

FLOAT AND SINK PROFICIENCY TESTING

REPORT NINE

Revision: 0

Final report

FEBRUARY 2018

PARTICIPANT:

SCHEME COORDINATOR: K MUNSAMY

CHECKED BY: R BABOOLAL (SCHEME MANAGER)

EXECUTIVE SUMMARY

1. Fourteen samples were sent out to participants with 14 result submissions.
2. Since most of the results do not follow a Normal distribution, non-parametric statistics were used. This is a straightforward statistical calculation and can be found on the link below

<https://www.youtube.com/watch?v=qkl-HeMiKzQ>

3. Observations at the differing densities

DENSITY	COMMENTS
1.30	One outlier was detected on the yields. The yields standard deviation is 2.05, higher than previous round of 1. The range is high at 9.25. Participants are urged to apply utmost care in this at this density. The mean and median for Ash did not differ by much, it was 5.85 and 6.17 respectively with a standard deviation of 1.53
1.40	The yields at this density were also still quite varied with a standard deviation of 5.80. No outliers were detected on the yield and ash determination. The ash results median and average compared well with a standard deviation of 0.46
1.50	No outliers were detected on the yields. Although the variance of results was quite high indicated by the standard deviation 4.11. Two outliers were detected on the ash results. The remaining results compared well, with the mean and median being similar with a standard deviation of 0.46.
1.60	One outlier was detected on the yields and on the ash results. Low standard deviations of 1.45 and 0.94 were observed for the yields and ash results.
1.70	One outlier was detected on the yields and four on the ash results. The mean and median results did not differ much and therefore were acceptable with low standard deviations at this stage.
1.80	Acceptable results for the yields and the Ash were reported. No outliers were detected on the yields and none on the Ash. The mean and median for the yields and the ash were close. The standard deviations were low for the yields at 0.29, the Ash was at 1.30.
Sink 1.80	The yield and ash results were acceptable for this round. An improvement from previous rounds. No outliers were detected, and the yield had a standard deviation of 0.18. The Ash results varied but the median and average were similar with a standard deviation 1.31.

TABLE OF CONTENTS

ITEM	PAGE NUMBER
Letter to participant	4
List of participants	5
Type of sample used	5
Preparation of sample	5
Yields and Ash results at density 1.30	6
Yields and Ash results at density 1.40	7
Yields and Ash results at density 1.50	8
Yields and Ash results at density 1.60	9
Yields and Ash results at density 1.70	10
Yields and Ash results at density 1.80	11
Yields and Ash results at sink 1.80	12
Conclusion	13
Terms and conditions	13

Dear

Thank you for your participation in the Coal Concepts Float and Sink **FEBRUARY 2018** proficiency testing scheme.

Your laboratory code is **XX**

All results are totally confidential. Any results in ***bold, italics, underlined*** are outliers

Please take note of the following:

Non-parametric statistics were used to assess results since most data do not follow a Normal or Gaussian distribution. Therefore the calculation of outliers was done using the box and whisker plot. It also does not make sense to calculate z-scores due data variance and limitation.

All calculations can be made available upon request

The Coal Concepts scheme adheres to the requirements of ISO/IEC 17043:2010 – Conformity assessment – General requirements for proficiency testing.

Best Regards

R Baboolal

LIST OF PARTICIPANTS IN ALPHABETICAL ORDER

ALS Witlab
Bureau Veritas Inspectorate Laboratories - Middelburg
Bureau Veritas Inspectorate Laboratories - Tendele
Bureau Veritas Trading & Inspection SA - PTA
Bureau Veritas Inspectorate Laboratories – ZAC Mine
CoalLab - Middelburg
Intertek - Mozambique
Noko Analytical Services - Witbank
SABS Secunda Laboratory
SGS - Trichardt Laboratory
SGS -Middelburg
SGS – Impunzi laboratory
Sibonisiwe Coal Laboratory Services
Umzamo Analytical Services

1. TYPE OF SAMPLE USED

The coal used in this proficiency testing round was washed bituminous coal with low ash. Low ash coal was selected so that yields across the spectrum could be obtained

2. PREPARATION OF SAMPLE

Approximately 160kg's of sample with an approximate topsize of 50mm was sourced. This was crushed to approximately 12 mm using a jaw crusher. The bulk sample was mixed on a concrete floor using a spade. Ten by 10l buckets was placed near the bulk samples. Using the spade, small increments of the bulk sample were placed into each of the buckets. This was done until all the buckets contained about 10kgs of coal.

