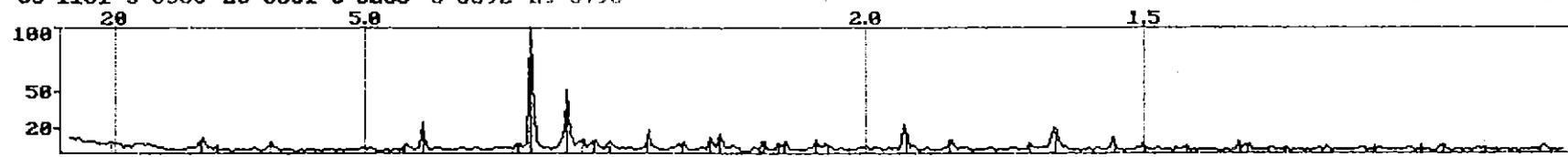
G1884
11/6/73

G1884
3523430

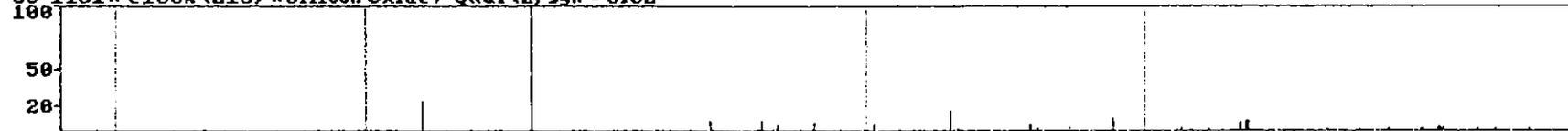
IDENTIFIED PHASES

Intensities: Linear

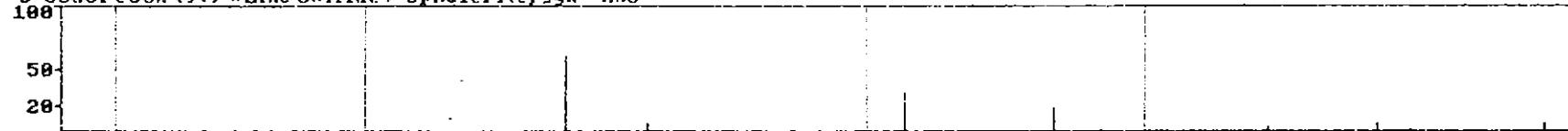
33-1161 5-0566 26-0801 6-0263 5-0592 29-0790



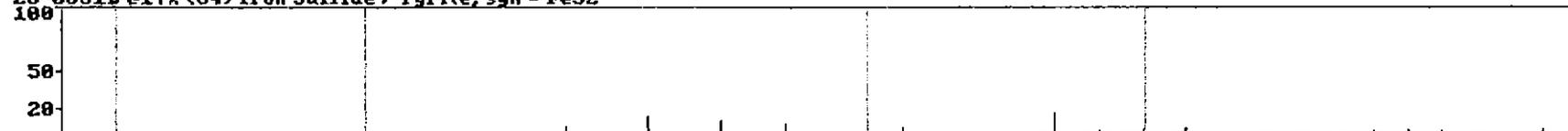
33-1161 0106x (213) *Silicon Oxide / Quartz, syn = SiO2



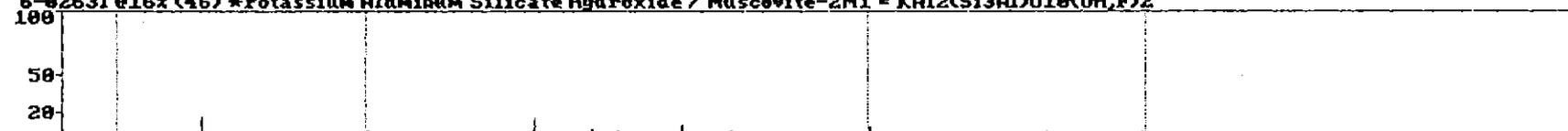
5-0566 060x (97) *Zinc Sulfide / Sphalerite, syn = ZnS



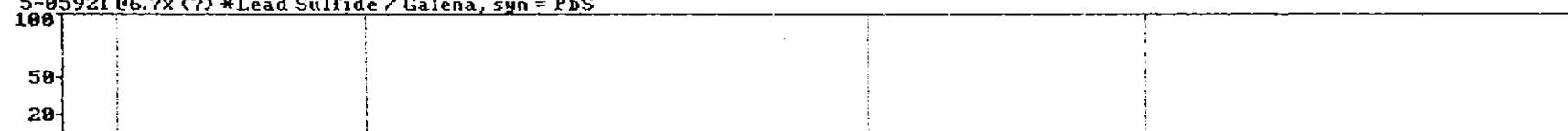
26-0801 017x (64) Iron Sulfide / Pyrite, syn = FeS2



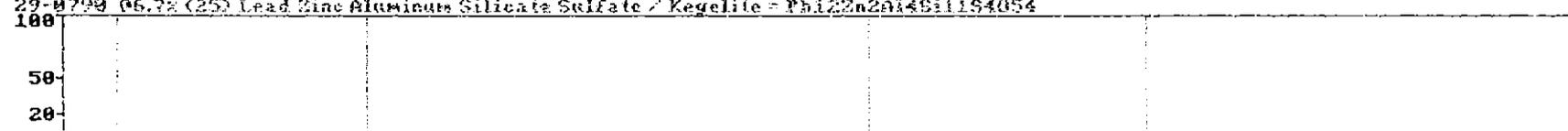
6-0263 016x (46) *Potassium Aluminum Silicate Hydroxide / Muscovite-2M1 = KAl2(Si3Al)O10(OH,F)2



5-0592 06.7x (?) *Lead Sulfide / Galena, syn = PbS



29-0790 06.7x (25) Lead Zinc Aluminum Silicate Sulfate / Kegelite = Pb12Zn2Al4Si11S4O54



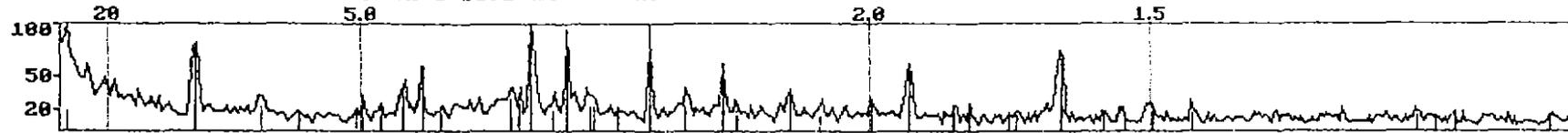
563185

G1885
3527708

IDENTIFIED PHASES

Intensities: Linear

26-0881 6-0263 5-0566 33-1161 5-0592 14-0366 19-0544



26-0881D 090x (153) Iron Sulfide / Pyrite, syn = FeS2



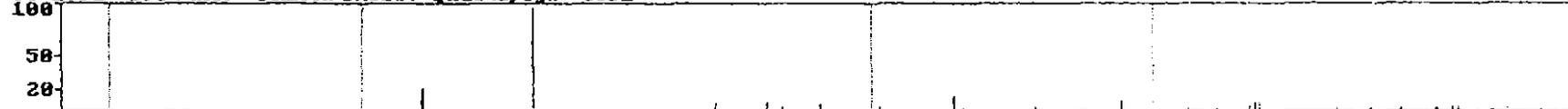
6-0263I 088x (116) *Potassium Aluminum Silicate Hydroxide / Muscovite-2M1 = KAl2(Si3Al)O10(OH,F)2



5-0566I 072x (49) *Zinc Sulfide / Sphalerite, syn = ZnS



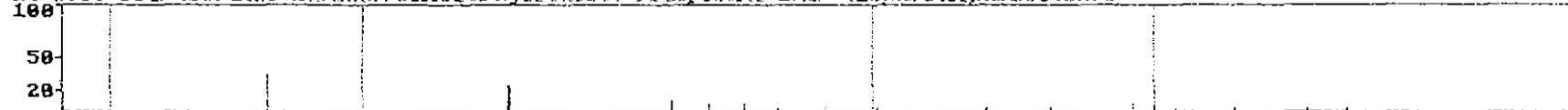
33-1161* 095x (18) *Silicon Oxide / Quartz, syn = SiO2



5-0592I 031x (44) *Lead Sulfide / Galena, syn = PbS



14-0366 034x (19) Zinc Aluminum Silicate Hydroxide / Fraipentite-2M1 = (Zn,Al)3(Si,Al)2O5(OH)4



19-0544I 028x (13) . Manganese Aluminum Silicate Hydroxide / Hendricksite-1M = K(Zn,Mn,Fe)3(Si,Al)4O10(OH)2

