

# ANNUAL REPORT

### MLN's 1058 and 1083

### MCN's 3333 - 3339

# Mt Bundy and Toms Gully Project

### 1 January 2010 to 31 December 2010

Distribution:-

- 1. DOR Darwin, NT
- 2. Crocodile Gold Australia, Humpty Doo

Marcelle Watson December 2011

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#### 1 EXECUTIVE SUMMARY

The Mt Bundy (formally Rustlers Roost) and Toms Gully tenement group (MCN's 3333-3339, MLN1058 and MLN1083 (Rustlers Roost)) are located some 110 kilometers south-east of Darwin. These tenements were granted in 1989 (expect for MLN1083, granted in 1991). In July 2007, GBS Gold Australia Pty Ltd acquired all mining and exploration assets, located in the Toms Gully Region, including tenement group discussed in this report. Crocodile Gold Australia secured the project area along with other tenements after GBS Gold Australia went into voluntary administration.

The MCN's 3333-3339 and MLN1058 lie within the Wildman Siltstone, a sequence of tightly folded strata with an unconformable contact between the Wildman Siltstone and the Koolpin Formation. A small portion of the Koolpin Formation is also covered by the tenements. Towards south-east, Mount Bundey Granite intrudes the orogenic sequence. MLN1083 covers rocks of the Burrell Creek Formation of the Finniss River Group and Mt Bonnie Formation of the South Alligator Group.

Activities during the 2010 reporting period included RC and diamond drilling at Toms Gully with the results used to update the resource model. The Mt Bundy deposit resource model was also reviewed and optimised. Some environmental sampling was also conducted at the Mt Bundy heap leach pad.

During the 2011 reporting period, Crocodile Gold will conduct a review of the Toms Gully and Mt Bundy deposits which will include mapping and field reconnaissance visits.

#### 2 INTRODUCTION

The Toms Gully and Mt Bundy (formally Rustlers Roost mine) tenement group is located about 90km SE of Darwin and comprises 9 tenements which were acquired by Renison Consolidated Mines Limited and Toms Gully Gold Mines Limited. GBS Gold acquired the tenements in 2007 before going into voluntary administration in 2008. Crocodile Gold Australia Pty Ltd acquired the tenements from GBS Gold in November 2009.

In this report, exploration activity conducted between 1 January 2010 and 31 December 2010 is documented.

#### 3 LOCATION AND ACCESS

The Toms Gully tenement group (MCN3333-3339 and MLN1058) is located approximately 90km SE of Darwin, Northern Territory some four kilometres south of the Arnhem Highway. The Mt Bundy deposit (Rustlers Roost mine MLN1083) is located approximately ten kilometres to the south west of Toms Gully.

Access from Darwin is via the Arnhem Highway. Access around the Mineral Claims is linked by station tracks, cleared grid lines and boundary fence lines and also via mine tracks to the limits of the MLN. Wet season access is poor due to the large number of creeks which cross cut the MCNs.

The region is characterized by rugged, strike ridges separated by silty creek flats. The region is considered to have difficult access during the wet season.

Figure 1 shows the location of the Toms Gully and Mt Bundy group of mining tenements.

#### 4 TENEMENT DETAILS

The MCNs 3333 to 3339 were initially granted on the 9/10/1989 and now expire in December 2018. These tenements form part of the Toms Gully Project Area, which include MLN 1058. MLN 1058 was granted on 8 March 1989 and will expire on 2 August 2014. MLN1083 forms the Mt Bundy mining project (formally called Rustlers Roost) and was granted in March 1991 and expires in 2020.

GBS Gold Australia acquired these leases in July 2007, however went into voluntary administration on 15 September 2008, and all assets were placed under care and maintenance. Crocodile Gold Australia purchased these assets held by GBS Gold Australia (liquidated) in Northern Territory, and after meeting regulatory and statuary requirements secured the control of these assets on 6 November 2009.

