Results of Proficiency Test
Fuel Oil
June 2021

Organized by: Institute for Interlaboratory Studies
Spijkenisse, the Netherlands

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1 INTRODUCTION

Since 1994 the Institute for Interlaboratory Studies (iis) organizes a proficiency scheme for the analysis of Fuel Oil in accordance with the latest version of ISO8217 and ASTM D396 every year and twice per year since 2016. During the annual proficiency testing program 2020/2021 it was decided to continue the round robin for the analysis of Fuel Oil.

In this interlaboratory study for the regular round robin of Fuel Oil 157 laboratories in 62 different countries registered for participation. In the round robin of Metals in Fuel Oil 108 laboratories in 48 different countries registered for participation. In total 163 laboratories in 62 different countries registered for at least one of the two rounds. See appendix 3 for the number of participants per country.
In this report the results of these Fuel Oil proficiency tests are presented and discussed. This report is also electronically available through the iis website www.iisnl.com.

2 SET UP

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organizer of this proficiency test (PT). Sample analyzes for fit-for-use and homogeneity testing were subcontracted to an ISO/IEC17025 accredited laboratory.
Depending on the registration it was decided to send one sample of Fuel Oil in a 1L bottle labelled #21095 for the regular round and/or one sample of Fuel Oil in a 100mL PE bottle labelled #21096 specifically prepared for metal determinations.
The participants were requested to report rounded and unrounded test results. The unrounded test results were preferably used for statistical evaluation.

2.1 ACCREDITATION

The Institute for Interlaboratory Studies in Spijkenisse, the Netherlands, is accredited in agreement with ISO/IEC17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). These PTs falls under the accredited scope. This ensures strict adherence to protocols for sample preparation and statistical evaluation and 100% confidentiality of participant's data. Feedback from the participants on the reported data is encouraged and customer's satisfaction is measured on regular basis by sending out questionnaires.

2.2 PROTOCOL

The protocol followed in the organization of these proficiency tests was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5). This protocol is electronically available through the iis website site www.iisnl.com, from the FAQ page.

2.3 CONFIDENTIALITY STATEMENT

All data presented in this report must be regarded as confidential and for use by the participating companies only. Disclosure of the information in this report is only allowed by means of the entire report. Use of the contents of this report for third parties is only allowed by written permission of the Institute for Interlaboratory Studies. Disclosure of the identity of one or more of the participating companies will be done only after receipt of a written agreement of the companies involved.

2.4 SAMPLES

For the preparation of the sample for regular analyzes on Fuel Oil a batch of approximately 220 liters was obtained from a local supplier. After heating to 60°C and homogenization 208 amber glass bottles of 1 liter were filled and labelled #21095.
The homogeneity of the subsamples was checked by determination of Density at 15°C in accordance with ISO12185 on 8 stratified randomly selected subsamples.

	Density at 15°C in kg/m^3
sample #21095-1	969.2
sample #21095-2	969.2
sample #21095-3	969.4
sample #21095-4	969.3
sample #21095-5	969.3
sample #21095-6	969.3
sample #21095-7	969.3
sample #21095-8	969.3

Table 1: homogeneity test results of subsamples #21095

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Density at 15°C in kg/m^3
r (observed)	0.18
reference test method	ISO12185:96
0.3 x R (reference test method)	0.45

Table 2: evaluation of the repeatability of subsamples #21095

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

For the preparation of the sample for the Metal analyzes in Fuel Oil a batch of approximately 15 liters of Fuel Oil containing metals was obtained from a local supplier. After heating to 60°C and homogenization 138 PE bottles of 0.1L were filled and labelled #21096.
The homogeneity of the subsamples was checked by determination of Nickel in accordance with IP501 on 8 stratified randomly selected subsamples.

	Nickel in mg/kg
sample #21096-1	31
sample #21096-2	33
sample #21096-3	28 G(0.01)
sample #21096-4	35
sample #21096-5	34
sample #21096-6	35
sample #21096-7	34
sample #21096-8	34

Table 3: homogeneity test results of subsamples #21096

Subsample 3 is a Grubbs outlier and therefore excluded for statistical evaluation of the homogeneity

From the above test results the repeatability was calculated and compared with 0.3 times the reproducibility of the reference test method in agreement with the procedure of ISO13528, Annex B2 in the next table.

	Nickel in mg/kg
r (observed)	3.9
reference test method	IP470:05
0.3 x R (reference test method)	4.8

Table 4: evaluation of the repeatability of subsamples #21096

The calculated repeatability is in agreement with 0.3 times the reproducibility of the reference test method. Therefore, homogeneity of the subsamples was assumed.

Depending on the registration of the participant the appropriate set of PT samples was sent on May 26, 2021. An SDS was added to the sample package.

2.5 STABILITY OF THE SAMPLES

The stability of Fuel Oil packed in the amber glass and PE bottles was checked. The material was found to be sufficiently stable for the period of the proficiency test.

2.6 ANALYZES

The participants were requested to determine on sample #21095:
On sample #21095: Total Acid Number, API Gravity, Ash Content, Asphaltenes, Calculated Carbon Aromaticity Index, Carbon Residue micro method, Conradson Carbon Residue, Density at 15°C, Flash Point PMcc, Heat of Combustion (Gross and Net), Kinematic Viscosity (at 50°C and 100°C), Kinematic Viscosity Stabinger (at 50°C and 100°C), Nitrogen, Pour Point (Lower, Upper and Automated), Sediment by Extraction, Total Sediment (Existent, Accelerated and Potential), Total Sulfur, Water by distillation, Water and Sediment, Vacuum Distillation at 10 mmHg but reported as AET (IBP, 5%,10%, 20%, 30%, 40%, 50% recovered and FBP), Total Carbon, Total Hydrogen and Total Nitrogen (CHN-analyzer).
Also, some extra information was requested about the determination of Total Acid Number.
On sample #21096 it was requested to determine: Aluminum, Silicon, Sum Aluminum and Silicon, Iron, Nickel, Sodium, Vanadium, Calcium, Phosphorus and Zinc content.

It was explicitly requested to treat the samples as if they were routine samples and to report the test results using the indicated units on the report form and not to round the test results but report as much significant figures as possible. It was also requested not to report ‘less than’ test results, which are above the detection limit, because such test results cannot be used for meaningful statistical evaluations.

To get comparable test results a detailed report form and a letter of instructions are prepared. On the report form the reporting units are given as well as the reference test methods (when applicable) that will be used during the evaluation. The detailed report form and the letter of instructions are both made available on the data entry portal www.kpmd.co.uk/sgs-iis/. The participating laboratories are also requested to confirm the sample receipt on this data entry portal. The letter of instructions can also be downloaded from the iis website www.iisnl.com.

3 RESULTS

During five weeks after sample dispatch, the test results of the individual laboratories were gathered via the data entry portal www.kpmd.co.uk/sgs-iis/. The reported test results are tabulated per determination in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after the deadline, a reminder was sent to those laboratories that had not reported test results at that moment. Shortly after the deadline, the available test results were screened for suspect data. A test result was called suspect in case the Huber Elimination Rule (a robust outlier test) found it to be an outlier. The laboratories that produced these suspect data were asked to check the reported test results (no reanalyzes). Additional or corrected test results are used for data analysis and the original test results are placed under ‘Remarks’ in the test result tables in appendix 1. Test results that came in after the deadline were not taken into account in this screening for suspect data and thus these participants were not requested for checks.

3.1 STATISTICS

The protocol followed in the organization of this proficiency test was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of June 2018 (iis-protocol, version 3.5).
For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded test results. Test results reported as '<…' or '>…' were not used in the statistical evaluation.
First, the normality of the distribution of the various data sets per determination was checked by means of the Lilliefors-test, a variant of the Kolmogorov-Smirnov test and by the calculation of skewness and kurtosis. Evaluation of the three normality indicators in combination with the visual evaluation of the graphic Kernel density plot, lead to judgement of the normality being either 'unknown', 'OK', 'suspect' or 'not OK'. After removal of outliers, this check was repeated. If a data set does not have a normal distribution, the (results of the) statistical evaluation should be used with due care.

The assigned value is determined by consensus based on the test results of the group of participants after rejection of the statistical outliers and/or suspect data.

According to ISO13528 all (original received or corrected) results per determination were submitted to outlier tests. In the iis procedure for proficiency tests, outliers are detected prior to calculation of the mean, standard deviation and reproducibility. For small data sets, Dixon (up to 20 test results) or Grubbs (up to 40 test results) outlier tests can be used. For larger data sets (above 20 test results) Rosner's outlier test can be used. Outliers are marked by D(0.01) for the Dixon's test, by G(0.01) or DG(0.01) for the Grubbs' test and by R(0.01) for the Rosner's test. Stragglers are marked by D(0.05) for the Dixon's test, by G(0.05) or DG(0.05) for the Grubbs' test and by R(0.05) for the Rosner's test. Both outliers and stragglers were not included in the calculations of averages and standard deviations.

For each assigned value, the uncertainty was determined in accordance with ISO13528. Subsequently the calculated uncertainty was evaluated against the respective requirement based on the target reproducibility in accordance with ISO13528. In this PT, the criterion of ISO13528, paragraph 9.2.1, was met for all evaluated tests, therefore, the uncertainty of all assigned values may be negligible and need not be included in the PT report.

Finally, the reproducibilities were calculated from the standard deviations by multiplying them with a factor of 2.8.

3.2 GRAPHICS

In order to visualize the data against the reproducibilities from literature, Gauss plots were made, using the sorted data for one determination (see appendix 1). On the Y-axis the reported test results are plotted. The corresponding laboratory numbers are on the X-axis. The straight horizontal line presents the consensus value (a trimmed mean). The four striped lines, parallel to the consensus value line, are the +3s, +2s, -2s and -3s target reproducibility limits of the selected reference test method. Outliers and other data, which were excluded from the calculations, are represented as a cross. Accepted data are represented as a triangle.

Furthermore, Kernel Density Graphs were made. This is a method for producing a smooth density approximation to a set of data that avoids some problems associated with histograms. Also, a normal Gauss curve (dotted line) was projected over the Kernel Density Graph (smooth line) for reference. The Gauss curve is calculated from the consensus value and the corresponding standard deviation.

3.3 Z-SCORES

To evaluate the performance of the participating laboratories the z-scores were calculated. As it was decided to evaluate the performance of the participants in this proficiency test (PT) against the literature requirements, e.g. EN, ISO or ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the variation in this interlaboratory study.

This target standard deviation was calculated from the literature reproducibility by division with 2.8. In case no literature reproducibility was available, other target values were used, like Horwitz or an estimated a reproducibility based on former iis proficiency tests.

When a laboratory did use a test method with a reproducibility that is significantly different from the reproducibility of the reference test method used in this report, it is strongly advised to recalculate the z-score, while using the reproducibility of the actual test method used, this in order to evaluate whether the reported test result is fit-for-use.
The z-scores were calculated according to:

$z_{(target)}$ = (test result - average of PT) / target standard deviation

The $z_{(target)}$ scores are listed in the test result tables of appendix 1.

Absolute values for z<2 are very common and absolute values for z>3 are very rare.
Therefore, the usual interpretation of z-scores is as follows:

	|z|	< 1	good
1 <	|z|	< 2	satisfactory
2 <	|z|	< 3	questionable
3 <	|z|		unsatisfactory

4 EVALUATION

In this proficiency test no severe problems were encountered with the dispatch of the samples. For the regular Fuel Oil PT seventeen participants reported test results after the reporting date and eight participants did not report any test results at all.
For the PT on metals: twelve participants reported the test results after the reporting date and seventeen participants did not report any test results at all. Not all participants were able to report all tests requested.
In total 159 participants reported 2744 numerical test results. Observed were 108 outlying test results, which is 3.9%.

In proficiency tests outlier percentages of 3% - 7.5% are quite normal.

Not all data sets proved to have a normal Gaussian distribution. These are referred to as “not OK” or “suspect”. The statistical evaluation of these data sets should be used with due care, see also paragraph 3.1.

4.1 EVALUATION PER SAMPLE AND PER TEST

In this section the reported test results are discussed per sample and per test. The test methods which were used by the various laboratories were taken into account for explaining the observed differences when possible and applicable. These test methods are also in the tables together with the original data. The abbreviations, used in these tables, are explained in appendix 4.

In the iis PT reports ASTM test methods are referred to with a number (e.g. D473) and an added designation for the year that the test method was adopted or revised (e.g. D473:07e1). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D473:07e1(2017)). In the test results tables of appendix 1 only the test method number and year of adoption or revision (e.g. D473:07e1) will be used.

Sample #21095

Total Acid Number: This determination was very problematic. Ten statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers was not at all in agreement with the requirements of ASTM D664:18e2 test method A for IP 125mL and also not in agreement with BEP 125mL. The calculated reproducibility was in agreement with the requirements of the test methods with IP 60mL and BEP 60mL. The variation in the test results was very high. Therefore, no z-scores are calculated. When evaluated separately for the type of end point the calculated reproducibility of the group did only meet the requirements of IP 60mL and BEP 60mL.

API Gravity: This determination was not problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D1298:12b(2017).

Ash Content: This determination was problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO6245:01 and ASTM D482:19.

Asphaltenes: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of IP143:04(2021). ASTM D6560:19 is equivalent to IP143.

Calculated Carbon Aromaticity Index: This determination was not problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO8217:17.

Carbon Residue micro method: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ISO10370:14.

Conradson Carbon Residue: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D189:06(2019).

Density at 15°C: This determination was problematic for a number of participants. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO12185:96.

Flash Point PMcc: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ISO2719-B:16.

Heat of Combustion (Gross): This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D240:19.

Heat of Combustion (Net): This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D240:19.

Kinematic Viscosity at 50°C: This determination was not problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:20.

Kinematic Viscosity at 100°C: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:20.

Kin. Viscosity Stabinger at 50°C: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D7042:21.

Kin. Viscosity Stabinger at 100°C: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D7042:21.

Nitrogen: This determination was problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is not in agreement with the requirements of ASTM D5762:18a.

Pour Point Lower: This determination was problematic. One statistical outlier was observed and two other test results were excluded. The calculated reproducibility after rejection of the suspect data is not in agreement with the requirements of ISO3016:19.

Pour Point Upper: This determination was not problematic. Two statistical outliers were observed and two other test results were excluded. The calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ISO3016:19.

Pour Point Automated: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D5950:14(2020).

Total Sediment by Extraction: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of ASTM D473:07e1(2017).

Total Sediment Existent (TSE): This determination was not problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP375:11(2018).

Total Sediment Accelerated (TSA): This determination was not problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP390:11. IP390:11(2017) is identical to ISO10307-2:09 and technically equivalent to ASTM D4870:18.

Total Sediment Potential (TSP): This determination was not problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP390:11. IP390:11(2017) is identical to ISO10307-2:09 and technically equivalent to ASTM D4870:18.

Total Sulfur: This determination was problematic for a number of participants. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO8754:03 and not in agreement with the stricter requirements of ASTM D4294:16e1.

Water by distillation: This determination was not problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3733:99(2021) or ASTM D95:13(2018).

Water and Sediment: This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of ASTM D1796:11(2016).

Vacuum Distillation at 10 mmHg but reported as AET: This determination was only problematic for the parameters 5% and 40% recovered. In total seven statistical outliers were observed and one other test result was excluded. The calculated reproducibilities of 5% and 40% recovered after rejection of the statistical outliers are not in agreement with the requirements of ASTM D1160:18. The calculated reproducibilities for the other parameters after rejection of the suspect data are in agreement with the requirements of ASTM D1160:18.

CHN-Analyzer: This determination was not problematic for Carbon and Hydrogen but problematic for Nitrogen. In total four statistical outliers were observed. The calculated reproducibilities for Carbon and Hydrogen after rejection of the statistical outliers are in agreement with the requirements of ASTM D5291-ABC:16. The calculated reproducibility for Nitrogen after rejection of the statistical outliers is not in agreement with the requirements of ASTM D5291-ABC:16.

Sample #21096

Aluminum: This determination may be problematic depending on the procedure used and was problematic for a number of participants. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Silicon: This determination may be problematic depending on the procedure used and was problematic for a number of participants. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Total Al/Si: This determination was problematic. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of IP470:05 and IP501:05(2019).

Iron: This determination may be problematic depending on the procedure used. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Nickel: This determination may be problematic depending on the procedure used. No statistical outliers were observed. The calculated reproducibility is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Sodium: This determination may be problematic depending on the procedure used. Two statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Vanadium: This determination was not problematic. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of IP470:05 and IP501:05(2019).

Calcium: This determination was problematic depending on the procedure used. One statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of IP470:05 but not in agreement with the stricter requirements of IP501:05(2019).

Phosphorus: This determination was not problematic. Almost all reporting participants agreed on a value near or below the application range. Therefore, no z-scores are calculated.

Zinc: This determination may be problematic. Five statistical outliers were observed. The consensus value after rejection of the statistical outliers was near or below the application range. Therefore, no z-scores are calculated.

Finally, it should be noted that proper attention for homogenization is crucial for a material such as Fuel Oil. Due to the nature of the material it is very susceptible to problems when not handled correctly. Practically every test method for the determination of metals in Fuel Oil has similar statements regarding homogenization. It is recommended to use a quality control Fuel Oil with known amounts of metals like Al, Fe, Si and V. This control standard may be of use to detect deviations in metals with respect to the preparation steps.

4.2 PERFORMANCE EVALUATION FOR THE GROUP OF LABORATORIES

A comparison has been made between the reproducibility as declared by the reference test method and the reproducibility as found for the group of participating laboratories. The number of significant test results, the average, the calculated reproducibility (2.8 * standard deviation) and the target reproducibility derived from literature reference test methods (in casu ASTM and IP test methods) are compared in the next tables.

Parameter	unit	n	average	2.8 * sd	R(lit)
Total Acid Number	mg KOH/g	67	0.18	0.09	(0.04)
API Gravity		84	14.4	0.2	0.5
Ash Content	%M/M	97	0.015	0.008	0.005
Asphaltenes	%M/M	64	2.34	0.73	0.47
Calc. Carbon Aromaticity Index		63	830.8	1.2	2.2
Carbon Residue micro method	%M/M	88	9.98	0.95	1.14
Conradson Carbon Residue	%M/M	26	10.23	1.20	1.64

Parameter	unit	n	average	2.8 * sd	R(lit)
Density at 15°C	kg/m^3	123	969.6	1.7	1.5
Flash Point PMcc	°C	122	110.7	5.8	6
Heat of Combustion (Gross)	MJ/kg	62	43.37	0.36	0.40
Heat of Combustion (Net)	MJ/kg	52	40.95	0.41	0.40
Kinematic Viscosity at 50°C	mm^2/s	113	371.2	15.0	31.4
Kinematic Viscosity at 100°C	mm^2/s	82	33.58	1.09	4.05
Kin. Viscosity Stabinger at 50°C	mm^2/s	18	366.2	17.2	37.7
Kin. Viscosity Stabinger at 100°C	mm^2/s	17	33.64	0.60	2.42
Nitrogen	mg/kg	23	3246	1132	864
Pour Point Lower	°C	50	24.2	7.7	6.6
Pour Point Upper	°C	90	27.9	4.7	6.6
Pour Point Automated Δ3°C	°C	28	26.4	6.6	6.1
Total Sediment by Extraction	%M/M	73	0.013	0.016	0.036
Total Sediment Existent (TSE)	%M/M	51	0.010	0.003	0.029
Total Sediment Accel. (TSA)	%M/M	54	0.010	0.003	0.030
Total Sediment Potential (TSP)	%M/M	49	0.010	0.005	0.030
Total Sulfur	%M/M	131	0.88	0.07	0.08
Water by distillation	%V/V	75	0.04	0.08	0.2
Water and Sediment	%V/V	43	0.05	0.09	0.11
Initial Boiling Point	°C	13	206.5	35.9	49
5% recovered	°C	13	290.4	32.6	28.4
10% recovered	°C	12	358.9	21.3	21.8
20% recovered	°C	13	410.6	11.9	16.0
30% recovered	°C	12	433.9	5.8	14.3
40% recovered	°C	13	467.9	13.4	9.9
50% recovered	°C	2	n.e.	n.e.	n.e.
Final Boiling Point	°C	12	516.1	20.5	27
Total Carbon	%M/M	27	87.3	1.1	2.4
Total Hydrogen	%M/M	27	11.2	0.7	0.8
Total Nitrogen	%M/M	25	0.37	0.17	0.10

Table 5: reproducibilities of tests on sample #21095

Element	unit	n	average	2.8 * sd	R(lit)
Aluminum as Al	mg/kg	77	10.4	4.2	3.8
Silicon as Si	mg/kg	75	10.6	5.9	6.7
Sum of Aluminum and Silicon	mg/kg	77	21.3	9.4	7.7
Iron as Fe	mg/kg	76	20.3	8.2	11.5
Nickel as Ni	mg/kg	81	33.1	15.0	16.0
Sodium as Na	mg/kg	78	20.8	7.2	8.1
Vanadium as V	mg/kg	88	94.5	19.6	31.7
Calcium as Ca	mg/kg	74	4.7	3.8	4.1

Element	unit	n	average	2.8 * sd	R(lit)
Phosphorus as P	mg/kg	58	<1	n.e.	n.e.
Zinc as Zn	mg/kg	52	1.0	0.7	(0.6)

Table 6: reproducibilities of tests on sample #21096

Without further statistical calculations it can be concluded that for many tests there is a good compliance of the group of participants with the reference test method. The problematic tests have been discussed in paragraph 4.1.

4.3 COMPARISON OF THE PROFICIENCY TEST OF JUNE 2021 WITH PREVIOUS PTS

	June 2021	December 2020	June 2020	December 2019	June 2019
Number of reporting laboratories	159	129	153	137	147
Number of test results	2744	2778	2810	2945	2713
Number of statistical outliers	108	81	89	115	86
Percentage of statistical outliers	3.9%	2.9%	3.2%	3.9%	3.2%

Table 7: comparison with previous proficiency tests

In proficiency test, outlier percentages of 3% - 7.5% are quite normal

The performance of the determinations of the proficiency tests was compared to the requirements of the reference test methods. The conclusions are given in the following table.

Parameter	June 2021	December 2020	June 2020	December 2019	June 2019
Total Acid Number	(--)	(--)	(--)	(--)	(--)
API Gravity	++	++	+	++	+
Ash Content	-	--	--	--	--
Asphaltenes	-	+/-	--	(--)	-
Calc. Carbon Aromaticity Index	+	+	+	+	+
Carbon Residue micro method	+	++	+	+	+
Conradson Carbon Residue	+	+	+	+/-	+/-
Density at 15°C	-	+	-	+	-
Flash Point PMcc	+/-	+/-	-	+	+/-
Heat of Combustion (Gross)	+/-	+/-	+/-	+	+
Heat of Combustion (Net)	+/-	+	+/-	+/-	+
Kinematic Viscosity at 50°C	++	+	+	-	+
Kinematic Viscosity at 100°C	++	++	+	+	+/-
Kin. Viscosity Stabinger at 50°C	++	++	++	+	++
Kin. Viscosity Stabinger at 100°C	++	++	++	++	++
Nitrogen	-	-	-	-	+/-
Pour Point Lower	-	+	-	+	-
Pour Point Upper	+	+/-	+	+	-
Pour Point Automated Δ3°C	+/-	--	+	+/-	-

Parameter	June 2021	December 2020	June 2020	December 2019	June 2019
Total Sediment by Extraction	++	+	+	+	+
Total Sediment Existent (TSE)	++	++	++	++	++
Total Sediment Accel. (TSA)	++	++	++	++	++
Total Sediment Potential (TSP)	++	++	++	++	++
Total Sulfur	+	+	+	+	+
Water by distillation	++	++	++	++	++
Water and Sediment	+	+	+	+	++
Distillation at 10 mmHg to AET	+	+	-	+/-	-
Total Carbon	++	+	+	+	+
Total Hydrogen	+	+	+	+	+
Total Nitrogen	-	-	--	+	-
Aluminum as Al	-	-	-	+/-	+/-
Silicon as Si	+	-	-	+	+
Total Aluminum + Silicon	-	+/-	-	+/-	+/-
Iron as Fe	+	+	+	+	+
Nickel as Ni	+/-	+	+	++	++
Sodium as Na	+	+/-	+/-	+	+
Vanadium as V	+	+	+	+	+
Calcium as Ca	+/-	+	-	-	-
Phosphorus as P	n.e.	n.e.	+	+	+/-
Zinc as Zn	(-)	+/-	-	+/-	+/-

Table 8: comparison determinations against the reference test methods

For the evaluations between brackets no z-scores are calculated

The following performance categories were used:

- ++ : group performed much better than the reference test method
- + : group performed better than the reference test method
- +/- : group performance equals the reference test method
- - : group performed worse than the reference test method
- -- : group performed much worse than the reference test method
- n.e. : not evaluated

APPENDIX 1

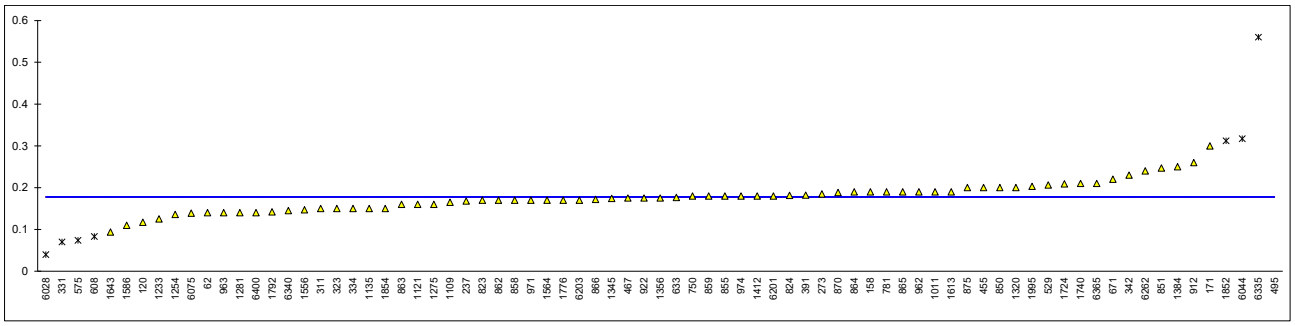
Determination of Total Acid Number on sample #21095; results in mg KOH/g

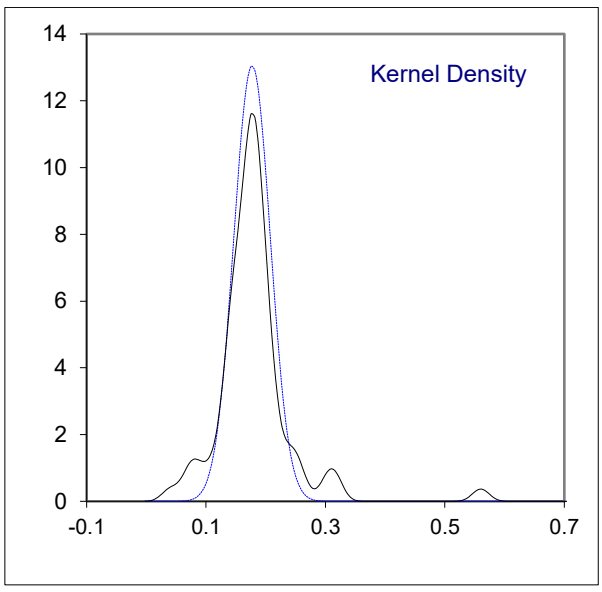
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D664-A	0.14		-----	859	D664-A	0.18		-----
90		-----		-----	862	D664-A	0.17		-----
92		-----		-----	863	D664-A	0.16		-----
120	D664-A	0.117		-----	864	D664-A	0.19		-----
140		-----		-----	865	D664-A	0.190		-----
150		-----		-----	866	D664	0.172		-----
154		-----		-----	870	D664-A	0.188		-----
158	D664-A	0.19		-----	875	D664-A	0.20		-----
159		-----		-----	886		-----		-----
168		-----		-----	912	D664-A	0.26	C	-----
169		-----		-----	913		-----		-----
171	D664-A	0.30	R(0.05)	-----	922	D664-A	0.175		-----
175		-----		-----	962	D664-A	0.19		-----
221		-----		-----	963	D664-A	0.14		-----
224		-----		-----	971	D664-A	0.17		-----
225		-----		-----	974	D664-A	0.18		-----
228		-----		-----	982		-----		-----
237	D664-A	0.168		-----	1011	D664-A	0.19		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109	D664-A	0.165		-----
254		-----		-----	1121	D664-A	0.16		-----
273	D664-A	0.185		-----	1126		-----		-----
309		-----		-----	1135	D664-A	0.15		-----
311	D664-A	0.15		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323	D664-A	0.15		-----	1233	D664-A	0.125		-----
328		-----		-----	1254	D664-A	0.136		-----
331	D664Mod	0.07	R(0.05)	-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	D664-A	0.15		-----	1269		-----		-----
335		-----		-----	1275	IP177	0.16		-----
339		-----		-----	1281	D664-A	0.140		-----
342	D664-A	0.23		-----	1320	D664-A	0.20		-----
343		-----		-----	1345	D664-A	0.174		-----
349		-----		-----	1356	D664-A	0.175		-----
371		-----		-----	1379		-----		-----
391	D664-A	0.182		-----	1384	ISO6619	0.25		-----
398		-----		-----	1392		-----		-----
399		-----		-----	1412	D664-A	0.18		-----
444		-----		-----	1438		-----		-----
455	IP177	0.20		-----	1459		-----		-----
467	D664-A	0.175		-----	1498		-----		-----
495	D664-A	1.572	R(0.01)	-----	1510		-----		-----
511		-----		-----	1556	D664-A	0.147		-----
529	D664-A	0.2062		-----	1564	D664-A	0.17	C	-----
557		-----		-----	1586	D664-A	0.11		-----
562		-----		-----	1613	D664-A	0.19		-----
575	D664-A	0.074	R(0.05)	-----	1643	D664-A	0.094	R(0.05)	-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724	D664-A	0.209		-----
608	D664-A	0.083	R(0.05)	-----	1728		-----		-----
631		-----		-----	1740	D664-A	0.21		-----
633	D664-A	0.1764		-----	1761		-----		-----
663		-----		-----	1776	D664-A	0.17		-----
671	D664-A	0.22		-----	1792	D664-A	0.142		-----
750	D664	0.18		-----	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852	D664-A	0.312	C,R(0.05)	-----
781	D664-A	0.19		-----	1854	D664-B	0.15		-----
785		-----		-----	1906		-----		-----
823	D664-A	0.17		-----	1956		-----		-----
824	D664-A	0.1814		-----	1964		-----		-----
825		-----		-----	1995	D664-A	0.203		-----
850	D664-A	0.20		-----	6028	IP570	0.04	R(0.05)	-----
851	D664-A	0.247		-----	6038		-----		-----
855	D664-A	0.18		-----	6039		-----		-----
858	D664-A	0.17		-----	6044	D664-A	0.317	R(0.05)	-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262	D664-A	0.24		-----
6075	D664-A	0.139		-----	6308		-----		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335	D664-A	0.56	R(0.01)	-----
6122		-----		-----	6340	D664-A	0.145		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365	D664-A	0.21		-----
6192		-----		-----	6373		-----		-----
6201	D664-A	0.18		-----	6376		-----		-----
6203	D664-A	0.17		-----	6400	D664-A	0.14		-----
6252		-----		-----					

		Only IP	Only BEP
normality	OK	not OK	OK
n	67	46	11
outliers	10	2	1
mean (n)	0.1769	0.1803	0.1637
st.dev. (n)	0.03058	0.03286	0.04518
R(calc.)	0.0856	0.0920	0.1265
st.dev.(D664-A:18e2 IP 125 mL)	(0.01287)	(0.01309)	-----
R(D664-A:18e2 IP 125 mL)	(0.03607)	(0.0366)	-----
compare			
R(D664-A:18e2 IP 60 mL)	(0.0975)	(0.0975)	-----
R(D664-A:18e2 BEP 125 mL)	(0.0513)	-----	(0.0472)
R(D664-A:18e2 BEP 60 mL)	(0.1026)	-----	(0.0948)

Lab 912: first reported 0.50
Lab 1564: first reported 0.43
Lab 1852: first reported 0.394





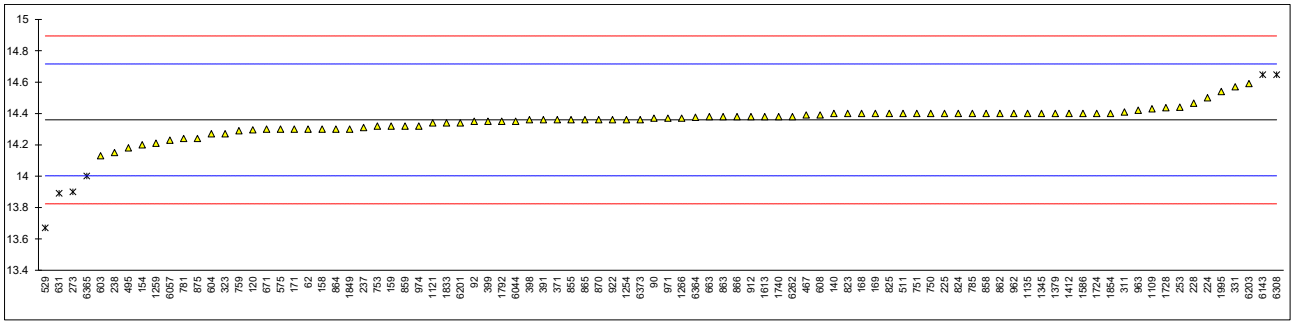
Determination of API Gravity on sample #21095

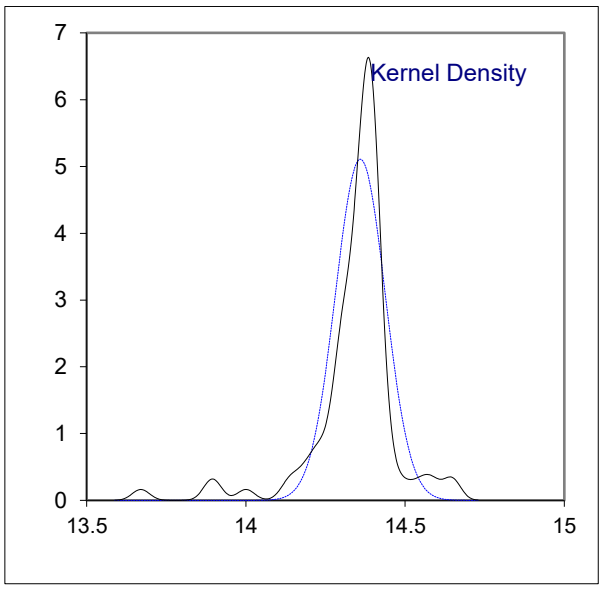
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4052	14.3		-0.33	859	D1298	14.32		-0.22
90	D4052	14.37		0.06	862	D287	14.40		0.23
92	D4052	14.35		-0.05	863	ISO12185	14.38		0.12
120	D4052	14.295		-0.36	864	ISO12185	14.3		-0.33
140	D4052	14.4		0.23	865	ISO12185	14.36		0.00
150		-----		-----	866	ISO12185	14.38		0.12
154	D4052	14.2		-0.89	870	ISO12185	14.36		0.00
158	D4052	14.3		-0.33	875	D1298	14.24		-0.67
159	D4052	14.32		-0.22	886		-----		-----
168	D287	14.4	C	0.23	912	D1298	14.38		0.12
169	D1298	14.4		0.23	913		-----		-----
171	D4052	14.3		-0.33	922	D1298	14.36		0.00
175		-----		-----	962	D4052	14.4		0.23
221		-----		-----	963	D1298	14.42		0.34
224	D1298	14.50		0.79	971	ISO12185	14.37		0.06
225	D4052	14.4		0.23	974	D1298	14.32		-0.22
228	D1298	14.466		0.60	982		-----		-----
237	D1298	14.31		-0.28	1011		-----		-----
238	D1298	14.15		-1.17	1082		-----		-----
253	D4052	14.44		0.45	1109	D287	14.43		0.40
254		-----		-----	1121	ISO12185	14.34		-0.11
273	D4052	13.9	R(0.01)	-2.57	1126		-----		-----
309		-----		-----	1135	D1298	14.40		0.23
311	D4052	14.41		0.28	1177		-----		-----
313		-----		-----	1218		-----		-----
323	D1298	14.27		-0.50	1233		-----		-----
328		-----		-----	1254	D4052	14.36		0.00
331	ISO12185	14.57		1.18	1259	ISO12185	14.21		-0.84
333		-----		-----	1266	D1298	14.37		0.06
334		-----		-----	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345	D1250	14.4		0.23
349		-----		-----	1356		-----		-----
371	D4052	14.36		0.00	1379	D1250	14.4		0.23
391	ISO12185	14.36		0.00	1384		-----		-----
398	D1298	14.36		0.00	1392		-----		-----
399	ISO12185	14.35		-0.05	1412	D1250	14.4		0.23
444		-----		-----	1438		-----		-----
455		-----		-----	1459		-----		-----
467	D4052	14.39		0.17	1498		-----		-----
495	D1298	14.18		-1.00	1510		-----		-----
511	D1298	14.4		0.23	1556		-----		-----
529	D4052	13.67	R(0.01)	-3.86	1564		-----		-----
557		-----		-----	1586	D4052	14.4		0.23
562		-----		-----	1613	D1298	14.38		0.12
575	D1298	14.3		-0.33	1643		-----		-----
603	D1298	14.13		-1.28	1720		-----		-----
604	D4052	14.27		-0.50	1724	D1298	14.4		0.23
608	D4052	14.39		0.17	1728	D287	14.4365		0.43
631	D4052	13.89	R(0.01)	-2.63	1740	D1298	14.38		0.12
633		-----		-----	1761		-----		-----
663	D4052	14.38		0.12	1776		-----		-----
671	D287	14.3		-0.33	1792	ISO12185	14.35		-0.05
750	D1298	14.4		0.23	1807		-----		-----
751	D1298	14.4		0.23	1833	D4052	14.34		-0.11
753	ISO12185	14.32		-0.22	1849	ISO12185	14.3		-0.33
759	D1298	14.29		-0.39	1852		-----		-----
781	ISO12185	14.24		-0.67	1854	ISO12185	14.4		0.23
785	D1298	14.4		0.23	1906		-----		-----
823	D4052	14.4		0.23	1956		-----		-----
824	ISO12185	14.4		0.23	1964		-----		-----
825	ISO12185	14.4		0.23	1995	D4052	14.54		1.01
850		-----		-----	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D4052	14.36		0.00	6039		-----		-----
858	D1298	14.40		0.23	6044	D1298	14.35		-0.05

