

Results of Proficiency Test  
Fuel Oil  
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Organised by: Institute for Interlaboratory Studies  
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## **1 INTRODUCTION**

Since 1994 the Institute for Interlaboratory Studies organizes a proficiency test for Fuel Oil every year. In the annual proficiency testing program of 2014/2015, it was decided to continue the round robin for the analysis of Fuel Oil. In this interlaboratory study 216 laboratories in 78 different countries have participated. See appendix 2 for the number of participants per country. In this report, the results of the 2015 interlaboratory study on Fuel Oil are presented and discussed. This report is also electronically available through the iis internet site [www.iisnl.com](http://www.iisnl.com).

## **2 SET-UP**

The Institute for Interlaboratory Studies (iis) in Spijkenisse, the Netherlands, was the organiser of this proficiency test. Sample analyses for fit-for-use and homogeneity testing were subcontracted. It was decided depending on the registration to send one bottle of 1L Fuel Oil (labelled #15001), one bottle of 0.1L (labelled #15002) specifically for metals and/or one bottle of 0.5L (labelled #15003) specifically for Bromine Number and p-Value.

Participants were requested to report rounded and unrounded results. The unrounded 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/IEC 17043:2010 (R007), since January 2000, by the Dutch Accreditation Council (Raad voor Accreditatie). This PT 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 organisation was the one as described for proficiency testing in the report 'iis Interlaboratory Studies: Protocol for the Organisation, Statistics and Evaluation' of April 2014 (iis-protocol, version 3.3). This protocol can be downloaded from the iis website <http://www.iisnl.com>.

### **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

In this proficiency test three different samples were prepared, a regular Fuel Oil, a Fuel Oil positive on metals and a sample for Bromine Number and p-Value.

From 400 litre Fuel Oil, purchased from a refinery in The Netherlands, 281 amber glass bottles of 1L were filled after heating to 60°C and homogenisation. The homogeneity of the subsamples #15001 was checked by determination of density @15°C in accordance with ISO12185 on 16 stratified randomly selected samples. The lowest density test result was 1007.7 kg/m<sup>3</sup> and the highest density test result was 1008.0 kg/m<sup>3</sup>. The repeatability of the density test results was calculated and compared with 0.3 times the corresponding target reproducibility in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Density @15°C in kg/m <sup>3</sup>
r (Observed)	0.32
Reference method	ISO12185:96
0.3 * R (ref. method)	0.45

Table 1: repeatabilities of test results of subsamples #15001

The calculated repeatability for Density was in agreement with 0.3 times the corresponding target reproducibility of the respective reference method. Therefore, homogeneity of the subsamples of #15001 was assumed.

For Subsample #15002, 25 litre Fuel Oil was spiked with Calcium (approx. 85 mg/kg), Phosphorus (approx. 21 mg/kg) and Zinc (approx. 24 mg/kg). From the batch after heating to 60°C and homogenisation, 192 plastic bottles of 0.1L were filled and labelled #15002.

The homogeneity of the subsamples was checked by determination of Phosphorus in accordance with IP501 and density @15°C in accordance with ISO12185 on 8 stratified randomly selected samples.

	Phosphorus in mg/kg	Density @15°C in kg/m <sup>3</sup>
Sample #15002-1	22	966.6
Sample #15002-2	21	966.5
Sample #15002-3	21	966.4
Sample #15002-4	22	966.6
Sample #15002-5	22	966.5
Sample #15002-6	22	966.5
Sample #15002-7	21	966.5
Sample #15002-8	21	966.5

Table 2: homogeneity test results of subsamples #15002

From the test results of table 2, the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibilities in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Phosphorus in mg/kg	Density @15°C in kg/m <sup>3</sup>
r (Observed)	1.5	0.18
Reference method	IP501:05	ISO12185:96
0.3 * R (ref. method)	2.1	0.45

Table 3: repeatability of Aluminium results of subsamples #15002

The calculated repeatabilities for Phosphorus and Density are respectively in agreement with 0.3 times the corresponding target reproducibilities of IP501:05 and ISO12185:96. Therefore, homogeneity of the subsamples of #15002 was assumed.

For Subsample #15003, 60 litre Fuel Oil was obtained from a refinery in Saudi Arabia. From the batch after heating to 60°C and homogenisation, 53 amber glass bottles of 0.5L were filled and labelled #15003. The homogeneity of the subsamples #15003 was checked by determination of density @15°C in accordance with ISO12185 on 8 stratified randomly selected samples.

