

CURRAGH RESOURCES INC.
INTER-OFFICE MEMORANDUM

TO: Kurt Forgaard
Bill Weymark
Marv Pelley

FROM: Gregg Jilson
Cam Reed

DATE: 1989 08 24

Last month we carried out a number of recalculations of grade for the geological interpretation by Steven Cheeseman using the total assay data base to the end of 1987.

The calculations have involved varying the rules followed during interpolation by computer and the use of various assay composite types. The results are shown on the attached Tables.

Table 1

Compares 4 different calculations to blastholes. On the extreme left is the original model (F8805) as calculated by S. Cheeseman. On the extreme right are blastholes for benches 3410 to 3310 in the B2 phase (the same benches and areas as reconciled by Ed Blaxland).

The columns to the right of Cheesman's calculation are gradually "more relaxed" recalculations. Beside the blasthole column is our favoured calculation which uses bench composited assays and a loose matching of rock types. We propose to call this calculation the F8908 model. Because of the bench composites this calculation is not diluted. The comparison of high grade volume to blasthole volumes is very good, however, the tonnage comparison is not as good and is due to the low blasthole density used, (the average of 3 tonnes per cubic yard). Overall at a 4% cutoff blastholes and model are still relatively close.

Table 2

Compares the same 4 calculations to the blastholes for the 3630 bench August 1989 mining volume. It is apparent that our favoured model (F8908) came much closer to the actual tonnage blocked out.

Table 3

Compares total volume mined to date by Curragh for the new bench composite model (F8908), as well as the remaining reserves and the overall start of mining reserves. It appears that the new model calculation does not distort the overall tonnage and grade of the deposit at low cutoff grades as what was originally feared.

We therefore recommend that the F8908 model replace the F8805 model and be used for future mine planning. However, in no case should the current dilution practice of 10% dilution at zero grade with a 95% mining recovery be applied to the F8908 model otherwise grades will be far too low. The dilution by blasthole drilling is inherently included in the model blocks because of the bench compositing.

I believe this brief discussion will need much amplification with the Faro Mine staff. Should you agree that the F8908 model is to be used we will see that this information is conveyed and the model will be made available immediately.

