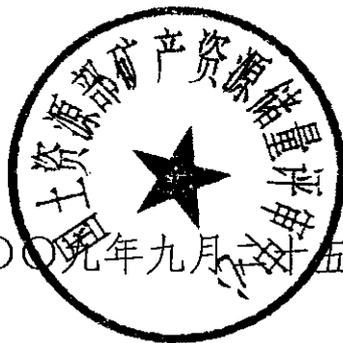


《澳大利亚塔斯马尼亚州齐恩铅锌矿区
资源储量核实报告》矿产资源储量

审 查 意 见 书

国土资矿评咨〔2009〕64号



二〇〇九年九月十五日

THE REVIEW OPINION
ON THE THE MINERAL RESOURCES /RESERVES
VERIFICATION REPORT OF Pb-Zinc
MINE AREA OF ZEEHAN, TASMANIYA, AUSTRALIA

Reviewed by: Mineral Resources and Reserves
Eveluation Center of Minister of
Land Resources,P.R.C
File Number: MLREC (2009) No.64

September 25, 2009

The Resource /Reserves Verification Report of Pb-Zinc Mine Area of Zeehan, Tasmania, Australia ("the Report" for short as below) , prepared by Beijing Zhongjin Taike Exploration Technical Limited Company and submitted by Creat Group Co., Ltd, was sent to the Mineral Resources Reserves Evaluation Centre, Ministry of Land and Resources P.R.C.(the Reserves Centre for short as follow) in September 3, 2009, to be entrusted to review it. The Reserves Centre, after examining the application of the Report, admitted the application and invited 7 evaluators on Mineral Reserves to become a reviewing expert group (the name list including in Appendix 2).Each member of the group reviewed the Report and had individual opinion in writing. In September 8, 2009, the Reserves Centre held the reviewing meeting to evaluate the Report in Beijing. During the meeting, the company of compiling the report (the reporter)introduced the compiling procedures of the Report to the experts and all of the experts and representatives had a discussion to the Report in detail and had a report reviewing and amending opinions .

After the meeting ,according to the recommendations expressed at meeting , the Reporter should compile the revision report and submit the revised Report to the Reserves Centre by September 23, 2009. The Reserves Centre has reviewed the the revised Report and found it amended and completed and formed this Final Opinion of Review.

一、 Summary of Mine Area

(1) Location, Traffic & Topography

The Zeehan Mine Area is located between West Coast Zeehan Township region of the island of Tasmania and Heemskirk Granite ,which is near to west of the seafront area, and the geographical coordinates are as follow :

145°26'44.655"E~145°14'28.736"E

41°57'13.676"S~41°51'13.538"S.

There is a highway straightly from south to north through the central town of this area , it is 286km to directly reach southeast Hobart—the Capital of the state of Tasmania, and there is a 139-km railway north and a road to directly get to the transport hub Burnie of Northern Tasmania, and it is a 45-km highway to go west to Strahan, the sea mouth of Zeehan. There are several blacktops , simple roads connecting to main roads and the railways, so the traffic is quite easy.

Based on the range of the distribution of the ore body , Zeehan Pb-Zinc mine area can be divided into 3 ore sections which are Comstock, Oceana and Mariposa.

The region belongs to maritime climate belt of Rainforest Climate Zone of Southern Hemisphere. It is gorgeous in summer and windy and snowy in winter with occasional stormy weathers. The average annual precipitation is 2446mm.

The region belongs to low hilly with average elevation of 90~360m. The highest peak is at Mount Agnew with elevation of 846m and the lowest part is at Piney Creek with 97.5m in elevation. This area is rich in vegetation and forest coverage is above 70%.

The population is very small and mostly gathered in Zeehan Township. The economy is mainly based on mining, forestry and service industries.

The seismic peak ground acceleration is 0.08g.

(2) Mineral Properties Description and Location

Zeehan Zinc Limited has owned 3 mining leases and 3 exploration licenses in general in Zeehan mine area.

The Comstock ore section is for mining .The Mining Lease 5M/2007 was issued by Tasmania Department of Resources and Energy to Oceania Tasmania Pty. Ltd.

(the lease holder) for a mining area of 2.47km², of which the boundary is fixed by 12 turning points, the term of the expiry is from August 22nd,2007 to March

31st ,2009. The lease is now under renewal application (Application Receiving Letter No: RL4/2009) .

The Oceana ore section is also for mining. The Mining Lease 2M/2005 was issued by Tasmania Department of Resources and Energy to ZZ Exploration Pty Ltd (the lease holder) on September 4th, 2006 for a mining area of 0.5km², of which the boundary is bounded by 6 turning points, and the term of the expiry is September 4 2008. The lease is now under renewal application (Application Receiving Letter No:RL3/2009) define.

The Mariposa ore section the Mining Lease RL1/2008 was issued by Tasmania Department of Resources and Energy, to ZZ Exploration Pty Ltd (the lease holder) on September 4th, 2006, for a mining area of 0.5km², of which the boundary is limited by 6 turning points, and the term of the expiry is from February 20th, 2009 to February 1st, 2011.

The Exploration License EL30/2002 was issued by Tasmania Department of Economy Development and Tasmania Department of Resources and Energy to ZZ Exploration Pty Ltd (the license holder) for a mining area of 8 km², of which the boundary is limited by 11 turning points, and the term of the expiry is from February 20th, 2009 to January 31st, 2010.

The Exploration License EL18/2003 was issued by Tasmania Department of Economy Development and Tasmania Department of Resources and Energy to ZZ Exploration Pty Ltd (the license holder) , for a mining area of 14km² which consists of two parts separated and 1000m away from each other ,of which the boundary is limited by 11 turning points, the term of the expiry is from February 3th, 2005 to February 10th, 2010.

The Exploration License EL20/2002 was issued by Tasmania Department of Economy Development and Tasmania Department of Resources and Energy to ZZ Exploration Pty Ltd (the license holder) on February 20, 2009 for a mining

area of 71 km², of which the boundary is limited by 4 turning points, and the expiry is to January 31st, 2010.

The scope of resource reserve estimation is within the scope of the mining and exploration license.

The relationship between the scope of mining leases, exploration licenses and resource reserve estimation as well as the coordination of the turning points are as shown in Appendix 3.

(3) Overview of Geology uncomfortable

The oldest strata within this region are Mesoproterozoic and Epiproterozoic metamorphic assemblage in Arthur period, on which the Paleozoic cap rock is uncomfortable. Mainly On the base of the south-north-direction folds ,the regional tectonic system re-added a fault system of an east-west nappe structures or thrust faults which are main ,and in the later period, the NNW structures are minor . A large scope of magma movement occurred during the Cambrian period within the region, but now a little only appears today in the mine area of Zeenhan.