3. RESULTS

3.1 YIELDS AND ASH RESULTS AT DENSITY OF 1.30

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.30			
	LAB ID	MASS (Kg)	%YIELD
	2f	0,73	7,50
	3f	0,18	1,90
	4f	0,25	2,70
	5f	0,38	3,90
	6f	0,47	5,00
	7f	0,23	2,30
	8f	0,93	9,71
	9f	0,28	2,90
	11f	0,32	4,80
	14f	0,04	0,46
	15f	0,21	2,20
	16f	0,68	7,10
	17f	0,30	3,20
	18f	0,23	2,40
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	1
AVERAGE	-	0,33	3,57
STD DEVIATION	-	0,19	2,05
MEDIAN	-	0,28	2,90

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.30)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	4,70	6,70	7,03
	3f	4,10	3,70	3,86
	4f	4,20	4,10	4,28
	5f	4,00	8,50	8,85
	6f	3,30	6,80	7,03
	7f	3,60	4,30	4,46
	8f	4,30	6,60	6,90
	9f	4,00	6,70	6,98
	11f	4,50	6,10	6,39
	14f	3,92	3,30	3,43
	15f	4,00	5,20	5,42
	16f	4,20	6,20	6,47
	17f	4,40	5,70	5,96
	18f	4,10	4,60	4,80
NUMBER OF RESULTS	-	12	12	12
OUTLIERS	-	-	-	0
AVERAGE	-	4,09	5,61	5,85
STD DEVIATION	-	-	1,46	1,53
MEDIAN	-	-	5,90	6,17

Non parametrics stats on yield results	
Quartertile 1	2,30
Quartertile 2	3,05
Quartertile 3	5,00
INTERQUARTILE RANGE (IQR)	2,70
1.5 X IQR	4,05
Acceptable lower limit	0,00
Acceptable upper limit	9,05
Results outside acceptable limits	8f

Non parametrics stats on DB results	
Quartertile 1	4,46
Quartertile 2	6,17
Quartertile 3	6,98
INTERQUARTILE RANGE (IQR)	2,52
1.5 X IQR	3,78
Acceptable lower limit	1,94
Acceptable upper limit	10,76
Results outside acceptable limits	0

3.2 YIELDS AND ASH RESULTS AT DENSITY OF 1.40

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.40			
	LAB ID	MASS (Kg)	%YIELD
	2f	3,35	34,65
	3f	3,92	40,60
	4f	4,15	44,00
	5f	3,42	35,40
	6f	3,97	40,80
	7f	4,40	45,70
	8f	2,31	24,11
	9f	3,54	36,40
	11f	2,29	34,33
	14f	3,04	31,05
	15f	4,07	42,20
	16f	3,19	33,10
	17f	3,00	31,60
	18f	3,58	37,40
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	0
AVERAGE	-	3,44	36,52
STD DEVIATION	-	0,64	5,80
MEDIAN	-	3,48	35,90

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.40)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	4,70	8,90	9,34
	3f	4,10	8,00	8,34
	4f	4,10	8,10	8,45
	5f	4,00	8,60	8,96
	6f	3,60	8,50	8,82
	7f	4,10	8,30	8,65
	8f	4,50	8,30	8,69
	9f	3,80	7,90	8,21
	11f	5,20	8,20	8,65
	14f	3,68	7,30	7,58
	15f	4,20	8,40	8,77
	16f	4,00	8,90	9,27
	17f	3,90	8,20	8,53
	18f	4,30	7,70	8,05
NUMBER OF RESULTS	-	12	14	14
OUTLIERS	-	-	0	0
AVERAGE	-	4,14	8,24	8,59
STD DEVIATION	-	-	0,44	0,46
MEDIAN	-	-	8,25	8,65

