NEWCREST MINING LIMITED

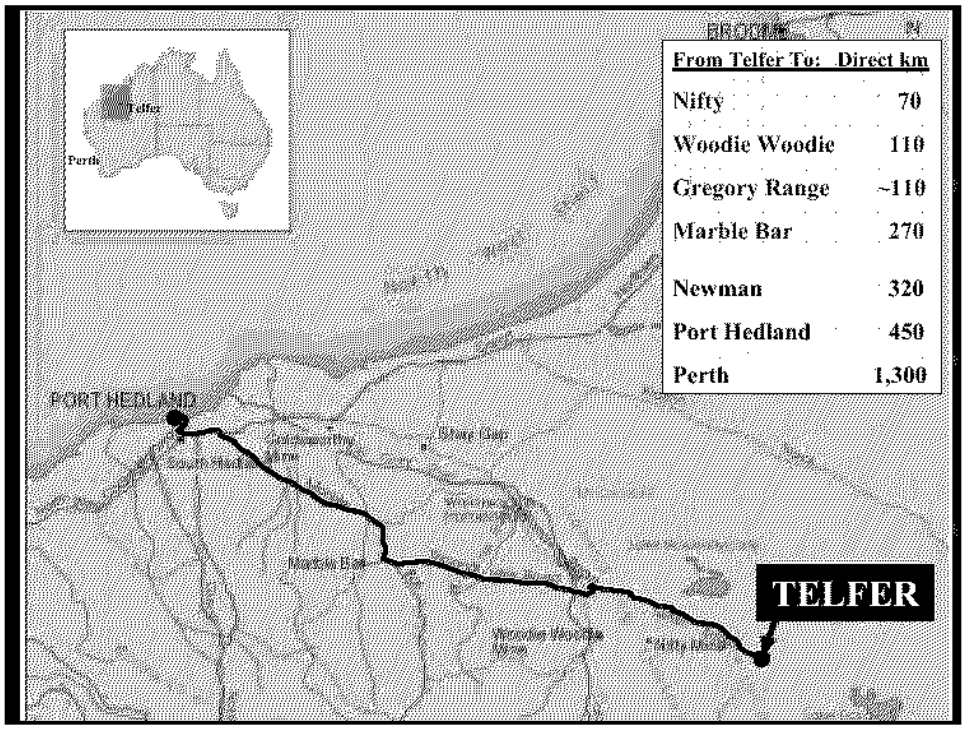
# TELFER PROJECT

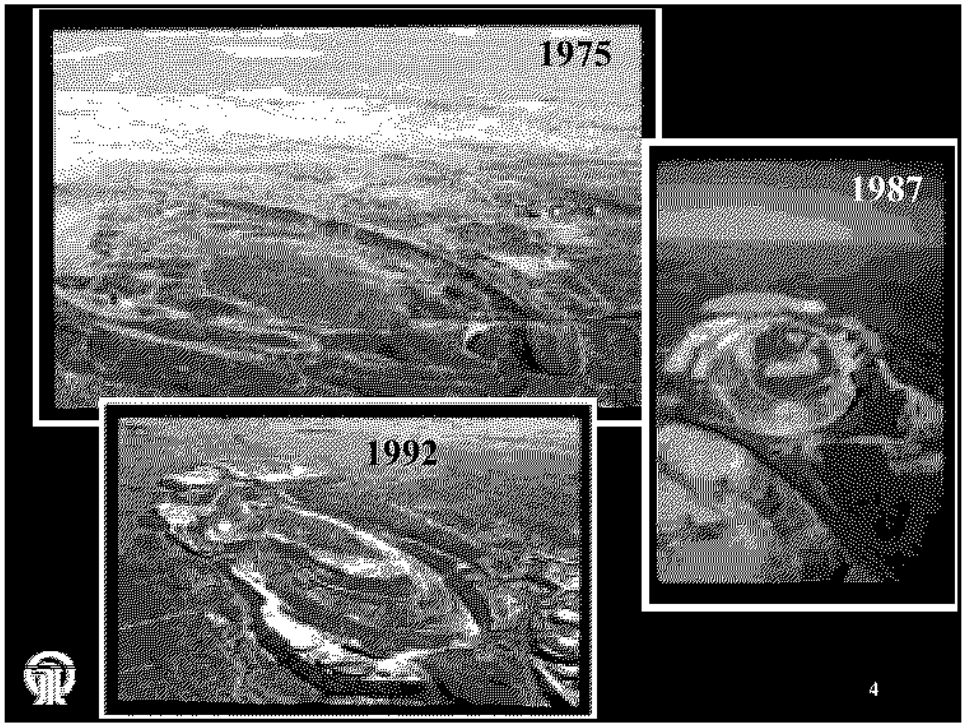


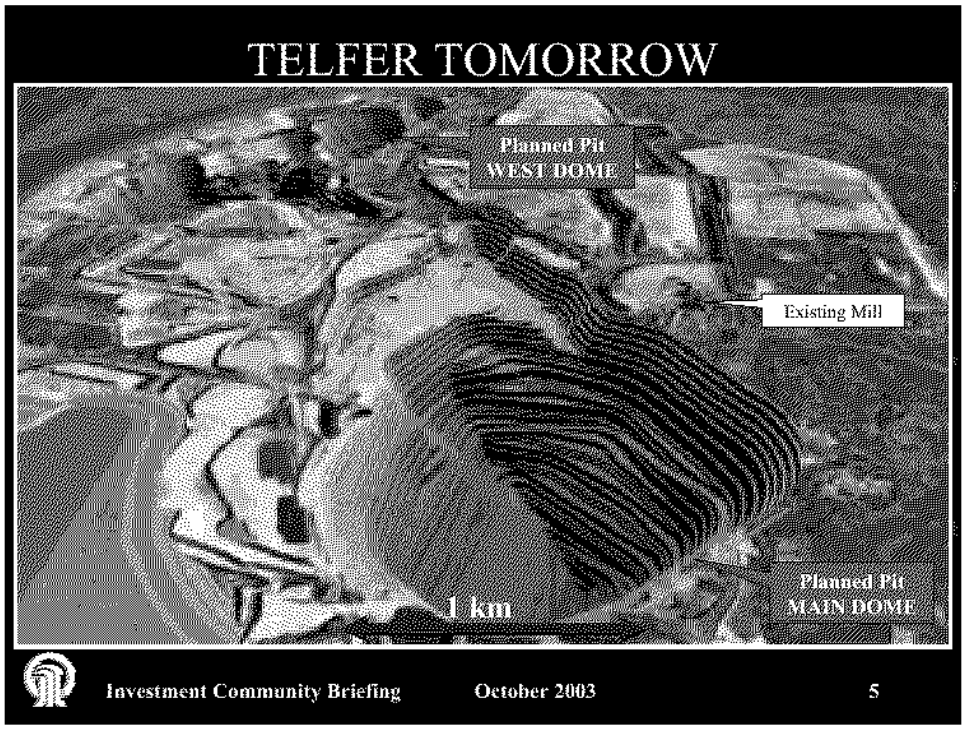
TELFER

## Introduction

**Bruce Price**
**EXECUTIVE GENERAL MANAGER**
**PROJECT DEVELOPMENT**


Telfer
Perth
From Telfer To: Direct km
Nifty 70
Woodie Woodie 110
Gregory Range ~110
Marble Bar 270
Newman 320
Port Hedland 450
Perth 1,300
PORT HEDLAND
TELFER


1975
1987
1992
4


TELFER TOMORROW
Planned Pit
WEST DOME
Existing Mill
1 km
Planned Pit
MAIN DOME
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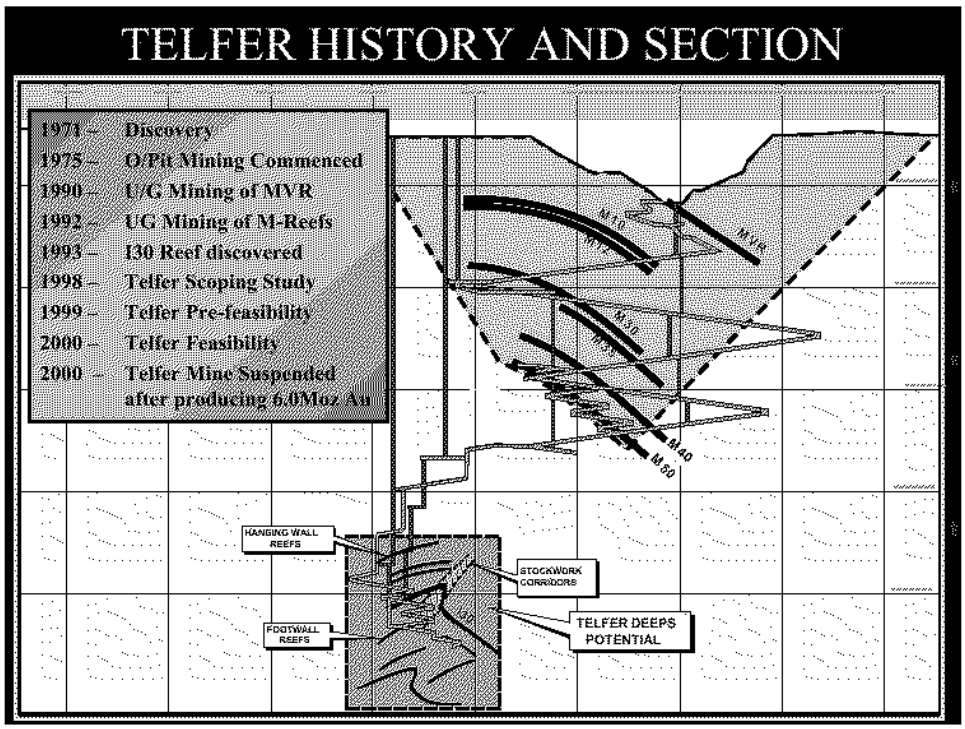
TELFER HISTORY AND SECTION
1971 – Discovery
1975 – O/Pit Mining Commenced
1990 – U/G Mining of MVR
1992 – UG Mining of M-Reefs
1993 – I30 Reef discovered
1998 – Telfer Scoping Study
1999 – Telfer Pre-feasibility
2000 – Telfer Feasibility
2000 – Telfer Mine Suspended
after producing 6.0Moz Au
M140
M60
HANGING WALL REEFS
STOCKWORK CORRIDORS
FOOTWALL REEFS
TELFER DEEPS POTENTIAL

## TELFER PROJECT

**Feasibility Study recommended:**

- **An open pit mine to produce 13-19 Mtpa**
- **An underground mine to produce 4 Mtpa**
- **A concentrator to process 17-19 Mtpa**
- **Gas fired power station with gas pipeline from Pt Hedland**
- **Ancillary services & utilities to support the mines & concentrator**
- **Upgrades to access road and village**



## TELFER PROJECT

- **18.4 Moz Reserve**
- **26.2 Moz Resource**
- **Average annual LOM production**
  - **800,000 oz gold**
  - **30,000 t copper**
- **Operating workforce 620 people**
- **Commission in September quarter 2004**

# OPERATING COST

**Cash Cost / oz Gold Production**

| SOURCE | 1st 5 yrs $/oz |
|---|---|
| Dump Leach | 260 |
| Open Pit | 215 |
| Underground | 225 |
| TOTAL | 220 |

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# OPERATING COST

**Average life of mine costs are:**

| | A$/t Ore | | | |
|---|---|---|---|---|
| | Open Pit | U'ground | Dump Leach | TOTAL |
| Mining | 7.10 | 16.00 | | 7.40 |
| Dump Leaching | | | 3.00 | 0.20 |
| Processing | 5.80 | 6.75 | | 5.50 |
| Administration | 0.95 | 0.95 | | 0.90 |
| TOTAL | 13.85 | 23.70 | 3.00 | 14.00 |

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# TELFER RISK ASSESSMENT

- Mined at Telfer for 25 years
- Using proven technology only
- Granted mining leases
- Environmental approvals granted
- Substantial infrastructure in place
- Understand working conditions

| TELFER | CADIA HILL | RIDGEWAY |
|---|---|---|
| Large open pit | ✓ | - |
| 4 Mtpa SLC | - | ✓ |
| 16 – 18 Mtpa plant | 17 Mtpa | 5 Mtpa |
| Large SAG/Ball Mill | ✓ | ✓ |
| Flotation | ✓ | ✓ |
| Concentrate sales | ✓ | ✓ |

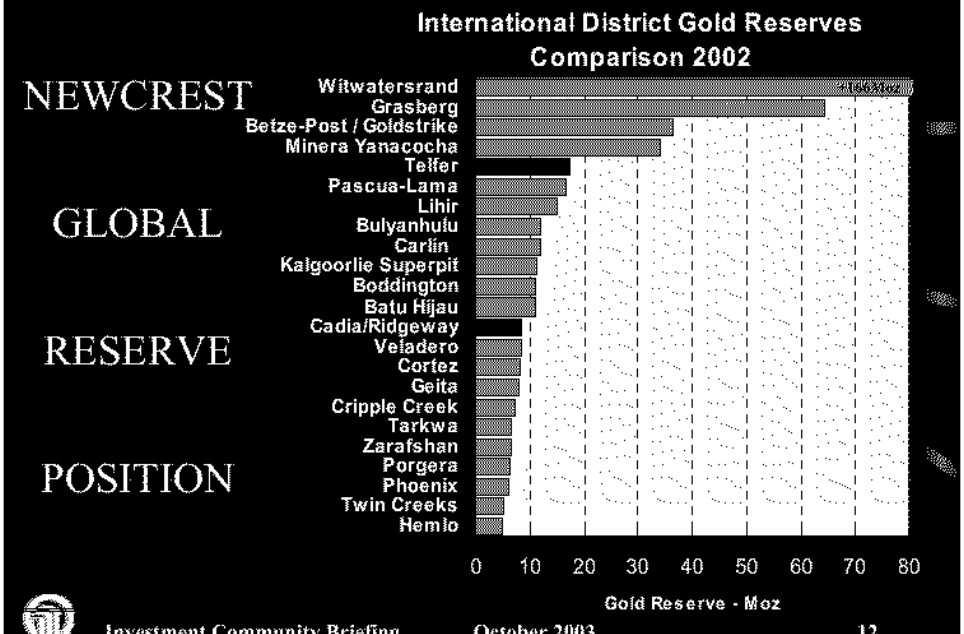


NEWCREST

GLOBAL

RESERVE

POSITION



## TELFER PROJECT

**Feasibility Study recommended**

- **Staged approach - initially, implementation of the:**
  - **Open pit**
  - **Concentrator comminution and bulk float sections**
  - **Installation of 2 gensets (3 planned)**
- **Underground development continued**