The exposed strata in the mine area are as follow(from old to new): Epiproterozoic Oohan group, Epiproterozoic Crimson Creek group, Cambrian Dundas group, Ordovician system, Silurian - Devonian Eldon group. The Epiproterozoic Oohan group is one of the most widely present stratum units and key ore-bearing strata. The group is a series of complicated, neritic sediment and epimetamorphic rock series. The lithology is mainly interbedding siltite, blocky sandstone, carbonate siltite, carbonatite, dolostone and mica sandstone and sandstone formations.

. The mine area is located at the south end of a regional, outstand-west ,arc-shape-tectonic belt, middle-turning point ,and located in the middle-north of the Multiple Synclines of Zeehan. The axis direction of the fold

system stretches NNE-SSW, and the western axis changes to NW gradually (on the SW corner of the mine area). The trend of the main fracture system is nearly East to West (110°), which is the thrust fault of dipping to north.

Cambrian Mount Read lava belts are distributed in the east of mine area, which is considered relevant to mineralization. Devonian Heemskirk Granites are widely distributed over the western and northern parts of the area. It intruded into the mine area and mine belts from the depth of 1km underground and outcrops at the north-west end remotely, forming a huge intrusion rock basin of granite. The Pb-Zinc mineralization is considered to have been formed at the intrusive contact surface of Heemskirk between granite and sedimentary rocks, which is likely to be the major mineralization of system of power and thermal, and also the sources of materials.

Wall rock alteration includes mainly pyritization, pyrrhotitization, siliconization, carbonatization, chloritization, and serpentinization, etc. and fading alteration (talcification, kaolinization).

(4) Deposit Characteristics

Comstock Ore Member:

The main ore bodies of Comstock ore Member are buried inside the hidden ore bodies of the A and B. Besides, there are the four of the other ore bodies nearly mined out, which are controlled by 4 groups of the South-North fracture structures.

Ore body A occurs at the elevation of 80~230m and the buried depth is 80~160m deep in general, the controlled length from East to West is 1400m long, and the width from South to North is 200~380m wide. The trend of the ore body A is NNE, the dipping angle is between 10° and 25° , and the ore body A is locally destroyed by the later faults. The ore body is normally 2.39~6.89m thick, 6.43m thick in average with 91.08% of variation factor of thickness,

characterized as "comparatively stable". An average grade of Pb of the ore body is 2.46% with 165% of variation factor of thickness, characterized as "comparatively uniform", and an average grade of Zn is 3.10% with 140% of variation factor of thickness, characterized as "comparatively uniform". An average grade of Ag is 87×10^{-6} .

Ore body B lies below the ore body A, 100~300m deep almost in consistence with the occurrence of Ore body A, an occurring elevation is between 140m and 170m, and burying depth is 150~410m deep. The trend of ore body is NNE, and the dipping angle is between 20° and 30°. The controlled length of the ore body is 1200m long and 200~480m wide and occurs in the bedded, unevenly thick, or bulge or sag way. Maximum thickness for a single engineering is 12.32m thick, the average thickness is 3.16m thick, and the variation factor of thickness is 98.56%, characterized as comparatively stable. An average grade of Pb of the ore body is 2.60% with 151% of variation factor of thickness, characterized as "comparatively uniform". An average grade of Zn is 3.34% with 101% of variation factor of thickness, characterized as "comparatively uniform". An average grade of Ag is 32×10^{-6} .

Oceana Ore Member:

Oceana Ore Member has only one ore body. The number of the ore body is P. The trend of Ore body P is NNE15°~20° with a steeply dipping angle and the shape of the ore body is simple. The controlled length is 274m long. The extending depth is 260m deep. The average thickness is 23.12m. The variation factor of thickness is 24.70%. The average grade of Pb is 3.67% with 53.98% of variation factor of thickness. The average grade of Zn is 1.25% with 41.69% of variation factor of thickness. The average grade of Ag is 30×10^{-6} with 39.88% of variation factor of thickness. Faults of later period may destroy the ore body P.

Mariposa Ore Member:

Mariposa Ore Member consists of 2 ore bodies. One is ore body M and the other is ore body N.

Ore body M occurs in bedded way, which is 288m long with maximum extension of 180m long, whose average thickness is 6.03m and whose variation factor of thickness is 46.01%. The trend of the ore body is 340° , SW dipping, and the dipping angle is between 0° and 85° . The Average grade of Zn is 1.18% with 49.31% of variation factor of thickness and the average grade of Pb is 4.94% with 29.01% of variation factor of thickness. The average grade of Ag is 54×10^{-6} .

Ore body N occurs in bedded way at the elevation of 200~100m, there is 640m long on the earth surface, and the maximum extension is 90m long, there is a branch of 200m long with NE dipping in its north section. The trend of ore body is 340° , SW or SN dipping, and dipping angle is $70^{\circ} \sim 75^{\circ}$ but locally steep. The average thickness of Ore body N is 8.43m wide, the variation factor of thickness is 43.17%. The average grade of Pb is 4.94% with 64.19% of variation factor of thickness. The average grade of Zn is 6.00% with 50.78% of variation factor of thickness. The average grade of Ag is 96×10^{-6} .

(5) the Quality of Ores

The mineral compositions of the ores : The ore body A and B mainly consist of metallic minerals of pyrite, pyrrhotite, sphalerite (containing marmatite), galena, chalcopyrite, argentite, native silver, siderite, marcasite, arsenopyrite, etc. And the rocky minerals include dolomite, quartz, calcite, graphite (carbon), mica group, barite, phosphorite, tremolite, etc. There occurs limonite, haematite, jarosite, cerusite, hemimorphite, lead vitriol, calamine, kaolin, talc, etc. on the surface and in the shallow part of ore body P, M and N. there is mainly pyrite,

pyrrhotite, galena, sphalerite, rocky minerals of dolomite, calcite, plagioclase, quartz, carbon, graphite, sericite (white mica), phlogopite, etc. in the deep part of the ore body P, M and N.

The type of mineral combinations includes the combination of galena-sphalerite-pyrite (pyrrhotite), the combination of sphalerite-pyrite (pyrrhotite), and the combination of containing sphalerite galena-pyrite and pyrrhotite.

The useful key elements of the ore body are Zn, Pb, Ag, in which Zn and Pb reaches the industry standard and Ag meets the requirement of the Comprehensive Evaluation standard. The Contents of the other beneficial and harmful elements in concomitancy are 4.6% of S, 22.1% of TFe, and 925×10^{-6} of As in average.

