1988 06 28

019086

MEMORANDUM

TO: Cam Reed

FROM: Lee Pigage

RE: 1987 Vangorda assays

Entering the Bonder-Clegg SG and Au results has "highlighted" the following problem samples:

DH	Sample	Rock	Sg	Pb	Zn	Ag	Au	To & Fe	Sol Fe
87V-05	11481	4H4%	3.10	3.07	5.26	46	0.89	27.70	22.30
87V-06	11086	4C8$	3.9	0.14	0.35	12	0.51	6.79	2.93
87V-08	11280	4E0#	2.9	1.53	0.39	20	1.27	29.10	1.92
87V-09	30243	4E1	2.9	0.89	1.00	16	0.01	6.49	4.14
87V-09	30158	4C0	4.5	1.79	0.44	2	0.86	17.20	5.19
87V-10	30624	4E48	4.2	5.22	5.69	73	1.17	3.21	5.91
87V-10	30635	4H491	2.7	4.22	4.91	39	0.51	30.60	23.10
87V-10	30647	4G4#8	-	4.87	6.81	65	-	18.80	1.86
87V-10	30649	4K#0	2.4	1.41	0.44	24	1.75	17.20	1.84
87V-11	30298	4L127	3.8	0.16	0.20	6	0.31	9.47	10.50
87V-20	30358	4A4	-	2.64	4.69	40	-	9.45	2.56
87V-20	30360	4A0	-	1.22	2.23	18	-	9.20	3.73
87V-21	30370	5A196	4.0	0.46	1.16	10	0.27	8.19	3.96
87V-22	30348	4G4	-	-	-	-	-	-	-
87V-27	30263	4A0	3.9	0.45	0.29	22	1.13	30.60	2.11
87V-27	30265	4A4	4.0	3.08	4.31	56	0.34	16.20	3.08

Samples 30647, 30358, 30360,and 30348 are missing from the pulps sent to Bondar-Clegg. Note that 30348 seems to be missing from all data sets.

Analyses for soluble Fe and total Fe are suspect for samples 30624, 30298, and 11086.

Analyses for 30243 and 30263 are internally consistent but do not fit the respective rock types. Yet they are ideal if the samples were "swapped". In the current databases assay results for these two samples have been switched.

For the remaining samples (11481, 11280, 30158, 30635, 30649, 30370, 30265) the SG results do not correspond to the rock type. This suggests possible problems with the Au results as well.

For samples 30158 and 30635 the Bondar-Clegg analyses and original

MINE analyses were quite close to each other but did not correspond to the rock type. When you asked for a MINE re-assay the new results were totally different and did correspond to the logged rock type. This suggests a major problem associated with labelling of the sample pulps sometime during processing in the bucking room and/or the MINE assay lab.

Perhaps you can work on resolving some of the problem raised by these analyses.