	Density @15°C in kg/m <sup>3</sup>
Sample #15003-1	948.9
Sample #15003-2	948.8
Sample #15003-3	948.8
Sample #15003-4	948.9
Sample #15003-5	948.9
Sample #15003-6	948.8
Sample #15003-7	948.8
Sample #15003-8	948.9

Table 4: homogeneity test results of subsamples #15002

From the test results of table 2, the repeatabilities were calculated and compared with 0.3 times the corresponding reproducibilities in agreement with the procedure of ISO 13528, Annex B2 in the next table:

	Density @15°C in kg/m <sup>3</sup>
r (Observed)	0.15
Reference method	ISO12185:96
0.3 * R (ref. method)	0.45

Table 5: repeatability of Aluminium results of subsamples #15002

The calculated repeatability for Density is in agreement with 0.3 times the corresponding target reproducibilities of ISO12185:96. Therefore, homogeneity of the subsamples of #15003 was assumed.

Depending on the registration of the participant, one bottle of 1L, labelled #15001, one bottle of 0.1L, labelled #15002 and/or one bottle of 0.5L, labelled #15003 were sent to each of the participating laboratories on January 14, 2015.

## 2.5 STABILITY OF THE SAMPLES

The stability of Fuel Oil, packed in the amber glass and plastic bottles was checked. The material has been found sufficiently stable for the period of the proficiency test.

## 2.6 ANALYSES

The participants were asked to determine on sample #15001: Acid Number, API gravity, Ash Content, Asphaltenes, Calculated Carbon Aromaticity Index, Micro Carbon Residue, Conradson Carbon Residue, Density @15°C, Flash Point PMcc, Heat of Combustion (Gross and Net), Kinematic Viscosity (@ 50°C and 100°C), Viscosity Stabinger (@ 50°C and 100°C), Nitrogen, Pour Point (Lower, Upper and Automated), Sediments by Extraction, Total Sediment (By Hot filtration, Accelerated and Potential), Total Sulphur, Water by Distillation, Water and Sediment, Distillation (IBP, 5%-50% and FBP), and Total Carbon, Hydrogen and Nitrogen (CHN-analyzer).

On sample #15002 was requested to analyze: Aluminium, Silicon, Sum Aluminium and Silicon, Iron, Nickel, Sodium, Vanadium, Calcium, Phosphorus and Zinc content.

On Sample #15003 was requested to analyze: Bromine Number and p-Value.

To get comparable results a detailed report form, on which the units were prescribed as well as the required standards and a letter of instructions were prepared and made available on the data entry portal [www.kpmd.co.uk/sgs-iis/](http://www.kpmd.co.uk/sgs-iis/). The detailed report form was also made available for download on the iis website [www.iisnl.com](http://www.iisnl.com). A SDS and a form to confirm receipt of the samples were added to the sample package.

## 3 RESULTS

During four weeks after sample despatch, the results of the individual laboratories were received. The original reported results are tabulated per determination in appendix 1 of this report. The laboratories are presented by their code numbers.

Directly after deadline, a reminder fax was sent to those laboratories that did not report results at that moment. Shortly after the deadline, the available results were screened for suspect data. A 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 raw data of these tests (no reanalysis). Additional or corrected results are used for data analysis and original results are placed under 'Remarks' in the result tables in appendix 1.

### 3.1 STATISTICS

Statistical calculations were performed as described in the report 'i.i.s. Interlaboratory Studies-Protocol for the Organisation, Statistics and Evaluation' of April 2014 (iis-protocol, version 3.3). For the statistical evaluation the *unrounded* (when available) figures were used instead of the rounded results. 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. Not all

data sets proved to have a normal distribution, in which cases the statistical evaluation of the results should be used with due care.

In accordance with ISO 5725 (1986 and 1994) the original results per determination were submitted subsequently to Dixon and Grubbs outlier tests. Outliers are marked by D(0.01) for the Dixon test, by G(0.01) or DG(0.01) for the Grubbs test. Stragglers are marked by D(0.05) for the Dixon test, by G(0.05) or DG(0.05) for the Grubbs test and by R(0.05) for the Rosner General ESD test (ref. 15). 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. When the uncertainty passed the evaluation, no remarks are made in the report. However, when the uncertainty failed the evaluation it is mentioned in the report and it will have consequences for the evaluation of the test results.