## TELFER PROJECT

**Feasibility Study recommended**

- **Second stage to involve completion of:**
  - **Underground mine**
  - **Concentrator selective float and pyrite leach circuits**
  - **Installation of the 3rd genset**

## TELFER PROJECT

**Feasibility Study**

- **Capital costs estimated to be**
  - **Stage 1 $976M**
  - **Stage 2 $215M**
- **Construction Schedule:**
  - **Stage 1 schedule was for completion in October 2004 (including contingency)**
  - **Stage 2 completion June 2005**



## TELFER FUNDING

- **Capex – Stage 1**
  - **Loan Note Agreement A$575M**
  - **Equity A$250M**
  - **Financial Leases A$150M**

## TELFER FINANCIAL

- **Telfer Capex** **2004 - $614M**
  **2005 - $340M**

  **As per full financials presentation Telfer Debt repayment schedule**

| Year | 2004 | 2005 | 2006 | 2007 | 2008 | 2009+ |
|---|---|---|---|---|---|---|
| $M | 495 | 80 | (124) | (138) | (138) | (175) |

- **Feasibility based on 55¢ exchange rate**
- **Locked in US$ expenditure at 60¢**
- **Telfer funding fully covered**

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## IMPLEMENTATION STRATEGY

**Feasibility Study recommended**

- **Owners team concept**
- **Engineering consultancies to be selected on the basis of specialist skills**

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## IMPLEMENTATION STRATEGY

**Feasibility Study recommended**

- **Staged procurement of long lead items proceed immediately**
- **Contracts were awarded for:**
  - **Grinding mills**
  - **Crushers**
  - **Gas turbine generating sets, and**
  - **Open pit mining equipment**



## IMPLEMENTATION STRATEGY

**Feasibility Study also recommended**

- **Upgrades to site access road and village**
  - **To be completed prior to 02/03 wet (road) & before numbers materially increased (camp)**

## TELFER PROJECT - PROGRESS

**Progress to date has been in accordance with the Study recommendations:**

- **Long lead items were procured and are being delivered to site**
- **Infrastructure including water supply, HV reticulation, site road works, heavy vehicle workshop, admin building are all virtually complete**
- **Access road & village completed early 03**



## TELFER PROJECT - PROGRESS

- **In accordance with project procedures definitive estimate recently completed, confirming Feasibility Study estimates**
- **Study schedule indicated completion of concentrator Stage 1 in October 04**
- **Construction on schedule with schedule float intact**

## MAJOR EQUIPMENT STATUS

| EQUIPMENT | STATUS |
|---|---|
| Gyratory Crushers | On site / In transit |
| SAG Mills | Trunnions / bearings on site<br>Ends - 2 in Fremantle; 2 due Nov<br>Shells - All in Fremantle |
| SAG Mill Motors | #1 due end Oct; #2 due early Dec<br>Cyclo-converters - complete in Brisbane |

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## MAJOR EQUIPMENT STATUS

| EQUIPMENT | STATUS |
|---|---|
| Ball Mills | Trunnions / bearings on site<br>Ends - on site<br>Shells - #1 due end Oct;<br>- #2 due early Dec<br>Gear sets and motors on site |
| Recycle Crushers | 2 on site, remainder complete in Perth |
| Gas Turbine gensets | 2 sets in transit, due early Dec |
| Open pit equipment | All delivered and commissioned<br>Additional 3 trucks due Jan 2004 |

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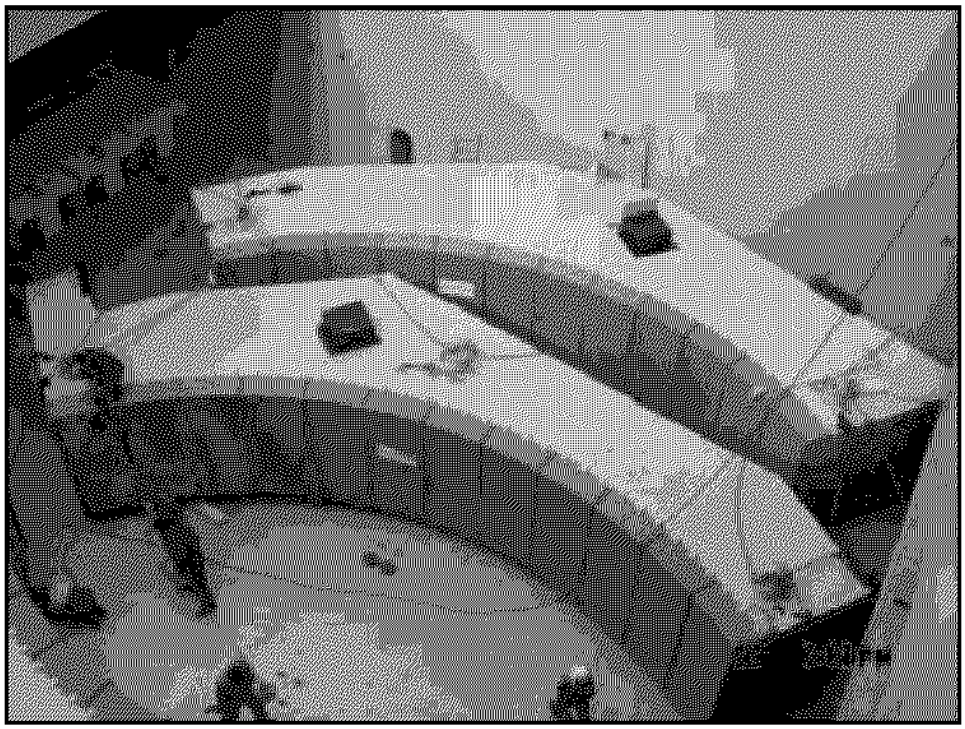
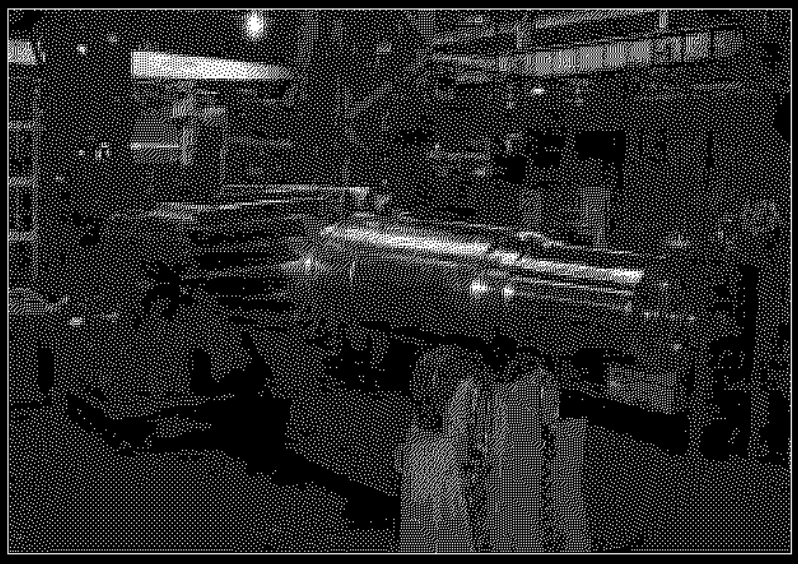


## BALL MILL PINION PRIOR TO TOOTH GRINDING





## TELFER

**Geology**

**Graham Howard**
MANAGER GEOLOGY - TELFER

# TELFER FEASIBILITY PROJECT

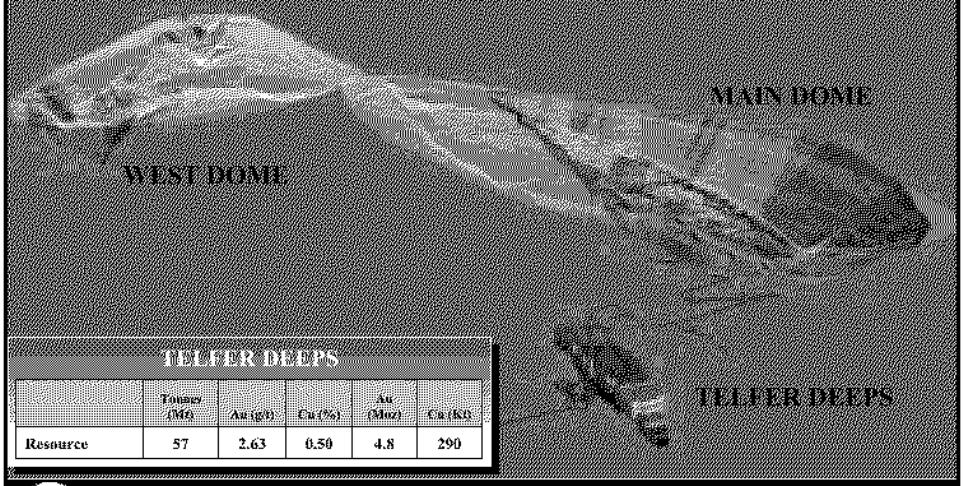


**TELFER OPEN PIT**

| | Tonnes (Mt) | Au (g/t) | Cu (%) | Au (Moz) | Cu (Kt) |
|---|---|---|---|---|---|
| Resource | 466 | 1.4 | 0.14 | 21.2 | 671 |

Over 1 million samples from ~20,000 drillholes were utilised to produce the Open Pit resource estimate

Over 33,000 samples from 200 drillholes were utilised to produce the Telfer Deeps resource estimate

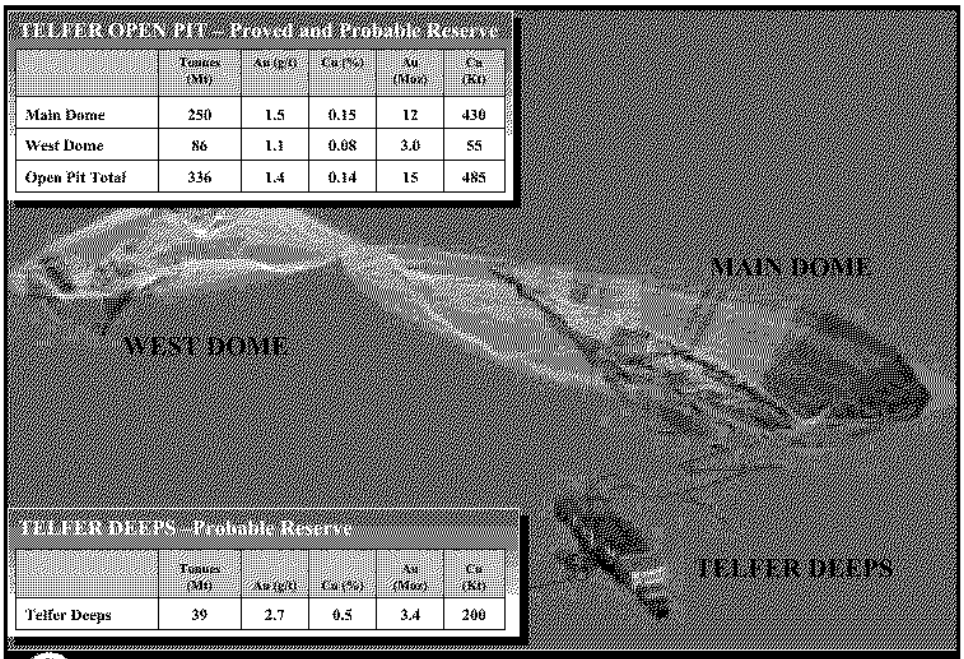



**TELFER DEEPS**

| | Tonnes (Mt) | Au (g/t) | Cu (%) | Au (Moz) | Cu (Kt) |
|---|---|---|---|---|---|
| Resource | 57 | 2.63 | 0.50 | 4.8 | 290 |

**TELFER OPEN PIT – Proved and Probable Reserve**

| | Tonnes (Mt) | Au (g/t) | Cu (%) | Au (Moz) | Cu (Kt) |
|---|---|---|---|---|---|
| Main Dome | 250 | 1.5 | 0.15 | 12 | 430 |
| West Dome | 86 | 1.1 | 0.08 | 3.0 | 55 |
| Open Pit Total | 336 | 1.4 | 0.14 | 15 | 485 |




**TELFER DEEPS – Probable Reserve**

| | Tonnes (Mt) | Au (g/t) | Cu (%) | Au (Moz) | Cu (Kt) |
|---|---|---|---|---|---|
| Telfer Deeps | 39 | 2.7 | 0.5 | 3.4 | 200 |

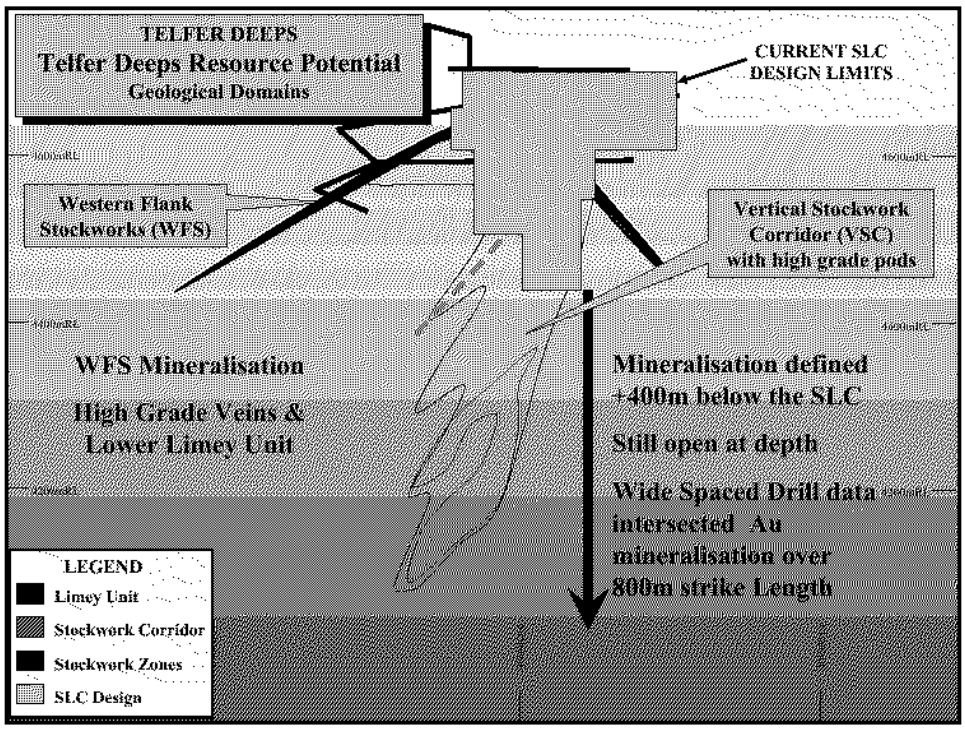


# TELFER NEAR MINE EXPLORATION POTENTIAL

# GEOLOGICAL POTENTIAL

- **Work in progress has identified additional potential Au – Cu mineralisation outside the current Telfer Resource**
- **Mineralisation adjacent to current Telfer Deeps SLC Project**
  - **Beneath SLC – Vertical Stockwork Corridor (VSC)**
  - **West of SLC – Western Flank Stockwork (WFS)**
- **Drillholes intersected potential Au – Cu Mineralisation at West Dome at depth similar to Telfer Deeps**