Cheers,

Lee

Lee

DDH	SAMPLE NUMBER		ROCK TYPE	AG (M) G/T	AG(B-C) G/T	DIFF G/T	COEF VAR %
87V-01	11153		4G4	101	94.6	6.4	6
87V-01	11173		4C38	12	9.6	2.4	20
87V-02	11412		4G0	30	27.4	2.6	9
87V-02	11432		4C0	6	6.5	-0.5	-9
87V-03	11374		4G48	85	78.2	6.8	8
87V-04	11016		4G48	65.2	71.0	-5.8	-9
87V-04	11017		4G48	49.3	61.0	-11.7	-24
87V-04	11022		4E48	46	45.6	0.4	1
87V-04	11042		3C3	18	15.4	2.6	14
87V-05	11455		4G4*	21.3	70.6	-49.3	-232
87V-05	11459		4E0$	30	23.3	6.7	22
87V-05	11477		4C38	10	6.5	3.5	35
87V-05	11484		4C3$	29	25.0	4.0	14
87V-06	11069		3B2	40	13.7	26.3	66
87V-06	11089		4C8$	14	10.6	3.4	24
87V-07	11316		4A0	28	25.7	2.3	8
87V-07	11336		4C7	11	12.0	-1.0	-9
87V-07	11356		4L624	2	1.7	0.3	14
87V-08	11265		4H47$	89	93.3	-4.3	-5
87V-08	11285		4C0	14	11.0	3.0	22
87V-09	30158	#	4C0	85	76.5	8.5	10
87V-09	30217	1	4G0	44	40.5	3.5	8
87V-09	30217	2	4G0	33	40.5	-7.5	-23
87V-09	30224		4G0	10	8.6	1.4	14
87V-09	30226		4G4	115	105.3	9.7	8
87V-09	30246		4C8	12	10.3	1.7	14
87V-10	30617		4A4	20	19.2	0.8	4
87V-10	30623	1	4A0	24	21.6	2.4	10
87V-10	30623	2	4A0	14	21.6	-7.6	-54
87V-10	30624		4E48	73	66.2	6.8	9
87V-10	30635	#	4H91	13	12.7	0.3	2
87V-10	30637		4G48	48	44.2	3.8	8
87V-10	30657		4E10	19	8.6	10.4	55
87V-11	30306		4A4	56	54.9	1.1	2
87V-11	30310		4A0	22	24.7	-2.7	-12
87V-11	30330		4G4	62	61.0	1.0	2
87V-11	30698		4L126	24	22.3	1.7	7
87V-13	30959		4G48	69	68.6	0.4	1
87V-13	30979		4LC	10	8.6	1.4	14
87V-17	30376		4G4	80	75.4	4.6	6
87V-17	30381	1	4E08	16	13.7	2.3	14
87V-17	30381	2	4E08	11	13.7	-2.7	-25
87V-19	30671		4E41	26	23.3	2.7	10
87V-22	30338		4E4	99	90.9	8.1	8
87V-22	30335	*	4G4	99	82.6	16.4	17
87V-23	30604		4C8	33	27.4	5.6	17
87V-25	30176		4E$0	27	22.6	4.4	16
87V-25	30188	1	4L62	41	39.1	1.9	5
87V-25	30188	2	4L62	33	39.1	-6.1	-18
87V-25	30196		4G4	102	93.6	8.4	8
87V-27	30254	1	4A4	46	48.0	-2.0	-4
87V-27	30254	2	4A4	19	48.0	-29.0	-153

87V-27	30282	1	4L76	12	9.6	2.4	20
87V-27	30282	2	4L76	25	9.6	15.4	62
			AVG	39.3	38.1	1.2	
			STD DEV	30.0	29.0	10.1	
			MIN	2.0	1.7	-49.3	
			MAX	115.0	105.3	26.3	

\# assay does not correspond to rock type or to new MINE assay
* mislabelled by B-C as 30353
1,2 Mine completed a new assay