The ore textures mainly include the xenomorphic poly particle or dispersive particle texture, the re-melt-recrystallized texture, the semi-shaped poly particle or dispersive particle texture, and granular textures. Secondly, the textures are poikilitic texture, cataclastic texture, ring-growing texture and intersertal texture, etc. The ore structures are mainly blocky structure, plaque hybrid band structure, residual laminated structure and disseminated structure. The others are brecciated structure, crumpled structure and vein structure, etc. bearing

The natural types of the ores are sulfide ore, oxide ore and mixed ore. The ore industry types are Zinc type, Pb type and only-Sulfur type. There is no oxidization with the ore body A and B because they bury deep. There are iron caps with the Ore body C, D and E on the surface so that they become the significant prospecting indicator and the mining objects in the early period. Ore body P, M, and N have characteristics of both weathering and oxidization.

(6) Processing Performance of the Ores

In May 2001, Zeehan Zinc Limited entrusted Esker Milling Processing Pty Ltd

to carry out sink-float tests using ore samples from Comstock Ore Member.

The results of sink-float tests this time indicate that :

On condition that special gravity of the medium gets separately 3.31 or 2.85 , the recovery rates of Zn samples for granular size of 12 ~ 6mm are correspondingly 94.3% or 95.5% ,and the recovery rates of Pb samples are 82.0% or 83.3% , the recovery rates of Zn samples for granular size below 6mm are 89.6% or 90.8% , the recovery rates of Pb samples are respectively 82.0% or 83.3%.

In the products of sink-float tests , the tailings (in which granular size is below 0.075mm) contains 3.3~5.5% of Zn and 3.8~4.1% of Pb.

The removing rate of the main harmful component MgO reached 74.3-77.2%.

After the ores getting through the floating - sinking process, a concentration ratio up to 3:1 was achieved.

It is estimated that the recovery rate level of Ag will be close to Pb' s.

The results of sink-float tests indicate that the ores are of better performance of mineral processing.

(7) Technical Conditions of Mining

1. Hydrogeology

The mine area lies in a low hilly area .There is Mount Imsk which mainly consists of granite in its both east side and west side. The ridge of Mount Selina which consists of Cambrian-Ordovician sedimentary rocks makes up of the hydrogeology boundary in this region. The underground watershed is consistent with the surface watershed. The boundary of theirs is clear. The surface water and underground water generally lies in a catchment basin with an area of 460km², flowing from three directions of east, north and west to the south.

The underground water in Comstock Ore Member can be divided, according to its occurring type and buried conditions, into Carbonate carst water, bedrock

fracture water and Quaternary pore water. The Ore Member mainly consists Ore Body A, B, C, D and E, of which A and B belong to the hidden ore bodies, and the Ore Body C, D and E lie above the upper plates of the Ore Body A and B. There are 2 open pits left and an underground mining system through the mining activities nearly for a century. There has been no water filling in the open pits yet while the underground tunnels are submerged. The filling factor of the primary direct water in the future is bedrock fracture water, and the second is the carst water and Quaternary pore water infiltrating through the structure fractures. The hydrogeology of the Ore Member can be defined as the simple type to the medium type. Ore Body A and B entirely lie under the base level of erosion and it should be noted that the underground reservoir formed by the bedrock fracture water and the underground tunnel water may become a threatening factor for the mining in the future. That should be paid more attention to.

The strata of Oceana Ore Member mainly consist of the lithologic characters of Ordovician conglomerate, sandstone, bioclastic rock and so on. There are three types of the underground water which are the carbonate carst water, the bedrock fracture water and Quaternary pore water. This Ore Member is in the lower position and the area of catchment is large. The amount of pumping water daily in Oceana mine was reported to be $1.14 \times 10^4 \text{ m}^3$ in the 1950's. If it came across flood period in the period of the rich rain, the water inflow of the underground tunnel had been as 2 to 3 times as usual. The low sections of the mine usually were drowned out. In 1960, the water inflow of the mine wells reached the maximum of $30000 \text{ m}^3/\text{d}$. Most of the ore bodies of this Ore Mine lie below the base level of erosion, so it is not suitable for water to flow away in nature. Carst water may remain there. The conditions of the hydrogeology may be divided into the complex type.

The strata of Mariposa Ore Member mainly consists of Cambrian-Ordovician

clasolite, Devonian-Silurian quartzite, fine-clastic rock and limestone, etc.. There are three types of the underground water which are carbonate carst water, bedrock fracture water and Quaternary pore water. This Ore Member is in the lower position . If it came across flood period in the period of the rich rain , the low sections of the mine usually were drowned out . The Dundas River crosses the west part of Mariposa Ore Member with a large Water-gathering area. The Water-gathering area in the whole basin is 60 km². The natural gradient of the river bed is 3%~5%.The river is 2~4m wide. It is a perennial river for all a year around with the depth of 0.2~0.6m deep. Most of the ore bodies of this Ore Member lie below the base level of erosion, so it is not suitable for water to flow away in nature . And Karst water may remain in this area , the type of the hydrogeology conditions of the Ore Member belongs to is the middle to complex class.

2. Engineering Geology

The ore bodies of Comstock Ore Member consist of mainly Pb-Zn ores of the clastic rock type and altered rock type. The lithologies of the wall rocks are mainly the upper Proterozoic shallow metamorphic sandstone, siltite, carbonatite, ect.. The physical and mechanical properties of rocks are stable, so the Such structures as cleavage, divisional plane, and minor faults is not developed,except for the position of ore beds, the interlayer fracture zones are generally not developed, either. The wall rocks are more stable.

The Comstock Ore Member has a history of mining in the way of both open and underground. The north open-pit is 240m long from north to south, and 80~120m wide from east to west with elevation of the pit bottom of 278m and the size of 68m×20m. The elevations of west and east slopes are separately 297m and 308m. The maximum of the vertical height of the open pit is 30m deep. There are 4 steps on the east slope, the height of each step is 6~8m with the

slope angle of $30^{\circ}\sim 36^{\circ}$. The west slope has 3 steps with slope angle of about 35° . The south open-pit is 100m wide from west to east and 140m long from north to south. There are 3 steps of which each height is 8 m and the top surface of the steps is 3~5m wide . The slope angle is 45° . The underground works is located below the south and north open-pit, which was developing through the shafts with the incline shafts. The wall rocks of the workings are in good condition .It is not necessary to do supporting measures during mining construction.

Currently, the slopes of the open-pit are in good condition, and may be used as ventilation shaft and water drains in the future. There are no records of serious incidents of engineering geology in the past.