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 analysis results are plotted. The corresponding laboratory numbers are under 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 standard. Outliers and other data, which were excluded from the calculations, are represented as a "x". 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 (see appendix 3; nos.13 and 14). Also a normal Gauss curve was projected over the Kernel Density Graph for reference.

### 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. ASTM reproducibilities, the z-scores were calculated using a target standard deviation. This results in an evaluation independent of the spread of this interlaboratory study. The target standard deviation was calculated from the literature reproducibility by division with 2.8.

The z-scores were calculated in accordance with:

$$Z_{(\text{target})} = (\text{result} - \text{average of PT}) / \text{target standard deviation}$$

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 the fit-for-useness of the reported test result.

The  $z_{(\text{target})}$  scores are listed in the result tables in 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 major problems were encountered with the despatch of the samples. Several laboratories in Brazil, Iran, Jordan, Malaysia, Mexico, Qatar, Russia, Saudi Arabia, Sudan, Turkmenistan and U.S.A. received the samples late or not at all.

For sample #15001, in total, ten participants did not report any test results and twenty-one laboratories reported the test results after the final reporting date. For sample #15002, in total nineteen participants did not report any test results and eleven participants reported the test results after the final reporting date. For sample #15003, in total five participants did not report any test results and three participants reported the test results after the final reporting date.

Not all laboratories were able to report all analyses requested. Finally, 207 participants reported in total 4048 numerical results. Observed were 130 statistically outlying results, which is 3.2%. In proficiency studies, outlier percentages of 3% - 7.5% are quite normal.

### 4.1 EVALUATION PER SAMPLE AND PER TEST

In this section, the results are discussed per sample and per test. The methods, which are used by the various laboratories, are taken into account for explaining the observed differences where possible and applicable. These methods are also in the tables together with the reported data. The abbreviations, used in these tables, are listed in appendix 3.

In the iis PT reports, ASTM methods are referred to with a number (e.g. D2086) and an added designation for the year that the method was adopted or revised (e.g. D2086-08). If applicable, a designation in parentheses is added to designate the year of reapproval (e.g. D2086-08(2013)). In the results tables of Appendix 1 only the method number and year of adoption or revision e.g. D2086-08 will be used.

Not all original 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.

#### Sample #15001

Acid Number: 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 D664A:11a.



- API Gravity: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the requirements of ASTM D1298:12b.
- Ash: This determination was very problematic at an ash content of 0.029 %M/M. Four statistical outliers were observed. The calculated reproducibility, after rejection of the statistical outliers is not at all in agreement with requirements of ISO6245:01.
- Asphaltenes: This determination was problematic for a number of laboratories. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of IP143:04. Two laboratories reported to have used ASTM D3279 which may not be equivalent to IP143:04.
- Calculated Carbon: This determination was not problematic. One statistical outlier was observed  
Aromaticity Index and three test results were excluded from the statistical evaluation as these results probably contained a calculation error. However, the calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ISO8217:12.
- CR Micro: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of ISO10370:93 and ASTM D4530:11.
- CCR: This determination was problematic for a number of laboratories. Two statistical outliers were observed and three results were excluded for several reasons (pag 31). However, the calculated reproducibility after rejection of the suspect data is in agreement with the requirements of ASTM D189:06(2010).
- Density @ 15°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 ISO12185:96.
- Flash Point PMcc: This determination was problematic. Two statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO2719:02.
- HOC Gross: This determination of the Gross Heat of Combustion was problematic. No statistical outliers were observed. Two laboratories reported to have used ASTM D4809. This method is specially designed for aviation turbine fuels and therefore, both D4809 test results were excluded from the statistical calculations. However, the calculated reproducibility after rejection of the suspect data is not in agreement with the requirements of ASTM D240:09. Thirty-three laboratories reported to have used ASTM D4868, which is a method for the estimation of the Gross Heat of Combustion.

HOC Net: This determination of the Net Heat of Combustion was problematic. Only one statistical outlier was observed. Two laboratories reported to have used ASTM D4809. This method is specially designed for aviation turbine fuels and therefore, both D4809 results were excluded from the statistical calculations. However, the calculated reproducibility after rejection of the suspect data is not in agreement with the requirements of ASTM D240:09. Thirty-eight laboratories reported to have used ASTM D4868, which is a method for the estimation of the Net Heat of Combustion.

Kin. Visc. @ 50°C: This determination was problematic for a number of laboratories. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ISO3104:94.

Kin. Visc. @ 100°C: This determination was problematic. Five statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ISO3104:94.

