



**CURRAGH RESOURCES INC.
DY DEPOSIT
LONG RANGE PLAN
SHAFT ACCESS
APRIL 1989**

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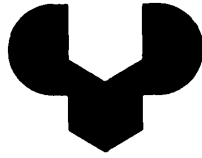
**CANADIAN
MINE
DEVELOPMENT**

**ENGINEERS
CONTRACTORS
SERVING THE MINING INDUSTRY**

**CURRAGH RESOURCES INC.
DY DEPOSIT**

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CANADIAN MINE DEVELOPMENT

April 10, 1989

Curragh Resources Inc.
95 Wellington St. West
Suite 1900, Box 12
TORONTO, ON
M5J 2N7

ATTENTION: MR. MARVIN H. PELLEY
EXECUTIVE VICE PRESIDENT

Dear Mr. Pelley:

RE: DY DEPOSIT - EXPLORATION AND MINING COST ESTIMATE

Canadian Mine Development takes pleasure in presenting its preliminary report on accessing the ore horizon for underground development of the Dy Deposit.

A production hoisting plant has been costed. The steel headframe has been limited in height to 24 metres (80 ft). Ore and waste will be dumped onto storage pads to be moved by front-end loaders. The headframe design should allow provision for increasing the dump elevation to accommodate bin installations.

The timbered shaft size has been altered to provide 2 skip compartments 7'6" by 6' and a manway 7'6" by 4'4".

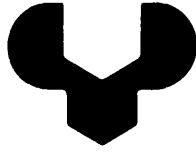
Lip pockets will be fed through an ore or waste hynam grizzly raise system.

Limited muck storage will be contained in rooms off the main crosscut. Rehandling to the grizzly will be by scooptram.

Initial mine development will be to intersect the ore zone at +/- 485. A short ore drive to the west will be used as a garage. The east ore drift will be advanced to the east limit of the zone. A bored vent raise and 2nd exit will be constructed.

Adequate ventilation will allow the rapid increase in ore production to 2,500 tonnes per day.

Initial ore production is projected for the higher grade areas of the B2 zone.



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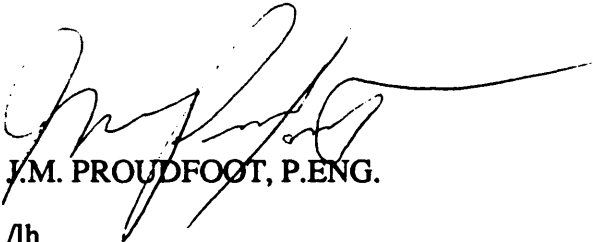
Mining costs have been adjusted to reflect operating costs for scoop and truck haulage, as well as the revised mine production rate of 2,500 tonnes per day.

It is anticipated that the initial mining method for the first 3 years will be 60% pilot, 40% bench.

I trust these changes reflect the meeting of April 7, 1989.

Yours very truly,

CANADIAN MINE DEVELOPMENT



J.M. PROUDFOOT, P.ENG.

/lh

TERMS OF REFERENCE

Canadian Mine Development was asked to review the drill data and indicated geologic ore reserves of the Dy Deposit and to prepare a plan and cost estimate to access the ore zones for exploration drifting and test stoping.

A mining cost was to be estimated for a production rate of 875,000 tonnes per annum.

A further request was made to cost a production shaft capable of hoisting 2,500 tonnes per day.

This report has been prepared without benefit of a site visit.

ORE RESERVES

Ore reserves have been estimated by Cypress Anvil personnel, and by Curragh Resources Inc. Drill indicated ore reserves are as tabled on Page 3.

**CURRAGH RESOURCES INC.
DY DEPOSIT**

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DRILL INDICATED ORE RESERVES

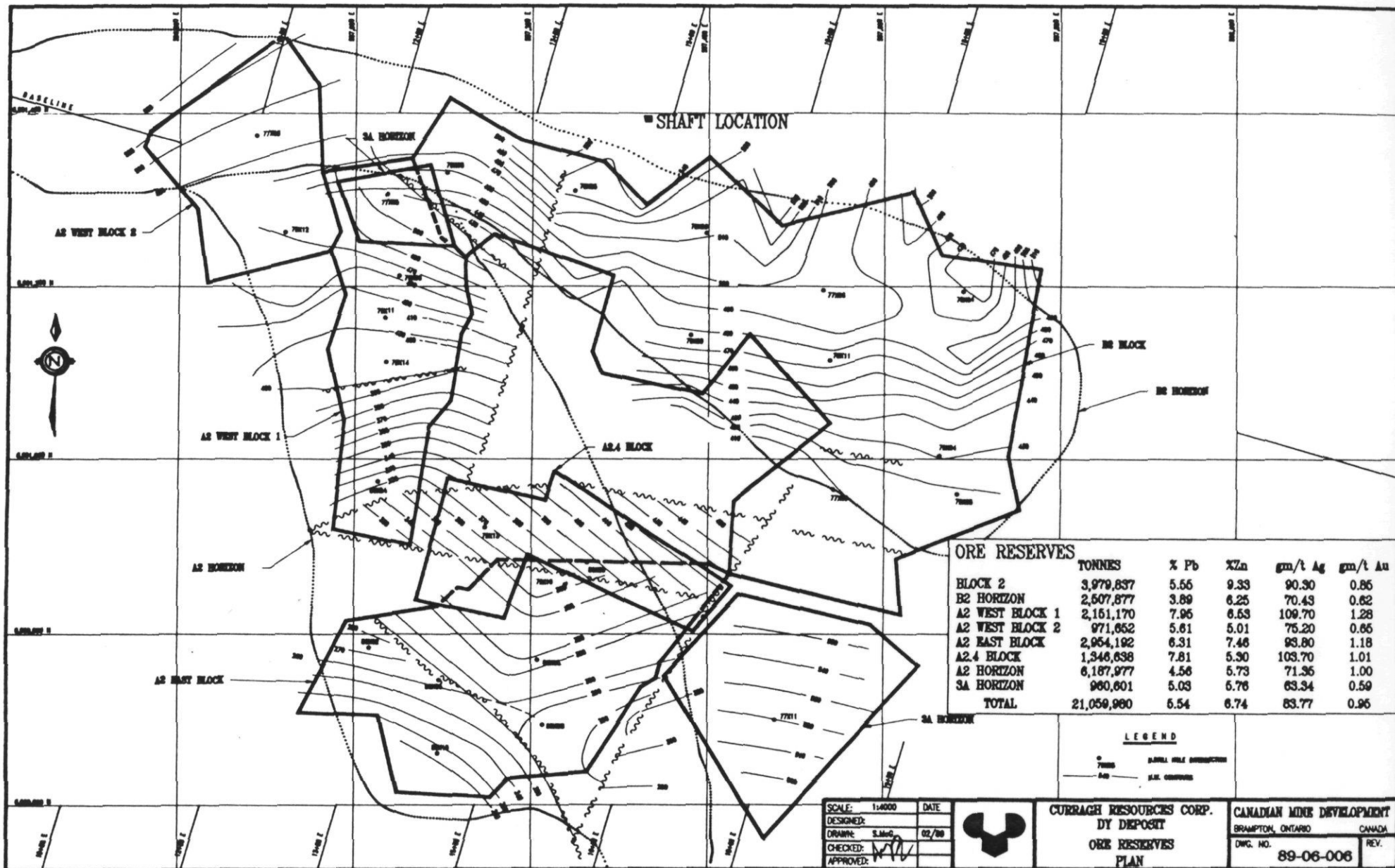
DY DEPOSIT - 1982 - ROLLINGS

	Horizon B2	Horizon A2	Horizon 3A	Total Ore Reserve
Ore Volumes	1,847,880.00	3,217,104.00	231,648.00	5,296,632.00
Ore Tonnes	6,487,749.72	13,611,628.96	960,601.44	21,059,980.12
S.G.	3.51	4.23	4.16	3.98
% Cu	.080	.140	.160	.120
% Pb	4.910	5.870	5.030	5.540
% Zn	8.140	6.140	5.760	6.740
An (g/mT)	82.62	85.76	63.34	83.77
Au (g/mT)	.76	1.06	.59	.95

AVERAGE THICKNESS 9.46 metres
AVERAGE SPECIFIC GRAVITY 3.98

DY DEPOSIT - 1981 - B.V. HALL

	<u>Tonnes</u>	<u>% Pb</u>	<u>% Zn</u>	<u>gm/t Ag</u>
<u>9% Cutoff (3.5 m minimum mining width)</u>				
Total Drill Indicated	17,388,056	5.82	6.84	83.1
Total Drill Inferred	3,946,071	5.03	7.45	75.3
TOTAL DEPOSIT	21,334,127	5.68	6.95	81.6
<u>12% Cutoff (3.5 m minimum mining width)</u>				
Total Drill Indicated	9,982,856	6.88	7.95	102.1
Total Drill Inferred	1,647,200	5.91	8.32	90.3
TOTAL DEPOSIT	11,630,056	6.74	8.00	100.4



**CURRAGH RESOURCES INC.
DY DEPOSIT
PRODUCTION TONNES AND GRADE**

YEAR	1991				1992				1993		1994
QUARTER	1ST	2ND	3RD	4TH	1ST	2ND	3RD	4TH	1ST	2ND	
TONNES	12,600	63,000	114,300	218,000	218,000	221,000	218,000	218,000	438,000	437,000	
Pb%	4.57	6.73	6.73	5.84	5.84	5.70	5.70	5.58	5.81	5.61	
Zn%	7.45	11.34	11.34	10.87	10.87	10.47	10.47	10.15	10.12	8.79	
Ag gm/t	77.11	115.6	115.6	102.97	102.97	100.42	100.43	98.31	96.7	81.5	
Au gm/t	1.11	0.84	0.84	0.75	0.75	0.79	0.79	0.81	0.81	0.81	

**PRODUCTION SCHEDULE
(1,000 tonnes)**

YEAR	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
BLOCK										
B2	408	875	875	150	75					
A2.4				350	400	75				
A2 WEST				375	400	400	475	300		
A2 EAST						400	400	400	650	350
OTHER								175	225	525
TOTAL	408	875	875	875	875	875	875	875	875	875

GRADE										
Pb %	5.77	5.71	5.71	7.18	7.35	6.85	6.80	6.22	5.79	5.19
Zn %	10.67	10.49	9.46	6.12	5.89	6.63	6.69	6.66	7.05	6.43
Ag g/t	101.70	100.53	89.1	95.0	99.6	97.0	96.60	90.80	87.78	78.59
Au g/t	0.77	0.79	0.81	1.01	1.03	1.12	1.13	1.09	1.09	0.98

MINE STOPING TONNAGE

	Block B2 Block	A2.4 East	A2 East	A2 West	Total	Additional Indicated Ore Reserves	Geologic Reserves
Tonnes	3,979,873	1,346,638	2,954,198	3,122,822	11,403,530	9,656,450	21,059,980
S.G.	3.50	3.89	4.35	4.43	4.02	3.93	3.98
% Pb	5.55	7.81	6.31	7.22	6.47	4.30	5.54
% Zn	9.33	5.30	7.46	6.05	7.47	5.88	6.74
gm/t Ag	90.3	103.7	93.8	98.9	95.1	70.4	83.8
gm/t Au	0.85	1.01	1.18	1.09	1.02	0.87	0.95

SHAFT ACCESS

A shaft site location was selected north of the ore zone. Surface mapping indicates bedrock (outcrop) in this area.

A rectangular, 3 inline compartment shaft was selected. Both skip compartments are 7'6" by 6'0". One cage will be installed above the skip. During sinking the manway would be equipped with vent tube. Initial phase development would require the leak proofing of the manway lining to make use of the manway as a ventilation compartment.

Sets would consist of 10" x 10" timber with all compartments lined.