The top and bottom plates of the ore bodies are better in geotechnical and geological performance. The hardness of the deposits belongs to hard or semi-hard. According to the engineering-geological features of ore bodies and wall rocks and according to the strata in which the major engineering-geological problem of the ore bodies may occur, the type of engineering-geological exploration in the mine area is defined as the one of massive rock. According to the features of the topology and geomorphy , the geological structure, the development degree of the rocks weathering, Quaternary covering thickness, and the hydrostatic pressure of the underground water, etc. the type of the engineering- geological exploration is divided as the simple one.

3. Environmental Geology

The topology in the mine area is hilly and rich in plants with forest coverage rate of 70%. The mining activities in the past were in the small scale, the goaf of the underground is limited, and there is no occurrence of landslide, collapse, cave-in , mud-rock flow and the other adverse geological disasters.

The surface water of the mine area is clear, but the indicators such as its Ph

value, conducting rate, acidity and alkalinity, and metal element contents etc. have changed in some degree due to the mining activities in the past, so the mining activities on a large scale in the future are bound to have greater harmful effect on the environments , so it should be noted to pay much more attention to that .

2. Brief introduce to geological exploration and evaluation work in the mine area.

(1) Geological exploration work

1. Geological work in the past

In 1879, the first tin vein was discovered in this mine area, and so from then on, the exploration and development of mineral metals began actively in the Mt. Zeehan mine area.

In 1884, a large number of small non-ferrous metal deposits on the surface and in the shallow were discovered, but the geological less investment was done at that time.

In 1880's to 1890's, people discovered the Silver Queen Lead-Zinc Mine, Ring River Tin Mine, Mt. Zeehan Ag-Pb Mine, Western Ag-Pb Mine, Oceana Ag-Pb Mine, Maestries Broken Hill and other non-ferrous metals deposits in succession.

Since the 60 years after 1940's, the geological exploration work in Mt. Zeehan mine area can be in general classified into three stages: stage I: from 1940's to 1950's, mainly for drilling works in Oceana; stage II: from 1970's to 1990's, mainly for drilling engineering in Oceana and Mariposa; stage III: since this century, drilling works focusing in Comstock and Oceana.

Since 2006, Oceana Mineral Resource Block Model Report and other 7 research reports and Report on Resources/ Reserves Estimation were completed by professional consulting companies or Mt. Zeehan Zinc Industry Company's

Engineering and technicians. Based on the Surpac software platform, according to " Australasia Published Standard for Reporting Mineral Resources and Ore Reserves " (JORC Code/ Joint Ore Reserves Committee Code) standards and classification program, through the establishment of the geological block model for the deposits and using ordinary kriging' s method ,these reports all estimated the retain resources of silver ,lead and zinc of the Ore Members in Mariposa, Oceana, Comstock, and some have summarized the information of mineral resources/ reserves in Mt. Zeehan mine area (within the mineral rights of Zeehan Zinc Industry Company). All of mineral resources/ reserves have been published in London Stock Exchange.

Since 2002, Zeehan Zinc Industry Company had constructed 24 pieces of exploratory trenches in total with the engineering quantities of 1022.94m. There was construction of 150 drilling holes in the past geological exploration in Comstock Ore Member with the engineering quantities of 18800.25m. There was the construction of 59 drilling holes in the Oceana Ore Member with the engineering quantities of 6045.1m. There was construction of 128 drilling holes in the Mariposa Ore Member with the engineering quantities of 9041.21m.

In 2008, the core recovery is 55% in average in the Oceana Ore Member, the data of the other core recovery were not seen , since the 1990's, there were only the word descriptions that the core recovery of the construction of the diamond drilling holes were all above 90% .

Since 2002, the analysis of all the samples from Mt.Zeehan mine area was carried out in SGS Laboratory in Perth, Western Australia. In order to ensure the accuracy and reliability of analysis results of Pb, Zn, Ag, atomic absorption spectrometry (AAS43B) chose inserting samples, blank samples and duplicate analysis sample as its analysis method. All of the backup samples were sent to ALS Laboratory in Perth for examining.

2. Work of this time

There was no new physical engineering quantities to be done in the verification work of the resources /reserves this time. The main task is to collect and collate the information of the geological exploration before, the data of mining and ore concentration , the deposit models ,the results of resource reserves estimation, and the information of the main economic index, etc. . Combined with the purpose and task of this work, this verification report on resources /reserves was compiled and completed through analysis, study and classify in whole.

The procedures and methods of the resource reserves verification this time are to study all kinds of the original information , comprehensive information with which were provided by the holders of mineral rights deep and detailedly. The main maps, tables and word materials were translated into Chinese. The methods of resources/ reserves estimaton we took were the Chinese traditional one. The reserved resources / reserves of Comstock Ore Member, Oceana Ore Member and Mariposa Ore Member within Mt.Zeehan mine area were separately calculated.

The Mapgis66 software was used to make vectorization of all maps or drawings, and all of the contents on the maps or drawings were translated into Chinese . The exploration line profiles, orebody vertical projection figure , resources /reserves estimates projection figure were re-drawn.trenching, The parameters of the trench and drilling engineering, the analysis datas of the amples, the testing data of the ore body weight, and the data of the engineering surveys, etc. were classified and . sorted out.

(2) Exploration type of deposits and engineering control degree

For Comstock Ore Member , Orebody A and B occur in layered or in similar layered, the shapes of the ore bodies are relatively simple and the type factor is

0.4. The length of ore body is 1400m, the width is 200 ~ 380m, the scale of the ore bodies belongs to large size, type factor is 0.9. The faults later had the damage to the ore bodies in some degree, so the type factor is 0.2. The thickness change factor of the Orebody A is 91.80% and the thickness change factor of the Orebody B is 98.56% , so both of the orebodies belong to more stable type and the valuation factor is 0.4. The change factor of Pb is 165% and the change factor of Zn is 140% in Orebody A . The change factor of Pb grade is 151% and Zn' s is 101% in Orebody B . The type of the distribution about the main-useful elements belongs to be more well-distributed , so the valuation factor is 0.5. Sum of the five of the type factors is 2.5, so that the exploration type is defined as the First Exploration Type.

Orebody P occurs in vein in Oceana Ore Member. The shape of the orebody is relatively simple. The type factor is 0.4. The length of the orebody controlled is 274m long. The extending depth of the orebody is 260m deep. The scale of the orebody belongs to the type of the medium size and type factor is 0.6. The later faults had the damage to the orebody in some degree, so the type factor is 0.2. The thickness change factor of the Orebody P as a stable type is 24.70% and the type factor is 0.6. The change factor of Pb grade in the orebody is 53.98%, Zn' s is 41.69%. The type of the distribution of the useful elements belongs to be well-distributed and type factor is 0.6. Sum of the five of the type factors equals 2.4 , so that the exploration type is defined as the Second Exploration Type.