Vis Stab. @ 50°C : The test method ASTM D7042 is intended for Newtonian flow behaviour liquids only (see §1.2 in ASTM D7042) and therefore it may not be suitable for Fuel Oil. And the precision data mentioned in D7042 may not be applicable for Fuel Oil. Therefore no significant conclusions were drawn.  
Vis Stab. @ 100°C The mean values for the Stabinger Viscosity (50°C and 100°C) do not differ significantly from the mean values for the Kinematic Viscosity determinations.

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 D5762:12. When the results of ASTM D5762 volumetric and gravimetric method were evaluated separately, it was surprising to see that the calculated reproducibility of the gravimetric method results was in full agreement with the requirements of the test method. Three laboratories reported to have used ASTM D4629 which may not be equivalent to ASTM D5762:12.

Pour Point Lower: This determination was problematic. No statistical outliers were observed and three test results were excluded as the reported result for lower PP is higher than the result for upper PP, which is in principle not possible. The calculated reproducibility after rejection of the suspect data is not in agreement with the requirements of ISO3016:94. Rounding to 3 degrees acc. ISO3016:94 may (partly) explain the large spread.

Pour Point Upper: This determination was problematic. No statistical outliers were observed and three test results were excluded as the reported result for upper PP is lower than the result for lower PP, which is in principle not possible. The calculated reproducibility after rejection of the suspect data is not in agreement with ISO3016:94. Rounding to 3 degrees acc. ISO3016:94 may (partly) explain the large spread.

Pour Point: This determination was very problematic. No statistical outliers were observed

- Automated but five test results were excluded prior to the statistical analysis, as the reported test method was a manual method. The calculated reproducibility is not at all in agreement with ASTM D5950:14. The large spread may (partly) be explained by possible problems with the detector sensitivity or by not following the method properly (see Note 8 in ASTM D5940:14).
- Sediment by:  
Extraction This determination was problematic for a number of laboratories. Seven statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is in agreement with the requirements of ASTM D473:07.
- Sediment by:  
hot filtration This determination was not problematic. One statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is in agreement with the requirements of IP375:99.
- Total sediment:  
(Accelerated) This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in good agreement with IP390:11. IP390:11 is identical to ISO10307-2:09 and technically equivalent to ASTM D4870 (App. X1).
- Total sediment:  
(Potential) This determination was not problematic. No statistical outliers were observed. The calculated reproducibility is in good agreement with IP390:11. IP390:11 is identical to ISO10307-2:09) and technically equivalent to ASTM D4870 (App. X1).
- Total Sulphur: This determination was problematic. Six statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the requirements of ASTM D4294:10.
- Water by distillation: This determination was not problematic. Three statistical outliers were observed. The calculated reproducibility after rejection of the statistical outlier is in good agreement with the requirements of ASTM D95:13e1. Not all laboratories used the distillation method. A number of laboratories reported to have used a different method which may not be equivalent to ASTM D95:13e1.
- Water and sediment: 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 ASTM D1796:11e1.
- Vacuum Distillation: This determination may be problematic. In total thirteen statistical outliers were observed and three results from one laboratory were excluded as the other reported test results from this laboratory were marked as statistical outliers. The calculated reproducibility after rejection of the suspect data is in agreement for IBP, 5% and 30% recovered with the requirements of ASTM D1160:13. The calculated reproducibilities for 10%, 20%, 40%, 50% recovered and FBP are not in agreement with the requirements of ASTM D1160:13.

**CHN-Analyzer:** This determination was not problematic for Carbon and Hydrogen. Only two statistical outliers were observed both for Hydrogen. The calculated reproducibilities for Carbon and Hydrogen are both in agreement with the requirements of ASTM D5291:10. No statistical outliers were observed for the Nitrogen determination. However, the calculated reproducibility for Nitrogen is not in agreement with the requirements of ASTM D5291:10.

**Sample #15002:**

Two laboratories used ASTM D5185 as test method for metals in Fuel Oil. This test method may not be applicable to Fuel Oil.

**Aluminium:** This determination may be problematic for a number of laboratories. Four statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with IP470:05, but not in agreement with the requirements of IP501:05.

**Silicon:** This determination may be not problematic. Only one statistical outlier was observed. The calculated reproducibility after rejection of the statistical outlier is in full agreement with IP470:05, but not at all in agreement with the requirements of IP501:05.

