EXPLORATION PERMIT FOR COAL
No. 971 – COCKENZIE

REPORT FOR THE 12 MONTHS ENDING 12 OCTOBER 2006

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SUMMARY

This report details the exploration activities for EPC 971 held by the BHP Coal Pty Ltd, during the first 12 month period to 12 October 2006.

Exploration Permit for Coal No. 971 (Cockenzie) was granted over 292 sub-blocks and is located approximately 11 km south of Nebo in Central Queensland (Figure 1). The EPC has been granted to BHP Coal Pty Ltd for a term of five years on 13 October 2005.

During the first year of tenure a photogeological interpretation was completed from colour stereoscopic aerial photographs, ASTER imagery and geological maps.

The Permian Bowen Basin sequence crops out mainly near the eastern margin of the EPC and comprises sediments assigned to the Back Creek Group and two subdivisions of the underlying Lizzie Creek Volcanic Group. Where exposed in this eastern area, the Back Creek Group generally dips shallowly to moderately towards the west but is locally modified by fault-related folds. Based on subtle evidence, additional zones of possible Back Creek Group sub-crop are also interpreted in which the sequence may be folded on northerly trending axes.

Permian and ?Tertiary rhyolitic intrusions occur locally and there are also several photogeological anomalies which could be intrusions and, in one case, a rhyolitic eruptive centre.

Most of the area comprises Tertiary and Quaternary cover, subdivided into 12 unit types. The oldest ones are the Tertiary Duaringa Formation that crops out locally in the southeast, and a widespread Tertiary/Quaternary unit of dissected, poorly consolidated alluvium/colluvium. The latter is inferred to be a less consolidated equivalent of the Duaringa Formation, erosional material derived from it and possibly also soil-mantled Duaringa sub-crop. In the southwest this unit includes very local basalt outcrop and is capped by a soil/alluvium-veneered, slightly elevated plain that may represent a palaeosurface. On the latter, possible 'basalt' soils are locally developed.

Other cover types delineated include dissected Tertiary /Quaternary alluvial fan deposits, Quaternary valley alluvium aprons and terraces, recent alluvial/colluvial and soil veneers and alluvium of the broad Denison/Funnel Creek flood plain that bisects the area.

The Cockenzie and Bee Creek lineaments may represent significant transverse subsurface faults. Similarly the straight nature of the Denison/Funnel Creek flood plain reflects a concealed structural corridor, a fault zone. In addition, the photogeology and previous drilling suggests that the widespread Tertiary/Quaternary unit contains interlayered basalt. This also occurs in the interpreted zones of Duaringa Formation because, based on previous work, basalt can occur within it (Snodin, 2006).

Between 11 July and 6 August 2006 Velseis recorded 62.48km of 2D mini-SOSIE reflection data along six regional traverses and the data was processed by Velseis Processing Pty Ltd.

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Location Map

EPC 971 - COCKENZIE

Figure: 1

Drawn: P. Watts	Date: 29.04.2005	Scale 1:180,000	Revision: 0
Checked: R.Stephens	Filename: 20050307-2b.mxd		