DDH	SAMPLE NUMBER		ROCK TYPE	PB(M) %	PB(B-C) %	DIFF %	COEF VAR %
87V-01	11153		4G4	5.87	5.21	0.66	11
87V-01	11173		4C38	0.58	0.55	0.03	5
87V-02	11412		4G0	3.07	2.83	0.24	8
87V-02	11432		4C0	0.08	0.08	0.00	0
87V-03	11374		4G48	6.16	6.25	-0.09	-1
87V-04	11016		4G48	4.69	4.70	-0.01	0
87V-04	11017		4G48	4.60	4.49	0.11	2
87V-04	11022		4E48	3.31	3.10	0.21	6
87V-04	11042		3C3	1.43	1.43	0.00	0
87V-05	11455		4G4*	4.02	4.50	-0.48	-12
87V-05	11459		4E0$	1.64	1.58	0.06	4
87V-05	11477		4C38	0.51	0.47	0.04	8
87V-05	11484		4C3$	1.97	2.00	-0.03	-2
87V-06	11069		3B2	0.70	0.74	-0.04	-6
87V-06	11089		4C8$	0.76	0.71	0.05	7
87V-07	11316		4A0	1.49	1.51	-0.02	-1
87V-07	11336		4C7	0.56	0.56	0.00	0
87V-07	11356		4L624	0.01	0.01	0.00	0
87V-08	11265		4H47$	7.46	7.54	-0.08	-1
87V-08	11285		4C0	0.13	0.12	0.01	8
87V-09	30158	#	4C0	5.18	4.92	0.26	5
87V-09	30217	1	4G0	10.90	2.39	8.51	78
87V-09	30217	2	4G0	2.70	2.39	0.31	11
87V-09	30224		4G0	0.45	0.42	0.03	7
87V-09	30226		4G4	6.78	6.15	0.63	9
87V-09	30246		4C8	0.49	0.51	-0.02	-4
87V-10	30617		4A4	1.21	1.26	-0.05	-4
87V-10	30623	1	4A0	1.40	1.42	-0.02	-1
87V-10	30623	2	4A0	1.39	1.42	-0.03	-2
87V-10	30624		4E48	5.22	5.15	0.07	1
87V-10	30635	#	4H91	0.73	0.78	-0.05	-7
87V-10	30637		4G48	3.19	2.78	0.41	13
87V-10	30657		4E10	0.41	0.38	0.03	7
87V-11	30306		4A4	4.60	4.40	0.20	4
87V-11	30310		4A0	1.81	1.91	-0.10	-6
87V-11	30330		4G4	3.97	3.39	0.58	15
87V-11	30698		4L126	2.17	2.25	-0.08	-4
87V-13	30959		4G48	5.50	5.08	0.42	8
87V-13	30979		4LC	0.41	0.44	-0.03	-7
87V-17	30376		4G4	6.60	6.22	0.38	6
87V-17	30381	1	4E08	0.92	0.98	-0.06	-7
87V-17	30381	2	4E08	0.93	0.98	-0.05	-5
87V-19	30671		4E41	2.59	2.54	0.05	2
87V-22	30338		4E4	10.70	9.93	0.77	7
87V-22	30335	*	4G4	5.65	5.71	-0.06	-1
87V-23	30604		4C8	2.13	2.11	0.02	1
87V-25	30176		4E$0	3.37	3.34	0.03	1
87V-25	30188	1	4L62	3.12	3.05	0.07	2
87V-25	30188	2	4L62	2.20	3.05	-0.85	-39
87V-25	30196		4G4	9.19	8.33	0.86	9
87V-27	30254	1	4A4	2.74	2.63	0.11	4
87V-27	30254	2	4A4	2.62	2.63	-0.01	0

87V-27	30282	1	4L76	0.70	0.68	0.02	3
87V-27	30282	2	4L76	1.56	0.68	0.88	56
			AVG	3.01	2.75	0.26	
			STD DEV	2.65	2.29	1.17	
			MIN	0.01	0.01	-0.85	
			MAX	10.90	9.93	8.51	

\# assay does not correspond to rock type or to new MINE assay
* mislabelled by B-C as 30353
1,2 Mine completed a new assay