Tenement	Grant Date	<b>Expiry Date</b>	Area (ha)
MCN3333 to 3339	9/10/1989	31/12/2018	39.5
MLN1058	3/08/1989	2/08/2014	681.8
MLN1083	4/03/1991	31/12/2020	755.6

 Table 1: Toms Gully & Mt Bundy (Rustlers Roost) Tenement Details

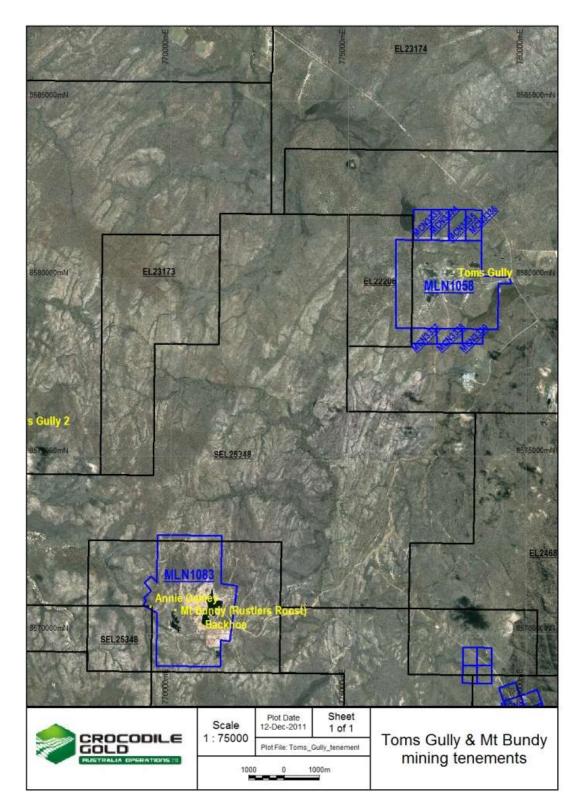


Figure 1: Mt Bundy and Toms Gully Group Tenement Location

#### 5 GEOLOGICAL SETTING

#### 5.1 REGIONAL GEOLOGY

The Mt Bundy and Toms Gully group of tenements are situated within the Pine Creek Geosyncline, a tightly folded sequence of Lower Proterozoic rocks, 10km to 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga. The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant inter-layered cherty tuff units. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87Ga) intruded formations of the South Alligator Group. During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies with phyllite in sheared zones.

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.84-1.80Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Less deformed Middle and Late Proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Geosyncline lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

Regionally there is a tendency for gold mineralisation to be focused in anticlinal settings within strata of the South Alligator Group and lower parts of the Finniss River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies. Dated at ~1740Ga (Sener 2004) the gold events post dated the Pine Creek Orogeny and Cullen intrusive events and has favoured suitable litho-structural sites in the biotite-hornfels contact facies.