# TELFER DEEPS

# WESTERN FLANK MINERALISATION

# EXPLORATION RESULTS



## STATUS – Western Flank Mineralisation

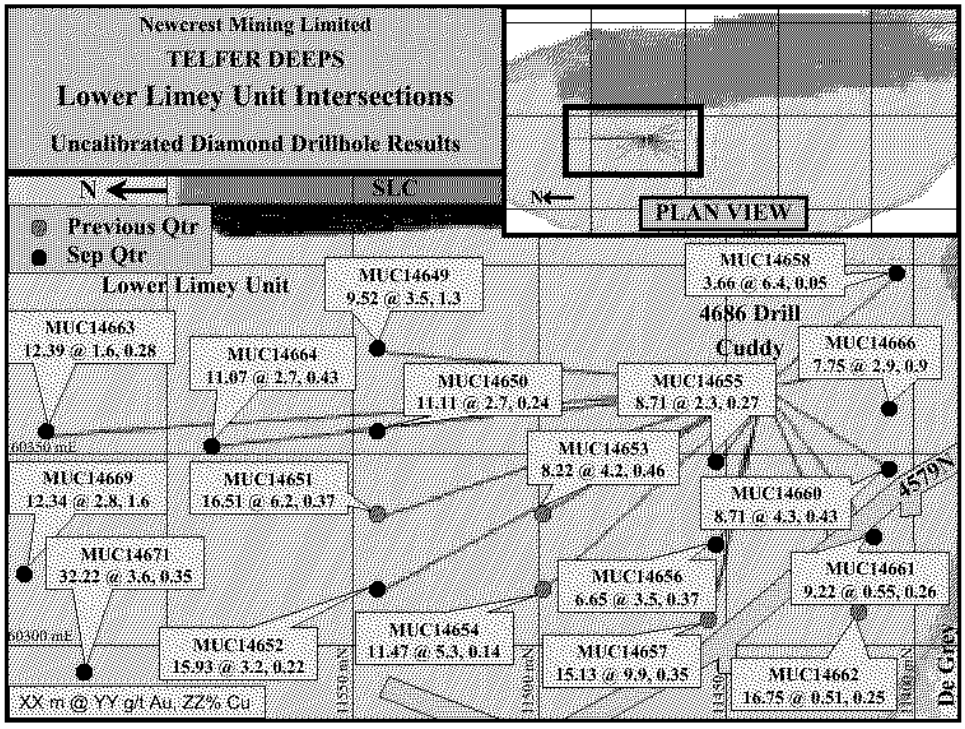
- **October 2002 potential Au – Cu mineralisation outside the current Telfer Deeps Mineral Resource**
  - **Broad spaced drilling identified high grade Au and Cu mineralisation in the west of the SLC - Lower Limey Unit (LLU) and north dipping veins (NDV)**
- **June 2003 50 m x 25 m spaced drilling commenced**
  - **Targeting LLU and NDV's within 100 m of the western boundary of SLC**

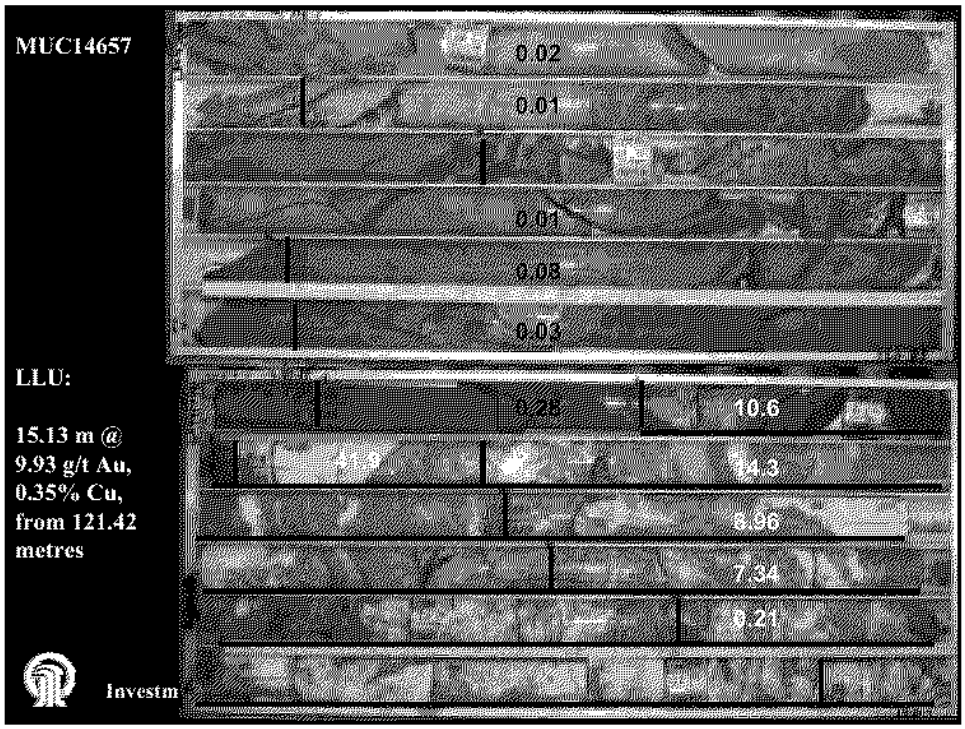
# TELFER DEEPS POTENTIAL - WFS

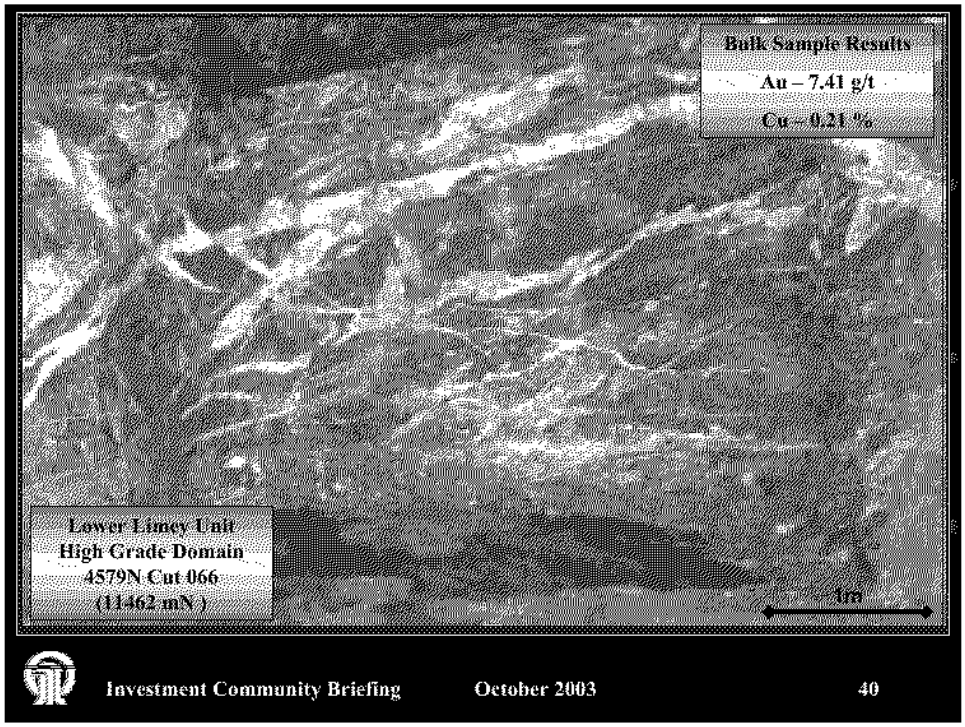
**Lower Limey Unit**

- **High Au - Cu grade (~5 g/t Au) domain**
  - **Northern third of SLC (11400–11700 mN)**
  - **200 m wide from western SLC boundary (E-W)**
  - **Typically 8m true thickness**
  - **4579N Bulk sample - 61m @ 4.1 g/t Au, 0.2 % Cu**
- **Lower grade Au – Cu (~2 to 3 g/t Au) domain**
  - **Southern two thirds of SLC ( 10900–11400 mN)**






MUC14657
0.02
0.01
0.01
0.08
0.03
LLU:
15.13 m @
9.93 g/t Au,
0.35% Cu,
from 121.42
metres
0.28
10.6
14.3
8.96
7.34
8.21
Investm


Bulk Sample Results
Au – 7.41 g/t
Cu – 0.21 %
Lower Limey Unit
High Grade Domain
4579N Cut 066
(11462 mN )
1m
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October 2003
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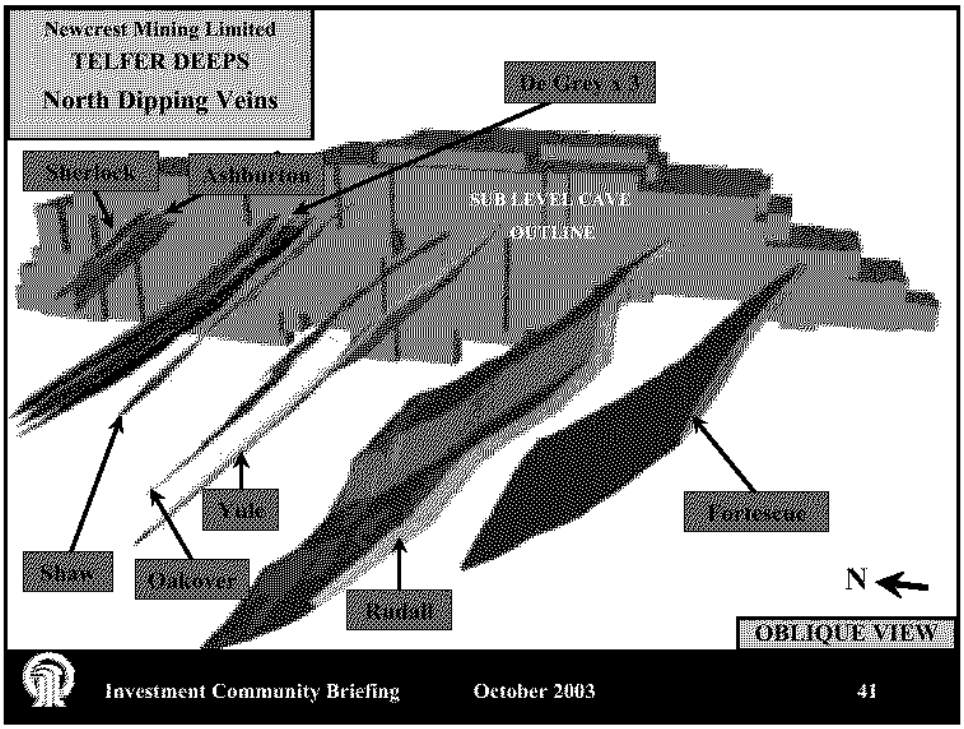
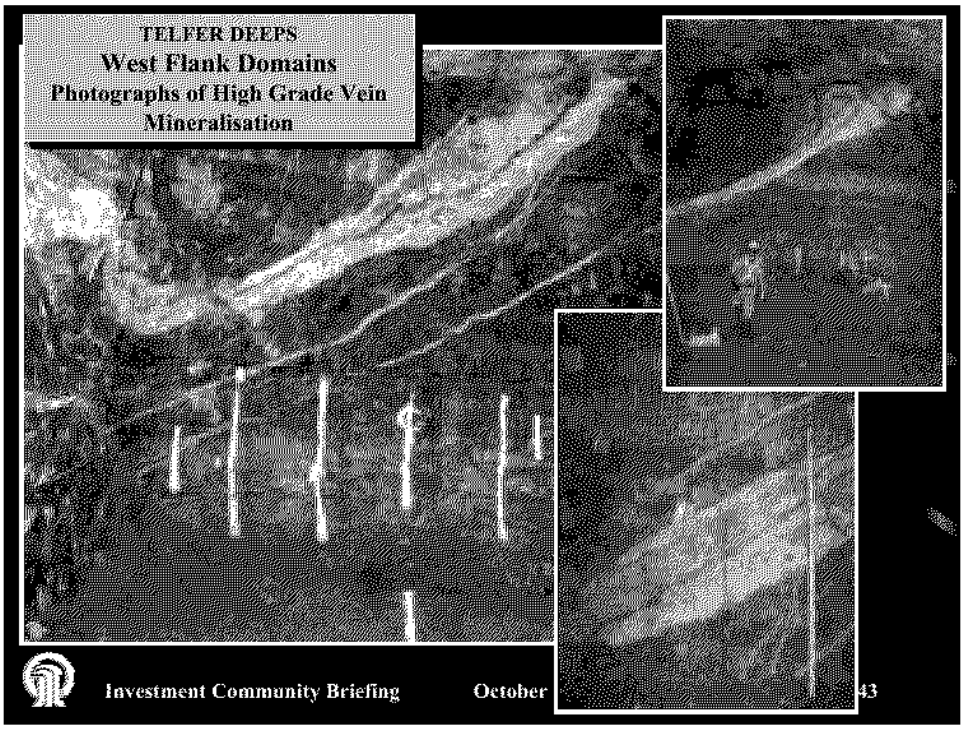
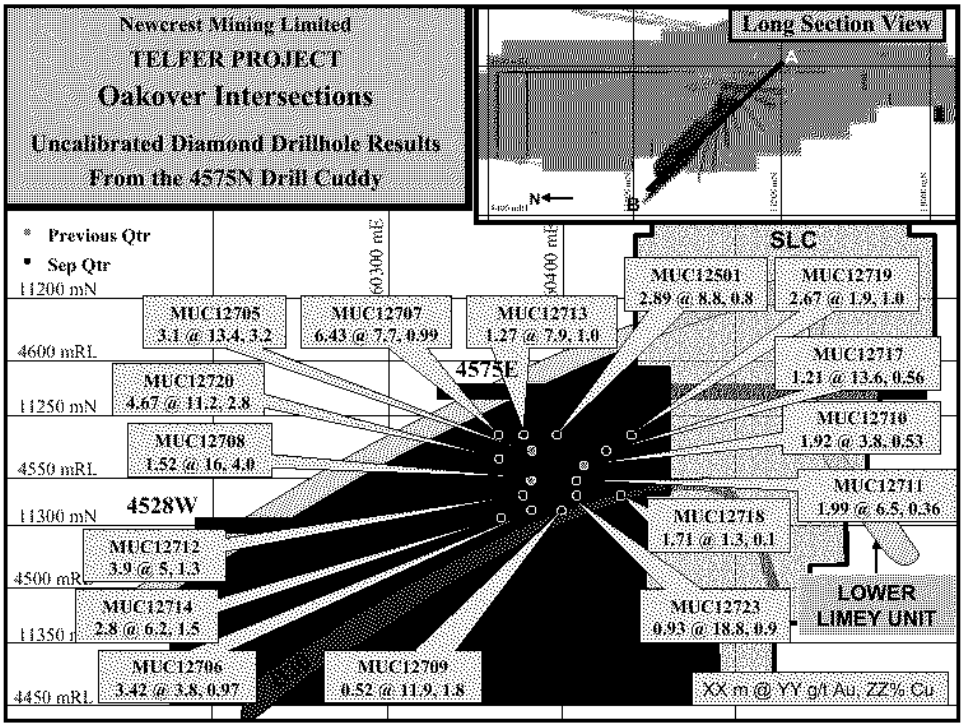