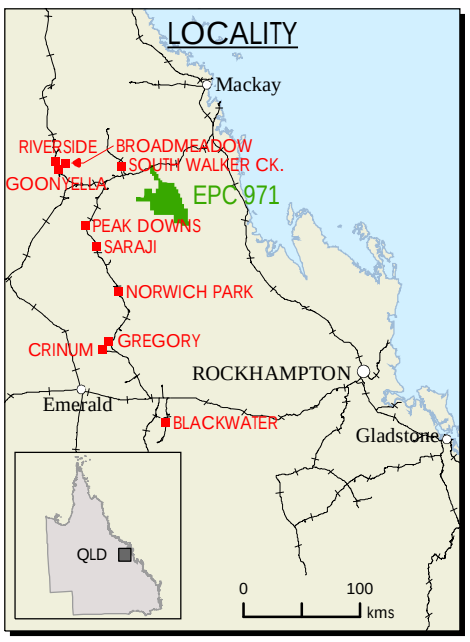
670000 690000 710000

7590000 7570000 7550000 7530000

N

Braeside
Bluevale
Oxford Downs
PEAK DOWNS HIGHWAY
Lot 4 WHS354 BHP MITSUI COAL
Waitara
Tierawoomba
Lot 36 KL811178
Mt Flora
Lot 3 WHS21
New Yard
Lot 1 WHS15
DIPPERU NATIONAL PARK
Cockenzie
Lot 2 WHS441
Lot 1 WHS3
MARLBOROUGH - SARINA ROAD
Lot 3 KL162
Lot 4 RP839291
Harry James Lagoon
Lot 1 RP845112
Lot 6 WHS377
Lot 4 SP168490
Lot 10 KL175
Lot 16 RP845112
Lot 3 RP839291
Lot 2 RP839291
Lot 6 KL132
Lot 9 SP168491
Lot 1 RP620009
Morpeth
Lot 10 KL111
Saltbush Park
EPC971
Lot 8 SP168491
Lot 11 KL117
Lot 4 KL157
Lot 15 KL116
Lot 7 KL75
Overflow
Rookwood Out Station

LOCALITY



5 0 5
Kilometres

Projection: AGD84 AMG Zone 55

1.0 INTRODUCTION

Exploration Permit for Coal No. 971 (Cockenzie) was granted over 292 sub-blocks (Appendix A) and is located approximately 11 km south of Nebo in Central Queensland. The EPC has been granted to BHP Coal Pty Ltd for a term of five years on 13 October 2005.

The exploration target is low volatile PCI coal, in the poorly explored eastern margin of the Bowen Basin between the Fitzroy Development road and the Sarina-Marlborough road. Geologically, the exploration area lies in the Permian Taroom Trough depocentre on the eastern flank of the Permo-Triassic Bowen Basin.

This area is thought to contain Permian coal measures blanketed by Cainozoic cover of varying thickness, and is the northern most 292 sub-blocks closest to transport infrastructure.

This report describes the program of work carried out in EPC 971 over the 12 months to 12 October 2006.

2.0 PREVIOUS EXPLORATION

During 1968, Clutha Development Pty Ltd drilled 8 open holes within AP 51C (Clutha Development Pty Ltd, 1968). Most of these holes were drilled to 500 feet and none intersected coal. Grimstone & Thomas (2004) conducted some 2D mini-SOSIE exploration followed by some drilling within EPC 688 before relinquishing part of the area which now occurs on the western side of the EPC 971. In 2000 to 2001 they also drilled 6 open holes between 111m and 174m deep which intersected some thin coal units of the German Creek Formation which range from 0.16m to 2.16m in thickness.

3.0 PHOTOGEOLOGICAL INTERPRETATION

A photogeological interpretation of colour aerial photography was carried out over a 950 sq km area of EPC 971 with a small surrounding boundary and also included 2.5 days of field reconnaissance. Stereoscopic colour air-photos were used for interpretation with the results recompiled to a georeferenced ASTER image base prior to digitizing (Maps 1 & 2). The original photogeological interpretation report has been attached as Appendix B.

3.1 PHYSIOGRAPHY

Main physiographic features are shown in Figure 2. The principal drainages are Nebo, Denison, Funnel and Bee Creeks and, in the far southeast, the Connors River. They join to form a system with overall southerly flow to a confluence with the Isaacs River beyond the EPC area southern margin.

Elevations in the area are mostly in the range 130m to about 200m. They are associated with three main landform types as follows:

1) Flood plain

A main zone is associated with Nebo, Denison and Funnel Creeks and is up to 7 km wide. It bisects the exploration area on a north-north westerly trend coincident with the lowest local elevations. On it, numerous drainage courses form complex braided and meandering patterns. There is part of a similar alluviated plain along the Connors River near the southeast corner of the EPC area.

2) Undulating incised terrain

This occurs on the east and west sides of the Nebo/Denison/Funnel Creek flood plain. The undulating landform is weakly incised by fairly dense dendritic secondary drainage with some courses bordered by significant alluvial flats. East of the flood plain, the landform is associated with gently rising ground towards the Connors Ranges beyond the exploration area. Locally here it also includes low mesas of Tertiary bedrock with lateritised cappings and a few prominent hills associated with outcrop of more resistant Permian acid volcanics. One example of the latter rises to 400m. West of the flood plain, the undulating incised terrain has a local relief of up to about 20m and is developed on poorly consolidated older alluvial/colluvial deposits.