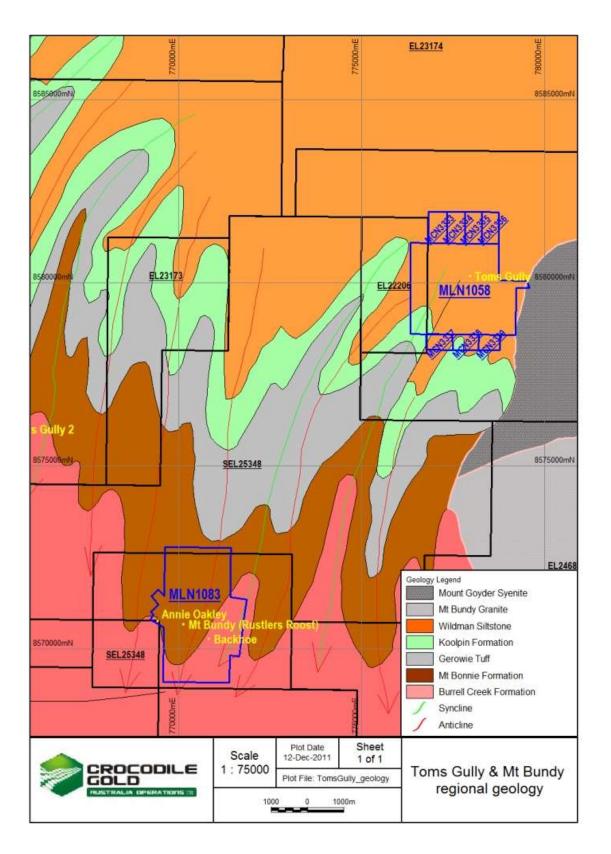


Figure 2: Toms Gully and Mt Bundy Group Tenement Geology

#### 5.2 LOCAL GEOLOGY

The MCN's 3333-3339 and MLN1058 lie within the Wildman Siltstone, a sequence of tightly folded strata with an unconformable contact between the Wildman Siltstone and the Koolpin Formation. A small portion of the Koolpin Formation is also covered by the tenements. Towards south-east, Mount Bundey Granite intrudes the orogenic sequence.

MLN1083 covers rocks of the Burrell Creek Formation of the Finniss River Group and Mt Bonnie Formation of the South Alligator Group.

#### 5.3 DEPOSIT GEOLOGY

#### Toms Gully

The Tom's Gully Deposit, located within MLN1058, consists of a shallowly south dipping quartz reef in graphitic shale and siltstone of the Wildman Siltstone unit within the thermal aureole of the post-tectonic (1831+/- 6Ma) Mt Bundey pluton. Carbonaceous shales and siltstones dominate the lithologies in the vicinity of the Tom's Gully Mine.

Gold mineralization comprises a minimum of two south-southwest plunging sulphidic ore shoots which are intimately associated with brecciation and recrystallization of early barren quartz. Where early quartz is absent from the thrust, gold mineralization is not well developed, indicating that this secondary brittle fracturing was essential to sulphide and gold deposition.

The metamorphic overprint has resulted in a mineral assemblage in the sediments of varying proportions of quartz, sericite, graphite, biotite, pyrite and andalusite with accessory tourmaline and rutile. Locally, the sediment package dips southerly and the reef appears to be conformable with the sediments. However, mapping has demonstrated that the structure cross-cuts the fold structures. The sediments are generally well banded, with little structural fabric. However, within 1-2m of the reef, a deformation fabric is typically present. This comprises shearing and varying degrees of brecciation, with the fabric parallel to the reef orientation. Similar deformation occurs in the vicinity of the Crabb and Williams faults.

In the deposit area, the Tom's Gully mineralization is hosted by a planar quartz sulphide vein which strikes east-west and dips south at approximately 30° near the outcrop position to near horizontal some 1,500 meters down-dip (280 meters deep). Sheppard (1996) interpreted the mineralized "reef" to be hosted in the D2 thrust fault with fluid transport to the northwest. The ore shoots plunge parallel to the trend of the D3 fold axes; D3 folds in the hangingwall and footwall decrease in amplitude toward the reef, indicating that during continued east-west compression the thrust acted as a décollement zone. Field relationships and micro-fabric studies suggest that quartz and sulphide were deposited in a reactivated thrust during wrench shear along several north-northeast trending faults associated with emplacement of the Mt Bundy pluton.

No significant gold mineralization occurs outside of the defined quartz-sulphide reef. Within the open cut the 'central shoot' or main mineralized zone was located immediately west of the vertically dipping, south-southwest striking Crabb Fault, which is the main structural feature along the eastern margin of the deposit (Figure 7.34 and **Error! Reference source not found.**). The sub-vertical Williams Fault marks the western margin of the portion of the reef mined in the open pit. The Williams Fault has a similar orientation to the Crabb Fault with a vertical throw of approximately 20m.