Non parametrics stats on Yield results	
Quartertile 1	33,10
Quartertile 2	35,90
Quartertile 3	40,80
INTERQUARTILE RANGE (IQR)	7,70
1.5 X IQR	11,55
Acceptable lower limit	21,55
Acceptable upper limit	52,35
Results outside acceptable limits	0

Non parametrics stats on DB results	
Quartertile 1	8,28
Quartertile 2	8,65
Quartertile 3	8,89
INTERQUARTILE RANGE (IQR)	0,61
1.5 X IQR	0,92
Acceptable lower limit	7,36
Acceptable upper limit	9,80
Results outside acceptable limits	0

3.3 YIELDS AND ASH RESULTS AT DENSITY OF 1.50

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.50			
	LAB ID	MASS (Kg)	%YIELD
	2f	4,17	43,08
	3f	3,91	40,50
	4f	3,55	37,60
	5f	4,67	48,40
	6f	3,89	39,90
	7f	3,54	36,70
	8f	4,00	41,75
	9f	4,10	42,20
	11f	2,82	42,28
	14f	4,82	49,18
	15f	3,75	38,90
	16f	4,26	44,30
	17f	4,74	49,90
	18f	4,09	42,70
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	-	0
AVERAGE	-	4,02	42,67
STD DEVIATION	-	0,53	4,11
MEDIAN	-	4,05	42,24

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.50)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	4,80	13,40	14,08
	3f	4,00	13,70	14,27
	4f	3,90	14,80	15,40
	5f	4,00	13,90	14,48
	6f	4,10	13,80	14,39
	7f	3,90	14,30	14,88
	8f	4,40	13,00	13,60
	9f	3,80	13,40	13,93
	11f	5,10	13,30	14,01
	14f	4,20	12,40	12,94
	15f	4,20	14,70	15,34
	16f	4,00	13,20	13,75
	17f	3,80	13,80	14,35
	18f	4,70	13,30	13,96
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	2	2
AVERAGE	-	4,17	13,65	14,25
STD DEVIATION	-	-	0,49	0,49
MEDIAN	-	-	13,55	14,17

Non parametrics stats on yield results	
Quartertile 1	39,40
Quartertile 2	42,24
Quartertile 3	44,30
INTERQUARTILE RANGE (IQR)	4,90
1.5 X IQR	7,35
Acceptable lower limit	32,05
Acceptable upper limit	51,65
Results outside acceptable limits	0

Non parametrics stats on DB results	
Quartertile 1	13,93
Quartertile 2	14,17
Quartertile 3	14,48
INTERQUARTILE RANGE (IQR)	0,55
1.5 X IQR	0,82
Acceptable lower limit	13,10
Acceptable upper limit	15,30
Results outside acceptable limits	14f, 4f

3.4 YIELDS AND ASH RESULTS AT DENSITY OF 1.60

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.60			
	LAB ID	MASS (Kg)	%YIELD
	2f	0,94	9,72
	3f	1,15	11,90
	4f	1,06	11,20
	5f	0,79	8,20
	6f	0,91	9,30
	7f	0,99	10,30
	8f	1,78	18,58
	9f	1,14	11,70
	11f	0,80	11,99
	14f	1,32	13,50
	15f	1,15	11,90
	16f	0,98	10,20
	17f	0,94	9,90
	18f	1,16	12,10
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	1	1
AVERAGE	-	1,02	10,92
STD DEVIATION	-	0,16	1,45
MEDIAN	-	0,99	11,20

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.60)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	4,40	23,20	24,27
	3f	3,80	22,80	23,70
	4f	3,60	23,90	24,79
	5f	3,50	24,90	25,80
	6f	3,30	22,90	23,68
	7f	3,60	24,30	25,21
	8f	4,20	19,10	19,94
	9f	3,80	22,40	23,28
	11f	4,60	22,30	23,38
	14f	3,57	22,30	23,13
	15f	3,70	25,10	26,06
	16f	3,80	23,60	24,53
	17f	2,90	23,40	24,10
	18f	3,80	23,10	24,01
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	1	1
AVERAGE	-	3,75	23,40	24,30
STD DEVIATION	-	-	0,93	0,94
MEDIAN	-	-	23,20	24,10