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D1298	14.23		-0.72	6262	D4052	14.38		0.12
6075		-----		-----	6308	D4052	14.647	R(0.05)	1.61
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364	D1298	14.376		0.09
6143	D1298	14.647	R(0.05)	1.61	6365	D1298	14.0	R(0.01)	-2.01
6192		-----		-----	6373	ISO12185	14.36		0.00
6201	D1298	14.34		-0.11	6376		-----		-----
6203	D4052	14.59		1.29	6400		-----		-----
6252		-----		-----					

normality	suspect
n	84
outliers	6
mean (n)	14.359
st.dev. (n)	0.0781
R(calc.)	0.219
st.dev.(D1298:12b)	0.1786
R(D1298:12b)	0.5

Lab 168: first reported 14.9





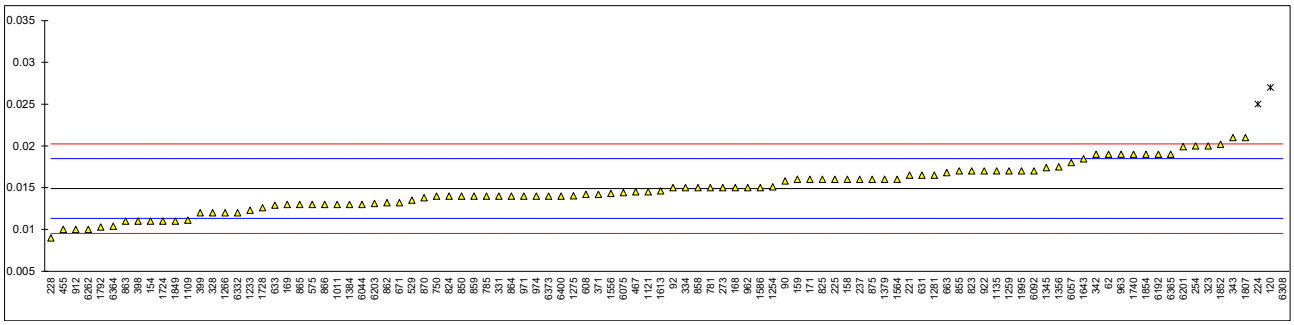
Determination of Ash Content on sample #21095; results in %M/M

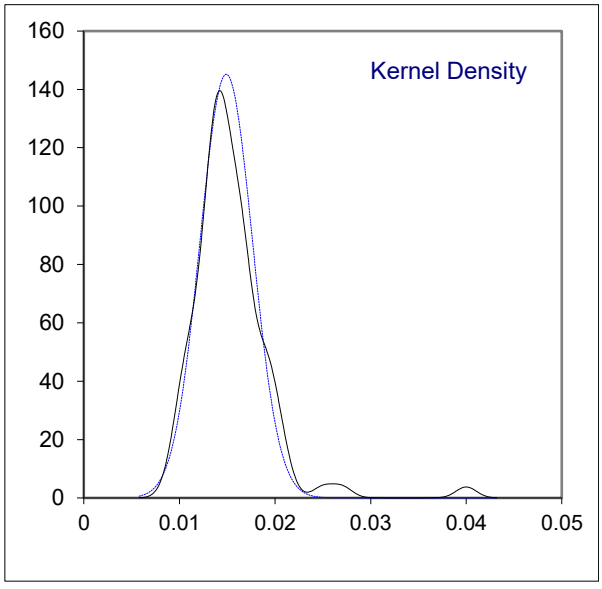
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D482	0.019		2.30	859	D482	0.014		-0.50
90	D482	0.0158		0.51	862	ISO6245	0.0132		-0.95
92	D482	0.015		0.06	863	D482	0.0110		-2.18
120	D482	0.027	R(0.01)	6.78	864	ISO6245	0.014		-0.50
140		-----		-----	865	ISO6245	0.013		-1.06
150		-----		-----	866	D482	0.013		-1.06
154	D482	0.011		-2.18	870	D482	0.0138		-0.61
158	D482	0.016		0.62	875	D482	0.016		0.62
159	D482	0.016		0.62	886		-----		-----
168	D482	0.015		0.06	912	ISO6245	0.010		-2.74
169	D482	0.013	C	-1.06	913		-----		-----
171	ISO6245	0.016		0.62	922	D482	0.017		1.18
175		-----		-----	962	D482	0.015		0.06
221	D482	0.0165		0.90	963	ISO6245	0.019		2.30
224	D482	0.025	R(0.05)	5.66	971	D482	0.014		-0.50
225	D482	0.016		0.62	974	D482	0.014		-0.50
228	D482	0.00899		-3.31	982		-----		-----
237	D482	0.016		0.62	1011	ISO6245	0.013		-1.06
238		-----		-----	1082		-----		-----
253		-----		-----	1109	D482	0.0111		-2.12
254	D482	0.020		2.86	1121	ISO6245	0.0145		-0.22
273	D482	0.015		0.06	1126		-----		-----
309		-----		-----	1135	ISO6245	0.017		1.18
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323	ISO6245	0.02		2.86	1233	ISO6245	0.0123		-1.45
328	ISO6245	0.012		-1.62	1254	D482	0.0151		0.12
331	ISO6245	0.014		-0.50	1259	ISO6245	0.017		1.18
333		-----		-----	1266	ISO6245	0.012		-1.62
334	ISO6245	0.015		0.06	1269		-----		-----
335		-----		-----	1275	IP4	0.01403		-0.48
339		-----		-----	1281	ISO6245	0.0165		0.90
342	ISO6245	0.019		2.30	1320		-----		-----
343	ISO6245	0.021		3.42	1345	D482	0.0174		1.40
349		-----		-----	1356	ISO6245	0.0175		1.46
371	D482	0.0142		-0.39	1379	GOST1461	0.016		0.62
391		-----		-----	1384	ISO6245	0.013		-1.06
398	ISO6245	0.011		-2.18	1392		-----		-----
399	ISO6245	0.012		-1.62	1412		-----		-----
444		-----		-----	1438		-----		-----
455	IP4	0.010		-2.74	1459		-----		-----
467	ISO6245	0.0145		-0.22	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	ISO6245	0.0143		-0.33
529	D482	0.0135		-0.78	1564	D482	0.016		0.62
557		-----		-----	1586	D482	0.015		0.06
562		-----		-----	1613	D482	0.0146		-0.16
575	D482	0.013		-1.06	1643	D482	0.01846		2.00
603		-----		-----	1720		-----		-----
604		-----		-----	1724	D482	0.011		-2.18
608	D482	0.0142		-0.39	1728	D482	0.0126		-1.28
631	D482	0.0165		0.90	1740	ISO6245	0.019		2.30
633	D482	0.0129		-1.12	1761		-----		-----
663	D482	0.0168		1.07	1776		-----		-----
671	D482	0.0132		-0.95	1792	ISO6245	0.0103		-2.57
750	GOST1461	0.014		-0.50	1807	ISO6245	0.021		3.42
751		-----		-----	1833		-----		-----
753		-----		-----	1849	ISO6245	0.011		-2.18
759		-----		-----	1852	ISO6245	0.0202		2.97
781	ISO6245	0.015		0.06	1854	ISO6245	0.019		2.30
785	ISO6245	0.014		-0.50	1906		-----		-----
823	ISO6245	0.017		1.18	1956		-----		-----
824	ISO6245	0.014		-0.50	1964		-----		-----
825	D482	0.016		0.62	1995	D482	0.017		1.18
850	ISO6245	0.014		-0.50	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D482	0.017		1.18	6039		-----		-----
858	D482	0.015		0.06	6044	D482	0.013	C	-1.06

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO6245	0.018		1.74	6262	D482	0.01		-2.74
6075	ISO6245	0.0144		-0.28	6308	IP4	0.04	R(0.01)	14.06
6092	ISO6245	0.017		1.18	6332	D482	0.0120		-1.62
6109		-----		-----	6335	D482	<0.010		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364	D482	0.01038		-2.53
6143		-----		-----	6365	D482	0.019		2.30
6192	ISO6245	0.019		2.30	6373	ISO6245	0.014		-0.50
6201	ISO6245	0.0199		2.80	6376		-----		-----
6203	ISO6245	0.0131		-1.00	6400	ISO6245	0.014		-0.50
6252		-----		-----					
6262	6262								

	normality	OK
	n	97
	outliers	3
	mean (n)	0.0149
	st.dev. (n)	0.00275
	R(calc.)	0.0077
	st.dev.(ISO6245:01)	0.00179
	R(ISO6245:01)	0.005
Compare		
	R(D482:19)	0.005

Lab 169 first reported 0.041
Lab 6044 first reported 0.0025





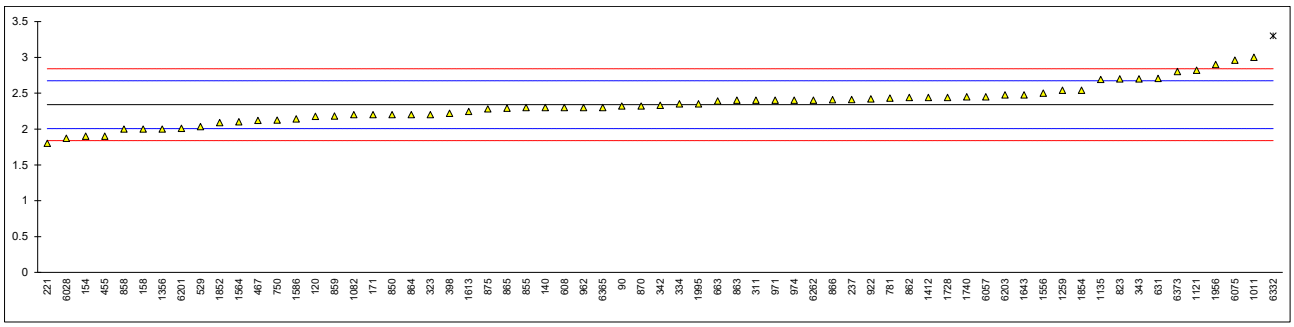
Determination of Asphaltenes on sample #21095; results in %M/M

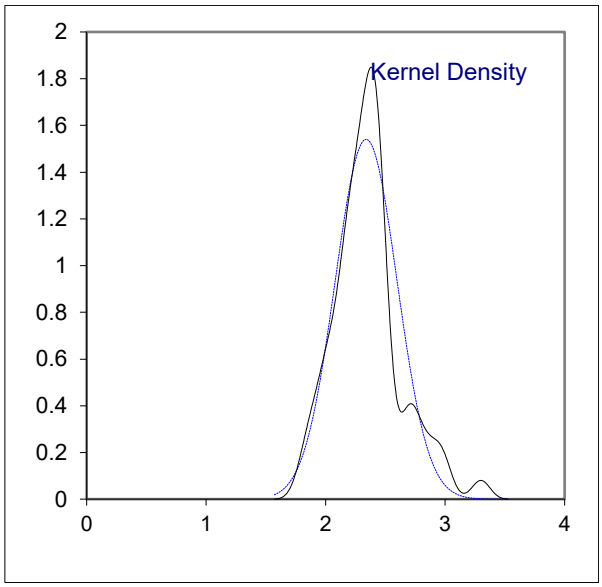
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	D6560	2.18		-0.96
90	IP143	2.32		-0.12	862	IP143	2.44		0.60
92		-----		-----	863	IP143	2.40		0.36
120	D6560	2.177		-0.97	864	IP143	2.2		-0.84
140	D6560	2.3		-0.24	865	IP143	2.29		-0.30
150		-----		-----	866	IP143	2.41		0.42
154	D6560	1.9		-2.63	870	IP143	2.32		-0.12
158	D6560	2.0		-2.03	875	IP143	2.28		-0.36
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171	IP143	2.2		-0.84	922	D6560	2.42		0.48
175		-----		-----	962	D6560	2.3		-0.24
221	D6560	1.8		-3.23	963		-----		-----
224		-----		-----	971	IP143	2.4		0.36
225		-----		-----	974	IP143	2.4		0.36
228		-----		-----	982		-----		-----
237	D6560	2.412		0.43	1011	IP143	3.0		3.95
238		-----		-----	1082	DIN51595	2.199658		-0.84
253		-----		-----	1109		-----		-----
254		-----		-----	1121	IP143	2.82	C	2.87
273		-----		-----	1126		-----		-----
309		-----		-----	1135	IP143	2.69		2.10
311	IP143	2.4		0.36	1177		-----		-----
313		-----		-----	1218		-----		-----
323	IP143	2.2		-0.84	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259	D6560	2.54		1.20
333		-----		-----	1266		-----		-----
334	IP143	2.35		0.06	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342	IP143	2.331		-0.05	1320		-----		-----
343	IP143	2.7		2.16	1345		-----		-----
349		-----		-----	1356	D6560	2.0		-2.03
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398	IP143	2.22		-0.72	1392		-----		-----
399		-----		-----	1412	D6560	2.44		0.60
444		-----		-----	1438		-----		-----
455	INH-52	1.9		-2.63	1459		-----		-----
467	IP143	2.12		-1.31	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	IP143	2.5		0.96
529	D6560	2.032		-1.84	1564	IP143	2.1		-1.43
557		-----		-----	1586	IP143	2.14		-1.19
562		-----		-----	1613	IP143	2.245		-0.57
575		-----		-----	1643	D6560	2.4758		0.81
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608	D6560	2.3		-0.24	1728	D6560	2.44		0.60
631	D6560	2.705		2.19	1740	D6560	2.45		0.66
633		-----		-----	1761		-----		-----
663	IP143	2.39		0.30	1776		-----		-----
671		-----		-----	1792		-----		-----
750	D6560	2.124		-1.29	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852	DIN51595	2.09		-1.49
781	IP143	2.43		0.54	1854	IP143	2.54		1.20
785		-----		-----	1906		-----		-----
823	IP143	2.70		2.16	1956	NF T60-115	2.9		3.35
824		-----		-----	1964		-----		-----
825		-----		-----	1995	D6560	2.35		0.06
850	IP143	2.2		-0.84	6028	IP143	1.87		-2.81
851		-----		-----	6038		-----		-----
855	IP143	2.3		-0.24	6039		-----		-----
858	IP143	2.0		-2.03	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	IP143	2.45		0.66	6262	IP143	2.4		0.36
6075	NF T60-115	2.96		3.71	6308		-----		-----
6092		-----		-----	6332	D6560	3.3	R(0.05)	5.75
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365	IP143	2.3		-0.24
6192		-----		-----	6373	IP143	2.8		2.75
6201	IP143	2.01		-1.97	6376		-----		-----
6203	IP143	2.474		0.80	6400		-----		-----
6252		-----		-----					

normality	OK
n	64
outliers	1
mean (n)	2.340
st.dev. (n)	0.2590
R(calc.)	0.725
st.dev.(IP143:04)	0.1671
R(IP143:04)	0.468

Lab 1121 first reported 3.28





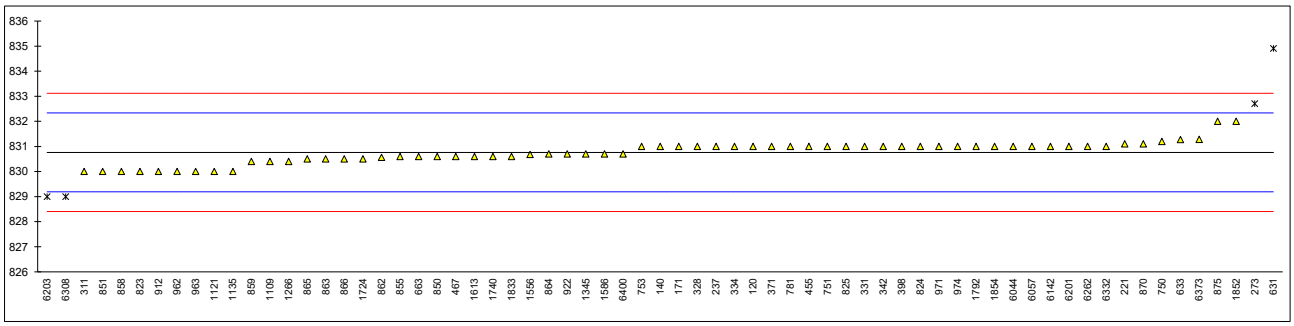
Determination of Calculated Carbon Aromaticity Index on sample #21095

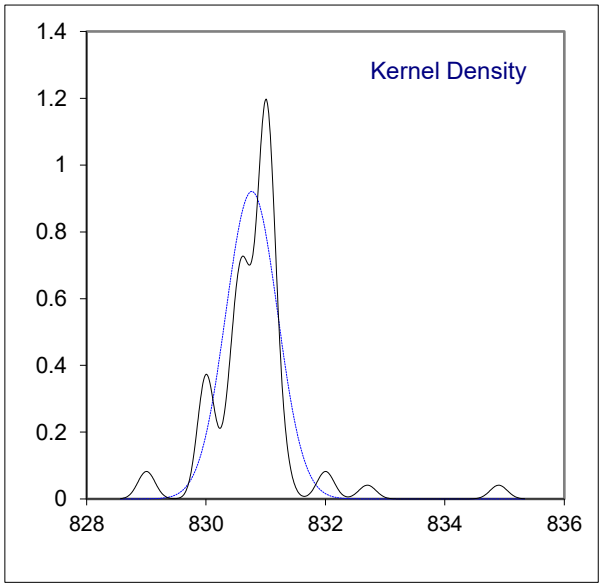
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	ISO8217	830.4		-0.46
90		-----		-----	862	ISO8217	830.56		-0.26
92		-----		-----	863	ISO8217	830.5		-0.34
120	ISO8217	831		0.30	864	ISO8217	830.7		-0.08
140	ISO8217	831		0.30	865	ISO8217	830.5		-0.34
150		-----		-----	866	ISO8217	830.5		-0.34
154		-----		-----	870	ISO8217	831.1		0.43
158		-----		-----	875	ISO8217	832		1.57
159		-----		-----	886		-----		-----
168		-----		-----	912	ISO8217	830		-0.97
169		-----		-----	913		-----		-----
171	ISO8217	831		0.30	922	ISO8217	830.7		-0.08
175		-----		-----	962	ISO8217	830		-0.97
221	ISO8217	831.1		0.43	963	ISO8217	830		-0.97
224		-----		-----	971	ISO8217	831		0.30
225		-----		-----	974	ISO8217	831		0.30
228		-----		-----	982		-----		-----
237	ISO8217	831		0.30	1011		-----		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109	ISO8217	830.4		-0.46
254		-----		-----	1121	ISO8217	830		-0.97
273	ISO8217	832.7	C,R(0.01)	2.46	1126		-----		-----
309		-----		-----	1135	ISO8217	830		-0.97
311	ISO8217	830		-0.97	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328	ISO8217	831		0.30	1254		-----		-----
331	ISO8217	831		0.30	1259		-----		-----
333		-----		-----	1266	ISO8217	830.4		-0.46
334	ISO8217	831		0.30	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342	ISO8217	831		0.30	1320		-----		-----
343		-----		-----	1345	ISO8217	830.7		-0.08
349		-----		-----	1356		-----		-----
371	ISO8217	831		0.30	1379		-----		-----
391		-----		-----	1384		-----		-----
398	ISO8217	831		0.30	1392		-----		-----
399		-----		-----	1412		-----		-----
444		-----		-----	1438		-----		-----
455	ISO8217	831.0		0.30	1459		-----		-----
467	ISO8217	830.6		-0.21	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	ISO8217	830.68		-0.11
529		-----		-----	1564		-----		-----
557		-----		-----	1586	ISO8217	830.7		-0.08
562		-----		-----	1613	ISO8217	830.6		-0.21
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724	ISO8217	830.5		-0.34
608		-----		-----	1728		-----		-----
631	ISO8217	834.9	R(0.01),E	5.26	1740	ISO8217	830.6		-0.21
633	ISO8217	831.27		0.64	1761		-----		-----
663	ISO8217	830.6		-0.21	1776		-----		-----
671		-----		-----	1792	ISO8217	831		0.30
750	ISO8217	831.2		0.56	1807		-----		-----
751	ISO8217	831		0.30	1833	ISO8217	830.6		-0.21
753	ISO8217	831		0.30	1849		-----		-----
759		-----		-----	1852	ISO8217	832		1.57
781	ISO8217	831		0.30	1854	ISO8217	831		0.30
785		-----		-----	1906		-----		-----
823	ISO8217	830		-0.97	1956		-----		-----
824	ISO8217	831		0.30	1964		-----		-----
825	ISO8217	831		0.30	1995		-----		-----
850	ISO8217	830.6		-0.21	6028		-----		-----
851	ISO8217	830		-0.97	6038		-----		-----
855	ISO8217	830.6		-0.21	6039		-----		-----
858	ISO8217	830		-0.97	6044	ISO8217	831		0.30

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO8217	831		0.30	6262	ISO8217	831		0.30
6075		-----		-----	6308	ISO8217	829	R(0.01)	-2.24
6092		-----		-----	6332	Calculation	831		0.30
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142	ISO8217	831		0.30	6364		-----		-----
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373	ISO8217	831.28		0.66
6201	ISO8217	831		0.30	6376		-----		-----
6203	ISO8217	829	R(0.01)	-2.24	6400	ISO8217	830.7		-0.08
6252		-----		-----					

normality	OK
n	63
outliers	4
mean (n)	830.763
st.dev. (n)	0.4331
R(calc.)	1.213
st.dev.(ISO8217:17)	0.7857
R(ISO8217:17)	2.2

Lab 273 first reported 834
Lab 631 calculation difference, iis calc.: 833.49





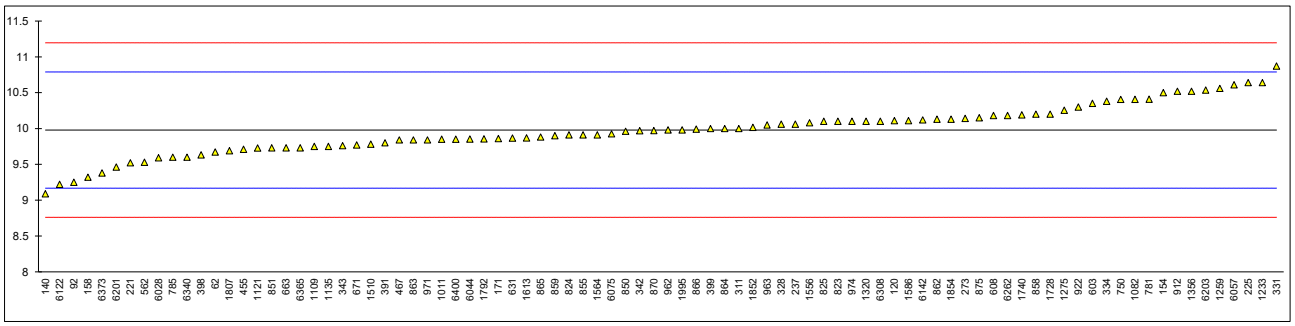
Determination of Carbon Residue micro method on sample #21095; results in %M/M

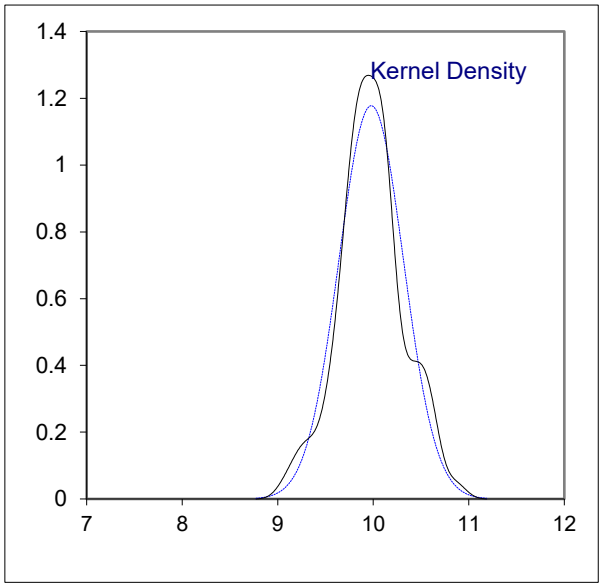
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4530	9.67		-0.76	859	D4530	9.9		-0.19
90		-----		-----	862	ISO10370	10.13		0.37
92	D4530	9.25		-1.80	863	D4530	9.84		-0.34
120	D4530	10.11		0.32	864	ISO10370	10.0		0.05
140	ISO10370	9.09		-2.19	865	ISO10370	9.88		-0.24
150		-----		-----	866	D4530	9.99		0.03
154	D4530	10.5		1.29	870	D4530	9.972		-0.02
158	D4530	9.32		-1.62	875	D4530	10.15		0.42
159		-----		-----	886		-----		-----
168		-----		-----	912	ISO10370	10.52		1.33
169		-----		-----	913		-----		-----
171	ISO10370	9.86		-0.29	922	D4530	10.3		0.79
175		-----		-----	962	D4530	9.98		0.00
221	D4530	9.52		-1.13	963	ISO10370	10.05		0.18
224		-----		-----	971	D4530	9.84		-0.34
225	D4530	10.64		1.63	974	D4530	10.1		0.30
228		-----		-----	982		-----		-----
237	D4530	10.06		0.20	1011	ISO10370	9.85		-0.32
238		-----		-----	1082	ISO10370	10.40745		1.06
253		-----		-----	1109	D4530	9.750		-0.56
254		-----		-----	1121	ISO10370	9.729		-0.61
273	D4530	10.14		0.40	1126		-----		-----
309		-----		-----	1135	ISO10370	9.75		-0.56
311	D4530	10.0		0.05	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233	ISO10370	10.64		1.63
328	ISO10370	10.06		0.20	1254		-----		-----
331	ISO10370	10.87		2.20	1259	ISO10370	10.56		1.43
333		-----		-----	1266		-----		-----
334	ISO10370	10.38		0.99	1269		-----		-----
335		-----		-----	1275	IP398	10.25502		0.68
339		-----		-----	1281		-----		-----
342	ISO10370	9.97		-0.02	1320	ISO10370	10.10		0.30
343	ISO10370	9.76		-0.54	1345		-----		-----
349		-----		-----	1356	ISO10370	10.52		1.33
371		-----		-----	1379		-----		-----
391	ISO10370	9.80		-0.44	1384		-----		-----
398	ISO10370	9.63		-0.86	1392		-----		-----
399	ISO10370	10.00		0.05	1412		-----		-----
444		-----		-----	1438		-----		-----
455	IP398	9.71		-0.66	1459		-----		-----
467	ISO10370	9.84		-0.34	1498		-----		-----
495		-----		-----	1510	ISO10370	9.78		-0.49
511		-----		-----	1556	ISO10370	10.08		0.25
529		-----		-----	1564	D4530	9.91		-0.17
557		-----		-----	1586	ISO10370	10.11		0.32
562	D4530	9.53		-1.11	1613	D4530	9.8675		-0.27
575		-----		-----	1643		-----		-----
603	D4530	10.35		0.92	1720		-----		-----
604		-----		-----	1724		-----	W	-----
608	D4530	10.18		0.50	1728	D4530	10.2		0.55
631	D4530	9.866		-0.28	1740	D4530	10.19		0.52
633		-----		-----	1761		-----		-----
663	D4530	9.730		-0.61	1776		-----		-----
671	D4530	9.77		-0.51	1792	ISO10370	9.856		-0.30
750	D4530	10.405		1.05	1807	ISO10370	9.69		-0.71
751		-----		-----	1833		-----	W	-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852	ISO10370	10.015		0.09
781	ISO10370	10.41		1.06	1854	ISO10370	10.13		0.37
785	ISO10370	9.60		-0.93	1906		-----		-----
823	ISO10370	10.1		0.30	1956		-----		-----
824	ISO10370	9.91		-0.17	1964		-----		-----
825	ISO10370	10.10		0.30	1995	D4530	9.98		0.00
850	ISO10370	9.96		-0.05	6028	ISO10370	9.59		-0.96
851	ISO10370	9.73		-0.61	6038		-----		-----
855	ISO10370	9.91		-0.17	6039		-----		-----
858	D4530	10.2		0.55	6044	ISO10370	9.852		-0.31

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO10370	10.61		1.56	6262	D4530	10.18		0.50
6075	ISO10370	9.924		-0.13	6308	ISO10370	10.1		0.30
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122	ISO10370	9.221		-1.87	6340	D4530	9.60		-0.93
6142	ISO10370	10.12		0.35	6364		-----		-----
6143		-----		-----	6365	D4530	9.73		-0.61
6192		-----		-----	6373	ISO10370	9.38		-1.48
6201	ISO10370	9.462		-1.27	6376		-----		-----
6203	ISO10370	10.537		1.38	6400	ISO10370	9.85		-0.32
6252		-----		-----					

normality	OK
n	88
outliers	0
mean (n)	9.9785
st.dev. (n)	0.33862
R(calc.)	0.9481
st.dev.(ISO10370:14)	0.40572
R(ISO10370:14)	1.1360

Lab 1724 test result withdrawn, reported 11.3
Lab 1833 test result withdrawn, reported 8.68





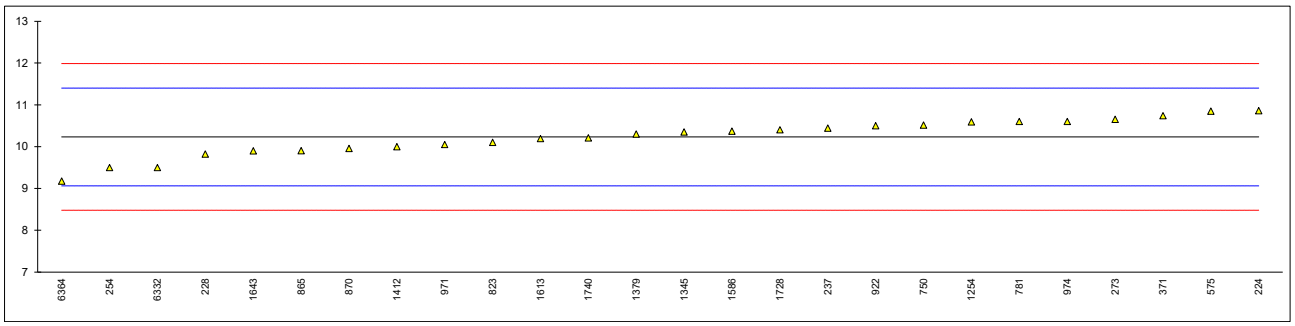
Determination of Conradson Carbon Residue on sample #21095; results in %M/M

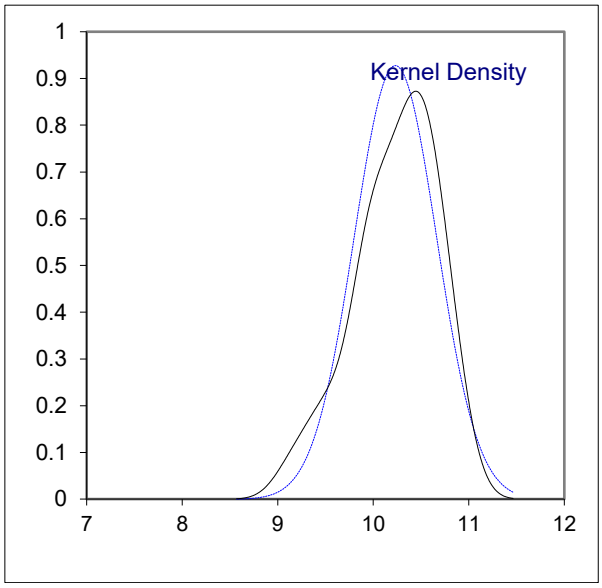
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90		-----		-----	862		-----		-----
92		-----		-----	863		-----		-----
120		-----		-----	864		-----		-----
140		-----		-----	865	ISO6615	9.90		-0.57
150		-----		-----	866		-----		-----
154		-----		-----	870	D189	9.954		-0.48
158		-----		-----	875		-----		-----
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922	D189	10.5		0.46
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224	D189	10.86		1.07	971	D189	10.05		-0.31
225		-----		-----	974	D189	10.6		0.63
228	D189	9.82		-0.71	982		-----		-----
237	D189	10.44		0.35	1011		-----		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109		-----		-----
254	D189	9.50		-1.25	1121		-----		-----
273	D189	10.65		0.71	1126		-----		-----
309		-----		-----	1135		-----		-----
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328		-----		-----	1254	D4530	10.59		0.61
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334		-----		-----	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345	D189	10.35		0.20
349		-----		-----	1356		-----		-----
371	D189	10.74		0.87	1379	GOST19932	10.3		0.11
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399		-----		-----	1412	D189	10.0		-0.40
444		-----		-----	1438		-----	W	-----
455		-----		-----	1459		-----		-----
467		-----		-----	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D189	10.37		0.23
562		-----		-----	1613	D189	10.1895		-0.07
575	D189	10.847	C	1.05	1643	D189	9.897		-0.57
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728	D189	10.4		0.29
631		-----		-----	1740	D189	10.21		-0.04
633		-----		-----	1761		-----		-----
663		-----		-----	1776		-----		-----
671		-----		-----	1792		-----		-----
750	GOST19932	10.5125		0.48	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781	D189	10.60		0.63	1854		-----		-----
785		-----		-----	1906		-----		-----
823	D189	10.1		-0.23	1956		-----		-----
824		-----		-----	1964		-----		-----
825		-----		-----	1995		-----		-----
850		-----		-----	6028		-----		-----
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262		-----		-----
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332	D189	9.5		-1.25
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364	D189	9.176		-1.81
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373		-----		-----
6201		-----		-----	6376		-----		-----
6203		-----		-----	6400		-----		-----
6252		-----		-----					

normality	OK
n	26
outliers	0
mean (n)	10.2329
st.dev. (n)	0.43020
R(calc.)	1.2046
st.dev.(D189:06)	0.58464
R(D189:06)	1.6370

Lab 575 first reported 15.859
Lab 1438 test result withdrawn, reported 0.973





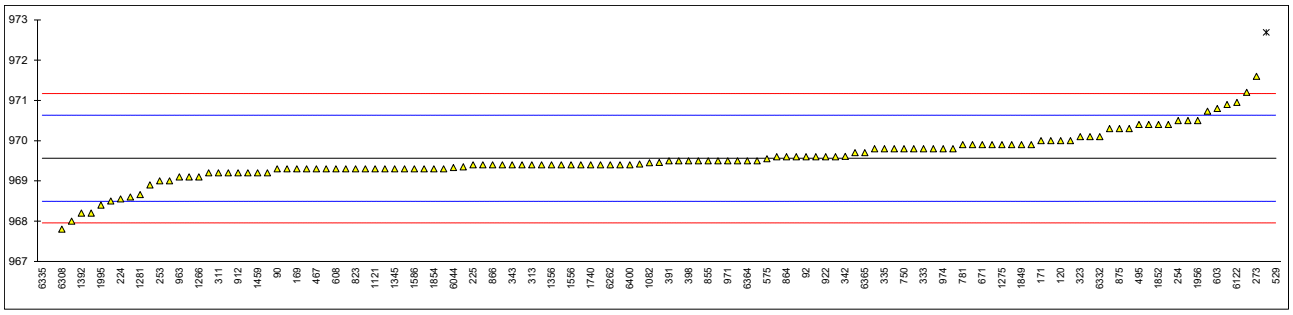
Determination of Density at 15°C on sample #21095; results in kg/m^3

