



**HAZELWOOD**  
POWER CORPORATION

10 October 1995

ATTENTION: MR DOUG SCENEY

Resource Manager  
Department of Agriculture, Energy and Minerals  
115 Victoria Parade  
PO Box 2145 MDC  
Fitzroy 3065

Dear Sir,

HAZELWOOD POWER CORPORATION  
MINE REHABILITATION COST ESTIMATES

Further to our letter 9 August 1995 (submission regarding 'ongoing' and 'end of life' rehabilitation cost estimates for HPC Mine) we were requested by Mr Doug Sceney to provide supporting information on how the estimates were arrived at.

Please find attached the working papers which provides this information.

This issue of using the sale of assets at the 'end of life' to offset final rehabilitation costs was discussed - we believe that this is quite in order, in fact HPC will have numerous additional assets (not included in our submission) which will be realisable. These assets include approximately \$5 Million dollars of grazing land within our boundary which we have no current plans to mine.

Your faithfully,

Ian A Derham  
General Manager, Mining Operations

att.

**HAZELWOOD POWER CORPORATION MINE  
REHABILITATION OF LAND DISTURBED BY MINING  
ESTIMATE OF COSTS - LIFE OF MINE  
FROM JULY 1995**

*Current Exp ~\$1M p.o.  
93-94 \$ 410,000 - 21 ha  
94-95 \$ 882,000 2 1/2 ha*

**1 EASTERN OVERBURDEN DUMP**

AREA REMAINING - 150 HA

*(6 ha per yr)*

SHAPING @ \$9000/HA	\$1.35M	
SOWING @ \$1100/HA	\$0.17M	
DRAINAGE / WETLANDS	\$1.00M	
TREES - 50,000 @ \$8 ea	\$0.40M	<i>- high \$ 0.15m</i>
FENCING - 25KM @ \$6/lin m	\$0.20M	<i>✓</i>
CAP TIP / SUMPS	\$1.00M	
IMPORT TOPSOIL		
150,000CM @ \$20/CM	\$3.00M	
		<b>TOTAL \$7.1M</b>

**2 MINE BATTERS**

**EASTERN BATTERS**

OLD QUARRY - CART SURPLUS \$0.9M

DBL / NE CORNER - 1500m

EARTHWORKS @ \$333/lin m	\$0.50M	
SOWING @ \$11/lin m	\$0.02M	\$1.4M

**NORTHERN BATTERS**

REMAINING - 4,000m



*Area = 240,000 m<sup>2</sup>  
TIS = 240,000 x 0.1 = 24,000 m<sup>2</sup> at \$20/m<sup>2</sup>  
= \$480,000 for TIS.*

EARTHWORKS @ \$333/lin m	\$1.33M	<i>✓</i>
SOWING @ \$11/lin m	\$0.04M	<i>✓ \$1.4M</i>

*Shaping 240,000 = 24 ha  
\$1000/day x 0.5 ha = 2000/ha  
= \$500,000 shaping.*

**SOUTHERN BATTERS**

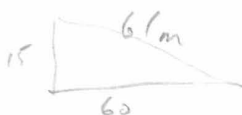
REMAINING - 2500m

EARTHWORKS @ \$333/lin m	\$0.83M	
SOWING @ \$11/lin m	\$0.03M	\$0.9M

*Earthworks \$1.0m c/f 1.3m*

**STRIP/STOCKPILE/RECLAIM/SPREAD LOCAL TOPSOIL - BATTERS**

80,000CM @ \$11	\$0.9M	<b>TOTAL \$4.6M</b>
		<i>\$11.7m.</i>



*Area = 7000m x 60 = 42 ha*



MOC

Appendix 3.

Page: A

5/5/94

PJM

X 6378

Dis - Establishment

No. 6

F/S Network - Cost Summary.

COSTS

Droppers : 46 off x \$6,500ea = 299,000

Press. Red. Tank: 4 off x \$14,000ea = 56,000

Stand Tanks : 2 off x \$5,000ea = 10,000

C &amp; D Tanks : 2 off x \$5,000ea = 10,000

Blgd Pipe Crossings: 82 off x \$3,400ea = 278,800

Anchor Blocks : 220 off x \$1,000ea = 220,000

Cons Pipe Stools: 4,230 off x \$60ea = 253,800

TOTAL 1,127,600NO COSTSAll pipe fittings: valves, exp joints, hydrants, sprays.  
Pump StationsREVENUE

Ø200 / Ø300 Pipe: 30,000 m x \$7/m = 210,000

Ø450, Ø600, Ø750 and Larger Pipe: 29,600 m x \$10/m = 296,000

506,000

TOTAL COST : \$621,600

27

No. 7

Appendix 4

cjkmi  
ext 3990

5 May 1994

NOTE FOR: MINE MANAGER MORWELL

SHUTDOWN COST  
6.6kV DISTRIBUTION SYSTEM

Attached is an estimate for the cost of dismantling and removing the entire 6.6kV distribution system at MOC.