**CURRAGH RESOURCES INC.
DY DEPOSIT**

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SURFACE PLANT & SHAFT SINKING	\$ 13,078,275
CONTINGENCY	<u>1,300,000</u>
	\$ 14,378,375
PHASE I MINE DEVELOPMENT	<u>4,420,070</u>
PHASE I PROJECT COST	\$ 18,798,445

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINE DEVELOPMENT SCHEDULE**

	1989		1990				1991				
	3RD QTR	4TH QTR	1ST QTR	2ND QTR	3RD QTR	4TH QTR	1ST QTR	2ND QTR	3RD QTR	4TH QTR	
SHAFT PILOT HOLE	—										
SITE PREPARATION											
ROAD	—	—									
POWER		—									
SURFACE PLANT											
COLLAR		—									
HEADFRAME				—							
HOIST		—									
SHAFT CONTRACTOR											
MOBILIZE			—								
SINK SHAFT			—	—	—	—	—				
STATIONS					—		—	—			
PROVISION FOR GROUTING							—				
PROVISION FOR BAD GROUND							—				
LIP POCKET INSTALL							—				
CHANGEOVER								—			
LEVEL DEVELOPMENT									—		
ORE DEVELOPMENT										—	
VENT RAISE & 2ND ACCESS											—
ORE PRODUCTION 2,500 T/DAY											—

**CURRAGH RESOURCES INC.
DY DEPOSIT
DATA SUMMARY
(\$1,000)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
SHAFT ACCESS												
PRODUCTION SCHEDULE												
TOTAL (1,000 TONNES)			408	875	875	875	875	875	875	875	875	875
EXPENDITURES												
MINE EXPLORATION & DEVELOPMENT												
SURFACE SETUP	4,774	482										
SINK SHAFT		7,167	1,955									
PHASE I MINE DEVELOPMENT			4,440									
MINE DEVELOPMENT	4,774	7,649	6,395									
MINE OPERATING												
MINING			6,700	18,850	18,850	20,125	20,125	20,125	20,125	20,125	20,125	20,125
MINE EQUIPPING						1,500			3,000		2,500	
ONGOING DEVELOPMENT & EXPLORATION				1,000	1,000	1,500	2,000	2,000	2,000	2,000	2,000	2,000
MINE OPERATING				19,850	19,850	23,125	22,125	22,125	25,125	22,125	24,625	22,125
MINE ANNUAL EXPENDITURES	4,774	7,649	13,095	19,850	19,850	23,125	22,125	22,125	25,125	22,125	24,625	22,125

MINING COST - 2,500 TONNES PER DAY

Contractor supplied and maintained equipment.

Permanent materials by Contractor.

Engineering and geological Services by Company.

Mucking to grizzly, hynam, at shaft station operated and maintained by Contractor, parts and lubricants by Company.

	<u>Pilot /Tonne</u>	<u>Bench /Tonne</u>	<u>Slusher Stoping /Tonne</u>	<u>Longhole Mining /Tonne</u>
<u>Contractor's Cost</u>				
Direct Labour	0.76	0.75	9.72	0.49
Steel & Bits	0.91	0.45	1.23	0.59
Explosives & Accessories	1.94	1.43	4.02	1.26
Equipment Rental	0.25	0.24	0.25	0.17
Equipment Repairs	0.37	0.21	0.31	0.24
Fuel & Lubricants	0.02	0.02	0.03	0.02
Pipe	0.36	0.00	0.10	0.24
Ventilation Duct	0.35	0.00	0.24	0.23
Electric Cables	1.09	0.00	0.10	0.71
Hoses, Small Tools	0.06	0.03	0.16	0.04
Insurance, Communications	0.06	0.03	0.16	0.04
Freight During Contract	0.18	0.09	0.48	0.11
Haulage to Shaft	5.16	5.16	5.16	5.16
Support Labour & Equipment	2.81	2.81	2.81	2.81
Shaft Operation	3.08	3.08	3.08	3.08
Subtotal	<u>17.40</u>	<u>14.30</u>	<u>27.85</u>	<u>15.19</u>
G & A 11-1/2%	2.00	1.64	3.20	1.75
	<u>19.40</u>	<u>15.94</u>	<u>31.05</u>	<u>16.94</u>
Fee 8-1/2%	1.48	1.22	2.37	1.29
CONTRACTOR'S COST PER TONNE	<u>20.28</u>	<u>17.16</u>	<u>33.42</u>	<u>18.23</u>
Electric Power	0.49	0.53	0.47	0.49
Rockbreaker Maintenance	0.15	0.15	0.15	0.15
Mine Air Heating	0.22	0.22	0.22	0.22
Misc. Operating Supplies	0.25	0.25	0.25	0.25
	<u>21.99</u>	<u>18.31</u>	<u>34.51</u>	<u>19.34</u>
Contingency 5%	1.10	0.92	1.73	0.97
MINING COST/TONNE	<u>23.09</u>	<u>19.23</u>	<u>36.24</u>	<u>20.31</u>
Estimated Quantity	50.4%	29.6%	10.0%	10.0%

Average Cost Per Tonne \$22.99/tonne

Average Cost Per Tonne 1st 3 Years \$21.54/tonne

MINING EQUIPMENT - OWNER SUPPLIED

2	3 BOOM ELECTRIC/HYDRAULIC JUMBOS@	\$	600,000	\$	1,200,000
1	1 BOOM ELECTRIC/HYDRAULIC JUMBO @		300,000		300,000
4	ST8 SCOOPTRAMS	@	370,000		1,480,000
3	CM TRUCKS	@	300,000		900,000
8	VENTILATION FANS	@	6,000		48,000
6	VENTILATION FANS AUX.	@	3,500		21,000
12	JACKLEGS & STOPERS	@	2,700		32,400
LOT	UNDERGROUND PUMPS	@	40,000		40,000
1	GROUT PUMP	@	18,000		18,000
2	MAGAZINES	@	10,000		20,000
1	GRADER	@	125,000		125,000
1	D4 DOZER	@	90,000		90,000
1	MOBILE ANFO LOADER	@	195,000		195,000
1	HYDRAULIC ROCKBOLT JUMBO	@	300,000		300,000
1	MOBILE SHOTCRETE UNIT	@	250,000		250,000
2	MAN CARRIERS	@	65,000		130,000
	MISCELLANEOUS	LOT			100,000
					\$ 5,249,400

SAY

\$5.3 MILLION

MINING COST - 2,500 TONNES PER DAY

Owner supplied equipment.

Permanent materials by Contractor.

Engineering and geological Services by Company.

Mucking to grizzly, hyram, at shaft station operated and maintained by Contractor, parts and lubricants by Company.

	<u>Pilot /Tonne</u>	<u>Bench /Tonne</u>	<u>Slusher Stoping /Tonne</u>	<u>Longhole Mining /Tonne</u>
<u>Contractor's Cost</u>				
Direct Labour	0.76	0.75	9.72	0.49
Steel & Bits	0.91	0.45	1.23	0.59
Explosives & Accessories	1.94	1.43	4.02	1.26
Equipment Rental	-	-	-	-
Equipment Repairs	0.37	0.21	0.31	0.24
Fuel & Lubricants	0.02	0.02	0.03	0.02
Pipe	0.36	0.00	0.10	0.24
Ventilation Duct	0.35	0.00	0.24	0.23
Electric Cables	1.09	0.00	0.10	0.71
Hoses, Small Tools	0.06	0.03	0.16	0.04
Insurance, Communications	0.06	0.03	0.16	0.04
Freight During Contract	0.18	0.09	0.48	0.11
Haulage to Shaft	4.17	4.17	4.17	4.17
Support Labour & Equipment	2.45	2.45	2.45	2.45
Shaft Operation	2.63	2.63	2.63	2.63
Subtotal	<u>15.35</u>	<u>12.26</u>	<u>25.80</u>	<u>13.22</u>
G & A 11-1/2%	1.77	1.41	2.97	1.52
	<u>17.12</u>	<u>13.67</u>	<u>28.77</u>	<u>14.74</u>
Fee 8-1/2%	1.30	1.16	2.19	1.12
CONTRACTOR'S COST PER TONNE	<u>18.42</u>	<u>14.83</u>	<u>30.96</u>	<u>15.86</u>
Electric Power	0.49	0.53	0.14	0.49
Rockbreaker Maintenance	0.15	0.15	0.15	0.15
Mine Air Heating	0.22	0.22	0.22	0.22
Misc. Operating Supplies	0.25	0.25	0.25	0.25
	<u>19.53</u>	<u>15.98</u>	<u>31.72</u>	<u>16.97</u>
Contingency	0.98	0.80	1.59	0.85
MINING COST/TONNE	<u>20.51</u>	<u>16.78</u>	<u>33.31</u>	<u>17.82</u>
Estimated Quantity	50.4%	29.6%	10.0%	10.0%

Average Cost Per Tonne \$20.40/tonne

Average Cost Per Tonne 1st 3 Years \$19.02/tonne

ORE EXTRACTION

Primary room and pillar mining will extract 60 percent of the geologic reserve prior to fill emplacement. Dilution of the ore grades have not been calculated as the conservative recovery in the first pass stoping is a function of ore left in the back and ribs which should allow mining grades to approximate the drill indicated reserves..

Blocks B2, A2.4E, A2E and A2W will provide 6.8 million tonnes or 7.7 years at 60% extraction.

Initial mining will concentrate on the higher grade B2 zone to the east of the shaft section.

Mining grades by quarters have been calculated for 1991 - 1993.

Additional ongoing exploration and mine development will require further expenditures. Future production will concentrate on the other indicated ore zones and on possible pillar recovery.

Longhole and slusher stoping will be employed in appropriate areas.

HOISTING PLANT

A hoisting rate of 2,500 tonnes per 14 hours would require a 10 or 12 foot double drum hoist, of which several used units are available. To lower equipment would take a hoist with a rope pull in excess of 50,000#. Skip capacity would be 7.3 tonnes (8 ton).

The headframe would be 24 metres (80 feet) to the sheave. Muck would be dumped from the skip dump onto a heated pad via a muck slide. One transfer to trucks would be by front end loader. Provision would be made to raise the headframe to 37 metres and install ore and waste bin.

Shaft stations would be cut at 800 metres and 480 metres. A temporary sump would be installed at the 800 level. Provision would be made for raise boring the ventilation escapeway.

The shaft would be bottomed at the 460 level with lip pockets installed at the 469 level. The loading pockets would be fed by short ore-waste raises from the 480 level. Hynam and grizzly units would be installed on both dumps.

Ore waste storage rooms would be cut to accommodate the mucking cycle.

PHASE I DEVELOPMENT

Initial development on the 480 level will include the completion of the permanent sump, and the installation of hynam-grizzly units on the lip pocket raises.

Ore waste storage rooms will be cut off the main x-cut.

The main crosscut will be driven to intersect the ore. A short drift west will be driven in ore for use as a temporary shop.

A single heading drift in ore will be pushed out to the east as an exploration heading and ventilation access. Secondary panel drifts will be advanced as equipment is made available.

Ventilation air volumes will restrict the total operating equipment horsepower.

During this period ore production should approximate 750 tonnes per day.

Drive completion to the east vent raise location will enable the raise borehole +/- 500 metres to be bored from surface.

Completion of the vent hole plus the installation of the second exit manway will enable the contractor to accelerate ore production to 2,500 tonnes per day.

Initial production will be concentrated in the higher grade sections of the B2 zone.