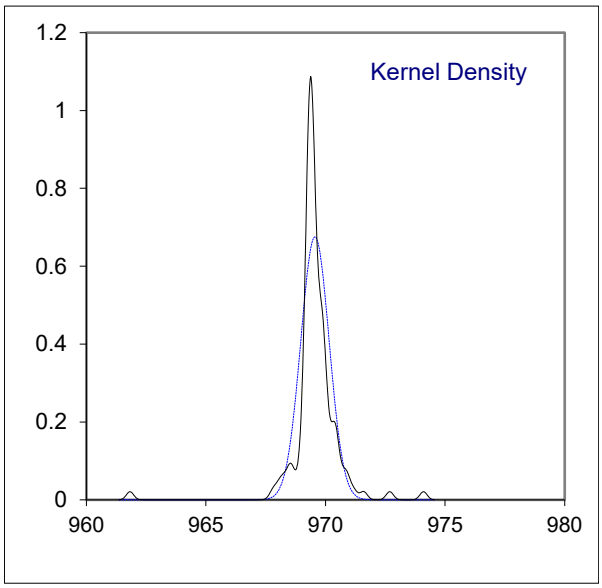
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4052	969.6		0.07	859	ISO12185	969.4		-0.31
90	D4052	969.3		-0.49	862	ISO12185	969.20		-0.68
92	D4052	969.6		0.07	863	ISO12185	969.42		-0.27
120	D4052	970.0		0.81	864	ISO12185	969.6		0.07
140	D4052	970.0		0.81	865	ISO3675	969.5		-0.12
150		-----		-----	866	ISO12185	969.4		-0.31
154	D4052	970.3		1.37	870	ISO12185	969.5		-0.12
158	D4052	969.8		0.44	875	ISO12185	970.3		1.37
159		-----		-----	886		-----		-----
168		-----		-----	912	D1298	969.2		-0.68
169	D1298	969.3		-0.49	913		-----		-----
171	ISO12185	970.0		0.81	922	D1298	969.6		0.07
175		-----		-----	962	D1298	969.3		-0.49
221	D4052	969.3		-0.49	963	ISO12185	969.1		-0.87
224	D1298	968.55		-1.89	971	IP365	969.5		-0.12
225	D4052	969.4		-0.31	974	D1298	969.8		0.44
228	D1298	968.5		-1.99	982		-----		-----
237	D4052	969.4		-0.31	1011	ISO12185	970.3		1.37
238	ISO12185	970.9		2.49	1082	ISO12185	969.45		-0.21
253	D4052	969.0		-1.05	1109	D4052	969.1		-0.87
254	D1298	970.5		1.75	1121	ISO12185	969.3		-0.49
273	D1298	971.6	C	3.80	1126	ISO12185	969.9		0.63
309		-----		-----	1135	ISO12185	969.3		-0.49
311	D1298	969.2		-0.68	1177		-----		-----
313	ISO12185	969.4		-0.31	1218		-----		-----
323	ISO12185	970.1		1.00	1233	ISO12185	969.2		-0.68
328	ISO12185	969.9		0.63	1254	D4052	969.35		-0.40
331	ISO12185	969.4		-0.31	1259	ISO12185	970.5		1.75
333	D4052	969.8		0.44	1266	ISO3675	969.1		-0.87
334	ISO12185	969.8		0.44	1269		-----		-----
335	ISO12185	969.8		0.44	1275	IP365	969.9		0.63
339		-----		-----	1281	ISO12185	968.66		-1.69
342	D4052	969.61		0.09	1320		-----		-----
343	D4052	969.4		-0.31	1345	D4052	969.3		-0.49
349		-----		-----	1356	ISO12185	969.4		-0.31
371	ISO12185	969.46		-0.19	1379	D4052	969.4		-0.31
391	ISO12185	969.5		-0.12	1384		-----		-----
398	ISO12185	969.5		-0.12	1392	DIN51757	968.2		-2.55
399	ISO12185	969.6		0.07	1412	D4052	969.3		-0.49
444		-----		-----	1438		-----		-----
455	IP365	969.3		-0.49	1459	ISO12185	969.20		-0.68
467	ISO12185	969.3		-0.49	1498		-----		-----
495	ISO12185	970.4		1.56	1510	ISO12185	970.4		1.56
511		-----		-----	1556	ISO12185	969.4		-0.31
529	D4052	974.1	C,R(0.01)	8.47	1564	D4052	969.9		0.63
557		-----		-----	1586	D4052	969.3		-0.49
562		-----		-----	1613	D1298	969.4		-0.31
575	D4052	969.55		-0.03	1643	D4052	969.8		0.44
603	D1298	970.8		2.31	1720		-----		-----
604	D4052	969.8		0.44	1724	D1298	969.2		-0.68
608	D4052	969.3		-0.49	1728	D4052	969.0		-1.05
631	D4052	972.69	R(0.01)	5.84	1740	ISO3675	969.4		-0.31
633	D1298	970.73		2.18	1761		-----		-----
663	D4052	969.40		-0.31	1776	ISO12185	961.83	R(0.01)	-14.44
671	D1298	969.9		0.63	1792	ISO12185	969.6		0.07
750	D4052	969.8		0.44	1807	D1298	969.5		-0.12
751	D1298	969.5		-0.12	1833	D4052	969.3		-0.49
753	ISO12185	969.8		0.44	1849	ISO12185	969.9		0.63
759	ISO3675	970.0		0.81	1852	ISO12185	970.4		1.56
781	ISO12185	969.9		0.63	1854	ISO12185	969.3		-0.49
785	ISO12185	969.7		0.25	1906		-----		-----
823	ISO12185	969.3		-0.49	1956	ISO3675	970.5		1.75
824	ISO12185	969.2		-0.68	1964		-----		-----
825	ISO12185	969.3		-0.49	1995	D4052	968.4		-2.17
850	ISO3675	969.6		0.07	6028	ISO12185	968.6		-1.80
851	ISO12185	968.9		-1.24	6038		-----		-----
855	ISO12185	969.50		-0.12	6039		-----		-----
858	ISO12185	969.3		-0.49	6044	D4052	969.33		-0.44

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO12185	970.4		1.56	6262	D4052	969.4		-0.31
6075	ISO12185	971.2		3.05	6308	D4052	967.8		-3.29
6092	ISO12185	969.4		-0.31	6332	D1298	970.1		1.00
6109		-----		-----	6335	D1298	0.891	R(0.01)	-1808
6122	ISO12185	970.95	C	2.59	6340	IP365	969.4		-0.31
6142	ISO12185	970.1		1.00	6364	D1298	969.5		-0.12
6143	D1298	968.2		-2.55	6365	D4052	969.7		0.25
6192	D1298	969.9		0.63	6373	ISO12185	969.5		-0.12
6201	ISO12185	969.3		-0.49	6376		-----		-----
6203	D4052	968.0		-2.92	6400	ISO12185	969.4		-0.31
6252		-----		-----					

normality	suspect
n	123
outliers	4
mean (n)	969.563
st.dev. (n)	0.5911
R(calc.)	1.655
st.dev.(ISO12185:96)	0.5357
R(ISO12185:96)	1.5

Lab 273 first reported 973.2
Lab 529 first reported 0.4741
Lab 6122 first reported 973.7





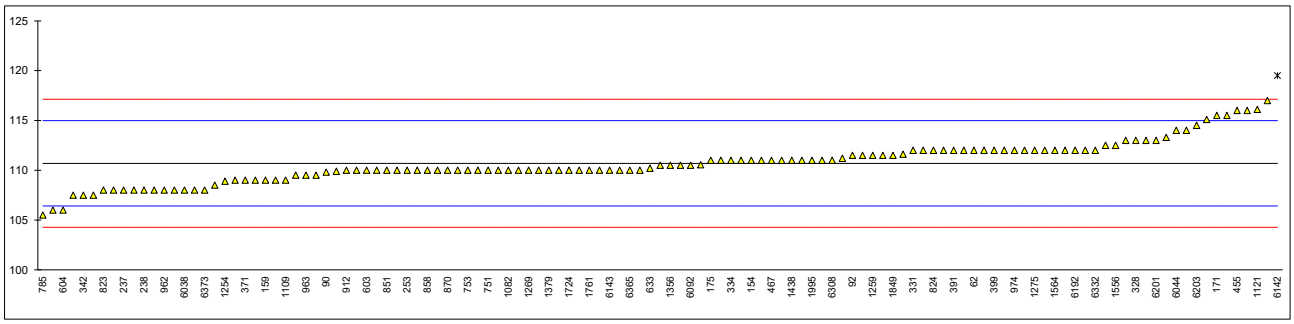
Determination of Flash Point PMcc on sample #21095; results in °C

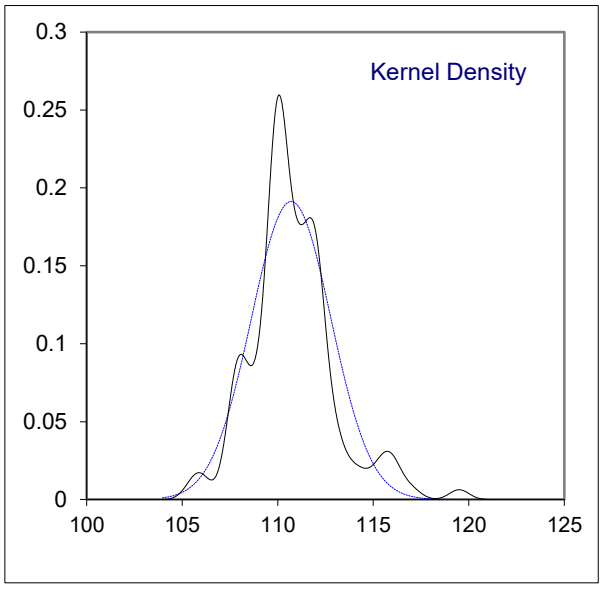
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D93-C	112.0		0.61	859	ISO2719	111		0.14
90	D93-B	109.8		-0.42	862	ISO2719-B	108.0		-1.26
92	D93-B	111.5		0.37	863	D93-B	110.5		-0.09
120	D93-B	110.0		-0.33	864	ISO2719-B	112.0		0.61
140	D93-B	>110		-----	865	ISO2719-B	109.0		-0.79
150		-----		-----	866	D93	109.5		-0.56
154	D93-B	111.0		0.14	870	D93-B	110		-0.33
158	D93-B	>110		-----	875	D93-B	108.5		-1.03
159	D93-B	109.0		-0.79	886		-----		-----
168	D93-B	107.5		-1.49	912	ISO2719-B	110		-0.33
169	D93-B	111.0		0.14	913		-----		-----
171	ISO2719-A	115.5		2.24	922	D93-B	112.0		0.61
175	D93-B	111		0.14	962	ISO2719-B	108.0		-1.26
221		-----		-----	963	ISO2719-B	109.5		-0.56
224	D93-A	110		-0.33	971	D93-B	110.0		-0.33
225	D93-B	110.0		-0.33	974	D93-B	112		0.61
228	D93-A	110.0		-0.33	982		-----		-----
237	D93	108		-1.26	1011	ISO2719-B	112.0		0.61
238	D93-B	108		-1.26	1082	ISO2719-A	110		-0.33
253	D93-B	110		-0.33	1109	D93-A	109.0		-0.79
254	D93-B	110		-0.33	1121	ISO2719-B	116.1		2.52
273	D93-B	112.0		0.61	1126		-----		-----
309		-----		-----	1135	ISO2719-B	110.0		-0.33
311	D93-B	110.0		-0.33	1177		-----		-----
313	D93-B	112.0		0.61	1218		-----		-----
323		-----		-----	1233	ISO2719-A	111.5		0.37
328	ISO2719-B	113.0		1.07	1254	D93-B	108.9		-0.84
331	D93-B	112		0.61	1259	ISO2719-B	111.5	C	0.37
333	D93-B	111.0		0.14	1266	ISO2719-B	110.55		-0.07
334	D93-B	111.0		0.14	1269	D93-B	110.0		-0.33
335		-----		-----	1275	IP34-B	112.0		0.61
339		-----		-----	1281	ISO2719-B	115.1	C	2.05
342	ISO2719-B	107.5		-1.49	1320		-----		-----
343	ISO2719-B	112.5		0.84	1345	D93-B	110.0		-0.33
349		-----		-----	1356	ISO2719-B	110.5		-0.09
371	D93-B	109.0		-0.79	1379	D93-A	110.0		-0.33
391	ISO2719-B	112		0.61	1384		-----		-----
398	ISO2719-B	113.0		1.07	1392		-----		-----
399	ISO2719-B	112.0		0.61	1412	D93-B	108.0		-1.26
444		-----		-----	1438	D93-B	111		0.14
455	D93-B	116.0		2.47	1459	ISO2719-A	115.5		2.24
467	ISO2719-B	111		0.14	1498	D93-B	112		0.61
495	ISO2719-B	112		0.61	1510	ISO2719-B	107.5		-1.49
511		-----		-----	1556	ISO2719-B	112.5		0.84
529	D93-B	109.0		-0.79	1564	D93-B	112.0		0.61
557		-----		-----	1586	D93-B	110.0		-0.33
562	D93-A	111.2		0.23	1613	D93-B	110.5		-0.09
575		-----		-----	1643	D93-B	109.9		-0.37
603	D93-B	110		-0.33	1720		-----		-----
604	D93-B	106		-2.19	1724	D93-B	110		-0.33
608	D93-A	113.0		1.07	1728	D93-B	110		-0.33
631	D93-B	108.0		-1.26	1740	D93-B	111.5		0.37
633	D93-B	110.2		-0.23	1761	ISO2719-B	110.0		-0.33
663	D93-B	111.6		0.42	1776		-----		-----
671	D93-B	>110		-----	1792	D93-B	109.5		-0.56
750	ISO2719-B	108.0		-1.26	1807	D93-B	112		0.61
751	D93-B	110.0		-0.33	1833		110		-0.33
753	D93-B	110.0		-0.33	1849	ISO2719-B	111.5		0.37
759	ISO2719-B	111.0		0.14	1852	ISO2719-A	117		2.94
781	ISO2719-B	106.0		-2.19	1854	ISO2719-B	111		0.14
785	ISO2719-B	105.5		-2.43	1906		-----		-----
823	ISO2719-B	108.0		-1.26	1956		-----		-----
824	ISO2719-B	112		0.61	1964		-----		-----
825		-----		-----	1995	D93-A	111		0.14
850	ISO2719-B	110		-0.33	6028	ISO2719-A	116.0		2.47
851	ISO2719-B	110		-0.33	6038	ISO2719-A	108	C	-1.26
855	D93-B	109.0		-0.79	6039		-----		-----
858	D93-B	110.0		-0.33	6044	D93-B	114		1.54

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO2719-B	111.0		0.14	6262	D93-B	112.0		0.61
6075	ISO2719-B	108.0		-1.26	6308	D93-C	111		0.14
6092	D93-B	110.5		-0.09	6332	D93-B	112.0		0.61
6109		-----		-----	6335	ISO2719-A	>100		-----
6122	ISO2719-B	113.3		1.21	6340	D93-B	110.0		-0.33
6142	ISO2719-B	119.5	R(0.01)	4.11	6364	D93-B	114.0		1.54
6143	D93-B	110		-0.33	6365	D93-B	110.0		-0.33
6192		112		0.61	6373	ISO2719-B	108.0		-1.26
6201	ISO2719-B	113		1.07	6376		-----		-----
6203	ISO2719-B	114.5		1.77	6400	ISO2719-B	110.0		-0.33
6252		-----		-----					

normality	OK
n	122
outliers	1
mean (n)	110.702
st.dev. (n)	2.0871
R(calc.)	5.844
st.dev.(ISO2719-B:16)	2.1429
R(ISO2719-B:16)	6

Lab 1259 first reported 124
Lab 1281 first reported 125.1
Lab 6038 first reported 122.0





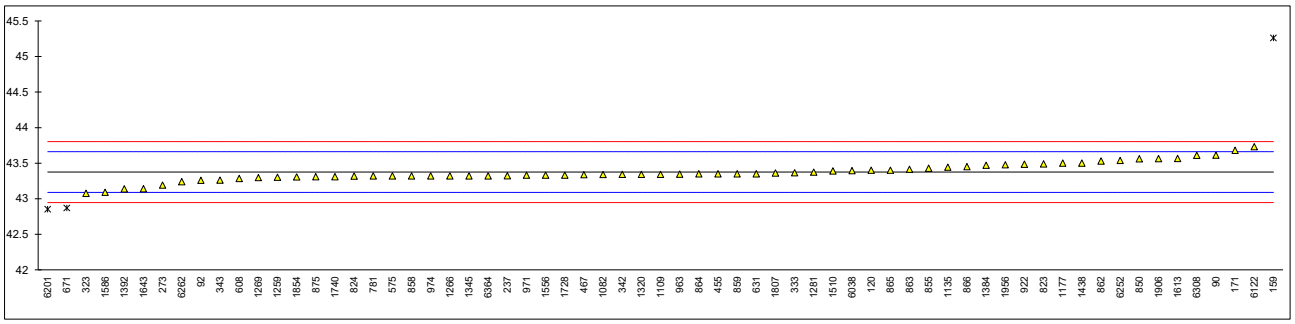
Determination of Heat of Combustion (Gross) on sample #21095; results in MJ/kg

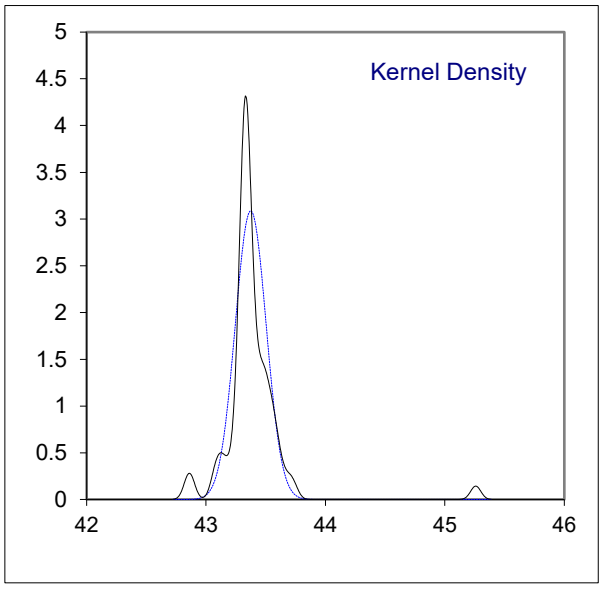
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	D4868	43.35		-0.17
90	D240	43.612		1.66	862	D240	43.529		1.08
92	D240	43.259		-0.81	863	GB/T384	43.413		0.27
120	D4868	43.40		0.18	864	D4868	43.35		-0.17
140		-----		-----	865	GB/T384	43.40		0.18
150		-----		-----	866	D240	43.451		0.53
154		-----		-----	870		-----		-----
158		-----		-----	875	D4868	43.31		-0.45
159	D240	45.259	R(0.01)	13.19	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171	D240	43.680		2.14	922	D240	43.484		0.77
175		-----		-----	962		-----		-----
221		-----		-----	963	D240	43.345		-0.21
224		-----		-----	971	D240	43.33		-0.31
225		-----		-----	974	D4868	43.32		-0.38
228		-----		-----	982		-----		-----
237	D4868	43.322		-0.37	1011		-----		-----
238		-----		-----	1082	D240	43.3392		-0.25
253		-----		-----	1109	D4868	43.341		-0.24
254		-----		-----	1121		-----		-----
273	D4868	43.19		-1.29	1126		-----		-----
309		-----		-----	1135	D240	43.442		0.47
311		-----		-----	1177	DIN51900-1/2	43.500		0.88
313		-----		-----	1218		-----		-----
323	D240	43.075		-2.10	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259	D4868	43.30		-0.52
333	D240	43.365		-0.07	1266	D4868	43.32		-0.38
334		-----		-----	1269	DIN51900-1	43.2965		-0.55
335		-----		-----	1275		-----		-----
339		-----		-----	1281		43.372		-0.02
342	D4868	43.34		-0.24	1320		43.34		-0.24
343	D240	43.260		-0.80	1345	D4868	43.32		-0.38
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384	In house	43.47		0.67
398		-----		-----	1392	D240	43.137		-1.66
399		-----		-----	1412		-----		-----
444		-----		-----	1438		43.5		0.88
455	D240	43.350	C	-0.17	1459		-----		-----
467	D4868	43.337		-0.26	1498		-----		-----
495		-----		-----	1510	D240	43.39		0.11
511		-----		-----	1556	D4868	43.33		-0.31
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D240	43.09	C	-1.99
562		-----		-----	1613	D240	43.566		1.34
575		43.32		-0.38	1643	D240	43.1403		-1.64
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608	D240	43.2833		-0.64	1728	D4868	43.3304		-0.31
631	D240	43.350		-0.17	1740	D240	43.31		-0.45
633		-----		-----	1761		-----		-----
663		-----		-----	1776		-----		-----
671	D240	42.87	C,R(0.05)	-3.53	1792		-----		-----
750		-----		-----	1807		43.36		-0.10
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781	D4868	43.32		-0.38	1854	D240	43.305		-0.49
785		-----		-----	1906	D4809	43.563		1.32
823	KS M2057	43.489		0.80	1956	NF M07-030	43.476		0.71
824	D240	43.317		-0.40	1964		-----		-----
825		-----		-----	1995		-----		-----
850	GB/T384	43.560		1.30	6028		-----		-----
851		-----		-----	6038	PN-C04062	43.394		0.14
855	GB/T384	43.428		0.37	6039		-----		-----
858	D4868	43.32		-0.38	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262	D240	43.24		-0.94
6075		-----		-----	6308	ISO8217	43.61		1.65
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122	D240	43.730		2.49	6340		-----		-----
6142		-----		-----	6364	D4868	43.32		-0.38
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373		-----		-----
6201	D240	42.852	R(0.05)	-3.66	6376		-----		-----
6203		-----		-----	6400		-----		-----
6252		43.5386		1.15					

normality	OK
n	62
outliers	3
mean (n)	43.3747
st.dev. (n)	0.12917
R(calc.)	0.3617
st.dev.(D240:19)	0.14286
R(D240:19)	0.40

Lab 455 first reported 43350.000
Lab 671 first reported 43.87
Lab 1586 first reported 43090





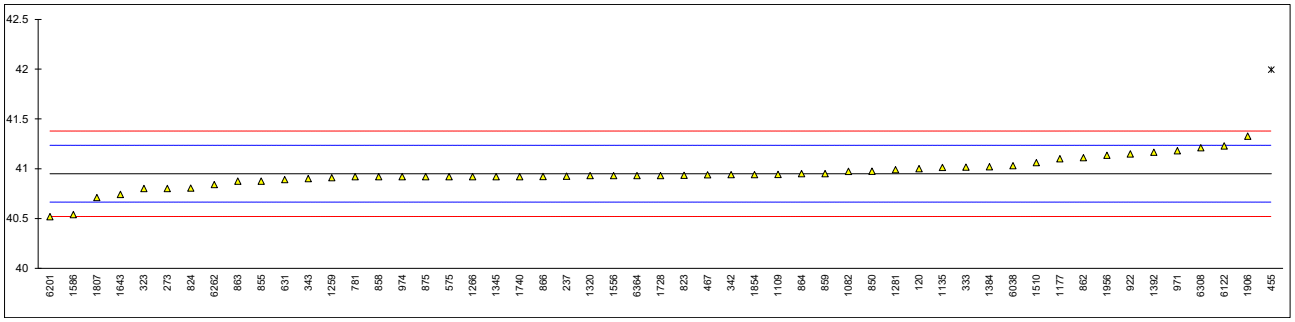
Determination of Heat of Combustion (Net) on sample #21095; results in MJ/kg

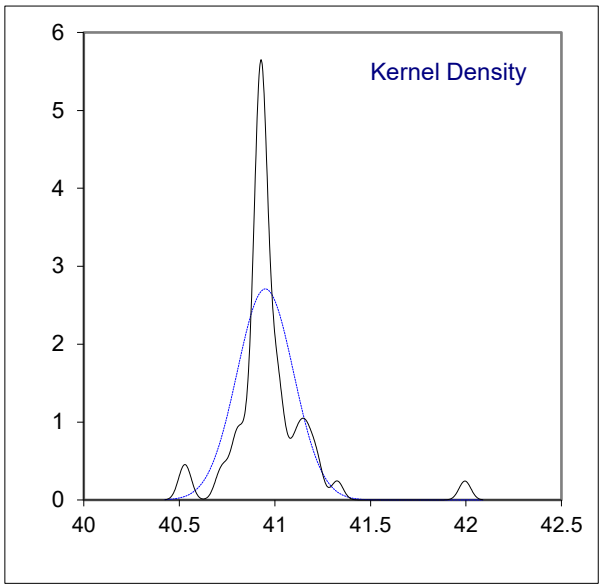
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	D4868	40.95		0.00
90		-----		-----	862	D240	41.110		1.12
92		-----		-----	863	GB/T384	40.874		-0.53
120	D4868	41.00		0.35	864	D4868	40.95		0.00
140		-----		-----	865		-----		-----
150		-----		-----	866	D240	40.922		-0.20
154		-----		-----	870		-----		-----
158		-----		-----	875	D4868	40.92		-0.21
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922	D240	41.149		1.39
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971	D240	41.18		1.61
225		-----		-----	974	D4868	40.92		-0.21
228		-----		-----	982		-----		-----
237	D4868	40.924		-0.18	1011		-----		-----
238		-----		-----	1082	D240	40.97317		0.16
253		-----		-----	1109	D4868	40.943		-0.05
254		-----		-----	1121		-----		-----
273	D4868	40.8		-1.05	1126		-----		-----
309		-----		-----	1135	D240	41.012		0.43
311		-----		-----	1177	DIN51900-1/2	41.100		1.05
313		-----		-----	1218		-----		-----
323	D240	40.800		-1.05	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259	D4868	40.91		-0.28
333	D240	41.015		0.45	1266	D4868	40.92		-0.21
334		-----		-----	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		40.989		0.27
342	D4868	40.94		-0.07	1320		40.93		-0.14
343	D240	40.900		-0.35	1345	D4868	40.92		-0.21
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384	In house	41.02		0.49
398		-----		-----	1392	D240	41.165		1.50
399		-----		-----	1412		-----		-----
444		-----		-----	1438		-----		-----
455	D240	41.995	C,R(0.01)	7.31	1459		-----		-----
467	D4868	40.938		-0.08	1498		-----		-----
495		-----		-----	1510	D240	41.06		0.77
511		-----		-----	1556	D4868	40.93		-0.14
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D240	40.54	C	-2.87
562		-----		-----	1613		-----		-----
575		40.92		-0.21	1643	D240	40.7424		-1.45
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728	D4868	40.9311		-0.13
631	D240	40.89		-0.42	1740	D240	40.92		-0.21
633		-----		-----	1761		-----		-----
663		-----		-----	1776		-----		-----
671		-----		-----	1792		-----		-----
750		-----		-----	1807		40.71		-1.68
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781	D4868	40.92		-0.21	1854	D240	40.940		-0.07
785		-----		-----	1906	D4809	41.326		2.63
823	KS M2057	40.933		-0.12	1956	NF M07-030	41.135		1.29
824	D240	40.805		-1.02	1964		-----		-----
825		-----		-----	1995		-----		-----
850	GB/T384	40.974		0.17	6028		-----		-----
851		-----		-----	6038	PN-C04062	41.030		0.56
855	GB/T384	40.875		-0.53	6039		-----		-----
858	D4868	40.92		-0.21	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262	D240	40.84		-0.77
6075		-----		-----	6308	ISO8217	41.21		1.82
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122	D240	41.228		1.95	6340		-----		-----
6142		-----		-----	6364	D4868	40.93		-0.14
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373		-----		-----
6201	D240	40.518		-3.02	6376		-----		-----
6203		-----		-----	6400		-----		-----
6252		-----		-----					

normality	suspect
n	52
outliers	1
mean (n)	40.9500
st.dev. (n)	0.14736
R(calc.)	0.4126
st.dev.(D240:19)	0.14286
R(D240:19)	0.40

Lab 455 first reported 41995,300
Lab 1586 first reported 40545





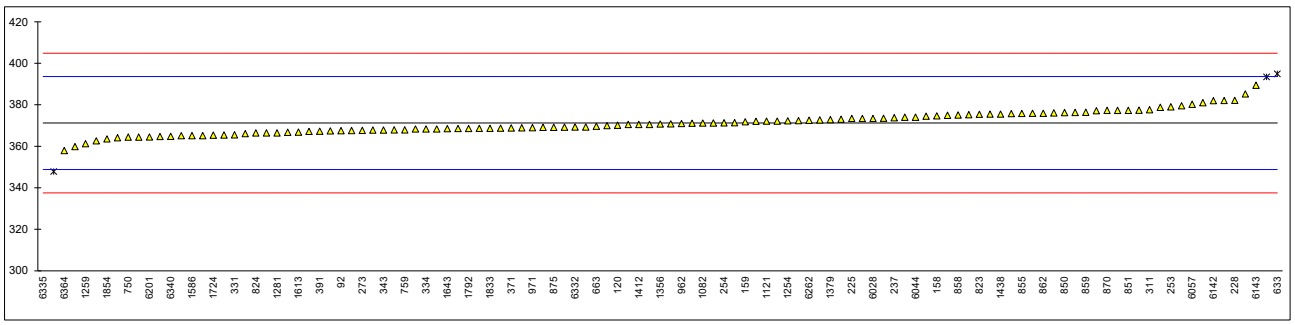
Determination of Kinematic Viscosity at 50°C on sample #21095; results in mm²/s

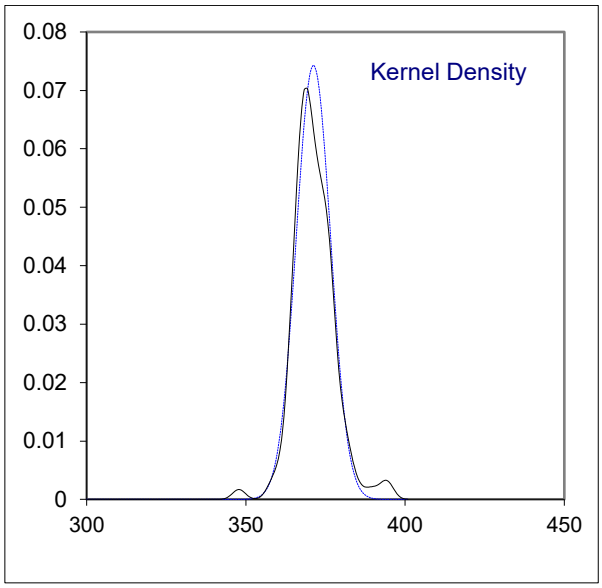
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D445	370.5		-0.06	859	D445	376.4		0.46
90	D445	367.16		-0.36	862	ISO3104	375.89		0.42
92	D445	367.540		-0.33	863	D445	374.0		0.25
120	D445	370.13		-0.10	864	ISO3104	375.5		0.38
140	D445	374.5		0.29	865	ISO3104	379.5		0.74
150		-----		-----	866	D445	374.92		0.33
154	D445	377.3		0.54	870	ISO3104	377.28		0.54
158	D445	374.6		0.30	875	D445	369.1		-0.19
159	D445	371.8		0.05	886		-----		-----
168	D445	372.1		0.08	912	ISO3104	376.1		0.44
169	D445	373.5		0.20	913		-----		-----
171	ISO3104	367.8		-0.30	922	D445	375.2		0.35
175	D445	369.2		-0.18	962	D445	370.9		-0.03
221	D445	368.3		-0.26	963	ISO3104	371.2		0.00
224		-----		-----	971	D445	369.0		-0.20
225	D445	373.4		0.19	974	D445	371.4		0.02
228	D445	382.1		0.97	982		-----		-----
237	D445	373.76		0.23	1011		-----		-----
238		-----		-----	1082	ISO3104	371.13		-0.01
253	D445	379.0		0.69	1109	D445	365.04		-0.55
254	D445	371.3		0.01	1121	ISO3104	372.06		0.07
273	D445	367.7		-0.31	1126	ISO3104	393.4	R(0.01)	1.98
309		-----		-----	1135	ISO3104	373.4		0.19
311	D445	377.6		0.57	1177		-----		-----
313	D445	359.8		-1.02	1218		-----		-----
323		-----		-----	1233	ISO3104	377.1		0.52
328	ISO3104	372.7		0.13	1254	D445	372.23		0.09
331	D445Mod.	365.5		-0.51	1259	ISO3104	361.22		-0.89
333	D445	366.1		-0.46	1266	ISO3104	368.6		-0.23
334	ISO3104	368.3		-0.26	1269		-----		-----
335		-----		-----	1275	IP71	347.806	R(0.01)	-2.09
339		-----		-----	1281	ISO3104	366.418		-0.43
342	ISO3104	373.0		0.16	1320		-----		-----
343	ISO3104	367.8		-0.30	1345	D445	364.4		-0.61
349		-----		-----	1356	ISO3104	370.7		-0.05
371	D445	368.79		-0.22	1379	D445	372.8		0.14
391	ISO3104	367.2		-0.36	1384		-----		-----
398		-----		-----	1392		-----		-----
399	ISO3104	366.4		-0.43	1412	D445	370.5		-0.06
444		-----		-----	1438	D445	375.5		0.38
455	IP71	369.1		-0.19	1459		-----		-----
467	ISO3104	367.56		-0.33	1498		-----		-----
495	ISO3104	377.396		0.55	1510	ISO3104	364.1		-0.63
511	D445	372.307		0.10	1556	ISO3104	367.87		-0.30
529	D445	368.35		-0.26	1564	D445	365.4		-0.52
557		-----		-----	1586	D445	365.1		-0.55
562		-----		-----	1613	D445	366.8		-0.39
575	D445	375.69		0.40	1643	D445	368.46		-0.25
603	D445	382.0		0.96	1720		-----		-----
604	D445	369.27		-0.17	1724	D445	365.37		-0.52
608	D445	371.07		-0.01	1728	D445	375.86		0.41
631	D445	385.19		1.25	1740	ISO3104	370.5		-0.06
633	D445	394.896	R(0.01)	2.11	1761	ISO3104	376.30		0.45
663	D445	369.59		-0.15	1776		-----		-----
671	D445	378.74		0.67	1792	ISO3104	368.52		-0.24
750	ISO3104	364.389		-0.61	1807	ISO3104	381.0		0.87
751	D445	364.7		-0.58	1833		368.6		-0.23
753	ISO3104	367.4		-0.34	1849		-----		-----
759	ISO3104	367.9		-0.30	1852	ISO3104	365.15		-0.54
781	ISO3104	366.7		-0.40	1854		363.5		-0.69
785	ISO3104	362.6		-0.77	1906		-----		-----
823	D445	375.4		0.37	1956		-----		-----
824	ISO3104	366.4		-0.43	1964		-----		-----
825	ISO3104	368.9		-0.21	1995	D445	372.02		0.07
850	ISO3104	376.2		0.44	6028	ISO3104	373.4		0.19
851	ISO3104	377.3		0.54	6038		-----		-----
855	D445	375.8		0.41	6039		-----		-----
858	D445	375.1		0.35	6044	D445	374	C	0.25

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO3104	380.2		0.80	6262	D445	372.5		0.11
6075	ISO3104	369.9		-0.12	6308		-----		-----
6092	D445	370.8		-0.04	6332	D445	369.23		-0.18
6109		-----		-----	6335	D445	155.25	R(0.01)	-19.25
6122		-----		-----	6340	D445	364.8		-0.57
6142	ISO3104	381.95		0.96	6364	D445	357.98		-1.18
6143	D445	389.4		1.62	6365	D445	368.5		-0.24
6192		-----		-----	6373		-----		-----
6201	D445	364.5		-0.60	6376		-----		-----
6203		-----		-----	6400	ISO3104	368.7		-0.22
6252		-----		-----					

normality	OK
n	113
outliers	4
mean (n)	371.2198
st.dev. (n)	5.36973
R(calc.)	15.0352
st.dev.(ISO3104:20)	11.21747
R(ISO3104:20)	31.4089