Philip A. Reed

CORRAGH RESOURCES INC.
 FARD MINE
 COMPARISON OF PREDICTED TO ACTUAL BENCH ORE

TABLE I

		FY85 ACTUAL DIG LIMITS				ACTUAL DIG LIMITS				F8903 ACTUAL DIG LIMITS				BLASTHOLE							
		GEOLOGICAL COMP, STRICT MATCH CALCULATED BY PC/MINE UNDILUTED				GEOLOGICAL COMP, LOOSE MATCH CALCULATED BY PC/MINE UNDILUTED				BENCH COMP, STRICT MATCH CALCULATED BY PC/MINE UNDILUTED				BENCH COMP, LOOSE MATCH CALCULATED BY PC/MINE UNDILUTED							
		Tonnes	Volume (bcy)	Pb+Zn (%)	Metal (tonnes)	Tonnes	Volume (bcy)	Pb+Zn (%)	Metal (tonnes)	Tonnes	Volume (bcy)	Pb+Zn (%)	Metal (tonnes)	Tonnes	Volume (bcy)	Pb+Zn (%)	Metal (tonnes)				
3410	4-5% 5-7% +7% +5% +4%	39,660 94,760 490,750 585,510 625,170	15,713 32,736 142,731 175,467 191,181	4.56 5.84 8.70 8.24 8.00	1,810 5,534 42,695 48,229 50,039	58,420 174,890 478,610 653,300 711,920	21,604 55,652 140,112 195,764 217,370	4.54 6.14 8.64 7.97 7.69	2,651 10,738 41,338 52,076 54,727	112,370 175,930 348,000 521,938 634,300	45,176 52,378 101,483 153,861 199,037	4.45 6.11 8.57 7.75 7.16	5,005 10,618 29,820 40,439 45,444	87,900 254,870 420,730 675,600 763,500	35,355 80,531 124,399 204,930 240,285	4.48 6.03 8.48 7.56 7.20	3,936 15,361 35,686 51,047 54,983	74,276 308,952 303,569 612,521 686,797	24,759 102,984 101,190 204,174 228,932	4.56 6.08 9.04 7.55 7.22	3,387 18,784 27,443 46,227 49,614
3390	4-5% 5-7% +7% +5% +4%	39,190 188,950 266,570 455,520 494,710	17,023 7,267 75,949 83,216 100,239	4.68 5.99 8.55 7.49 7.27	1,835 11,318 22,802 34,121 35,955	52,770 266,880 214,650 481,530 534,300	20,951 94,936 61,544 156,480 177,431	4.62 6.04 7.92 6.88 6.65	2,440 16,109 17,009 33,118 35,557	59,120 205,950 251,530 457,480 516,600	24,225 76,603 72,675 149,278 173,503	4.74 5.82 8.11 7.08 6.81	2,800 11,978 20,397 32,375 35,175	60,460 320,900 170,430 491,330 551,790	22,916 112,613 49,104 161,718 184,633	4.68 5.96 7.86 6.62 6.41	2,829 19,119 13,401 32,520 35,349	77,223 200,245 202,520 402,765 479,988	25,741 66,748 67,507 134,255 159,996	4.99 6.21 8.54 7.38 7.00	3,853 12,435 17,295 29,730 33,584
3370	4-5% 5-7% +7% +5% +4%	51,310 69,210 292,630 361,840 413,150	22,261 29,463 86,424 115,887 138,147	4.87 5.41 9.04 8.35 7.91	2,497 3,744 26,460 30,203 32,700	51,980 148,910 232,990 381,900 433,880	22,261 53,033 69,401 122,434 144,695	4.87 5.89 8.74 7.63 7.30	2,530 8,768 20,368 29,136 31,666	63,980 53,140 278,340 331,480 395,460	27,499 20,951 81,841 102,792 130,290	4.40 5.69 8.68 8.20 7.58	2,816 3,023 24,146 27,169 29,985	55,360 126,490 196,370 322,860 378,220	22,916 40,593 58,271 98,864 121,779	4.48 5.98 8.47 7.49 7.05	2,482 7,562 16,633 24,194 26,676	42,875 143,172 256,953 400,125 443,000	14,292 47,724 85,651 133,375 147,667	4.74 6.13 8.36 7.56 7.29	2,032 8,776 21,481 30,258 32,290
3350	4-5% 5-7% +7% +5% +4%	42,220 34,060 172,110 206,170 249,390	18,332 14,404 49,104 63,509 81,841	4.54 5.96 8.44 8.03 7.44	1,918 2,030 14,528 16,558 18,476	42,210 34,080 171,430 205,510 247,720	18,332 14,404 49,104 63,509 81,841	4.54 5.96 8.11 7.75 7.21	1,918 2,032 13,901 15,933 17,890	21,100 40,570 182,760 223,330 244,430	9,166 17,023 56,961 73,984 83,150	4.54 5.81 8.31 7.85 7.57	957 2,356 15,180 17,536 18,493	10,700 36,020 201,750 237,770 248,470	4,583 13,059 64,163 79,222 83,805	4.45 5.99 7.94 7.64 7.50	476 2,156 16,009 18,165 18,640	64,167 71,083 102,333 173,416 237,583	21,389 23,694 34,111 57,805 79,194	4.53 6.56 8.09 7.46 6.67	2,907 4,663 8,279 12,942 15,849
3330	4-5% 5-7% +7% +5% +4%	22,600 72,650 36,160 108,810 131,410	9,821 31,427 10,476 41,983 51,723	4.47 6.11 8.40 6.87 6.46	1,011 4,437 3,036 7,473 8,484	22,600 72,600 38,440 111,040 133,640	9,821 31,427 11,130 42,557 52,378	4.47 6.11 8.29 6.86 6.46	1,011 4,434 3,185 7,619 8,650	21,180 68,790 12,160 80,950 102,130	9,166 28,153 4,583 32,736 41,903	4.66 5.82 7.84 6.12 5.82	986 4,000 953 4,953 5,939	40,090 84,350 27,570 111,920 152,010	17,678 34,046 9,821 43,867 61,544	4.51 6.16 7.71 6.54 6.00	1,808 5,192 2,126 7,318 9,126	36,000 10,967 28,606 39,573 75,573	12,000 3,656 9,535 13,191 25,191	4.87 5.75 8.56 7.78 6.39	1,753 631 2,449 3,079 4,832
Total	4-5% 5-7% +7% +5% +4%	194,980 459,630 1,258,220 1,717,850	83,150 115,297 364,684 479,981	4.65 5.89 8.70 7.95	9,071 27,063 109,521 136,384	227,980 697,360 1,136,120 1,833,480	92,971 249,451 331,292 580,744	4.63 6.03 8.43 7.52	10,549 42,080 95,801 137,881	277,750 542,380 1,072,790 1,615,170	115,232 195,109 317,543 512,651	4.52 5.90 8.44 7.58	12,565 31,975 90,496 127,471	254,510 822,630 1,016,850 1,839,480	103,447 282,843 305,758 588,600	4.53 6.00 8.25 7.24	11,530 49,389 83,855 133,744	294,541 734,419 893,981 1,678,400	98,180 244,806 297,994 547,800	4.73 6.17 8.61 7.51	13,933 45,290 76,947 127,244

F8910
 UNCALCULATED - NO MINING LOSS

at 3 tonnes/bcy
 for all rocks

Tonnes vs Pb+Zn

418,510 8.56

CORRAGH RESOURCES INC.