SHAFT ACCESS

COSTING PARAMETERS

Shaft 3 Compartment

surface to 480 level

shaft bottom 460 m

Scooptram or Trucks to Shaft Station (rehandling by loader)

hoist 200 tonnes/hr, 2,500 tonnes per day

Hoist - used Nordberg 12' x 7'8"

double drum, double friction clutch

2,250 feet per minute

rope pull 57,400 pounds

2,150 hp DC

5,500 feet capacity

1-7/8 rope

10 ton skips

HOIST PURCHASE	\$220,000 U.S. @ 0.83 CDN	\$ 265,060	
DUTY		39,000	
		_____	\$ 304,060
LOADING		20,000	
FREIGHT	10 LOADS @ \$9,000	90,000	
		_____	110,000
REFURBISH		MECHANICAL	60,000
	2ND BRAKE	75,000	
	ELECTRICS	200,000	
		_____	335,000
OFFLOAD	10 MS @ \$308.40	3,084	
CRANE	10 X \$960.00	9,600	
		_____	12,684
HOIST COST AT SITE			\$ 761,744

**CURRAGH RESOURCES
DY DEPOSIT
HOIST DATA**

	DYPHST1	DYPHST2	DYPHST3	DYPHST4	DYPHST5
	Production	Production	Production	Production	Production
Make	Nordberg	Nordberg	Nordberg	Nordberg	Nordberg
Size	12'x7'8"	14'x8'	10'X5'	12'x7'10"	10'x6'
Clutches	2 Friction	1	1	1	1
Brakes	Post	Post	Post	Post	Post
Rope Pull (lbs)	57,400	48,600	50,000	57,200	50,000
Rope Speed	2,250	1,500	2,200	2,250	2,250
Rope Dia. (in.)	1-7/8"	1-3/4"	1-1/2"	1-7/8"	1-1/2"
Horsepower	2,150	1,100	1,800	2,250	2,050
Electrics	DC (direct)	DC (direct)	DC (direct)	DC (direct)	DC (direct)
Rope Capacity	5,500	4,532	3,070	5,600	3,680
Skip Load (tonnes)	7.3	7.3	6.8	9.1	6.8
Tonnes/Hr	294	216	256	349	252
Price	220,000 US	700,000 Cdn	1,250,000 Cdn	700,000 US	T.B.N.
Owner	Cementation	Inco	Inco	Butte Mining	PCA
Loacted At	Tucson	Sudbury	Sudbury	Butte	Saskatoon
		DC Generator	New DC		Further data
		Switchgear	Generator		avail. later
		Not Included	Not Included		

DRUM HOIST CALCULATION SHEET

FILE:DYPHST1

BALANCED HOISTING

Type of Hoist = _____ or Double Drum
 Type of Installation: _____ Service _____ Production
 _____ Manual _____ Automatic

Output Required Q = 325 tons per hour
 Hoisting Distance St = 2,060 feet
 Net Load W = 16,000 pounds
 Desired Hoist Speed 2,250 feet per minute

Number of Payloads Per Hour: $J = \frac{2,000 Q}{W} = 40.63$

Note: For balanced hoisting, a payload is delivered each lift.
 For counterbalanced hoisting, a payload is delivered only every second lift, so the number of lifts required is double.

Time Per Lift : $Tt = \frac{3600}{J} = 89.0$ seconds

CYCLE OF OPERATION:

		Feet	Seconds
Creep	Sc1 =	10.0	Tc1 = 5.0
Acceleration	Sa =	298.4	Ta = 16.0
Full Speed	Sm =	1505.3	Tm = 40.3
Retardation	Sr =	236.3	Tr = 12.7
Creep	Sc2 =	10.0	Tc2 = 5.0
Load and Dump			Tl = 10.0
Total Trip	St =	2060	Tt = 89.0

Full Speed: $v = \frac{St - Sc}{Tt - Tl - (Ta + Tr) / 2 - Tc} = 37.3$ fps

Hoisting Speed: $V = 60 v = 2,238$ fpm

Rate of Acceleration: $a = \frac{v}{60 Ta} = 2.331$ fps²

Rate of Retardation: $r = \frac{v}{60 Tr} = 2.944$ fps²

DRUM HOIST CALCULATION SHEET

ROPE:	TYPE	Wh	B (P)	B (Imp)
	6 x 19 Round Strand	5.63	138.0	152.0
	6 x 25 Flattened Strand	6.34	152.0	169.5
	Flattened Strand Haulage	0.00	0.0	0.0
	Non-Rotating Flattened Strand	6.65	160.0	176.0
	Locked Coil	9.00	203.0	212.0

Required Safety Factor: Top 8.5 Actual: $\frac{2000 B}{W + Ws} = 11.18$ O K A Y

Req'd Safety Factor: Bottom 5.0 Actual: $\frac{2000 B}{W+Ws+Rh} = 7.55$ O K A Y

Rope Diameter d = 1.875 inches
 Rope Breaking Strength B = 152.0 tons
 Unit Weight of Rope Wh = 6.34 pounds/foot
 Total Weight of Rope : St x Wh = Rh = 13,060 pounds
 Length of rope 9303 feet O K A Y

LOADING: Pounds
 Net Load W = 16,000
 Rope Rh = 13,060
 Maximum Unbalance: Maxun = W + Rh = 29,060
 Conveyance Ws = 11,200
 Total Load One Rope: Ws+Maxun = T1 = 40,260 O K A Y
 Other Rope Rb = 13,060
 Other Conveyance Wc = 11,200
 Total Load Balance Rope T2 = 24,260
 Total Suspended Load T1 + T2 = 64,521

HOIST:
 Diameter of Drum: D = 144 inches
 Required Drum Diameter : Rope Diameter 80 /1
 Actual Drum Diameter : Rope Diameter D/d = 76.8 /1 TOO LOW
 Drum Width required for Rope Capacity = 92 inches
 (Check if Drum width exceeds maximum width permitted by fleet angle)
 Hoist Size 144 inches x 92 inches
 Hoist Rope Pull Rating T: 57,400 pounds
 Rope Lead-Off Angle 37 Deg. above horizontal

DRUM HOIST CALCULATION SHEET

ELECTRICS:

Hoist Motor is: AC use \a or DC use \d
 Power Supply Volts

Phase
 Cycle
 Volts

Control Voltage

Number of Levels, Excluding Collar = 4

Drum Diameter D = 148.6875 inches Rope wraps # = 2.5
 Rope Speed V = 2238 fpm

Drum Speed : $\frac{12 V}{\pi D} = N1 = 57.5$ rpm

Motor Speed N2 = 60 rpm

Gear Ratio : $N1/N2 = 1$ O K A Y

Approx. Horsepower = $\frac{\text{Max Unbal Load} \times V}{33,000 \times \text{Mech. Eff.}}$ = 2021 HP
 TRY 2150 HP Motor I = 100000 lb-ft²

INERTIAS:

Wk2 Hoist and Sheaves Ih = 4200000 lb-ft²

Wk2 Motor(s) at Hoist Speed:

$I \times (N1 / N2)^2 = Im = 100000$ lb-ft²

Total Wk2 = Ih + Im = 4300000 lb-ft²

Equivalent Weight at Rope Centre:

$Ih + Im \times (24/D)^2 = 112032$ lb.

Raising Load

Equivalent Weight at Rope Centre 112,032
 Suspended Load TSL = 64,521
 Equ. Weight to Accel or Retard We = 176,553
 Rope Pull to Accel $We \times a/32.2 = 12,781$ (TAA)
 Rope Pull to Retard $We \times r/32.2 = 16,142$ (TRR)
 Shaft Guide Friction F = 2,581

Mechanical Efficiency Single Reduction = 0.975
 Double Reduction = 0.951

Effective Cooling Time (AC)	Effective Cooling Time (DC)
Acc + Ret'd = $(ta+tr)/2 =$	$(ta+tr) \times 3/4 = 21.50$
Full Speed $tm =$	$tm = 40.33$
Creep + Rest = $(tc+t1)/4 =$	$(tc+t1)/2 = 10.00$
E.C.T. Total (raising load)	secs. E.C.T. Total 71.83 secs.

DRUM HOIST CALCULATION SHEET

Raising Load: Rope Pull x HP Factor = Horsepower (secs.)
 Pos = V/(33000xE) Neg = VxE/33000
 0.0696 0.06612

TIME HP2-SEC

Begin Creep: Max. Unbal. + F
 29060.4 2581 31641.4 0.0696 2202)
) Tc = 5.0
 End Creep: BC - (2 x Sc x Wh))
 31641.4 127 31514.4 0.0696 2193) ----> 2197.5 2.41E+07

Begin Acceleration: EC + TAA
 31514.4 12780.88 44295.28 0.0696 3083)
) Ta = 16.0
 End Acceleration: BA - (2 x Sa x Wh))
 44295.28 3784 40511.28 0.0696 2820) ----> 2951.5 1.39E+08

Begin Full Speed: EC - (2 x Sa x Wh)
 31514.4 3784 27730.4 0.0696 1930
 End Full Speed: BFS - (2 x Sm x Wh)
 27730.4 19087 8643.4 0.0696 602
 Tm = 40.3
 5.01E+07
 4.87E+06
 1.56E+07

Begin Retard: EFS - TRR
 8643.4 16141.97 -7498.57 0.06612 -522)
) Tr = 12.7
 End Retard: BR - (2 x Sr x Wh))
 -7498.57 2996 -10494.5 0.06612 -730) ----> -626.0 4.97E+06

Begin Creep: ER + TRR
 -10494.5 16141.97 5647.4 0.0696 393)
) Tc = 5.0
 End Creep: BC - (2 x Sc x Wh))
 5647.4 127 5520.4 0.0696 384) ----> 388.5 7.55E+05

Total 2.40E+08

RMS HP (DC) = $\sqrt{\frac{\text{HP2-sec}}{\text{ECT(DC)}}}$ = 1827 HP

Peak HP : Motor HP $\frac{3083 \text{ HP}}{2150 \text{ HP}}$ = 1.43 O K A Y

CURRAGH RESOURCES - DY DEPOSIT

FILE: COST_EST
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MINING COST ESTIMATES

SURFACE PLANT		
Access Road, Site Clear & Level	BY OTHERS	\$200,000
Primary Power Line & Transformer & Substation	BY OTHERS	\$400,000
Shaft Pilot Hole	BY OTHERS	\$450,000
Site Investigation	BY OTHERS	\$30,000
Shaft Collar		\$382,299
Headframe		\$650,000
Hoist		\$1,485,809
Site Utilities		\$454,285
Changeover		\$82,451
Plant Commission		\$22,834
Contractor Mobilization & Demobilization		\$402,191
TOTAL SURFACE PLANT		\$4,559,869

CURRAGH RESOURCES - DY DEPOSIT

MINING COST ESTIMATES

SHAFT SINKING & STATION CUTTING				
Shaft Sinking	633 metres	@	\$7,181	\$4,545,573
Bearing Set	6 each	@	\$7,808	\$46,848
Rock Catcher	45 each	@	\$1,050	\$47,250
Water Ring	3 each	@	\$3,449	\$10,347
Electric Power Cable				\$53,391
Provision for Ground Support				\$200,000
Provision for Grout and Water				\$200,000
SUBTOTAL SHAFT				\$5,103,409
Station 800 m.				\$184,955
Station 480 m.				\$607,001
Lip Pocket 461 m.				\$327,629
SUBTOTAL STATIONS				\$1,119,585
Air Heating				\$16,000
Surface Muck Handling				\$148,400
TOTAL SHAFT & STATIONS				\$6,387,394
SURFACE PLANT				\$3,479,869
TOTAL PLANT, SHAFT & STATIONS				\$9,867,263
Contractor G & A	11.5%			\$1,134,735
Contractor Fee	8.5%			\$838,717
CONTRACTOR COST				\$11,840,716
Power Cost BY OWNER	350 days	@	\$450.17	\$157,559
Site Setup Cost			BY OTHERS	\$1,080,000
TOTAL PROJECT PHASE I				\$13,078,275