**Total Al/Si:** This determination may be problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the estimated reproducibility of IP470:05, but not in agreement with the estimated requirements of IP501:05.

**Iron:** This determination may be problematic for a number of laboratories. Five statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the reproducibility of IP470:05, but not in agreement with the requirements of IP501:05.

**Nickel:** This determination was problematic for a number of laboratories. Seven statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the reproducibilities of IP470:05 and IP501:05.

**Sodium:** This determination may be problematic for a number of laboratories. Six statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the reproducibility of IP470:05, but not in agreement with the requirements of IP501:05.

**Vanadium:** This determination was problematic for a number of laboratories. Eight statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in good agreement with the estimated reproducibilities of IP470:05 and IP501:05.

Calcium: This determination was problematic. Four statistical outliers were observed. The calculated reproducibility after rejection of the statistical outliers is not in agreement with the reproducibilities of IP470:05 and IP501:05. The average recovery of Calcium (theoretical increment of 85.1 mg Calcium/kg) may be good: "less than 98%" (the actual blank Calcium content is unknown).

Phosphorus: This determination was not problematic. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in agreement with the reproducibility of IP501:05 but not in agreement with the requirements of IP500:03. The average recovery of Phosphorus (theoretical increment of 21.2 mg Phosphorus/kg) may be good: "less than 98%" (the actual blank Phosphorus content is unknown).

Zinc: This determination was problematic. Only one statistical outlier was observed. However, the calculated reproducibility after rejection of the statistical outlier is not in agreement with the reproducibilities of IP470:05 and IP501:05. The average recovery of Zinc (theoretical increment of 24.1 mg Zinc/kg) may be good: "less than 96%" (the actual blank Zinc content is unknown).

### **Sample #15003**

Bromine Number: This determination was problematic for a number of laboratories. Three statistical outliers were observed. However, the calculated reproducibility after rejection of the statistical outliers is in full agreement with the requirements of ASTM D1159:07.

P-Value: This determination was not problematic. No statistical outliers were observed and the calculated reproducibility is in full agreement with the requirements of target testmethod estimated from the repeatability.

Finally it should be noted that proper attention for homogenisation 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 all methods for the determination of metals in Fuel Oil have similar statements regarding homogenization. Recommended is the use of 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 relevant standard and the reproducibility as found for the group of participating laboratories that participated. The average results of the evaluated parameters, calculated reproducibilities and reproducibilities, derived from literature standards (in casu ASTM, EN, ISO and IP standards) are compared in the next table.

Parameters	Unit	n	average	2.8 * sd	R (lit)
Acid Number	mg KOH/g	90	0.086	0.114	0.153
API gravity		103	8.75	0.22	0.50
Ash	%M/M	159	0.029	0.013	0.005
Asphaltenes	%M/M	97	7.27	1.52	1.45
Calc. Carbon Aromaticity Index		86	863.1	1.9	2.3
Carbon Residue, Micro	%M/M	128	15.15	0.90	1.50
Conradson Carbon Residue	%M/M	57	15.41	2.34	2.42
Density @ 15°C	kg/m <sup>3</sup>	184	1008.3	1.6	1.5
Flash Point PMcc	°C	178	92.1	6.7	6.0
Heat of Combustion Gross	MJ/kg	93	41.89	0.56	0.40
Heat of Combustion Net	MJ/kg	74	39.69	0.60	0.40
Kinematic Viscosity @50°C	mm <sup>2</sup> /s	156	715.3	41.2	52.9
Kinematic Viscosity @100°C	mm <sup>2</sup> /s	132	47.84	2.71	2.23
Stabinger Viscosity @50°C	mm <sup>2</sup> /s	14	715.9	43.9	unknown
Stabinger Viscosity @100°C	mm <sup>2</sup> /s	15	48.03	4.01	unknown
Nitrogen	µg/g	40	3889	1296	1034
Pour Point Lower	°C	82	3.9	8.2	6.6
Pour Point Upper	°C	126	5.9	9.8	6.6
Pour Point (automated)	°C	31	0.3	13.3	6.1
Sediment by Extraction	%M/M	112	0.016	0.021	0.037
Total Sediment (Hot Filtration)	%M/M	86	0.015	0.018	0.036
Total Sediment (Accelerated)	%M/M	88	0.018	0.026	0.040
Total Sediment (Potential)	%M/M	86	0.018	0.023	0.039
Total Sulphur	%M/M	175	3.64	0.31	0.17
Water by Distillation	%V/V	112	0.05	0.06	0.20
Water and Sediment	%M/M	50	0.05	0.10	0.11
Distillation @ 760 mm Hg					
IBP	°C	37	194.8	50.2	49.0
5% recovered	°C	38	269.0	28.5	25.9
10% recovered	°C	38	317.2	29.4	23.6
20% recovered	°C	37	414.9	25.9	21.2
30% recovered	°C	35	466.1	14.5	16.7
40% recovered	°C	36	497.8	17.5	14.3
50% recovered	°C	31	522.9	25.7	10.5
FBP	°C	32	531.6	39.6	27.0
CHN analyzer					
Total Carbon	%M/M	32	85.50	2.18	2.41
Total Hydrogen	%M/M	30	10.18	0.57	0.74
Total Nitrogen	%M/M	23	0.44	0.22	0.10