DDH	SAMPLE NUMBER		ROCK TYPE	ZN(M) %	ZN(B-C) %	DIFF %	COEF VAR %
87V-01	11153		4G4	8.28	8.20	0.08	1
87V-01	11173		4C38	0.46	0.41	0.05	11
87V-02	11412		4G0	5.01	5.23	-0.22	-4
87V-02	11432		4C0	0.28	0.22	0.06	21
87V-03	11374		4G48	8.78	8.60	0.18	2
87V-04	11016		4G48	6.57	6.95	-0.38	-6
87V-04	11017		4G48	6.47	7.30	-0.83	-13
87V-04	11022		4E48	8.22	8.00	0.22	3
87V-04	11042		3C3	0.27	0.27	0.00	0
87V-05	11455		4G4*	6.01	7.00	-0.99	-16
87V-05	11459		4E0$	1.82	1.69	0.13	7
87V-05	11477		4C38	0.52	0.46	0.06	12
87V-05	11484		4C3$	2.39	2.33	0.06	3
87V-06	11069		3B2	1.29	1.34	-0.05	-4
87V-06	11089		4C8$	2.02	2.00	0.02	1
87V-07	11316		4A0	2.91	2.90	0.01	0
87V-07	11336		4C7	0.83	0.82	0.01	1
87V-07	11356		4L624	0.06	0.04	0.02	33
87V-08	11265		4H47$	8.74	8.60	0.14	2
87V-08	11285		4C0	0.15	0.13	0.02	13
87V-09	30158	#	4C0	8.46	8.40	0.06	1
87V-09	30217	1	4G0	23.20	6.50	16.70	72
87V-09	30217	2	4G0	6.37	6.50	-0.13	-2
87V-09	30224		4G0	0.85	0.83	0.02	2
87V-09	30226		4G4	11.20	10.95	0.25	2
87V-09	30246		4C8	0.84	0.79	0.05	6
87V-10	30617		4A4	2.77	2.71	0.06	2
87V-10	30623	1	4A0	3.73	3.20	0.53	14
87V-10	30623	2	4A0	3.20	3.20	0.00	0
87V-10	30624		4E48	5.69	5.10	0.59	10
87V-10	30635	#	4H91	1.07	1.09	-0.02	-2
87V-10	30637		4G48	4.26	4.00	0.26	6
87V-10	30657		4E10	0.21	0.17	0.04	19
87V-11	30306		4A4	5.12	5.15	-0.03	-1
87V-11	30310		4A0	1.93	1.95	-0.02	-1
87V-11	30330		4G4	6.70	6.80	-0.10	-1
87V-11	30698		4L126	1.37	1.45	-0.08	-6
87V-13	30959		4G48	6.65	6.60	0.05	1
87V-13	30979		4LC	1.21	1.20	0.01	1
87V-17	30376		4G4	8.10	9.07	-0.97	-12
87V-17	30381	1	4E08	1.41	1.42	-0.01	-1
87V-17	30381	2	4E08	1.65	1.42	0.23	14
87V-19	30671		4E41	4.08	3.80	0.28	7
87V-22	30338		4E4	9.13	9.00	0.13	1
87V-22	30335	*	4G4	6.72	8.50	-1.78	-26
87V-23	30604		4C8	2.85	2.90	-0.05	-2
87V=25	30176		4E$0	1.29	1.20	0.09	7
87V-25	30188	1	4L62	5.91	5.65	0.26	4
87V-25	30188	2	4L62	4.48	5.65	-1.17	-26
87V-25	30196		4G4	9.91	9.40	0.51	5
87V-27	30254	1	4A4	6.27	6.05	0.22	4
87V-27	30254	2	4A4	5.99	6.05	-0.06	-1

87V-27	30282	1	4L76	0.90	0.92	-0.02	-2
87V-27	30282	2	4L76	2.01	0.92	1.09	54
			AVG	4.38	4.09	0.29	
			STD DEV	4.00	3.16	2.29	
			MIN	0.06	0.04	-1.78	
			MAX	23.20	10.95	16.70	

\# assay does not correspond to rock type or to new MINE assay
* mislabelled by B-C as 30353
1,2 Mine completed a new assay