MINING COST ESTIMATES

MINE DEVELOPMENT PROGRAM			
Underground Contractor Mobilization			\$167,849
Mine Development			\$2,670,491
Ground Support			\$43,750
Air Heating			\$16,063
Shaft Operation	89 days		\$698,038
TOTAL			\$3,596,191
Contractor G & A	11.5%		\$413,562
Contractor Fee	8.5%		\$305,676
CONTRACTOR COST			\$4,315,430
Power			\$81,440
Geology	2.9 months @	\$8,000	\$23,200
OWNER COST			\$104,640
TOTAL MINE DEVELOPMENT			\$4,420,070

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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SURFACE PLANT

ACCESS ROAD, SITE CLEARING AND LEVELLING BY OTHERS	\$	200,000
PRIMARY POWER LINE AND TRANSFORMER BY OTHERS		400,000
SHAFT PILOT HOLE BY OTHERS		450,000
SITE INVESTIGATION BY OTHERS		30,000
SHAFT COLLAR		382,299
HEADFRAME		650,000
HOIST		1,485,809
SITE UTILITIES		454,285
CHANGEOVER		82,451
PLANT COMMISSION		22,834
CONTRACTOR MOBILIZATION & DEMOBILIZATION		402,191
	\$	<u>4,559,869</u>

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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SHAFT COLLAR SUMMARY

EXCAVATION 45.75 DAYS \$ 133,125

CONSTRUCTION

MATERIALS 90,567
LABOUR 46.7 DAYS 89,468
\$ 180,035

SHAFT COLLAR EQUIPPING 37,273
VENT BYPASS 31,866
SHAFT COLLAR \$ 382,299

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

HEADFRAME SUMMARY

HEADFRAME & COLLAR HOUSE	\$ 650,000
HEADFRAME	<u>\$ 650,000</u>

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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PRODUCTION HOIST, SUMMARY

ONSITE	\$	761,744
FOUNDATION		162,366
INSTALLATION		131,196
HOIST HOUSE		235,543
CONVEYANCES		<u>194,960</u>
PRODUCTION HOIST	\$	1,485,809

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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SITE UTILITIES SUMMARY

SURFACE ELECTRICS (TRANSFORMER SUBSTATION BY OTHERS)	\$	180,537
COMPRESSOR PLANT (2000 CFM)		120,000
SURFACE PIPING		48,552
HEATER & FANS		57,907
WATER DISCHARGE POND		30,038
MAGAZINES		4,034
FUEL TANKS		1,237
SEPTIC SYSTEM		11,980
SITE UTILITIES	\$	454,285

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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CONTRACTOR'S MOBILIZATION AND PLANT SETUP SUMMARY

3 COMPARTMENT SHAFT 19'4" X 9'2"

MOBILIZATION

FREIGHT	\$	78,127
PLANT SETUP		56,240
PLANT SURFACE MATERIALS		41,000
	\$	175,367
CONTRACTOR'S EQUIPMENT W.O.		115,300
CONTRACTORS CREW TRANSPORT		IN DAILY LABOUR COST
		<hr/>
MOBILIZATION	\$	290,667
DEMOBILIZATION		111,524
		<hr/>
TOTAL MOBILIZATION & DEMOBILIZATION	\$	402,191

CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES

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FREIGHT

CRYDERMAN (1)	1		
BUCKETS X HEAD (3) (2)	1		
DUMP HOIST ROPES MINING GEAR	1		
BLASTING SET & GALLOWAY	1		
FRONT END LOADER	1		
630 LOADER	1		
STAGE WINCHES (2)	1		
MISCELLANEOUS	1		
	8 @ \$7,500	\$	60,000
PREMOB LABOUR 8 @ \$145.00			1,160
UNLOAD 8 @ \$308.40			2,467
CRANE 5 DAYS @ \$1,200			6,000
WAREHOUSE TRAILER (BRAMPTON)	1		7,500
POWDER MAGAZINE (WHITEHORSE)	1		1,000
		\$	<u>78,127</u>

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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PLANT SETUP

SHOP	6 MS		
STAGE WINCHES	12 MS		
SITE ELECTRICS (ADDITIONAL)	12 MS		
VENT FAN (INCL)	--		
DUMP DOOR (2)	36 MS		
SAFETY DOOR (2)	12 MS		
CHAIRS (2)	6 MS		
ROPE UP HOIST (2,000')	4 MS		
ROPE UP WINCH (2)	6 MS		
GEAR IN SHAFT	24 MS		
SHAFT SIGNALS	10 MS		
POWDER MAZAINES	4 MS		
DRY/OFFICE SETUP	4 MS		
WAREHOUSE TRAILER	2 MS		
COMPRESSOR PLANT	9 MS		
	147 MS @ \$308.40	\$	45,335
INDIRECTS 147 MS X 10 HRS = 15 DAYS			
SUPERVISION 15 @ \$377.00			5,655
SUPPORT 15 @ \$350.00			5,250
		\$	56,240

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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PLANT SURFACE MATERIALS

PIPING 300' @ \$25.00	\$	7,500
ELECTRICAL 300' @ \$35.00		10,500
VENTILATION 100' @ \$50.00		5,000
CRANE 15 DAYS @ \$1,200		<u>18,000</u>
	\$	41,000

CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES

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CONTRACTOR'S EQUIPMENT W.O.

BLASTING SET		\$	12,000
CROSS HEAD	2 @ \$7,500		15,000
SINKING ROPE	2 X 2,400 @ \$5.00		24,000
STAGE WINCH ROPE 7/8"			
	2 @ 2,400' X \$3.50		16,800
CHAIN BLOCKS	4 @ \$1,500		6,000
DUMP DOOR	2 @ \$9,000		18,000
SAFETY DOOR	2 @ \$5,000		10,000
SINKING BUCKETS (70/CU FT)			
	3 @ \$4,500		13,500
		\$	<u>115,300</u>

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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DEMOBILIZATION

FREIGHT		\$	78,127
PLANT REMOVAL	7 DAYS X 10 MEN @ \$308.40		21,588
CRANE	7 @ \$960.00		6,720
INDIRECT SUPERVISION	7 @ \$377.00		2,639
INDIRECT SUPPORT	7 @ \$350.00		2,450
			<hr/>
		\$	111,524

CURRAGH RESOURCES INC.

SINK TIMBER SHAFT

DY DEPOSIT

INLINE 19'4" x 9'2"

BID SUMMARY SHEET

ELECTRIC

CATEGORY	TOTAL COST /METRE	PERFORMANCE			
		STATION CUTTING TOTAL COST / CUM	50 CUM/DAY	OWNER'S COST/METRE	OWNER'S COST / CUM
REGULAR SINKING					
DIRECT LABOUR	\$1,814.65	\$91.10	-	-	
SUPPORT LABOUR	\$1,802.23	\$90.47	-	-	
STEEL & BITS	\$134.70	\$6.76	-	-	
EXPLOSIVES & ACCESSORIES	\$385.04	\$19.33	-	-	
EQUIPMENT RENTAL	\$552.53	\$27.74	-	-	
EQUIPMENT REPAIR	\$500.27	\$25.11	-	-	
FUEL & LUBE	\$163.42	\$8.20	-	-	
PIPE & ACCESSORIES	\$136.58	\$0.00	-	-	
VENTILATION & ACCESSORIES	\$97.52	\$0.00	-	-	
ELECTRIC POWER	\$0.00	\$0.00	\$189.86	\$9.53	
ELECTRIC CABLE	\$124.53	\$0.00	-	-	
TIMBER	\$1,015.90	\$0.00	-	-	
HARDWARE	\$111.35	\$0.00	-	-	
HOSES, SMALL TOOLS	\$68.39	\$2.69	-	-	
INSURANCE, COMMUNICATION	\$68.39	\$2.69	-	-	
FREIGHT DURING CONTRACT	\$205.16	\$8.06	-	-	
SUBTOTAL	\$7,180.68	\$282.15	\$189.86 /METRE	\$9.53 /CUM	
G & A 11.5%	\$825.78	\$32.45			
TOTAL COST	\$8,006.46	\$314.60			
MARGIN 8.5%	\$610.36	\$23.98			
PRICE	\$8,616.82 /METRE	\$338.58 /CUM			

**CURRAGH RESOURCES INC.
DY DEPOSIT
MINING COST ESTIMATES**

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STATION EXCAVATION & EQUIPPING

800 LEVEL

EXCAVATION	340 CU M @ \$282	\$	95,880
BOLTING	60 @ \$75		4,500
MESH	65 SQ M @ \$100		6,500
PUMP & SUMP			54,375
STATION ELECTRICS			23,700
			23,700
		\$	184,955

480 LEVEL

EXCAVATION	720 CU M @ \$282	\$	203,040
BOLTING	90 @ \$75		6,750
MESH	90 SQ M @ \$100		9,000
PUMP & SUMP			72,025
STATION ELECTRICS			35,402
HYRAM & GRIZZLY			280,784
			280,784
		\$	607,001

469 LOAD OUT

EXCAVATION	150 CU M @ \$282	\$	42,300
BOLTING	100 @ \$75		7,500
MESH	82 SQ M @ \$100		8,200
ORE & WASTE RAISE	30 M @ \$282 EQUIV		33,840
LIP POCKETS			235,789
			235,789
		\$	327,629

CURRAGH RESOURCES - DY DEPOSIT

MINE DEVELOPMENT PROGRAM									
SCOPE OF WORK									
	SIZE	GRADE	LENGTH	UNIT RATE	TOTAL COST		POWER	POWER	
					CONTRACTOR		UNIT COST	COST	
1/	U/G CONTRACTOR MOBILIZATION					\$57,051	mob		\$0
2/	LOWER U/G CONTRACTOR GEAR					\$110,798	mob		\$0
3/	SHAFT SUPPORT DURING LOWERING OF GEAR			14 DAYS	\$4,361.19	\$61,057	op	\$444.13	\$6,218
4/	EXCAVATE MAIN X-CUT						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	160 M	\$1,205.19	\$192,830		\$11.89	\$1,902
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,127.79	\$0		\$9.91	\$0
5/	EXCAVATE VENT RAISE ACCESS						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	25 M	\$1,205.19	\$30,130		\$11.89	\$297
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,127.79	\$0		\$9.91	\$0
6/	EXCAVATE MAIN SUMP						dev		
	SINGLE HEADING	4.27 M x 4.57 M	-25%	25.5 M	\$1,205.19	\$30,732		\$11.89	\$303
	MULTIPLE HEADING	4.27 M x 4.57 M	-25%	0 M	\$1,127.79	\$0		\$9.91	\$0
7/	EXCAVATE PUMP & ELECTRICAL STATION						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	9 M	\$1,205.19	\$10,847		\$11.89	\$107
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,127.79	\$0		\$9.91	\$0
8/	EXCAVATE MUCK STORAGE						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	30 M	\$1,205.19	\$36,156		\$11.89	\$357
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,127.79	\$0		\$9.91	\$0
9/	EXCAVATE WEST DRIFT						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	40 M	\$1,205.19	\$48,208		\$11.89	\$476
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,127.79	\$0		\$9.91	\$0
10/	EXCAVATE EAST DRIFT						dev		
	SINGLE HEADING	6.00 M x 5.00 M	+2%	470 M	\$1,652.38	\$776,619		\$31.35	\$14,735
	MULTIPLE HEADING	6.00 M x 5.00 M	+2%	0 M	\$1,574.98	\$0		\$29.37	\$0
10/	EXCAVATE MISC. OPENINGS						dev		
	SINGLE HEADING	4.27 M x 4.57 M	+2%	0 M	\$1,205.19	\$0		\$11.89	\$0
	MULTIPLE HEADING	4.27 M x 4.57 M	+2%	100 M	\$1,127.79	\$112,779		\$9.91	\$991
16/	EXCAVATE REMUCK BAYS						dev		
		4.27 M x 4.57 M	+2%	48 M	\$1,011.98	\$48,575		\$7.93	\$381
17/	EXCAVATE VENT RAISE						dev		
		2.44 M DIAMETER		510 M		\$883,370		\$15.16	\$7,732
18/	EQUIP VENT RAISE						dev		
				510 M		\$500,246		\$25.26	\$12,883
20/	DAILY SHAFT INDIRECTS				75 DAYS	\$8,493.09			
21/	PROVISION FOR GROUND SUPPORT				1750 BOLTS	\$25.00		\$444.13	\$33,310
22/	PROVISION FOR MINE AIR HEATING				89 DAYS	\$180.48		\$1.00	\$1,750
						\$16,063			\$0
	TOTAL					\$3,596,191			\$81,440

FILE:LV_A

CURRAGH RES. CORP.