Table 6: summary of test results on Fuel Oil sample #15001

Parameters	Unit	n	average	2.8 * sd	R (lit)
Aluminium	mg/kg	102	9.67	3.67	3.61
Silicon	mg/kg	103	9.78	6.28	6.39
Total Aluminium+Silicon	mg/kg	92	19.44	6.85	7.34
Iron as Fe	mg/kg	88	15.45	5.38	9.75
Nickel as Ni	mg/kg	94	12.01	4.33	9.16
Sodium as Na	mg/kg	97	4.38	3.00	3.16
Vanadium as V	mg/kg	98	24.82	4.93	16.24
Calcium as Ca	mg/kg	83	82.99	19.22	13.94
Phosphorous	mg/kg	71	20.78	4.95	6.77
Zinc	mg/kg	87	23.06	6.99	6.10

Table 7: summary of test results on Fuel Oil sample #15002

Parameters	Unit	n	average	2.8 * sd	R (lit)
Bromine Number	g Br <sub>2</sub> /100g	27	13.28	4.40	4.40
p-Value		34	1.83	0.60	0.60

Table 8: summary of test results on Fuel Oil sample #15003

Without further statistical calculations it can be concluded that for a number tests there is a good compliance of the group of participating laboratories with the relevant standards. The problematic tests have been discussed in paragraph 4.1.

#### 4.3 COMPARISON OF THE PROFICIENCY TEST OF JANUARY 2015 WITH PREVIOUS PTS

	January 2015	January 2014	January 2013	January 2012
Number of reporting labs	207	200	188	75
Number of results reported	4048	3835	3261	1195
Statistical outliers	130	112	98	74
Percentage outliers	3.2%	2.9%	3.2%	6.2%

Table 9: comparison with previous proficiency tests

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

The performance of the determinations of the proficiency tests was compared against the requirements of the respective standards. The conclusions are given the following table:

Determination	January 2015	January 2014	January 2013	February 2012
Acid Number	++	+	+/-	+
API Gravity	++	++	++	--
Ash	--	--	--	--
Asphaltenes	-	+	+/-	--
Calc. Carb. Aromaticity Index	+	+	++	+/-
Micro Carbon Residue	++	+/-	-	--
Conradson Carbon Residue	+	+	+/-	-
Density @ 15 °C	+/-	+	-	-
Distillation D1160	+/-	+/-	+	--
Flash Point PMcc	-	+/-	-	--
Heat of Combustion Gross	--	+	+/-	--
Heat of Combustion Net	--	+	+/-	+/-
Kinematic Viscosity @ 50 °C	++	+	+	+
Kinematic Viscosity @ 100 °C	-	-	-	++
Nitrogen	--	-	-	--
Pour Point Lower	-	-	-	--
Pour Point Upper	-	-	-	--
Pour Point (automated)	--	-	-	-
Sediments by Extraction	++	+	+	++
Total Sediment (Hot Filtration)	++	+	n.e	n.e
Total Sediment (Accelerated)	++	++	++	++
Total Sediment (Potential)	++	++	++	++
Total Sulphur	--	+/-	-	--
Water by Distillation	++	++	+	++
Water and Sediment	+/-	+	+/-	n.e.
Total Carbon	+	+	+	++
Total Hydrogen	++	+	+	+
Total Nitrogen	--	-	-	++
Aluminium as Al	+/-	-	--	++
Silicon as Si	+	-	--	++
Total Aluminium/Silicon	+	-	--	+/-
Iron as Fe	++	-	n.e	n.e
Nickel as Ni	++	+	++	++
Sodium as Na	+	-	--	--
Vanadium as V	++	++	++	++
Calcium as Ca	--	-	n.e	n.e
Phosphorous	++	+	n.e	n.e
Zinc as Zn	-	+/-	n.e	n.e
Bromine Number	+/-	n.e.	n.e.	n.e.
p-Value	+/-	n.e.	n.e.	n.e.