DDH	SAMPLE NUMBER		ROCK TYPE	FETOT(M) %	FETOT(B-C %	DIFF %	COEF VAR %
87V-01	11153		4G4	12.70	12.90	-0.20	-2
87V-01	11173		4C38	21.90	22.13	-0.23	-1
87V-02	11412		4G0	22.00	23.34	-1.34	-6
87V-02	11432		4C0	12.40	12.85	-0.45	-4
87V-03	11374		4G48	19.40	19.58	-0.18	-1
87V-04	11016		4G48	17.70	18.31	-0.61	-3
87V-04	11017		4G48	17.20	13.26	3.94	23
87V-04	11022		4E48	19.90	19.74	0.16	1
87V-04	11042		3C3	8.42	8.70	-0.28	-3
87V-05	11455		4G4*	19.60	16.83	2.77	14
87V-05	11459		4E0$	37.80	39.98	-2.18	-6
87V-05	11477		4C38	19.90	21.11	-1.21	-6
87V-05	11484		4C3$	27.20	28.76	-1.56	-6
87V-06	11069		3B2	27.80	27.64	0.16	1
87V-06	11089		4C8$	26.40	27.34	-0.94	-4
87V-07	11316		4A0	6.69	7.04	-0.35	-5
87V-07	11336		4C7	31.00	30.35	0.65	2
87V-07	11356		4L624	10.10	11.37	-1.27	-13
87V-08	11265		4H47$	20.30	20.30	0.00	0
87V-08	11285		4C0	28.40	28.36	0.04	0
87V-09	30158	#	4C0	23.40	24.03	-0.63	-3
87V-09	30217	1	4G0	49.50	18.31	31.19	63
87V-09	30217	2	4G0	17.20	18.31	-1.11	-6
87V-09	30224		4G0	8.33	8.60	-0.27	-3
87V-09	30226		4G4	13.00	13.35	-0.35	-3
87V-09	30246		4C8	26.20	26.00	0.20	1
87V-10	30617		4A4	2.91	3.39	-0.48	-16
87V-10	30623	1	4A0	0.13	13.41	-13.28	-10215
87V-10	30623	2	4A0	12.70	13.41	-0.71	-6
87V-10	30624		4E48	3.21	31.67	-28.46	-887
87V-10	30635	#	4H91	62.90	6.58	56.32	90
87V-10	30637		4G48	20.00	19.88	0.12	1
87V-10	30657		4E10	23.10	23.12	-0.02	0
87V-11	30306		4A4	31.10	29.44	1.66	5
87V-11	30310		4A0	5.97	6.17	-0.20	-3
87V-11	30330		4G4	13.00	12.90	0.10	1
87V-11	30698		4L126	18.10	18.11	-0.01	0
87V-13	30959		4G48	8.97	8.70	0.27	3
87V-13	30979		4LC	13.60	13.56	0.04	0
87V-17	30376		4G4	14.40	14.62	-0.22	-2
87V-17	30381	1	4E08	42.20	40.47	1.73	4
87V-17	30381	2	4E08	39.80	40.47	-0.67	-2
87V-19	30671		4E41	28.50	28.43	0.07	0
87V-22	30338		4E4	19.30	19.43	-0.13	-1
87V-22	30335	*	4G4	12.40	16.14	-3.74	-30
87V-23	30604		4C8	26.60	26.66	-0.06	0
87V-25	30176		4E$0	34.50	35.92	-1.42	-4
87V-25	30188	1	4L62	17.20	18.11	-0.91	-5
87V-25	30188	2	4L62	14.10	18.11	-4.01	-28
87V-25	30196		4G4	24.50	24.18	0.32	1
87V-27	30254	1	4A4	0.65	3.34	-2.69	-414
87V-27	30254	2	4A4	3.07	3.34	-0.27	-9

87V-27	30282	1	4L76	5.39	6.07	-0.68	-13
87V-27	30282	2	4L76	8.07	6.07	2.00	25
			AVG	19.46	18.89	0.57	
			STD DEV	12.24	9.52	9.82	
			MIN	0.13	3.34	-28.46	
			MAX	62.90	40.47	56.32	

\# assay does not correspond to rock type or to new MINE assay
* mislabelled by B-C as 30353
1,2 Mine completed a new assay