4.27 M x 4.57 M LEVEL

DY DEPOSIT

SINGLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$188.33	-
SUPPORT LABOUR	\$291.42	-
STEEL & BITS	\$76.82	-
EXPLOSIVES & ACCESSORIES	\$199.97	-
EQUIPMENT RENTAL	\$116.80	-
EQUIPMENT REPAIR	\$73.58	-
FUEL & LUBE	\$28.69	-
PIPE & ACCESSORIES	\$32.69	-
VENTILATION & ACCESSORIES	\$34.02	-
ELECTRIC CABLE	\$105.49	-
ELECTRIC POWER	\$0.00	\$11.89
HOSES, SMALL TOOLS	\$11.48	-
INSURANCE, COMMUNICATION	\$11.48	-
FREIGHT DURING CONTRACT	\$34.43	-
	<hr/>	<hr/>
SUBTOTAL	\$1,205.19	\$11.89 /METRE
G & A 11.5%	\$138.60	
	<hr/>	
TOTAL COST	\$1,343.79	
MARGIN 8.5%	\$102.44	
	<hr/>	
PRICE	\$1,446.23 /METRE	
	<hr/>	
	\$440.81 /FT	

FILE:LV_B

CURRAGH RES. CORP.

4.27 M x 4.57 M LEVEL

DY DEPOSIT

MULTIPLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$221.32	-
SUPPORT LABOUR	\$227.07	-
STEEL & BITS	\$76.82	-
EXPLOSIVES & ACCESSORIES	\$199.97	-
EQUIPMENT RENTAL	\$87.60	-
EQUIPMENT REPAIR	\$70.54	-
FUEL & LUBE	\$18.58	-
PIPE & ACCESSORIES	\$32.69	-
VENTILATION & ACCESSORIES	\$34.02	-
ELECTRIC CABLE	\$105.49	-
ELECTRIC POWER	\$0.00	\$9.91
HOSES, SMALL TOOLS	\$10.74	-
INSURANCE, COMMUNICATION	\$10.74	-
FREIGHT DURING CONTRACT	\$32.22	-
SUBTOTAL	\$1,127.79	\$9.91 /METRE
G & A 11.5%	\$129.70	
TOTAL COST	\$1,257.49	
MARGIN 8.5%	\$95.86	
PRICE	\$1,353.35 /METRE	
	\$412.50 /FT	

FILE:RMP_A

CURRAGH RES. CORP.

4.27 M x 4.57 M RAMP

DY DEPOSIT

SINGLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$188.33	-
SUPPORT LABOUR	\$291.42	-
STEEL & BITS	\$76.82	-
EXPLOSIVES & ACCESSORIES	\$199.97	-
EQUIPMENT RENTAL	\$116.80	-
EQUIPMENT REPAIR	\$73.58	-
FUEL & LUBE	\$28.69	-
PIPE & ACCESSORIES	\$70.86	-
VENTILATION & ACCESSORIES	\$34.02	-
ELECTRIC CABLE	\$105.49	-
ELECTRIC POWER	\$0.00	\$14.96
HOSES, SMALL TOOLS	\$11.86	-
INSURANCE, COMMUNICATION	\$11.86	-
FREIGHT DURING CONTRACT	\$35.58	-
SUBTOTAL	\$1,245.27	\$14.96 /METRE
G & A 11.5%	\$143.21	
TOTAL COST	\$1,388.47	
MARGIN 8.5%	\$105.85	
PRICE	\$1,494.32 /METRE	
	\$455.47 /FT	

DY DEPOSIT

MULTIPLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$221.32	-
SUPPORT LABOUR	\$227.07	-
STEEL & BITS	\$76.82	-
EXPLOSIVES & ACCESSORIES	\$199.97	-
EQUIPMENT RENTAL	\$87.60	-
EQUIPMENT REPAIR	\$70.54	-
FUEL & LUBE	\$27.78	-
PIPE & ACCESSORIES	\$70.86	-
VENTILATION & ACCESSORIES	\$34.02	-
ELECTRIC CABLE	\$105.49	-
ELECTRIC POWER	\$0.00	\$12.21
HOSES, SMALL TOOLS	\$11.21	-
INSURANCE, COMMUNICATION	\$11.21	-
FREIGHT DURING CONTRACT	\$33.64	-
<hr/>		
SUBTOTAL	\$1,177.54	\$12.21 /METRE
G & A 11.5%	\$135.42	
<hr/>		
TOTAL COST	\$1,312.95	
MARGIN 8.5%	\$100.09	
<hr/>		
PRICE	\$1,413.04 /METRE	
<hr/>		
	\$430.70 /FT	

FILE:INCLIN_A

CURRAGH RES. CORP.

3.05 M x 3.05 M CONVEYOR WAY

DY DEPOSIT

SINGLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$220.55	-
SUPPORT LABOUR	\$341.29	-
STEEL & BITS	\$65.99	-
EXPLOSIVES & ACCESSORIES	\$132.98	-
EQUIPMENT RENTAL	\$101.09	-
EQUIPMENT REPAIR	\$72.18	-
FUEL & LUBE	\$30.96	-
PIPE & ACCESSORIES	\$32.69	-
VENTILATION & ACCESSORIES	\$24.43	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$9.29
HOSES, SMALL TOOLS	\$10.22	-
INSURANCE, COMMUNICATION	\$10.22	-
FREIGHT DURING CONTRACT	\$30.66	-
<hr/>		
SUBTOTAL	\$1,073.26	\$9.29 /METRE
G & A 11.5%	\$123.43	
<hr/>		
TOTAL COST	\$1,196.69	
MARGIN 8.5%	\$91.23	
<hr/>		
PRICE	\$1,287.92 /METRE	
	\$392.56 /FT	

FILE:INCLIN_B

CURRAGH RES. CORP.

3.05 M x 3.05 M CONVEYOR WAY

DY DEPOSIT

MULTIPLE HEADING

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$230.39	-
SUPPORT LABOUR	\$236.38	-
STEEL & BITS	\$65.99	-
EXPLOSIVES & ACCESSORIES	\$132.98	-
EQUIPMENT RENTAL	\$67.40	-
EQUIPMENT REPAIR	\$63.63	-
FUEL & LUBE	\$26.58	-
PIPE & ACCESSORIES	\$32.69	-
VENTILATION & ACCESSORIES	\$24.43	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$6.19
HOSES, SMALL TOOLS	\$8.80	-
INSURANCE, COMMUNICATION	\$8.80	-
FREIGHT DURING CONTRACT	\$26.41	-
	<hr/>	<hr/>
SUBTOTAL	\$924.48	\$6.19 /METRE
G & A 11.5%	\$106.31	
TOTAL COST	\$1,030.79	
MARGIN 8.5%	\$78.58	
PRICE	\$1,109.37 /METRE	
	<hr/>	
	\$338.14 /FT	

FILE:MUCKBAY

CURRAGH RES. CORP.

4.27 M x 4.57 M MUCKBAY

DY DEPOSIT

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$188.33	-
SUPPORT LABOUR	\$291.42	-
STEEL & BITS	\$76.82	-
EXPLOSIVES & ACCESSORIES	\$199.97	-
EQUIPMENT RENTAL	\$114.90	-
EQUIPMENT REPAIR	\$73.16	-
FUEL & LUBE	\$19.20	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$7.93
HOSES, SMALL TOOLS	\$9.64	-
INSURANCE, COMMUNICATION	\$9.64	-
FREIGHT DURING CONTRACT	\$28.91	-
<hr/>		
SUBTOTAL	\$1,011.98	\$7.93 /METRE
G & A 11.5%	\$116.38	
TOTAL COST	\$1,128.36	
MARGIN 8.5%	\$86.02	
PRICE	\$1,214.38 /METRE	
	\$370.14 /FT	

DY DEPOSIT

ELECTRIC

BID SUMMARY SHEET

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>TOTAL COST/BAY</u>	<u>OWNER'S COST/BAY</u>
DIRECT LABOUR	\$198.13	\$362.34	-
SUPPORT LABOUR	\$0.00	\$0.00	-
STEEL & BITS	\$49.39	\$90.33	-
EXPLOSIVES & ACCESSORIES	\$96.12	\$175.79	-
EQUIPMENT RENTAL	\$1.52	\$2.78	-
EQUIPMENT REPAIR	\$17.50	\$32.00	-
FUEL & LUBE	\$4.55	\$8.33	-
PIPE & ACCESSORIES	\$0.00	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	\$0.00	-
ELECTRIC CABLE	\$0.00	\$0.00	-
ELECTRIC POWER	\$0.00	\$0.00	\$0.00
HOSES, SMALL TOOLS	\$3.67	\$6.72	-
INSURANCE, COMMUNICATION	\$3.67	\$6.72	-
FREIGHT DURING CONTRACT	\$11.02	\$20.15	-
SUBTOTAL	\$385.58	\$705.14 EACH	\$0.00 EACH
G & A 11.5%	\$44.34	\$81.09	
TOTAL COST	\$429.92	\$786.24	
MARGIN 8.5%	\$32.77	\$59.94	
PRICE	\$462.69 /METRE	\$846.17 each	

\$141.03 /FT

FILE:DRILLBAY

CURRASH RES. CORP.

3.0M x 3.0M DRILL BAY

DY DEPOSIT

0

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

<u>CATEGORY</u>	<u>TOTAL COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$188.33	-
SUPPORT LABOUR	\$291.42	-
STEEL & BITS	\$62.11	-
EXPLOSIVES & ACCESSORIES	\$159.95	-
EQUIPMENT RENTAL	\$114.90	-
EQUIPMENT REPAIR	\$67.64	-
FUEL & LUBE	\$19.20	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$7.93
HOSES, SMALL TOOLS	\$9.04	-
INSURANCE, COMMUNICATION	\$9.04	-
FREIGHT DURING CONTRACT	\$27.11	-
	<hr/>	<hr/>
SUBTOTAL	\$948.73	\$7.93 /METRE
G & A 11.5%	\$109.10	
	<hr/>	
TOTAL COST	\$1,057.83	
MARGIN 8.5%	\$80.64	
	<hr/>	
PRICE	\$1,138.47 /METRE	
	<hr/>	
	\$347.01 /FT	

06-Apr-89

3.0 M x 3.0 M DRILLBAY

FILE: VENTRSE
06-Apr-89
10:25 AM

CURRAGH RES. CORP.

DY DEPOSIT

2.00 M X 2.00 M RAISE

CONCURRENT

BID SUMMARY SHEET

<u>CATEGORY</u>	<u>COST / M.</u>	<u>OWNER'S COST / M.</u>
DIRECT LABOUR	\$477.36	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$53.22	-
EXPLOSIVES & ACCESSORIES	\$125.25	-
EQUIPMENT RENTAL	\$11.90	-
EQUIPMENT REPAIR	\$20.09	-
FUEL & LUBE	\$11.35	-
PIPE & ACCESSORIES	\$21.99	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
LADDERS	\$32.81	-
ELECTRIC POWER	\$0.00	\$0.00
HOSES, SMALL TOOLS	\$7.54	-
INSURANCE, COMMUNICATION	\$7.54	-
FREIGHT DURING CONTRACT	\$22.62	-
<hr/>		
SUBTOTAL	\$791.66	\$0.00 /METRE
G & A 11.5%	\$91.04	
<hr/>		
TOTAL COST	\$882.70	
MARGIN 8.5%	\$67.29	
PRICE	\$949.99 /M.	
	\$289.56 /FT	

06-Apr-89

2.00 M x 2.00 M VENT. RAISE

FILE:PILOT
 31-Mar-89
 09:06 AM

CURRAGH RES. CORP.