3) Elevated alluvial/soil plain

This zone, in the southwest of the exploration area, is a flat to gently south-sloping surface with abundant melon holes. Its elevation is slightly higher than that of undulating incised terrain that fringes it. Drainage on it is sparse and incision is very weak or absent.

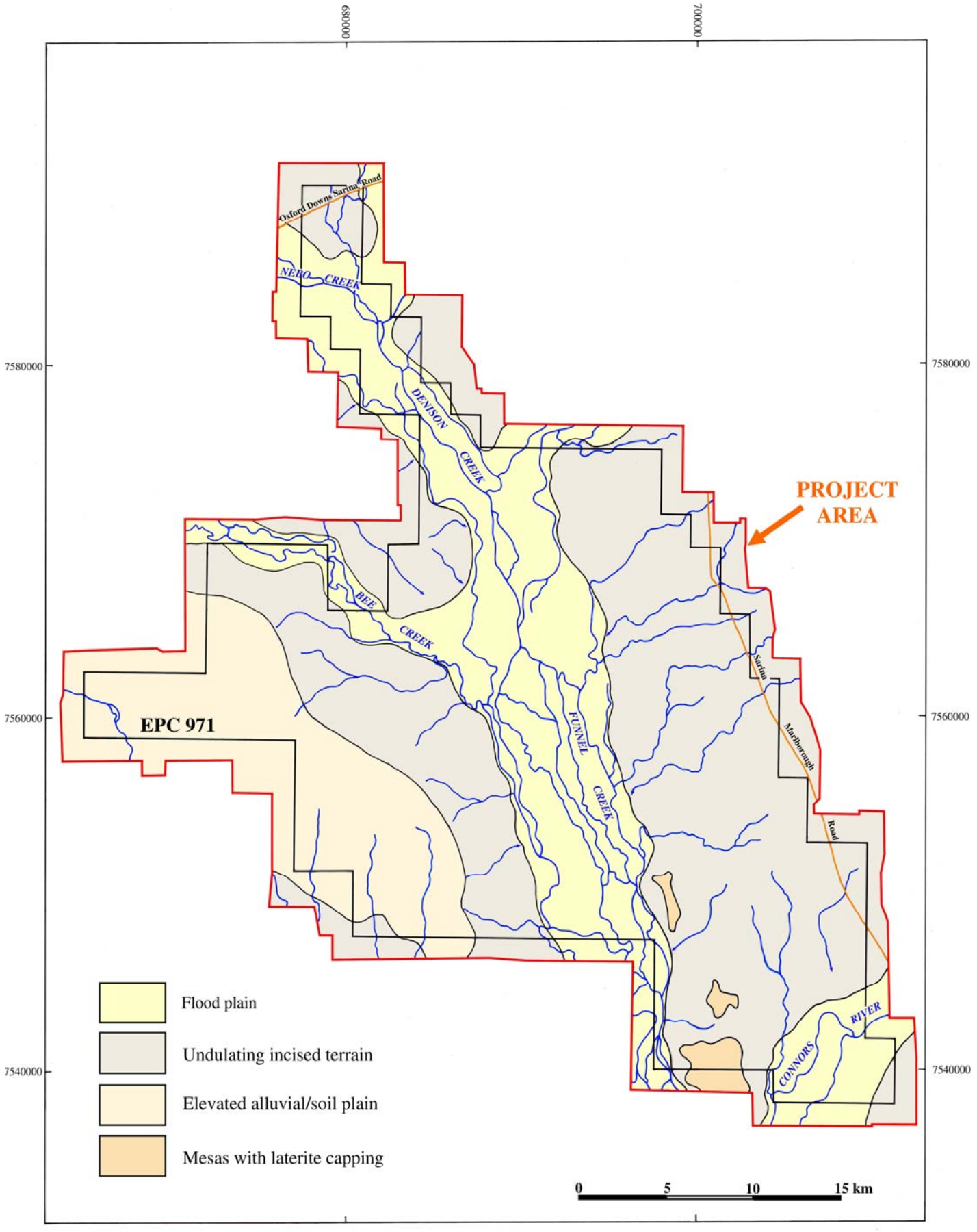


Figure 2. Physiography.