Non parametrics stats on yield results	
Quartertile 1	9,90
Quartertile 2	11,45
Quartertile 3	11,99
INTERQUARTILE RANGE (IQR)	2,09
1.5 X IQR	3,14
Acceptable lower limit	6,77
Acceptable upper limit	15,13
Results outside acceptable limits	8f

Non parametrics stats on DB results	
Quartertile 1	23,38
Quartertile 2	24,06
Quartertile 3	24,79
INTERQUARTILE RANGE (IQR)	1,42
1.5 X IQR	2,13
Acceptable lower limit	21,25
Acceptable upper limit	26,92
Results outside acceptable limits	8f

3.5 YIELDS AND ASH RESULTS AT DENSITY OF 1.70

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.70			
	LAB ID	MASS (Kg)	%YIELD
	2f	0,28	2,89
	3f	0,32	3,30
	4f	0,23	2,40
	5f	0,25	2,60
	6f	0,30	3,10
	7f	0,29	3,00
	8f	0,43	4,49
	9f	0,36	3,70
	11f	0,24	3,60
	14f	0,32	3,29
	15f	0,25	2,60
	16f	0,28	3,00
	17f	0,29	3,10
	18f	0,27	2,80
NUMBER OF RESULTS	-	14	14
OUTLIERS	-	1	1
AVERAGE	-	0,28	3,03
STD DEVIATION	-	0,04	0,38
MEDIAN	-	0,28	3,00

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.70)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	4,00	32,40	33,75
	3f	3,40	32,80	33,95
	4f	3,00	34,20	35,26
	5f	2,90	35,70	36,77
	6f	2,20	31,90	32,62
	7f	3,10	32,60	33,64
	8f	3,70	31,50	32,71
	9f	3,40	30,50	31,57
	11f	4,20	32,00	33,40
	14f	3,47	32,40	33,56
	15f	3,30	34,90	36,09
	16f	3,00	32,60	33,61
	17f	2,50	33,20	34,05
	18f	3,30	32,40	33,51
NUMBER OF RESULTS	-	14	14	14
OUTLIERS	-	-	4	4
AVERAGE	-	3,25	32,38	33,48
STD DEVIATION	-	-	0,48	0,47
MEDIAN	-	-	32,40	33,59

Non parametrics stats on yield results	
Quartertile 1	2,80
Quartertile 2	3,05
Quartertile 3	3,30
INTERQUARTILE RANGE (IQR)	0,50
1.5 X IQR	0,75
Acceptable lower limit	2,05
Acceptable upper limit	4,05
Results outside acceptable limits	8f

Non parametrics stats on DB results	
Quartertile 1	33,40
Quartertile 2	33,63
Quartertile 3	34,05
INTERQUARTILE RANGE (IQR)	0,65
1.5 X IQR	0,97
Acceptable lower limit	32,43
Acceptable upper limit	35,02
Results outside acceptable limits	4f,5f,9f,15f

3.6 YIELDS AND ASH RESULTS AT DENSITY OF 1.80

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT F1.80			
	LAB ID	MASS (Kg)	%YIELD
	2f	0,09	0,94
	3f	0,10	1,00
	4f	0,09	1,00
	5f	0,05	0,50
	6f	0,10	1,00
	7f	0,09	0,90
	9f	0,16	1,60
	11f	0,10	1,50
	14f	0,12	1,22
	15f	0,09	1,00
	16f	0,11	1,10
	17f	0,10	1,10
	18f	0,13	1,40
NUMBER OF RESULTS	-	13	13
OUTLIERS	-	0	0
AVERAGE	-	0,10	1,10
STD DEVIATION	-	0,03	0,29
MEDIAN	-	0,10	1,00

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Density at 1.80)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	3,50	40,60	42,07
	3f	3,10	40,90	42,21
	4f	2,90	40,90	42,12
	5f	2,50	43,20	44,31
	6f	2,60	39,30	40,35
	7f	2,80	41,60	42,80
	9f	3,00	39,00	40,21
	11f	3,70	39,00	40,50
	14f	3,02	39,90	41,14
	15f	3,30	42,20	43,64
	16f	2,30	40,80	41,76
	17f	2,50	40,90	41,95
	18f	3,20	38,90	40,19
NUMBER OF RESULTS	-	13	13	13
OUTLIERS	-	-	0	0
AVERAGE	-	2,96	40,55	41,79
STD DEVIATION	-	-	1,32	1,30
MEDIAN	-	-	40,80	41,95