Table 10: comparison determinations against the reference standard



The performance of the determinations against the requirements of the respective standards is listed in the above table. The following performance categories were used:

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

**APPENDIX 1**

**Determination of Acid Number on sample #15001; results in mg KOH/g**

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		0.02		-1.20	621	D664	0.077		-0.16
62	D664	<0.05		----	631	D664	0.063	C	-0.42
90		----		----	633	D664	0.0730		-0.23
92		----		----	634		----		----
120	D664	0.06		-0.47	657	D664	0.04		-0.84
131		----		----	663		----		----
132	D664	<0.10		----	671		----		----
133		----		----	704	D664	0.07		-0.29
140	D664	0.441	R(0.01)	6.50	732		----		----
150		----		----	750	D664	0.076		-0.18
154		----		----	753		----		----
158	D664	0.055		-0.56	781	D664	0.081		-0.09
159	D664	0.105		0.35	784	D664	0.074		-0.22
168		----		----	785	D664	0.050		-0.65
169		----		----	791		----		----
171	D664	<0.05		----	823	D664	0.15	C	1.17
175		----		----	824		----		----
193		----		----	840	D664	0.107		0.39
194		----		----	851		----		----
212	D664	0.02		-1.20	855	D664	0.095		0.17
221		----		----	858	D664	0.10		0.26
224	D974	0.2		2.09	859	D664	0.098		0.22
225		----		----	862	D664	0.099		0.24
228		----		----	863	D664	<0.1		----
230	D664	0.046		-0.73	864	D664	0.09		0.08
237	D664	<0.1		----	865	D664	0.08		-0.11
238		----		----	866	D664	<0.1		----
242		----		----	867	D664	<0.1		----
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875	D664	0.075		-0.20
256		----		----	886	D664	<0.05		----
273		----		----	887	D664	0.093		0.13
311	D664	<0.10		----	902		----		----
313		----		----	904		----		----
323		----		----	912	D664	0.128		0.77
331	D664	0.092		0.11	913	D664	0.120		0.63
333	D664	<0.1		----	922		----		----
334		----		----	962		----		----
336	D664	0.11		0.44	963		----		----
337		----		----	971	D664	0.06		-0.47
340	D664	0.06		-0.47	974	D664	0.09		0.08
342	D664	0.08		-0.11	982		----		----
343	D664	<0.05		----	994	D664	0.10		0.26
349	D664	0.06		-0.47	995	D664	0.086		0.00
351		----		----	996		----		----
353		----		----	997		----		----
356	D664	0.093		0.13	1011		----		----
360	D664	0.055		-0.56	1026		----		----
370		----		----	1040	ISO6619	0.082		-0.07
371		----		----	1059	ISO6619	0.050		-0.65
372	D664	0.10		0.26	1062		----		----
391	D664	0.150		1.17	1065	D664	0.063		-0.42
398	D664	0.140		0.99	1082		----		----
399		----		----	1109	D664	<0.05		----
440		----		----	1121	IP177	0.054		-0.58
444		----		----	1126		----		----
445	D664	0.099		0.24	1134	D664	0.07		-0.29
447		----		----	1161	D664	0.031		-1.00
463		----		----	1167		----		----
494	D664	0.07		-0.29	1177		----		----
498		----		----	1191		----		----
507	D664	0.074		-0.22	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	D664	0.181		1.74
541		----		----	1213		----		----
551		----		----	1229		----		----
557		----		----	1233	D664	0.021		-1.18
562		----		----	1254		----		----
575		----		----	1259	D664	0.1697		1.53
604		----		----	1266		----		----
605	D664	0.06		-0.47	1275		----		----
607		----		----	1347	D664	0.076	C	-0.18
608	D664	0.055		-0.56	1348	D664	0.07		-0.29
1356	D664	0.03		-1.02	1740	D664	0.09		0.08