4.0 GEOLOGY

The geology of the area is based on the photogeological interpretation is summarised below and can be seen on Maps 3 & 4.

4.1 REGIONAL GEOLOGY

The Cockenzie exploration area lies in the Permian Taroom Trough depocentre on the eastern flank of the Permo-Triassic Bowen Basin. It straddles the boundary between the Nebo Synclinorium in the north and the Dawson Folded Zone in the south (Mallett et al., 1995).

4.2 LOCAL GEOLOGY

Permian outcrops are shown almost entirely near the eastern margin of the EPC, a zone also close to the basin margin itself. Here the exposed sequence is mapped as Back Creek Group sediments underlain by Lizzie Creek Volcanics. The Bowen Basin Solid Geology Map (Qld. Dept. Mines, 1988) infers undifferentiated Back Creek Group beneath cover over the whole exploration area. However, in the far west, Macarthur Exploration' s drilling (5 holes) intersected Permian coal seams at depths between 70m and 134m beneath Tertiary cover and deep weathering (Grimstone and Thomas, 2004). The seams were thin (<1m to 2.16m), widely spaced, and assigned to the German Creek Formation rather than the Back Creek Group.

4.3 STRATIGRAPHY

The interpreted litho-units are described below in order of decreasing age. Although the unit contacts are based on photogeological evidence, the unit nomenclature, age and information about contained lithologies is guided by the published geological mapping and supplemented by the reconnaissance fieldwork.

1) The Lizzie Creek Volcanic Group is a bimodal sequence that crops out intermittently straddling the eastern margin of the exploration area. Photogeologically it is divided into the Mount Benmore Volcanics and a more local development of Cobweb Mountain Rhyolite.

The Mount Benmore Volcanics (Pvb) are expressed on the air-photos as zones of low, gently undulating, smooth-textured terrain grading locally to areas of slightly higher relief and dissection. Associated soil colours are patchily brown to pale. A coarse layering is intermittently expressed as subtle slope breaks, changes in soil/bedrock colour and in the distribution of sparse vegetation. Principal recorded lithologies for the unit are basalt, basaltic andesite, volcaniclastic sandstone and rudite (DNRM, 2004; DNRME, 2004). In areas examined during the current fieldwork the unit was poorly exposed, though some

outcrop was observed of very amygdaloidal, greenish grey ?andesitic volcanics and pale limestone/dolomite.

The Cobweb Mountain Rhyolite (Pvc) crops out only locally near the exploration area margin in the southeast. It is distinctive photogeologically and forms rounded hill and short ridge topography with markedly (more resistant) higher relief than the adjacent Mount Benmore Volcanics. Fracture-controlled gullies are developed on the unit and interpreted coarse layering is subtly defined by ridge trends, bedrock/soil colour changes and vegetation distribution. Recorded lithologies are volcaniclastic sandstone, conglomerate, siltstone, breccia and rhyolite flows. The published mapping (DNRME, 2004) shows the unit as older than the Mount Benmore Volcanics although photogeological evidence for this is ambiguous.

2) Rhyolite (Pr) is delineated just north of the Cobweb Mountain Rhyolite. The unit is expressed as a cluster of small rugged hills (in places thickly vegetated) that stand out relative to the lower relief Mount Benmore Volcanics surround. At air-photo scale the unit appears to be massive. Published mapping (DNRME, 2004) notes the presence of intrusive rhyolite components. The rounded outlines of the individual occurrences delineated in the photogeological study also suggest this.