6.00 M x 5.00 M ORE DRIFT

DY DEPOSIT

MULTIPLE HEADING

26.13 CM/LM
 97.00 TONNES PER LM

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

CATEGORY	TOTAL COST / M.	TOTAL COST/TONNE	OWNER'S COST/TONNE
DIRECT LABOUR	\$73.77	\$0.76	-
SUPPORT LABOUR	\$0.00	\$0.00	-
STEEL & BITS	\$88.58	\$0.91	-
EXPLOSIVES & ACCESSORIES	\$188.51	\$1.94	-
EQUIPMENT RENTAL	\$24.06	\$0.25	-
EQUIPMENT REPAIR	\$35.90	\$0.37	-
FUEL & LUBE	\$1.67	\$0.02	-
PIPE & ACCESSORIES	\$35.17	\$0.36	-
VENTILATION & ACCESSORIES	\$34.02	\$0.35	-
ELECTRIC CABLE	\$105.49	\$1.09	-
ELECTRIC POWER	\$0.00	\$0.00	\$0.07
HOSES, SMALL TOOLS	\$5.87	\$0.06	-
INSURANCE, COMMUNICATION	\$5.87	\$0.06	-
FREIGHT DURING CONTRACT	\$17.62	\$0.18	-
SUBTOTAL	\$616.53	\$6.36	\$0.07 /TONNE
G & A 11.5%	\$70.90	\$0.73	
TOTAL COST	\$687.43	\$7.09	
MARGIN 8.5%	\$52.40	\$0.54	
PRICE	\$739.83 /METRE	\$7.63 /TONNE	

\$225.59 /FT

FILE: BENCH
 31-Mar-89
 09:33 AM

CURRAGH RES. CORP.

6.00 M x 4.00 M BENCH

DY DEPOSIT

MULTIPLE HEADING

24.00 CM/LM
 89.04 TONNES PER LM

BID SUMMARY SHEET

ELECTRIC

CONCURRENT

CATEGORY	TOTAL COST / M.	TOTAL COST/TONNE	OWNER'S COST/TONNE
DIRECT LABOUR	\$66.72	\$0.75	-
SUPPORT LABOUR	\$0.00	\$0.00	-
STEEL & BITS	\$39.71	\$0.45	-
EXPLOSIVES & ACCESSORIES	\$127.72	\$1.43	-
EQUIPMENT RENTAL	\$21.76	\$0.24	-
EQUIPMENT REPAIR	\$18.93	\$0.21	-
FUEL & LUBE	\$1.51	\$0.02	-
PIPE & ACCESSORIES	\$0.00	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	\$0.00	-
ELECTRIC CABLE	\$0.00	\$0.00	-
ELECTRIC POWER	\$0.00	\$0.00	\$0.11
HOSES, SMALL TOOLS	\$2.76	\$0.03	-
INSURANCE, COMMUNICATION	\$2.76	\$0.03	-
FREIGHT DURING CONTRACT	\$8.29	\$0.09	-
SUBTOTAL	\$290.17	\$3.26	\$0.11 /TONNE
G & A 11.5%	\$33.37	\$0.37	
TOTAL COST	\$323.54	\$3.63	
MARGIN 8.5%	\$24.66	\$0.28	
PRICE	\$348.21 /METRE	\$3.91 /TONNE	
	\$106.13 /FT		

FILE:SLUSHMIN
31-Mar-89
08:15 AM

CURRAGH - FARD DEPOSIT

SLUSHER STOPING
CONCURRENT

BID SUMMARY SHEET

CATEGORY	TOTAL COST / TONNE	OWNER'S COST / TONNE
DIRECT LABOUR	\$9.72	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$1.23	-
EXPLOSIVES & ACCESSORIES	\$4.02	-
EQUIPMENT RENTAL	\$0.25	-
EQUIPMENT REPAIR	\$9.31	-
FUEL & LUBE	\$0.03	-
PIPE & ACCESSORIES	\$0.10	-
VENTILATION & ACCESSORIES	\$0.24	-
ELECTRIC CABLE	\$0.10	-
ELECTRIC POWER	\$0.00	\$0.05
HOSES, SMALL TOOLS	\$0.16	-
INSURANCE, COMMUNICATION	\$0.16	-
FREIGHT DURING CONTRACT	\$0.48	-
	-----	-----
SUBTOTAL	\$16.79	\$0.05 / TONNE
G & A 11.5%	\$1.93	
TOTAL COST	\$18.73	
MARGIN 8.5%	\$1.43	
PRICE	\$20.15 / TONNE	

CURRAGH RESOURCES CORP.
DY DEPOSIT
LONGHOLE MINING

ORE THICKNESS 30 M
 ASSUME STOPE WIDTH = 12 M
 ASSUME PILLAR WIDTH = 12 M
 ASSUME STOPE THICKNESS = 20 M
 ORE DENSITY 3.9
 LONGHOLE STOPE HEIGHT 15 M

DESCRIPTION	QUANTITY	UNIT RATE	TOTAL COST
PILOT	12,229 TONNES	\$6.36	\$77,776.44
SLASH	9,828 TONNES	\$3.26	\$32,039.28
BENCH	5,335 TONNES	\$3.26	\$17,392.10
SLOT RSE	15 METRES	\$607.56	\$9,113.40
LONGHOLE DRILLING	3,200 METRES	\$13.50	\$43,200.00
LONGHOLE BLASTING	25,791 TONNES	\$1.60	\$41,265.60
TONNES PRODUCED	53,288 TONNES	\$4.14	\$220,786.82

SUMMARY

DIRECT LABOUR	\$0.49
STEEL & BITS	\$0.59
EXPLOSIVES & ACCESSORIES ..	\$1.26
EQUIPMENT RENTAL	\$0.17
EQUIPMENT REPAIR	\$0.24
FUEL & LUBE	\$0.02
PIPE & ACCESSORIES.....	\$0.24
VENTILATION & ACCESSORIES .	\$0.23
ELECTRIC CABLE	\$0.71
HOSES, SMALL TOOLS.....	\$0.04
INSURANCE, COMMUNICATION ..	\$0.04
FREIGHT DURING CONTRACT ...	\$0.11

TOTAL	\$4.14 / TONNE

FILE: DRILL_1
 31-Mar-89
 08:14 AM

CURRAGH RES. CORP.
 DY DEPOSIT
 BID SUMMARY SHEET

LONGHOLE DRILLING
 CONCURRENT

CATEGORY	COST / METRE	OWNER'S COST / METRE
DIRECT LABOUR	\$8.35	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$1.64	-
EXPLOSIVES & ACCESSORIES	\$0.00	-
EQUIPMENT RENTAL	\$0.79	-
EQUIPMENT REPAIR	\$1.64	-
FUEL & LUBE	\$0.44	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	-	\$0.10
HOSES, SMALL TOOLS	\$0.13	-
INSURANCE, COMMUNICATION	\$0.13	-
FREIGHT DURING CONTRACT	\$0.39	-
	-----	-----
SUBTOTAL	\$13.50	\$0.10 /METRE
G & A 11.5%	\$1.55	

TOTAL COST	\$15.06	
MARGIN 8.5%	\$1.15	
PRICE	\$16.20 /METRE	
	\$4.94 /FOOT	

CURRAGH RES. COR
 DY DEPOSIT
 BID SUMMARY SHEET

LONGHOLE
 BLASTING CONCURRENT

 LOADING SYSTEM

CATEGORY	COST / TONNE	BY OWNER
DIRECT LABOUR	\$0.48	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$0.00	-
EXPLOSIVES & ACCESSORIES	\$0.90	-
EQUIPMENT RENTAL	\$0.04	-
EQUIPMENT REPAIR	\$0.06	-
FUEL & LUBE	\$0.04	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC POWER	\$0.00	-
HOSES, SMALL TOOLS	\$0.02	-
INSURANCE, COMMUNICATION	\$0.02	-
FREIGHT, FARES DURING CONTRACT.....	\$0.05	-
SUBTOTAL	\$1.60	\$0.00 /TONNE
G & A 11.5%	\$0.18	
MARGIN 8.5%	\$0.14	
PRICE	\$1.91 /TONNE	

- 1.) UP HOLE
 a) Toe Priming with A-35 Primer along with Nonel XT Primer (50 ft lng)
 b) Pneumatic ANFO Loading to Collar minus 3 feet.
- 2.) DOWN HOLE
 a) Middle Priming with A-35 Primer along with Nonel XT Primer (30 ft lng)
 b) Pneumatic ANFO Loading to Collar minus 3 feet.
- ‡ If critical charge is not a problem then gravity feeding may be feasible.

FILE: SLT_RSE
 31-Mar-89
 08:14 AM

CURRAGH RES. CORP.

DY DEPOSIT

1.22 M X 1.83 M RAISE

BID SUMMARY SHEET

CONCURRENT

CATEGORY	COST / M.	OWNER'S COST / M.
DIRECT LABOUR	\$375.87	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$42.34	-
EXPLOSIVES & ACCESSORIES	\$71.50	-
EQUIPMENT RENTAL	\$9.37	-
EQUIPMENT REPAIR	\$15.82	-
FUEL & LUBE	\$8.93	-
PIPE & ACCESSORIES	\$21.99	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
LADDERS	\$32.81	-
ELECTRIC POWER	\$0.00	\$0.00
HOSES, SMALL TOOLS	\$5.79	-
INSURANCE, COMMUNICATION	\$5.79	-
FREIGHT DURING CONTRACT	\$17.36	-
<hr/>		
SUBTOTAL	\$607.56	\$0.00 /METRE
G & A 11.5%	\$69.87	
<hr/>		
TOTAL COST	\$677.43	
MARGIN 8.5%	\$51.64	
PRICE	\$729.08 /M.	
	\$222.22 /FT	

CURRAGH RESOURCES CORP.
DY DEPOSIT
MINING PHASE
MINE AIR HEATING

AIR VOLUME (CFM) 200,000
BTU/HOUR = CFM x TEMP RISE (DEG. F) x 1.08
BTU/LITRE OF PROPANE = 24,175

	M O N T H									
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
FARD *	---	---	---	---	---	---	---	---		
MEAN TEMP. (DEG. C)	-0.4	-13.8	-21.7	-24.5	-15.9	-10.1	-0.8	7.1		
MEAN TEMP. (DEG. F)	31.3	7.2	-7.1	-12.1	3.4	13.8	30.6	44.8		
TEMP RISE TO 35 DEG. F. (DEG. F)	3.7	27.8	42.1	47.1	31.6	21.2	4.4	-		
BTU/HOUR	803,520	6,013,440	9,084,960	10,173,600	6,829,920	4,574,880	959,040			TOTAL HEATING
DAYS	31	30	31	31	28	31	30	-		212 DAYS
PROPANE CONSUMPTION (LITRES) PER MONTH	24,729	179,097	279,595	313,099	189,853	140,795	28,563	0		TOTAL LITRES
PROPANE COST \$0.19 PER LITRE	\$4,698	\$34,028	\$53,123	\$59,489	\$36,072	\$26,751	\$5,427	\$0	\$219,589	/YEAR

* FROM ENVIRONMENT CANADA

	DEG. C HIGH	DEG. C LOW	DEG. C MEAN
JAN	-20.4	-28.5	-24.5
FEB	-10.7	-20.9	-15.9
MAR	-3.4	-16.7	-10.1
APR	5.5	-7.0	-0.8
MAY	13.3	0.8	7.1
JUN	18.9	6.1	12.5
JUL	21.2	8.6	14.9
AUG	18.9	5.8	12.4
SEP	12.6	1.5	7.1
OCT	3.5	-4.3	-0.4
NOV	-10.4	-17.2	-13.8
DEC	-17.8	-25.6	-21.7

MINIMUM DAILY TEMP

-28.5 DEG. C
-19.3 DEG. F

54.3 TEMP RISE TO 35 DEG. F

11,728,800 BTU/HR - MAXIMUM REQUIREMENT

@ 500,000 t/YR = \$0.44 /TONNE
@ 1,000,000 t/YR = \$0.22 /TONNE

90 FROST FREE DAYS

FILE:MAIL
09-Apr-89
12:00 PM

CURRAGH RESOURCES CORP.