FARO MINE

"S" Phase Predicted Ore Quantities - 3630 Bench

TABLE II

	ACTUAL DIG LIMITS F8805 MODEL GEOLOGICAL STRICT MATCH CALCULATED BY PC/MINE UNDILUTED					ACTUAL DIG LIMITS F8805 MODEL GEOLOGICAL LOOSE MATCH CALCULATED BY PC/MINE UNDILUTED					ACTUAL DIG LIMITS F8805 MODEL BENCH COMP, STRICT MATCH CALCULATED BY PC/MINE UNDILUTED				ACTUAL DIG LIMITS F8805 MODEL BENCH COMP, LOOSE MATCH CALCULATED BY PC/MINE UNDILUTED				BLASTHOLE						
	Tonnes	Volume	Pb+Zn (%)	Metal (tonnes)		Tonnes	Volume	Pb+Zn (%)	Metal (tonnes)		Tonnes	Volume	Pb+Zn (%)	Metal (tonnes)		Tonnes	Volume	Pb+Zn (%)	Metal (tonnes)		Tonnes	Volume	Pb+Zn (%)	Metal (tonnes)	
3630	4-52	3,230	1,310	4.29	139				0		1,790	655	4.19	75		26,260	9,821	4.37	1,147		7,535	2,512	4.28	322	
	5-72	1,880	655	6.03	113				0		45,820	15,059	6.35	2,911		61,110	20,951	5.99	3,659		27,952	9,317	6.55	1,831	
	+72	175,340	53,033	10.40	10,230				0		26,380	8,511	7.34	1,936		88,780	28,808	8.37	7,434		97,401	32,467	9.68	9,428	
	+52	177,220	53,688	10.35	10,343	0	0	ERR	0		72,200	23,570	6.71	4,847		149,890	49,759	7.40	11,094		125,353	41,784	8.98	11,259	
	+42	180,450	54,997	10.24	10,482	0	0	ERR	0		73,990	24,225	6.65	4,922		176,150	59,580	6.95	12,241		132,888	44,296	8.72	11,582	
											lots of UI blocks?														
raap	4-52	0	0	0.00	0				0		0	0	0.00	0		0	0	0.00	0		0	0	0.00	0	
	5-72	0	0	0.00	0				0		0	0	0.00	0		0	0	0.00	0		0	0	0.00	0	
	+72	13,195	3,928	8.87	1,171				0		0	0	0.00	0		13,105	3,928	8.86	1,161						
	+52	13,195	3,928	8.87	1,171	0	0	ERR	0		0	0	ERR	0		13,105	3,928	8.86	1,161						
	+42	13,195	3,928	8.87	1,171	0	0	ERR	0		0	0	ERR	0		13,105	3,928	8.86	1,161						
Total	4-52	3,230	1,310	4.29	139	4-52	0	0	ERR		1,790	655	4.19	75		26,260	9,821	4.37	1,147		7,535	2,512	4.28	322	
	5-72	1,880	655	6.03	113	5-72	0	0	ERR		45,820	15,059	6.35	2,911		61,110	20,951	5.99	3,659		27,952	9,317	6.55	1,831	
	+72	188,535	56,961	10.29	19,401	+72	0	0	ERR		26,380	8,511	7.34	1,936		101,885	32,736	8.44	8,595		97,401	32,467	9.68	9,428	
	+52	190,415	57,616	10.25	19,514	+52	0	ERR	ERR		72,200	23,570	6.71	4,847		162,995	53,688	7.52	12,254		125,353	41,784	8.98	11,259	
	+42	193,645	58,926	10.15	19,653	+42	0	ERR	ERR		73,990	24,225	6.65	4,922		189,255	63,508	7.08	13,402		132,888	44,296	8.72	11,582	