Non parametrics stats on yield results	
Quartertile 1	0,90
Quartertile 2	1,00
Quartertile 3	1,31
INTERQUARTILE RANGE (IQR)	0,41
1.5 X IQR	0,62
Acceptable lower limit	0,29
Acceptable upper limit	1,93
Results outside acceptable limits	0

Non parametrics stats on DB results	
Quartertile 1	40,42
Quartertile 2	41,95
Quartertile 3	42,50
INTERQUARTILE RANGE (IQR)	2,08
1.5 X IQR	3,12
Acceptable lower limit	37,30
Acceptable upper limit	45,62
Results outside acceptable limits	0

3.7 YIELDS AND ASH RESULTS AT DENSITY OF SINK 1.80

COAL CONCEPTS - PROFICIENCY TESTING - FEBRUARY 2018			
ANALYTICAL PARAMETER : YIELDS AT Si 1.80			
	LAB ID	MASS (Kg)	%YIELD
	2f	0,12	1,22
	3f	0,09	1,00
	4f	0,10	1,10
	5f	0,09	0,90
	6f	0,10	1,00
	7f	0,10	1,00
	9f	0,14	1,40
	11f	0,10	1,50
	14f	0,13	1,30
	15f	0,12	1,20
	16f	0,12	1,30
	17f	0,12	1,30
	18f	0,12	1,30
NUMBER OF RESULTS	-	13	13
OUTLIERS	-	0	0
AVERAGE	-	0,11	1,19
STD DEVIATION	-	0,02	0,18
MEDIAN	-	0,12	1,22

COAL CONCEPTS - PROFICIENCY TESTING -FEBRUARY 2018				
ANALYTICAL PARAMETER : ISO ASH (%) (Sink portion after density1.80)				
	LAB ID	MOISTURE IN ANALYSIS SAMPLE (%)	AIR DRY	DRY BASE
	2f	2,60	53,60	55,03
	3f	2,30	53,60	54,86
	4f	1,90	53,30	54,33
	5f	1,90	53,50	54,54
	6f	1,60	51,60	52,44
	7f	1,80	54,10	55,09
	9f	2,10	51,10	52,20
	11f	2,50	52,90	54,26
	14f	2,19	53,80	55,00
	15f	2,40	55,30	56,66
	16f	1,80	53,00	53,97
	17f	1,70	52,40	53,31
	18f	2,10	51,10	52,20
NUMBER OF RESULTS	-	13	13	13
OUTLIERS	-	-	0	0
AVERAGE	-	2,07	53,02	54,14
STD DEVIATION	-	-	1,22	1,31
MEDIAN	-	-	53,30	54,33

Non parametrics stats on yield results	
Quartertile 1	1,00
Quartertile 2	1,22
Quartertile 3	1,30
INTERQUARTILE RANGE (IQR)	0,30
1.5 X IQR	0,45
Acceptable lower limit	0,55
Acceptable upper limit	1,75
Results outside acceptable limits	0

Non parametrics stats on DB results	
Quartertile 1	52,87
Quartertile 2	54,33
Quartertile 3	55,02
INTERQUARTILE RANGE (IQR)	2,15
1.5 X IQR	3,22
Acceptable lower limit	49,65
Acceptable upper limit	58,24
Results outside acceptable limits	0

4. CONCLUSION

Generally acceptable/comparable results were obtained.

The ash results were very good considering this is obtained from a washed fraction (sampling). (If the compounding contributions from sample preparation and testing errors are taken into account as well.)

The use of non-parametric statistics had been applied

COAL CONCEPTS: Terms and Conditions

Return of results:

Laboratories participate in proficiency testing programs on the understanding that they will be sharing their results and information **anonymously** with other laboratories performing the same analysis. No return of results compromises the spirit of the programs, and reports will not be sent to laboratories unless they return results. Payment in full is required from all laboratories enrolling whether they return results or not.