Later-faults

The Orebody M and N in Mariposa Ore Member occur in layer and in similar layer and the shape of them is simple. The type factor is 0.4. The lengths of Orebody M and N are separately 286m and 520m, The extending depth of the orebodies are separately 130m and 42m. The scale type of the orebodies belong to small size, so the type factor is 0.4. The later faults had the damage effects

on the orebodies in some degree, so the type factor is 0.2. The range of thickness change factor of the orebodies is from 46.01% to 43.17% which belong to stable type, so the type factor is 0.6. The range of the Pb grade change factor is from 29.01% to 50.78%, and Zn's is from 49.31% to 64.19%, The distribution of the main-useful elements belongs to be well-distributed. type factor is 0.6. Sum of the five of the type factors is 2.2, so the exploration type is defined as the Second Exploration Type.

The resources controlled and estimated by 30 ~ 140 × 30 ~ 160m of Orebody A in Mariposa are called as the indicated resources of extrapolation. And The resources controlled and estimated by 240m ~ 620m × 230m ~ 500m are called as the inferred ones. In Orebody B of Mariposa, the resources controlled and estimated by 160m ~ 400m × 160m ~ 500m are called as the inferred ones.

Oceana's P ore body takes 30m ~ 40m × 40m ~ 90m to estimate the controlled amount of resources, and inferred amount of resource.

Mariposa ore block's M ore body takes 15m ~ 42m × 20m ~ 60m to estimate the controlled amount of resources, and inferred amount of resource; N orebody takes 50m × 10m ~ 28m to estimate the controlled amount of resources, and inferred amount of resources.

(3) Estimation of Mineral resources/reserves

Estimated industrial indicators of resource reserve adopt recommended general industrial indicators of code and standard:

Cutoff : $Zn \geq 1\%$ or $Pb \geq 1\%$;

Minimum industrial grade: $Pb + Zn \geq 2\%$;

Deposit average grade: $Pb + Zn \geq 6\%$;

Minimum mining thickness: $\geq 1.0m$;

Heterogeneous stone removed thickness: $\geq 2.0m$;

When mining thickness is less than 1.0m, and the grade is relatively high, the

corresponding meter percentage measurement is adopted.

Other minerals indicators: $Ag \geq 2 \times 10^{-6}$, $S (TS) \geq 4\%$.

Reserves estimation method is the geological block segment method.

Reserves estimation results (reserves amount to be submitted for examination):

Main mineral resources:

Lead-zinc, ore quantity of 33.3127 million tons, 943,728 tons of lead metal, zinc metal quantity of 1,339,563 tons, of which:

Indicated intrinsic economic resource (332) ore quantity of 4.5219 million tons, lead metal of 167.26 thousand tons, zinc metal of 145,232 tons;

Inferred intrinsic economic resources (333) ore quantity of 28.7908 million tons, lead metal of 776,469 tons, 1,194,331 tons of zinc metal.

Associated minerals:

Silver, the ore quantity of 33.3127 million tons, silver and metal of 1.01859 million kilograms.

(D) About the exploitation of the mine

In 1882, a silver galena was found in the mining area and later the first lead-silver mine-Mt.Zeehan Hill Mine was built in the area. Historically, main mining period in Mt.Zeehan mining area is between 1890 ~ 1918. In 1891, as many as 159 companies and syndicates operated in this area who mainly exploited surface shallow ore bodies, and had taken out of 277,000 tons of lead silver ore from 31 different mines, 193 thousand tons of metal lead and 26 million ounces (80.6 tons) of silver. In addition, during 1893 ~ 1925 Oceana ore block produced 1585 tons of silver lead concentrate.

In 1901, due to mining development, a smelter was built here.

After 1905, the mining industry in Mt.Zeehan area had been intermittent.

After World War II, mining activities in Mt.Zeehan mining area carried through slowly.

1954 ~ 1960, a total quantity of 130,236 tons of ore were taken out, 16.725 tons of silver (590,000 ounces) and 14,473 tons of lead were produced, after that mining was stopped.

In the past two decades, only small-scale mining was maintained.

C, D, E lead-zinc orebody were mainly exploited in history for Comstock ore block, and the mining method are open-pit mining and underground mining combined. Two open mining pit, one underground exploitation and mined-out area (already obsolete) formed.

In 1989, 7334 tons of lead-zinc ore were exploited only in Comstock ore block in Mt.Zeehan mining area, with zinc grade of 15.3%, lead grade of 3.6%, and silver grade of 62g / t.

In 1997, only about 1,400 tons of ore were taken out and then sent to Luosiborui smelter for processing of ores.

In 2000, Oceania Company built a joint venture for silver-lead-zinc prospecting and mining in Comstock ore block. In January 1,000 tons of high grade ore were produced, and the annual production was 3300 tons of high grade ore, with zinc grade of 21%, lead grade of 14% and silver grade of 540×10^{-6} .

Since then, excavation industry in Mt.Zeehan mining area suspended, only mineral exploration continued.

After many years of mining, C, D, E basic lead-zinc ore body located in Comstock shallow area almost exhausted. The mining depth is 40 ~ 60m, while A, B ore bodies had not been exploited due to deep burial.

3. About report reviews

(I) Review basis

1. The technical standards that the review are based on

The technical standards that the review of this report are based on:

Solid Mineral Resource / Reserve Classification (GB / T 17766-1999);

Geological Survey Norms for Copper, Lead, Zinc, Silver, Nickel, Molybdenum Ore (DZ / T 0214-2002);

Compiling Standard for Solid Mineral Resources Reserves Verification Report Guotu Zi Fa (2007) No. 26;

Mine Hydrogeology and Engineering Geology Exploration Norms in the Mining Area (GB12719-91);

Solid Mineral Exploration / Closed-pit/Mine Geological Report Compiling Standards for (DZ / T 0033-2002), etc.

2. The purpose of review

Zeehan Zinc Pty Ltd was listed at London Stock Exchange on March 6, 2007, and the stock code is ZZL. In early 2008, CREAT Group acquired 70% shares of the control of Zeehan Zinc Pty Ltd through convertible bonds. The purpose of this report is for financing.

(B) Review methods

1. Deposit scale and review methods

Resources estimated in this Report is large-scale and the review method is joint checkup/review.

2. Determination of relevant factors of the review

(1) The range of resources estimated is within the scope of mining and prospecting permit.

(2) Estimated industrial indexes of resource reserves may refer to the existing norms.