3) Undifferentiated Back Creek Group (Pb) occurs as a 20km long outcrop zone of west-dipping sequence overlying the Mount Benmore Volcanics near the eastern margin of the exploration area. In addition three smaller windows are more tentatively interpreted to the west of this near Atlantic Creek. The unit has low relief with a flat to very gently undulating landform. Thin layering (at air-photo scale) is intermittently expressed as small breakaways and parallel striping caused by variations in soil colour and vegetation distribution. Based on air-photo characteristics the unit cannot be subdivided. Field exposures of the sequence are rare, but sandstone (including pebbly varieties), laminated siltstone and some mudstone was observed at several localities. Published mapping records sandy coquinite and minor coal in addition to the above lithologies. Malone (1970) notes that the sequence includes the Tiverton Formation (lowermost Back Creek Group), but does not delineate it.

4) Possible Back Creek Group sub-crop (Pb?) is interpreted as a number of small windows in areas of younger cover, both east and west of the Funnel Creek flood plain. Their identification is tentative and based mainly on very subtle air-photo evidence of possible associated bedding expressed in the micro relief and soil colour/texture patterns. Two zones of Pb? were visited during the fieldwork, but because of the lack of exposure, the presence of Back Creek Group could not be confirmed.

5) Duaringa Formation and associated deposits

Duaringa Formation (Tu), of Early Tertiary age is interpreted in a number of zones in the south-eastern part the exploration area. The unit forms slight to moderate positive relief with smooth to rough-textured micro relief and patchy very pale tones on the air-photos. Occasional ragged breakaways define some sub-horizontal or gently tilted bedding. Outcrops examined during the current fieldwork comprise very pale weathering or patchily

iron stained friable, massive felspathic sandstone and clayey siltstone. Published mapping records in addition, mudstone, conglomerate, lignite, basalt and oil shale in the formation.

Laterite palaeosurface (Td) occurs as a number of remnants capping the Duaringa Formation in the southeast of the exploration area. They are flat to very gently undulating with an intermittent bounding scarplet or gentler breakaway. Associated clay pans are sometimes present on them, as is thin layering defined on the air-photos by colour banding.

Indurated slope debris (TQc) form small sloping aprons around the lateritic palaeosurfaces and are derived from them. They are at least partly indurated and are themselves currently undergoing dissection and erosion.

6) Dissected, poorly consolidated alluvial/colluvial deposits (TQa) are interpreted over large continuous zones and more patchy developments on both sides of the Denison/Funnel Creek flood plain. On the air-photos they are characterized by elevated undulating relief relative to adjacent low-lying younger alluvium. They are currently undergoing erosion associated with a relatively dense pattern of incised dendritic drainage. Very locally, subtle breakaways and pale soil colour patterns define what appears to be sub-horizontal layering. Where examined during the fieldwork the unit mainly comprises poorly sorted, unconsolidated to weakly consolidated sands, sometimes clayey or pebbly. More locally, gravels are also present and silcrete cobbles can occur on the capping soils.

As interpreted in the photogeological study, TQa is roughly coincident with large zones of Tertiary Duaringa Formation shown on the existing Bombandy geological map (DNRMW, 2006). However to the north on the Nebo map (DNRM, 2004) it is shown as Tertiary-Quaternary high level alluvium/colluvium. Our conclusion, based on air-photo expression and field examination, groups the two types as a single unit of heterogeneous origin. We suggest that it includes a less consolidated sand/gravel/clay equivalent of the Duaringa Formation (Tu), together with younger erosional products derived from it. In addition, it may include zones of patchily pale soil cover mantling Tu sub-crop, particularly in the southeast of the exploration area where the latter also crops out.

7) Tertiary Basalt (Tb) vesicular cobbles with associated black soil were observed in the field over one small area within TQa west of the Funnel Creek flood plain. On the air-photos this zone is faintly visible as a local darker-tones, but on the ASTER (TM 247 look-alike) it is very distinctive with a dark purple spectral signature.

8) ?Tertiary basalt or ‘basalt’ soil (Tb?) is tentatively delineated as a cluster of irregular patches in zones of TQa and Qph southwest of Bee Creek. Their identification is inferred principally from their purple/blue ASTER spectral signature similar to that for Tb further east (see 7, above). They have not been checked in the field and therefore need to be confirmed. It is significant however that Macarthur Exploration’ s drill hole in this area intercepted several layers of basalt in unconsolidated (Tertiary) sediments between 1.5m and 43m (Grimstone and Thomas, 2004).