Numerous narrow lamprophyre dykes have been intersected in drilling and are visible in the wall of the open pit. The dykes are thought to be sub-parallel to the Crabb and Williams Faults. The dykes are locally well mineralized when in contact with the reef. Down-dip drilling beyond the pit extremities has located what is interpreted to be a series of echelon shoots, which mimic the orientation of the regional deformation, plunging along 220°.

The reef has not been located beyond the eastern contact with the intrusive Mount Goyder Syenite.

#### Mt Bundy (Rustlers Roost)

Gold mineralization at the Mt Bundy deposit is hosted by a 600m thick sequence of interbedded sediments and volcanoclastics belonging to the Mt Bonnie Formation of the South Alligator Group. The sequence has been subdivided into six distinct stratigraphic units on the basis of dominant rock-types.

The lower part of the sequence includes the Below Dolly Pot Sequence (>50 meters), the Dolly Pot Sequence (100-120 meters) and the Dolly Pot Cover Sequence (30-40 meters). These units are comprised of a mixture of laminated sediments and volcaniclastics. Volcaniclastics dominate the upper and lower units whereas laminated sediments dominate the intervening Dolly Pot Sequence.

The upper part of the mine sequence includes the Beef Bucket Sequence (120-150 meters), the Beef Bucket Cover Sequence (130-150 meters) and the Backhoe Sequence and is comprised of interlayered units of laminated siltstone-shale-chert (and minor volcaniclastics) and greywacke-siltstone-shale. The Beef Bucket Cover Sequence is comprised predominantly of greywacke-siltstone-shale of turbiditic origin though it does include a relatively thin laminated sediment unit. In contrast, the Beef Bucket Sequence and the Backhoe Sequence are dominated by laminated siltstone-shale-chert with minor volcaniclastics.

The sedimentary sequences are strongly folded about north-northeast trending regional F1 fold axes. These folds are open to tight in style and plunge consistently to the south at approximately 35°.

The bulk of the gold mineralization at the My Bundy deposit occurs on the W-SW dipping fold limb between the Backhoe Syncline to the west and Dolly Pot Anticline to the east, though some mineralization in the Dolly Pot Sequence does extend east across the axis of the Dolly Pot Anticline; and some mineralization in the Beef Bucket and Backhoe Sequences does extend to the west limb of the Backhoe Syncline.

Gold mineralization in the laminated sediment sequences is spatially and genetically associated with a set of thin (1-3 centimeters), widely spaced (1-3 meters), parallel, pyritic quartz veins ("sheeted veins") which occur widely throughout the mine.

Significant gold mineralization appears to be truncated at the south end of the deposit by the east-west trending Sunset Fault. The post-mineralization Broken Nose Fault trends NE-SW across the gold deposit and apparently displaces the mineralized units dextrally about 50-70m in plan view. East dipping reverse faults have been identified in the walls of the open pit but the relationship of these to the gold mineralization has not been fully characterized.

Gold mineralization is strongly associated with pyrite and to a lesser extent with arsenopyrite. Coarse grains of gold are rare.

#### 6 PREVIOUS EXPLORATION

#### Toms Gully

Initial exploration at the property that led to the discovery of the Tom's Gully deposit was carried out by Carpentaria Exploration Company (CEC), a subsidiary of Mt Isa Mines Pty Ltd. It is reported that stream sediment sampling in 1986, as part of a regional reconnaissance exploration program, led to the discovery of an outcropping quartz vein. Surface sampling of the vein confirmed the high gold grade and led to the commencement of an extensive drilling program in 1987.

Geophysical exploration at the project has been limited. CEC is reported to have tried a seismic survey after commencement of open pit mining. Renison carried out an aeromagnetic survey as part of a government program in 2000, but the results were not considered useful. Renison also attempted a sub audio magnetic (SAM) survey in 2005. Renison reported that some interesting features were identified which warranted follow up work. Initial drilling commenced in April 1987 using open hole percussion, reverse circulation and diamond core drilling methods. Later drilling was limited to reverse circulation and diamond core methods only.