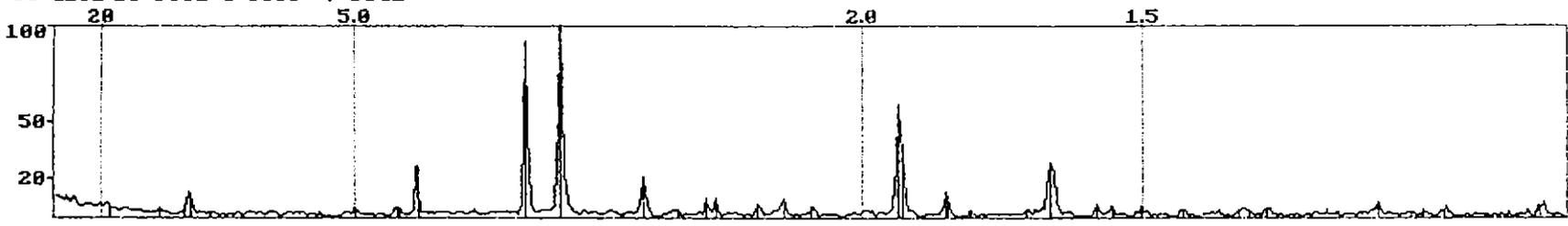


563186

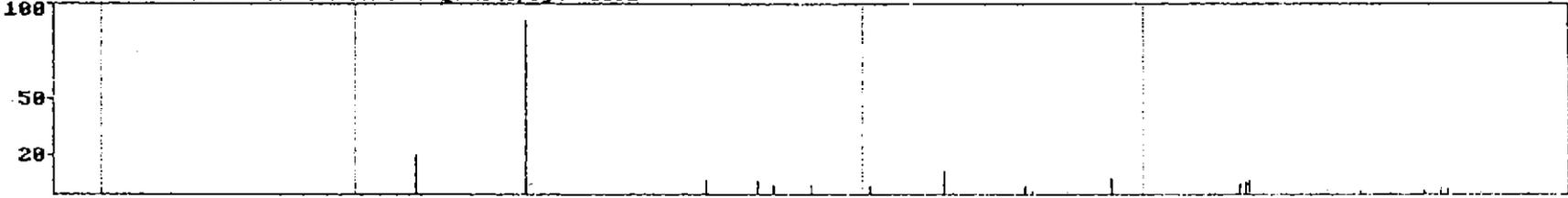
7/SSA
G1886
3528057

IDENTIFIED PHASES
33-1161 26-0801 5-0566 7-0042

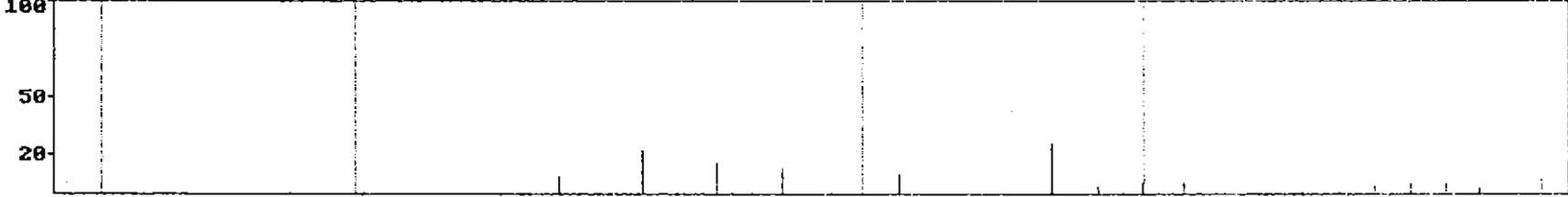
Intensities: Linear



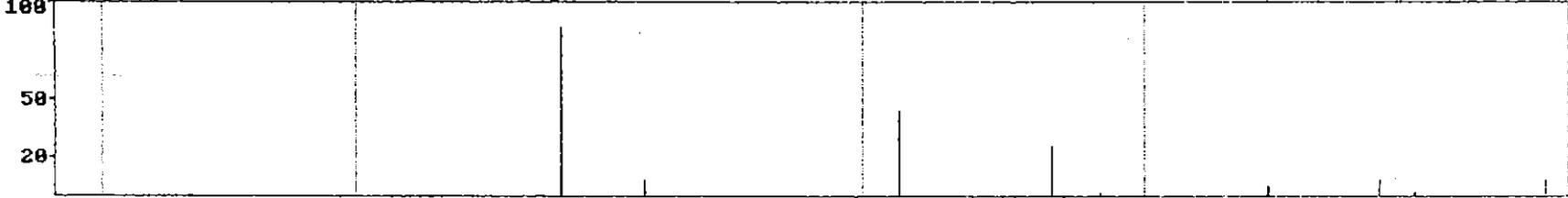
33-1161 * 091X (193) * Silicon Oxide / Quartz, $syn = SiO_2$



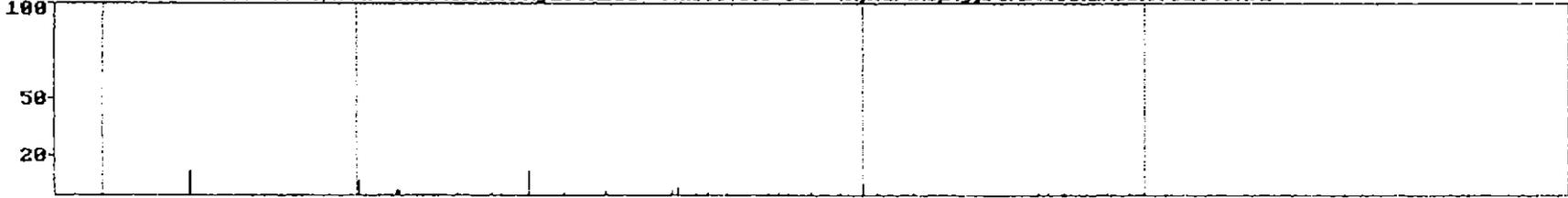
26-0801D 026X (162) Iron Sulfide / Pyrite, $syn = FeS_2$



5-0566I 087X (69) *Zinc Sulfide / Sphalerite, $syn = ZnS$



7-0042I 012X (46) .. ssium Aluminum Silicate Hydroxide / Muscovite-3T = $(K,Na)(Al,Mg,Fe)_2(Si_3,Al_0.9)O_{10}(OH)_2$

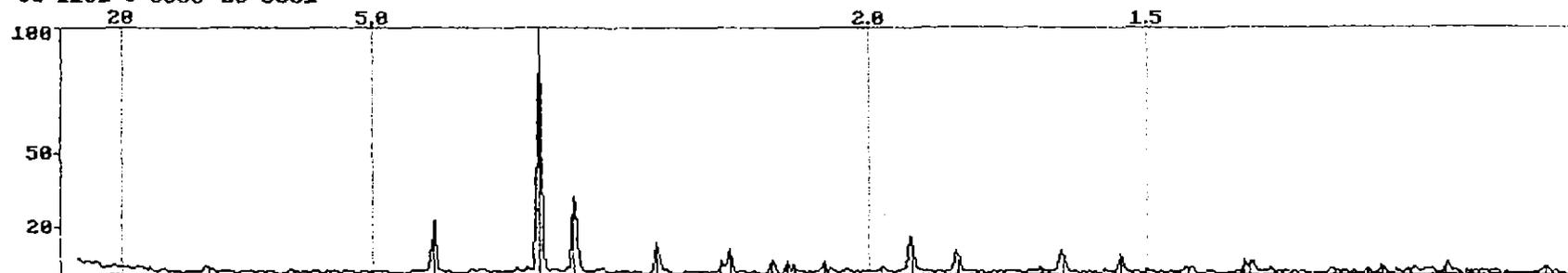


063187

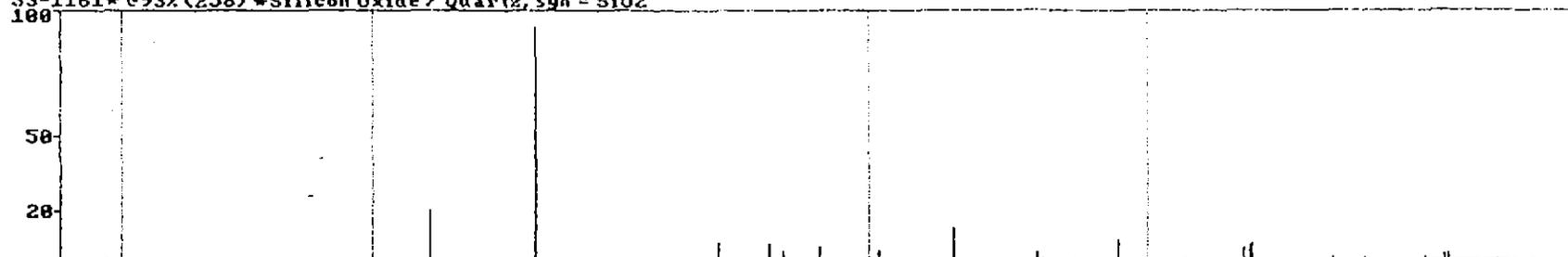
G1887
3528109

IDENTIFIED PHASES
33-1161 5-0566 26-0801

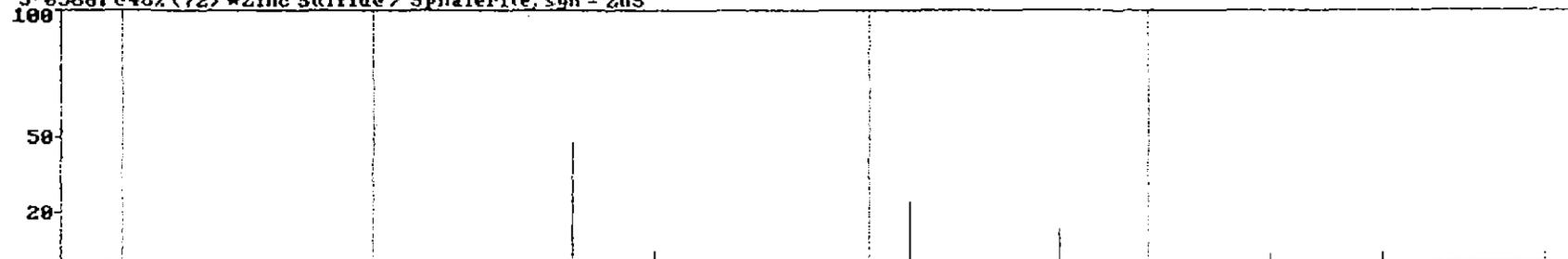
Intensities: Linear



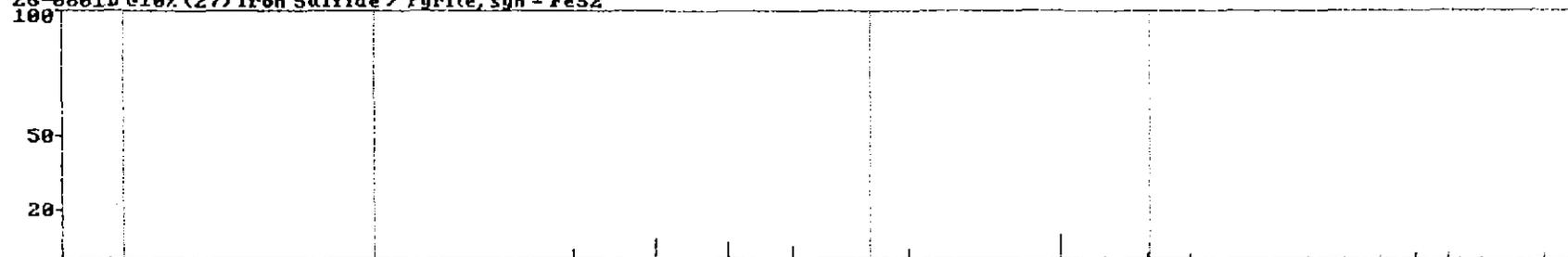
33-1161* (93% (258) *Silicon Oxide / Quartz, $syn = SiO_2$