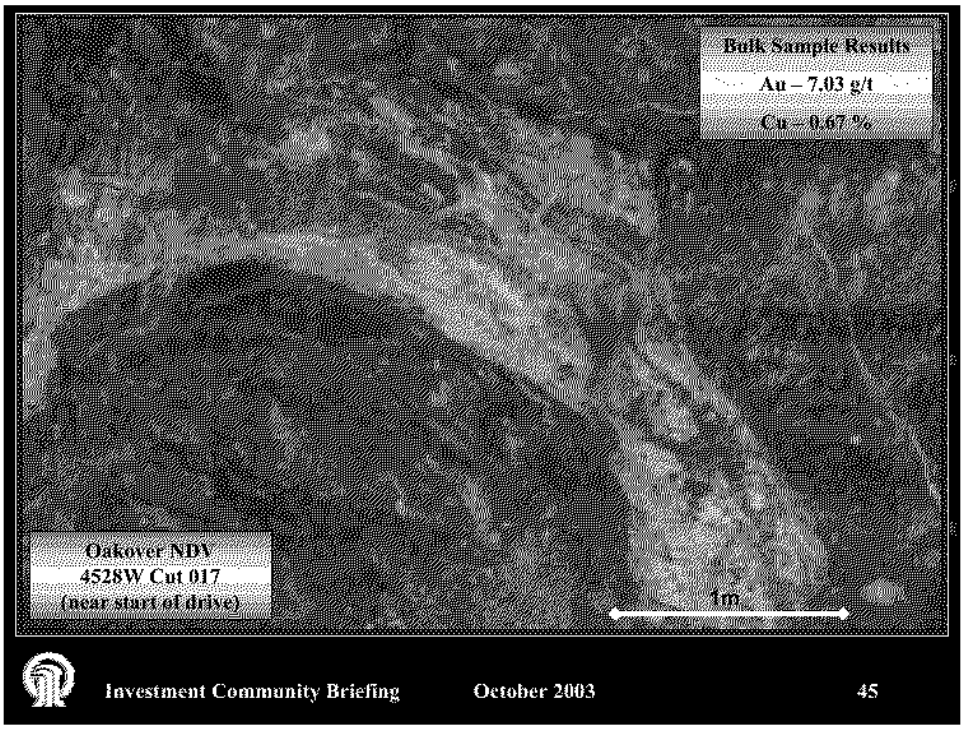

# TELFER DEEPS POTENTIAL - WFS

**North Dipping Vein Systems – 8 identified, most notably:**

- **Oakover Vein System characteristics**
  - **typically > 250 m strike (E-W ) and 150m down dip**
  - **0.6 m single vein to multiple veins in package 5 m thick**
  - **4528W Oakover BS - 93 m @ 4.2g/t Au, 1.1% Cu**
- **New Veins System identified**
  - **Ashburton and Sherlock (named after local rivers)**
  - **>250 m strike (E-W) and 100 m down dip**
  - **4520N Ashburton BS - 12.8 m @ 6.8 g/t Au, 0.6% Cu**


TELFER DEEPS
West Flank Domains
Photographs of High Grade Vein Mineralisation
Investment Community Briefing
October


Newcrest Mining Limited
TELFER PROJECT
Oakover Intersections
Uncalibrated Diamond Drillhole Results
From the 4575N Drill Cuddy
Long Section View
Previous Qtr
Sep Qtr
60300 mE
60400 mE
11200 mN
4600 mRL
11250 mN
4550 mRL
11300 mN
4500 mRL
11350 mN
4450 mRL
4575E
4528W
SLC
MUC12501
2.89 @ 8.8, 0.8
MUC12719
2.67 @ 1.9, 1.0
MUC12705
3.1 @ 13.4, 3.2
MUC12707
6.43 @ 7.7, 0.99
MUC12713
1.27 @ 7.9, 1.0
MUC12717
1.21 @ 13.6, 0.56
MUC12720
4.67 @ 11.2, 2.8
MUC12710
1.92 @ 3.8, 0.53
MUC12708
1.52 @ 16, 4.0
MUC12711
1.99 @ 6.5, 0.36
MUC12718
1.71 @ 1.3, 0.1
MUC12712
3.9 @ 5, 1.3
LOWER LIMEY UNIT
MUC12714
2.8 @ 6.2, 1.5
MUC12723
0.93 @ 18.8, 0.9
MUC12706
3.42 @ 3.8, 0.97
MUC12709
0.52 @ 11.9, 1.8
XX m @ YY g/t Au, ZZ% Cu


Bulk Sample Results
Au – 7.03 g/t
Cu – 0.67 %
Oakover NDV
4528W Cut 017
(near start of drive)
1m
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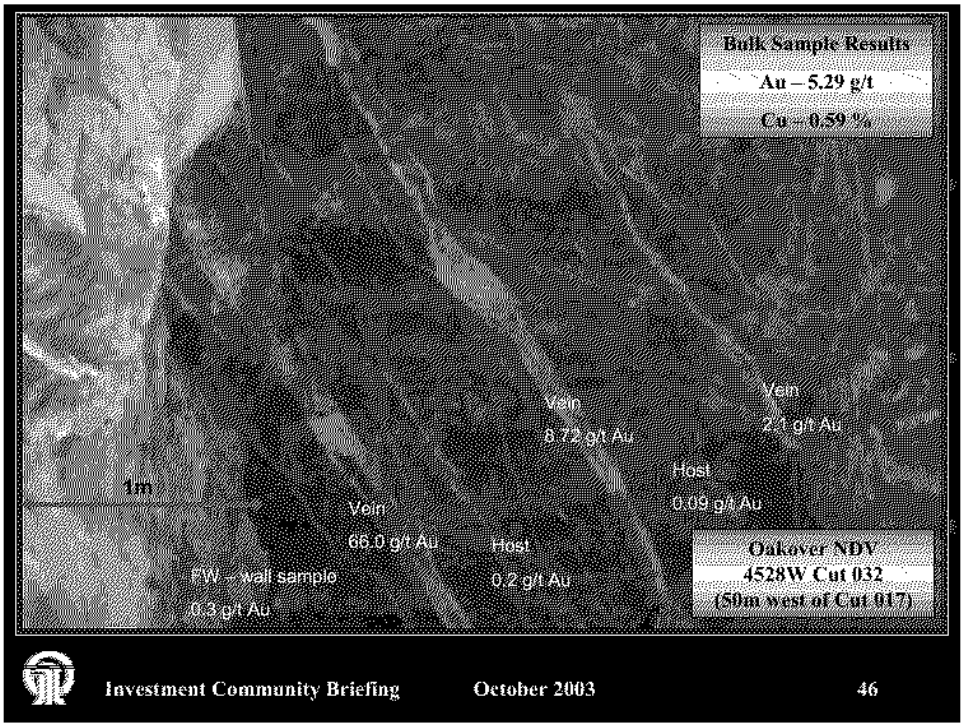
Bulk Sample Results
Au – 5.29 g/t
Cu – 0.59 %
Vein
8.72 g/t Au
Vein
2.1 g/t Au
Host
0.09 g/t Au
1m
Vein
66.0 g/t Au
Host
0.2 g/t Au
FW – wall sample
0.3 g/t Au
Oakover NDV
4528W Cut 032
(50m west of Cut 017)
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# TELFER DEEPS

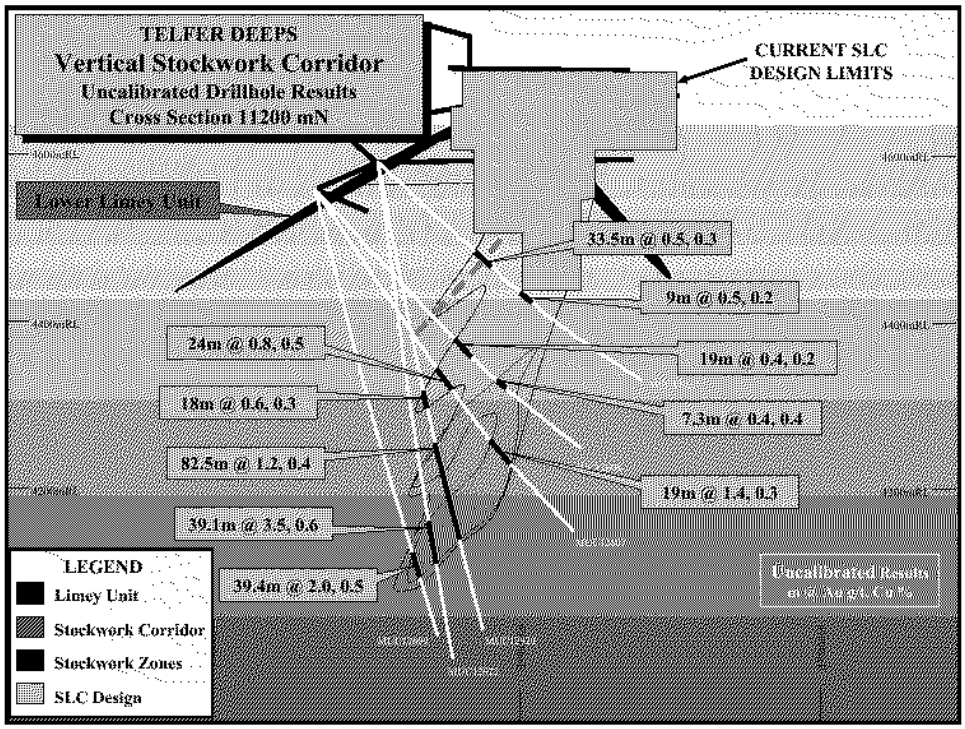
# VERTICAL STOCKWORK CORRIDOR (VSC) EXPLORATION RESULTS

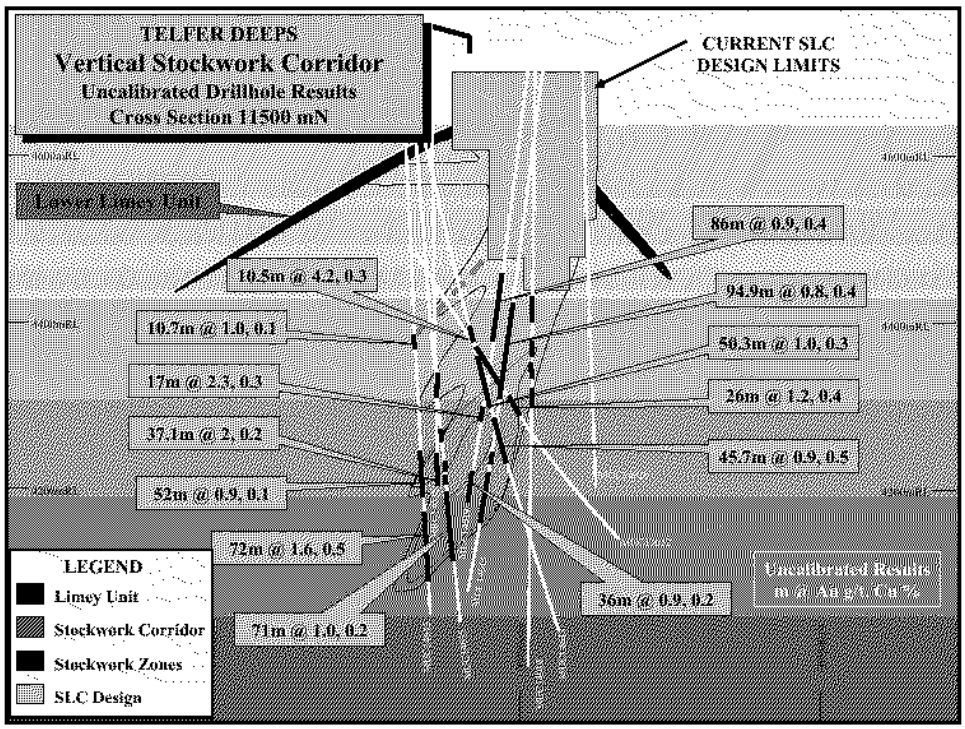


# TELFER DEEPS POTENTIAL - VSC

**Au – Cu mineralisation intersected beneath SLC by recent diamond drilling program**

- **> 800 m strike length & open north**
- **> 400 m down dip & open at depth**
- **High grade stockwork zones in lower grade envelope**