Lab 6044 first reported 33.35





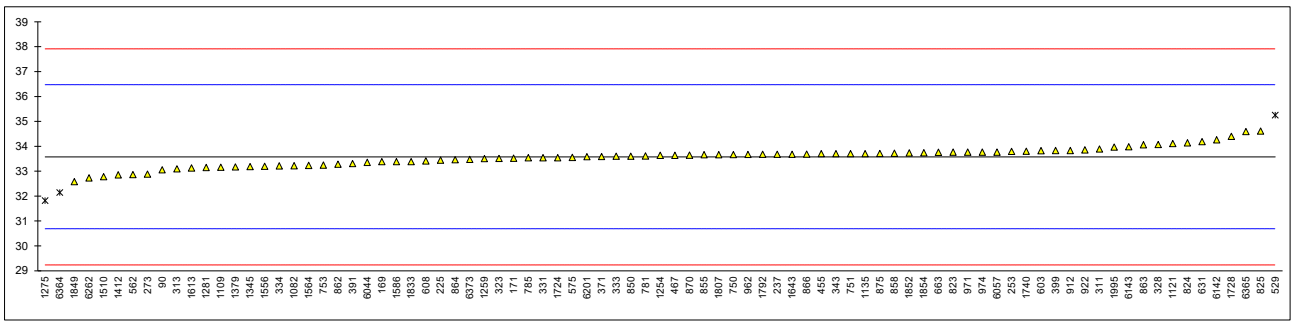
Determination of Kinematic Viscosity at 100°C on sample #21095; results in mm^2/s

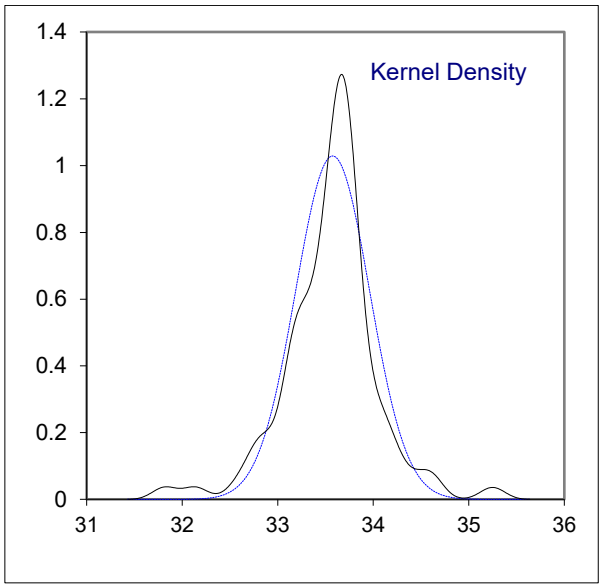
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90	D445	33.054		-0.36	862	ISO3104	33.280		-0.20
92		-----		-----	863	ISO3104	34.06		0.33
120		-----		-----	864	ISO3104	33.46		-0.08
140		-----		-----	865		-----		-----
150		-----		-----	866	D445	33.683		0.07
154		-----		-----	870	D445	33.642		0.05
158		-----		-----	875	D445	33.71		0.09
159		-----		-----	886		-----		-----
168		-----		-----	912	ISO3104	33.83		0.18
169	D445	33.38		-0.14	913		-----		-----
171	ISO3104	33.52		-0.04	922	D445	33.85		0.19
175		-----		-----	962	ISO3104	33.67		0.07
221		-----		-----	963		-----		-----
224		-----		-----	971	D445	33.76		0.13
225	D445	33.44		-0.09	974	D445	33.76		0.13
228		-----		-----	982		-----		-----
237	D445	33.68		0.07	1011		-----		-----
238		-----		-----	1082	ISO3104	33.218		-0.25
253	D445	33.79		0.15	1109	D445	33.16		-0.29
254		-----		-----	1121	ISO3104	34.107		0.37
273	D445	32.88		-0.48	1126		-----		-----
309		-----		-----	1135	ISO3104	33.70		0.09
311	D445	33.89		0.22	1177		-----		-----
313	D445	33.09		-0.34	1218		-----		-----
323	ISO3104	33.51		-0.05	1233		-----		-----
328	ISO3104	34.07		0.34	1254	D445	33.635		0.04
331	D445Mod.	33.54		-0.02	1259	ISO3104	33.50		-0.05
333	D445	33.60		0.02	1266		-----		-----
334	ISO3104	33.21		-0.25	1269		-----		-----
335		-----		-----	1275	IP71	31.8182	R(0.05)	-1.22
339		-----		-----	1281	ISO3104	33.145		-0.30
342		-----		-----	1320		-----		-----
343	ISO3104	33.70		0.09	1345	D445	33.182		-0.27
349		-----		-----	1356		-----		-----
371	D445	33.59		0.01	1379	D445	33.17		-0.28
391	ISO3104	33.30		-0.19	1384		-----		-----
398		-----		-----	1392		-----		-----
399	ISO3104	33.83		0.18	1412	D445	32.85		-0.50
444		-----		-----	1438		-----		-----
455	IP71	33.70		0.09	1459		-----		-----
467	ISO3104	33.638		0.04	1498		-----		-----
495		-----		-----	1510		32.78		-0.55
511		-----		-----	1556	ISO3104	33.1920		-0.27
529	D445	35.25	R(0.05)	1.16	1564	D445	33.23		-0.24
557		-----		-----	1586	D445	33.38		-0.14
562	D445	32.8630573		-0.49	1613	D445	33.13		-0.31
575	D445	33.55		-0.02	1643	D445	33.68		0.07
603	D445	33.82		0.17	1720		-----		-----
604		-----		-----	1724	D445	33.54		-0.02
608	D445	33.41		-0.11	1728	D445	34.4		0.57
631	D445	34.186		0.42	1740	ISO3104	33.80		0.16
633		-----		-----	1761		-----		-----
663	D445	33.758		0.13	1776		-----		-----
671		-----		-----	1792	ISO3104	33.678		0.07
750	ISO3104	33.6646		0.06	1807	ISO3104	33.66		0.06
751	D445	33.70		0.09	1833		33.38		-0.14
753	ISO3104	33.24		-0.23	1849	ISO3104	32.58		-0.69
759		-----		-----	1852	ISO3104	33.731		0.11
781	ISO3104	33.61		0.02	1854		33.74		0.11
785	ISO3104	33.54		-0.02	1906		-----		-----
823	ISO3104	33.76		0.13	1956		-----		-----
824	ISO3104	34.14		0.39	1964		-----		-----
825	ISO3104	34.61		0.72	1995	D445	33.97		0.27
850	ISO3104	33.60		0.02	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D445	33.66		0.06	6039		-----		-----
858	D445	33.72		0.10	6044	D445	33.35	C	-0.16

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO3104	33.76		0.13	6262	D445	32.73		-0.58
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142	ISO3104	34.255		0.47	6364	D445	32.14	R(0.05)	-0.99
6143	D445	33.98		0.28	6365	D445	34.59		0.70
6192		-----		-----	6373	ISO3104	33.47		-0.07
6201	D445	33.58		0.00	6376		-----		-----
6203		-----		-----	6400		-----		-----
6252		-----		-----					

normality	OK
n	82
outliers	3
mean (n)	33.5756
st.dev. (n)	0.38779
R(calc.)	1.0858
st.dev.(ISO3104:20)	1.44615
R(ISO3104:20)	4.0492

Lab 6044 first reported 374



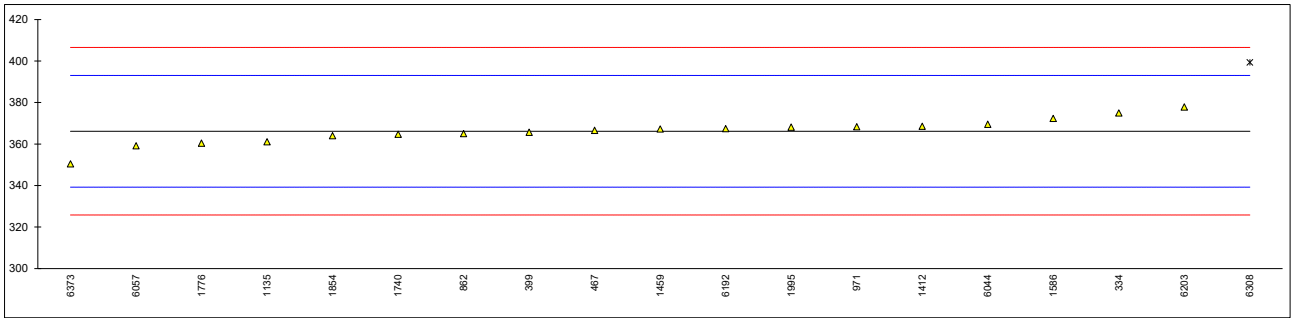


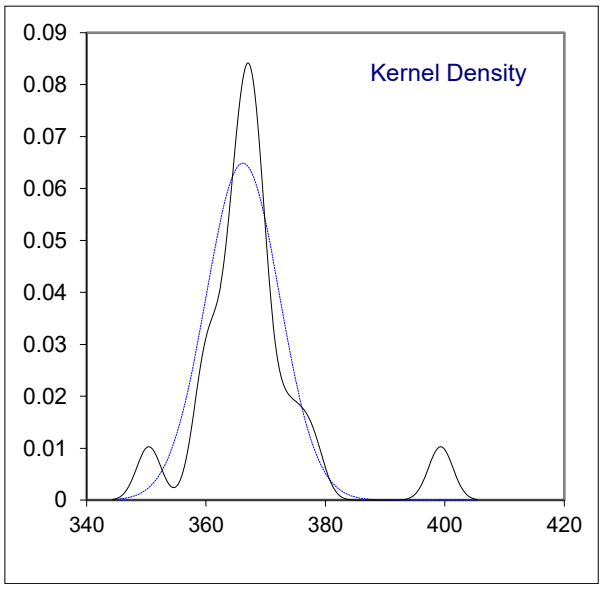
Determination of Kinematic Viscosity Stabinger at 50°C on sample #21095; results in mm^2/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90		-----		-----	862	D7042	364.95		-0.09
92		-----		-----	863		-----		-----
120		-----		-----	864		-----		-----
140		-----		-----	865		-----		-----
150		-----		-----	866		-----		-----
154		-----		-----	870		-----		-----
158		-----		-----	875		-----		-----
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922		-----		-----
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971	D7042	368.3		0.16
225		-----		-----	974		-----		-----
228		-----		-----	982		-----		-----
237		-----		-----	1011		-----		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109		-----		-----
254		-----		-----	1121		-----		-----
273		-----		-----	1126		-----		-----
309		-----		-----	1135	D7042	361.1		-0.38
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	D7042	374.9		0.65	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345		-----		-----
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	D7042	365.6		-0.04	1412	D7042	368.5		0.17
444		-----		-----	1438		-----		-----
455		-----		-----	1459	D7042	367.23		0.08
467	D7042	366.60		0.03	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D7042	372.3		0.46
562		-----		-----	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728		-----		-----
631		-----		-----	1740	D7042	364.7		-0.11
633		-----		-----	1761		-----		-----
663		-----		-----	1776	D7042	360.40		-0.43
671		-----		-----	1792		-----		-----
750		-----		-----	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781		-----		-----	1854		364.0		-0.16
785		-----		-----	1906		-----		-----
823		-----		-----	1956		-----		-----
824		-----		-----	1964		-----		-----
825		-----		-----	1995	D7042	368.12		0.15
850		-----		-----	6028		-----		-----
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044	D7042	369.49		0.25

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D7042	359.1		-0.52	6262		-----		-----
6075		-----		-----	6308	D7042	399.3	G(0.01)	2.46
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365		-----		-----
6192	D7042	367.4		0.09	6373	D7042	350.4		-1.17
6201		-----		-----	6376		-----		-----
6203	D7042	377.8		0.86	6400		-----		-----
6252		-----		-----					

normality	suspect
n	18
outliers	1
mean (n)	366.1605
st.dev. (n)	6.15016
R(calc.)	17.2204
st.dev.(D7042:21)	13.45640
R(D7042:21)	37.6779



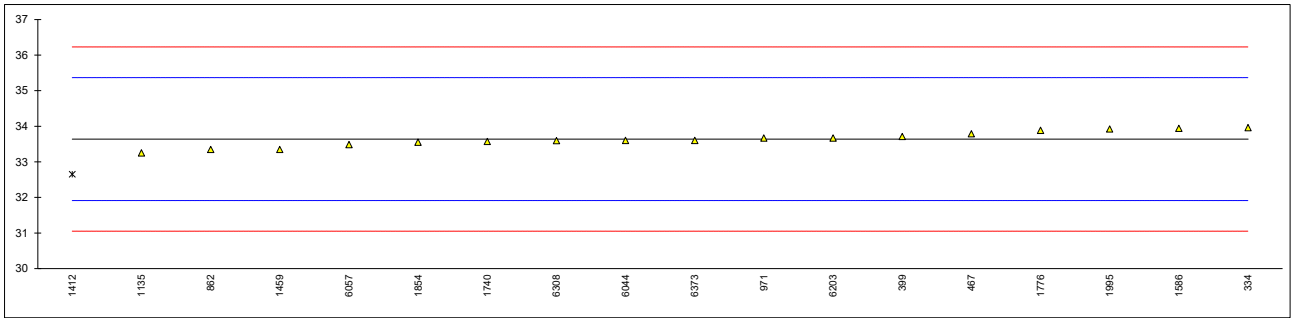


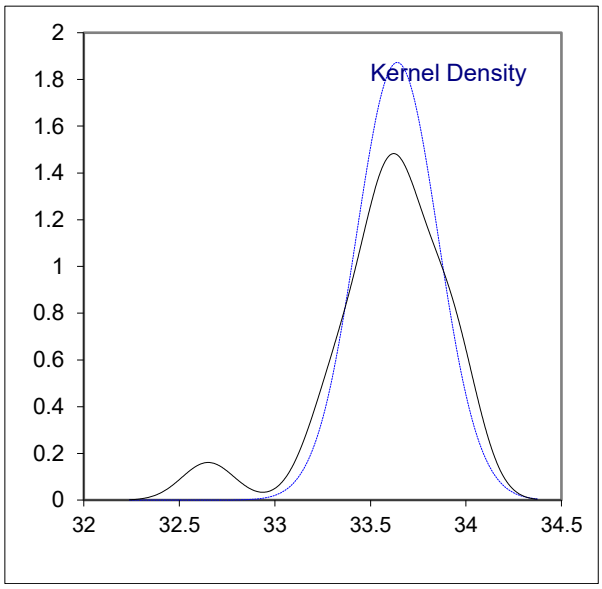
Determination of Kinematic Viscosity Stabinger at 100°C on sample #21095; results in mm²/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90		-----		-----	862	D7042	33.347		-0.34
92		-----		-----	863		-----		-----
120		-----		-----	864		-----		-----
140		-----		-----	865		-----		-----
150		-----		-----	866		-----		-----
154		-----		-----	870		-----		-----
158		-----		-----	875		-----		-----
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922		-----		-----
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971	D7042	33.67		0.04
225		-----		-----	974		-----		-----
228		-----		-----	982		-----		-----
237		-----		-----	1011		-----		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109		-----		-----
254		-----		-----	1121		-----		-----
273		-----		-----	1126		-----		-----
309		-----		-----	1135	D7042	33.25		-0.45
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	D7042	33.96		0.37	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345		-----		-----
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	D7042	33.71		0.08	1412	D7042	32.65	G(0.01)	-1.15
444		-----		-----	1438		-----		-----
455		-----		-----	1459	D7042	33.347		-0.34
467	D7042	33.787		0.17	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D7042	33.94		0.35
562		-----		-----	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728		-----		-----
631		-----		-----	1740	D7042	33.57		-0.08
633		-----		-----	1761		-----		-----
663		-----		-----	1776	D7042	33.884		0.28
671		-----		-----	1792		-----		-----
750		-----		-----	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781		-----		-----	1854		33.55		-0.10
785		-----		-----	1906		-----		-----
823		-----		-----	1956		-----		-----
824		-----		-----	1964		-----		-----
825		-----		-----	1995	D7042	33.92		0.32
850		-----		-----	6028		-----		-----
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044	D7042	33.599		-0.05

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D7042	33.48		-0.18	6262		-----		-----
6075		-----		-----	6308	D7042	33.59		-0.06
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373	D7042	33.60		-0.05
6201		-----		-----	6376		-----		-----
6203	D7042	33.67		0.04	6400		-----		-----
6252		-----		-----					

normality	OK
n	17
outliers	1
mean (n)	33.6396
st.dev. (n)	0.21313
R(calc.)	0.5968
st.dev.(D7042:21)	0.86334
R(D7042:21)	2.4173



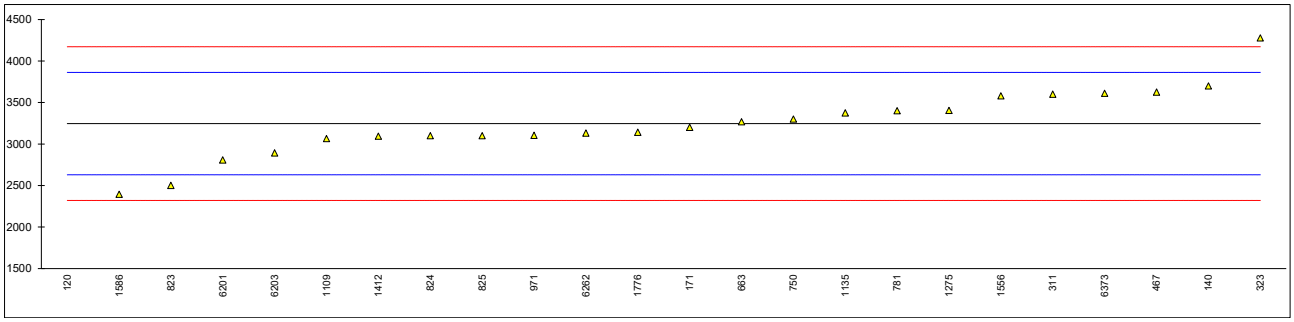


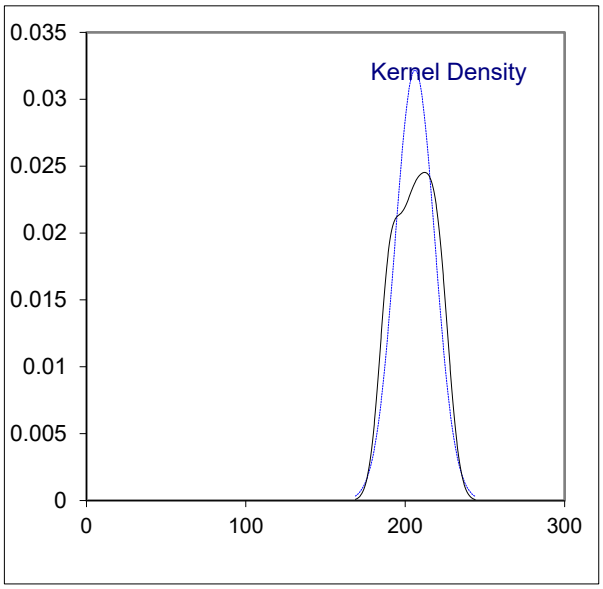
Determination of Nitrogen on sample #21095; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90		-----		-----	862		-----		-----
92		-----		-----	863		-----		-----
120	D4629	1325.426	R(0.01)	-6.23	864		-----		-----
140	D5762 Gravimetric	3700		1.47	865		-----		-----
150		-----		-----	866		-----		-----
154		-----		-----	870		-----		-----
158		-----		-----	875		-----		-----
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171	D5762 Gravimetric	3200		-0.15	922		-----		-----
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971	D5762 Gravimetric	3105		-0.46
225		-----		-----	974		-----		-----
228		-----		-----	982		-----		-----
237		-----		-----	1011		-----		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109	D4629	3065		-0.59
254		-----		-----	1121		-----		-----
273		-----		-----	1126		-----		-----
309		-----		-----	1135	D4629	3374.6		0.42
311	D5762 Volumetric	3600		1.15	1177		-----		-----
313		-----		-----	1218		-----		-----
323	D5762 Gravimetric	4278		3.34	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334		-----		-----	1269		-----		-----
335		-----		-----	1275	IP379	3404.3		0.51
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345		-----		-----
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399		-----		-----	1412	D5762 Gravimetric	3093		-0.50
444		-----		-----	1438		-----		-----
455		-----		-----	1459		-----		-----
467	D5762 Gravimetric	3625		1.23	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	D5762 Volumetric	3580		1.08
529		-----		-----	1564		-----		-----
557		-----		-----	1586	D5762 Volumetric	2393		-2.77
562		-----		-----	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728		-----		-----
631		-----		-----	1740		-----		-----
633		-----		-----	1761		-----		-----
663	D5762 Gravimetric	3267		0.07	1776	D5762 Volumetric	3140		-0.35
671		-----		-----	1792		-----		-----
750	D5762	3300		0.17	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781	D3228	3400		0.50	1854		-----		-----
785		-----		-----	1906		-----		-----
823	D5762 Gravimetric	2500		-2.42	1956		-----		-----
824	D5762 Volumetric	3100		-0.47	1964		-----		-----
825	D5762 Gravimetric	3100		-0.47	1995		-----		-----
850		-----		-----	6028		-----		-----
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262	D4629	3132		-0.37
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373	D4629	3610		1.18
6201	D5762 Gravimetric	2808		-1.42	6376		-----		-----
6203	D5762 Gravimetric	2892.6		-1.15	6400		-----		-----
6252		-----		-----					

normality	suspect
n	23
outliers	1
mean (n)	3246.41
st.dev. (n)	404.447
R(calc.)	1132.45
st.dev.(D5762:18a)	308.409
R(D5762:18a)	863.55





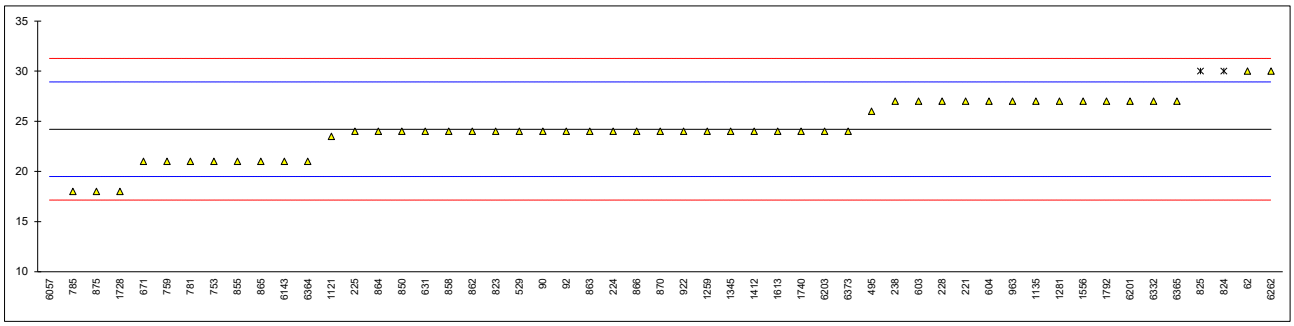
Determination of Pour Point Lower on sample #21095; results in °C

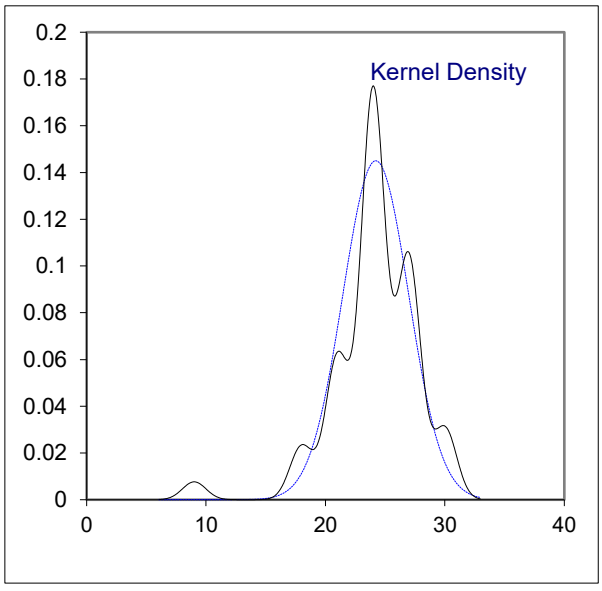
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D97	30		2.46	859		-----		-----
90	D97	24		-0.09	862	ISO3016	24		-0.09
92	D97	24		-0.09	863	D97	24		-0.09
120		-----		-----	864	ISO3016	24		-0.09
140		-----		-----	865	ISO3016	21		-1.36
150		-----		-----	866	D97	24		-0.09
154		-----		-----	870	D97	24		-0.09
158		-----		-----	875	D97	18		-2.64
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922	D97	24		-0.09
175		-----		-----	962		-----		-----
221	D97	27		1.19	963	ISO3016	27		1.19
224	D97	24.0		-0.09	971		-----		-----
225	D97	24		-0.09	974		-----		-----
228	D97	27		1.19	982		-----		-----
237		-----		-----	1011		-----		-----
238	ISO3016	27		1.19	1082		-----		-----
253		-----		-----	1109		-----		-----
254		-----		-----	1121	ISO3016	23.5		-0.30
273		-----		-----	1126		-----		-----
309		-----		-----	1135	ISO3016	27		1.19
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259	ISO3016	24		-0.09
333		-----		-----	1266		-----		-----
334		-----		-----	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281	ISO3016	27.0		1.19
342		-----		-----	1320		-----		-----
343		-----		-----	1345	D97	24.0		-0.09
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399		-----		-----	1412	D97	24		-0.09
444		-----		-----	1438		-----		-----
455		-----		-----	1459		-----		-----
467		-----		-----	1498		-----		-----
495	ISO3016	26		0.76	1510		-----		-----
511		-----		-----	1556	ISO3016	27		1.19
529	D97	24.0		-0.09	1564		-----		-----
557		-----		-----	1586		-----		-----
562		-----		-----	1613	D97	24		-0.09
575		-----		-----	1643		-----		-----
603	D97	27		1.19	1720		-----		-----
604	D97	27		1.19	1724		-----		-----
608		-----		-----	1728	D97	18		-2.64
631	D97	24		-0.09	1740	D97	24		-0.09
633		-----		-----	1761		-----		-----
663		-----		-----	1776		-----		-----
671	D97	21		-1.36	1792	ISO3016	27	C	1.19
750		-----		-----	1807		-----		-----
751		-----		-----	1833		-----		-----
753	D97	21		-1.36	1849		-----		-----
759	ISO3016	21		-1.36	1852		-----		-----
781	ISO3016	21		-1.36	1854		-----		-----
785	ISO3016	18		-2.64	1906		-----		-----
823	ISO3016	24		-0.09	1956		-----		-----
824	ISO3016	30	ex	2.46	1964		-----		-----
825	ISO3016	30	ex	2.46	1995		-----		-----
850	ISO3016	24		-0.09	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D97	21		-1.36	6039		-----		-----
858	D97	24		-0.09	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D97	9	R(0.01)	-6.46	6262	D97	30		2.46
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332	D97	27		1.19
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364	D97	21.0		-1.36
6143	D97	21		-1.36	6365	D97	27		1.19
6192		-----		-----	6373	ISO3016	24		-0.09
6201	ISO3016	27		1.19	6376		-----		-----
6203	D97	24		-0.09	6400		-----		-----
6252		-----		-----					

normality	OK
n	50
outliers	1 (+2ex)
mean (n)	24.21
st.dev. (n)	2.752
R(calc.)	7.71
st.dev.(ISO3016:19)	2.354
R(ISO3016:19)	6.59

Lab 824 test result excluded as PP lower > PP upper, which is in principle not possible
Lab 825 test result excluded as PP lower > PP upper, which is in principle not possible
Lab 1792 first reported 9





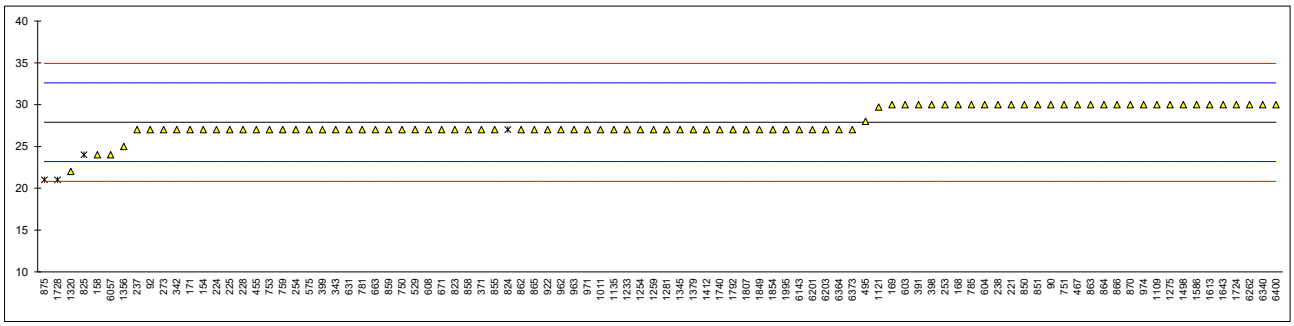
Determination of Pour Point Upper on sample #21095; results in °C

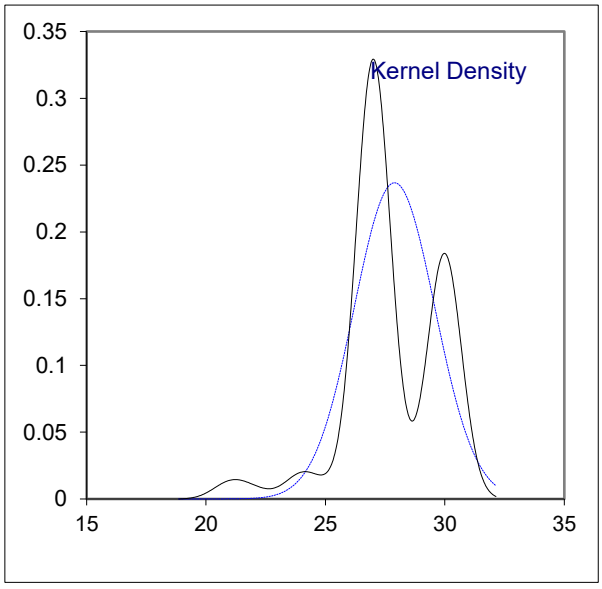
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	D97	27		-0.38
90	D97	30		0.89	862	ISO3016	27		-0.38
92	D97	27		-0.38	863	ISO3016	30		0.89
120		-----		-----	864	ISO3016	30		0.89
140		-----		-----	865	ISO3016	27		-0.38
150		-----		-----	866	D97	30		0.89
154	D97	27		-0.38	870	D97	30		0.89
158	D97	24		-1.66	875	D97	21	R(0.05)	-2.93
159		-----		-----	886		-----		-----
168	D97	30		0.89	912		-----		-----
169	D97	30	C	0.89	913		-----		-----
171	ISO3016	27		-0.38	922	D97	27		-0.38
175		-----		-----	962	D97	27		-0.38
221	D97	30		0.89	963	ISO3016	27		-0.38
224	D97	27.0		-0.38	971	D97	27		-0.38
225	D97	27		-0.38	974	D97	30		0.89
228	D97	27		-0.38	982		-----		-----
237	D97	27		-0.38	1011	D97	27		-0.38
238	ISO3016	30		0.89	1082		-----		-----
253	D97	30		0.89	1109	D97	30		0.89
254	D97	27		-0.38	1121	ISO3016	29.7		0.77
273	D97	27	C	-0.38	1126		-----		-----
309		-----		-----	1135	ISO3016	27		-0.38
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233	ISO3016	27		-0.38
328		-----		-----	1254	ISO3016	27		-0.38
331		-----		-----	1259	ISO3016	27		-0.38
333		-----		-----	1266		-----		-----
334		-----		-----	1269		-----		-----
335		-----		-----	1275	IP15	30.0		0.89
339		-----		-----	1281	ISO3016	27.0		-0.38
342	ISO3016	27		-0.38	1320	ISO3016	22		-2.51
343	ISO3016	27		-0.38	1345	D97	27.0		-0.38
349		-----		-----	1356	ISO3016	25		-1.23
371	D97	27		-0.38	1379	D97	27		-0.38
391	ISO3016	30		0.89	1384		-----		-----
398	ISO3016	30		0.89	1392		-----		-----
399	ISO3016	27		-0.38	1412	D97	27		-0.38
444		-----		-----	1438		-----		-----
455	D97	27		-0.38	1459		-----		-----
467	ISO3016	30		0.89	1498	D97	30		0.89
495	ISO3016	28		0.04	1510		-----		-----
511		-----		-----	1556		-----		-----
529	D97	27.0		-0.38	1564		-----		-----
557		-----		-----	1586	D97	30		0.89
562		-----		-----	1613	D97	30		0.89
575	D97	27		-0.38	1643	D97	30		0.89
603	D97	30		0.89	1720		-----		-----
604	D97	30		0.89	1724	D97	30		0.89
608	D97	27		-0.38	1728	D97	21	R(0.05)	-2.93
631	D97	27		-0.38	1740	D97	27		-0.38
633		-----		-----	1761		-----		-----
663	D97	27		-0.38	1776		-----		-----
671	D97	27		-0.38	1792	ISO3016	27		-0.38
750	D97	27		-0.38	1807	D97	27		-0.38
751	D97	30		0.89	1833		-----		-----
753	D97	27		-0.38	1849	ISO3016	27		-0.38
759	ISO3016	27		-0.38	1852		-----		-----
781	ISO3016	27		-0.38	1854		27		-0.38
785	ISO3016	30		0.89	1906		-----		-----
823	ISO3016	27		-0.38	1956		-----		-----
824	ISO3016	27	ex	-0.38	1964		-----		-----
825	ISO3016	24	ex	-1.66	1995	D97	27		-0.38
850	ISO3016	30		0.89	6028		-----		-----
851	ISO3016	30		0.89	6038		-----		-----
855	D97	27		-0.38	6039		-----		-----
858	D97	27		-0.38	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D97	24		-1.66	6262	D97	30		0.89
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340	D97	30		0.89
6142		-----		-----	6364	D97	27	C	-0.38
6143	D97	27		-0.38	6365		-----		-----
6192		-----		-----	6373	ISO3016	27		-0.38
6201	D97	27		-0.38	6376		-----		-----
6203	D97	27		-0.38	6400	ISO3016	30		0.89
6252		-----		-----					

normality	OK
n	90
outliers	2 (+2ex)
mean (n)	27.90
st.dev. (n)	1.686
R(calc.)	4.72
st.dev.(ISO3016:19)	2.354
R(ISO3016:19)	6.59

Lab 824 test result excluded as PP lower > PP upper, which is in principle not possible
Lab 825 test result excluded as PP lower > PP upper, which is in principle not possible
Lab 169 first reported 12
Lab 273 first reported 18
Lab 6364 first reported 15





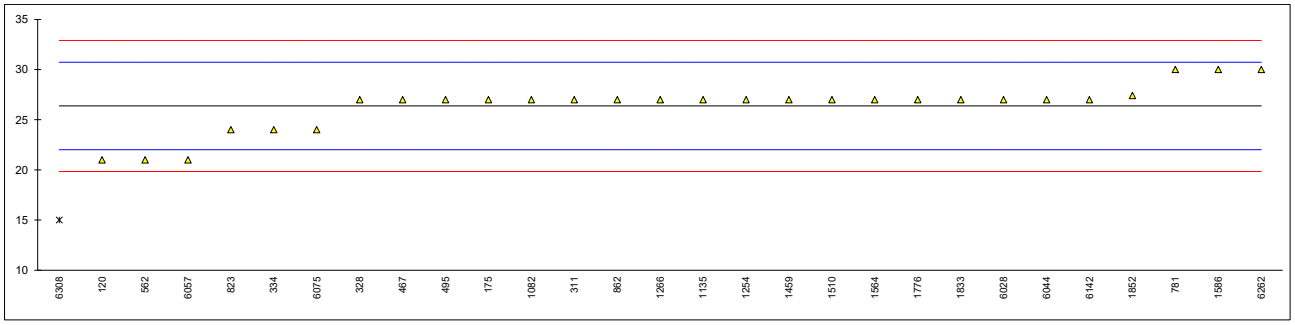
Determination of Pour Point Automated, 3°C interval on sample #21095; results in °C