5-0566I (48% (72) *Zinc Sulfide / Sphalerite, $syn = ZnS$



26-0801D (10% (27) *Iron Sulfide / Pyrite, $syn = FeS_2$



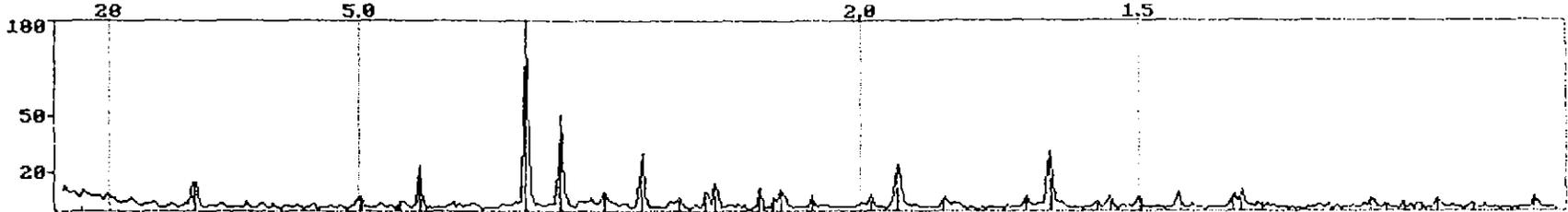
563188

G1888
3528121

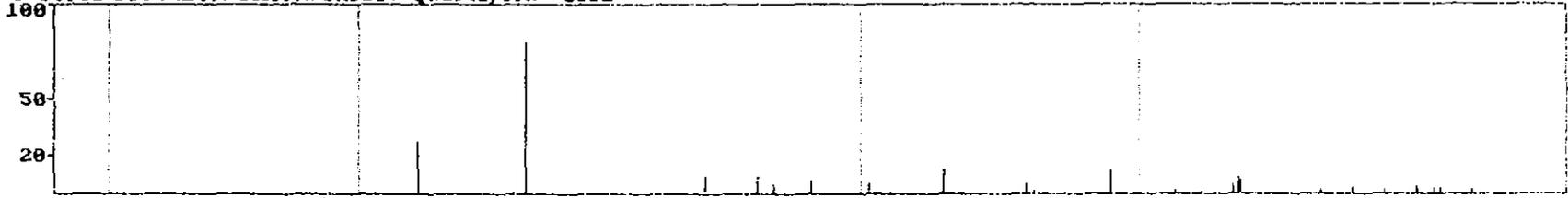
IDENTIFIED PHASES

Intensities: Linear

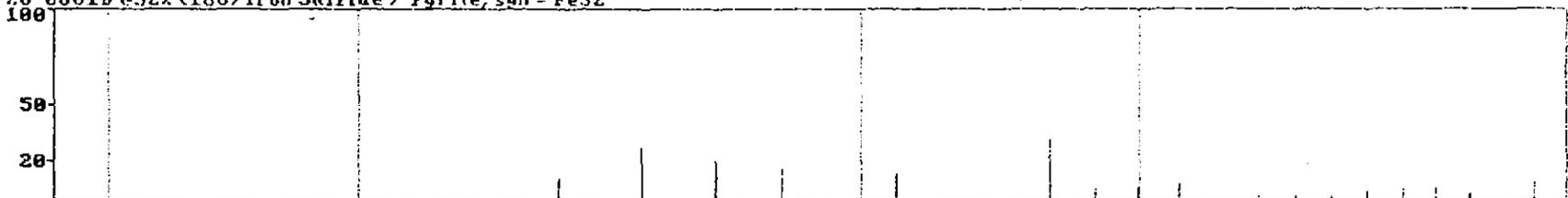
5-0490 26-0001 5-0566 7-0042



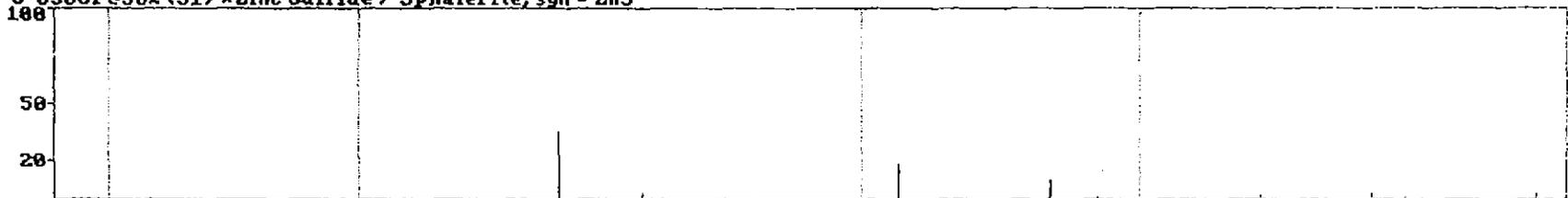
5-0490D 080x (249) Silicon Oxide / Quartz, low = SiO2



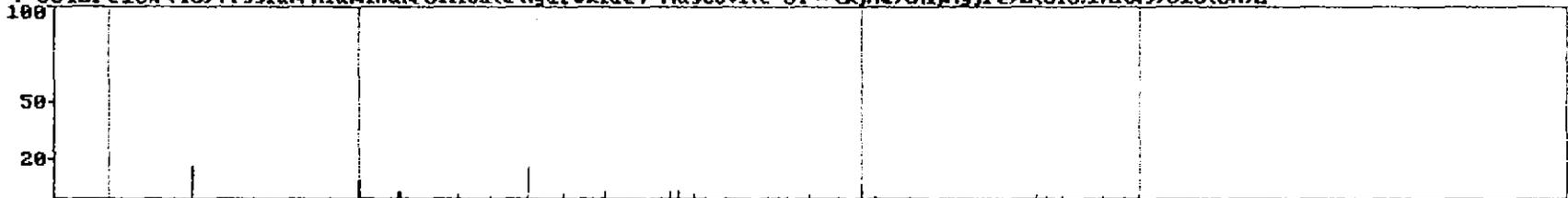
26-0001D 032x (186) Iron Sulfide / Pyrite, syn = FeS2



5-0566I 036x (51) *Zinc Sulfide / Sphalerite, syn = ZnS



7-0042I 016x (46) . . ssium Aluminum Silicate Hydroxide / Muscovite-3T = (K,Nb)(Al,Mg,Fe)2(Si3.1Al0.9)O10(OH)2



663189

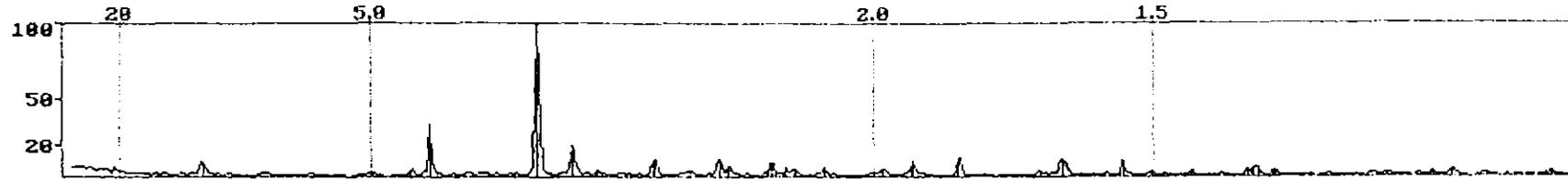
G1889

3528430

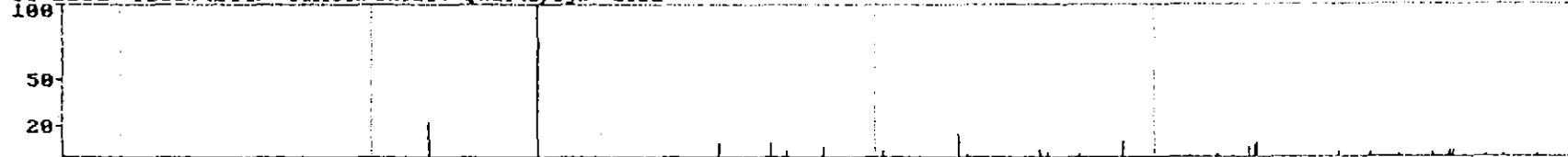
IDENTIFIED PHASES

33-1161 7-0025 5-0566 26-0801 5-0592

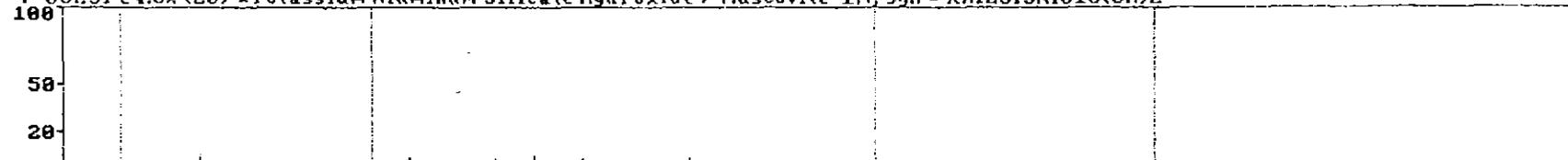
Intensities: Linear



33-1161 * 0186x (244) *Silicon Oxide / Quartz, syn = SiO2



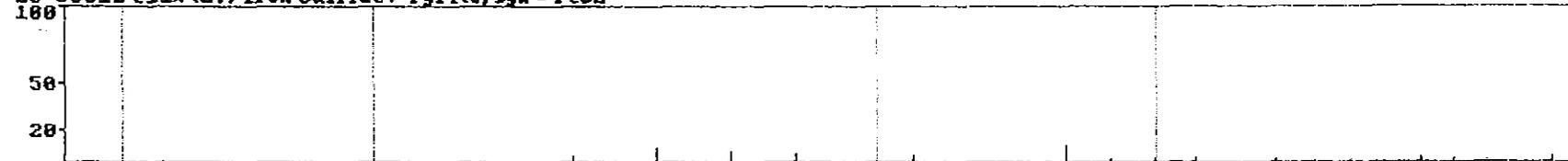
7-0025I 04.6x (28) *Potassium Aluminum Silicate Hydroxide / Muscovite-1M, syn = KA12Si3Al10(OH)2



5-0566I 035x (93) *Zinc Sulfide / Sphalerite, syn = ZnS



26-0801D 011x (27) Iron Sulfide / Pyrite, syn = FeS2



5-0592I 02.0x (8) *Lead Sulfide / Galena, syn = PbS



563190

**CRA
ADVANCED TECHNICAL DEVELOPMENT**

Melbourne

THE MINERALOGY OF A TASMANIAN RESOURCE

PROJECT REPORT PR93/A857A

Author: R Walker

Copies to: T Dickson (CRAE)
R Parkinson (CRAE)
M Lavery (R&PD)
J Box
S Roden/C Halsall/minfile
B Kelley/P O'Neill/file

Date: 18 May 1993

Ref: A857A/603ms
DPO 71546

PROJECT DETAILS

BACKGROUND

CRAE commissioned ATD to identify the minerals present in two samples from a Tasmanian Resource. The primary focus for the work was to determine if the zinc present was sphalerite or smithsonite ($ZnCO_3$). The two samples were 3527751 and 3523563.

The techniques used to define the mineralogy were X-ray diffraction (XRD), scanning electron microscopy with energy dispersive X-ray capabilities (SEM/EDX) and chemical assays.