(3) According to Comstock ore block 5 factors type coefficient sum is 2.5, thus determined as the first survey type; for Oceana ore block, 5 factors type coefficient sum is 2.4, thus determined as the second survey type; for Mariposa ore block 5 factors type coefficient sum is 2.2, thus determined as the second survey type.

(4) The review company, report compiling company shall give to a written commitment to the authenticity of materials to be reviewed.

3. Resource reserves estimation method and checking computations

Geological block section method is applied to estimate reserves, and no other methods are used for verification.

4. Deadline of resource reserves estimation

The resource reserves estimation results of this report is up to December 31, 2008.

(3) Major achievements

1. This verification report is compiled based on the detailed geological survey, mine production and ore-dressing data collected and collated before, after comprehensive edit, translation and map vectorization, and in accordance with existing norms, and the provisions. The Report is prepared on the basis of the relatively complete basic geological information, and the methodology of preparation is appropriate.

2. The Report outlines the mining areal stratigraphy, tectonics, igneous rocks, and deposit characteristics, and studies the areal tectonic history, and gives description to rock formation and structure of the mine and the ore block. The Report has found out ore body horizon and geological conditions of mineralization.

3. According to Comstock ore block 5 factors type coefficient sum is 2.5, thus determined as the first survey type; for Oceana ore block, 5 factors type coefficient sum is 2.4, thus determined as the second survey type; for Mariposa ore block 5 factors type coefficient sum is 2.2, thus determined as the second survey type. The survey type determined is basically appropriate.

4. In 2008 for the Oceana ore block, the average core recovery is 55%. Since the 1990's, constructed core recovery were all over 90%. Samples analysis was

completed in SGS Laboratory, and chemistry analysis has been adopted, and standard sample, blank samples and duplicate analysis sample were inserted. The survey works and processing of testing quality of samples meet the requirements.

5. For the past geological prospecting, Comstock ore block 150 bores were constructed, engineering quantity 18800.25m; Oceana ore block construction of a total of 59 drilling, engineering quantity 6045.1m; Mariposa ore block total of 128 bores, engineering quantity 9041.21m. Through exploration, ore body distribution, quantity, shape, size, production condition, and changes has been basically ascertained and the continuity of ore body has been basically established, and the ore quality has been basically identified.

6. The report describes the floating and sinking test results that was carried out in Comstock ore block: under the conditions of the medium proportion 3.31 and 2.85, 12 ~ 6mm grain size of samples Zn recoveries were 94.3%, 95.5%, Pb recovery was 82.0 %, 83.3%, below 6mm grain size samples of Zn, the recovery rates were 89.6%, 90.8%, Pb recovery rates were 79.0%, 80.6%. The ore deposit prospecting and ore-dressing and processing technology performance has been largely identified.

7. The report describes the hydrogeological conditions of each ore block in the Mt.Zeehan lead-zinc mining area. The report also comments on the slope stability of open-pit mining in the past, trenches supporting conditions, environmental geology status quo, etc. the hydrogeology, engineering geology and environmental geological conditions in the mining area has been roughly found out.

8. The industrial indicators of resource reserves estimation refer to recommended general industrial indexes of existing norms. Geological block segment method is used to estimate resource reserves, and resources reserves

estimation parameters are determined as reasonable and estimation results reliable.

9. Complete sections of the report, and drawings, schedule format and content is in line with the requirements.

(4) Problems and suggestions

1. In the past geological exploration work, the ore body engineering controls were uneven and deep ore body or edge had seldom engineering controls, the proposed work will pay further attention.

2. Proposed for future hydro-geological, engineering geological exploration and mineral processing and ore-dressing test.

(5) The main differences and opinions on mineral reserves by the valuers

There are no differences or opinions on mineral reserves/resources between the evaluator in the present report reviews.

(6) Conclusion

The Reserve Center agrees to approve resources/reserves review of the following minerals:

Main mineral resources:

Zinc, ore volume of 25.253 million tons, metal quantity of 776.23 thousand tons, with an average grade of 3.08%, of which:

Indicated intrinsic economic resources (332) the amount of 4.5029 million tons of ore, metal of 108,603 tons, with an average grade of 2.41%;

Inferred intrinsic economic resources (333) the amount of 20.7501 million tons of ore, metal of 667,627 tons, with an average grade of 3.23%.

Symbiosis Mineral:

Galena, ore quantity of 25.253 million tons, metal of 760,794 tons, with an average grade of 3.02%, of which:

Controlled intrinsic economic resources (332) the amount of 4.5029 million tons

of ore, metal of 160.69 thousand tons, with an average grade of 3.57%;

Inferred intrinsic economic resources (333) the amount of 20.7501 million tons of ore, metal content of 600,104 tons, with an average grade of 2.90%.

Other minerals:

Silver, the quantity of ore is 25.253 million tons, metal quantity is 1,285,111 kilograms, with an average grade of 51×10^{-6} , in which:

Controlled intrinsic economic resources (332) is 4.5029 million tons, metal of 289,793 kilograms, with an average grade of 64×10^{-6} ;

Inferred intrinsic economic resources (333) the amount of 20.7501 million tons of ore, metal of 995,318 kilograms, with an average grade of 48×10^{-6} .

Sulfur, inferred intrinsic economic resources (333) the amount of 25.253 million tons of ore, the amount of sulfur (TS) 1161640 tons, average grade of 4.60%.

Zinc, lead, silver reserves estimation results are listed in Annex 4.

Description:

The upper part of the Comstock A orebody, C, D, E ore body, and Oceana P ore body branch are regarded as the mined-out area, there is no verification for resource reserves.

4. Changes of reserves/resources

Since there are great difference among each report about the range of reserves estimates, reserves estimation methods, ore body weight value, special high-grade treatment method, industrial indicators, and different authors have different judgments and choices on the works, samples, laboratory analysis value and other information and data, and therefore the outcome of reserves estimates vary widely. The estimation result this time is much greater than in past years, and the main factors are as follows:

Prospecting works involving Comstock A, B ore bodies, 358.6 358600 exploration line to the east and 357400 exploration line to the west are not used

in this report. Instead, in accordance with standards of the first survey type lead-zinc ore body control the spacing requirements, this report use all of them to double the length of the ore body and double the size of resources reserves estimates, which is the most important reason for substantial increase in Comstock ore block reserves;

Weight value in the previous geological report is 2.7g/cm^3 , this is the average value of 12 bores, 1796 results of core weight, regardless of rocks, and ores. During the resource reserves estimation process this time, the core values of 12 bores were sorted and finally representative nine bores 108 ore body weight test values were selected for average calculation, the result is the average body weight of ore 3.34g/cm^3 , an increase of 23.7%, compared with the past data.