9) ?Intrusive rhyolite (Tir?) crops out locally near the exploration area south-western margin. Together with possible Back Creek Group sediments (Pb?), it forms an elliptical, 'anomalous' part-quarried hill rising above the surrounding soil covered plain. This geomorphic expression suggests an intrusive origin and the lithology observed in the current fieldwork comprised hard, grey, fractured, fine-grained 'rhyolite' with feldspar phenocrysts. Evidence for the presence of adjacent Back Creek Group sediments (on the east side) derives mainly from previous published mapping (Malone,1970; DNRMW, 2006). A contact with Tir? is tentatively delineated on ASTER image evidence.

10) Dissected alluvial fan deposits (TQf) are interpreted as a large zone in the east (northeast of Harry James Lagoon) and a smaller one in the southeast corner of the exploration area. They form dissected upland areas similar to TQa but are associated with a partly preserved flat to very gently undulating top surface with melon holes that slopes gently to the west. On that basis they are inferred to be older alluvial fan components derived from the bedrock hinterland near and beyond the exploration areas eastern margin.

11) Alluvial/colluvial and soil veneers of the higher-level plains (Qph). The main occurrence of this unit encompasses a large zone in the southwest, coincident with the elevated plain shown in Figure 2. Here drainage is sparse, very weakly incised, and locally small rounded alluvial pans are present. Extensive zones with abundant melon holes are common. We suggest that this south-western main occurrence is a soil/alluvial veneer on a former sub-horizontal to gently sloping palaeosurface capping unit TQa which is itself exposed by erosion around the margins.

Unit Qph is also delineated as smaller zones east of the Funnel Creek flood plain. Here they form elevated flat or gently sloping erosional remnants that cap the Permian Back Creek Group (Pb). One zone examined in the field comprised varicoloured soils with silcrete pebbles (again pointing to a palaeosurface association).

12) Older valley alluvium as aprons and terraces (Qpa) occurs in the far north of the EPC area as spreads associated with the Nebo and Denison Creek valleys. It forms a flat plain fringed by, and interspersed with, more elevated zones of older dissected alluvium/ colluvium (TQa). Drainage courses are weakly incised and some have anastomose patterns. The boundary with the flood plain alluvium (Qa1) of Nebo Creek to the south is poorly defined.

Qpa is also delineated in the Bee Creek valley. Here it forms flat, low terraces with melon holes.

13) Flood plain alluvium of the major drainage systems (Qa1) comprises the broad zone of fill bisecting the exploration area and associated with Nebo, Denison, Bee and Funnel Creeks. In the far southeast it also includes the flood plain of the Connors River. The unit is characterized by the presence of numerous, incised, tree-lined, branching drainage courses forming braided to meandering patterns. Clusters of straight and sinuous features defined by micro relief and air-photo tone form patterns related to previous channelling.

14) Recent slope colluvium/alluvium and residual soil veneers (Qc) form patchy developments, mainly in the south-eastern part of the exploration area. They are generally smooth-textured on the air-photos, but locally also display melon hole soil patterns. For the most part the unit comprises colluvium/alluvium on very gently sloping valley sides. Less commonly it includes sub-horizontal veneers interpreted as residual soil.

15) Recent alluvium of the secondary drainage (Qa) follows the flat-floored zones along secondary creeks and includes both channel and low terrace deposits. Elsewhere it includes narrow, discontinuous ribbons of channel alluvium in the flood plain deposits (Qa1) and alluvium of small pans developed on the flat plains associated with units Qph and Td.

4.4 STRUCTURE

In a regional structural context related to Triassic compressive deformation, the Permian sequence in the exploration area straddles the boundary between the Nebo Synclinorium in the north and the Dawson Folded Zone in the south (Mallett et al., 1995). Based on evidence beyond the exploration area, the Nebo Synclinorium comprises broad open folds, thrusts and high angle faults and the Dawson Folded Zone is characterized by tight folding and steeply dipping reverse faults. The boundary between the two (Bundarra Corridor) trends northeast across the basin and is postulated by Hammond (1987) to be the trace of a crustal transfer fault associated with early Permian extension. Direct surface evidence for the above regional structural setting is however inconclusive in the exploration area itself because of the lack of outcrop. Previous mapping (BMR, 1970) shows (unfolded) westerly dips in the Back Creek Group near the exploration areas eastern margin. However in the far west of the exploration area, Macarthur Exploration's results indicated that the concealed German Creek Formation is flat lying or gently folded (Grimstone and Thomas, 2004).