OUR RESULTS

- * Neither sample contained smithsonite ($ZnCO_3$).
- * Sample 3527751 has a simple mineralogy.

Both X-ray diffraction and SEM/EDX identify the sulphide minerals as sphalerite, pyrite and galena. The gangue minerals are quartz and the potassic clay, sericite - $KAl_3Si_3O_{10}(OH)_2$.

Table 1 shows the assays, XRD and SEM results for this sample, all of which complement each other.

Table 1

Assay	8.9% Zn, 2.4%Pb, 11.2% Fe, 16.2% S, 1.1% C
XRD	Quartz (Major); Sericite (Minor) Sphalerite (Minor); Pyrite (Minor); Galena (trace)
SEM	Confirms XRD - No other mineral observed

Sample 3527751

Dm13 8-10 m.

The sphalerite in both these samples is a low iron variety.

* **Sample 3523563 is complex.**

The sulphides present are sphalerite, pyrite and galena, however only about two-thirds of the zinc assayed is present as sphalerite.

The remainder of the zinc appears to be present as the mineral 'Fraipontite'
- $(Zn, Al)_3(Si, Al)_2O_5(OH)_4$.

Table 2 shows the assays, XRD and SEM results for this sample.

Table 2

Assay	28%Zn, 2.6%Pb, 4.6% Fe, 11.6% S, 5.0% C
XRD	Sphalerite (Major) Cronstedtite $(Fe_3(Si, Fe)_2O_5(OH)_4)$ Fraipontite $(Zn, Al)_3(Si, Al)_2O_5(OH)_4$ Pyrite (Trace) ; Galena (Trace) Quartz (Trace) ; Graphite (Trace)
SEM	Confirms XRD Suggest Fraipontite as the major alumina silicate

Sample 3523563

Chemical analysis of individual grains of the mineral 'Fraipontite' by SEM/EDX show a consistent chemical composition of:-

25 wt% Zn
12 wt% Si
10 wt% Al
and 3 wt% Fe

suggesting a solid solution transition between the minerals 'Fraipontite' and 'Cronstedtite'.

NEXT STEPS

- * Analyse a number of samples to obtain a better understanding of the zinc minerals.
- * Conduct a comprehensive size by grade chemical and mineralogical characterisation on a suitable composite sample.

563194

CRA-ATD powdered samples for bulk
qualitative XRD phase analysis

La Trobe University-Geology: final XRD report

Date: 19/4/93

CRA-ATD officer: Rob Walker
Sample identification: G1850 and G1851
Date sample received: 6/4/93

Sample information supplied:
Material type: Zinc ore

Approximate composition: not given

Possible phases: Sphalerite/Smithsonite

Sample preparation:

The powdered (pulverised) sample was placed into a clean agate mortar and any large lumps were broken up. The powder was poured into the XRD sample holder and flattened. A straight glass edge was dragged over the surface of the powdered material before presentation to the XRD.

XRD information attached:

uDPSM search/match report with graphical representation.

Preliminary report submitted: 8/4/93

Summary/Conclusion:

In order of abundance-

G1850 - 352 7751

5-0490 Quartz SiO₂ 50-100%
 5-0566 Sphalerite ZnS 5-50%
 5-0032 Muscovite 2M1 KAl 2Si₃AlO₁₀(OH)₂ ~5%
 6-0710 Pyrite FeS₂ ~5%
 5-0592 Galena PbS ~5%
 25-0284 Graphite C <5%

G1851 - 3523563

5-0566 Sphalerite ZnS 50-100%
 17-0470 Cronstedtite Fe₃(Si,Fe)₂O₅(OH)₄ 5-50%
 5-0592 Galena PbS ~5%
 6-0710 Pyrite FeS₂ ~5%
 33-1161 Quartz SiO₂ ~5%
 25-0284 Graphite C <5%

Smithsonite (ZnCO₃), corundum (Al₂O₃) and the iron aluminosilicate, deerite (Fe₆(Fe,Al)₃Si₆O₂₀(OH)₅) were not detected in either samples using XRD.

The scan for sample G1851 was more complex than that for G1850.

Fraipontite-2M1 (Zn,Al)₃(Si,Al)₂O₅(OH)₄ could have given rise to the reflections attributed to cronstedtite in G1851. More work is required in this area.

4-08
6105C
3527751

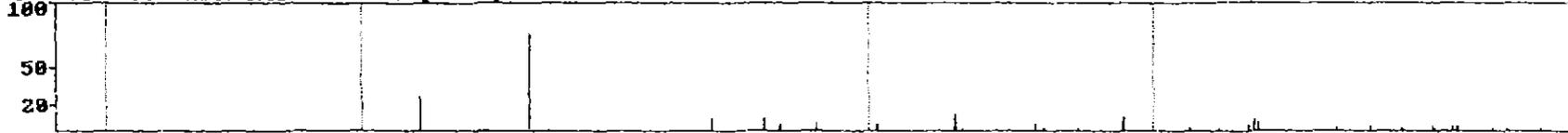
IDENTIFIED PHASES

Intensities: Linear

5-0490 7-0032 5-0566 6-0710 5-0592 25-0204



5-0490D 075% (296) Silicon Oxide / Quartz, low = SiO2



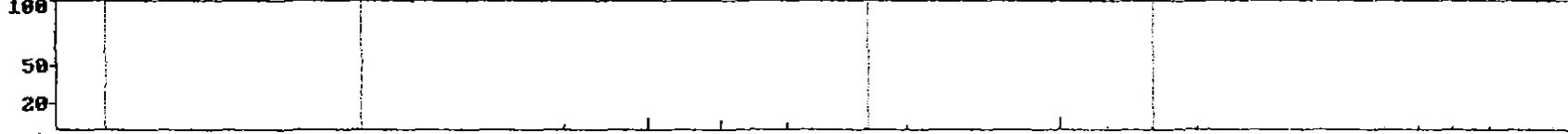
7-0032D 08.3% (88) Potassium Aluminum Silicate Hydroxide / Muscovite 2M1, syn = KAl2Si3Al010(OH)2



5-0566I 040% (40) *Zinc Sulfide / Sphalerite, syn = ZnS



6-0710I 08.7% (43) *Iron Sulfide / Pyrite, syn = FeS2



5-0592I 07.2% (51) *Lead Sulfide / Galena, syn = PbS



25-0204C 051% (10) Carbon / Graphite, syn = C



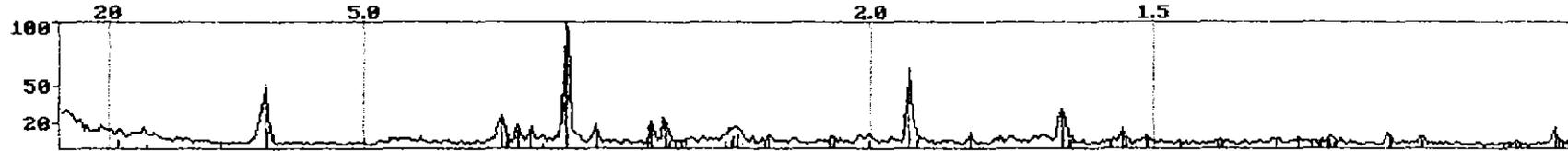
563196

LSN 77378
G1851
3523563

IDENTIFIED PHASES

Intensities: Linear

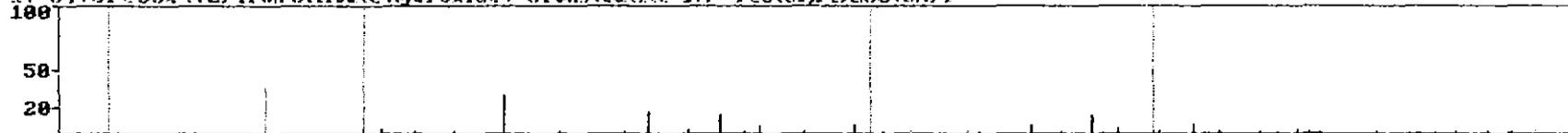
5-0566 17-0470 5-0592 6-0710 33-1161 25-0204



5-0566I 0111 (171) *Zinc Sulfide / Sphalerite, syn = ZnS



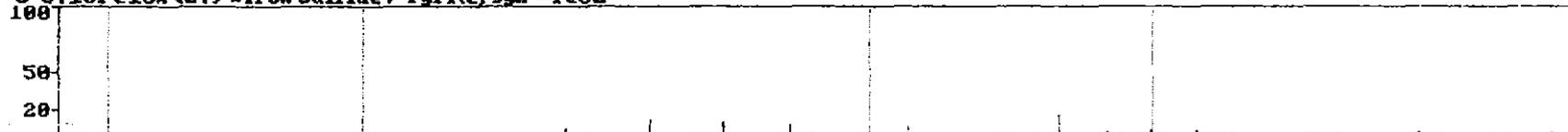
17-0470I 035 (72) Iron Silicate Hydroxide / Cronstedtite-1M = Fe3(Si,Fe)2O5(OH)4



5-0592I 026 (81) *Lead Sulfide / Galena, syn = PbS



6-0710I 015 (27) *Iron Sulfide / Pyrite, syn = FeS2



33-1161 * 035 (13) *Silicon Oxide / Quartz, syn = SiO2



25-0204C 052 ((0)) Carbon / Graphite, syn = C



563197

563198

APPENDIX 5

**REMAINING
AIRCORE
SAMPLES**

HOLE	LOCATION	SAMPLES	LITHOLOGY	% Zn	COMMENTS
ZG 36	SW corner of RL	6-8	clay	9.3	not in resource area
		10-12	limestone	5.6	
		12-14	limestone	9.0	
ZG 51	north of southern zone				all bags broken; not useable
ZG 54	southern zone	0-2	clay	0.3	above zone of interest
		2-4	clay	0.6	
		4-6	clay	0.7	
ZG 55	southern zone	2-4	clay . gravel	1.8	some bags broken, low grade mineralisation in clays
		4-6	clay	1.4	
		6-8	clay	no assay	
		8-10	clay	0.9	
		10-12	clay, limestone	0.6	
		12-14	limestone	1.5	
ZG 74	northern zone	2-4	clay . gravel	1.5	some bags broken: bulk 2-12 m. as low grade clay sample bulk 12-16 m. as weathered limestone sample
		4-6	clay	1.3	
		6-8	clay	2.6	
		8-10	clay	2.6	
		10-12	clay	3.9	
		12-14	clay, limestone	4.2	
		14-16	limestone	3.0	
ZG108	northern zone	4-6	clay	2.1	some bags broken, others difficult to read: bulk 8-12 m;
		8-10	lst, decomp.	10.3	
		10-12	clay	5.3	
ZG 117	northern zone	4-6	clay	7.8	some broken bags; some bags difficult to read: could met test individual samples;
		8-10	clay	11.2	
ZG 116	northern zone	6-8	clay	8.4	3-6 m. missing; bulk 6-14 m. as high grade clay sample;
		8-10	clay	11.4	
		10-12	clay	6.3	
		12-14	clay	2.2	