It has been prepared on the basis of

- . A fully developed South East Field
- . All lines removed back to Feeder Supply Switches outside each of the three open cut substations
- . All cable and distribution cubicles removed
- . Interface point between plant and supply is the plant terminals - this is the supply end of the trailing cable for dredgers.

The net cost, taking account of expected salvage value is about \$380k.

  
B. Morwell

PLANT ENGINEER

att

**MOC 6.6kV Distr'n System Dismantelling Costs & Salvage Value.**

wp5apr94

Includes O/H lines equip, trailing cables, distribution cubicles & portable subs  
System to be dismantelled from field up to first pole outside main Substations

**Dismantelling Costs**

1 Overhead line removal. \$15,000/km. Route length - 46km.	Cost	690000
2 Cable Removal. Up to 200m lengths - \$350/cable    35 lengths 200 to 400m lengths - \$525/cable    13 lengths	Cost	19075
3 Distr Cub (7 off), Port Sub (9 off) Removal Crane, Truck, 4 Men, 4 days	Cost	8000
	Total	717075

**Salvage Value**

1 Concrete Poles, 345 off, @ \$400/pole	138000	
2 Timber Poles, 230 off, @ \$90/pole	20700	
3 Pole Transformers, 8100kva, @ \$10/kva	81000	
4 Distribution Cubs, 7 off salvagable, @ \$4000/cub	28000	
5 Pole JBs, est 50 salvagable, @ \$500/JB	25000	
6 Portable subs, 9 off, say 200kva, @ \$10/kva	18000	
7 Pole Switches, est 50 salvagable, @ \$500/switch	25000	
	Total	335700

No. 8

BORE SEALING AND INSTALLATION DURING STAGED FLOODING

Costs for sealing of bores	\$3.935 M
Costs for removal of M1 and M2 pumps	\$101 k
Costs for removal of bore head works	\$20 k
Costs for salvage of pumps	\$20 k +++
Costs for removal of collection lines	\$75 k
Pipe removal (cost neutral)	\$0
Modelling costs for staged flooding (5 weeks)	\$20 k
Installation of new bores (during staged flooding)	\$3.385 M
Installation of new pumps	\$620 k
Disposal of Pumps (after flooding is completed)	\$80 k +++
Capping of new bores	\$350 k
<b>TOTAL</b>	<b>\$8.386 M</b>

Reference: GEO - ENG  
Gary Honeychurch  
Attached Spreadsheet

ESCALATE TO \$8.52

+++ = Revenue

BORE SEALING AND INSTALLATION DURING STAGED FLOODING  
MORWELL OPEN CUT REHABILITATION

## SEALING COSTS

	No.	Cost per bore	Cost
M1 Observation bores	70	8000	560000
M2 Observation Bores	115	8000	920000
M1 Pumping Bores	54	20000	1080000
M2 Pumping Bores	55	25000	1375000
<b>SUBTOTAL</b>			<b>3935000</b>

## PUMP REMOVAL COSTS

	No.	Cost per bore	Cost
M2 Pumps	10	5000	50000
M1 Pumps	17	3000	51000
<b>SUBTOTAL</b>			<b>101000</b>

## COLLECTION LINE REMOVAL

	No.	Cost per bore	Cost
Excavation	15	2000	30000
Dismantle	15	1000	15000
Remove	15	1000	15000
Tansport	15	1000	15000
<b>SUBTOTAL</b>			<b>75000</b>

## NEW BORE INSTALLATION

	Depth	Cost/metre	No.	Cost
M2 Bore	250	1350	6	2025000
M1 Bore	170	800	10	1360000
<b>SUBTOTAL</b>				<b>3385000</b>

## NEW PUMPS

	No.	Cost/pump	Cost
M2 Pump	6	70000	420000
M1 Pump	10	20000	200000
<b>SUBTOTAL</b>			<b>620000</b>

## DISPOSAL OF PUMPS

	No.	Cost/pump	Cost
M2 Pump	6	10000	60000
M1 Pump	10	2000	20000
<b>SUBTOTAL</b>			<b>80000</b>

## SEALING OF NEW BORES

	No.	Cost/pump	Cost
M2 Pump	6	25000	150000
M1 Pump	10	20000	200000
<b>SUBTOTAL</b>			<b>350000</b>