5. Examination conclusions

compiling of Australia Tasmania Mt.Zeehan Lead-Zinc Mining area reserves verification report accord with the relevant specifications and requirements, to related materials submitted for examination adhere to relevant provisions of the reserves, and the reserves center has approved the report.

Appendix 1: the Framer of the reviewing expert group on 《The Resource /Reserves Verification Report of Pb-Zinc Mine Area of Zeehan, Tasmania, Australia》

Appendix 2: Members Attended The reviewing meeting On 《The Resource /Reserves Verification Report of Pb-Zinc Mine Area of Zeehan, Tasmania, Australia》

Appendix 3: Relationship map and Form of the Scop of Tenements-- Resources /Reserves Estimated in Mine Area of Zeehan, Tasmania

Appendix 4: The Sumary of Pb-Zn-Ag Resources /Reserves Estimated in Mine Area of Zeehan, Tasmania

Appendix 1 the Framer of the reviewing expert group on «The Resource /Reserves
Verification Report of Pb-Zinc Mine Area of Zeehan, Tasmania, Australia»

Name	M/F	Spetiality	Qualifecation	If Evaluator	Signiture
Meng Xianqin	M	Geology	Proffesor	Yes	
Gao Limin	M	Geology	Proffesor	Yes	
Wang Hanyu	M	Geology	Senior Engineer	Yes	
Zhou Shenghua	M	Geology	Proffesor	Yes	
WangYong	M	Geology	Proffesor	Yes	
Han Zaisheng	M	Hydro、Engineering & Environment	Proffesor	Yes	
Yong Weihua	F	Economics	Proffesor	Yes	

Appendix 2

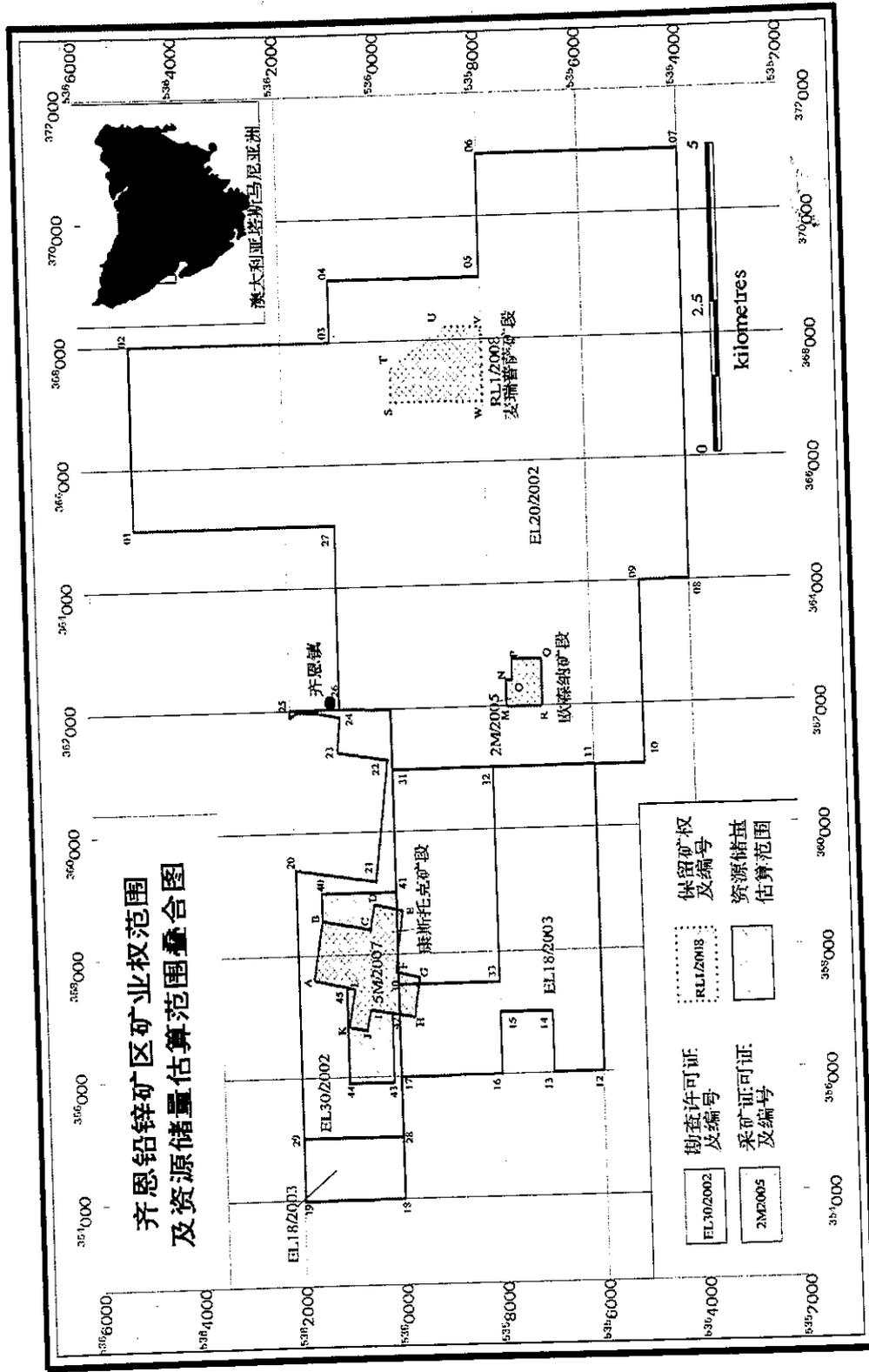
Members Attended The reviewing meeting On «The Resource /Reserves Verification

Report of Pb-Zinc Mine Area of Zeehan, Tasmania, Australia»

Name	Occupation	SERVING IN
Yang Qiang	Vice Manager	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Meng Xiangqin	Proffessor	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Gao limin	Proffessor	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Wang Hanyu	Proffessor	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Zhou Shenghua	Proffessor	The Survey Center of Non-ferrous Metals, Beijing
Wang Yong	Vice Manager	The Zhongsedike Resources Technical Limited Company
Han Zaisheng	Proffessor	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Yong Weihua	Proffessor	The Mineral Resources /Reserves EvaluationCentre, The Ministry of Land and Resources
Ren Xiaojian	CEO	Creat Group
Meng Qingfeng	Invest director	Creat Group
Li Fumin	Senior Engineer	Creat Group
Li yi	Secretary	Creat Group
Meng Wei	Chief Engineer	Sinotek (Beijing) Exploration Technical Limited Company
Li Guangwei	Geologist	Sinotek (Beijing) Exploration Technical Limited Company