663109

**GRIEVES SIDING AIR CORE SAMPLES REMAINING IN ZEEHAN SHED
AND AVAILABLE FOR METALLURGICAL TEST WORK**

HOLE	LOCATION	SAMPLES	LITHOLOGY	% Zn	COMMENTS
ZG 115	northern zone	2.8-4	clay	9.3	sample 14-16 m. missing; bulk 2.8-24 m. as a clay-minor weathered limestone sample; bulk 24-28.5 m. as a weathered limestone sample;
		4-6	clay	4.1	
		6-8	clay	4.9	
		8-10	clay	3.0	
		10-12	limestone	5.2	
		12-14	limestone	2.6	
		16-18	clay	4.1	
		18-20	clay	7.2	
		20-22	clay	3.2	
		22-24	clay	3.5	
		24-26	limestone	4.4	
		26-28	limestone	6.9	
		28-28.5	limestone	7.2	
ZG 123	northern zone	8-10	clay	6.1	sample 12-14 m. missing; bulk 8-24 m. as a clay and minor weathered limestone sample;
		10-12	clay	3.3	
		14-16	clay	2.7	
		16-18	clay	2.8	
		18-20	limestone	3.7	
		20-22	clay	6.8	
		22-24	clay	9.7	
ZG 129	northern zone	2-4	clay-decom lst	2.9	0-2 m. missing
		4-6		1.1	
ZG 149	central zone	8-10	clay	2.5	possibly more samples but bags difficult to read; bulk 8-14 m. as a mixed limestone and clay sample;
		10-12	clay	4.6	
		12-14	clay-lst	6.7	
ZG 152	central zone	18-20	limestone	6.0	possibly more samples; bags difficult to read;
ZG 153	north of central zone	36-38	py. limestone	5.5	bags difficult to read; possibly more samples
ZG 170	southern zone	2-4	clay	3.1	one other sample, difficult to read, possibly 0-2 m; bulk 2-6 m. as a clay-minor weathered limestone sample
		4-6	clay, lst	7.3	
		6-7	limestone	3.1	

663200

**GRIEVES SIDING AIR CORE SAMPLES REMAINING IN ZEEHAN SHED
AND AVAILABLE FOR METALLURGICAL TEST WORK**

HOLE	LOCATION	SAMPLES	LITHOLOGY	% Zn	COMMENTS
ZG 171	southern zone	4-6	clay	3.1	sample 10-12 m. missing; bulk 4-10 m. as a clay sample;
		6-8	clay	3.3	
		8-10	clay	13.4	
		12-14	limestone	2.9	
		14-16	limestone	2.3	
		16-18	limestone	2.2	
ZG 177	north of southern zone	52-54	clay, lst	2.7	deep hole, with most Zn near the top of weathered limestone:
		54-56	limestone	3.9	
		56-58	limestone	4.2	
ZG178	southern zone	2-4	clay	3.2	bulk 2-8 m. as a moderate grade clay sample; bulk 8-17.5 m. as a moderate-low grade weathered limestone sample;
		4-6	clay	4.3	
		6-8	clay	3.0	
		8-10	limestone	2.9	
		10-12	limestone	3.0	
		12-14	limestone	3.6	
		14-16	limestone	3.1	
16-17.5	limestone	2.2			
ZG 180	southern zone	4-6	clay	7.6	good hole but difficult to read some bags; could be more samples but these cover the main interval; bulk 4-16 m. as a high grade clay sample;
		6-8	clay	6.7	
		8-10	clay	13.5	
		10-12	clay	14.8	
		12-14	clay	10.8	
		14-16	clay, lst	3.3	
ZG 181	southern zone	4-6	clay	2.9	could be more samples; difficult to read many bags;
		18-20	clay	8.8	
ZG 182	southern zone	6-8	clay, (lst)	7.4	could be more samples, difficult to read some bags; bulk 6-10 m. as high grade clay sample with minor weathered limestone;
		8-10	clay, (lst)	10.3	
		12-14	limestone	1.6	

563201

GRIEVES SIDING AIR CORE SAMPLES REMAINING IN ZEEHAN SHED
AND AVAILABLE FOR METALLURGICAL TEST WORK

HOLE	LOCATION	SAMPLES	LITHOLOGY	% Zn	COMMENTS
ZG 183	north of southern zone	8-10	clay	2.6	important clay samples missing; bulk 12-20 m. as moderate grade decomposed limestone, minor clay sample: (note one sample missing);
		12-14	decom. lst	2.2	
		14-16	decom. lst	3.5	
		18-20	decom. lst	3.7	
		20-21	limestone	2.3	
ZG 184	southern zone	2-4	clay	2.1	most samples missing;
		34-36	limestone	3.4	
		38-39	limestone	2.1	
ZG 228	SW corner of RL	6-8	clay	2.2	samples missing; outside but along strike of resource areas;
		10-12	clay, lst	2.4	
ZG 264	far northern zone	3-6	clay and gravel	3.6	sample 3-6 m. could be tested as one of the few samples available from this far north zone;
		12-14	clay	3.2	
ZG 273	northern zone	6-8	clay	2.9	
ZG 348	northern zone	26-28	limestone	2.5	
		28-30	limestone	5.8	
		30-31	limestone	3.4	
ZG 350	northern zone	4.5-6	limestone	11.5	could be useful sample on which to investigate recovery in decomposed limestone; note one sample missing; bulk 4.5-10 m;
		8-10	clay, lst	6.9	
ZG 351	northern zone	4.6-5.5	limestone	6.7	
ZG 352	northern zone	8-10	clay	4.9	some samples missing below 18 m; bulk 8-18 m as sample of mixed clay and decomposed limestone;
		10-12	clay, lst	6.1	
		12-14	clay, lst	5.5	
		14-16	lst, clay	11.2	
		16-18	clay	4.0	
		20-22	lst, clay	2.6	
ZG 357	central zone	52-54	clay	2.9	
ZG 368	southern zone	2-4	clay	2.7	some bags small, indicating poor recoveries; bulk 2-12.1 m; as sample of high grade shallow clay;
		4-6	clay	10.4	
		6-8	clay	18.2	
		8-10	clay	20.5	
		10-12.1	clay, lst	12.6	

E03609

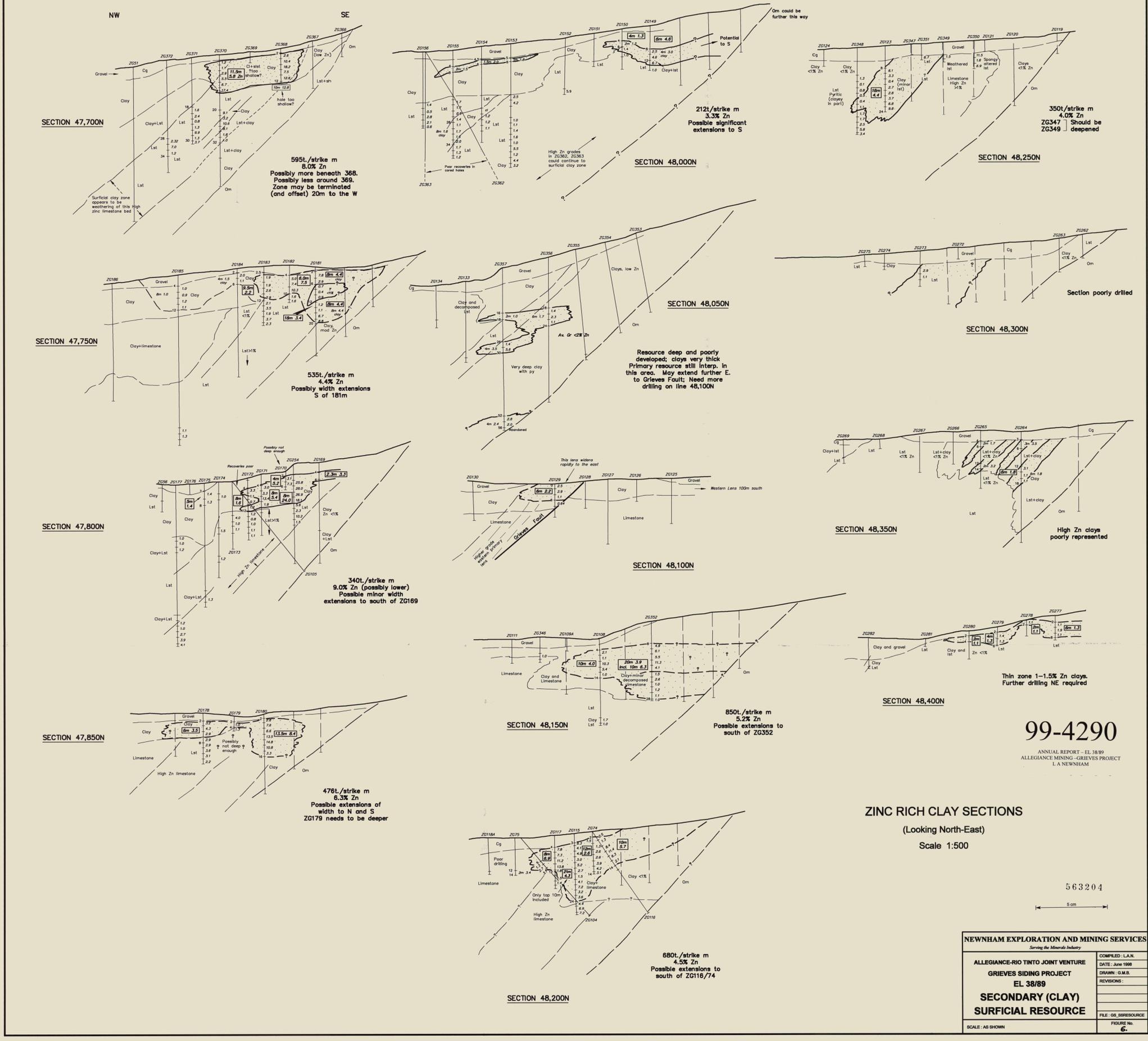
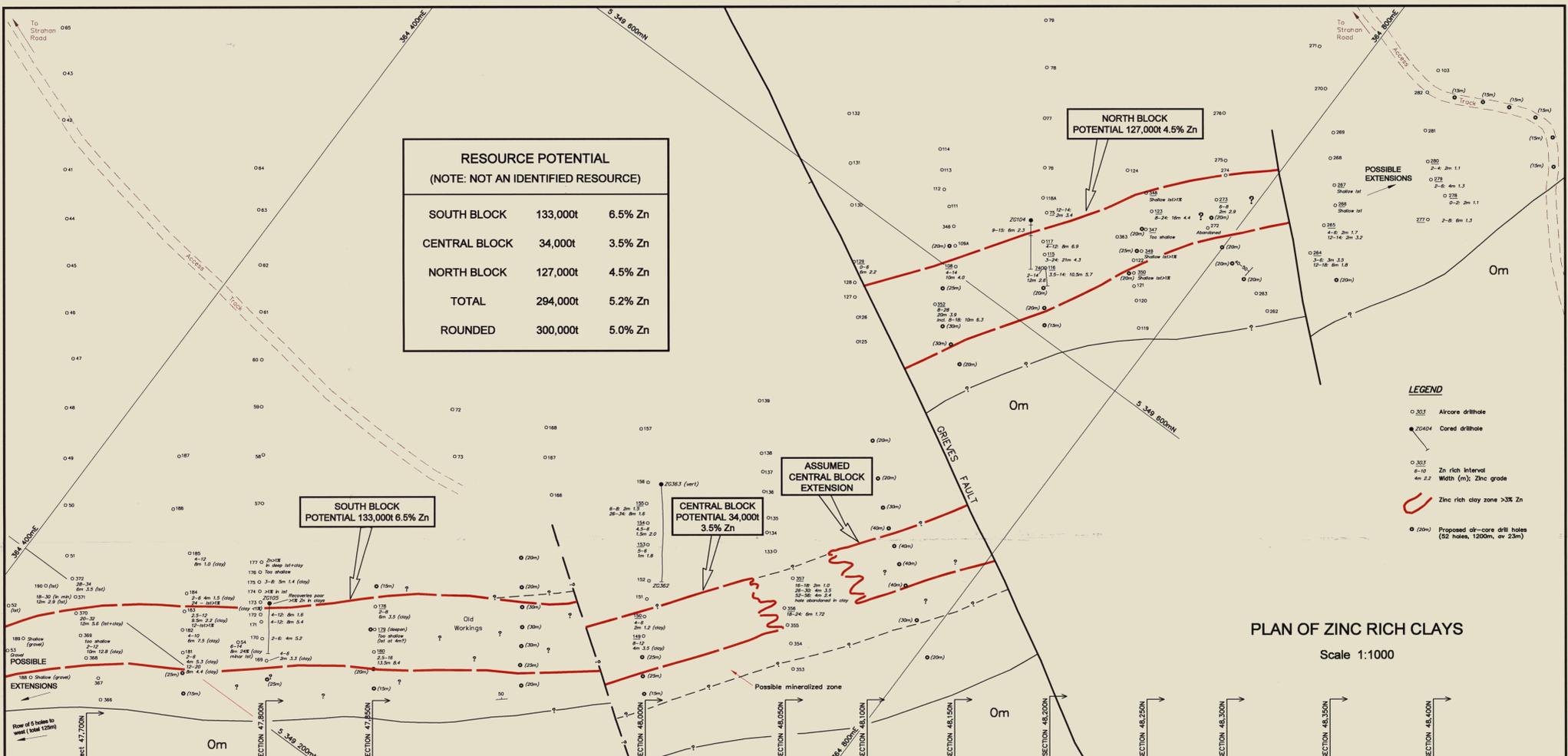
**GRIEVES SIDING AIR CORE SAMPLES REMAINING IN ZEEHAN SHED
AND AVAILABLE FOR METALLURGICAL TEST WORK**