<b>GRAND TOTAL</b>	<b>8386000</b>
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MOC		6/3/94	
Dis-Establishment - Buildings		Pjm	
PERMANENT BLDGS		x 6378.	
6A Toilet Block	6 x 3m <sup>2</sup>	x 32.75/m <sup>2</sup>	= 600
Control Centre	30 x 30m <sup>2</sup>	"	= 30,000
MOC Admin Bldg	(100+40) x 15m <sup>2</sup>	"	= 4,600
Stores Shed & Lean-to	40m x 20m <sup>2</sup>	"	= 26,200
Coal / Shift Storage Shed	30 x 20m <sup>2</sup>	"	= 19,700
F/S Shed & Lean-to	40 x 10m <sup>2</sup>	"	= 13,100
F/S Towers (2)	60 x 10m <sup>2</sup>	"	= 19,700
Vulcanisers Shop	30 x 40m <sup>2</sup>	"	= 39,300
No. 2 Gate Training Centre & Muster Rms.	70 x 20m <sup>2</sup>	"	= 45,900
Yal. Seam Village - Radio Shack	10 x 10m <sup>2</sup>	"	= 3,300
" " " - Green Shed	15 x 10m <sup>2</sup>	"	= 5,000
Lehmens Shed	30 x 20m <sup>2</sup>	"	= 19,700
Hose Wash	50 x 7m <sup>2</sup>	"	= 11,500
			<u>\$238,600</u>
PORTABLE BLDGS			
PDP Buildings	20 x 10m <sup>2</sup>	x 1,600 ea	= 1,600
F/S Offices	20 x 10m <sup>2</sup>	x 1,600 ea	= 1,600
Atco's (70 off) x	6 x 8m <sup>2</sup>	x 1,000 ea	= 70,000
			<u>\$73,200</u>
<b>TOTAL</b>			<u><b>\$311,800</b></u>



MOC - Dis-Establishment  
Grass Lu Roads - Rehabilitate  
Cost Summary

No. 17

3/6/91

PJ  
x6378Bitumin Rds - Rehab.

S<sup>th</sup> Pivot Access Rd 500m x \$35/m = \$17,500

Gravel Rds

N<sup>th</sup> Bat Ramps 4,000m x \$25/m = \$100,000  
Gr Lu - Lu 1

Western Bat. Ramps 1,500m x \$25/m = \$37,500  
Gr Lu - Lu 1

Brodribb Rd 1,000m x \$25/m = \$25,000

HTA Ponds 3,000m x \$25/m = \$75,000

E. Bat. Access Tracks 3,000m x \$25/m = \$75,000

Drilling Depot Rd 1,500m x \$25/m = \$37,500

Hardstanding Areas / Car Parks-Bitumin

Stores Bay 5: 1,400 m<sup>2</sup> x \$22/m<sup>2</sup> = \$30,800 ✓

MOC Admin Bldg 600 m<sup>2</sup> x \$22/m<sup>2</sup> = \$13,200 ✓

Control Centre 2,000 m<sup>2</sup> x \$22/m<sup>2</sup> = \$44,000 ✓

Geotech PT 4,600 m<sup>2</sup> x \$22/m<sup>2</sup> = \$101,200 ✓

-Gravel

F/S / DIO Erection Site 30,000 m<sup>2</sup> x \$12/m<sup>2</sup> = \$360,000

Coal Storage Shed Area 2,400 m<sup>2</sup> x \$12/m<sup>2</sup> = \$28,800

Solar Dried Plant Area 15,000 m<sup>2</sup> x \$12/m<sup>2</sup> = \$180,000

Bitumin Rds Convert to Gravel

21

N<sup>th</sup> Perim Rd 2,800m x \$10 = \$28,000

E. Perim Rd 2,600m x \$10 = \$26,000

Hazelwood Rd 4,000m x \$10 = \$40,000

TOTAL

ROUND UP TO \$1,219,000  
\$1.3M.

2.  
moc - Dis-Establishment  
Grass Lv Roads - Rehabilitate

3/6/9  
PJ~  
x637

Assumptions:

- Open cut developed to end of SEF.
- \$'s at May 1994 Prices.
- Perimeter roads returned to gravel roads (where sealed)
- Perimeter roads and major access roads maintained.
- Labour rate \$50/hr
- Hazelwood road returned to gravel road.