Appendix 3 Relationship map of the Scope of Tenements-- Resource /Reserves

Estimated in Mine Area of Zeehan, Tasmania



Appendix 3

Comstock 5M/2007

No.	Coordinate		Coordinate	
	E	S	x	y
A	145° 17' 05.890"E	41° 52' 56.440"S	357642.24	5359926.81
B	145° 17' 48.413"E	41° 53' 02.864"S	358626.66	5359748.13
C	145° 17' 39.850"E	41° 53' 34.468"S	358448.61	5358769.06
D	145° 17' 57.707"E	41° 53' 36.990"S	358861.83	5358699.42
E	145° 17' 53.121"E	41° 53' 55.105"S	358767.20	5358138.38
F	145° 17' 08.894"E	41° 53' 48.861"S	357743.82	5358310.74
G	145° 17' 05.094"E	41° 54' 03.908"S	357665.51	5357844.71
H	145° 16' 37.091"E	41° 54' 00.317"S	357017.78	5357942.57
I	145° 16' 43.818"E	41° 53' 31.053"S	357154.73	5358848.63
J	145° 16' 29.198"E	41° 53' 28.866"S	356816.31	5358909.34
K	145° 16' 31.725"E	41° 53' 17.885"S	356867.76	5359249.33
L	145° 16' 58.984"E	41° 53' 21.921"S	357498.73	5359137.41

Oceana 2M/2005

No.	Coordinate		Coordinate	
	E	S	x	y
M	145° 20' 13.842"E	145° 20' 13.842"E	362054.89	5355944.27
N	145° 20' 31.816"E	145° 20' 31.816"E	362469.25	5355944.27
O	145° 20' 31.131"E	145° 20' 31.131"E	362455.50	5355838.75
P	145° 20' 46.263"E	145° 20' 46.263"E	362805.22	5355792.88
Q	145° 20' 45.803"E	145° 20' 45.803"E	362805.20	5355243.98
R	145° 20' 13.253"E	145° 20' 13.253"E	362054.89	5355243.97

Mariposa RL1/2008

No.	Coordinate		Coordinate	
	E	S	x	y
S	145° 23' 52.529"E	145° 23' 52.529"E	367057.00	5358045.16
T	145° 24' 15.512"E	145° 24' 15.512"E	367586.93	5358047.20
U	145° 24' 45.728"E	145° 24' 45.728"E	368304.66	5356913.79
V	145° 24' 43.144"E	145° 24' 43.144"E	368257.48	5356244.40
W	145° 23' 51.069"E	145° 23' 51.069"E	367056.99	5356244.38

Appendix 3

EL30/2002

No.	Coordinate		Coordinate	
	E	S	X	y
20	145° 18' 25.115"E	41° 52' 47.269"S	359463.42	5360246.06
21	145° 18' 13.760"E	41° 53' 40.053"S	359233.79	5358612.24
22	145° 19' 39.438"E	41° 53' 50.340"S	361215.16	5358333.61
23	145° 19' 46.313"E	41° 53' 18.325"S	361354.41	5359324.53
24	145° 20' 12.014"E	41° 53' 21.405"S	361948.81	5359241.01
25	145° 20' 17.458"E	41° 52' 48.910"S	362054.90	5360246.07
26	145° 20' 16.617"E	41° 53' 21.321"S	362054.88	5359245.66
28	145° 15' 12.118"E	41° 53' 49.224"S	355052.04	5358245.23
29	145° 15' 13.881"E	41° 52' 44.404"S	355051.98	5360246.09
30	145° 17' 00.563"E	41° 53' 50.859"S	357553.00	5358245.25
31	145° 19' 32.395"E	41° 53' 53.102"S	361054.46	5358245.22

EL18/2003

No.	Coordinate		Coordinate	
	E	S	x	y
11	145° 21' 38.394"E	41° 56' 02.744"S	364035.50	5354301.21
12	145° 15' 51.981"E	41° 55' 59.520"S	356052.37	5354243.56
13	145° 15' 52.860"E	41° 55' 27.110"S	356052.38	5355243.99
14	145° 16' 36.258"E	41° 55' 27.764"S	357052.80	5355243.98
15	145° 16' 37.130"E	41° 54' 55.354"S	357052.80	5356244.41
16	145° 15' 53.739"E	41° 54' 54.701"S	356052.40	5356244.39
17	145° 15' 55.494"E	41° 53' 49.881"S	356052.39	5358245.25
30	145° 17' 00.563"E	41° 53' 50.859"S	355052.04	5358245.23
33	145° 16' 58.826"E	41° 54' 55.679"S	361054.46	5358245.22
32	145° 19' 30.701"E	41° 54' 57.923"S	355051.98	5360246.09

EL18/2003

No.	Coordinate		Coordinate	
	E	S	x	y
18	145° 14' 28.736"E	41° 53' 48.561"S	356052.40	5356244.39
19	145° 14' 30.514"E	41° 52' 43.742"S	356052.39	5358245.25
29	145° 15' 13.881"E	41° 52' 44.404"S	365056.17	5359245.67
28	145° 15' 12.118"E	41° 53' 49.224"S	362054.88	5359245.66

Appendix 4

The Summary of Pb-Zn-Ag Resources /Reserves

Estimated in Mine Area of Zeehan, Tasmania

Scope	Area	Orebody	Classify	Average		Tonnage (t)	The amount of metals			
				Zn (%)	Pb (%)		Ag (10 ⁻⁶)	Zn (t)	Pb (t)	Ag (kg)
Lease	Comstock	Total	332	2.72	3.02	82	2479486	67540	74912	202845
			333	3.29	2.41	68	12040789	396029	290096	726565
			332+333	3.19	2.51	70	14520275	463569	365007	929410
	Oceana	Total	332	1.41	3.59	28	1402627	19771	50410	38710
			333	1.15	3.71	32	2269852	26063	84235	71531
	Mariposa	Total	332	3.43	5.70	78	620818	21292	35368	48238
			333	3.49	5.46	79	1252592	43690	68438	98494
			332+333	3.47	5.54	78	1873411	64981	103806	146732
			332	2.41	3.57	64	4502931	108603	160690	289793
			333	2.99	2.84	58	15563233	465782	442768	896590
Lisence	Comstock	Total	332+333	2.86	3.01	59	20066164	574385	603459	1186383
			333	3.89	3.03	57	5186869	201846	157335	98728
Zeehan	Sumary	Total	332	2.41	3.57	64	4502931	108603	160690	289793
			333	3.23	2.90	48	20750102	667627	600104	995318
			332+333	3.08	3.02	51	25253033	776230	760794	1285111