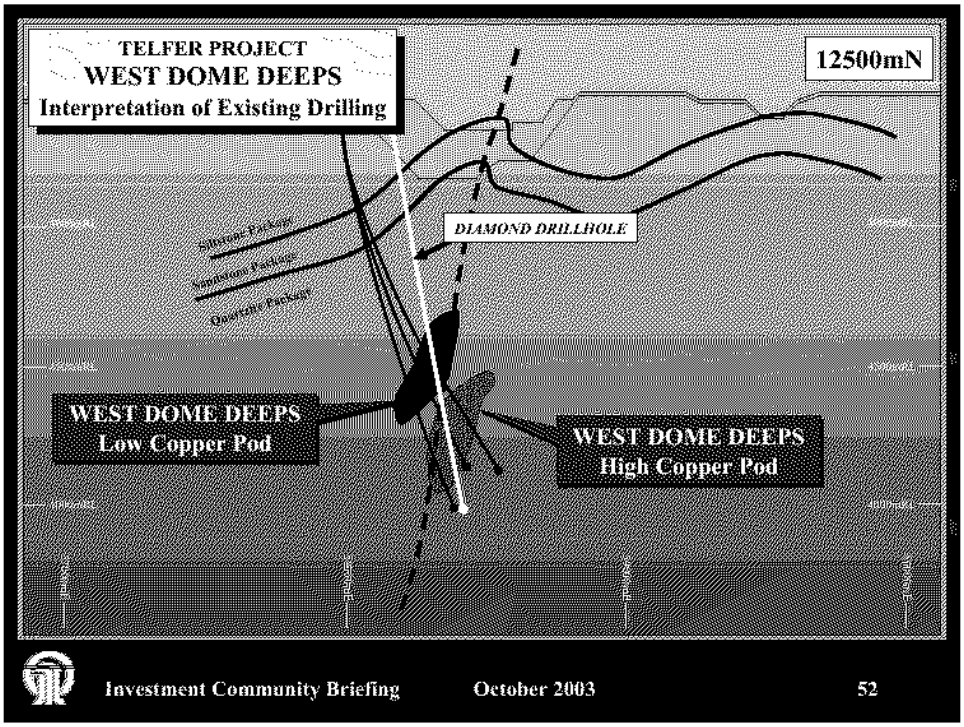

TELFER DEEPS
Vertical Stockwork Corridor
Uncalibrated Drillhole Results
Cross Section 11200 mN
CURRENT SLC
DESIGN LIMITS
Lower Limey Unit
33.5m @ 0.5, 0.3
9m @ 0.5, 0.2
24m @ 0.8, 0.5
19m @ 0.4, 0.2
18m @ 0.6, 0.3
7.3m @ 0.4, 0.4
82.5m @ 1.2, 0.4
19m @ 1.4, 0.3
39.1m @ 3.5, 0.6
39.4m @ 2.0, 0.5
LEGEND
Limey Unit
Stockwork Corridor
Stockwork Zones
SLC Design

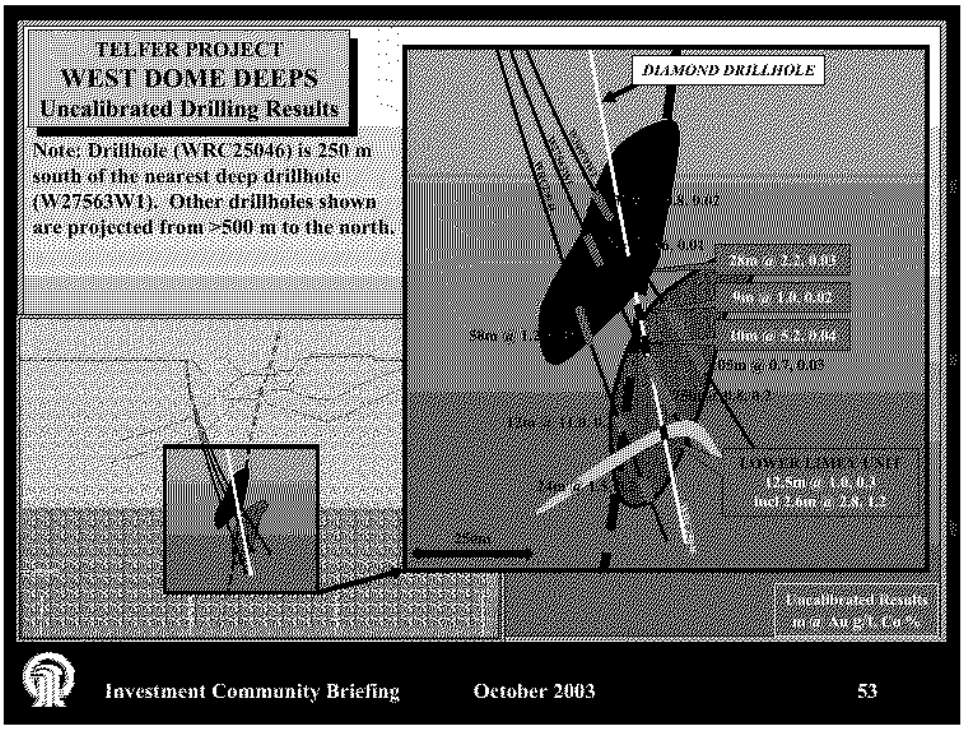

TELFER DEEPS
Vertical Stockwork Corridor
Uncalibrated Drillhole Results
Cross Section 11500 mN
CURRENT SLC
DESIGN LIMITS
Lower Limey Unit
86m @ 0.9, 0.4
10.5m @ 4.2, 0.3
94.9m @ 0.8, 0.4
10.7m @ 1.0, 0.1
50.3m @ 1.0, 0.3
17m @ 2.3, 0.3
26m @ 1.2, 0.4
37.1m @ 2, 0.2
45.7m @ 0.9, 0.5
52m @ 0.9, 0.1
72m @ 1.6, 0.5
36m @ 0.9, 0.2
71m @ 1.0, 0.2
LEGEND
Limey Unit
Stockwork Corridor
Stockwork Zones
SLC Design

# WEST DOME POTENTIAL

- **Geologically similar to the Telfer Deeps system**
- **Recent drilling program identified potential strike length > 1000 m, similar depth as Telfer Deeps**
- **Au – Cu grades from wide spaced drill data similar tenor to parts of Telfer Deeps system**






TELFER PROJECT
WEST DOME DEEPS
Uncalibrated Drilling Results
Note: Drillhole (WRC25046) is 250 m south of the nearest deep drillhole (W27563W1). Other drillholes shown are projected from >500 m to the north.
DIAMOND DRILLHOLE
28m @ 2.2, 0.03
40m @ 1.0, 0.02
60m @ 5.2, 0.04
85m @ 0.7, 0.03
LOWER LENS 1 UNIT
12.8m @ 1.0, 0.1
incl 2.6m @ 2.8, 1.2
250m
Uncalibrated Results
m @ Au g/t, Cu %
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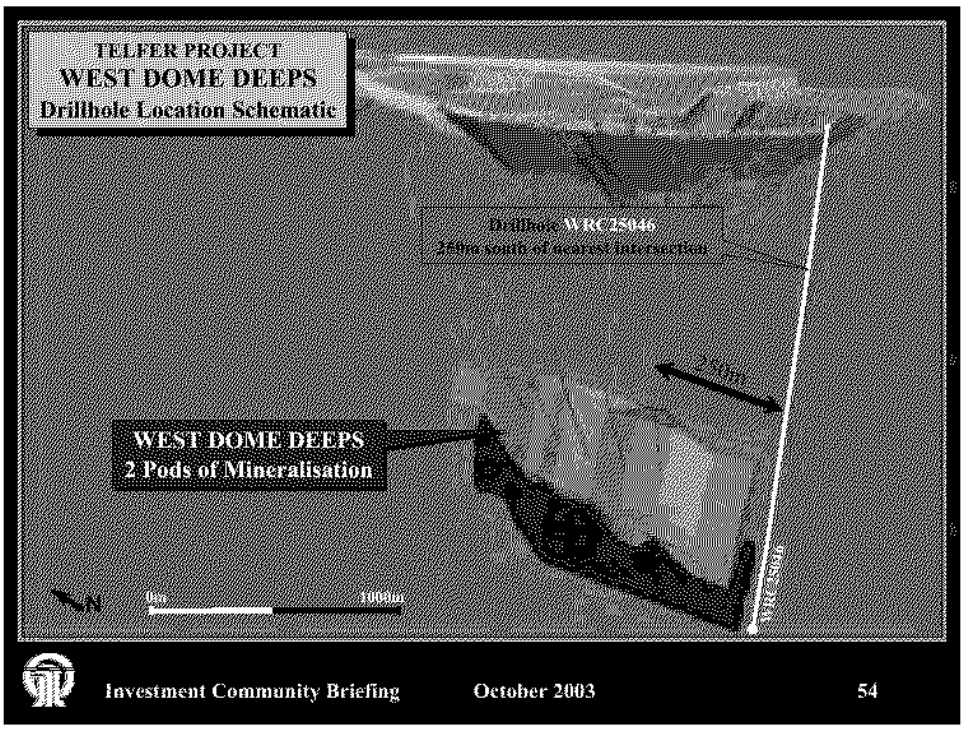
TELFER PROJECT
WEST DOME DEEPS
Drillhole Location Schematic
Drillhole WRC25046
250m south of nearest intersection
250m
WEST DOME DEEPS
2 Pods of Mineralisation
N
0m
100m
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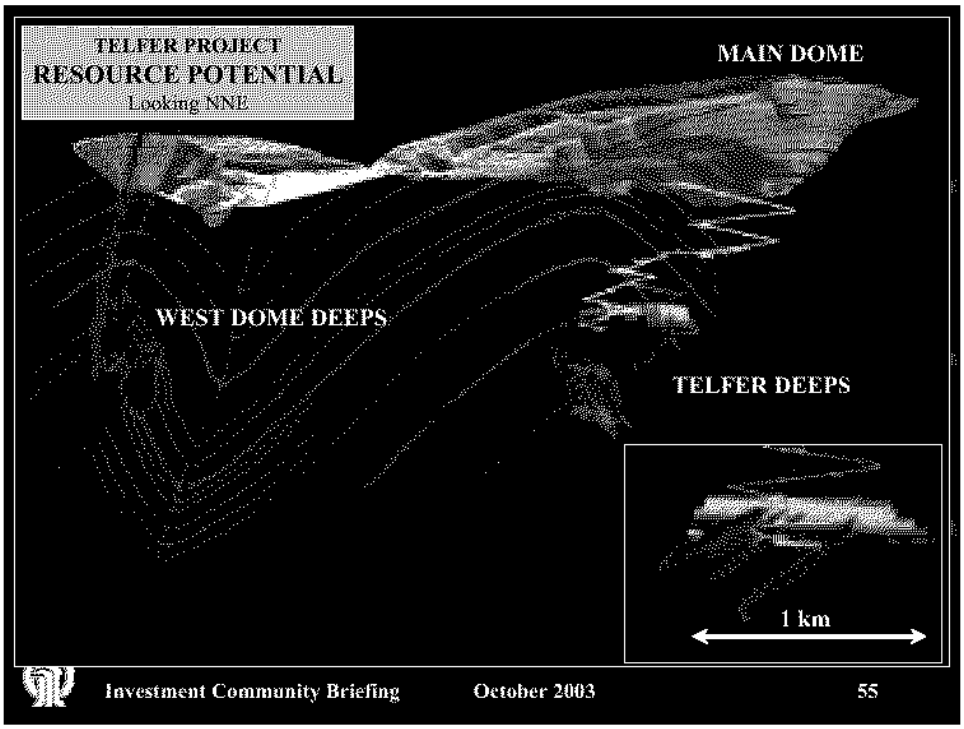



# IMPLICATION FOR TELFER DISTRICT

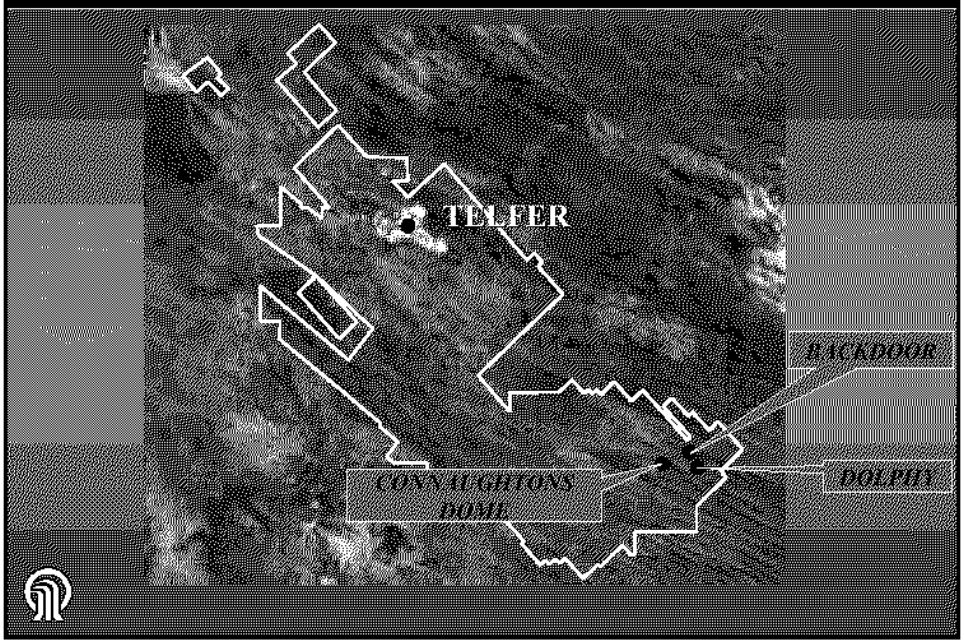
- **The understanding gained during the Project is significantly improving our ability to optimise district resources**
- **Demonstrated improvements at Telfer Dome include:**
  - **structural controls on stockwork mineralisation**
  - **stratigraphic controls for reef mineralisation at depth**
  - **geochemical signature for the Telfer deposits**
  - **potential hazards of using raw drillhole grades**