HOLE	LOCATION	SAMPLES	LITHOLOGY	% Zn	COMMENTS
ZG 370	southern zone	6-8	clay, lst	2.9	some samples missing; bulk 6-14 m. plus 24-28 m. as one high grade clay sample; bulk 20-24 m. as one weathered limestone sample
		8-10	clay	5.5	
		10-12	clay	6.7	
		12-14	clay	17.4	
		20-22	limestone	9.2	
		22-24	limestone	3.2	
		24-26	clay	10.6	
		26-28	clay	8.2	
ZG 371	southern zone	20-20	limestone	2.5	many samples missing
		26-28	clay and lst	9.9	
ZG 372	southern zone	28-30	limestone	2.3	
		30-32	limestone	7.0	
ZG 374	west of RL	0-2	clay, gravel	8.3	
		2-4	py. limestone	18.0	
		4-4.8	limestone	19.4	
ZG 393	west of RL	6-7.5	lst, clay	2.1	
ZG 395	west of RL	6-8	clay	3.2	

563203

**GRIEVES SIDING AIR CORE SAMPLES REMAINING IN ZEEHAN SHED
AND AVAILABLE FOR METALLURGICAL TEST WORK**

RESOURCE POTENTIAL (NOTE: NOT AN IDENTIFIED RESOURCE)		
SOUTH BLOCK	133,000t	6.5% Zn
CENTRAL BLOCK	34,000t	3.5% Zn
NORTH BLOCK	127,000t	4.5% Zn
TOTAL	294,000t	5.2% Zn
ROUNDED	300,000t	5.0% Zn



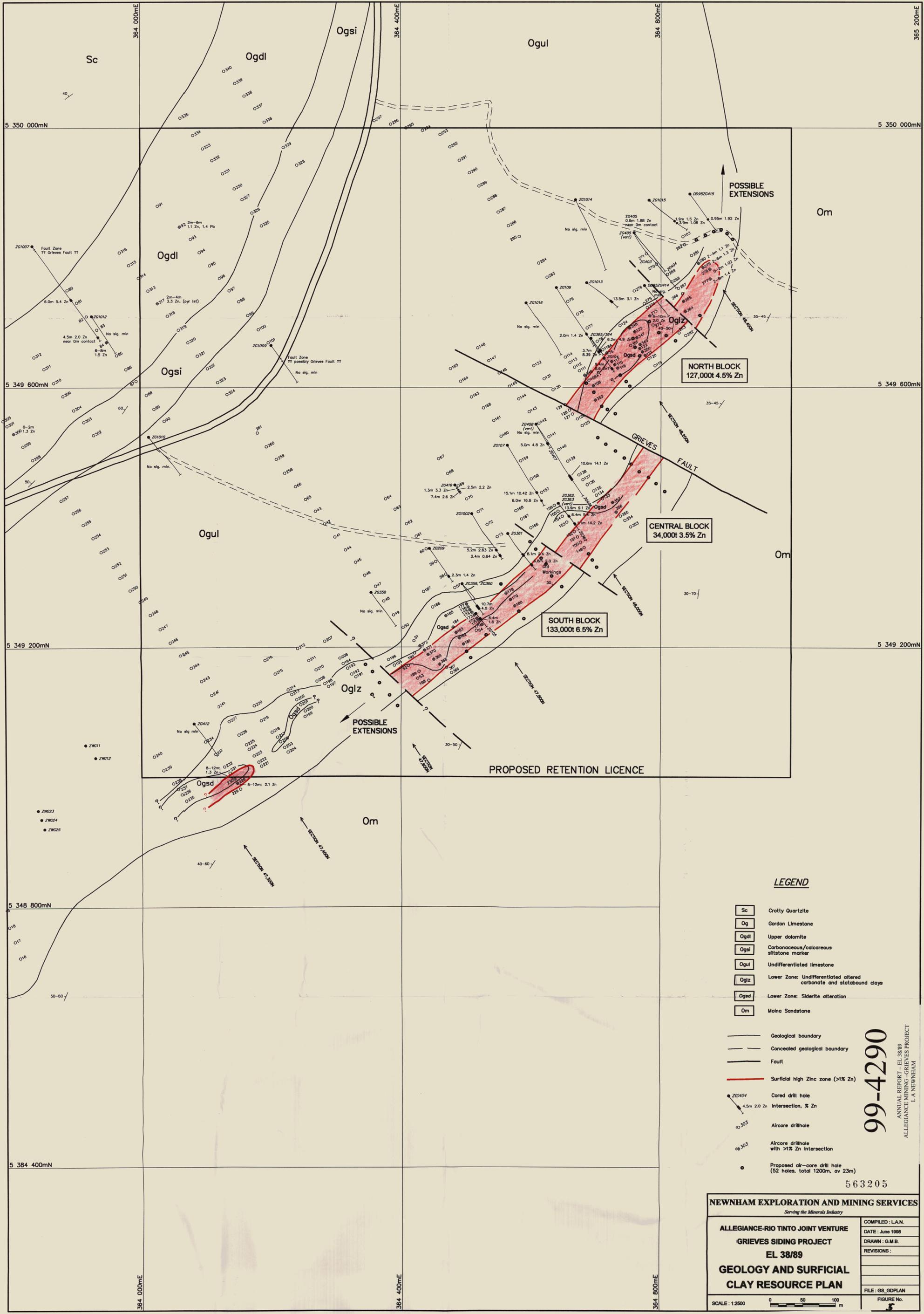
99-4290

ANNUAL REPORT - EL 38/89
ALLEGANCE MINE - GRIEVES PROJECT
L.A. NEWNHAM

ZINC RICH CLAY SECTIONS
(Looking North-East)
Scale 1:500

5 6 3 2 0 4

NEWNHAM EXPLORATION AND MINING SERVICES <i>Serving the Minerals Industry</i>		COMPILED: L.A.N.
ALLEGANCE-RIO TINTO JOINT VENTURE		DATE: June 1988
GRIEVES SIDING PROJECT		DRAWN: G.M.B.
EL 38/89		REVISIONS:
SECONDARY (CLAY)		FILE: GS_RESOURCE
SURFICIAL RESOURCE		FIGURE No. 6
SCALE: AS SHOWN		



NORTH BLOCK
127,000t 4.5% Zn

CENTRAL BLOCK
34,000t 3.5% Zn

SOUTH BLOCK
133,000t 6.5% Zn

POSSIBLE EXTENSIONS

POSSIBLE EXTENSIONS

PROPOSED RETENTION LICENCE

LEGEND

- Sc Crotty Quartzite
- Og Gordon Limestone
- Ogd Upper dolomite
- Ogsi Carbonaceous/calcareous siltstone marker
- Ogul Undifferentiated limestone
- Ogiz Lower Zone: Undifferentiated altered carbonate and stibonite clays
- Ogsd Lower Zone: Siderite alteration
- Om Moira Sandstone
- Geological boundary
- Concealed geological boundary
- Fault
- Surficial high Zinc zone (>1% Zn)
- Cored drill hole
- 4.5m 2.0 Zn intersection, % Zn
- Aircore drillhole
- Aircore drillhole with >1% Zn intersection
- Proposed air-core drill hole (52 holes, total 1200m, av 23m)

99-4290

ANNUAL REPORT - EL 38/89
ALLEGIANCE MINING - GRIEVES PROJECT
L.A. NEWNHAM

563205

NEWNHAM EXPLORATION AND MINING SERVICES
Serving the Minerals Industry

ALLEGIANCE-RIO TINTO JOINT VENTURE GRIEVES SIDING PROJECT EL 38/89 GEOLOGY AND SURFICIAL CLAY RESOURCE PLAN	COMPILED: L.A.N.
	DATE: June 1998
	DRAWN: G.M.B.
	REVISIONS:
	FILE: GS_GDPLAN

SCALE: 1:2500

FIGURE No. 5

563206

TCR 99-4290(B)

metcon
LABORATORIES

- 2 MAR 1999

MICROFILMED
FICHE No.014882-85

REPORT No. : 98624

CLIENT : Allegiance Mining N
C/- Newnham Exploration and Mining Services
PO Box 132
Riverside, Tasmania, 7250

DATE : November 12, 1998

TITLE : Zinc Flotation from Old Grieves Siding Drill Samples

SAMPLES: Three samples, identified as : ZG 115, ZG 149 and ZG 180.