ORE HAULAGE

DY DEPOSIT

200 METRES +

ELECTRIC

26.13 CM/LM
97.00 TONNES PER LM

BID SUMMARY SHEET

<u>CATEGORY</u>	<u>TOTAL COST/TONNE</u>	<u>OWNER'S COST/TONNE</u>
DIRECT LABOUR	\$2.29	-
SUPPORT LABOUR	\$0.00	-
STEEL & BITS	\$0.00	-
EXPLOSIVES & ACCESSORIES	\$0.00	-
EQUIPMENT RENTAL	\$0.99	-
EQUIPMENT REPAIR	\$0.93	-
FUEL & LUBE	\$0.70	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$0.00
HOSES, SMALL TOOLS	\$0.05	-
INSURANCE, COMMUNICATION	\$0.05	-
FREIGHT DURING CONTRACT	\$0.15	-
SUBTOTAL	\$5.16	\$0.00 /TONNE
G & A 11.5%	\$0.59	
TOTAL COST	\$5.75	
MARGIN 8.5%	\$0.44	
PRICE	\$6.19 /TONNE	

09-Apr-89

ONE HAULAGE

FILE:INDIRECT
09-Apr-89
12:24 PM

CURRAGH RESOURCES CORP.

INDIRECT LABOUR

DY DEPOSIT

AND EQUIPMENT

26.13 CM/LM
97.00 TONNES PER LM

BID SUMMARY SHEET

ELECTRIC

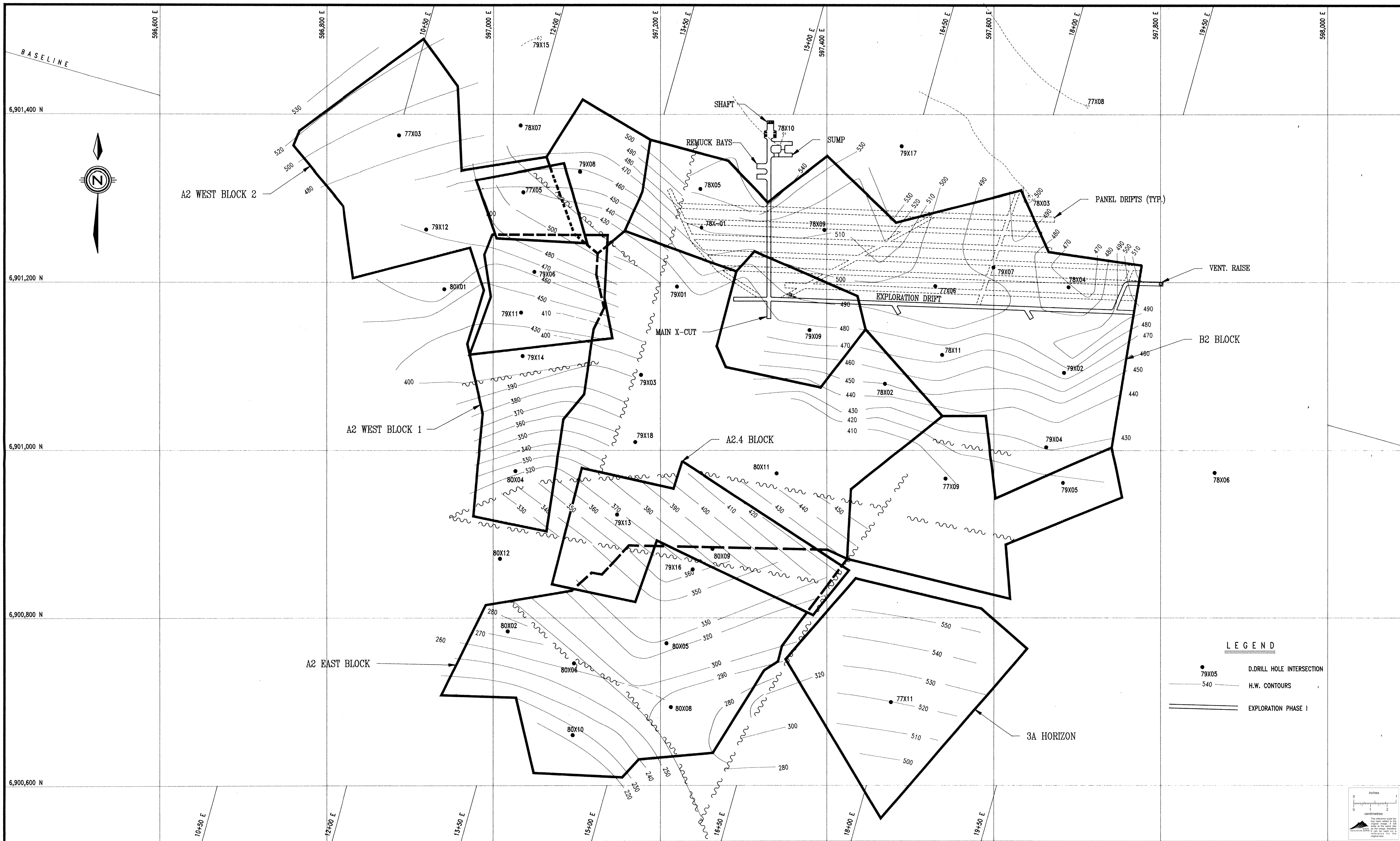
<u>CATEGORY</u>	<u>TOTAL COST/TONNE</u>	<u>OWNER'S COST/TONNE</u>
DIRECT LABOUR	\$0.00	-
SUPPORT LABOUR	\$1.80	-
STEEL & BITS	\$0.00	-
EXPLOSIVES & ACCESSORIES	\$0.00	-
EQUIPMENT RENTAL	\$0.45	-
EQUIPMENT REPAIR	\$0.34	-
FUEL & LUBE	\$0.08	-
PIPE & ACCESSORIES	\$0.00	-
VENTILATION & ACCESSORIES	\$0.00	-
ELECTRIC CABLE	\$0.00	-
ELECTRIC POWER	\$0.00	\$0.11
HOSES, SMALL TOOLS	\$0.03	-
INSURANCE, COMMUNICATION	\$0.03	-
FREIGHT DURING CONTRACT	\$0.08	-
SUBTOTAL	\$2.81	\$0.11 /TONNE
G & A 11.5%	\$0.32	
TOTAL COST	\$3.13	
MARGIN 8.5%	\$0.24	
PRICE	\$3.37 /TONNE	

<u>C A T E G O R Y</u>	<u>T O T A L C O S T / D A Y</u>	<u>O W N E R ' S C O S T / D A Y</u>		
DIRECT LABOUR	\$1,969.77	-		
SUPPORT LABOUR	\$2,357.87	-		
STEEL & BITS	\$0.00	-		
EXPLOSIVES & ACCESSORIES	\$0.00	-		
EQUIPMENT RENTAL	\$896.00	-		
EQUIPMENT REPAIR	\$1,610.00	-		
FUEL & LUBE	\$511.36	-		
PIPE & ACCESSORIES	\$0.00	-		
VENTILATION & ACCESSORIES	\$0.00	-		
ELECTRIC CABLE	\$0.00	-		
ELECTRIC POWER	\$0.00	\$972.86		
HOSES, SMALL TOOLS	\$73.45	-		
INSURANCE, COMMUNICATION	\$73.45	-		
FREIGHT DURING CONTRACT	\$220.35	-		
	-----	-----		
SUBTOTAL	\$7,712.25	\$972.86 /DAY =		\$0.39 /TONNE
G & A 11.5%	\$886.91		@ 2,500 TONNES/DAY COST =	\$3.08 /TONNE
TOTAL COST	\$8,599.16			
MARGIN 8.5%	\$655.54			
PRICE	\$9,254.70 /DAY			

**CURRAGH RESOURCES INC.
DY DEPOSIT**

LIST OF DRAWINGS

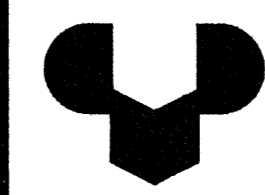
U/G DEVELOPMENT PLAN	89-06-022
DRILL INDICATE ORE RESERVES - B2 BLOCK	89-06-023
9'-2" X 19'-4" SHAFT - PLAN & SECTION	89-06-024



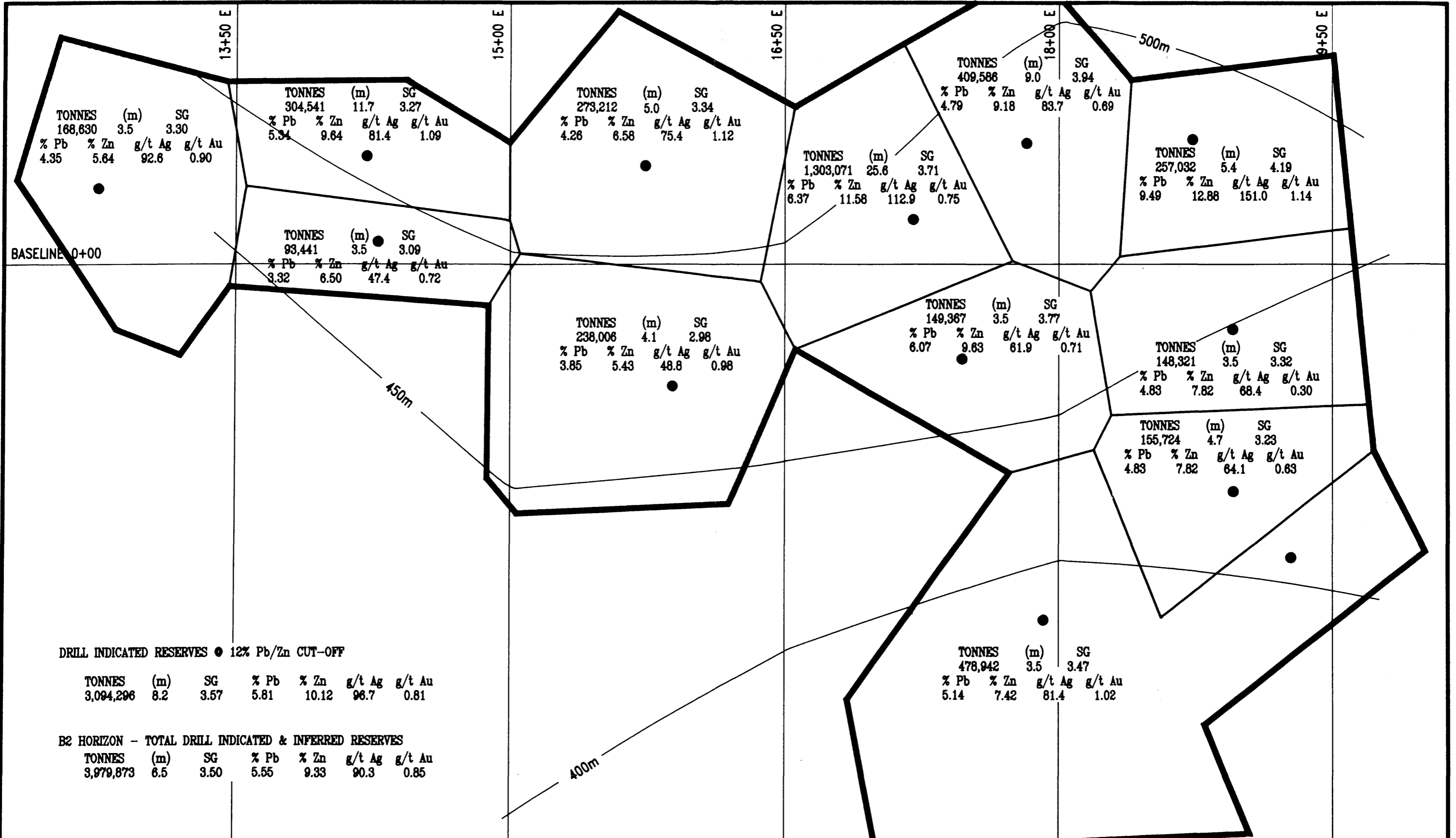
DWG. NO.	REFERENCE DRAWING	DWG. NO.	REFERENCE DRAWING	NO.	DESCRIPTION OF REVISION	DATE	BY	NO.	DESCRIPTION OF REVISION	DATE	NO.	APPROVED:

SCALE:	1:2000	DATE:	
DESIGNED:			
DRAWN:	S.McG.	02/89	
CHECKED:			
APPROVED:			

CURRAGH RESOURCES CORP.
 DY DEPOSIT
U/G EXPLORATION PLAN



CANADIAN MINE DEVELOPMENT	
BRAMPTON, ONTARIO	CANADA
DWG. NO.	REV.
89-06-022	



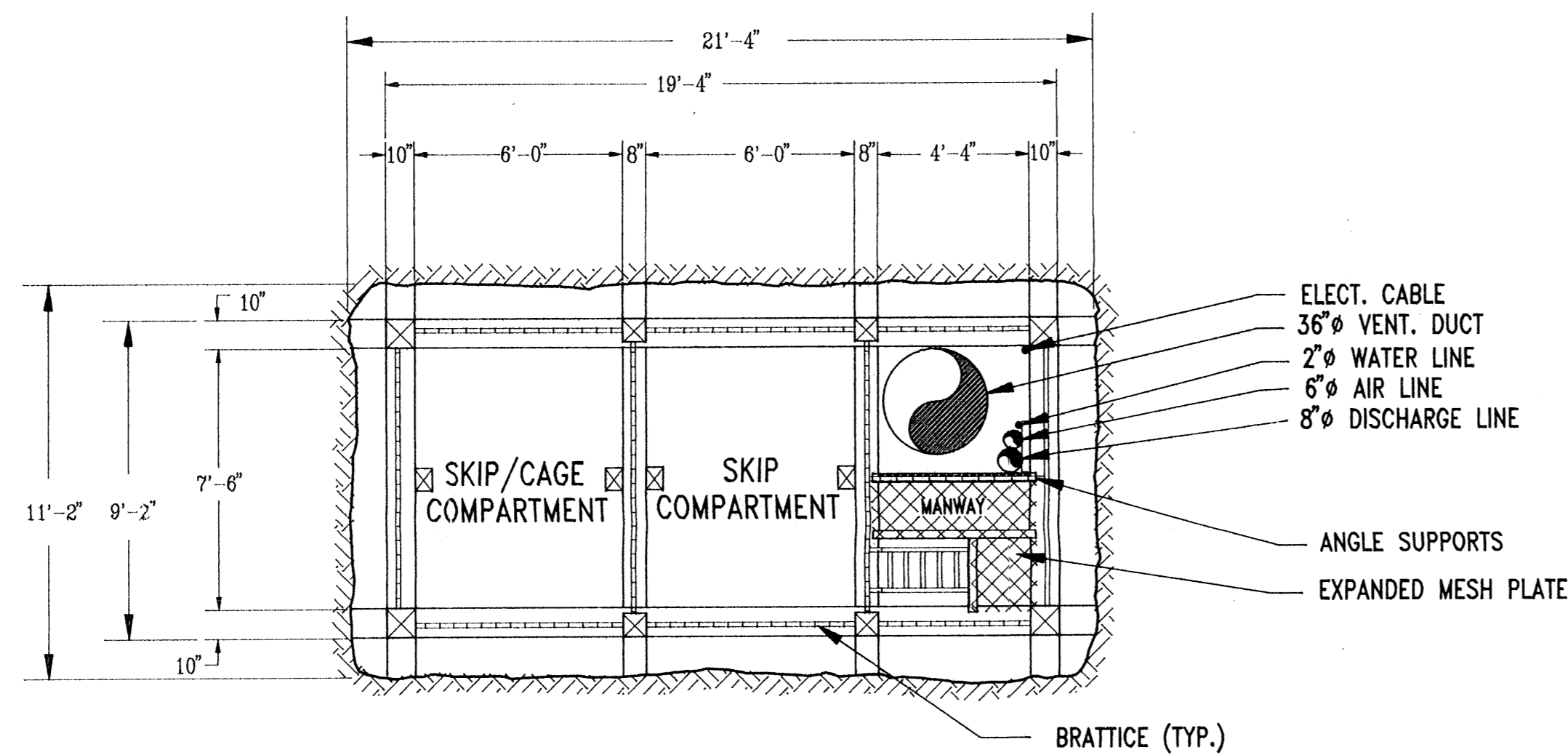
DRILL INDICATED RESERVES ● 12% Pb/Zn CUT-OFF

TONNES	(m)	SG	% Pb	% Zn	g/t Ag	g/t Au
3,094,296	8.2	3.57	5.81	10.12	96.7	0.81

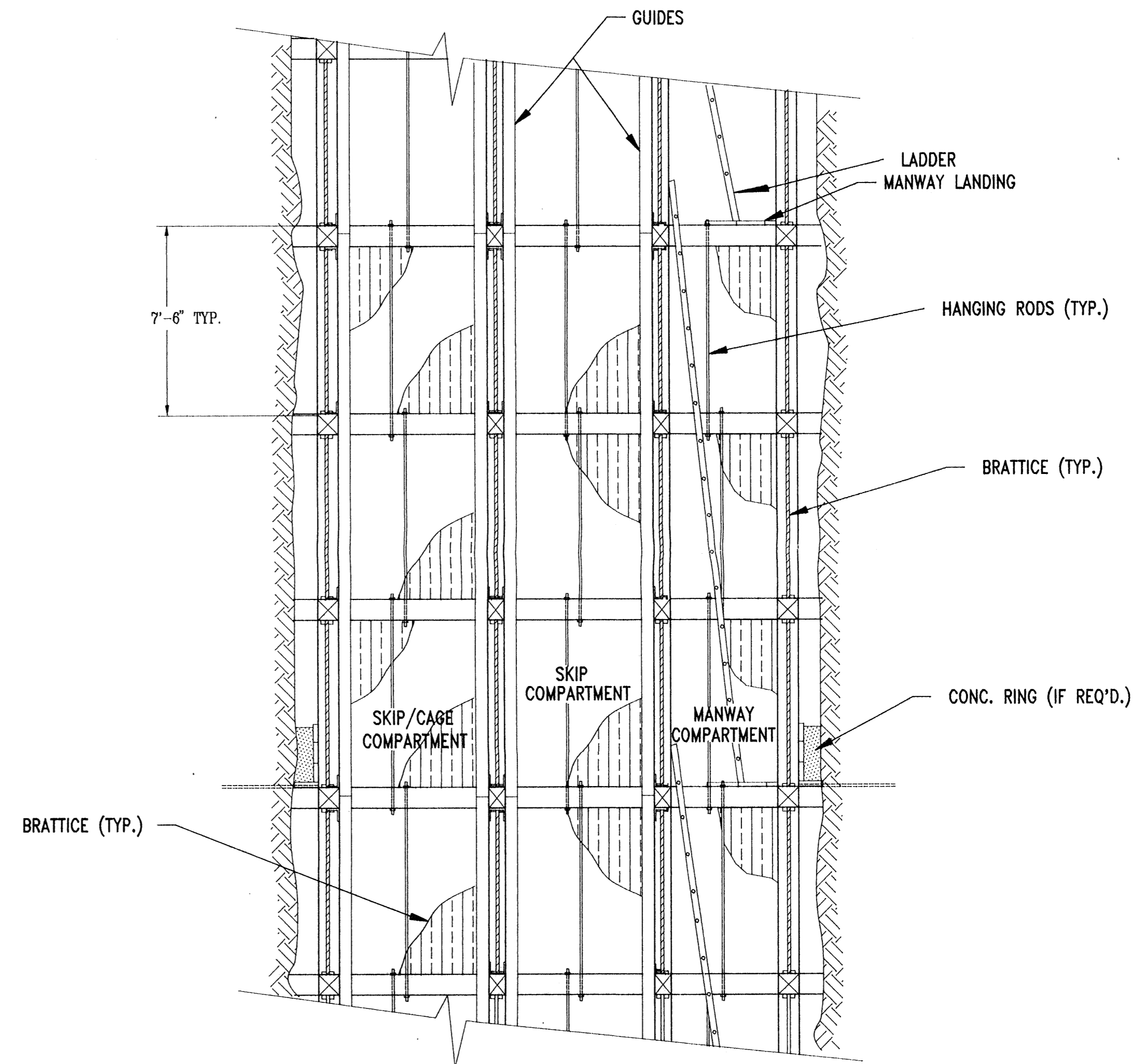
B2 HORIZON - TOTAL DRILL INDICATED & INFERRED RESERVES

TONNES	(m)	SG	% Pb	% Zn	g/t Ag	g/t Au
3,979,873	6.5	3.50	5.55	9.33	90.3	0.85

SCALE:	DATE:		CURRAGH RESOURCES CORP. DY DEPOSIT	CANADIAN MINE DEVELOPMENT	
DESIGNED: J.M.P.				BRAMPTON, ONTARIO	CANADA
DRAWN: S.McG.	04/89				
CHECKED:				DWG. NO.	REV.
APPROVED:				89-06-023	

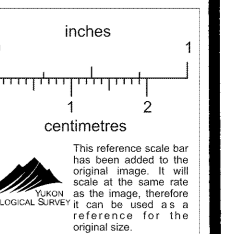


SHAFT PLAN



SHAFT SECTION

3 COMPARTMENT SHAFT - 2.29m (7.5') SET CENTERS
 MANWAY LANDINGS @ 3 SET INTERVALS
 TIMBER END & WALL PLATES - 250mm X 250mm (10"x10")
 TIMBER DIVIDERS - 250mm X 200mm (10"x 8")
 CORNER TIMBER POSTS - 250mm X 250mm (10"x 10")
 MIDDLE TIMBER POSTS - 200mm X 200mm (8"x 8")
 COMPARTMENTS - FULL TIGHT LINING
 6 HANGING SETS/SET
 BEARING SETS @ 90m INTERVALS
 ROCK CATCHERS @ 6 SET INTERVALS
 WATER RINGS ABOVE EACH LEVEL & AS REQ'D.
 GUIDES - 6" X 8" NOMINAL X 22'-6" LG.
 GUIDES - DOUGLAS FIR SELECT (189B)
 SETS - BC FIR NO.1 STRUCTURAL



DWG. NO.	REFERENCE DRAWING	DWG. NO.	REFERENCE DRAWING	NO.	DESCRIPTION OF REVISION	DATE	BY	NO.	DESCRIPTION OF REVISION	DATE	NO.



CURRAGH RESOURCES CORP.
 DY DEPOSIT
 9'-2" x 19'-4" SHAFT
 PLAN & SECTION

CANADIAN MINE DEVELOPMENT
 BRAMPTON, ONTARIO CANADA
 DWG. NO. 89-06-024
 REV.