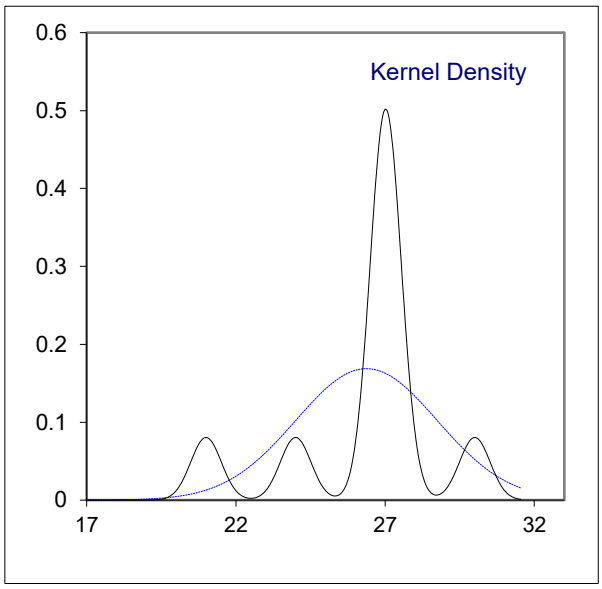
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859		-----		-----
90		-----		-----	862	D5950	27		0.29
92		-----		-----	863		-----		-----
120	D5949	21		-2.47	864		-----		-----
140		-----		-----	865		-----		-----
150		-----		-----	866		-----		-----
154		-----		-----	870		-----		-----
158		-----		-----	875		-----		-----
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171		-----		-----	922		-----		-----
175	D5950	27		0.29	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971		-----		-----
225		-----		-----	974		-----		-----
228		-----		-----	982		-----		-----
237		-----		-----	1011		-----		-----
238		-----		-----	1082	D5950	27		0.29
253		-----		-----	1109		-----		-----
254		-----		-----	1121		-----		-----
273		-----		-----	1126		-----		-----
309		-----		-----	1135	D5950	27		0.29
311	D5950	27		0.29	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328	D5950	27		0.29	1254	D5950	27		0.29
331		-----		-----	1259		-----		-----
333		-----		-----	1266	D5950	27		0.29
334	D5950	24		-1.09	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345		-----		-----
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399		-----		-----	1412		-----		-----
444		-----		-----	1438		-----		-----
455		-----		-----	1459	In house	27.0		0.29
467	D6892	27		0.29	1498		-----		-----
495	D6892	27		0.29	1510	D5950	27		0.29
511		-----		-----	1556		-----		-----
529		-----		-----	1564	D5950	27		0.29
557		-----		-----	1586	D5950	30		1.67
562	D97	21		-2.47	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728		-----		-----
631		-----		-----	1740		-----		-----
633		-----		-----	1761		-----		-----
663		-----		-----	1776	D5950	27		0.29
671		-----		-----	1792		-----		-----
750		-----		-----	1807		-----		-----
751		-----		-----	1833	D5950	27		0.29
753		-----		-----	1849		-----		-----
759		-----		-----	1852	D7346	27.4		0.47
781	D5950	30		1.67	1854		-----		-----
785		-----		-----	1906		-----		-----
823	D5950	24		-1.09	1956		-----		-----
824		-----		-----	1964		-----		-----
825		-----		-----	1995		-----		-----
850		-----		-----	6028	D5950	27		0.29
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044	D6892	27		0.29

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D5950	21		-2.47	6262	D6892	30		1.67
6075		24	C	-1.09	6308	D5950	15	R(0.01)	-5.22
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142	D5950	27		0.29	6364		-----		-----
6143		-----		-----	6365		-----		-----
6192		-----		-----	6373		-----		-----
6201		-----		-----	6376		-----		-----
6203		-----		-----	6400		-----		-----
6252		-----		-----					

normality	suspect
n	28
outliers	1
mean (n)	26.37
st.dev. (n)	2.366
R(calc.)	6.62
st.dev.(D5950:14)	2.179
R(D5950:14)	6.1

Lab 6075 first reported 0



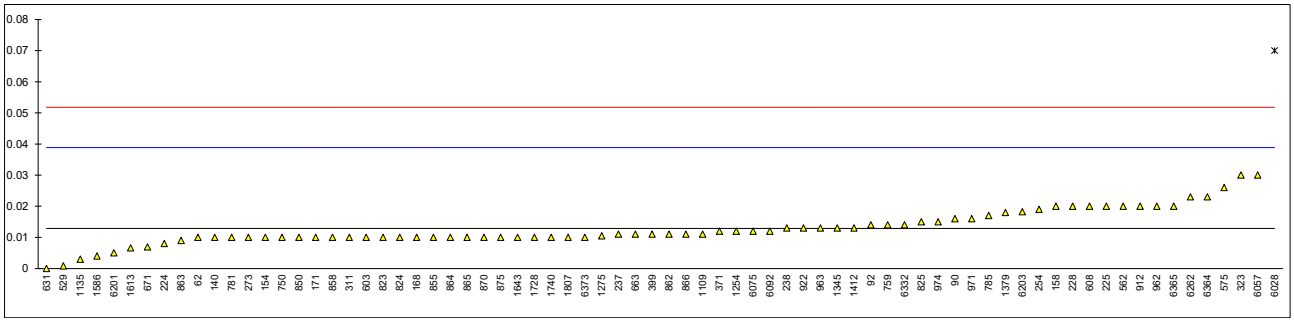


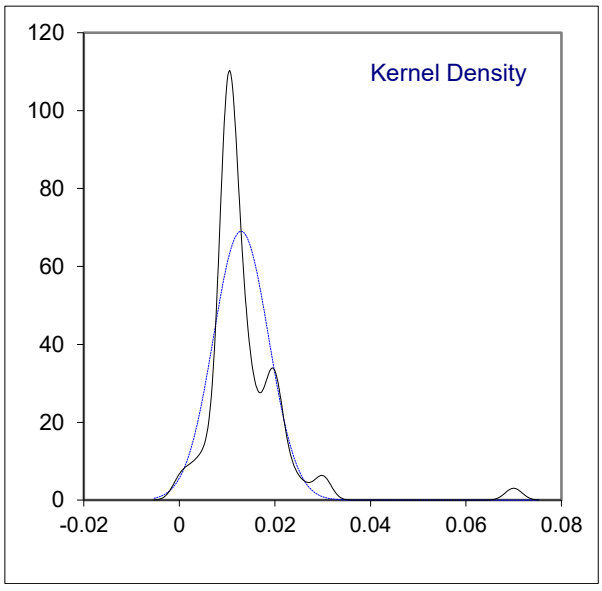
Determination of Total Sediment by Extraction on sample #21095; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D473	0.01		-0.22	859		-----		-----
90	D473	0.016		0.24	862	D473	0.011		-0.15
92	D473	0.014		0.09	863	D473	0.009		-0.30
120		-----		-----	864	D473	0.01		-0.22
140	D473	0.01		-0.22	865	D473	0.01		-0.22
150		-----		-----	866	D473	0.011		-0.15
154	D473	0.01		-0.22	870	D473	0.01		-0.22
158	D473	0.02		0.55	875	D473	0.01		-0.22
159		-----		-----	886		-----		-----
168	D473	0.01		-0.22	912	D473	0.020		0.55
169		-----		-----	913		-----		-----
171	D473	0.01		-0.22	922	D473	0.013		0.01
175		-----		-----	962	D473	0.02		0.55
221		-----		-----	963	D473	0.013		0.01
224	D473	0.008		-0.38	971	D473	0.016		0.24
225	D473	0.02		0.55	974	D473	0.015		0.16
228	D473	0.02		0.55	982		-----		-----
237	D473	0.011		-0.15	1011		-----		-----
238	D473	0.013		0.01	1082		-----		-----
253		-----		-----	1109	D473	0.011		-0.15
254	D473	0.019		0.47	1121		-----		-----
273	D473	0.01		-0.22	1126		-----		-----
309		-----		-----	1135	ISO3735	0.003		-0.76
311	D473	0.01		-0.22	1177		-----		-----
313		-----		-----	1218		-----		-----
323	D473	0.03		1.32	1233		-----		-----
328		-----		-----	1254	D473	0.012		-0.07
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334		-----		-----	1269		-----		-----
335		-----		-----	1275	IP53	0.0104949		-0.18
339		-----		-----	1281		-----		-----
342		-----		-----	1320		-----		-----
343		-----		-----	1345	D473	0.013		0.01
349		-----		-----	1356		-----		-----
371	D473	0.012		-0.07	1379	D473	0.018		0.39
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	D473	0.011		-0.15	1412	D473	0.013		0.01
444		-----		-----	1438		-----		-----
455		-----		-----	1459		-----		-----
467		-----		-----	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	ISO3735	<0,01		-----
529	D473	0.00083		-0.93	1564		-----		-----
557		-----		-----	1586	D473	0.004		-0.69
562	D473	0.02		0.55	1613	D473	0.0066		-0.49
575	D473	0.026		1.01	1643	D473	0.010		-0.22
603	D473	0.01		-0.22	1720		-----		-----
604		-----		-----	1724		-----		-----
608	D473	0.02		0.55	1728	D473	0.01		-0.22
631	D473	0		-0.99	1740	D473	0.01		-0.22
633		-----		-----	1761		-----		-----
663	D473	0.011		-0.15	1776		-----		-----
671	D473	0.00689		-0.46	1792		-----		-----
750	D473	0.01		-0.22	1807	D473	0.01		-0.22
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759	D473	0.014		0.09	1852		-----		-----
781	D473	0.01		-0.22	1854		-----		-----
785	D473	0.017		0.32	1906		-----		-----
823	D473	0.01		-0.22	1956		-----		-----
824	D473	0.01		-0.22	1964		-----		-----
825	D473	0.015		0.16	1995		-----		-----
850	D473	0.01		-0.22	6028	D473	0.07	R(0.01)	4.41
851		-----		-----	6038		-----		-----
855	D473	0.01		-0.22	6039		-----		-----
858	D473	0.01		-0.22	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	D473	0.03		1.32	6262	D473	0.023		0.78
6075	ISO3735	0.012		-0.07	6308	D473	<0.01		-----
6092		0.012		-0.07	6332	D473	0.014		0.09
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364	D473	0.023		0.78
6143		-----		-----	6365	D473	0.02		0.55
6192		-----		-----	6373	D473	0.01		-0.22
6201	D473	0.005		-0.61	6376		-----		-----
6203	D473	0.0182		0.41	6400		-----		-----
6252		-----		-----					

normality	suspect
n	73
outliers	1
mean (n)	0.0129
st.dev. (n)	0.00578
R(calc.)	0.0162
st.dev.(D473:07e1)	0.01296
R(D473:07e1)	0.0363



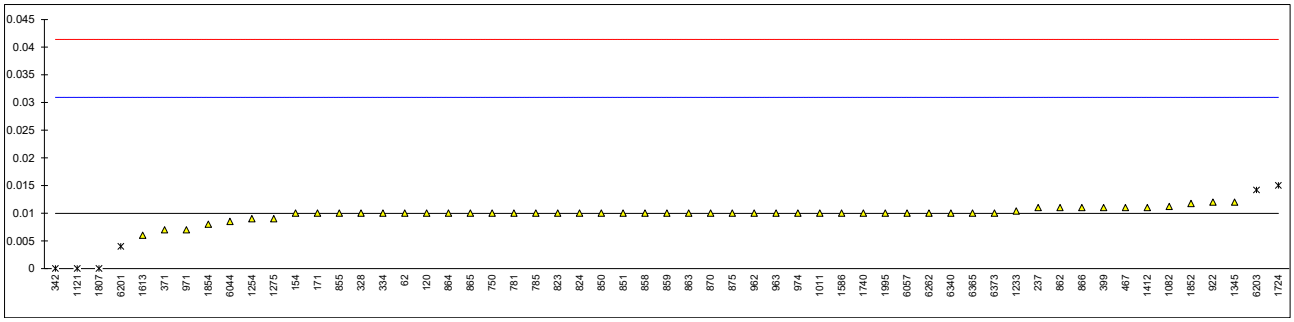


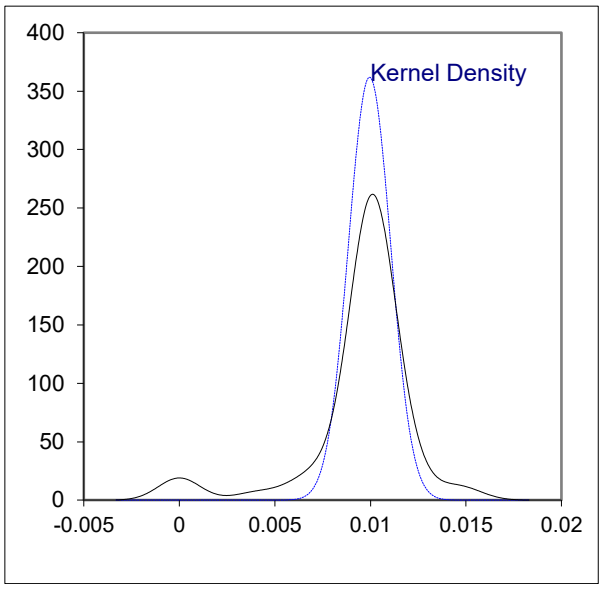
Determination of Total Sediment Existent (TSE) of sample #21095; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4870	0.01		0.00	859	ISO10307-1	0.01		0.00
90		-----		-----	862	IP375	0.011		0.10
92		-----		-----	863	IP375	0.01		0.00
120	D4870	0.01		0.00	864	ISO10307-1	0.01		0.00
140		-----		-----	865	ISO10307-1	0.01		0.00
150		-----		-----	866	ISO10307	0.011		0.10
154	D4870	0.01		0.00	870	IP375	0.01		0.00
158		-----		-----	875	IP375	0.01		0.00
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171	IP375	0.01		0.00	922	ISO10307-1	0.012		0.19
175		-----		-----	962	D4870	0.01		0.00
221		-----		-----	963	IP375	0.01		0.00
224		-----		-----	971	IP375	0.007		-0.28
225		-----		-----	974	IP375	0.01		0.00
228		-----		-----	982		-----		-----
237	D4870	0.011		0.10	1011	ISO10307-1	0.01		0.00
238		-----		-----	1082	ISO10307-1	0.0112		0.12
253		-----		-----	1109		-----		-----
254		-----		-----	1121	ISO10307-1	0.00	R(0.01)	-0.95
273		-----		-----	1126		-----		-----
309		-----		-----	1135	ISO10307-1	<0.01		-----
311	ISO10307-1	<0.01		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233	ISO10307-1	0.0104		0.04
328	IP375	0.01		0.00	1254	ISO10307-1	0.009		-0.09
331		-----		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	ISO10307-1	0.01		0.00	1269		-----		-----
335		-----		-----	1275	IP375	0.009		-0.09
339		-----		-----	1281		-----		-----
342	ISO10307-1	0.00	R(0.01)	-0.95	1320		-----		-----
343	ISO10307-1	<0,01		-----	1345	ISO10307-1	0.012		0.19
349		-----		-----	1356	ISO10307-1	<0.01		-----
371	ISO10307-1	0.007		-0.28	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	IP375	0.011		0.10	1412	IP375	0.011		0.10
444		-----		-----	1438		-----		-----
455	IP375	<0.01		-----	1459		-----		-----
467	ISO10307-1	0.011		0.10	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529		-----		-----	1564		-----		-----
557		-----		-----	1586	ISO10307-1	0.01		0.00
562		-----		-----	1613	D4870	0.0060		-0.38
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724	IP375	0.015	R(0.01)	0.48
608		-----		-----	1728		-----		-----
631		-----		-----	1740	ISO10307-1	0.010		0.00
633		-----		-----	1761		-----		-----
663	IP375	<0.01		-----	1776		-----		-----
671		-----		-----	1792		-----		-----
750	D4870	0.01		0.00	1807	D4870	0	R(0.01)	-0.95
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852	ISO10307-1	0.01175		0.17
781	IP375	0.01		0.00	1854	ISO10307-1	0.008		-0.19
785	IP375	0.01		0.00	1906		-----		-----
823	ISO10307-1	0.01		0.00	1956		-----		-----
824	ISO10307-1	0.01		0.00	1964		-----		-----
825		-----		-----	1995	D4870	0.01		0.00
850	ISO10307-1	0.01		0.00	6028		-----		-----
851	ISO10307-1	0.01		0.00	6038		-----		-----
855	D4870	0.01		0.00	6039		-----		-----
858	D4870	0.01		0.00	6044	ISO10307-1	0.0085		-0.14

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO10307-1	0.01		0.00	6262	ISO10307-1	0.01		0.00
6075		-----		-----	6308	IP375	<0.01		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335		-----		-----
6122		-----		-----	6340	IP375	0.010		0.00
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365	IP375	0.01		0.00
6192		-----		-----	6373	ISO10307-1	0.01		0.00
6201	IP375	0.004	R(0.01)	-0.57	6376		-----		-----
6203	ISO10307-1	0.0142	R(0.05)	0.40	6400	ISO10307-1	<0.01		-----
6252		-----		-----					

normality	not OK
n	51
outliers	6
mean (n)	0.0100
st.dev. (n)	0.00110
R(calc.)	0.0031
st.dev.(IP375:11)	0.01048
R(IP375:11)	0.0293



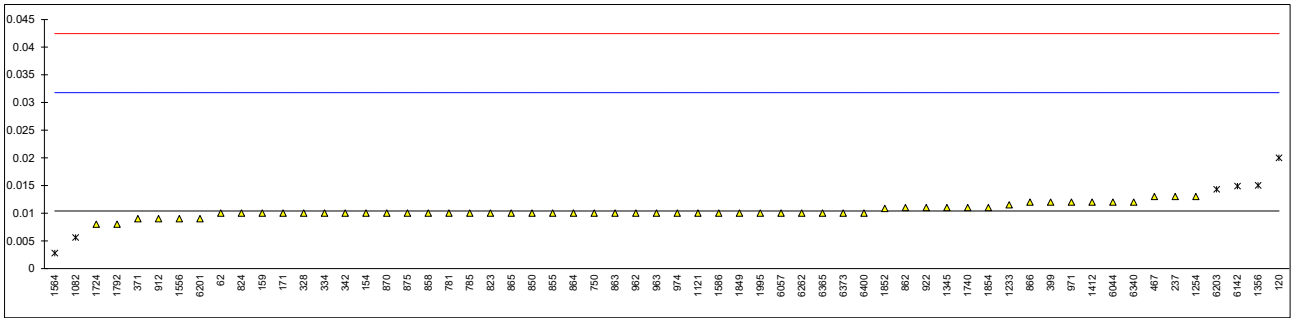


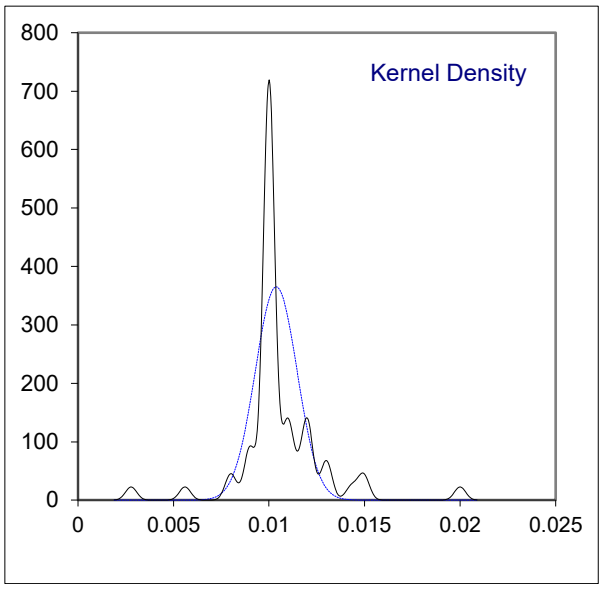
Determination of Total Sediment Accelerated (TSA) of sample #21095; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4870	0.01		-0.04	859		-----		-----
90		-----		-----	862	IP390	0.011		0.06
92		-----		-----	863	D4870	0.01		-0.04
120	D4870	0.02	R(0.01)	0.90	864	ISO10307-2	0.01		-0.04
140		-----		-----	865	ISO10307-2	0.01		-0.04
150		-----		-----	866	ISO10307	0.012		0.15
154	D4870	0.01		-0.04	870	IP390	0.01		-0.04
158		-----		-----	875	IP390	0.01		-0.04
159	IP390	0.01		-0.04	886		-----		-----
168		-----		-----	912	IP390	0.009		-0.13
169		-----		-----	913		-----		-----
171	IP390	0.01		-0.04	922	ISO10307-2	0.011		0.06
175		-----		-----	962	IP390	0.01		-0.04
221		-----		-----	963	IP390	0.01		-0.04
224		-----		-----	971	IP390	0.012		0.15
225		-----		-----	974	IP390	0.01		-0.04
228		-----		-----	982		-----		-----
237	D4870	0.013		0.25	1011		-----		-----
238		-----		-----	1082	ISO10307-2	0.0056	R(0.05)	-0.45
253		-----		-----	1109		-----		-----
254		-----		-----	1121	ISO10307-2	0.01		-0.04
273		-----		-----	1126		-----		-----
309		-----		-----	1135	ISO10307-2	<0.01		-----
311	ISO10307-2	<0.01		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233	ISO10307-2	0.0115		0.11
328	IP390	0.01		-0.04	1254	ISO10307-2	0.013		0.25
331	ISO10307-2	<0.01		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	ISO10307-2	0.01		-0.04	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342	ISO10307-2	0.01		-0.04	1320		-----		-----
343	ISO10307-2	<0,01		-----	1345	ISO10307-2	0.011		0.06
349		-----		-----	1356	ISO10307-2	0.015	R(0.05)	0.43
371	ISO10307-2	0.009		-0.13	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	ISO10307-2	0.012		0.15	1412	IP390	0.012		0.15
444		-----		-----	1438		-----		-----
455	IP390	<0.01		-----	1459		-----		-----
467	ISO10307-2	0.013		0.25	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556	ISO10307-2	0.009		-0.13
529		-----		-----	1564	ISO10307-2	0.00278	R(0.01)	-0.71
557		-----		-----	1586	ISO10307-2	0.01		-0.04
562		-----		-----	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724	IP390	0.008		-0.22
608		-----		-----	1728		-----		-----
631		-----		-----	1740	ISO10307-2	0.011		0.06
633		-----		-----	1761		-----		-----
663	IP390	<0.01		-----	1776		-----		-----
671		-----		-----	1792	IP390	0.008		-0.22
750	ISO10307-2	0.01		-0.04	1807		-----		-----
751		-----		-----	1833		-----		-----
753		-----		-----	1849	ISO10307-2	0.01		-0.04
759		-----		-----	1852	ISO10307-2	0.01085		0.04
781	IP390	0.01		-0.04	1854	ISO10307-2	0.011		0.06
785	IP390	0.01		-0.04	1906		-----		-----
823	ISO10307-2	0.01		-0.04	1956		-----		-----
824	ISO10307-2	0.01		-0.04	1964		-----		-----
825		-----		-----	1995	D4870	0.01		-0.04
850	ISO10307-2	0.01		-0.04	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D4870	0.01		-0.04	6039		-----		-----
858	D4870	0.01		-0.04	6044	ISO10307-2	0.012		0.15

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO10307-2	0.01		-0.04	6262	ISO10307-2	0.01		-0.04
6075		-----		-----	6308	IP390	<0.01		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335	D4870	<0.05		-----
6122		-----		-----	6340	IP390	0.012		0.15
6142	ISO10307-2	0.01488	R(0.05)	0.42	6364		-----		-----
6143		-----		-----	6365	IP390	0.01		-0.04
6192		-----		-----	6373	ISO10307-2	0.01		-0.04
6201	IP390	0.009		-0.13	6376		-----		-----
6203	ISO10307-2	0.0143	R(0.05)	0.37	6400	ISO10307-2	0.01		-0.04
6252		-----		-----					

normality	OK
n	54
outliers	6
mean (n)	0.0104
st.dev. (n)	0.00109
R(calc.)	0.0031
st.dev.(IP390:11)	0.01070
R(IP390:11)	0.0299



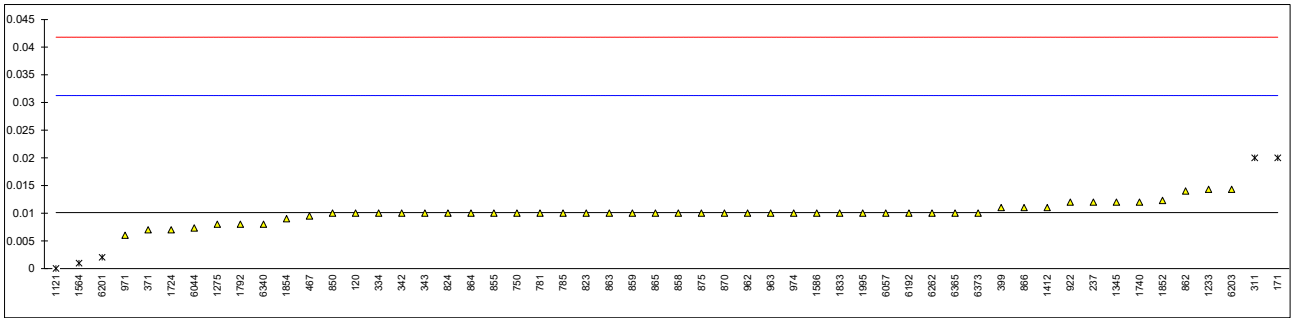


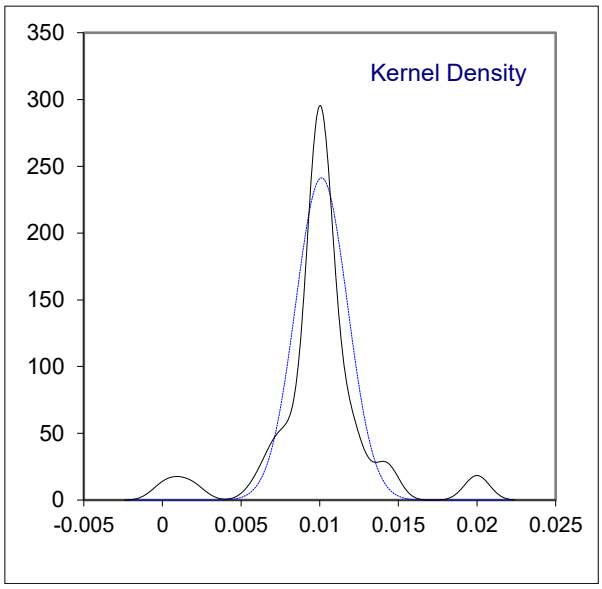
Determination of Total Sediment Potential (TSP) of sample #21095; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62		-----		-----	859	ISO10307-2	0.01		-0.01
90		-----		-----	862	IP390	0.014		0.37
92		-----		-----	863	ISO10307-2	0.01		-0.01
120	D4870	0.01		-0.01	864	ISO10307-2	0.01		-0.01
140		-----		-----	865	ISO10307-2	0.01		-0.01
150		-----		-----	866	ISO10307	0.011		0.08
154		-----		-----	870	IP390	0.01		-0.01
158		-----		-----	875	IP390	0.01		-0.01
159		-----		-----	886		-----		-----
168		-----		-----	912		-----		-----
169		-----		-----	913		-----		-----
171	IP390	0.02	R(0.01)	0.94	922	ISO10307-2	0.012		0.18
175		-----		-----	962	IP390	0.01		-0.01
221		-----		-----	963	IP390	0.01		-0.01
224		-----		-----	971	IP390	0.006		-0.39
225		-----		-----	974	IP390	0.01		-0.01
228		-----		-----	982		-----		-----
237	D4870	0.012		0.18	1011	ISO10307-2	<0,01		-----
238		-----		-----	1082		-----		-----
253		-----		-----	1109		-----		-----
254		-----		-----	1121	ISO10307-2	0.00	R(0.01)	-0.96
273		-----		-----	1126		-----		-----
309		-----		-----	1135	ISO10307-2	<0.01		-----
311	ISO10307-2	0.02	R(0.01)	0.94	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233	ISO10307-2	0.0143		0.40
328		-----		-----	1254		-----		-----
331	ISO10307-2	<0.01		-----	1259		-----		-----
333		-----		-----	1266		-----		-----
334	ISO10307-2	0.01		-0.01	1269		-----		-----
335		-----		-----	1275	IP390	0.008		-0.20
339		-----		-----	1281		-----		-----
342	ISO10307-2	0.01		-0.01	1320		-----		-----
343	ISO10307-2	0.01		-0.01	1345	ISO10307-2	0.012		0.18
349		-----		-----	1356	ISO10307-2	<0.01		-----
371	ISO10307-2	0.007		-0.30	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	IP390	0.011		0.08	1412	IP390	0.011		0.08
444		-----		-----	1438		-----		-----
455	IP390	<0.01		-----	1459		-----		-----
467	ISO10307-2	0.0095		-0.06	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529		-----		-----	1564	ISO10307-2	0.00096	R(0.01)	-0.87
557		-----		-----	1586	ISO10307-2	0.01		-0.01
562		-----		-----	1613		-----		-----
575		-----		-----	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724	IP390	0.007		-0.30
608		-----		-----	1728		-----		-----
631		-----		-----	1740	ISO10307-2	0.012		0.18
633		-----		-----	1761		-----		-----
663	IP390	<0.01		-----	1776		-----		-----
671		-----		-----	1792	IP390	0.008		-0.20
750	ISO10307-2	0.01		-0.01	1807		-----		-----
751		-----		-----	1833	ISO10307-2	0.010		-0.01
753		-----		-----	1849		-----		-----
759		-----		-----	1852	ISO10307-2	0.0123		0.21
781	IP390	0.01		-0.01	1854	ISO10307-2	0.009		-0.11
785	IP390	0.01		-0.01	1906		-----		-----
823	ISO10307-2	0.01		-0.01	1956		-----		-----
824	ISO10307-2	0.01		-0.01	1964		-----		-----
825		-----		-----	1995	D4870	0.01		-0.01
850	ISO10307-2	0.01		-0.01	6028		-----		-----
851		-----		-----	6038		-----		-----
855	D4870	0.01		-0.01	6039		-----		-----
858	D4870	0.01		-0.01	6044	ISO10307-2	0.0073		-0.27

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO10307-2	0.01		-0.01	6262	ISO10307-2	0.01		-0.01
6075		-----		-----	6308	IP390	<0.01		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335	D4870	<0.05		-----
6122		-----		-----	6340	IP390	0.008		-0.20
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365	IP390	0.01		-0.01
6192	ISO10307-2	0.01		-0.01	6373	ISO10307-2	0.01		-0.01
6201	IP390	0.002	R(0.01)	-0.77	6376		-----		-----
6203	ISO10307-2	0.0143		0.40	6400	ISO10307-2	<0.01		-----
6252		-----		-----					

normality	suspect
n	49
outliers	5
mean (n)	0.0101
st.dev. (n)	0.00165
R(calc.)	0.0046
st.dev.(IP390:11)	0.01056
R(IP390:11)	0.0296





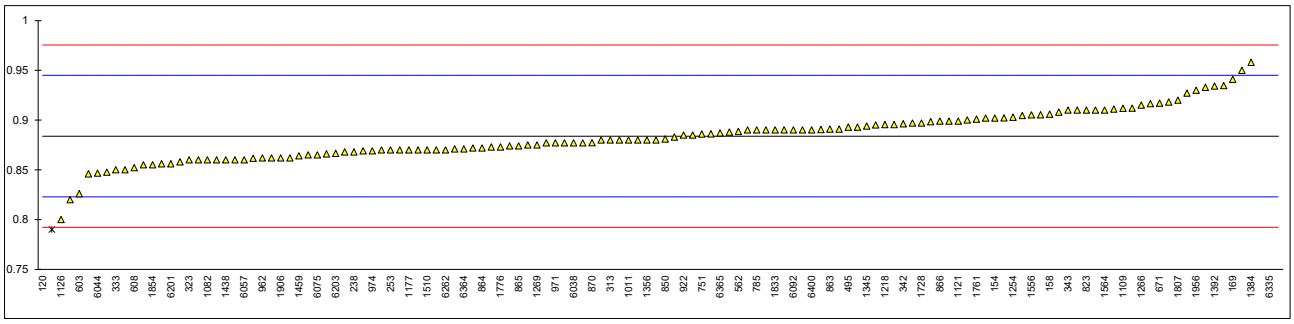
Determination of Total Sulfur on sample #21095; results in %M/M

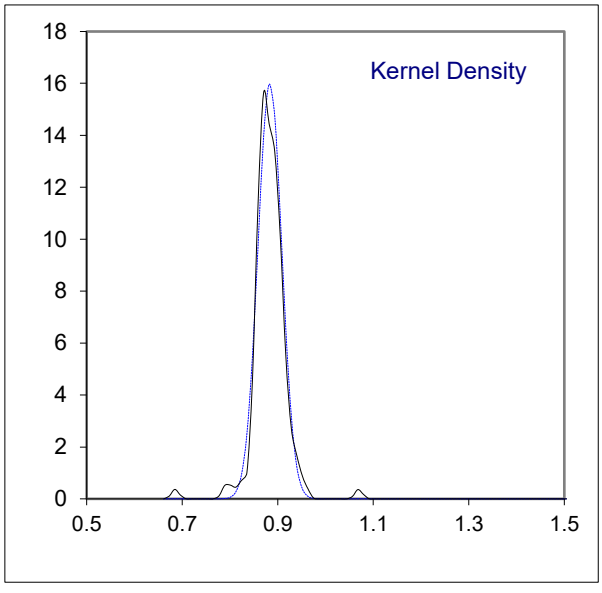
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D4294	0.933		1.64	859	D4294	0.877		-0.23
90	D4294	0.9022		0.61	862	ISO8754	0.897		0.44
92	D4294	0.9271		1.44	863	D4294	0.891		0.24
120	D4294	0.6858	R(0.01)	-6.61	864	ISO8754	0.872		-0.40
140	D4294	0.911		0.90	865	ISO8754	0.874		-0.33
150		-----		-----	866	D4294	0.899		0.50
154	D4294	0.902		0.60	870	D4294	0.8772		-0.22
158	D4294	0.906		0.74	875	D4294	0.869		-0.50
159	D4294	0.895		0.37	886	D4294	0.82		-2.13
168	D4294	0.908		0.80	912	ISO8754	0.858		-0.86
169	D4294	0.941		1.90	913		-----		-----
171	D4294	0.912		0.94	922	D4294	0.885		0.04
175		-----		-----	962	D4294	0.862		-0.73
221		-----		-----	963	ISO8754	0.85		-1.13
224	D4294	833	R(0.01)	27752.36	971	ISO8754	0.877		-0.23
225	D4294	0.89		0.20	974	D4294	0.869		-0.50
228	D4294	0.880		-0.13	982		-----		-----
237	D4294	0.885		0.04	1011	ISO8754	0.88		-0.13
238	D4294	0.868		-0.53	1082	ISO8754	0.860		-0.80
253	D4294	0.87		-0.46	1109	D2622	0.9118		0.93
254		-----		-----	1121	ISO8754	0.899		0.50
273	D4294	0.91		0.87	1126	ISO8754	0.80		-2.80
309		-----		-----	1135	ISO8754	0.87	C	-0.46
311	ISO8754	0.88		-0.13	1177	DIN10304-1	0.87		-0.46
313	D4294	0.88		-0.13	1218	In house	0.8955		0.39
323	ISO8754	0.86		-0.80	1233	ISO8754	0.86		-0.80
328	D4294	0.902		0.60	1254	D4294	0.9029		0.63
331		-----		-----	1259	ISO8754	0.88		-0.13
333	ISO8754	0.85		-1.13	1266	ISO8754	0.915		1.04
334	ISO8754	0.874		-0.33	1269	In house	0.875		-0.30
335	ISO8754	0.871		-0.43	1275	IP336	0.866		-0.60
339	INH-050	0.79	R(0.05)	-3.13	1281	ISO20846	0.8700		-0.46
342	ISO8754	0.8962		0.41	1320		-----		-----
343	IP336	0.91		0.87	1345	D4294	0.894		0.34
349		-----		-----	1356	ISO8754	0.88		-0.13
371	ISO8754	0.9045		0.69	1379	D4294	0.910		0.87
391	ISO8754	0.868		-0.53	1384	In house	0.958		2.47
398	ISO8754	0.893		0.30	1392	D1552	0.9342		1.68
399	ISO8754	0.90		0.54	1412	D4294	0.891		0.24
444		-----		-----	1438	D4294	0.86		-0.80
455	IP336	0.86		-0.80	1459	In house	0.864		-0.66
467	ISO8754	0.875		-0.30	1498		-----		-----
495	ISO8754	0.8930		0.30	1510	ISO8754	0.87		-0.46
511		-----		-----	1556	ISO8754	0.9052		0.71
529	D4294	0.9165		1.09	1564	D4294	0.91		0.87
557		-----		-----	1586	D4294	0.855		-0.96
562	D4294	0.8885		0.15	1613	D4294	0.888		0.14
575	D4294	0.8905		0.22	1643	D1552	0.89552		0.39
603	D4294	0.826		-1.93	1720		-----		-----
604	D4294	0.862		-0.73	1724	IP336	0.86		-0.80
608	D4294	0.8521		-1.06	1728	D4294	0.897		0.44
631	D4294	0.8476		-1.21	1740	ISO8754	0.87		-0.46
633		-----		-----	1761	ISO8754	0.901		0.57
663		-----		-----	1776	ISO8754	0.873		-0.36
671	D4294	0.91699		1.10	1792	ISO8754	0.8617		-0.74
750	D4294	0.856		-0.93	1807	ISO8754	0.92		1.20
751	ISO8754	0.886		0.07	1833	IP336	0.89		0.20
753	ISO8754	0.87		-0.46	1849		-----		-----
759	ISO8754	0.883		-0.03	1852	ISO8754	0.877		-0.23
781	ISO8754	0.865		-0.63	1854	ISO8754	0.855		-0.96
785	ISO8754	0.89		0.20	1906	D5623	0.862		-0.73
823	ISO8754	0.91		0.87	1956	ISO8754	0.93		1.54
824	ISO8754	0.899		0.50	1964		-----		-----
825	ISO8754	0.9054		0.72	1995	D4294	0.8862		0.08
850	D4294	0.881		-0.10	6028	ISO8754	0.95		2.20
851	ISO8754	0.873		-0.36	6038	ISO8754	0.877		-0.23
855	D4294	0.872		-0.40	6039	ISO8754	0.89		0.20
858	D4294	0.890		0.20	6044	ISO8754	0.8467		-1.24