Exploration and resource definition drilling at Tom's Gully has been performed during the management of CEC, Kakadu, Sirocco and Renison. The types of drilling were Percussion (open hole), Reverse Circulation (RC) and Diamond Core (DD). All holes were drilled from surface and the maximum depth of drilling is 340m.

Mining at Tom's Gully has also occurred over several periods.

An open cut mine was developed and operated by Carpentaria Gold Pty Ltd ("CGPL") between 1988 and May 1991. The CGPL open cut extended to a depth of 90 m and reportedly yielded 100,000 ounces of gold from 330,000 tonnes grading 9.35 g/t Au with a strip ratio in excess of 40 to 1. CGPL commenced a decline to access ore reserves down dip beyond the open pit to a depth 15 m below the base of the pit but the decline was subsequently abandoned in difficult ground conditions associated with the Crabb Fault on the eastern edge of the orebody.

In 1992, CGPL sold the mine and associated leases to Esmeralda Exploration Ltd ("Esmeralda") who removed the services from the previously developed decline and allowed the pit to flood.

Kakadu Resources NL ("Kakadu") acquired Tom's Gully from Esmeralda and built and commissioned a plant in May 1995 to re-treat the tailings. It is estimated that Kakadu treated some 65,000 tonnes of tailings at an overall recovery of about 35%.

Renison added a crushing circuit, re-commissioned the Tom's Gully treatment plant and commenced mining at Quest 29 in the latter part of 1999. Approximately 450,000t of ore was mined and treated at either the Tom's Gully treatment plant or the Quest 29 dump leach facility.

In 2003 and 2004, Renison carried out extensive drilling to delineate the Tom's Gully deposit down plunge of the existing open pit limits allowing a substantial resource

upgrade to be defined. This formed the basis for a feasibility study, which was carried out in 2004 to assess the viability of an underground mining operation at the deposit.

As a result of a positive outcome from the study, Renison committed to the development of the project in 2005. The project development included upgrading of the on-site treatment plant and a substantial underground mining operation. Underground mining by Renison to the end of March 2007 produced 63,300 tonnes grading 3.7 g/t Au, at which point the operation was placed on care and maintenance.

GBS Gold through certain subsidiaries acquired the Tom's Gully Gold Project on 25 July 2007 from Renison. They completed a feasibility study on the Tom's Gully deposit in December 2007 which supported a planned 35,000oz gold per annum for 3.5 years at a grade of 7.1g/t Au (Gerritsen, 2007). GBS commenced underground mining operations in July 2008 but only minimal mine development was completed before mining was suspended in September 2008 following the company being placed in administration.

Crocodile Gold acquired the leases in November 2009.

#### Mt Bundy (Rusters Roost)

First recorded activity includes the Rustlers Roost diggings which were mined in the late 1890s and again in the 1940s.

Activity within the region is recorded in 1958, when the Bureau of Mineral resources located the Mount Bundey iron deposit during a regional mapping exercise.

During the mid 1970s Geopeko were exploring essentially for uranium, and checking for base metals and gold within EL142. This exploration was spurred on by the acquisition of the then current BMR aeromagnetic and radiometric survey data flown in 1970. Targets were identified and investigated by ground based geophysics and geochemical survey. The anomalies were dubbed "Quest" numbers for identification and became the focus of the subsequent four years exploration.

During 1994 -1998 period, a total of 4.71 Mt @ 1.05 g/t Au oxide ore was mined, and 113, 000 oz Au was produced at a recovery rate of approximately 70%. Exploration during that time also delineated substantial low grade gold resource which stands at 21.7 Mt @ 1.14 g/t. Plans to develop the primary resource were suspended in 1997.

Crocodile Gold acquired the Mt Bundy mining tenement from GBS Gold in November 2009.