1) Structure in the Permian sequence is only directly observable where it crops out intermittently near and straddling the exploration areas eastern margin. Here the regional sequence strike in the Back Creek Group and underlying Lizzie Creek Volcanic Group is north-north westerly to northerly, and interpreted dips are mainly to the west away from the basin margin. The amount of westerly dip is difficult to assess photogeologically because of the subdued nature of the outcrop, but it appears to be mainly in the range of shallow ($< 5^o$) and shallow to moderate (5^o -20^o). Where measured in the field, at two localities in the Back Creek Group, the dips were 5^o and 20^o to the WSW. Seismic lines G, H, I also indicate westerly dips, open folding and reverse faulting.

2) In the area 10 km east-north east of Saltbush Park, the westerly regional dip in the Mount Benmore Volcanics and Back Creek Group is modified by a well-defined anticlinal fold with southwest-plunging axis. It appears to have developed in response to drag on a south-block-down fault along its southern limb. About 2 km east of this, there is a more

subtly expressed syncline with north-north westerly axial plunge. This fold also seems to be related to fault movement (along its western limb).

3) In the area 6 km southeast of Hamilton Park there also appears to be some local fault-related modification of regional dip in the Mount Benmore Volcanics to produce sub-horizontal and east to southeast dipping strata. A coherent fold associated with this dip reversal, is not however apparent.

4) In the areas 8 km east and 11 km south of Cockenzie, subtle layering is tentatively interpreted in windows of possible Back Creek Group sub-crop (Pb?). If this layering is 'real' , it defines folds on northerly to north-north westerly axes and includes multiple short wavelength examples.

5) Interpreted fault/fractures occur sporadically in the Permian sequence outcrop near the exploration areas eastern margin and vary in length from <500m to 6 km. North-easterly striking ones are common but other directions also occur (east-west, northerly and north-west to north-north west). A prominent northeast-trending example is the fault associated with the anticline described in (2), above. It juxtaposes Mount Benmore Volcanics on the north side against Back Creek Group to the south, indicating south-block-down throw. Two similarly trending south-block-down faults are interpreted further north (east of Harry James Lagoon) to explain offset of the contact between the Mount Benmore Volcanics and the Back Creek Group.

6) In the extensive Tertiary and Quaternary surficial cover units, linear features are generally classed as lineaments of uncertain origin. Most follow 'anomalously' straight drainage and include examples up to 8 km long. They are delineated as possible surface expressions of concealed fault/fractures. They show little evidence of preferred orientation although northerly to north-easterly trending ones seem especially common. On the Funnel Creek flood plain, 4.5 km west-south west of Saltbush Park, several east-west trending lineaments appear to be associated with drainage ponding to form a small lake and an 'anomalous' distribution of alluvium (Qa). It raises the possibility that these lineaments are neotectonic features.

7) Inferred sub-surface structures

Based on the photogeological results, three more regional features are highlighted that may reflect structures in the concealed Permian sequence. Because of the masking cover, their identification from surface evidence is speculative but seismic information can help confirm them.

The Cockenzie Lineament (CL) underlies flood plain alluvium and trends east-north east from north of Cockenzie homestead to beyond the exploration areas north-eastern margin. It is partly defined by a northeast sector of Funnel Creek and further east (outside the EPC area) by Boothill Creek. The lineament apparently juxtaposes Mount Benmore Volcanics (Pvb) on the north side and possible Back Creek Group (Pb?) on the south side. Assuming Pb? is correctly interpreted, it suggests that the Cockenzie Lineament is a subsurface fault or flexure with down to the south movement. It could be significant that further south,

several surface faults with similar trend and sense of movement are interpreted (see 5, above). The lineament also lies on, or close to, the similarly trending more regional Bundarra Corridor.