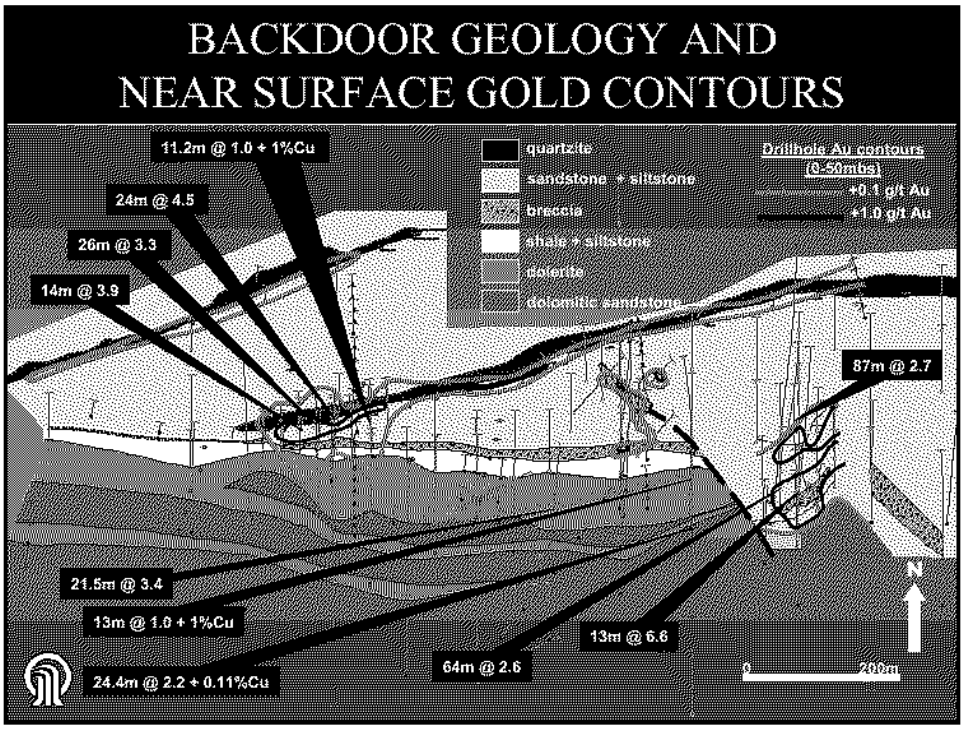
# IMPLICATION FOR TELFER DISTRICT

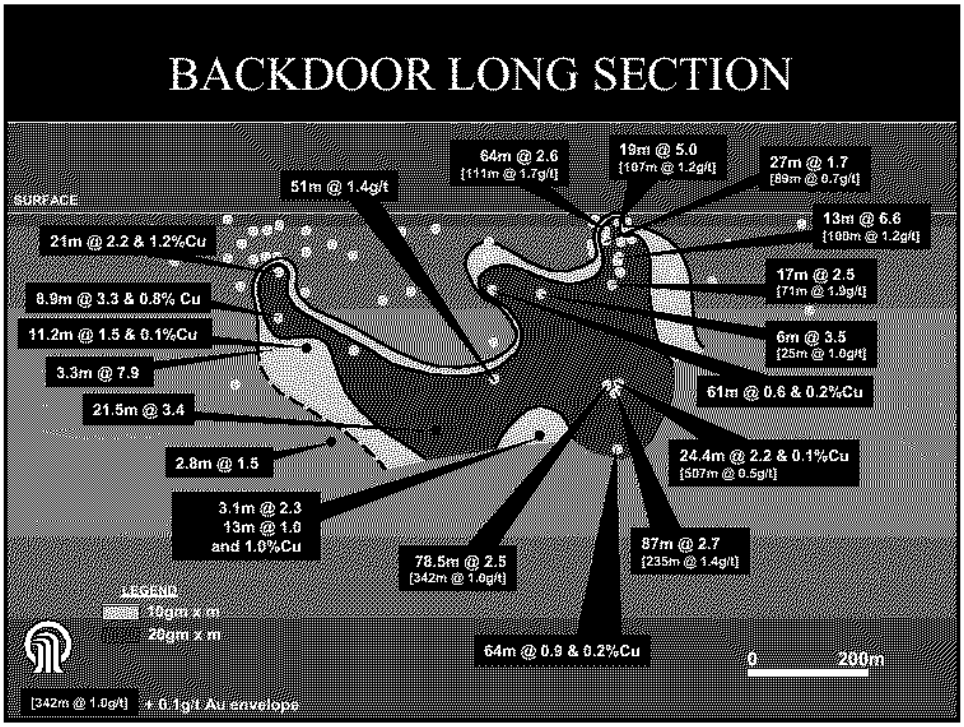
- **Areas where this understanding improves district exploration:**
  - **Trotman's Dome deposits**
  - **Connaughton's Dome deposits**



# REGIONAL TENEMENTS AND PROSPECTS




BACKDOOR GEOLOGY AND
NEAR SURFACE GOLD CONTOURS
11.2m @ 1.0 + 1%Cu
24m @ 4.5
26m @ 3.3
14m @ 3.9
quartzite
sandstone + siltstone
breccia
shale + siltstone
dolerite
dolomitic sandstone
Drillhole Au contours
(0-50mbs)
+0.1 g/t Au
+1.0 g/t Au
87m @ 2.7
21.5m @ 3.4
13m @ 1.0 + 1%Cu
24.4m @ 2.2 + 0.11%Cu
64m @ 2.6
13m @ 6.6
N
0
200m


BACKDOOR LONG SECTION
SURFACE
64m @ 2.6
[111m @ 1.7g/t]
19m @ 5.0
[107m @ 1.2g/t]
27m @ 1.7
[89m @ 0.7g/t]
51m @ 1.4g/t
13m @ 6.6
[108m @ 1.2g/t]
21m @ 2.2 & 1.2%Cu
17m @ 2.5
[71m @ 1.9g/t]
8.9m @ 3.3 & 0.8% Cu
11.2m @ 1.5 & 0.1%Cu
6m @ 3.5
[25m @ 1.0g/t]
3.3m @ 7.9
61m @ 0.6 & 0.2%Cu
21.5m @ 3.4
2.8m @ 1.5
24.4m @ 2.2 & 0.1%Cu
[507m @ 0.5g/t]
3.1m @ 2.3
13m @ 1.0
and 1.0%Cu
87m @ 2.7
[235m @ 1.4g/t]
78.5m @ 2.5
[342m @ 1.0g/t]
LEGEND
10gm x m
20gm x m
64m @ 0.9 & 0.2%Cu
0
200m
[342m @ 1.0g/t] + 0.1g/t Au envelope

# POST - FEASIBILITY STUDY RECONCILIATION RESULTS



# OPEN PIT RECONCILIATION – Sep 03 Qtr

**Open Pit Mining and Reconciliation**

- **Grade control defined**
  - **468,496 t @ 0.63 g/t Au**
- **Reserve calibrated to bulk sampling defined**
  - **402,463 t @ 0.64 g/t Au**
- **Reconciliation to date shows**
  - **16% more tonnes**
  - **15% more gold Oz**

COMMENTS……

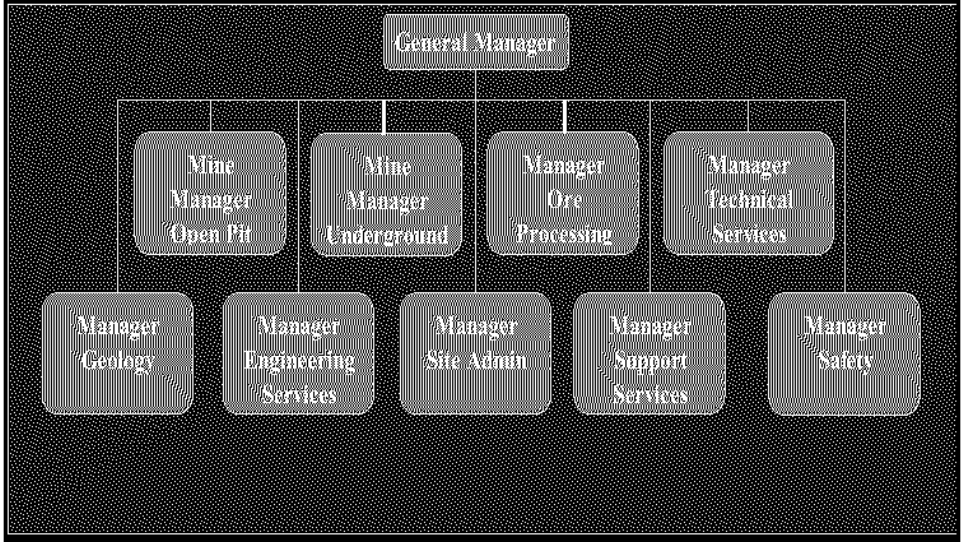


TELFER

## Operations

**Marco Zolezzi**
**GENERAL MANAGER - TELFER**

# ORGANISATIONAL STRUCTURE






# HUMAN RESOURCES – KEY ISSUES

- **Experienced operations management team recruited and in place**
- **New employees recruited "job ready"**
- **Federal Australian Workplace Agreements implemented for employees**
- **Use of contractors in specialist areas**
- **Recruitment experience to date indicates Telfer able to attract suitable employees**

## HUMAN RESOURCES – MANNING LEVELS

**Newcrest employees:**

| | |
|---|---|
| • Current | 152 |
| • Forecast by Jun 04 | 391 |
| **Total Operations current manning** | **498** |

**Including:**

| | |
|---|---|
| • EROC (Underground) | 88 |
| • Westrac (Open Pit Maintenance) | 38 |
| • Liebherr (Open Pit Maintenance) | 8 |
| • Monadelphous (Engineering services) | 22 |
| • ESS-Compass (Village Services) | 83 |



## TELFER VILLAGE

**Was historically a residential town**

- **Included facilities and services established over a 30 year period**
- **Older accommodation required demolition**
- **Considerable proportion of existing services required upgrade or replacement**
- **Village has been established for a 30 year mine life**

## TELFER VILLAGE – ACCOMMODATION

**Completed building:**

- 372 Rental Accommodation Rooms
- 328 Ensuited Rooms
- 23 Laundries
- 9 Ablution Blocks

**Completed refurbishing:**

- 366 existing Ensuited Rooms
- 48 existing Twin Share Rooms
- 88 existing Single Rooms

**Total Number of Rooms = 1,204**



## TELFER VILLAGE

**Infrastructure**

- Upgrade Dining Room / Kitchen
- Install Crib Collection Room
- Extend & upgrade Bar areas

**Recreational**

- Refurbish tennis / squash courts
- Upgrade indoor cricket
- Upgrade gymnasium
- Repair and reline swimming pool
- Health & Lifestyle Co-ordinator

**Flights**

- Jet 5 days / week

## RESULT FIRST CLASS FACILITY

- **Excellent Accommodation**
- **Access to Communication Services**
- **Multiple Sporting Facilities**
- **Multiple Recreational Activities**
- **Professional Catering & Cleaning Services**
- **High Standard Air Charter Service**



## OPERATIONS – OPEN PIT

## OPEN PIT STARTUP – KEY OUTCOMES

- **Good safety & environmental performance**
- **Commenced mining with the Liebherr 996 shovel in June**
- **2 x Liebherr 995 backhoes were commissioned in June/July**
- **Currently operating 11 x Cat 793's with 3 more trucks due in Q1-04**
- **Current workforce of 72 operators**



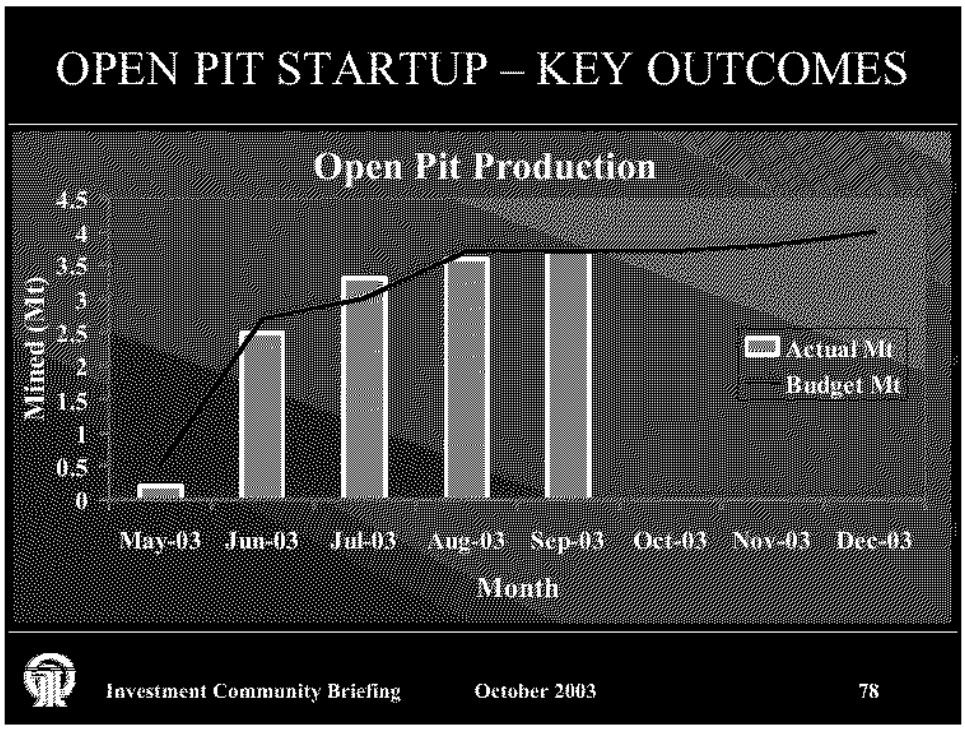
## OPEN PIT STARTUP – KEY OUTCOMES

- **Total tonnes mined to date – 14 Mt (130kt/day)**
- **No issues with the mining fleet**
- **1.5 Mbcm of Waste already hauled to the Tailings Storage Facility. Initial starter dam requirement 3 Mbcm**
- **Opportunity being utilised to deliver additional material to the tailings dam with the truck fleet before milling commences.**
- **Backfilling around Crushers, Reclaim & ROM pad areas on schedule for completion Jan 04**