3/6/94

Pjm

x637

MOC

## Grass Lv Roads - Rehabilitate.

<u>Bitumin Rds</u>	<u>Dist(m)</u>	<u>Width(m)</u>	<u>Area.(m<sup>2</sup>)</u>	<u>Status</u>
N <sup>th</sup> Perim Rd	2,800	8	22,400	Convert to Grav
E. Perim Rd	2,600	8	20,800	Convert to Grav
S <sup>th</sup> Pivot Access Rd	500	8	4,000	Rehab
Hazelwood Rd.	4,000	8	32,000	Maintain

Gravel Rds

N <sup>th</sup> Perim Rd	2,000	10	20,000	Maintain
E. O/B Dump Perim Rd	3,000	8	24,000	Maintain
S <sup>th</sup> Perim Rd	1,000	10	10,000	Maintain
N <sup>th</sup> Batter Ramps Gr Lv - Lv 2	4,000	10	40,000	Rehab
Western Batter Ramp Gr Lv - Lv 1	1500	10	15,000	Rehab
Brodribb Rd	1,000	8	8,000	Rehab
HTA Ponds	3,000	8	24,000	Rehab
E. Bat. Access Tracks	3,000	8	24,000	Rehab
Drilling Depot Rd	1,500	8	12,000	Rehab

Baked Clay Rds

S <sup>th</sup> Perim Rd	2,000	10	20,000	Maintain
Western Perim Rd	4,000	10	40,000	Maintain

Hardstanding Areas / Car Parks.

Stores: Bay 5	(20x70)	1,400	Rehab
MOC Admin Bldg.	(20x30)	600	Rehab
Control Centre	(20x100)	2,000	Rehab
F/S / DIO Erection Site.	(150x200)	30,000	Rehab
Coal Storage Shed Area	(40x60)	2,400	Rehab
Geotech PT.	(100x20)+(60x20)	4,600	Rehab
Solar Dried Plant Area	(100x150)	15,000	Rehab

4.

3/6/94

MOC - Dis-Establishment

Grass Lu Roads - Rehabilitate

PJM  
x6378Convert Bitumin Rds to Gravel Rds. (Rate)

Assume 200m of road convert (rip off top 50mm).

Grader <sup>16G</sup> (rip & grade) \$100/hr x 4 hrs = 400

FEL \$80/hr x 4 hrs = 320

Trucks (6x6) 2 x \$50/hr x 4 hrs = 400 (assume short haul)

Labour \$50/hr x 14 hrs = 700

Roller \$40/hr x 2 hrs = 80

Water Cart \$80/hr x 2 hrs = 160

TOTAL 2,060Rate ∴ say \$1,050 / 100m  
\$10/mRehab Gravel Roads (Rate).

Assume 200m of road.

Excavator \$150/hr x 8 hrs = 1,200

Dozer (D8) \$100/hr x 8 hrs = 800

Grader (16G) \$100/hr x 2 hrs = 200

Labour \$50/hr x 16 hrs = 800

Topsoil (Supply & Place) \$20/lin metre = 2,000  
& grass.5,000Rate \$5,000 / 200m.  
\$25/m

Method: - Excavate trench along side of road.

- Doze base of road into trench

- Material from trench (clay) doze over works area and grade to suit

- Spread topsoil and grass.

18'

Rehab Bitumin Roads (Rate)

Remove bitumin \$10/m (from convert Bit. Rd to Gravel)

Rehab Gravel Rd \$25/m (from Rehab Gravel Rd).

\$25/m

MOC - Dis-Establishment

5.

3/6/94

Grass Lv Roads - Rehabilitate

15m

x 6378

Rehab Hardstanding (Gravel) Areas.

Method: 1.- Remove ( $\approx 200\text{mm}$  (assumed depth) of rock.  
 2.- Doze to natural landscape form  
 3.- Spread topsoil and grass.

1. Removal.

Cordells: Jan 1992 Building cost guide.

- Excavate by Machine

- reduce level by machine, load spoil onto truck, cart 10km and dispose (in soft rock) Page 38.

 $\$27.27 / \text{m}^3$  for  $2000 \text{m}^3$ .

x 1.5 (for increase inflation &amp; on-site contractor)

 $\$40 / \text{m}^3$ Given  $200\text{mm}$  depth excavate $\therefore \$8 / \text{m}^2$ 

2. Doze to natural landscape form.

Assume area  $100\text{m} \times 10\text{m}$ 

Dozer (D8)	$\$100/\text{hr} \times 8 \text{hrs}$	= 800
Labour	$\$50/\text{hr} \times 8 \text{hrs}$	= 400
		$\$1200 / 1000 \text{m}^2$

 $\therefore \$1.2 / \text{m}^2$ 

3. Spread topsoil and grass.

 $\$20 / \text{linear metre}$  where width  $10\text{m}$ . $\therefore \$2 / \text{m}^2$ 

Rehab Hardstanding (Gravel) Areas

 $8 + 1.2 + 2 = 11.2$  say  $\$12 / \text{m}^2$ .Rehab Car Parks

17.

Remove Bitumin	$\$10 / \text{m}^2$	(from Convert Bit. Rds to Gravel)
Rehab Base material	$\$12 / \text{m}^2$	(from Rehab Hardstanding (Gravel) Areas).
	$\$22 / \text{m}^2$	