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057	ISO8754	-0.80		-0.78	6262	ISO8754	0.87		-0.46
6075	ISO8754	-0.63		-0.62	6308	D4294	0.862		-0.73
6092	D4294	0.20		0.20	6332	D4294	0.846		-1.26
6109	D1552	1.69		1.66	6335		3.60	R(0.01)	90.59
6122	ISO8754	6.21	R(0.01)	6.09	6340	ISO8754	0.877		-0.23
6142	ISO8754	0.48		0.47	6364	D4294	0.871		-0.43
6143	D2622	1.14		1.12	6365	D4294	0.887		0.10
6192		-0.13		-0.13	6373	ISO8754	0.89		0.20
6201	ISO8754	-0.93		-0.91	6376		-----		-----
6203	D2622	-0.58		-0.57	6400	ISO8754	0.89		0.20
6252		-----		-----					

	normality	OK
	n	131
	outliers	5
	mean (n)	0.8839
	st.dev. (n)	0.02494
	R(calc.)	0.0698
	st.dev.(ISO8754:03)	0.02998
	R(ISO8754:03)	0.0840
Compare		
	R(D4294:16e1)	0.0671

Lab 1135 first reported 2.87





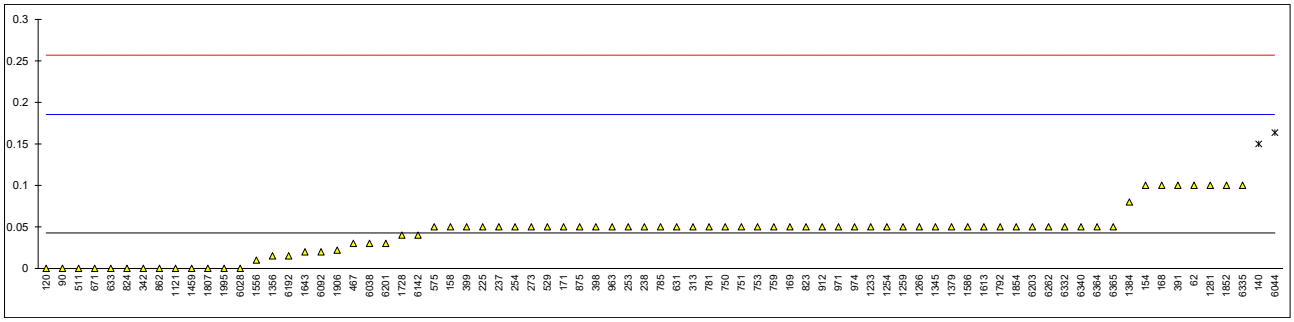
Determination of Water by distillation on sample #21095; results in %V/V

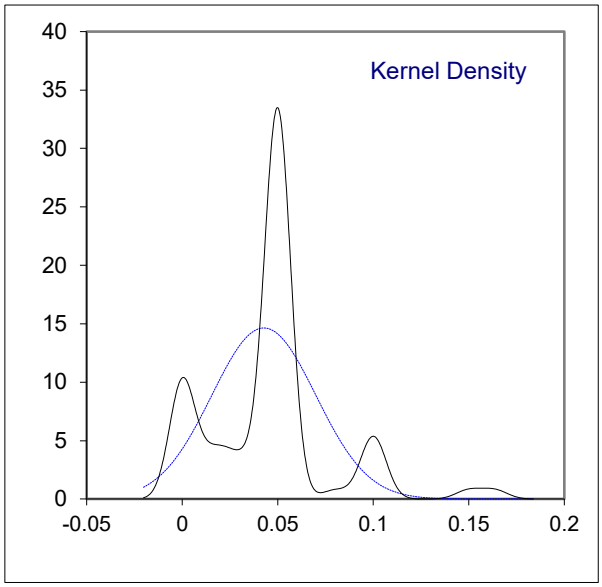
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D95	0.1		0.80	859	D95	<0.05		-----
90	D95	0.0		-0.60	862	ISO3733	0.00		-0.60
92		-----		-----	863	D95	<0.05		-----
120	D95	0.0		-0.60	864	ISO3733	<0.05		-----
140	D95	0.15	R(0.05)	1.50	865	ISO3733	<0.05		-----
150		-----		-----	866	D95	<0.05		-----
154	D95	0.10		0.80	870	D95	<0.05		-----
158	D95	0.05		0.10	875	D95	0.05		0.10
159		-----		-----	886		-----		-----
168	D95	0.10		0.80	912	D95	0.05		0.10
169	D95	0.05		0.10	913		-----		-----
171	D95	0.05		0.10	922	D95	<0.05		-----
175		-----		-----	962	ISO3733	<0.05		-----
221		-----		-----	963	ISO3733	0.05		0.10
224		-----		-----	971	D95	0.05		0.10
225	D95	0.05		0.10	974	D95	0.05		0.10
228		-----		-----	982		-----		-----
237	D95	0.05		0.10	1011	ISO3733	<0,10		-----
238	D95	0.05		0.10	1082		-----		-----
253	D95	0.05		0.10	1109	D95	<0.05		-----
254	D95	0.05		0.10	1121	ISO3733	0.00		-0.60
273	D95	0.05	C	0.10	1126		-----		-----
309		-----		-----	1135	ISO3733	<0.05		-----
311		-----		-----	1177		-----		-----
313	D95	0.05		0.10	1218		-----		-----
323	ISO3733	<0.05		-----	1233	D95	0.05		0.10
328	ISO3733	<0.1		-----	1254	D95	0.05		0.10
331	ISO3733	<0.05		-----	1259	ISO3733	0.05		0.10
333	ISO3733	<0.05		-----	1266	D95	0.05		0.10
334	D95	<0.05		-----	1269		-----		-----
335		-----		-----	1275	IP74	<0.05		-----
339		-----		-----	1281	ISO3733	0.1		0.80
342	ISO3733	0.00		-0.60	1320		-----		-----
343	D95	<0,1		-----	1345	D95	0.05		0.10
349	D95	<0,1		-----	1356	D6304-A	0.015		-0.39
371	D95	<0.05		-----	1379	D95	0.05		0.10
391	ISO3733	0.10		0.80	1384	ISO3733	0.08		0.52
398	ISO3733	0.05		0.10	1392		-----		-----
399	ISO3733	0.05		0.10	1412		-----		-----
444		-----		-----	1438		-----		-----
455	D95	<0.05		-----	1459	ISO3733	0.0		-0.60
467	ISO3733	0.03		-0.18	1498		-----		-----
495		-----		-----	1510		-----		-----
511	D95	0		-0.60	1556	D6304-C	0.01		-0.46
529	D95	0.05		0.10	1564	D95	<0,10		-----
557		-----		-----	1586	D95	0.05		0.10
562		-----		-----	1613	D95	0.05		0.10
575	D95	0.05		0.10	1643	D95	0.02		-0.32
603	D95	< 0.05		-----	1720		-----		-----
604		-----		-----	1724	D6304-A	<0,1		-----
608	D95	<0.15		-----	1728	D95	0.04		-0.04
631	D95	0.05		0.10	1740	ISO3733	<0.05		-----
633	D95	0		-0.60	1761		-----		-----
663	D95	<0.1		-----	1776		-----		-----
671	D95	0		-0.60	1792	ISO3733	0.05		0.10
750	D95	0.05		0.10	1807	ISO3733	0		-0.60
751	D95	0.05		0.10	1833	ISO3733	<0.1		-----
753	ISO3733	0.05		0.10	1849	EN1428	<0,1		-----
759	ISO3733	0.05		0.10	1852	ISO3733	0.1		0.80
781	ISO3733	0.05		0.10	1854	ISO3733	0.05		0.10
785	ISO3733	0.05		0.10	1906	D6304-C	0.022		-0.29
823	ISO3733	0.05		0.10	1956		-----		-----
824	ISO3733	0		-0.60	1964		-----		-----
825	ISO3733	L0.05		-----	1995	D95	0		-0.60
850	ISO3733	<0.05		-----	6028	D95	0.0		-0.60
851		-----		-----	6038	ISO3733	0.03		-0.18
855	D95	<0.05		-----	6039		-----		-----
858	D95	<0.05		-----	6044	D6304-C	0.1635	R(0.05)	1.69

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262	D6304-A	0.05	C	0.10
6075	ISO3733	<0.05		-----	6308	D95	<0.05		-----
6092	D95	0.02		-0.32	6332	D95	0.05		0.10
6109		-----		-----	6335	D95	0.10		0.802
6122		-----		-----	6340	D95	0.05		0.10
6142	ISO3733	0.04		-0.04	6364	D95	0.05		0.10
6143		-----		-----	6365	D95	0.05		0.10
6192		0.015		-0.39	6373	D95	<0.10		-----
6201	ISO3733	0.03		-0.18	6376		-----		-----
6203	D95	0.05		0.10	6400	ISO3733	<0.05		-----
6252		-----		-----					

	normality	OK
	n	75
	outliers	2
	mean (n)	0.0427
	st.dev. (n)	0.02725
	R(calc.)	0.0763
	st.dev.(ISO3733:99)	0.07143
	R(ISO3733:99)	0.2
Compare		
	R(D95:13)	0.2

Lab 273 first reported 0.20
Lab 6262 first reported 0.2627



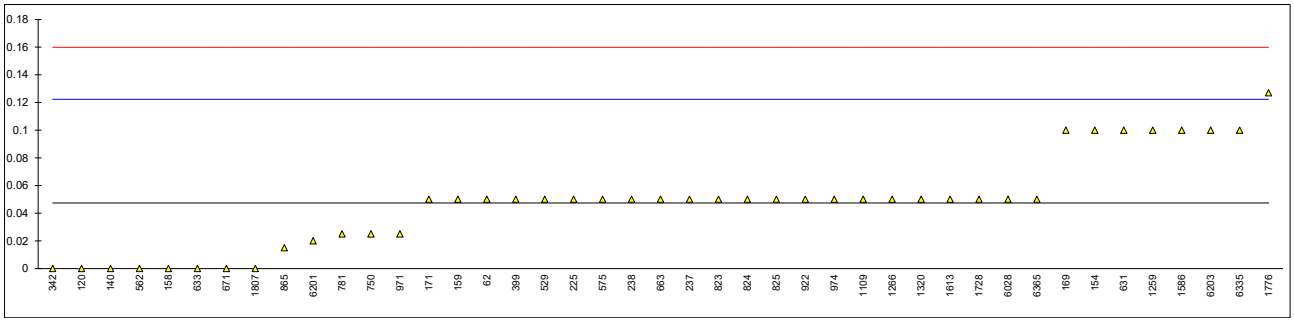


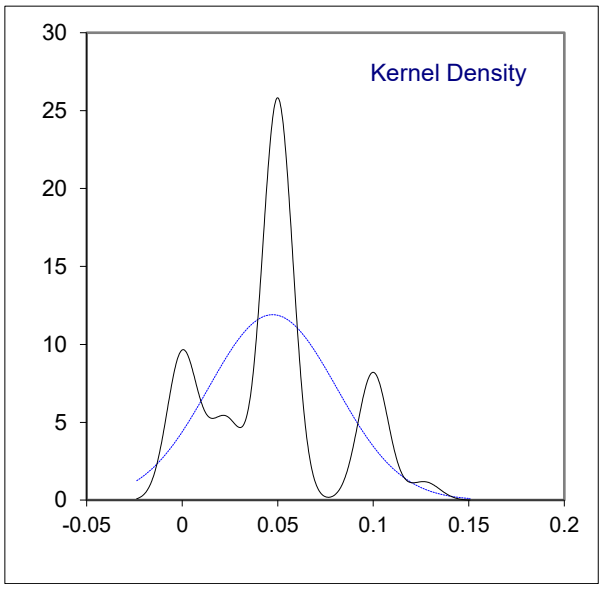
Determination of Water and Sediment on sample #21095; results in %V/V

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	D1796	0.05		0.07	859		-----		-----
90		-----		-----	862		-----		-----
92		-----		-----	863		-----		-----
120	D1796	0.00		-1.26	864		-----		-----
140	D1796	0		-1.26	865	D1796	0.015		-0.86
150		-----		-----	866		-----		-----
154	D1796	0.10		1.40	870		-----		-----
158	D1796	0.00		-1.26	875		-----		-----
159	D1796	0.05		0.07	886		-----		-----
168		-----		-----	912		-----		-----
169	D1796	0.10		1.40	913		-----		-----
171	D1796	0.05		0.07	922	D1796	0.05		0.07
175		-----		-----	962		-----		-----
221		-----		-----	963		-----		-----
224		-----		-----	971	D1796	0.025		-0.60
225	D1796	0.05		0.07	974	D1796	0.05		0.07
228		-----		-----	982		-----		-----
237	D1796	0.05		0.07	1011		-----		-----
238	D1796	0.05		0.07	1082		-----		-----
253		-----		-----	1109	D1796	0.05		0.07
254		-----		-----	1121		-----		-----
273		-----		-----	1126		-----		-----
309		-----		-----	1135		-----		-----
311		-----		-----	1177		-----		-----
313		-----		-----	1218		-----		-----
323		-----		-----	1233		-----		-----
328		-----		-----	1254		-----		-----
331		-----		-----	1259	ISO3734	0.10		1.40
333		-----		-----	1266	UNE51082	0.05		0.07
334		-----		-----	1269		-----		-----
335		-----		-----	1275		-----		-----
339		-----		-----	1281		-----		-----
342	D1796	0.000		-1.26	1320	D1796	0.05		0.07
343	D1796	<0,01		-----	1345		-----		-----
349		-----		-----	1356		-----		-----
371		-----		-----	1379		-----		-----
391		-----		-----	1384		-----		-----
398		-----		-----	1392		-----		-----
399	D1796	0.05		0.07	1412		-----		-----
444		-----		-----	1438		-----		-----
455		-----		-----	1459		-----		-----
467		-----		-----	1498		-----		-----
495		-----		-----	1510		-----		-----
511		-----		-----	1556		-----		-----
529	D1796	0.05		0.07	1564		-----		-----
557		-----		-----	1586	D1796	0.10		1.40
562	D1796	0.000		-1.26	1613	D1796	0.05		0.07
575	D1796	0.05		0.07	1643		-----		-----
603		-----		-----	1720		-----		-----
604		-----		-----	1724		-----		-----
608		-----		-----	1728	D1796	0.05		0.07
631	D1796	0.10		1.40	1740	D1796	<0.05		-----
633	D1796	0		-1.26	1761		-----		-----
663	D1796	0.05		0.07	1776	ISO3734	0.127		2.12
671	D1796	0		-1.26	1792		-----		-----
750	D1796	0.025		-0.60	1807	ISO3734	0		-1.26
751		-----		-----	1833		-----		-----
753		-----		-----	1849		-----		-----
759		-----		-----	1852		-----		-----
781	D1796	0.025		-0.60	1854		-----		-----
785		-----		-----	1906		-----		-----
823	ISO3734	0.05		0.07	1956		-----		-----
824	D1796	0.05		0.07	1964		-----		-----
825	D1796	0.05		0.07	1995		-----		-----
850		-----		-----	6028	D4007	0.05		0.07
851		-----		-----	6038		-----		-----
855		-----		-----	6039		-----		-----
858		-----		-----	6044		-----		-----

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
6057		-----		-----	6262		-----		-----
6075		-----		-----	6308		-----		-----
6092		-----		-----	6332		-----		-----
6109		-----		-----	6335	D1796	0.10		1.403
6122		-----		-----	6340		-----		-----
6142		-----		-----	6364		-----		-----
6143		-----		-----	6365	D1796	0.05		0.07
6192		-----		-----	6373		-----		-----
6201	D1796	0.02		-0.73	6376		-----		-----
6203	D1796	0.10		1.40	6400		-----		-----
6252		-----		-----					

normality	OK
n	43
outliers	0
mean (n)	0.0474
st.dev. (n)	0.03350
R(calc.)	0.0938
st.dev.(D1796:11)	0.03750
R(D1796:11)	0.1050





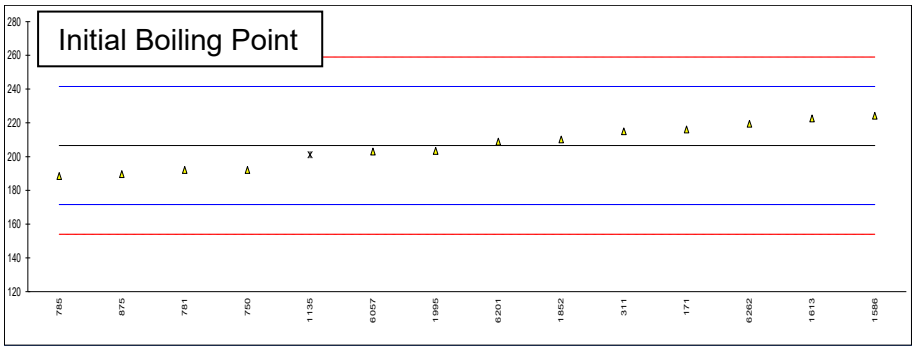
Vacuum Distillation at 10 mmHg but reported as AET on sample #21095, results in °C

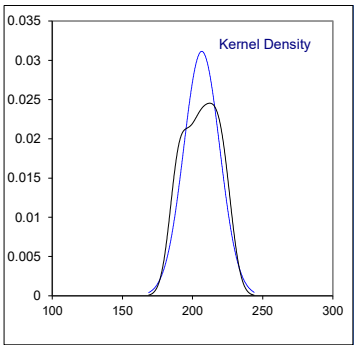
lab	method	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
62		-----	-----	-----	-----	-----	-----	-----	-----
90		-----	-----	-----	-----	-----	-----	-----	-----
92		-----	-----	-----	-----	-----	-----	-----	-----
120		-----	-----	-----	-----	-----	-----	-----	-----
140		-----	-----	-----	-----	-----	-----	-----	-----
150		-----	-----	-----	-----	-----	-----	-----	-----
154		-----	-----	-----	-----	-----	-----	-----	-----
158		-----	-----	-----	-----	-----	-----	-----	-----
159		-----	-----	-----	-----	-----	-----	-----	-----
168		-----	-----	-----	-----	-----	-----	-----	-----
169		-----	-----	-----	-----	-----	-----	-----	-----
171	D1160	216	287	352	410	432	464	-----	512
175		-----	-----	-----	-----	-----	-----	-----	-----
221		-----	-----	-----	-----	-----	-----	-----	-----
224		-----	-----	-----	-----	-----	-----	-----	-----
225		-----	-----	-----	-----	-----	-----	-----	-----
228		-----	-----	-----	-----	-----	-----	-----	-----
237		-----	-----	-----	-----	-----	-----	-----	-----
238		-----	-----	-----	-----	-----	-----	-----	-----
253		-----	-----	-----	-----	-----	-----	-----	-----
254		-----	-----	-----	-----	-----	-----	-----	-----
273		-----	-----	-----	-----	-----	-----	-----	-----
309		-----	-----	-----	-----	-----	-----	-----	-----
311	D1160	215	297	362	415	437	475	-----	510
313		-----	-----	-----	-----	-----	-----	-----	-----
323		-----	-----	-----	-----	-----	-----	-----	-----
328		-----	-----	-----	-----	-----	-----	-----	-----
331		-----	-----	-----	-----	-----	-----	-----	-----
333		-----	-----	-----	-----	-----	-----	-----	-----
334		-----	-----	-----	-----	-----	-----	-----	-----
335		-----	-----	-----	-----	-----	-----	-----	-----
339		-----	-----	-----	-----	-----	-----	-----	-----
342		-----	-----	-----	-----	-----	-----	-----	-----
343		-----	-----	-----	-----	-----	-----	-----	-----
349		-----	-----	-----	-----	-----	-----	-----	-----
371		-----	-----	-----	-----	-----	-----	-----	-----
391		-----	-----	-----	-----	-----	-----	-----	-----
398		-----	-----	-----	-----	-----	-----	-----	-----
399		-----	-----	-----	-----	-----	-----	-----	-----
444		-----	-----	-----	-----	-----	-----	-----	-----
455		-----	-----	-----	-----	-----	-----	-----	-----
467		-----	-----	-----	-----	-----	-----	-----	-----
495		-----	-----	-----	-----	-----	-----	-----	-----
511		-----	-----	-----	-----	-----	-----	-----	-----
529		-----	-----	-----	-----	-----	-----	-----	-----
557		-----	-----	-----	-----	-----	-----	-----	-----
562		-----	-----	-----	-----	-----	-----	-----	-----
575		-----	-----	-----	-----	-----	-----	-----	-----
603		-----	-----	-----	-----	-----	-----	-----	-----
604		-----	-----	-----	-----	-----	-----	-----	-----
608		-----	-----	-----	-----	-----	-----	-----	-----
631		-----	-----	-----	-----	-----	-----	-----	-----
633		-----	-----	-----	-----	-----	-----	-----	-----
663		-----	-----	-----	-----	-----	-----	-----	-----
671		-----	-----	-----	-----	-----	-----	-----	-----
750	D1160	192	284	356	410	432	468	-----	526
751		-----	-----	-----	-----	-----	-----	-----	-----
753		-----	-----	-----	-----	-----	-----	-----	-----
759		-----	-----	-----	-----	-----	-----	-----	-----
781	D1160	192	286	359	412	434	469	528	528
785	D1160	188.5	281.5	351.9	410.4	433.1	463.6	-----	520.4
823		-----	-----	-----	-----	-----	-----	-----	-----
824		-----	-----	-----	-----	-----	-----	-----	-----
825		-----	-----	-----	-----	-----	-----	-----	-----
850		-----	-----	-----	-----	-----	-----	-----	-----
851		-----	-----	-----	-----	-----	-----	-----	-----
855		-----	-----	-----	-----	-----	-----	-----	-----
858		-----	-----	-----	-----	-----	-----	-----	-----
859		-----	-----	-----	-----	-----	-----	-----	-----
862		-----	-----	-----	-----	-----	-----	-----	-----

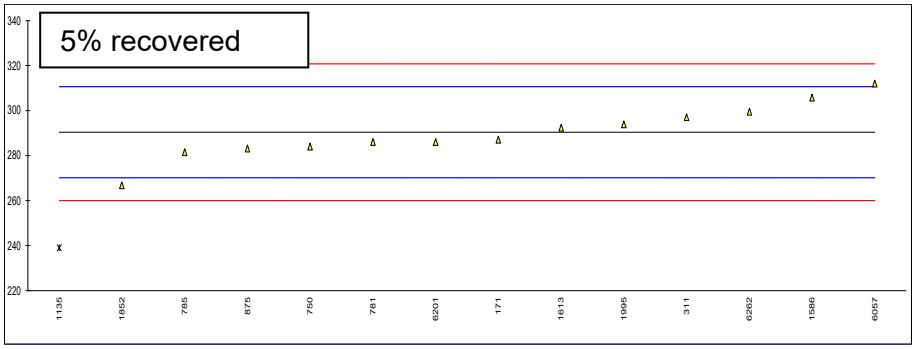
lab	method	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
863		-----	-----	-----	-----	-----	-----	-----	-----
864		-----	-----	-----	-----	-----	-----	-----	-----
865		-----	-----	-----	-----	-----	-----	-----	-----
866		-----	-----	-----	-----	-----	-----	-----	-----
870		-----	-----	-----	-----	-----	-----	-----	-----
875	D1160	189.6	283.1	358.2	413.0	433.1	467.8	-----	526.0
886		-----	-----	-----	-----	-----	-----	-----	-----
912		-----	-----	-----	-----	-----	-----	-----	-----
913		-----	-----	-----	-----	-----	-----	-----	-----
922		-----	-----	-----	-----	-----	-----	-----	-----
962		-----	-----	-----	-----	-----	-----	-----	-----
963		-----	-----	-----	-----	-----	-----	-----	-----
971		-----	-----	-----	-----	-----	-----	-----	-----
974		-----	-----	-----	-----	-----	-----	-----	-----
982		-----	-----	-----	-----	-----	-----	-----	-----
1011		-----	-----	-----	-----	-----	-----	-----	-----
1082		-----	-----	-----	-----	-----	-----	-----	-----
1109		-----	-----	-----	-----	-----	-----	-----	-----
1121		-----	-----	-----	-----	-----	-----	-----	-----
1126		-----	-----	-----	-----	-----	-----	-----	-----
1135	D1160	201 ex C	239 C,G5	298 C,DG1	391 C,G5	421 C,DG1	-----	-----	427 C,G1
1177		-----	-----	-----	-----	-----	-----	-----	-----
1218		-----	-----	-----	-----	-----	-----	-----	-----
1233		-----	-----	-----	-----	-----	-----	-----	-----
1254		-----	-----	-----	-----	-----	-----	-----	-----
1259		-----	-----	-----	-----	-----	-----	-----	-----
1266		-----	-----	-----	-----	-----	-----	-----	-----
1269		-----	-----	-----	-----	-----	-----	-----	-----
1275		-----	-----	-----	-----	-----	-----	-----	-----
1281		-----	-----	-----	-----	-----	-----	-----	-----
1320		-----	-----	-----	-----	-----	-----	-----	-----
1345		-----	-----	-----	-----	-----	-----	-----	-----
1356		-----	-----	-----	-----	-----	-----	-----	-----
1379		-----	-----	-----	-----	-----	-----	-----	-----
1384		-----	-----	-----	-----	-----	-----	-----	-----
1392		-----	-----	-----	-----	-----	-----	-----	-----
1412		-----	-----	-----	-----	-----	-----	-----	-----
1438		-----	-----	-----	-----	-----	-----	-----	-----
1459		-----	-----	-----	-----	-----	-----	-----	-----
1498		-----	-----	-----	-----	-----	-----	-----	-----
1510		-----	-----	-----	-----	-----	-----	-----	-----
1556		-----	-----	-----	-----	-----	-----	-----	-----
1564		-----	-----	-----	-----	-----	-----	-----	-----
1586	D1160	224.1	305.7	367.3	411.5	435.9	470.0	-----	507.3
1613	D1160	222.6	292.4	360.3	410.4	431.2	461.4	510.7	510.7
1643		-----	-----	-----	-----	-----	-----	-----	-----
1720		-----	-----	-----	-----	-----	-----	-----	-----
1724		-----	-----	-----	-----	-----	-----	-----	-----
1728		-----	-----	-----	-----	-----	-----	-----	-----
1740		-----	-----	-----	-----	-----	-----	-----	-----
1761		-----	-----	-----	-----	-----	-----	-----	-----
1776		-----	-----	-----	-----	-----	-----	-----	-----
1792		-----	-----	-----	-----	-----	-----	-----	-----
1807		-----	-----	-----	-----	-----	-----	-----	-----
1833		-----	-----	-----	-----	-----	-----	-----	-----
1849		-----	-----	-----	-----	-----	-----	-----	-----
1852	D1160	210.1	266.8	292.7 DG1	398.0	423.9 DG1	462.1	-----	-----
1854		-----	-----	-----	-----	-----	-----	-----	-----
1906		-----	-----	-----	-----	-----	-----	-----	-----
1956		-----	-----	-----	-----	-----	-----	-----	-----
1964		-----	-----	-----	-----	-----	-----	-----	-----
1995	D1160	203.4	293.8	355.7	410.1	434.6	466.0	-----	513.1
6028		-----	-----	-----	-----	-----	-----	-----	-----
6038		-----	-----	-----	-----	-----	-----	-----	-----
6039		-----	-----	-----	-----	-----	-----	-----	-----
6044		-----	-----	-----	-----	-----	-----	-----	-----
6057		203	312	378	416	438	478	-----	518
6075		-----	-----	-----	-----	-----	-----	-----	-----
6092		-----	-----	-----	-----	-----	-----	-----	-----
6109		-----	-----	-----	-----	-----	-----	-----	-----
6122		-----	-----	-----	-----	-----	-----	-----	-----
6142		-----	-----	-----	-----	-----	-----	-----	-----

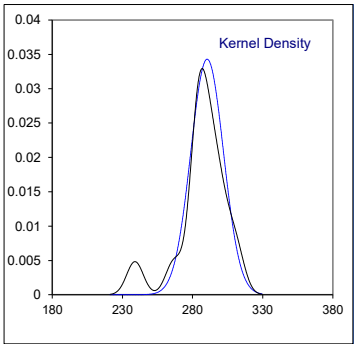
lab	method	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
6143		-----	-----	-----	-----	-----	-----	-----	-----
6192		-----	-----	-----	-----	-----	-----	-----	-----
6201	D1160	208.9	286.0	351.7	410.1	433.2	468.0	NA	513.3
6203		-----	-----	-----	-----	-----	-----	-----	-----
6252		-----	-----	-----	-----	-----	-----	-----	-----
6262	D1160	219.4	299.5	354.1	411.1	433.2	470.0	-----	508.9
6308		-----	-----	-----	-----	-----	-----	-----	-----
6332		-----	-----	-----	-----	-----	-----	-----	-----
6335		-----	-----	-----	-----	-----	-----	-----	-----
6340		-----	-----	-----	-----	-----	-----	-----	-----
6364		-----	-----	-----	-----	-----	-----	-----	-----
6365		-----	-----	-----	-----	-----	-----	-----	-----
6373		-----	-----	-----	-----	-----	-----	-----	-----
6376		-----	-----	-----	-----	-----	-----	-----	-----
6400		-----	-----	-----	-----	-----	-----	-----	-----
	normality	OK	OK	not OK	not OK	OK	OK	unknown	OK
	n	13	13	12	13	12	13	2	12
	outliers	0 (+1ex)	1	2	1	2	0	n.a.	1
	mean (n)	206.51	290.37	358.85	410.58	433.94	467.92	n.a.	516.14
	st.dev. (n)	12.8087	11.631	7.613	4.256	2.082	4.793	n.a.	7.318
	R(calc.)	35.86	32.57	21.32	11.92	5.83	13.42	n.a.	20.49
	st.dev.(D1160:18)	17.500	10.126	7.786	5.710	5.113	3.550	n.a.	9.643
	R(D1160:18)	49	28.35	21.80	15.99	14.32	9.94	n.a.	27

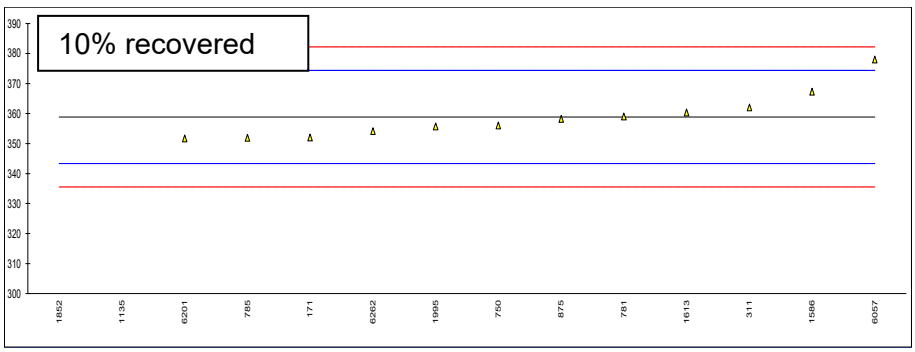
Lab 1135 first reported 78.3, 109.0, 157.0, 235.8, 261.9, ---,---,266.9