#### 7 EXPLORATION ACTIVITY 1 JANUARY 2010 TO 31 DECEMBER 2010

#### Toms Gully (MCN3333 to 3339 and MLN1058)

During 2010, development recommenced at the Tom's Gully mine, during the same period work began on refurbishing the mill to prepare for ore extraction from the underground operations. Mining of the deposit indicated that there were significant problems with reconciling to the 2009 resource model and consequently Crocodile Gold ceased mining operations in August 2010 and had to re-assess the Tom's Gully resources. With the aid of a geological consultant (A Hitchins) the Toms Gully resource model was reviewed and updated.

3 RC holes and 9 diamond holes with RC pre-collars were drilled for a total of 3,552m. The aim of the drilling was to infill gaps in the resource model. Figure 3 illustrates the holes drilled during the 2010 period.

New geological and mineralogical wireframes were generated for the deposit using the latest assay results from the drilling and underground face (chip) samples. The samples were composited, top cuts were applied and the data domained for the purpose of variography and the block modelling process. The ID<sup>2</sup> method was used to generate the new resource model.

The new Toms Gully resource calculated an Indicated resource of 321,000t @ 8.90g/t Au (92,000 oz).

Observations from the resource modelling, underground face sampling and drill hole results indicated that the 2009 resource model was overestimating the grade at Tom's Gully due to the spotty nature of the overall gold distribution.

An analysis of the comparison between the 2009 resource calculation and the current resource for the Alpha Block was completed. The 2009 resource was based on the available drill holes at time and GBS chip sampling –which was very limited. The 2009 resource model was estimated using the Kriging method of interpolation. Results are shown in Table 2.

Model	Tonnes	Grade (g/t)	Ounces
2009 model Kriged - GBS DDH and chips	36,900	11.39	13,407.28
2011 model ID2 - all GBS and CGC data	38,780	5.338	6,603.54

Table 2: Comparison between 2009 and current Toms Gully resource model.

Less than half the ounces remain in the current resource of the Alpha Block. The Kriging method of the 2009 model had significantly over estimated the gold grade.

A total of \$789,504 was spent on the Toms Gully tenement group for a total of \$796,365 combined with the Mt Bundy mining tenement.

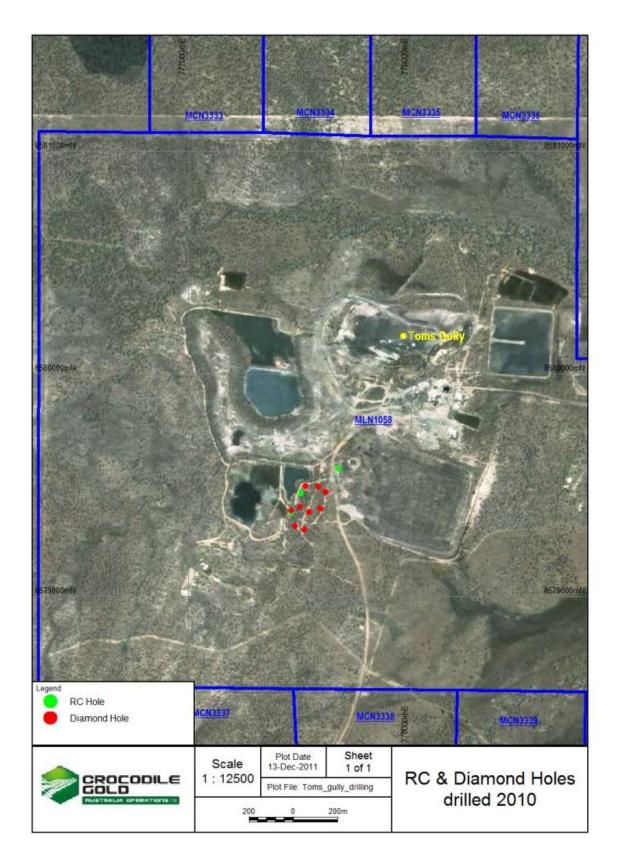


Figure 3: RC and Diamond Holes drilled at Toms Gully 2010

#### Mt Bundy (MLN1083) -formally Rustlers Roost

The Mt Bundy deposit resource model was reviewed and optimized during the reporting period.