TESTWORK BY : G Sheldon

OBJECTIVE : Examine for any potential to remove zinc from the samples using techniques for sphalerite flotation. It was acknowledged that the samples were several years old, and the effects of aging of the sulphides may have a detrimental effect on flotation response.

SUMMARY OF RESULTS :

The three samples contained varying zinc, iron and sulphur contents, as follows :

	<u>Zn %</u>	<u>Fe %</u>	<u>S %</u>
ZG 115	3.96	12.5	1.93
ZG 149	2.48	12.5	13.3
ZG 180	8.2	13.5	6.06

Earlier mineralogical examinations on various samples from the deposit had indicated most of the zinc in these types of samples was present as sphalerite. The only other sulphide of significance was pyrite. Some lead was present as galena. The gangue was mainly weathered limestone minerals, clays, and quartz. For sample ZG115, with the high iron and low sulphur grades, the iron was probably present mainly as siderite.

The samples had an acidic natural pH, particularly for ZG 149 (pH 2.9) and ZG 180 (pH 3.9). ZG 115 was near neutral at pH 6.9.

Flotation results were poor, with low zinc grades and recoveries to concentrates, even after very high reagent additions. Zinc recoveries were only 20 to 30%. The flotation conditions were based on normal techniques for selective flotation of sphalerite from pyrite and non sulphide gangue.

The poor flotation results may be due to post drilling degradation of the samples, particularly from any oxidation or tarnishing of the surfaces of sulphide minerals.

EL 38/80
PT3
See folio 41

99-4290

ANNUAL REPORT - EL 38/89
ALLEGIANCE MINING - GRIEVES PROJECT
L A NEWNHAM

1 Introduction

A brief test program was completed to examine for any potential to recovery and upgrade zinc minerals from old drill samples from the Grieves Siding deposit. The samples had been produced from air core drilling and were several years old. They were of a fine size but had been stored wet and had naturally dried into hard cakes in the sample bags.

It was recognised the samples were not ideal for flotation testwork, in that some oxidation and degradation of the sulphides could have occurred during storage, which could significantly and adversely affect the flotation response.

It was decided that some preliminary flotation tests should be completed with the existing samples before considering the procurement of any fresh samples for testwork and flotation optimisation.

2 Sample Preparation and Head Assays

The three samples contained a small amount of moisture. Each sample was dried, and crushed through jaw and rolls crushers to break up the hard cakes. The samples were riffled into 500 g portions for testwork. A 200g portion of each was riffled and pulverised for head assays. The head assays were lower than the expected head grades (based on earlier assays when the samples were relatively new).

Sample quantities received and head assays (both recent and original assays) are shown in Table 1.

Table 1 Head Assays

Weight Received kg	ZG 115			ZG 149			ZG 180		
	recent	original	variance	recent	original	variance	recent	original	variance
	16.3			4.6			4.3		
Zn %	3.96	4.7	-16%	2.48	4.6	-46%	8.2	9.4	-13%
Pb %	0.3	0.5	-40%	0.44	0.6	-27%	0.11	0.1	10%
Fe %	12.5	14.8	-16%	12.5	18	-31%	13.5	12.9	5%
S %	1.93	2.3	-16%	13.3	22.7	-41%	6.06	6.8	-11%

The reasonably consistent decrease in assay values from the original to the recent analysis could be due to some hydration and or degradation of the samples since drilling.

3 Flotation Testwork

The samples were repulped by light grinding. They generally broke down easily with a very short grind. Actual grain size reduction by grinding was probably minimal, and was not considered necessary, as the natural size was estimated to be mostly less than 90µm, and should be suitable for flotation. (Actual size distributions were not determined as they were considered outside the scope of this preliminary testing).

The natural pH values of the repulped samples were low, particularly for ZG 149 (pH 2.9) and ZG 180 (pH 3.9). ZG 115 was near neutral at pH 6.9. The pH values were raised with lime before attempting flotation.

A staged rougher flotation test was completed with each sample, using lime for pH adjustment, CuSO₄ to activate the sphalerite, and secondary iso butyl xanthate (SIBX) as collector. The target for pH adjustment was pH 10 to 10.5, to assist in depression of pyrite. However there was a strong buffering effect, and lime consumptions were very high. For sample ZG 149 the buffering effect was very strong, and the pH was only 7.5 even after a lime addition of 150 kg/t.

Results from the first tests were poor, with low zinc grades and recoveries to the concentrates. Detailed results are shown in Appendix 1. Testwork with sample ZG 149 was discontinued as this sample had the very low natural pH and very high lime requirement, and gave the worst flotation results.

An additional test was carried out with samples ZG 115 and 180. These samples were washed after the grind and repulping to remove any soluble salts which could be buffering the pH and contributing to the high lime consumptions. The repulp - grind times were also increased slightly (from 3 minutes to 5 minutes) to ensure complete repulping and possibly produce a finer flotation feed size distribution. Washing involved filtering after the grind - repulp (1st wash), then repulping the filter cake with nominally 5 litres of water, and filtering again (2nd wash). A third wash was completed for sample ZG 180 as the pH of the first two wash solutions was still very low. The final washed filter cakes were repulped in the flotation cell for flotation.

Lime was added for pH control before flotation. The lime requirements were less than for the initial tests without washing, however there was still a strong buffering effect for sample ZG180, and after 12 kg/t of lime, the pulp was still buffered at around pH 8.0. For both tests the CuSO₄ and collector additions were increased substantially to attempt to increase the zinc recovery. The stronger collector of potassium amyl xanthate (PAX) was also tried in both tests. Overall zinc recoveries increased only slightly compared to the first tests.

There was some upgrading of zinc to the concentrates for samples ZG115 and 180. The concentrates were hand panned, and pyrite appeared to be the main diluent in all concentrates.

Results are summarised in Table 2.

Table 2 Summarised Flotation Test Results

Test No	Sample	Head Zn %	Lime kg/t	Float pH	% Wt	Total Rougher Conc			Recoveries %		
						Zn %	Assays Fe %	S %	Zn	Fe	S
1	ZG115	3.96	5.1	10.5	9.4	8.3	9.8	7.0	19.8	8.4	46.5
2	ZG149	2.48	153	7.6	11.5	3.0	12.7	22.3	13.8	13.9	22.4
3	ZG180	8.20	44.0	8.8	14.8	13.7	9.9	8.0	24.7	11.6	21.9
4	ZG115	3.96	3.3	10.5	14.8	7.1	11.6	6.4	26.3	12.7	65.9
5	ZG180	8.20	24.0	8.0	11.7	20.4	11.3	13.1	29.5	8.7	31.3

4 Conclusions

It was concluded the samples supplied for testing were not amenable to zinc flotation evidenced by the very high lime consumptions and low zinc recoveries to concentrates. It was considered these effects could be due to sample degradation since drilling, and the results may not be indicative of the flotation response of fresh samples.

Fresh samples should be provided for testing to evaluate the flotation response and reagent consumptions of the ore.

APPENDIX 1

DETAILS OF FLOTATION TESTS AND RESULTS

FLOTATION TEST DATA SHEET

TEST NO.	1
PROJECT NO.	98624
DATE :	13/10/98
SAMPLE :	ZG 115
WT (g)	500

GRINDING MILL :	Stainless Rod Mill
P80 (µm)	
RPM	60
MINUTES	3
% SOLIDS	50

OBJECTIVE : Short grind time was used to repulp the sample
2.5 litre Denver float cell used.

	REAGENTS g/t				kg/t		Eh mV	pH	COND (min)	FLOAT (min)
	SIBX		CuSO4	MIBC		Lime				
Grind/repulp										
Natural pH							186	6.9	2	
Conditioning						3.32	50	10.5	5	
Conditioning			250			0.82	13	10.3	5	
Conditioning	40			20			36	10.2	2	
Rougher 1	Dirty grey froth. Silica gangue, very fine									2
Rougher 2	20		Pyrite dominant						1	2
Conditioning						0.5	28	10.5	2	
Rougher 3	20						31	10.4	1	2
Conditioning			350				27	10.1	2	
Conditioning				20		0.46	22	10.6	2	
Rougher 4	60						27	10.6	1	2
TOTALS	140		600	40		5.1				
PRODUCT	Wt	Wt	ASSAYS				DISTRIBUTION %			
	g	%	Zn %	Pb %	Fe %	S %	Zn	Pb	Fe	S
Rougher Conc 1	14.1	2.87	9.60	0.54	8.51	6.87	7.0	5.6	2.2	13.9
Rougher conc 2	9.7	1.97	9.10	0.59	10.6	8.01	4.5	4.2	1.9	11.1
Rougher conc 3	10.4	2.11	6.74	0.56	10.6	7.11	3.6	4.2	2.0	10.6
Rougher conc 4	12.2	2.48	7.50	0.54	9.95	6.27	4.7	4.8	2.2	10.9
Tail*	445.6	90.57	3.50	0.25	11.2	0.84	80.2	81.2	91.6	53.5
Calc Head	492	100	3.95	0.28	11.0	1.42	100.0	100.0	100.0	100.0
Actual Head			3.96	0.30	12.5	1.93				
Combined Products										
Conc 1		2.87	9.60	0.54	8.51	6.87	7.0	5.6	2.2	13.9
Cons 1 + 2		4.84	9.40	0.56	9.34	7.33	11.5	9.7	4.1	25.0
Cons 1 to 3		6.95	8.59	0.56	9.72	7.27	15.1	14.0	6.1	35.5
Cons 1 to 4		9.43	8.30	0.55	9.78	7.00	19.8	18.8	8.4	46.5

FLOTATION TEST DATA SHEET

TEST NO.	2	GRINDING MILL :	Stainless Rod Mill
PROJECT NO.	98624	P80 (µm)	
DATE :	13/10/98	RPM	60
SAMPLE :	ZG 149	MINUTES	3
WT (g)	500	% SOLIDS	50

OBJECTIVE : Short grind time was used to repulp the sample
2.5 litre Denver float cell used.