DDH	SAMPLE NUMBER		ROCK TYPE	FE SOL(M) %	FE SOL(B- %	DIFF %	COEF VAR %
87V-01	11153		4G4	1.80	1.90	-0.10	-6
87V-01	11173		4C38	5.65	6.15	-0.50	-9
87V-02	11412		4G0	1.88	1.95	-0.07	-4
87V-02	11432		4C0	3.36	3.70	-0.34	-10
87V-03	11374		4G48	1.18	12.70	-11.52	-976
87V-04	11016		4G48	4.81	5.56	-0.75	-16
87V-04	11017		4G48	5.23	4.80	0.43	8
87V-04	11022		4E48	3.56	3.40	0.16	4
87V-04	11042		3C3	6.94	7.73	-0.79	-11
87V-05	11455		4G4*	2.78	2.18	0.60	22
87V-05	11459		4E0$	10.60	11.00	-0.40	-4
87V-05	11477		4C38	5.66	5.99	-0.33	-6
87V-05	11484		4C3$	11.20	11.90	-0.70	-6
87V-06	11069		3B2	9.58	10.10	-0.52	-5
87V-06	11089		4C8$	10.00	10.20	-0.20	-2
87V-07	11316		4A0	4.33	4.72	-0.39	-9
87V-07	11336		4C7	25.60	2.70	22.90	89
87V-07	11356		4L624	4.70	4.82	-0.12	-3
87V-08	11265		4H47$	9.19	9.10	0.09	1
87V-08	11285		4C0	3.39	3.30	0.09	3
87V-09	30158	#	4C0	2.98	3.08	-0.10	-3
87V-09	30217	1	4G0	0.23	0.22	0.01	4
87V-09	30217	2	4G0	0.30	0.22	0.08	27
87V-09	30224		4G0	1.44	1.51	-0.07	-5
87V-09	30226		4G4	1.04	1.03	0.01	1
87V-09	30246		4C8	17.40	17.50	-0.10	-1
87V-10	30617		4A4	1.16	1.22	-0.06	-5
87V-10	30623	1	4A0	4.17	4.43	-0.26	-6
87V-10	30623	2	4A0	3.62	4.43	-0.81	-22
87V-10	30624		4E48	5.91	6.83	-0.92	-16
87V-10	30635	#	4H91	0.90	1.00	-0.10	-11
87V-10	30637		4G48	5.13	5.65	-0.52	-10
87V-10	30657		4E10	3.60	3.36	0.24	7
87V-11	30306		4A4	23.10	23.12	-0.02	0
87V-11	30310		4A0	3.07	3.02	0.05	2
87V-11	30330		4G4	2.58	2.64	-0.06	-2
87V-11	30698		4L126	6.45	6.45	0.00	0
87V-13	30959		4G48	2.71	2.82	-0.11	-4
87V-13	30979		4LC	5.05	5.66	-0.61	-12
87V-17	30376		4G4	1.80	1.84	-0.04	-2
87V-17	30381	1	4E08	10.90	12.14	-1.24	-11
87V-17	30381	2	4E08	10.90	12.14	-1.24	-11
87V-19	30671		4E41	7.04	7.40	-0.36	-5
87V-22	30338		4E4	3.03	2.80	0.23	8
87V-22	30335	*	4G4	1.08	2.28	-1.20	-111
87V-23	30604		4C8	11.20	11.70	-0.50	-4
87V-25	30176		4E$0	3.23	3.53	-0.30	-9
87V-25	30188	1	4L62	7.00	7.76	-0.76	-11
87V-25	30188	2	4L62	6.57	7.76	-1.19	-18
87V-25	30196		4G4	4.46	8.10	-3.64	-82
87V-27	30254	1	4A4	1.06	1.14	-0.08	-8
87V-27	30254	2	4A4	0.99	1.14	-0.15	-15

87V-27	30282	1	4L76	41.60	4.55	37.05	89
87V-27	30282	2	4L76	6.21	4.55	1.66	27
			AVG	6.28	5.68	0.60	
			STD DEV	7.02	4.48	6.15	
			MIN	0.23	0.22	-11.52	
			MAX	41.60	23.12	37.05	

\# assay does not correspond to rock type or to new MINE assay
* mislabelled by B-C as 30353
1,2 Mine completed a new assay