The Bee Creek Lineament (BCL) is defined by the 'anomalously' straight west-north west trending course of Bee Creek over a distance of at least 23 km including beyond the exploration area margin. This is especially evident on the ASTER imagery and suggests the presence of a concealed fault and seismic line C also indicates either a small fault or gently fold.

The Denison/Funnel Creek Corridor (DFC) is a broader feature defined by the anomalously straight belt of the Denison/Funnel Creek flood plain deposits and their contained braided channels over a distance of 42 km. Over most of its length the DFC trends north-north west, but across and to the north of the Cockenzie Lineament its orientation is more north-westerly. This overall alignment is parallel to the sequence strike of exposed Permian rocks further east. The DFC reflects a fault zone in the subsurface and can be seen on seismic lines G and H. It appears to be a Triassic west-vergent reverse fault/thrust zone of the type common elsewhere in the central and northern Bowen Basin (see for example Mallett et al., 1995).

4.5 INTRUSIVES

There is some existing evidence for intrusions in the exploration area. Early Permian intrusive rhyolite is recorded in the Lizzie Creek volcanics at the eastern margin (DNRME, 2004) and Tertiary intrusive rhyolite is tentatively identified near the south-western margin (DNMRW, 2006). It should also be noted that the large Bundarra Granodiorite together with its prominent hornfelsed country rock rim, occurs only a few kilometres beyond the exploration permit areas western margin.

5.0 EXPLORATION 2006 – YEAR 1

5.1 2D MINI SOSIE SEISMIC

During July-August 2006 Velseis Pty Ltd. acquired approximately 62.5km of 2D mini-SOSIE seismic data, which constitutes the initial phase of the 2D survey. Lines denoted A, B, C and G, H, I were acquired and subsequently processed by Velseis Processing Pty. Ltd. during August-September 2006, using ProMAX software. The locations of the seismic lines can be seen in Map 5.

The length and source location range of the lines acquired are presented in Table 1 below. The data type is Mini-SOSIE, acquired using a 120 channel symmetrical split spread configuration and a single 65kg Wacker Rammer. Geophone station interval was 10 metres using a 6 element array, with individual geophones equi spaced over the entire group interval (Dorling, 2006).

Further details of field acquisition parameters are listed in Table 2 below.

Line	Source location range	Length
A	100.5 – 428.5	3.28km
B	100.5 – 382.5	2.83km
C	100.5 – 556.5	4.57km
G	100.5 – 2668.5	25.68km
H	100.5 – 1459.5	13.60km
I	100.5 – 1352.5	12.52km
Total Length		**62.48km**

Table 1. Seismic Lines Acquired.

Section	Item	Specification
Instrumentation	Geophones	Sensor SM-7, 30hz; 6 elements in series
	Default data media	CD
	System polarity	SEG standard
	Source	Mini-SOSIE 65 Kg Wacker Rammer
Parameters	Record length	1000 ms
	Sample interval	1 ms
	No. Channels	120
	Spread	Symmetrical split spread
	Near Offset	5m
	Far Offset	595m
	Shot Point Interval	10m-20m according to data quality
	Receiver Interval	10m
	CDP Fold (nom)	30/60 according to data quality

Table 2. Field Acquisition Parameters

The data quality observed throughout the seismic survey is variable, ranging from high quality data containing strong reflection events and very little random or coherent noise, through to very noisy data exhibiting very little reflection data.

The acquisition and processing report is presented as Appendix C, the seismic sections are displayed in Appendices D and E and the survey data for the shot points is attached in Appendix F.

5.2 REHABILITATION

The exploration program was designed to minimise environmental impact by:

- Utilising existing tracks, roads fence lines and cleared areas where possible.
- Suspending field operations during wet weather.

All materials used and any rubbish were removed from site and the seismic lines have been rehabilitated to the landowners satisfaction.

6.0 FUTURE EXPLORATION PLANS

A drilling program is being prepared to drill stratigraphic holes along the current seismic lines. Another four south-west to north-east seismic lines are proposed to complete the EPC coverage and resolve the structure in the next 12 months. This will also be followed by more stratigraphic drilling. These results will be used to determine areas for relinquishment.

7.0 REFERENCES

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