	REAGENTS g/t					kg/t Lime	Eh mV	pH	COND (min)	FLOAT (min)
	SIBX	CuSO4	MIBC							
Grind/repulp										
Natural pH							350	2.9		
Conditioning						153.4	-40	7.6	60	
Conditioning			250				-40	7.6	5	
Conditioning	40			20			0	7.5	2	
Rougher 1										2
Rougher 2	20						27	7.5	1	2
Rougher 3	20						45	7.5	1	2
Conditioning			250				76	7.5	2	
Conditioning	40			20			75	7.5	2	
Rougher 4										2
TOTALS		120	500	40		153.4				
PRODUCT	Wt g	Wt %	ASSAYS				DISTRIBUTION %			
			Zn %	Pb %	Fe %	S %	Zn	Pb	Fe	S
Rougher Conc 1	22.9	4.37	2.65	0.60	12.0	28.4	4.7	6.5	5.0	10.9
Rougher conc 2	11.9	2.27	3.00	0.68	13.2	21.0	2.8	3.8	2.9	4.2
Rougher conc 3	11.4	2.18	3.12	0.63	14.2	17.6	2.7	3.4	3.0	3.4
Rougher conc 4	13.8	2.63	3.42	0.45	12.3	17.1	3.6	2.9	3.1	3.9
Tail	463.9	88.55	2.41	0.38	10.2	10.0	86.2	83.3	86.1	77.6
Calc Head	523.9	100	2.48	0.40	10.5	11.4	100.0	100.0	100.0	100.0
Actual Head			2.48	0.44	12.5	13.3				
Combined Products										
Conc 1		4.37	2.65	0.60	12.0	28.4	4.7	6.5	5.0	10.9
Cons 1 + 2		6.64	2.77	0.63	12.4	25.9	7.4	10.3	7.9	15.1
Cons 1 to 3		8.82	2.86	0.63	12.9	23.8	10.2	13.7	10.8	18.4
Cons 1 to 4		11.45	2.99	0.59	12.7	22.3	13.8	16.7	13.9	22.4

FLOTATION TEST DATA SHEET

TEST NO.	3
PROJECT NO.	98624
DATE :	13/10/98
SAMPLE :	ZG 180
WT (g)	500

GRINDING MILL :	Stainless Rod Mill
P80 (µm)	
RPM	60
MINUTES	3
% SOLIDS	50

OBJECTIVE : Short grind time was used to repulp the sample
2.5 litre Denver float cell used.

	REAGENTS g/t				kg/t		Eh mV	pH	COND (min)	FLOAT (min)
	SIBX	CuSO4	MIBC	Lime						
Grind/repulp										
Natural pH							260	3.9		
Conditioning					44		49	9.0	30	
Conditioning		250							5	
Conditioning	40			20			52	8.8	2	
Rougher 1										2
Conditioning		250					126	8.3	2	
Rougher 2	40						117	8.2	2	2
Rougher 3	40						127	7.9	2	2
Conditioning		250					138	7.7	2	
Rougher 4	40								2	2
TOTALS	160	750		20	44					
PRODUCT	Wt g	Wt %	ASSAYS				DISTRIBUTION %			
			Zn %	Pb %	Fe %	S %	Zn	Pb	Fe	S
Rougher Conc 1	32.2	6.74	11.10	0.13	9.69	6.59	9.1	8.2	5.2	8.2
Rougher conc 2	15.6	3.26	13.70	0.14	10.3	7.98	5.4	4.3	2.7	4.8
Rougher conc 3	12.0	2.51	16.10	0.17	9.81	9.72	4.9	4.0	1.9	4.5
Rougher conc 4	11.0	2.30	18.70	0.17	10.0	10.1	5.2	3.7	1.8	4.3
Tail	407.2	85.19	7.27	0.10	13.1	4.95	75.3	79.8	88.4	78.1
Calc Head	478.0	100	8.22	0.11	12.7	5.40	100.0	100.0	100.0	100.0
Actual Head			8.20	0.11	13.5	6.06				
Combined Products										
Conc 1		6.74	11.10	0.13	9.7	6.59	9.1	8.2	5.2	8.2
Cons 1 + 2		10.00	11.95	0.13	9.9	7.04	14.5	12.5	7.8	13.1
Cons 1 to 3		12.51	12.78	0.14	9.9	7.58	19.4	16.5	9.8	17.6
Cons 1 to 4		14.81	13.70	0.15	9.9	7.97	24.7	20.2	11.6	21.9

FLOTATION TEST DATA SHEET

TEST NO.	4
PROJECT NO.	98624
DATE :	27/10/98
SAMPLE :	ZG 115
WT (g)	500

GRINDING MILL :	Stainless Rod Mill
P80 (µm)	
RPM	60
MINUTES	5 for repulping
% SOLIDS	50

OBJECTIVE : Grind, filter, repulp, filter, then solids for flotation
2.5 litre Denver float cell used.

	REAGENTS g/t						kg/t	Eh mV	pH	COND (min)	FLOAT (min)
	SIBX	PAX	CuSO ₄	MIBC		Lime					
Natural pH								6.9			
Wash 1	Wash volume collected 2.49 L : assay was : 160 ppm Zn								6.4		
Wash 2	Wash volume collected 4.46 L : assay was : 21.7 ppm Zn								7.0		
	Total : 6.95 L : weighted average assay : 71.3 ppm Zn										
Float pulp								240	7.5		
Conditioning						2.18		10.5/9.9	8		
Conditioning			250			0.6		50	10.5	5	
Conditioning	40				20			50	10.4	2	
Rougher 1	Pyrite (similar to FT 1)										3
Conditioning			250			0.2		10.4	4		
Conditioning	40									2	
Rougher 2	Lots of pyrite										4
Conditioning			500			0.32		10.5	4		
Conditioning	80				20			10.4	2		
Rougher 3											4
Conditioning	120	120						10.2	2		
Rougher 4											4
TOTALS		280	120	1000		40		3.3			
PRODUCT	Wt	Wt	ASSAYS				DISTRIBUTION %				
	g	%	Zn %	Pb %	Fe %	S %	Zn	Pb	Fe	S	
Rougher Conc 1	18.2	3.7	10.50	0.79	11.30	9.62	9.8	9.8	3.1	24.8	
Rougher conc 2	20.9	4.3	7.10	0.59	12.6	7.59	7.6	8.4	4.0	22.5	
Rougher conc 3	14.7	3.0	6.22	0.59	11.3	5.16	4.7	5.9	2.5	10.8	
Rougher conc 4	18.2	3.8	4.32	0.43	10.80	2.99	4.1	5.3	3.0	7.7	
Tail	413.3	85.2	3.44	0.25	13.8	0.58	73.4	70.5	87.3	34.1	
Wash 6.95 L			71 ppm				0.3				
Calc Head	485.2	100	3.99	0.30	13.5	1.45	100.0	100.0	100.0	100.0	
Actual Head			3.96	0.30	12.5	1.93					
Combined Products											
Conc 1		3.7	10.50	0.79	11.30	9.62	9.8	9.8	3.1	24.8	
Cons 1 + 2		8.0	8.68	0.68	11.99	8.53	17.5	18.2	7.2	47.4	
Cons 1 to 3		11.1	8.01	0.66	11.80	7.61	22.2	24.1	9.7	58.2	
Cons 1 to 4		14.8	7.07	0.60	11.55	6.44	26.3	29.5	12.7	65.9	

FLOTATION TEST DATA SHEET

TEST NO. 5
 PROJECT NO. 98624
 DATE : 27/10/98
 SAMPLE : ZG 180
 WT (g) 500

GRINDING MILL : Stainless Rod Mill
 P80 (µm)
 RPM 60
 MINUTES 5
 % SOLIDS 50

OBJECTIVE : Wash before float.
 2.5 litre Denver float cell used.

	REAGENTS g/t				kg/t		Eh mV	pH	COND (min)	FLOAT (min)	
	PAX		CuSO ₄	MIBC		Lime					
Natural pH								4.0			
Wash 1	Wash volume collected 2.27 L : assay was :				1315 ppm Zn			4.3			
Wash 2	Wash volume collected 4.06 L : assay was :				147 ppm Zn			4.6			
Wash 3	Wash volume collected 6.50 L : assay was :				28.8 ppm Zn			5.0			
	Total : 12.83 L : weighted average assay : 294 ppm Zn										
Conditioning						12.4		5.0/8.3	5		
Conditioning			500			2.40		8.3	5		
Conditioning	120			20				7.6	2		
Rougher 1										4	
Conditioning						5.20		7.9	3		
Conditioning			500					7.7	2		
Conditioning	120							7.6	2		
Rougher 2										4	
Conditioning						3.00		8.4	1.5		
Conditioning			500					8.0	2		
Conditioning	120			20				7.9	2		
Rougher 3										4	
Conditioning						0.82		7.8	2		
Conditioning			1000					7.6	2		
Conditioning	120							7.5	2		
Rougher 4											
TOTALS		480		2500		40					
PRODUCT	Wt	Wt	ASSAYS				DISTRIBUTION %				
	g	%	Zn %	Pb %	Fe %	S %	Zn	Pb	Fe	S	
Rougher Conc 1	16.5	3.75	15.50	0.27	12.7	11.9	7.2	8.5	3.1	9.1	
Rougher conc 2	11.6	2.63	24.20	0.24	10.2	14.9	7.8	5.3	1.8	7.9	
Rougher conc 3	11.3	2.56	21.80	0.23	10.9	13.0	6.9	4.9	1.8	6.8	
Rougher conc 4	12.2	2.77	22.30	0.32	10.9	13.3	7.6	7.4	2.0	7.5	
Tail	388.7	88.3	6.38	0.10	15.8	3.82	69.4	73.9	91.3	68.7	
Wash 12.83 L			294 ppm				1.1				
Calc Head	440.3	100	8.12	0.12	15.3	4.9	100.0	100.0	100.0	100.0	
Actual Head			8.20	0.11	13.5	6.1					
Combined Products											
Conc 1		3.75	15.50	0.27	12.7	11.9	7.2	8.5	3.1	9.1	
Cons 1 + 2		6.38	19.08	0.26	11.7	13.1	15.0	13.8	4.9	17.0	
Cons 1 to 3		8.94	19.86	0.25	11.5	13.1	21.9	18.7	6.7	23.8	
Cons 1 to 4		11.71	20.44	0.27	11.3	13.1	29.5	26.1	8.7	31.3	