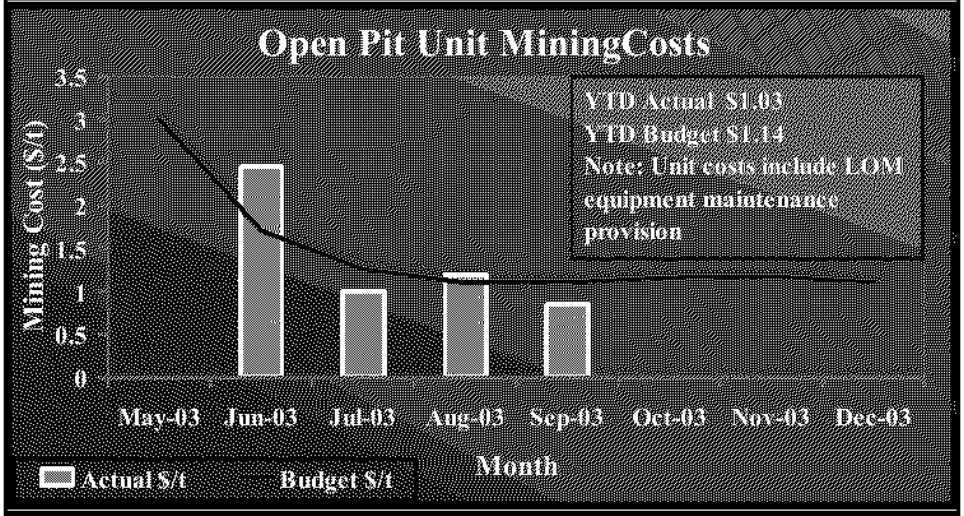
## OPEN PIT STARTUP – KEY OUTCOMES

- **Drilling & blasting performance inline with Feasibility estimates**
- **Average P.F. = 0.22 kg/bcm**
- **Shovel & Excavator achieved capacities above Feasibility estimates**
- **996 shovel 4,500 t/hr**
- **995 excavator 3,200 t/hr**



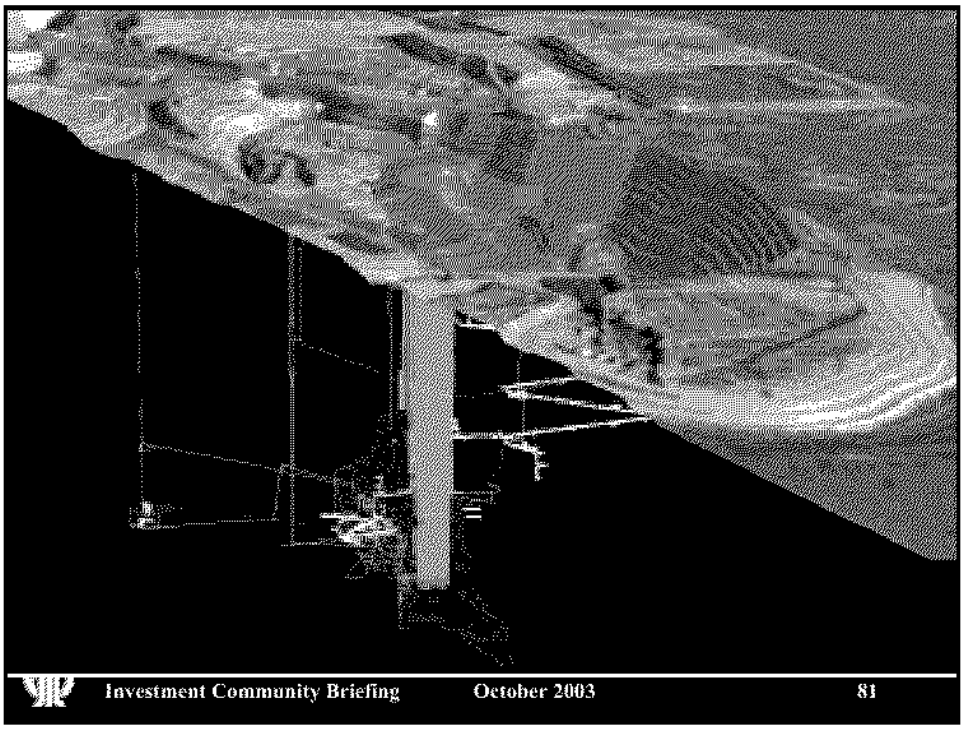

OPEN PIT STARTUP – KEY OUTCOMES
Open Pit Production
Mined (Mt)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Actual Mt
Budget Mt
May-03
Jun-03
Jul-03
Aug-03
Sep-03
Oct-03
Nov-03
Dec-03
Month
Investment Community Briefing
October 2003
78

# OPEN PIT STARTUP – KEY OUTCOMES






# OPERATIONS – UNDERGROUND





## UG – SELECTION OF MINING METHOD

**Telfer Deeps**

- Large tonnage, low height, wide at the top
- High grade at the top
- Relatively strong rock mass
- No difference in ore/waste rock properties

**Mining Method**

- SLC recommended
- Undercut Level
  - Optimised timing and recovery of high grade material

## UNDERGROUND – ORE HAULAGE

- **Shaft hoisting selected as the preferred strategy**
  - **Initial shaft depth 1100 m and 4.5 Mtpa**
  - **Shaft may be deepened later and capacity increased if required**
- **Underground crushing is required**
- **Crusher positioned adjacent to the shaft**
- **Haulage to the crusher is by trucks loaded from chutes**



## UNDERGROUND IMPLEMENTATION

**Feasibility demonstrated project viability but recognised need to:**

- **Monitor Ridgeway performance**
- **Assess impact of mineralisation at depth**
- **Assess impact of mineralisation to West**

## UNDERGROUND IMPLEMENTATION

**Ridgeway performance**

- **No major design changes warranted**

**Mineralisation at depth**

- **Analysis of haulage options at depth indicate potential for conveyor to be preferred**
- **Progressive development of conveyor drive will provide exploration platform**



## UNDERGROUND IMPLEMENTATION

**Impact of mineralisation to west**

- **Positive exploration outcome**
- **Add on with low incremental capital and operating costs**
- **No material impact on mining of SLC block**
- **Assessing benefits of moving SLC access and infrastructure to maximise extraction**
- **No change to SLC capital costs & schedule**
- **Study in progress – initial phase due December 03**

## UNDERGROUND – MINE ACCESS

- Use existing development for as long as practical
- Sections of existing decline will be replaced in stages
  - New portal on western side of Open Pit
  - By-pass around cave area has been deferred until after project commissioned
  - Decline to surface is deferred for 4 to 5 years
- Access to mine by shaft only - considered and rejected



## UNDERGROUND – VENTILATION

- Intake via the shaft and decline
- Exhaust via raises at the end of each production level
- Surface cooling plant at shaft collar
- Ventilation design based on:
  - Detailed analysis of Telfer climate data
  - Assessment of mine heat loads
  - Evaluation of alternatives for cooling
  - Experience

## UNDERGROUND MILESTONES

| Description | % Complete |
|---|---|
| Intermediate shaft access | 100% |
| Decline to bottom of shaft RL | 100% |
| Bulk Sample Drives | 86% |
| Haulage Access | 23% |

- Development to date is in line with the Feasibility Study schedule



## TELFER

## Site Development

**Ivor Whitefield**
PROJECT MANAGER – SITE DEVELOPMENT

# TELFER

**Site Development Group responsibility:**

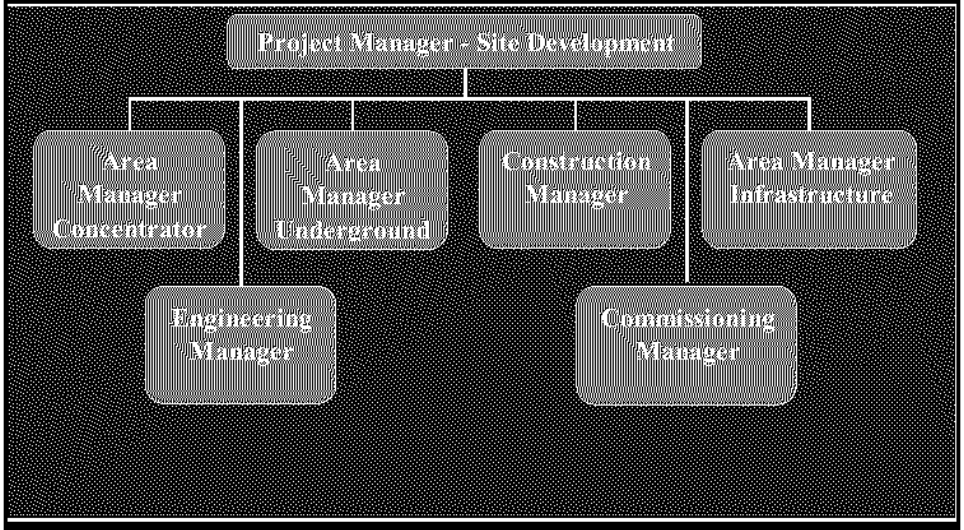
- **Development of Site Infrastructure at Telfer, including Access Road**
- **Treatment Plant**
- **Underground Fixed Capital Plant**

**In 2 Stages:**

- **Stage 1**
  - **Treatment of open pit bulk float ore**
- **Stage 2**
  - **Treatment of sequential float open pit & u/g ore**



# ORGANISATIONAL STRUCTURE



## STAGE 1 - INFRASTRUCTURE

**Includes:**

- Access Road
- Water
- Power Reticulation
- Village
- Tailings Storage Facility
- Communications
- Bulk Earthworks and Internal Roads
- Administration Buildings
- Fuel Systems
- Open Pit Infrastructure



## STAGE 1 - CONCENTRATOR

- Conventional crushing & SABC
  - Twin comminution circuits
- Bulk flotation circuit
- Produces gravity gold and auriferous copper concentrate from sulphide ore

## STAGE 1 - UNDERGROUND FIXED PLANT

- **Commence haulage shaft**
- **Fabricate & erect headframe**
- **Procure long lead time capital equipment**
- **Construction of associated underground plant**



## STAGE 2 - CONCENTRATOR

**Add:**

- **Sequential flotation (to treat pyritic ores)**
- **Pyrite leach**
- **Cyanide recovery**

**Which produces gold doré in addition to float concentrate & gravity gold**

## STAGE 2 - UG INFRASTRUCTURE

**Complete :**

- **Shaft**
- **Truck loading system**
- **Crushing and loading system**
- **Install winder and hoisting system**
- **Install dewatering system**
- **Ventilation systems**
- **Underground services**



## SURFACE INFRASTRUCTURE

**Telfer Access Road**

- **2 separate sections:**
  - **Public Road from Port Hedland to start of Telfer Access Road:**
    - **328km - 290km sealed, 38km unsealed**
    - **Maintained by State Govt & Shire**
  - **Second section is Telfer Access Road, recently reconstructed by Newcrest Mining Ltd to achieve same availability as public section:**
    - **Profiled gravel road; 137km**

**Total 465km**

## SURFACE INFRASTRUCTURE

**Potable Water**

- Sourced from 1 existing & 1 new borefield
- 1.6 Ml/day needed; system capacity 1.8 Ml/day
- 12 km of pipe required; 10 km laid to date

**Raw Water**

- Projected demand 67 Ml/day (initial requirement 29 Ml/d)
- Supplied from 1 existing (44 Ml/d) & 1 new (23 Ml/d) borefield
- 52 km total pipelines; 50 km installed to date



## SURFACE INFRASTRUCTURE

**HV Power Reticulation**

- New 33kV transmission line connecting existing & new power stations
- 11 kV line to shaft and underground
- 33 kV line to concentrator, borefields & village
- 35 km total power lines; 19 km installed to date
- Completion on schedule for end November 03

## SURFACE INFRASTRUCTURE

**Tailings Storage Facility**

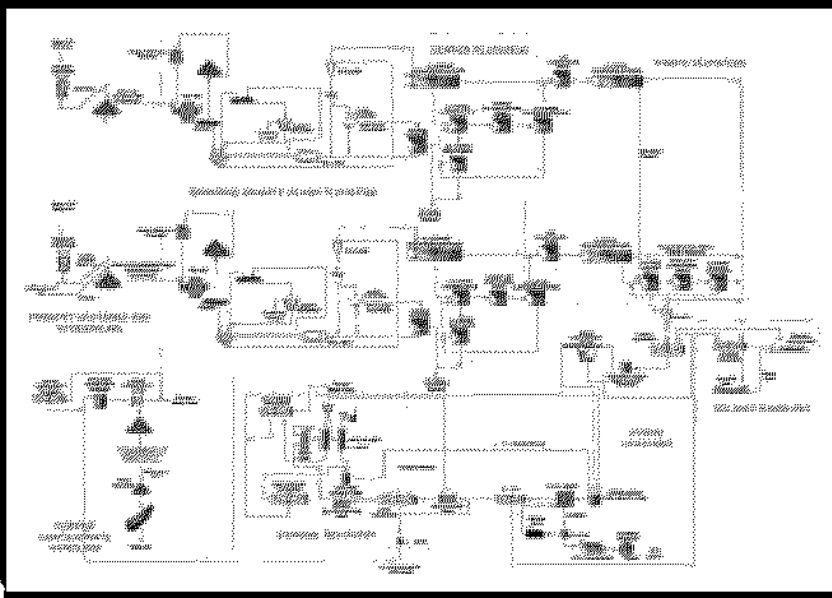
- **Area 472 ha; circular design; 2.5 km dia**
- **Stage 1 is 8 metres high; 4.8 Mbcm**
- **1.5 Mbcm placed to date**
- **Zone 1 (conditioned clay waste) being placed at 5,000 $m^3$/day; complete January 2004**



## CONCENTRATOR SCOPE

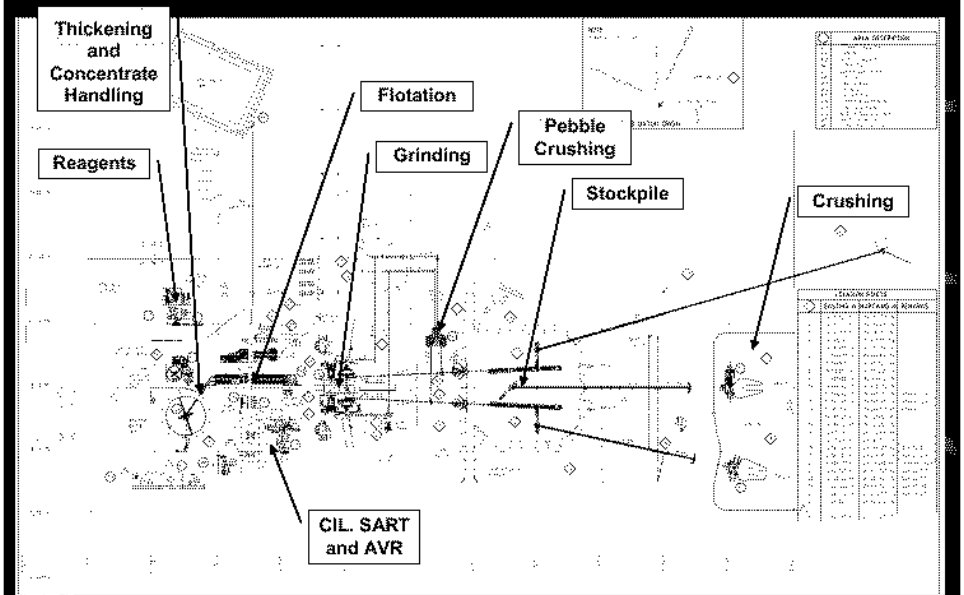
- **Nominal throughput rate of 17 to 19 Mtpa**
- **Two trains**
  - **Blend of open pit and U/G sequential ore (#1)**
  - **Bulk flotation of open pit ore (#2)**
- **Major Areas**
  - **Crushing and Stockpiling**
  - **Grinding**
  - **Flotation**
  - **Concentrate Handling and Recovery**
  - **Reagents and Plant Services**