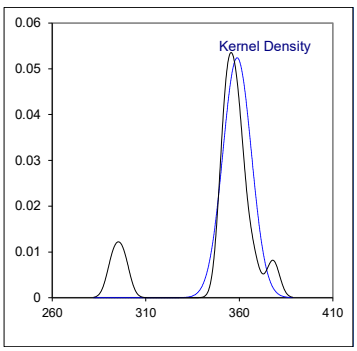


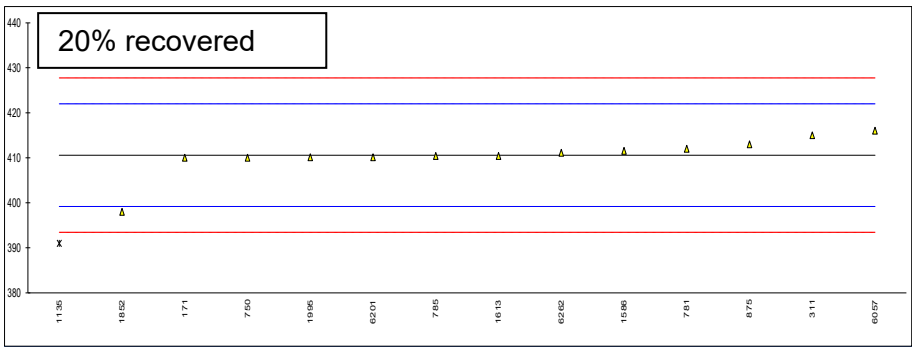


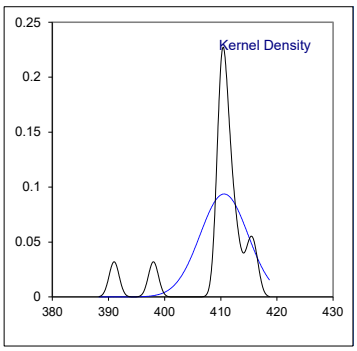


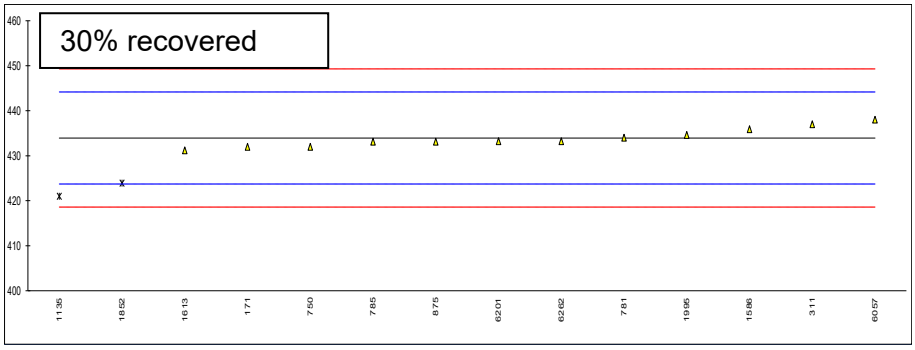


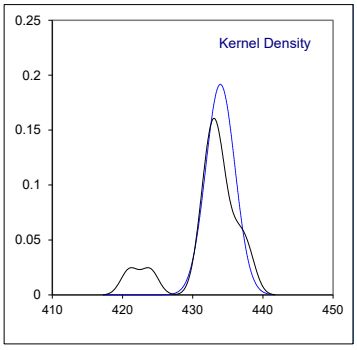


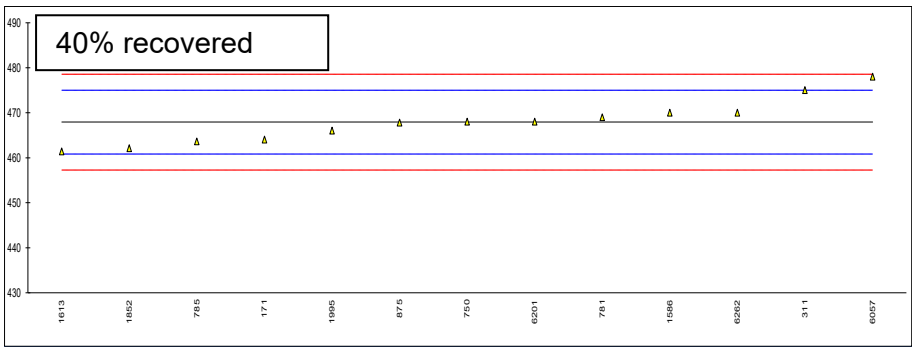


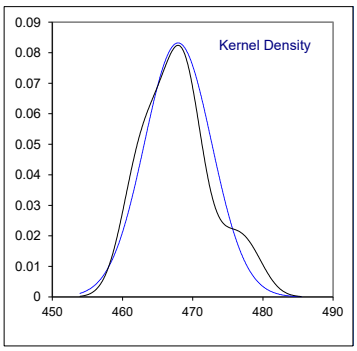

20% recovered
1135
1852
171
750
1995
6201
785
1613
6262
1586
781
875
311
6057

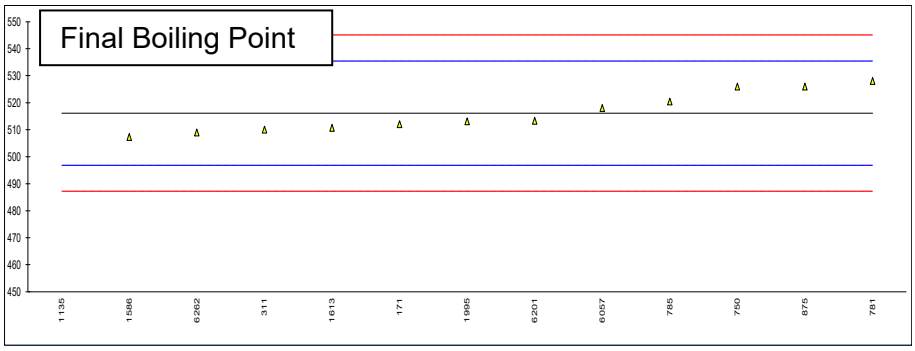

Kernel Density

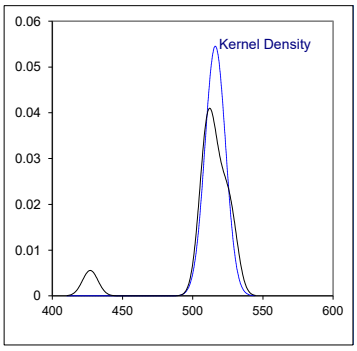

30% recovered
1135
1852
1613
171
750
785
875
6201
6262
781
1995
1586
311
6057


Kernel Density


40% recovered
1613
1852
785
171
1995
875
750
6201
781
1586
6262
311
6057


Kernel Density


Final Boiling Point
1135
1586
6262
311
1613
171
1995
6201
6057
785
750
875
781


Kernel Density

z-scores of Vacuum Distillation at 10 mmHg but reported as AET on sample #21095

lab	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
62	-----	-----	-----	-----	-----	-----	-----	-----
90	-----	-----	-----	-----	-----	-----	-----	-----
92	-----	-----	-----	-----	-----	-----	-----	-----
120	-----	-----	-----	-----	-----	-----	-----	-----
140	-----	-----	-----	-----	-----	-----	-----	-----
150	-----	-----	-----	-----	-----	-----	-----	-----
154	-----	-----	-----	-----	-----	-----	-----	-----
158	-----	-----	-----	-----	-----	-----	-----	-----
159	-----	-----	-----	-----	-----	-----	-----	-----
168	-----	-----	-----	-----	-----	-----	-----	-----
169	-----	-----	-----	-----	-----	-----	-----	-----
171	0.54	-0.33	-0.88	-0.10	-0.38	-1.10	-----	-0.43
175	-----	-----	-----	-----	-----	-----	-----	-----
221	-----	-----	-----	-----	-----	-----	-----	-----
224	-----	-----	-----	-----	-----	-----	-----	-----
225	-----	-----	-----	-----	-----	-----	-----	-----
228	-----	-----	-----	-----	-----	-----	-----	-----
237	-----	-----	-----	-----	-----	-----	-----	-----
238	-----	-----	-----	-----	-----	-----	-----	-----
253	-----	-----	-----	-----	-----	-----	-----	-----
254	-----	-----	-----	-----	-----	-----	-----	-----
273	-----	-----	-----	-----	-----	-----	-----	-----
309	-----	-----	-----	-----	-----	-----	-----	-----
311	0.49	0.65	0.40	0.77	0.60	2.00	-----	-0.64
313	-----	-----	-----	-----	-----	-----	-----	-----
323	-----	-----	-----	-----	-----	-----	-----	-----
328	-----	-----	-----	-----	-----	-----	-----	-----
331	-----	-----	-----	-----	-----	-----	-----	-----
333	-----	-----	-----	-----	-----	-----	-----	-----
334	-----	-----	-----	-----	-----	-----	-----	-----
335	-----	-----	-----	-----	-----	-----	-----	-----
339	-----	-----	-----	-----	-----	-----	-----	-----
342	-----	-----	-----	-----	-----	-----	-----	-----
343	-----	-----	-----	-----	-----	-----	-----	-----
349	-----	-----	-----	-----	-----	-----	-----	-----
371	-----	-----	-----	-----	-----	-----	-----	-----
391	-----	-----	-----	-----	-----	-----	-----	-----
398	-----	-----	-----	-----	-----	-----	-----	-----
399	-----	-----	-----	-----	-----	-----	-----	-----
444	-----	-----	-----	-----	-----	-----	-----	-----
455	-----	-----	-----	-----	-----	-----	-----	-----
467	-----	-----	-----	-----	-----	-----	-----	-----
495	-----	-----	-----	-----	-----	-----	-----	-----
511	-----	-----	-----	-----	-----	-----	-----	-----
529	-----	-----	-----	-----	-----	-----	-----	-----
557	-----	-----	-----	-----	-----	-----	-----	-----
562	-----	-----	-----	-----	-----	-----	-----	-----
575	-----	-----	-----	-----	-----	-----	-----	-----
603	-----	-----	-----	-----	-----	-----	-----	-----
604	-----	-----	-----	-----	-----	-----	-----	-----
608	-----	-----	-----	-----	-----	-----	-----	-----
631	-----	-----	-----	-----	-----	-----	-----	-----
633	-----	-----	-----	-----	-----	-----	-----	-----
663	-----	-----	-----	-----	-----	-----	-----	-----
671	-----	-----	-----	-----	-----	-----	-----	-----
750	-0.83	-0.63	-0.37	-0.10	-0.38	0.02	-----	1.02
751	-----	-----	-----	-----	-----	-----	-----	-----
753	-----	-----	-----	-----	-----	-----	-----	-----
759	-----	-----	-----	-----	-----	-----	-----	-----
781	-0.83	-0.43	0.02	0.25	0.01	0.31	-----	1.23
785	-1.03	-0.88	-0.89	-0.03	-0.16	-1.22	-----	0.44
823	-----	-----	-----	-----	-----	-----	-----	-----
824	-----	-----	-----	-----	-----	-----	-----	-----
825	-----	-----	-----	-----	-----	-----	-----	-----
850	-----	-----	-----	-----	-----	-----	-----	-----
851	-----	-----	-----	-----	-----	-----	-----	-----
855	-----	-----	-----	-----	-----	-----	-----	-----
858	-----	-----	-----	-----	-----	-----	-----	-----
859	-----	-----	-----	-----	-----	-----	-----	-----
862	-----	-----	-----	-----	-----	-----	-----	-----

lab	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
863	-----	-----	-----	-----	-----	-----	-----	-----
864	-----	-----	-----	-----	-----	-----	-----	-----
865	-----	-----	-----	-----	-----	-----	-----	-----
866	-----	-----	-----	-----	-----	-----	-----	-----
870	-----	-----	-----	-----	-----	-----	-----	-----
875	-0.97	-0.72	-0.08	0.42	-0.16	-0.03	-----	1.02
886	-----	-----	-----	-----	-----	-----	-----	-----
912	-----	-----	-----	-----	-----	-----	-----	-----
913	-----	-----	-----	-----	-----	-----	-----	-----
922	-----	-----	-----	-----	-----	-----	-----	-----
962	-----	-----	-----	-----	-----	-----	-----	-----
963	-----	-----	-----	-----	-----	-----	-----	-----
971	-----	-----	-----	-----	-----	-----	-----	-----
974	-----	-----	-----	-----	-----	-----	-----	-----
982	-----	-----	-----	-----	-----	-----	-----	-----
1011	-----	-----	-----	-----	-----	-----	-----	-----
1082	-----	-----	-----	-----	-----	-----	-----	-----
1109	-----	-----	-----	-----	-----	-----	-----	-----
1121	-----	-----	-----	-----	-----	-----	-----	-----
1126	-----	-----	-----	-----	-----	-----	-----	-----
1135	-0.31	-5.07	-7.81	-3.43	-2.53	-----	-----	-9.24
1177	-----	-----	-----	-----	-----	-----	-----	-----
1218	-----	-----	-----	-----	-----	-----	-----	-----
1233	-----	-----	-----	-----	-----	-----	-----	-----
1254	-----	-----	-----	-----	-----	-----	-----	-----
1259	-----	-----	-----	-----	-----	-----	-----	-----
1266	-----	-----	-----	-----	-----	-----	-----	-----
1269	-----	-----	-----	-----	-----	-----	-----	-----
1275	-----	-----	-----	-----	-----	-----	-----	-----
1281	-----	-----	-----	-----	-----	-----	-----	-----
1320	-----	-----	-----	-----	-----	-----	-----	-----
1345	-----	-----	-----	-----	-----	-----	-----	-----
1356	-----	-----	-----	-----	-----	-----	-----	-----
1379	-----	-----	-----	-----	-----	-----	-----	-----
1384	-----	-----	-----	-----	-----	-----	-----	-----
1392	-----	-----	-----	-----	-----	-----	-----	-----
1412	-----	-----	-----	-----	-----	-----	-----	-----
1438	-----	-----	-----	-----	-----	-----	-----	-----
1459	-----	-----	-----	-----	-----	-----	-----	-----
1498	-----	-----	-----	-----	-----	-----	-----	-----
1510	-----	-----	-----	-----	-----	-----	-----	-----
1556	-----	-----	-----	-----	-----	-----	-----	-----
1564	-----	-----	-----	-----	-----	-----	-----	-----
1586	1.01	1.51	1.09	0.16	0.38	0.59	-----	-0.92
1613	0.92	0.20	0.19	-0.03	-0.54	-1.84	-----	-0.56
1643	-----	-----	-----	-----	-----	-----	-----	-----
1720	-----	-----	-----	-----	-----	-----	-----	-----
1724	-----	-----	-----	-----	-----	-----	-----	-----
1728	-----	-----	-----	-----	-----	-----	-----	-----
1740	-----	-----	-----	-----	-----	-----	-----	-----
1761	-----	-----	-----	-----	-----	-----	-----	-----
1776	-----	-----	-----	-----	-----	-----	-----	-----
1792	-----	-----	-----	-----	-----	-----	-----	-----
1807	-----	-----	-----	-----	-----	-----	-----	-----
1833	-----	-----	-----	-----	-----	-----	-----	-----
1849	-----	-----	-----	-----	-----	-----	-----	-----
1852	0.21	-2.33	-8.50	-2.20	-1.96	-1.64	-----	-----
1854	-----	-----	-----	-----	-----	-----	-----	-----
1906	-----	-----	-----	-----	-----	-----	-----	-----
1956	-----	-----	-----	-----	-----	-----	-----	-----
1964	-----	-----	-----	-----	-----	-----	-----	-----
1995	-0.18	0.34	-0.40	-0.08	0.13	-0.54	-----	-0.32
6028	-----	-----	-----	-----	-----	-----	-----	-----
6038	-----	-----	-----	-----	-----	-----	-----	-----
6039	-----	-----	-----	-----	-----	-----	-----	-----
6044	-----	-----	-----	-----	-----	-----	-----	-----
6057	-0.20	2.14	2.46	0.95	0.79	2.84	-----	0.19
6075	-----	-----	-----	-----	-----	-----	-----	-----
6092	-----	-----	-----	-----	-----	-----	-----	-----
6109	-----	-----	-----	-----	-----	-----	-----	-----
6122	-----	-----	-----	-----	-----	-----	-----	-----
6142	-----	-----	-----	-----	-----	-----	-----	-----

lab	IBP	5%rec	10%rec	20%rec	30%rec	40%rec	50%rec	FBP
6143	-----	-----	-----	-----	-----	-----	-----	-----
6192	-----	-----	-----	-----	-----	-----	-----	-----
6201	0.14	-0.43	-0.92	-0.08	-0.15	0.02	-----	-0.29
6203	-----	-----	-----	-----	-----	-----	-----	-----
6252	-----	-----	-----	-----	-----	-----	-----	-----
6262	0.74	0.90	-0.61	0.09	-0.15	0.59	-----	-0.75
6308	-----	-----	-----	-----	-----	-----	-----	-----
6332	-----	-----	-----	-----	-----	-----	-----	-----
6335	-----	-----	-----	-----	-----	-----	-----	-----
6340	-----	-----	-----	-----	-----	-----	-----	-----
6364	-----	-----	-----	-----	-----	-----	-----	-----
6365	-----	-----	-----	-----	-----	-----	-----	-----
6373	-----	-----	-----	-----	-----	-----	-----	-----
6376	-----	-----	-----	-----	-----	-----	-----	-----
6400	-----	-----	-----	-----	-----	-----	-----	-----

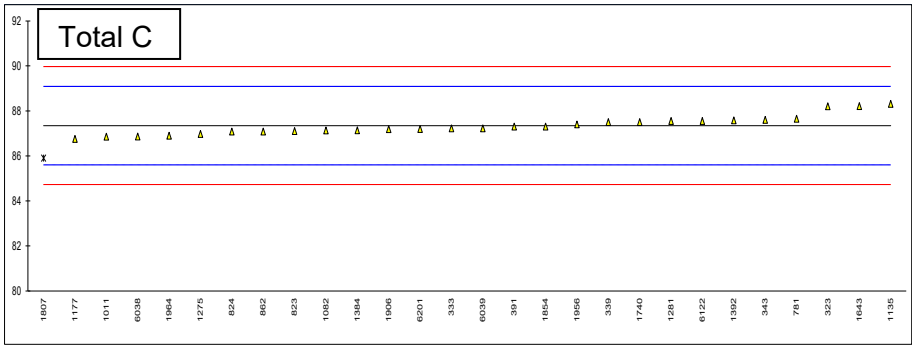
Determination of Total Carbon, Hydrogen and Nitrogen on sample #21095; results in %M/M

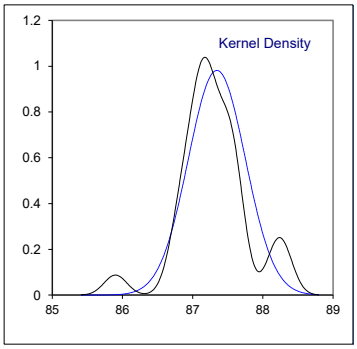
lab	method	Total C	mark	z(targ)	Total H	mark	z(targ)	Total N	mark	z(targ)
62		-----		-----	-----		-----	-----		-----
90		-----		-----	-----		-----	-----		-----
92		-----		-----	-----		-----	-----		-----
120		-----		-----	-----		-----	-----		-----
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
154		-----		-----	-----		-----	-----		-----
158		-----		-----	-----		-----	-----		-----
159		-----		-----	-----		-----	-----		-----
168		-----		-----	-----		-----	-----		-----
169		-----		-----	-----		-----	-----		-----
171		-----		-----	-----		-----	-----		-----
175		-----		-----	-----		-----	-----		-----
221		-----		-----	-----		-----	-----		-----
224		-----		-----	-----		-----	-----		-----
225		-----		-----	-----		-----	-----		-----
228		-----		-----	-----		-----	-----		-----
237		-----		-----	-----		-----	-----		-----
238		-----		-----	-----		-----	-----		-----
253		-----		-----	-----		-----	-----		-----
254		-----		-----	-----		-----	-----		-----
273		-----		-----	-----		-----	-----		-----
309		-----		-----	-----		-----	-----		-----
311		-----		-----	-----		-----	-----		-----
313		-----		-----	-----		-----	-----		-----
323	D5291-C	88.2		0.98	10.7		-1.68	0.6	R(0.05)	6.32
328		-----		-----	-----		-----	-----		-----
331		-----		-----	-----		-----	-----		-----
333	D5291-A	87.22		-0.14	11.07		-0.34	0.38		0.17
334		-----		-----	-----		-----	-----		-----
335		-----		-----	-----		-----	-----		-----
339	D5291-D	87.5		0.18	11.17		0.02	0.39		0.45
342		-----		-----	-----		-----	-----		-----
343	D5291-A	87.6		0.29	11.0		-0.59	0.33		-1.23
349		-----		-----	-----		-----	-----		-----
371		-----		-----	-----		-----	-----		-----
391	D5291-A	87.3	C	-0.05	11.4		0.85	0.52		4.08
398		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
455		-----		-----	-----		-----	-----		-----
467		-----		-----	-----		-----	-----		-----
495		-----		-----	-----		-----	-----		-----
511		-----		-----	-----		-----	-----		-----
529		-----		-----	-----		-----	-----		-----
557		-----		-----	-----		-----	-----		-----
562		-----		-----	-----		-----	-----		-----
575		-----		-----	-----		-----	-----		-----
603		-----		-----	-----		-----	-----		-----
604		-----		-----	-----		-----	-----		-----
608		-----		-----	-----		-----	-----		-----
631		-----		-----	-----		-----	-----		-----
633		-----		-----	-----		-----	-----		-----
663		-----		-----	-----		-----	-----		-----
671		-----		-----	-----		-----	-----		-----
750		-----		-----	-----		-----	-----		-----
751		-----		-----	-----		-----	-----		-----
753		-----		-----	-----		-----	-----		-----
759		-----		-----	-----		-----	-----		-----
781	D5291-A	87.65		0.35	11.52		1.29	0.32		-1.51
785		-----		-----	-----		-----	-----		-----
823	D5291-D	87.1		-0.28	11.3		0.49	0.3		-2.07
824	D5291-D	87.078		-0.31	11.115		-0.18	-----		-----
825		-----		-----	-----		-----	-----		-----
850		-----		-----	-----		-----	-----		-----
851		-----		-----	-----		-----	-----		-----
855		-----		-----	-----		-----	-----		-----
858		-----		-----	-----		-----	-----		-----
859		-----		-----	-----		-----	-----		-----
862	D5291-D	87.08		-0.30	11.42		0.93	0.34		-0.95

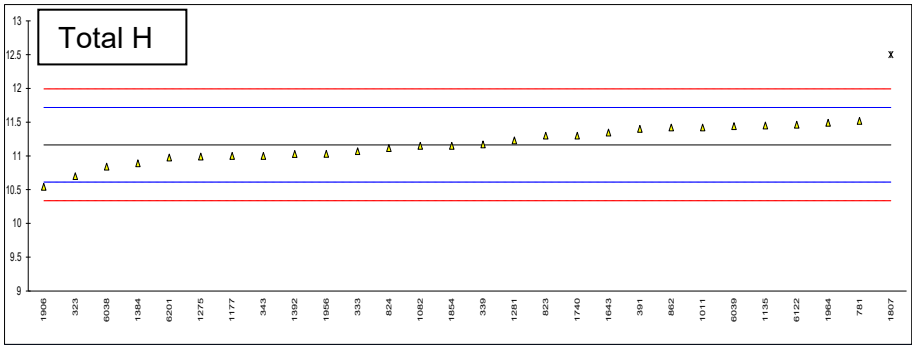
lab	method	Total C	mark	z(targ)	Total H	mark	z(targ)	Total N	mark	z(targ)
863		-----		-----	-----		-----	-----		-----
864		-----		-----	-----		-----	-----		-----
865		-----		-----	-----		-----	-----		-----
866		-----		-----	-----		-----	-----		-----
870		-----		-----	-----		-----	-----		-----
875		-----		-----	-----		-----	-----		-----
886		-----		-----	-----		-----	-----		-----
912		-----		-----	-----		-----	-----		-----
913		-----		-----	-----		-----	-----		-----
922		-----		-----	-----		-----	-----		-----
962		-----		-----	-----		-----	-----		-----
963		-----		-----	-----		-----	-----		-----
971		-----		-----	-----		-----	-----		-----
974		-----		-----	-----		-----	-----		-----
982		-----		-----	-----		-----	-----		-----
1011	D5291-A	86.85		-0.57	11.42		0.93	0.32		-1.51
1082	D5291-C	87.13		-0.25	11.15		-0.05	0.3		-2.07
1109		-----		-----	-----		-----	-----		-----
1121		-----		-----	-----		-----	-----		-----
1126		-----		-----	-----		-----	-----		-----
1135	D5291-A	88.31		1.10	11.45		1.04	0.32		-1.51
1177	D5291-D	86.75		-0.68	11.00		-0.59	0.43		1.56
1218		-----		-----	-----		-----	-----		-----
1233		-----		-----	-----		-----	-----		-----
1254		-----		-----	-----		-----	-----		-----
1259		-----		-----	-----		-----	-----		-----
1266		-----		-----	-----		-----	-----		-----
1269		-----		-----	-----		-----	-----		-----
1275	D5291-D	86.98	C	-0.42	10.99	C	-0.63	0.30	C	-2.07
1281	D5291	87.55		0.23	11.229		0.24	0.378		0.11
1320		-----		-----	-----		-----	-----		-----
1345		-----		-----	-----		-----	-----		-----
1356		-----		-----	-----		-----	-----		-----
1379		-----		-----	-----		-----	-----		-----
1384	In house	87.14		-0.24	10.89		-0.99	0.105	R(0.05)	-7.53
1392		87.577		0.26	11.029		-0.49	0.440		1.84
1412		-----		-----	-----		-----	-----		-----
1438		-----		-----	-----		-----	-----		-----
1459		-----		-----	-----		-----	-----		-----
1498		-----		-----	-----		-----	-----		-----
1510		-----		-----	-----		-----	-----		-----
1556		-----		-----	-----		-----	-----		-----
1564		-----		-----	-----		-----	-----		-----
1586		-----		-----	-----		-----	-----		-----
1613		-----		-----	-----		-----	-----		-----
1643	D5291-A	88.212		0.99	11.346		0.66	0.34784		-0.73
1720		-----		-----	-----		-----	-----		-----
1724		-----		-----	-----		-----	-----		-----
1728		-----		-----	-----		-----	-----		-----
1740	D5291-A	87.5		0.18	11.3		0.49	0.36		-0.39
1761		-----		-----	-----		-----	-----		-----
1776		-----		-----	-----		-----	-----		-----
1792		-----		-----	-----		-----	-----		-----
1807		85.9	R(0.05)	-1.66	12.5	R(0.01)	4.84	0.42		1.28
1833		-----		-----	-----		-----	-----		-----
1849		-----		-----	-----		-----	-----		-----
1852		-----		-----	-----		-----	-----		-----
1854	D5291-D	87.30		-0.05	11.15		-0.05	0.41		1.00
1906		87.189		-0.18	10.542		-2.25	0.500		3.52
1956	D5291-C	87.4		0.06	11.03		-0.49	0.41		1.00
1964		86.90		-0.51	11.49		1.18	0.35		-0.67
1995		-----		-----	-----		-----	-----		-----
6028		-----		-----	-----		-----	-----		-----
6038	D5291-A	86.86		-0.56	10.84		-1.17	0.314		-1.68
6039	D5291-C	87.22		-0.14	11.44		1.00	0.38		0.17
6044		-----		-----	-----		-----	-----		-----
6057		-----		-----	-----		-----	-----		-----
6075		-----		-----	-----		-----	-----		-----
6092		-----		-----	-----		-----	-----		-----
6109		-----		-----	-----		-----	-----		-----
6122	D5291-A	87.55		0.23	11.46		1.07	0.366		-0.23
6142		-----		-----	-----		-----	-----		-----

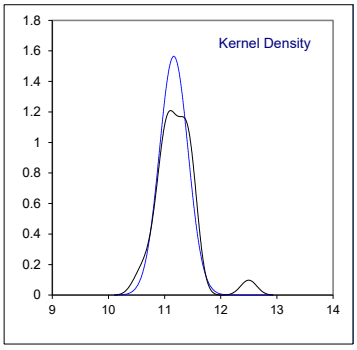
lab	method	Total C	mark	z(targ)	Total H	mark	z(targ)	Total N	mark	z(targ)
6143		-----		-----	-----		-----	-----		-----
6192		-----		-----	-----		-----	-----		-----
6201	D5291-A	87.1953		-0.17	10.976		-0.68	0.42616		1.46
6203		-----		-----	-----		-----	-----		-----
6252		-----		-----	-----		-----	-----		-----
6262		-----		-----	-----		-----	-----		-----
6308		-----		-----	-----		-----	-----		-----
6332		-----		-----	-----		-----	-----		-----
6335		-----		-----	-----		-----	-----		-----
6340		-----		-----	-----		-----	-----		-----
6364		-----		-----	-----		-----	-----		-----
6365		-----		-----	-----		-----	-----		-----
6373		-----		-----	-----		-----	-----		-----
6376		-----		-----	-----		-----	-----		-----
6400		-----		-----	-----		-----	-----		-----
normality		OK			OK			OK		
n		27			27			25		
outliers		1			1			2		
mean (n)		87.3459			11.1640			0.3741		
st.dev. (n)		0.40659			0.25489			0.05981		
R(calc.)		1.1385			0.7137			0.1675		
st.dev.(D5291-ABC:16)		0.87317			0.27613			0.03575		
R(D5291-ABC:16)		2.4449			0.7732			0.1001		

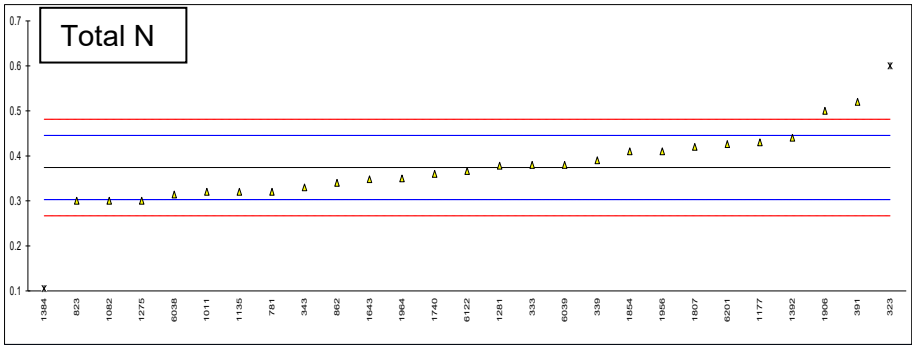
Lab 391 first reported 90.3
Lab 1275 first reported 6.98, 0.30, 10.99

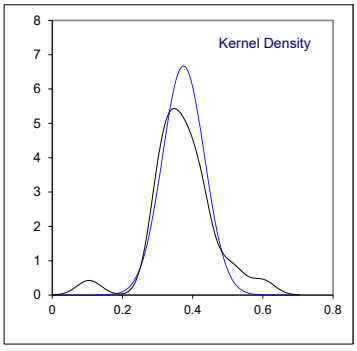










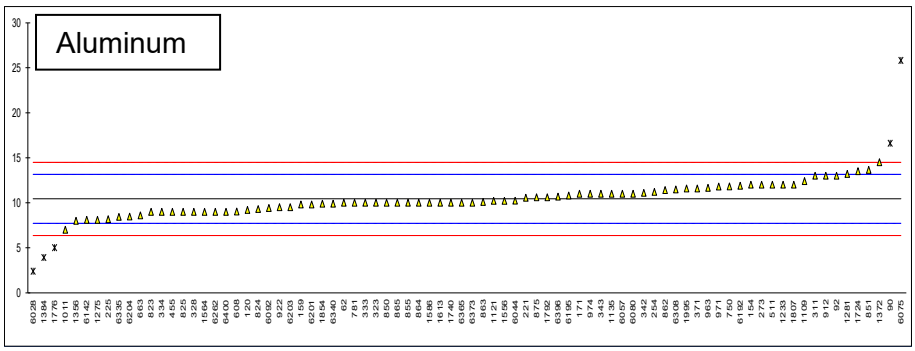


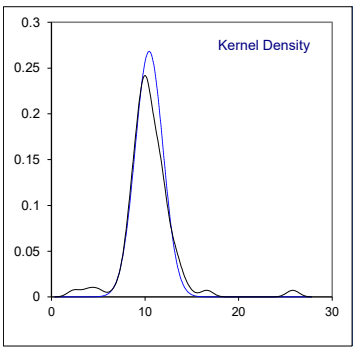
Determination of Aluminum as Al, Silicon as Si and total Al+Si on sample #21096; results in mg/kg

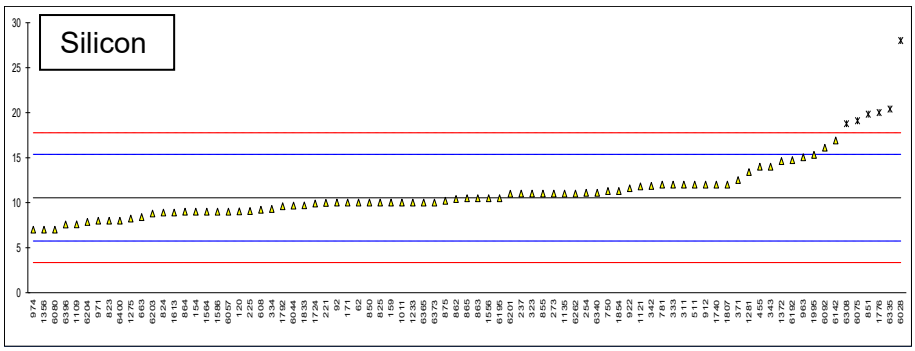
lab	method	Al	mark	z(targ)	Si	mark	z(targ)	Sum Al+Si	mark	z(targ)
62	IP501	10		-0.33	10		-0.23	20		-0.47
90	D5184	16.6	R(0.05)	4.54	-----		-----	-----		-----
92	D5184	13		1.89	10		-0.23	23		0.62
120	IP501	9.209		-0.91	9.036		-0.63	18.245		-1.10
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
154	IP501	12		1.15	9		-0.65	21		-0.11
159	IP501	9.8		-0.47	10.0		-0.23	19.8		-0.54
168		-----		-----	-----		-----	-----		-----
171	IP501	11		0.41	10		-0.23	21		-0.11
175		-----		-----	-----		-----	-----		-----
221	IP501	10.55		0.08	9.98		-0.24	20.53		-0.28
225	IP501	8.18		-1.67	9.07		-0.62	17.25		-1.46
237		-----		-----	11		0.18	-----		-----
254	IP501	11.21		0.57	11.10		0.22	22.31		0.37
273	IP501	12		1.15	11		0.18	23		0.62
311	IP501	13		1.89	12		0.60	25		1.34
323	IP501	10		-0.33	11		0.18	21		-0.11
328	IP501	9		-1.06	<10		-----	17		-1.55
331		-----		-----	-----		-----	-----		-----
333	IP501	10		-0.33	12		0.60	22		0.26
334	IP501	9.0		-1.06	9.3		-0.52	18.3		-1.08
342	IP501	11.0985		0.48	11.8629		0.54	22.9614		0.60
343	IP501	11		0.41	14		1.43	26		1.71
357		-----		-----	-----		-----	-----		-----
371	IP470	11.59		0.85	12.51		0.81	24.1		1.02
391		-----		-----	-----		-----	-----		-----
398		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
455	IP501	9		-1.06	14		1.43	23		0.62
467		-----		-----	-----		-----	-----		-----
495		-----		-----	-----		-----	-----		-----
511	D5184	12		1.15	12		0.60	24		0.98
529		-----		-----	-----		-----	-----		-----
557		-----		-----	-----		-----	-----		-----
608	IP501	9.02		-1.05	9.21		-0.56	18.23		-1.11
631		-----		-----	-----		-----	-----		-----
663	IP501	8.6		-1.36	8.4		-0.90	17.0		-1.55
750	IP501	11.82		1.02	11.30		0.31	23.12		0.66
781	IP501	10		-0.33	12		0.60	22		0.26
785		-----		-----	-----		-----	-----		-----
823	IP501	9		-1.06	8		-1.06	17		-1.55
824	IP501	9.3		-0.84	8.9		-0.69	18		-1.19
825	IP501	9		-1.06	10		-0.23	19		-0.83
850	IP501	10		-0.33	10		-0.23	20		-0.47
851	IP501	13.66		2.37	19.81	R(0.05)	3.85	33.47	R(0.05)	4.41
855	IP501	10		-0.33	11		0.18	21		-0.11
862	IP501	11.4		0.71	10.4		-0.07	21.8		0.18
863	IP501	10.1		-0.25	10.5		-0.02	20.6		-0.25
864	IP501	10		-0.33	9		-0.65	19		-0.83
865	IP501	10.0		-0.33	10.5		-0.02	20.5		-0.29
875	IP501	10.6		0.12	10.2		-0.15	20.8		-0.18
912	IP501	13		1.89	12		0.60	25		1.34
913		-----		-----	-----		-----	-----		-----
922	IP501	9.5		-0.69	11.6		0.43	21.1		-0.07
963	IP470	11.66		0.90	15.04		1.86	26.70		1.96
971	IP501	11.8		1.00	8.0		-1.06	19.8		-0.54
974	IP501	11		0.41	7		-1.48	18		-1.19
1011	ISO10478	7		-2.54	10		-0.23	17		-1.55
1109	IP470	12.4		1.44	7.6		-1.23	20.0		-0.47
1121	IP501	10.2		-0.18	11.8		0.52	22.0		0.26
1135	IP501	11		0.41	11		0.18	22		0.26
1218		-----		-----	-----		-----	-----		-----
1233	IP501	12		1.15	10		-0.23	22		0.26
1275	IP501	8.111	C	-1.72	8.234	C	-0.97	16.345	C	-1.79
1281	IP501	13.2		2.03	13.4		1.18	26.6		1.92
1320		-----		-----	-----		-----	-----		-----
1345		-----		-----	-----		-----	-----		-----
1356	ISO10478	8		-1.80	7		-1.48	15		-2.28

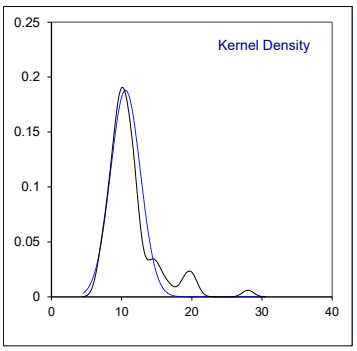
lab	method	Al	mark	z(targ)	Si	mark	z(targ)	Sum Al+Si	mark	z(targ)
1372	IP501	14.50		2.99	14.61		1.68	29.11		2.83
1384	In house	3.91	R(0.05)	-4.81	-----		-----	-----		-----
1412		-----		-----	-----		-----	-----		-----
1510		-----		-----	-----		-----	-----		-----
1556	IP501	10.2		-0.18	10.5		-0.02	20.7		-0.21
1564	IP501	9.00		-1.06	9.00		-0.65	18.00		-1.19
1586	IP501	10		-0.33	9		-0.65	19		-0.83
1613	IP501	10.0		-0.33	8.9		-0.69	18.9		-0.87
1643		-----		-----	-----		-----	-----		-----
1724	IP501	13.5		2.25	9.9		-0.27	23.4		0.76
1740	ISO10478	10		-0.33	12		0.60	22		0.26
1776	IP501	5	R(0.05)	-4.01	20	R(0.05)	3.93	25		1.34
1792	IP501	10.6		0.12	9.6		-0.40	20.2		-0.40
1807	IP501	12		1.15	12		0.60	24		0.98
1833		-----		-----	9.7		-0.36	-----		-----
1854	IP501	9.9		-0.40	11.3		0.31	21.2		-0.03
1995	IP501	11.58		0.84	15.3		1.97	26.88		2.02
6028	IP470/D5185	2.4	R(0.01)	-5.93	28.0	R(0.01)	7.25	30.4		3.30
6044	IP501	10.22		-0.16	9.675		-0.37	19.895		-0.51
6057	IP501	11		0.41	9		-0.65	20		-0.47
6075	In house	25.8	R(0.01)	11.32	19.1	R(0.05)	3.55	44.9	R(0.01)	8.55
6080	IP501	11.0		0.41	7.0		-1.48	18.0		-1.19
6092	IP501	9.4		-0.77	16.1		2.30	-----		-----
6142	IP501	8.107		-1.72	16.914		2.64	25.021		1.35
6143		-----		-----	-----		-----	-----		-----
6192	IP501	11.89		1.07	14.72		1.73	26.61		1.93
6195	IP501	10.8		0.26	10.5		-0.02	21.3		0.00
6201	IP501	9.80		-0.47	10.99		0.18	20.79		-0.18
6203	IP501	9.5		-0.69	8.8		-0.73	18.3		-1.08
6204	IP501	8.46		-1.46	7.86		-1.12	16.32		-1.80
6262	IP501	9		-1.06	11		0.18	20		-0.47
6308	IP501	11.47096		0.76	18.7635	R(0.05)	3.41	30.23446		3.24
6335		8.43		-1.48	20.40	R(0.05)	4.09	28.83		2.73
6340	IP501	9.9		-0.40	11.1		0.22	21.0		-0.11
6365	IP501	10		-0.33	10		-0.23	20		-0.47
6373	IP501	10		-0.33	10		-0.23	20		-0.47
6396	IP501	10.685		0.18	7.5725		-1.24	18.2575		-1.10
6400	IP501	9		-1.06	8		-1.06	17		-1.55
normality		OK			OK			OK		
n		77			75			77		
outliers		5			6			2		
mean (n)		10.44			10.56			21.29		
st.dev. (n)		1.488			2.120			3.347		
R(calc.)		4.17			5.94			9.37		
st.dev.(IP470:05)		1.357			2.405			2.761		
R(IP470:05)		3.80			6.73			7.73		
compare										
R(IP501:05)		3.52			3.51			4.97		