The Mt Bundy resource model was generated in 2004 using the ID<sup>2</sup> method of interpolation. Mineralization wireframes were generated on +0.2g/t material with a minimum width of 5m and a top cut of 10g/t Au. 402 drill holes were used (both RC and diamond), equating to approximately 39,900 meters of drilling. 1m samples with core split and half core sent for assay.

Using the 2004 resource model and the parameter mentioned above, an optimized pit shell was produced. The model was then classified according to this shell with the final tonnes and grade shown in Table 3. The shell takes in a large proportion of the resource with only lower grade material on the extremities of the model being excluded by the optimization process. The model can be seen in Figure 4.

	Indicated Resources			es Inferred Resources		
Cut off g/t	Tonnes	Grade g/t	Ounces	Tonnes	Grade g/t	Ounces
0.5	24,900,000	0.9	716,000	18,100,000	0.8	494,000
0.6	20,200,000	1.0	633,000	14,500,000	0.9	431,000
0.7	15,900,000	1.1	542,000	11,000,000	1.0	357,000
0.8	12,200,000	1.2	453,000	7,800,000	1.1	279,000
0.9	9,200,000	1.3	372,000	5,500,000	1.2	219,000
1.0	7,000,000	1.3	303,000	3,900,000	1.4	169,000
1.4	2,200,000	1.8	126,000	1,000,000	1.9	62,000

Table 3: Optimal Mt Bundy pit shell - final tonnes and grade.

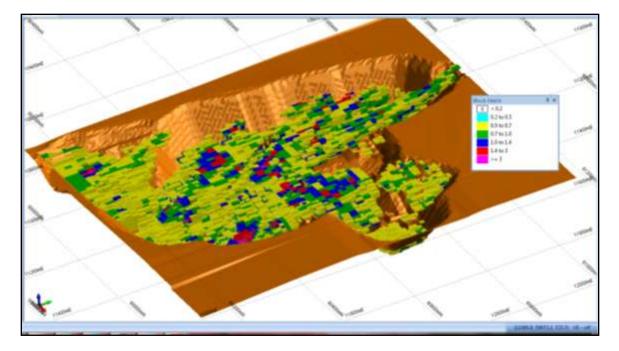


Figure 4: Optimal Mt Bundy pit shell with 2004 resource model draped

Some environmental sampling was also conducted over the heap leach pad.

A total of \$6,861 was spent on the Mt Bundy tenement for a total of \$796,365 combined with the Toms Gully tenement group. Table 4 lists the expenditure for each tenement.

Tenement	Expenditure
MCN3333	\$1,963
MCN3334	\$50
MCN3335	\$50
MCN3336	\$50
MCN3337	\$50
MCN3338	\$50
MCN3339	\$50
MLN1058	\$787,241
MLN1083	\$6,861
TOTAL	\$796,365

Table 4: Expenditure list for 2010 reporting year

#### 8 FORWARD PROGRAM YEAR ENDING 31 DECEMBER 2011

Exploration activities for the next reporting year will include a review of both the Toms Gully and Mt Bundy deposits. Geological mapping and reconnaissance visits will also be conducted.

A minimum of \$4,000 is the proposed expenditure for the 2011 reporting year.

#### 9 **REFERENCES**

Bajwah, Z.U., 2010, Annual Report on MLN 1058; Toms Gully Gold Mine; Year Ending 2 August 2010. *Crocodile Gold Australia Annual report submitted to DoR.* 

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Edwards, M., Gerritsen, H., Muller, F.L., 2011, Report on the Mineral Resources & Mineral Reserves of the Northern Territory Gold and Base Metals Properties, For Crocodile Gold Corp, April 4<sup>th</sup> 2011.