# CONCENTRATOR FLOWSHEET





# CONCENTRATOR PLANT LAYOUT



# CONCENTRATOR MAJOR COMMODITIES

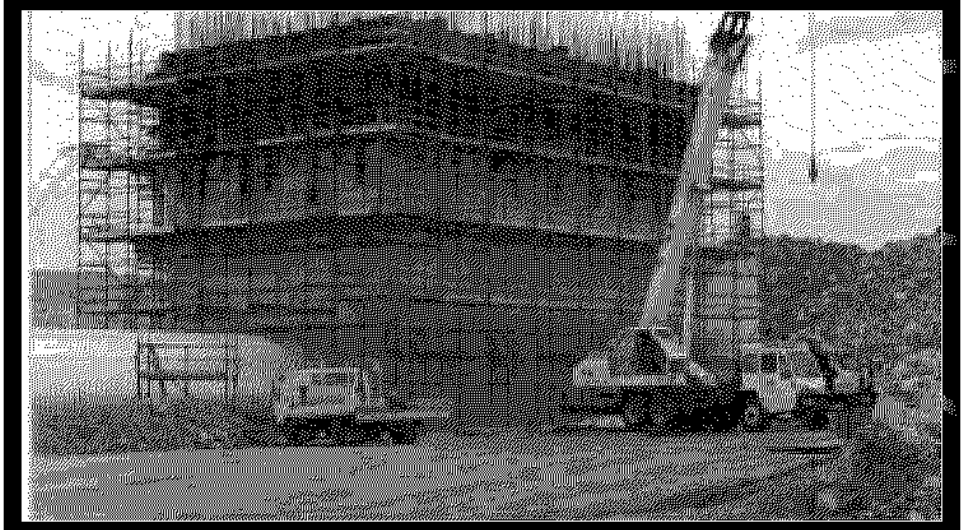
| ITEM | QUANTITY | STATUS |
|---|---|---|
| Structural Concrete | ~ 33,000 $m^3$ | 15,000 $m^3$ placed |
| Structural Steel, Plate work and Tankage | ~ 5,000 tonne | 600 tonne erected |
| Pipe | ~ 74,000 m | Bulk pipe ordered |
| Cables | ~ 696,000m | Bulk cable ordered |
| Direct Installation hours | ~ 800,000 | ~ 100,000 |
| Power Demand/ No of drives | 70 MW/ 800 | 95% of motors ordered |



# CONCENTRATOR SITE WORKS

| | | |
|---|---|---|
| Civil Works | DTMT | Crushing, Ore Reclaim and Grinding Areas |
| | S&N Construction | Flotation, Reagents and other Plant Areas |
| Steel, Mechanical Equipment and Piping (SMP) | Pacific Industrial | Crushing and Ore Reclaim Areas |
| | Simon Engineering | Grinding, Flotation and Other Plant Areas |
| Electrical and Instrumentation | Downer RML | High Voltage common, Crushing and Ore Reclaim Areas |
| | O'Donnell Griffin | Grinding, Flotation, Reagent and Plant Services |

## CRUSHER STRUCTURES & CONVEYOR TUNNELS





## SAG AND BALL MILL FOUNDATIONS

## STRUCTURAL STEEL



## CONCENTRATOR – OFFSITE MAJOR PACKAGES

| | |
|---|---|
| **Grinding Mills** | **Metso** |
| **SAG Mill Motor** | **ABB Alstom** |
| **Primary Crushers** | **Metso** |
| **Flotation Cells, Thickeners** | **Outokumpu** |
| **Steel and Plate Fabrication** | **Park Engineering, Pacific Industrial, AGC** |
| **HV Switchgear, Transformers, Variable Speed Drives** | **ABB** |
| **Process Control System** | **Yokogawa** |

# UNDERGROUND INFRASTRUCTURE

**Winder**

- **Ground mounted ABB friction winder with pulse width modulation drive control**
- **5.5 MW drive (expandable to 11 MW)**
- **Capacity 4.5 Mtpa (expandable)**
- **Winder ordered September 03 for delivery September 2004**



# UNDERGROUND INFRASTRUCTURE

**Shaft**

- **1100m deep, with intermediate access at 840m**
- **Shaft collar complete**
- **Raiseboring to 2.4m dia under way (@50% complete)**
- **7m dia shaft is concrete lined using a two stage strip and line construction**
- **Shaft provides rock hoisting & emergency access & is main chilled air intake**
- **Shaft sinking contractor mobilisation December 2003**

# UNDERGROUND INFRASTRUCTURE

**Ventilation**

- **Main air intake (shaft) provides 500 $m^3/s$**
- **6MW ammonia refrigeration plants supply chilled water to bulk air coolers**
- **North and South Ventilation shafts are 4.5m dia, 840m deep**
- **Centrifugal surface fans provide 600 $m^3/s$**



# UNDERGROUND INFRASTRUCTURE

**U/G Infrastructure Schedule**

- **Shaft sinking start is on schedule for January 2004**
- **Target completion for all U/G Infrastructure construction is March 2005**
- **Budgeted completion June 2005 for start of all system commissioning**

# TELFER

## Major Aquisitions

**Mario Di Cristofaro**
MANAGER - AQUISITIONS



# ACQUISITIONS SCOPE

**Covers:**

- **Open Pit Mining Fleet supply**
- **Maintenance contracts for open pit fleet**
- **Gas Supply**
- **Gas Transportation to Telfer**
- **On-Site Power Generation**
- **Operating and maintenance contracts for the power station**
- **Concentrates storage facility**

## OPEN PIT MINING FLEET

**Initial fleet delivered:**

- **11 trucks (CAT 793s)**
- **1 shovel and 3 backhoes (Liebherr)**
- **Ancilliary equipment**
- **2 drills. (Drilltech D75KS)**



## OPEN PIT MINING FLEET

- **Equipment to be delivered:**
  - **3 Cat 793 trucks on order for delivery January 2004**
  - **3rd drill – February 2004**
- **Capital costs are in line with Feasibility Study estimates**
- **Achieving productivities predicted in Feasibility Study**

## GAS SUPPLY

- **Requirement – Maximum Daily Quantity of 25 TJ/day**
- **Negotiations with 2 potential suppliers being finalised**



## GAS TRANSPORTATION TO TELFER

**Gas to be transported:**

- **To Port Hedland by PEP pipeline owned by Epic Energy**
- **Port Hedland to Telfer by purpose built pipeline**
- **Gas Transportation contracts being finalised**

## GAS TRANSPORTATION TO TELFER

**Construction work required:**

- **PEP pipeline - no work required.**
- **Telfer Pipeline – construction of a 450km, 250 NB, Class 600 pipeline, with operating and standby compressor located at Port Hedland**
- **Construction scheduled to start 20th October, completion May 2004**
- **Strategies developed for construction through cyclone season**



## POWER STATION

- **Installed capacity**
  - **3 x 47 MW dual fired GE gas turbines**
  - **Existing 20 MW diesel power station**
- **Power Station construction schedule:**
  - **2 x 47 MW gas turbines installed by mid April 2004**
  - **3rd unit installed by December 2004 (coincident with underground mine)**

## POWER STATION

**Current status:**

- **2 x GT's tested at GE factory in September**
- **One set fully load tested**
- **Shipped for Port Hedland 26th September**
- **Site works in progress**
- **On schedule for completion by April 2004 with first 2 units operating**



## POWER STATION

**Costs:**

- **Generating costs are in line with Feasibility Study estimate**
- **Capital cost is in line with Feasibility Study estimate**

## GAS TURBINE GENERATOR UNDER TEST



## TELFER

## Conclusions

**Bruce Price**
EXECUTIVE GENERAL MANAGER
PROJECT DEVELOPMENT

# CONCLUSION

**Project Implementation vs Feasibility Study**

- **Owners team concept has been a success**
- **Long lead items procured and being delivered as per schedule**
- **Early completion of major infrastructure including village and access road achieved**



# PROJECT COST & FEASIBILITY STUDY ESTIMATES

**Feasibility Study estimate:**

| | |
|---|---|
| **Stage 1** | **$976 M** |
| **Stage 2** | **$215 M** |
| **Total** | **$1,191 M** |

- **Following appropriate level of engineering design, definitive estimate has confirmed Feasibility Study Estimate**

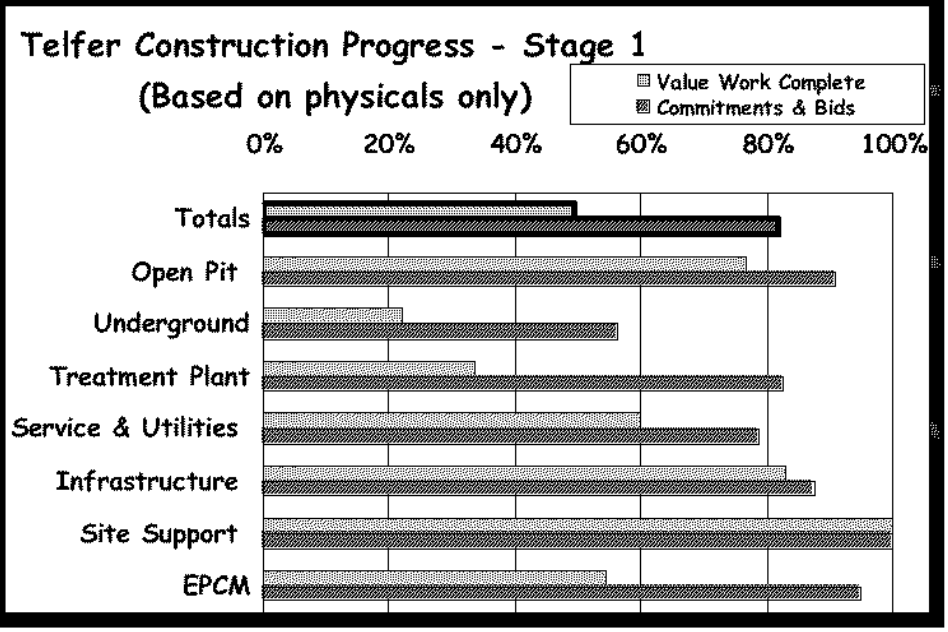
# CONCLUSION

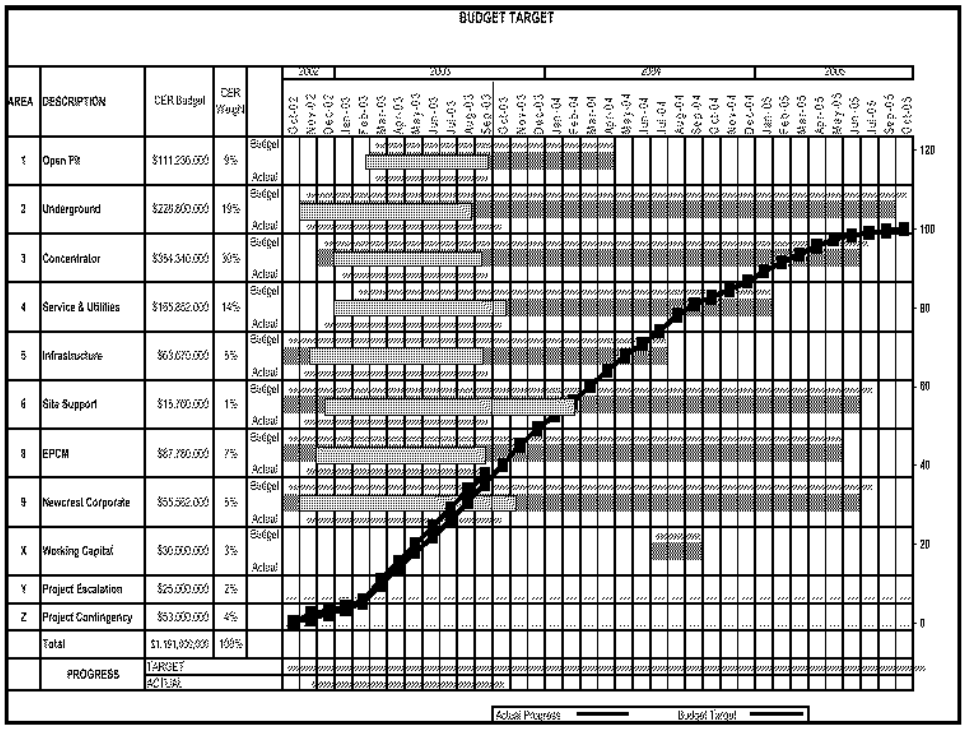
**Project Schedule vs Feasibility Study**

- **Construction on schedule to complete concentrator Stage 1 in October 2004**
- **Schedule float intact**



# TELFER PROJECT




BUDGET TARGET
2002
2003
2004
2005
AREA
DESCRIPTION
CER Budget
CER Weight
1 Open Pit $111,230,000 9%
2 Underground $228,800,000 19%
3 Concentrator $364,340,000 30%
4 Service & Utilities $165,282,000 14%
5 Infrastructure $63,670,000 5%
6 Site Support $15,700,000 1%
8 EPCM $87,760,000 7%
9 Newcrest Corporate $55,562,000 5%
X Working Capital $30,000,000 3%
Y Project Escalation $25,000,000 2%
Z Project Contingency $53,000,000 4%
Total $1,191,800,000 100%
PROGRESS
TARGET
ACTUAL
Budget
Actual
Actual Progress
Budget Target


NEWCREST MINING LIMITED
TELFER PROJECT
Thankyou for your attention……
Investment Community Briefing October 2003 132