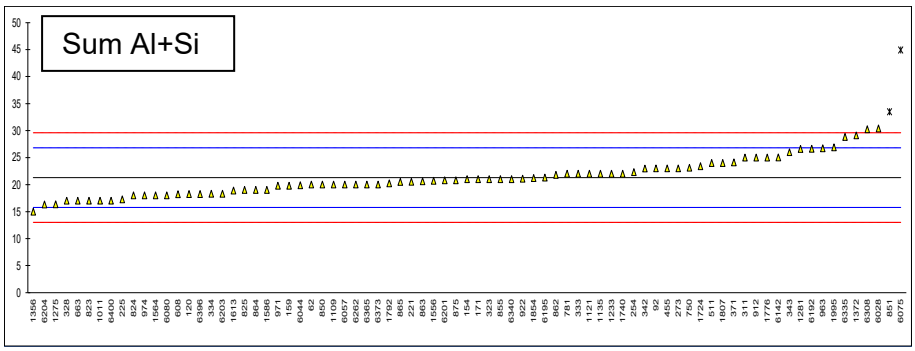
Lab 1275 first reported 4.423, 8.484, 12.907

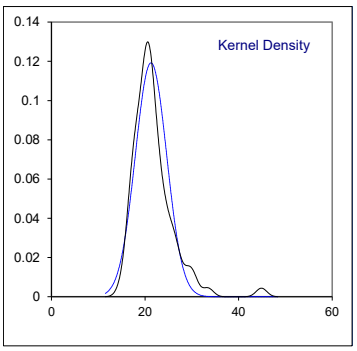

Aluminum


Kernel Density


Silicon


Kernel Density


Sum Al+Si

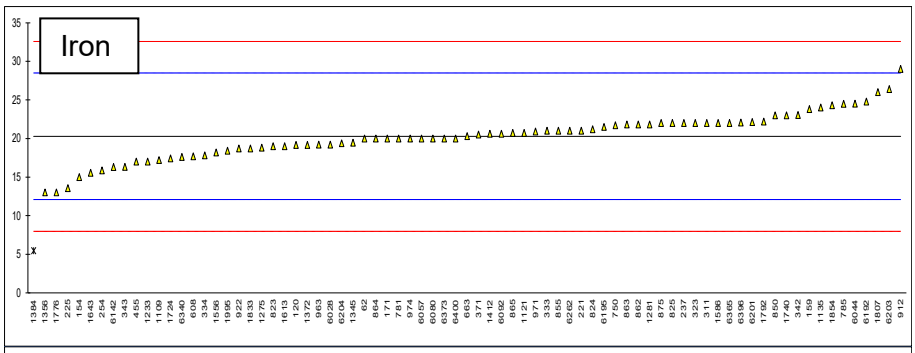

Kernel Density

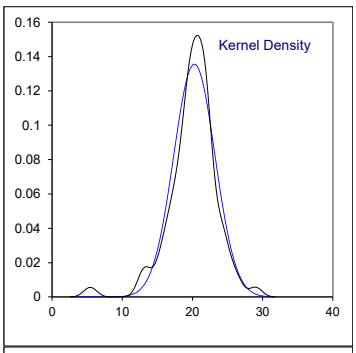
Determination of Iron as Fe, Nickel as Ni, Sodium as Na on sample #21096; results in mg/kg

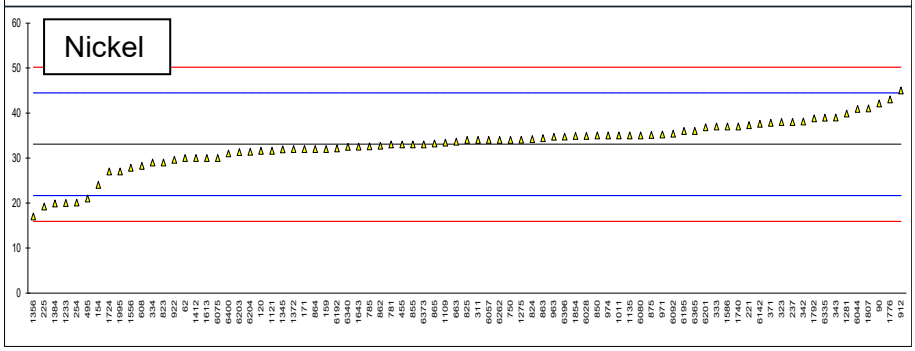
lab	method	Fe	mark	z(targ)	Ni	mark	z(targ)	Na	mark	z(targ)
62	IP501	20		-0.07	30		-0.54	19		-0.64
90		-----		-----	42.1		1.58	19.8		-0.36
92		-----		-----	-----		-----	21		0.06
120	IP501	19.156		-0.27	31.584		-0.26	19.091		-0.61
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
154	IP501	15		-1.29	24		-1.59	25		1.45
159	IP501	23.8		0.86	32.0		-0.19	24.0		1.10
168		-----		-----	-----		-----	-----		-----
171	IP501	20		-0.07	32		-0.19	26		1.79
175		-----		-----	-----		-----	-----		-----
221	IP501	21.01		0.18	37.28		0.74	19.73		-0.38
225	IP501	13.55		-1.64	19.23		-2.42	15.88		-1.72
237	IP501	22		0.42	38		0.87	22		0.40
254	IP501	15.87		-1.08	20.08		-2.28	-----		-----
273		-----		-----	-----		-----	-----		-----
311	IP501	22		0.42	34		0.16	22		0.40
323	IP501	22		0.42	38		0.87	22		0.40
328		-----		-----	-----		-----	23		0.75
331		-----		-----	-----		-----	-----		-----
333	IP501	21		0.18	37		0.69	24		1.10
334	IP501	17.8		-0.61	29.0		-0.71	20.8		-0.01
342	IP501	23.0389		0.67	38.1019		0.88	17.9558		-1.00
343	D5708	16.3		-0.97	39		1.04	22		0.40
357		-----		-----	-----		-----	-----		-----
371	IP470	20.49		0.05	37.83		0.84	19.98		-0.30
391		-----		-----	-----		-----	-----		-----
398		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
455	IP501	17		-0.80	33		-0.01	23		0.75
467		-----		-----	-----		-----	-----		-----
495		-----		-----	21		-2.11	-----		-----
511		-----		-----	-----		-----	-----		-----
529		-----		-----	-----		-----	-----		-----
557		-----		-----	-----		-----	-----		-----
608	IP501	17.69		-0.63	28.25		-0.84	-----		-----
631		-----		-----	-----		-----	-----		-----
663	IP501	20.3		0.00	33.6		0.09	20.1		-0.26
750	IP501	21.71		0.35	34.01		0.17	20.29		-0.19
781	IP501	20		-0.07	33		-0.01	21		0.06
785	IP470	24.5		1.03	32.6		-0.08	-----		-----
823	IP501	19		-0.31	29		-0.71	21		0.06
824	IP501	21.2		0.22	34.2		0.20	21.5		0.23
825	IP501	22		0.42	34		0.16	20		-0.29
850	IP501	23		0.66	35		0.34	23		0.75
851		-----		-----	-----		-----	26.68		2.03
855	IP501	21		0.18	33		-0.01	21		0.06
862	IP501	21.8		0.37	32.7		-0.06	20.6		-0.08
863	IP501	21.8		0.37	34.4		0.23	20.0		-0.29
864	IP501	20		-0.07	32		-0.19	20		-0.29
865	IP501	20.7		0.10	33.2		0.02	20.2		-0.22
875	IP501	22.0		0.42	35.1		0.36	23.1		0.79
912	IP501	29		2.13	45		2.09	23		0.75
913		-----		-----	-----		-----	-----		-----
922	IP501	18.7		-0.39	29.6		-0.61	20.3		-0.19
963	IP470	19.20		-0.26	34.72		0.29	16		-1.68
971	IP501	20.9		0.15	35.2		0.37	21.0		0.06
974	IP501	20		-0.07	35		0.34	20		-0.29
1011		-----		-----	35		0.34	18		-0.99
1109	IP470	17.2		-0.75	33.4		0.06	20.1		-0.26
1121	IP501	20.7		0.10	31.6		-0.26	23.0		0.75
1135	IP501	24		0.91	35		0.34	23		0.75
1218		-----		-----	-----		-----	-----		-----
1233	IP501	17		-0.80	20		-2.29	21		0.06
1275	IP501	18.81	C	-0.36	34.06	C	0.17	22.07	C	0.43
1281	IP501	21.8		0.37	39.9		1.20	18.0	C	-0.99
1320		-----		-----	-----		-----	-----		-----
1345	IP470	19.45		-0.20	31.90		-0.20	22.43		0.55
1356	IP501	13		-1.78	17		-2.81	18		-0.99
1372	D5708	19.17		-0.27	31.97		-0.19	10.37	R(0.01)	-3.64

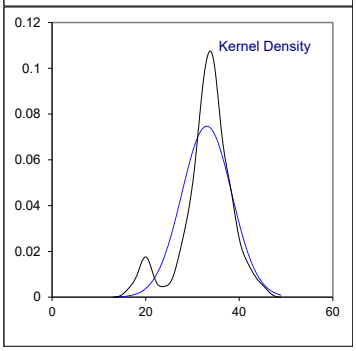
lab	method	Fe	mark	z(targ)	Ni	mark	z(targ)	Na	mark	z(targ)
1384	In house	5.45	R(0.01)	-3.62	19.9		-2.31	18.9		-0.67
1412	IP501	20.6		0.08	30		-0.54	-----		-----
1510		-----		-----	-----		-----	-----		-----
1556	IP501	18.2		-0.51	27.8		-0.92	20.4		-0.15
1564		-----		-----	-----		-----	15.00		-2.03
1586	IP501	22		0.42	37		0.69	22		0.40
1613	IP501	19.0		-0.31	30.0		-0.54	-----		-----
1643	D5185	15.54		-1.16	32.52		-0.10	25.69		1.69
1724	IP501	17.4		-0.70	27.0		-1.06	-----		-----
1740	IP501	23		0.66	37		0.69	20		-0.29
1776	IP501	13		-1.78	43		1.74	10	R(0.01)	-3.76
1792	IP501	22.2		0.47	38.8		1.01	23.8		1.03
1807	IP501	26		1.39	41		1.39	26		1.79
1833	IP501	18.7		-0.39	-----		-----	19.2		-0.57
1854	IP501	24.3		0.98	34.9		0.32	20.3		-0.19
1995	IP501	18.4		-0.46	27.01		-1.06	17.06		-1.31
6028	D5185	19.2		-0.26	34.9		0.32	16.4		-1.54
6044	IP501	24.51		1.03	40.92		1.38	22.64		0.63
6057	IP501	20		-0.07	34		0.16	17		-1.33
6075		-----		-----	30.0		-0.54	18.2		-0.92
6080	IP501	20.0		-0.07	35.0		0.34	20.0		-0.29
6092	IP501	20.6		0.08	35.4		0.41	21.7		0.30
6142	IP501	16.291		-0.97	37.589		0.79	22.007		0.41
6143		-----		-----	-----		-----	-----		-----
6192	IP501	24.78		1.10	32.13		-0.16	17.06		-1.31
6195	IP501	21.5		0.30	36.0		0.51	21.9		0.37
6201	IP501	22.13		0.45	36.80		0.65	21.37		0.19
6203	IP501	26.4		1.49	31.3		-0.31	22.5		0.58
6204	IP501	19.38		-0.22	31.36		-0.30	18.45		-0.83
6262	IP501	21		0.18	34		0.16	19		-0.64
6308		-----		-----	-----		-----	19.1774		-0.58
6335		-----		-----	38.96		1.03	16.39		-1.54
6340	IP501	17.6		-0.65	32.5		-0.10	18.8		-0.71
6365	IP501	22		0.42	36		0.51	24		1.10
6373	IP501	20		-0.07	33		-0.01	20		-0.29
6396	IP501	22.065		0.43	34.73		0.29	22.565		0.60
6400	IP501	20		-0.07	31		-0.36	27		2.14
	normality	OK			suspect			OK		
	n	76			81			78		
	outliers	1			0			2		
	mean (n)	20.28			33.06			20.83		
	st.dev. (n)	2.944			5.342			2.563		
	R(calc.)	8.24			14.96			7.18		
	st.dev.(IP470:05)	4.101			5.707			2.878		
	R(IP470:05)	11.48			15.98			8.06		
compare										
	R(IP501:05)	4.91			11.52			5.67		

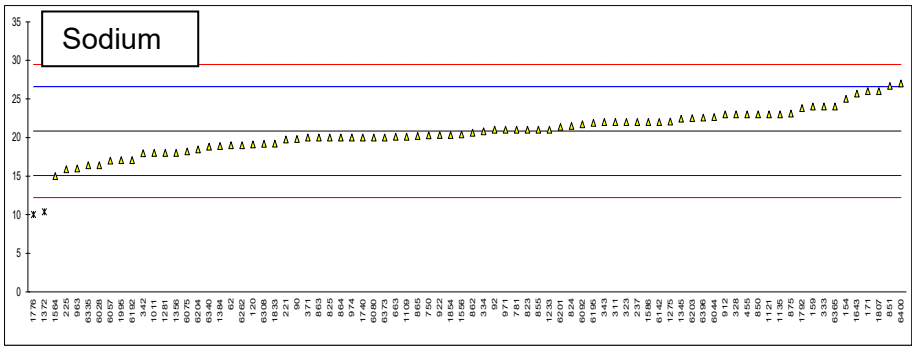
Lab 1275 first reported 20.75, 35.10, 20.34
Lab 1281 first reported 32.0

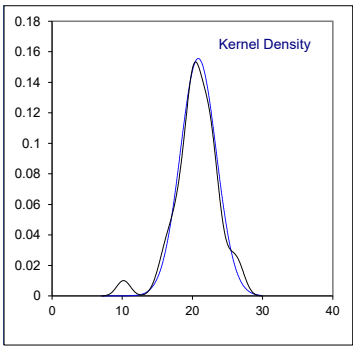

Iron


Kernel Density


Nickel


Kernel Density


Sodium

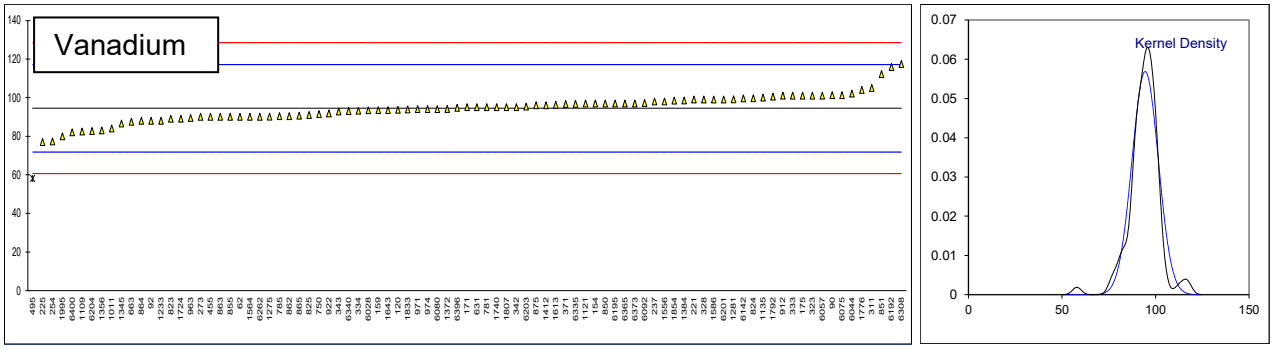

Kernel Density

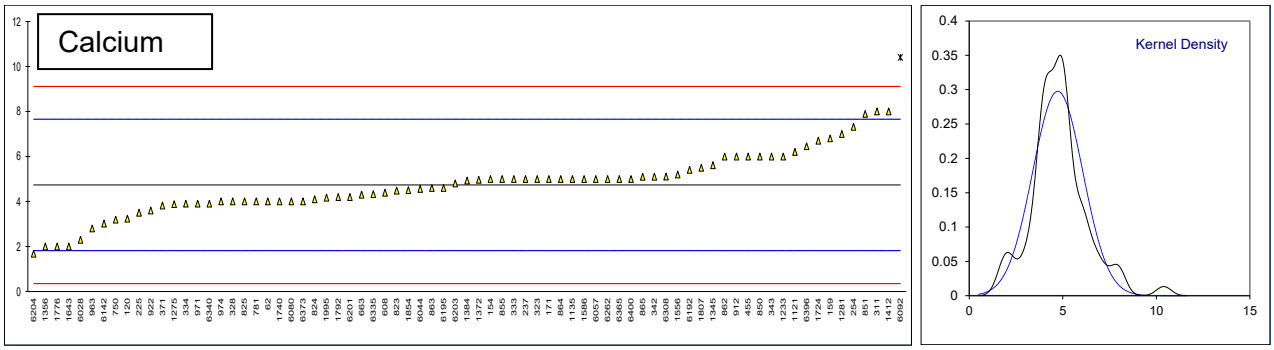
Determination of Vanadium as V, Calcium as Ca and Zinc as Zn on sample #21096; results in mg/kg

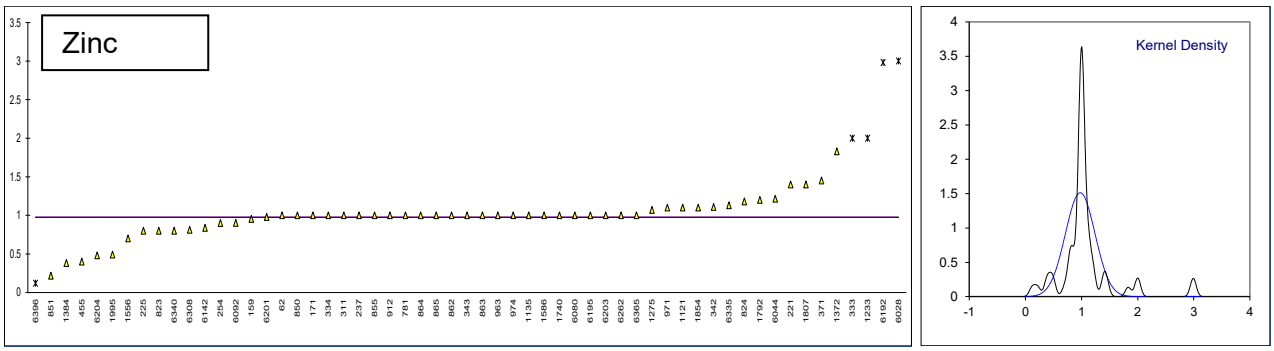
lab	method	V	mark	z(targ)	Ca	mark	z(targ)	Zn	mark	z(targ)
62	IP501	90		-0.40	4		-0.50	1		-----
90	D5863-A	101.3		0.60	-----		-----	-----		-----
92	D5863-B	88		-0.57	-----		-----	-----		-----
120	IP501	93.666		-0.07	3.231		-1.03	<1		-----
140		-----		-----	-----		-----	-----		-----
150		-----		-----	-----		-----	-----		-----
154	IP501	97		0.22	5		0.18	<1		-----
159	IP501	93.5		-0.09	6.8		1.41	0.954		-----
168		-----		-----	-----		-----	-----		-----
171	IP501	95		0.04	5		0.18	1		-----
175	D5863-B	101		0.57	-----		-----	-----		-----
221	IP501	99.0		0.40	-----		-----	1.40		-----
225	IP501	76.92		-1.55	3.50		-0.84	0.80		-----
237	IP501	98		0.31	5		0.18	1		-----
254	IP501	77.29		-1.52	7.32	C	1.77	0.899		-----
273	IP501	90		-0.40	-----		-----	-----		-----
311	IP501	105		0.93	8		2.24	1		-----
323	IP501	101		0.57	5		0.18	<1		-----
328	IP501	99		0.40	4		-0.50	<1		-----
331		-----		-----	-----		-----	-----		-----
333	IP501	101		0.57	5		0.18	2	R(0.05)	-----
334	IP501	93.2		-0.11	3.9		-0.57	1.0		-----
342	IP501	95.0089		0.05	5.1003		0.25	1.10875		-----
343	D5708	92.8		-0.15	6		0.87	1		-----
357		-----		-----	-----		-----	-----		-----
371	IP470	96.72		0.20	3.82		-0.62	1.45		-----
391		-----		-----	-----		-----	-----		-----
398		-----		-----	-----		-----	-----		-----
399		-----		-----	-----		-----	-----		-----
444		-----		-----	-----		-----	-----		-----
455	IP501	90		-0.40	6		0.87	0.4	C	-----
467		-----		-----	-----		-----	-----		-----
495	D8252	58	R(0.01)	-3.22	-----		-----	-----		-----
511		-----		-----	-----		-----	-----		-----
529		-----		-----	-----		-----	-----		-----
557		-----		-----	-----		-----	-----		-----
608		-----		-----	4.39		-0.23	<1		-----
631	D5863-A	95.0		0.04	-----		-----	-----		-----
663	IP501	87.5		-0.62	4.3		-0.30	<1		-----
750	IP501	91.46		-0.27	3.19		-1.06	<1		-----
781	IP501	95		0.04	4		-0.50	1		-----
785	IP470	90.4		-0.36	-----		-----	-----		-----
823	IP501	89		-0.49	4.48		-0.17	0.8		-----
824	IP501	99.7		0.46	4.1		-0.43	1.18		-----
825	IP501	91		-0.31	4		-0.50	<1		-----
850	IP501	97		0.22	6		0.87	1		-----
851	IP501	112.2		1.56	7.894		2.16	0.217		-----
855	IP501	90		-0.40	5		0.18	1		-----
862	IP501	90.4		-0.36	6.0		0.87	1.0		-----
863	IP501	90.0		-0.40	4.6		-0.09	1.0		-----
864	IP501	88		-0.57	5		0.18	1		-----
865	IP501	90.6		-0.34	5.1		0.25	1.0		-----
875	IP501	96.0		0.13	-----		-----	<1.0		-----
912	IP501	101		0.57	6		0.87	1		-----
913		-----		-----	-----		-----	-----		-----
922	IP501	91.8		-0.24	3.6		-0.78	<1.0	C	-----
963	IP470	89.42		-0.45	2.8		-1.32	1		-----
971	IP501	94.0		-0.04	3.9		-0.57	1.1		-----
974	IP501	94		-0.04	4		-0.50	1		-----
1011	D5863-A	84		-0.93	-----		-----	-----		-----
1109	IP470	82.4		-1.07	-----		-----	-----		-----
1121	IP501	96.98		0.22	6.2		1.00	1.1		-----
1135	IP501	100		0.49	5		0.18	1		-----
1218		-----		-----	-----		-----	-----		-----
1233	IP501	88		-0.57	6		0.87	2	R(0.05)	-----
1275	IP501	90.08	C	-0.39	3.879	C	-0.58	1.070	C	-----
1281	IP501	99.1		0.41	7.0		1.55	<2,5		-----
1320		-----		-----	-----		-----	-----		-----
1345	IP470	86.55		-0.70	5.61		0.60	-----		-----
1356	IP501	83		-1.02	2		-1.87	<1		-----
1372	D5708	94.13		-0.03	4.96		0.16	1.83		-----

lab	method	V	mark	z(targ)	Ca	mark	z(targ)	Zn	mark	z(targ)
1384	In house	98.5		0.35	4.93		0.14	0.380		-----
1412	IP501	96		0.13	8		2.24	-----		-----
1510		-----		-----	-----		-----	-----		-----
1556	IP501	98.0		0.31	5.2		0.32	0.7		-----
1564	D5863-B	90.00		-0.40	-----		-----	-----		-----
1586	IP501	99		0.40	5		0.18	1		-----
1613	IP501	96.3		0.16	<3.0		-----	<1.0		-----
1643	D5185	93.52		-0.09	2.003		-1.87	-----		-----
1724	IP501	89		-0.49	6.7		1.35	-----		-----
1740	IP501	95		0.04	4		-0.50	1		-----
1776	IP501	104		0.84	2		-1.87	<1		-----
1792	IP501	100.5		0.53	4.2		-0.36	1.2		-----
1807	IP501	95		0.04	5.5	C	0.53	1.4	C	-----
1833	IP501	93.8		-0.06	-----		-----	<1		-----
1854	IP501	98.4		0.34	4.5		-0.16	1.1		-----
1995	IP501	79.98		-1.28	4.17		-0.39	0.49		-----
6028	D5185	93.4		-0.10	2.3		-1.66	3.0	R(0.01)	-----
6044	IP501	102.07		0.67	4.565		-0.11	1.215		-----
6057	IP501	101		0.57	5		0.18	<1		-----
6075	D5863-B	101.3		0.60	-----		-----	-----		-----
6080	IP501	94.0		-0.04	4.0		-0.50	1.0		-----
6092	IP501	97.2		0.24	10.4	R(0.01)	3.88	0.9		-----
6142	IP501	99.577		0.45	3.015		-1.18	0.838		-----
6143		-----		-----	-----		-----	-----		-----
6192	IP501	115.87		1.89	5.40		0.46	2.98	R(0.01)	-----
6195	IP501	97.0		0.22	4.6		-0.09	1.0		-----
6201	IP501	99.00		0.40	4.20		-0.36	0.98		-----
6203	IP501	95.4		0.08	4.8		0.05	1.0		-----
6204	IP501	82.63		-1.05	1.68		-2.09	0.48		-----
6262	IP501	90		-0.40	5		0.18	1		-----
6308	IP501	117.469		2.03	5.104776		0.25	0.812034		-----
6335	D5185	96.81		0.20	4.32		-0.28	1.13		-----
6340	IP501	93.1		-0.12	3.9		-0.57	0.8		-----
6365	IP501	97		0.22	5		0.18	1		-----
6373	IP501	97		0.22	4		-0.50	<1		-----
6396	IP501	94.69		0.02	6.4535		1.18	0.1205	R(0.05)	-----
6400	IP501	82		-1.10	5		0.18	<1		-----
	normality	suspect			OK			not OK		
	n	88			74			52		
	outliers	1			1			5		
	mean (n)	94.50			4.73			0.98		
	st.dev. (n)	7.013			1.340			0.264		
	R(calc.)	19.64			3.75			0.74		
	st.dev.(IP470:05)	11.318			1.461			(0.203)		
	R(IP470:05)	31.69			4.09			(0.57)		
compare										
	R(IP501:05)	25.74			1.77			0.50		

Lab 254 first reported 12.57
Lab 455 first reported 0
Lab 922 first reported 1.8
Lab 1275 first reported 95.26, 4.271, <0.000
Lab 1807 first reported 9, 0


Vanadium
Kernel Density


Calcium
Kernel Density


Zinc
Kernel Density

Determination of Phosphorus as P on sample #21096; results in mg/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
62	IP501	<1		-----	913		-----		-----
90		-----		-----	922	IP501	<1.0		-----
92		-----		-----	963	IP501	<1		-----
120	IP501	<1		-----	971	IP501	0.1		-----
140		-----		-----	974	IP501	<1		-----
150		-----		-----	1011		-----		-----
154	IP501	1		-----	1109		-----		-----
159	IP501	0.07		-----	1121	IP501	0.4		-----
168		-----		-----	1135	IP501	0.3		-----
171	IP501	1		-----	1218		-----		-----
175		-----		-----	1233	IP501	1		-----
221		-----		-----	1275	IP501	0.000	C	-----
225	IP501	0.20		-----	1281		-----		-----
237	IP501	1		-----	1320		-----		-----
254	IP501	0.475		-----	1345		-----		-----
273		-----		-----	1356	IP501	<1		-----
311	IP501	<1		-----	1372	IP501	0.96		-----
323	IP501	<1		-----	1384	In house	1.01		-----
328	IP501	<1		-----	1412	IP501	1		-----
331		-----		-----	1510		-----		-----
333	IP501	<1		-----	1556	IP501	1.1		-----
334	IP501	0.3		-----	1564		-----		-----
342	IP501	0.3291		-----	1586	IP501	1		-----
343	IP501	1		-----	1613		-----		-----
357		-----		-----	1643		-----		-----
371		-----		-----	1724	IP501	<1,0		-----
391		-----		-----	1740	IP500	<1		-----
398		-----		-----	1776		-----		-----
399		-----		-----	1792	IP501	0.5		-----
444		-----		-----	1807	IP501	0		-----
455	IP501	0		-----	1833	IP501	<1		-----
467		-----		-----	1854	IP501	0.4		-----
495		-----		-----	1995	IP501	1.22		-----
511		-----		-----	6028	D5185	6.5	R(0.01)	-----
529		-----		-----	6044	IP501	0.155		-----
557		-----		-----	6057	IP501	<1		-----
608	IP501	<1		-----	6075		-----		-----
631		-----		-----	6080	IP501	<1		-----
663	IP501	<1		-----	6092	IP501	0.4		-----
750	IP501	0.51		-----	6142	IP501	1.675		-----
781	IP501	<1		-----	6143		-----		-----
785		-----		-----	6192	IP501	0.64		-----
823	IP501	0.4		-----	6195	IP501	<1		-----
824	IP501	0.43		-----	6201	IP501	0.13		-----
825	IP501	<1		-----	6203	IP501	0.2		-----
850	IP501	<1		-----	6204	IP501	0.21		-----
851	IP501	2.187	R(0.05)	-----	6262	IP501	1		-----
855	IP501	<1		-----	6308	IP501	0.735167		-----
862	IP501	0.4		-----	6335	D5185	0.24		-----
863	IP501	<1		-----	6340	IP501	<1		-----
864	IP501	<1		-----	6365	IP501	<1		-----
865	IP501	<1		-----	6373	IP501	<1		-----
875	IP501	<1.0		-----	6396	IP501	0.0		-----
912	IP501	<1		-----	6400	IP501	<1		-----
	n	58							
	mean (n)	<1							

Lab 1275 first reported 1.083

APPENDIX 2 Analytical details of the determination: Total Acid Number

lab	End point determination	Volume solvent	lab	End point determination	Volume solvent	lab	End point determination	Volume solvent
62	---	---	865	---	---	6026	BEP (pH 10)	125 mL
90	---	---	866	Inflection Point	125 mL	6028	---	---
92	---	---	870	---	---	6039	---	---
120	---	---	875	---	---	6044	Inflection Point	60 mL
140	---	---	886	---	---	6049	Inflection Point	125 mL
150	---	---	912	---	---	6057	---	---
154	---	---	913	---	---	6075	---	---
158	Inflection Point	60 mL	922	Inflection Point	125 mL	6092	---	---
159	---	---	962	---	---	6143	---	---
168	---	---	963	---	---	6192	---	---
169	---	---	971	Inflection Point	125 mL	6201	---	---
171	---	---	974	Inflection Point	125 mL	6203	Inflection Point	125 mL
175	---	---	982	---	---	6220	Inflection Point	125 mL
194	---	---	1019	---	---	6226	Inflection Point	125 mL
221	---	---	1059	BEP (pH 11)	60 mL	6262	Inflection Point	125 mL
224	---	---	1082	---	---	6266	---	---
225	---	---	1099	---	---	6308	---	---
228	---	---	1109	Inflection Point	125 mL	6335	Inflection Point	---
237	---	---	1121	BEP (pH 11)	125 mL			
238	---	---	1126	---	---			
253	---	---	1131	---	---			
254	---	---	1135	---	---			
273	Inflection Point	60 mL	1140	Inflection Point	125 mL			
309	---	---	1177	---	---			
311	---	---	1191	---	---			
313	---	---	1229	---	---			
323	Inflection Point	125 mL	1233	Inflection Point	60 mL			
331	---	---	1259	Inflection Point	60 mL			
333	---	---	1266	---	---			
334	---	---	1269	---	---			
335	---	---	1275	Inflection Point	125 mL			
336	---	---	1300	---	---			
339	---	---	1356	Inflection Point	60 mL			
342	BEP (pH 11)	125 mL	1367	Inflection Point	---			
343	---	---	1412	---	---			
349	---	---	1438	---	---			
371	---	---	1459	---	---			
391	---	---	1498	---	---			
398	---	---	1510	---	---			
399	---	---	1544	---	---			
444	---	---	1556	BEP (pH 10)	125 mL			
463	BEP (pH 11)	125 mL	1564	Inflection Point	60 mL			
511	---	---	1569	Inflection Point	125 mL			
529	Inflection Point	60 mL	1586	---	---			
541	---	---	1613	Inflection Point	60 mL			
557	---	---	1631	---	---			
562	---	---	1643	BEP (pH 10)	60 mL			
575	BEP (pH 10)	60 mL	1720	---	---			
603	---	---	1724	Inflection Point	125 mL			
604	---	---	1728	---	---			
608	Inflection Point	125 mL	1740	Inflection Point	60 mL			
631	---	---	1761	---	---			
633	---	---	1776	BEP (pH 10)	125 mL			
663	---	---	1788	---	---			
671	---	---	1807	---	---			
750	BEP (pH 10)	60 mL	1810	---	---			
751	---	---	1811	---	---			
753	---	---	1833	Inflection Point	125 mL			
759	---	---	1849	---	---			
781	Inflection Point	125 mL	1854	Inflection Point	125 mL			
785	---	---	1857	Inflection Point	125 mL			
823	Inflection Point	125 mL	1862	---	---			
825	---	---	1906	---	---			
850	Inflection Point	125 mL	1934	BEP (pH 10)	125 mL			
851	BEP (pH 10)	125 mL	1942	---	---			
855	Inflection Point	125 mL	1943	---	---			
858	Inflection Point	125 mL	1950	Inflection Point	60 mL			
859	Inflection Point	125 mL	1956	---	---			
862	---	---	1964	---	---			
863	Inflection Point	125 mL	1995	Inflection Point	---			
864	Inflection Point	125 mL	6016	---	---			

APPENDIX 3

Number of participants per country

1 lab in	ALGERIA	4 labs in	KOREA, Republic of
1 lab in	AUSTRALIA	2 labs in	LATVIA
1 lab in	AZERBAIJAN	4 labs in	MALAYSIA
6 labs in	BELGIUM	1 lab in	MALTA
1 lab in	BRAZIL	1 lab in	MARTINIQUE
3 labs in	CANADA	1 lab in	MEXICO
2 labs in	CHILE	5 labs in	NETHERLANDS
10 labs in	CHINA, People's Republic	2 labs in	NIGERIA
1 lab in	COLOMBIA	1 lab in	PAKISTAN
1 lab in	COTE D'IVOIRE	1 lab in	PERU
2 labs in	CROATIA	2 labs in	PHILIPPINES
1 lab in	DENMARK	2 labs in	POLAND
1 lab in	DJIBOUTI	1 lab in	PORTUGAL
2 labs in	EGYPT	2 labs in	ROMANIA
1 lab in	ESTONIA	7 labs in	RUSSIAN FEDERATION
2 labs in	FINLAND	2 labs in	SAUDI ARABIA
8 labs in	FRANCE	1 lab in	SENEGAL
2 labs in	GEORGIA	1 lab in	SLOVAKIA
4 labs in	GERMANY	1 lab in	SLOVENIA
5 labs in	GREECE	1 lab in	SOUTH AFRICA
1 lab in	GUAM	10 labs in	SPAIN
1 lab in	GUINEA REPUBLIC	1 lab in	SUDAN
1 lab in	HONG KONG	5 labs in	SWEDEN
2 labs in	INDIA	1 lab in	TAIWAN
1 lab in	IRAN, Islamic Republic of	1 lab in	THAILAND
1 lab in	IRAQ	1 lab in	TOGO
2 labs in	IRELAND	1 lab in	TUNISIA
1 lab in	ISRAEL	3 labs in	TURKEY
3 labs in	ITALY	6 labs in	UNITED ARAB EMIRATES
1 lab in	JORDAN	9 labs in	UNITED KINGDOM
3 labs in	KENYA	11 labs in	UNITED STATES OF AMERICA

APPENDIX 4

Abbreviations

C	= final test result after checking of first reported suspect test result
D(0.01)	= outlier in Dixon's outlier test
D(0.05)	= straggler in Dixon's outlier test
G(0.01)	= outlier in Grubbs' outlier test
G(0.05)	= straggler in Grubbs' outlier test
DG(0.01)	= outlier in Double Grubbs' outlier test
DG(0.05)	= straggler in Double Grubbs' outlier test
R(0.01)	= outlier in Rosner's outlier test
R(0.05)	= straggler in Rosner's outlier test
E	= calculation difference between reported test result and result calculated by iis
W	= test result withdrawn on request of participant
ex	= test result excluded from statistical evaluation
n.a.	= not applicable
n.e.	= not evaluated
n.d.	= not detected
fr.	= first reported
SDS	= Safety Data Sheet

Literature

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