Errors in Participant Proficiency Testing Results:

Proficiency testing reports should reflect the level of accuracy that a regular testing client would receive.

If a participant finds an error in their proficiency testing results, they may notify us in writing and change their submission **PRIOR** to the due date for return.

Changes after this time will not be accepted.

Coal Concepts' reports results *as submitted* by participants.

On occasion, it seems as though participants have mixed up the samples or not processed the samples according to the instructions. Coal Concepts cannot make assumptions of this nature and change results 'to suit'. We also cannot compromise the integrity of the programs by suggesting to some participants that they should review their results prior to the due date. (This is unfair to other participants) It is the responsibility of the participants to check all aspects of the program, including sample identification, preparation, testing instructions, calculations and reporting of the results prior to results submission.

If samples are not in good condition on arrival to the participant laboratory, Coal Concepts must be notified in writing IMMEDIATELY, as often samples can be replaced in good time. Claims about samples received in bad condition will not be accepted after the report has been issued.

Late Enrolments and Late Results:

Late enrolment requests cannot always be accommodated, as sample manufacture must be scheduled well in advance to the shipping date of the program to allow all necessary quality assurance activities to be carried out.

Shipping of PT materials and evaluating test results from PTPs out of cycle with the mainstream programs is considerably time consuming and therefore costly.

In order not to disadvantage participants able to comply with time frames, Coal Concepts may charge a late fee in the following circumstances:

Requests that Coal Concepts staff enters results on behalf of participants

Requests to record results after the due date

Requests for PTP participation that is out of cycle with the scheduled dates

Shipping fees and Customs clearance:

Costs incurred for shipping samples and clearance of same through customs are the responsibility of the participating laboratory unless otherwise indicated

Non-payment of fees:

Coal Concepts retains the right to withhold reports and/or test materials and services when invoices are outstanding.

Confidentiality of results:

All data and information received by Coal Concepts from its clients are considered confidential unless the client has given express permission to pass on information.

Definitions:

The dictionary definitions of "collusion" and "falsification" are as follows.

· *Collusion*: A secret agreement or cooperation for a fraudulent or deceitful purpose.

· *Falsification*: Deliberately changing something to be false. In proficiency testing terms, collusion is comparing data (and perhaps changing data) to fit in with a believed "correct" result. This is contrary to the spirit of proficiency testing programs, which are issued with the intention of providing an objective comparison of a laboratory's performance with others. Coal Concepts tries to minimise the occurrence of collusion by being aware that laboratories should be objective when they report their results, and should therefore not know the intended results at the time they are reporting to us.

Answers are not provided to clients until results have been submitted.

To prevent collusion and falsification our advice to clients is:

DON'T confer with others about PT samples or results.

DO accept the fact that everyone makes errors.

DON'T average the results or opinions of every person in the laboratory before selecting the answer to be submitted. Instead, use one of the answers AS SUBMITTED to you and take advantage of the Coal Concepts internal QA services and submit all answers generated by the technicians.

DO have confidence in your own results.

Proficiency Testing (PT) is a compulsory part of laboratory accreditation, but it is also an important tool for giving you confidence in your results. "Enhancing" your PT results with assistance from another participant cannot increase confidence in your laboratory's performance.

Coal Concepts' testing staff are not told what the expected results are, nor what we are expecting.

We subject ALL results to analysis, even if they are different.

The staff have the right to check that the results we enter on their behalf are correctly transcribed.

Clients are always welcome to contact Coal Concepts to seek advice or information about collusion or falsification of data.

Policy for Participant Appeal of PT Performance Assessment:

If participants disagree with their performance assessment in a proficiency report, they should inform Coal Concepts in writing.

The response will include Coal Concepts interpretation of the outcome of the reassessment and an explanation of that outcome. (For example, explanation of a calculation, or the rationale for the outcome of the evaluation.)

If a mistake has been made by Coal Concepts, it will be dealt with via Coal Concepts' non-conformance system.

Liability

In no event shall a party's liability to the other party for direct damages exceed an amount equal to the value of the amount for the PT Programme, under that specific month