TABLE III

	ACTUAL DIG LIMITS F8805 MODEL GEOLOGICAL COMP, STRICT MATCH CALCULATED BY PCMINI UNDILUTED					ACTUAL DIG LIMITS F8805 MODEL GEOLOGICAL COMP, STRICT MATCH CALCULATED BY PCMINI DILUTED			ACTUAL DIG LIMITS F8908 MODEL BENCH COMP, LOOSE MATCH CALCULATED BY PCMINI UNDILUTED					BLASTHOLE CALCULATION (AVERAGE ORE DENSITY = 3MT/BCY)							
	Tonnes	Volume	Density	Pb+Zn	Metal	Tonnes	Pb+Zn	Metal	Tonnes	Volume	Density	Pb+Zn	Metal	Tonnes	Volume	Density	Pb+Zn	Metal			
			mt/bcy	(%)	(tonnes)		(%)	(tonnes)			mt/bcy	(%)	(tonnes)		bcy	mt/bcy	(%)	(tonnes)			
Start-up	4-52	893,260	357,481	2.50	4.54	40,536	933,457	4.13	38,509	4-52	1,839,920	643,073	2.86	4.51	82,962	4-52	1,443,439	481,153	3.00	4.77	68,853
to	5-62	1,261,120	472,746	2.67	5.50	69,412	1,317,870	5.00	65,941	5-62	2,214,860	753,264	2.94	5.53	122,482						
June 30 89	6-72	1,525,020	524,470	2.91	6.49	99,020	1,593,646	5.90	94,069	6-72	2,193,740	715,323	3.07	6.51	142,747						
	+72	9,359,150	2,895,171	3.23	10.16	950,796	9,780,312	9.24	903,256	+72	7,930,020	2,490,210	3.17	9.70	769,291						
	+62	10,884,170	3,419,640	3.18	9.65	1,049,816	11,373,958	8.77	997,325	+62	10,123,760	3,213,532	3.15	9.01	912,038						
	+52	12,145,290	3,892,386	3.12	9.22	1,119,228	12,691,828	8.38	1,063,266	+52	12,338,620	3,966,796	3.11	8.38	1,034,520	+52	12,279,176	4,093,059	3.00	8.46	1,038,818
	+42	13,038,350	4,249,868	3.07	8.89	1,159,764	13,625,285	8.09	1,101,776	+42	14,178,540	4,609,870	3.08	7.88	1,117,482	+42	13,722,635	4,574,212	3.00	8.07	1,107,671
June 30 89	4-52	1,377,870	535,698	2.57	4.47	61,605	1,439,874	4.06	58,524	4-52	2,360,490	829,507	2.85	4.49	105,939						
to	5-62	1,092,250	429,141	2.55	5.50	60,030	1,141,401	5.00	57,029	5-62	2,037,340	710,150	2.87	5.50	112,135						
Ultimate	6-72	1,179,520	446,000	2.64	6.52	76,940	1,232,598	5.93	73,093	6-72	2,039,860	698,627	2.92	6.49	132,285						
Pit	+72	7,821,850	2,461,778	3.18	9.96	779,134	8,173,833	9.06	740,178	+72	6,863,540	2,212,587	3.10	9.27	636,525						
	+62	9,001,370	2,907,778	3.10	9.51	856,075	9,406,432	8.65	813,271	+62	8,903,400	2,911,214	3.06	8.64	768,810						
	+52	10,093,620	3,336,919	3.02	9.08	916,105	10,547,833	8.25	870,299	+52	10,940,740	3,621,364	3.02	8.05	880,945						
	+42	11,471,490	3,872,617	2.96	8.52	977,709	11,987,707	7.75	928,824	+42	13,301,230	4,450,871	2.99	7.42	986,884						
Total	4-52	2,271,130	893,180	2.54	4.50	102,141	2,373,331	4.09	97,034	4-52	4,200,410	1,472,580	2.85	4.50	188,901						
Mining	5-62	2,353,370	901,887	2.61	5.50	129,442	2,459,272	5.00	122,970	5-62	4,252,200	1,463,414	2.91	5.52	234,617						
Reserves	6-72	2,704,540	970,470	2.79	6.51	175,960	2,826,244	5.91	167,162	6-72	4,233,600	1,413,950	2.99	6.50	275,032						
	+72	17,181,000	5,356,949	3.21	10.07	1,729,931	17,954,145	9.15	1,643,434	+72	14,793,560	4,710,797	3.14	9.50	1,405,816						
	+62	19,885,540	6,327,419	3.14	9.58	1,905,890	20,780,389	8.71	1,810,596	+62	19,027,160	6,124,747	3.11	8.83	1,680,848						
	+52	22,238,910	7,229,306	3.08	9.15	2,035,332	23,239,661	8.32	1,933,566	+52	23,279,360	7,588,161	3.07	8.23	1,915,464						
	+42	24,510,040	8,122,485	3.02	8.72	2,137,473	25,612,992	7.93	2,030,599	+42	27,479,770	9,060,741	3.03	7.66	2,104,365						