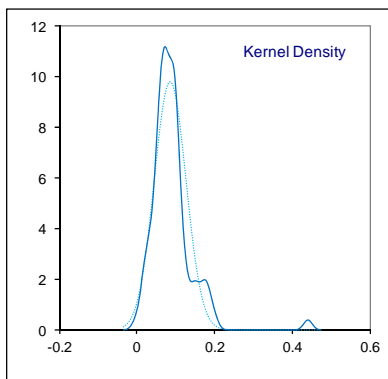
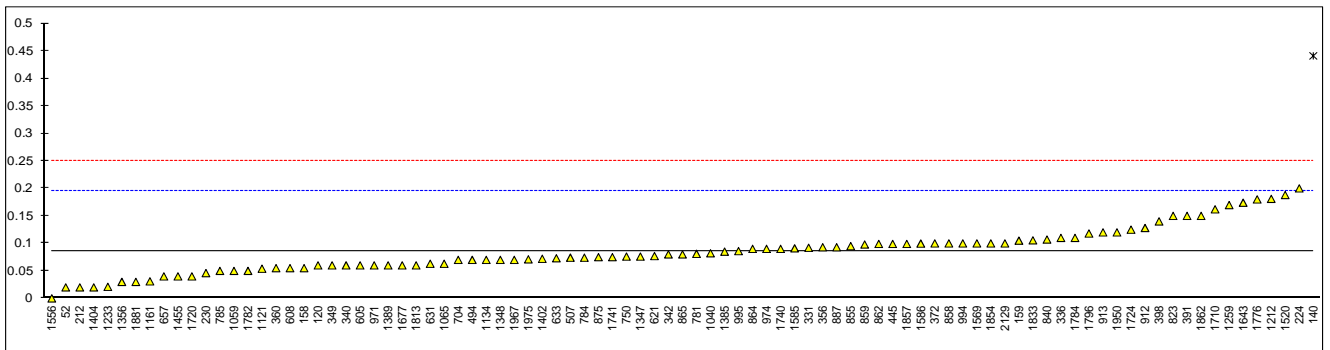
1381		----		1741	ISO6619	0.075	-0.20
1385	D664	0.085	-0.01	1763		----	----
1389	D664	0.06	-0.47	1776	D664	0.18	1.72
1392		----	----	1782	D664	0.05	-0.65
1395		----	----	1784	D664	0.11	0.44
1402	D664	0.072	-0.25	1796	D664	0.118	0.59
1404	D664	0.02	-1.20	1807		----	----
1412		----	----	1810		----	----
1428		----	----	1811		----	----
1431		----	----	1813	D664	0.06	-0.47
1455	D664	0.04	-0.84	1832		----	----
1459		----	----	1833	D664	0.1056	0.36
1510		----	----	1842		----	----
1520	D664	0.188	1.87	1849		----	----
1546		----	----	1854	D664	0.10	0.26
1556	D664	0.0	-1.57	1857	D664	0.099	0.24
1569	D664	0.10	0.26	1862	D664	0.15	1.17
1579		----	----	1881	D664	0.03	-1.02
1583		----	----	1906		----	----
1585	D664	0.091	0.10	1936		----	----
1586	D664	0.09968	0.25	1937		----	----
1610		----	----	1938		----	----
1613		----	----	1942		----	----
1616		----	----	1948		----	----
1622		----	----	1950	D664	0.120	0.63
1631		----	----	1956		----	----
1636		----	----	1962		----	W
1643	D664	0.174	1.61	1964		----	----
1654		----	----	1967	D664	0.07	-0.29
1677	D664	0.06	-0.47	1971		----	----
1710	D664	0.162	1.39	1975	D664	0.071	-0.27
1720	D664	0.04	-0.84	2129	D664	0.10	0.26
1724	D664	0.125	0.72	7017		----	----
1728		----	----				
	normality	OK					
	n	90					
	outliers	1					
	mean (n)	0.0858					
	st.dev. (n)	0.04067					
	R(calc.)	0.1139					
	R(D664:11a)	0.1531					

Lab 1962: result withdrawn, reported 3.208

Lab 631 ; first reported 0.263

Lab 823 : first reported 0.35

Lab 1347 : first reported 0.76

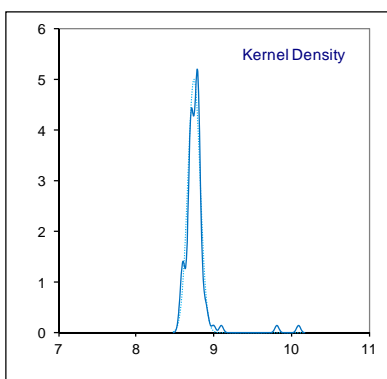
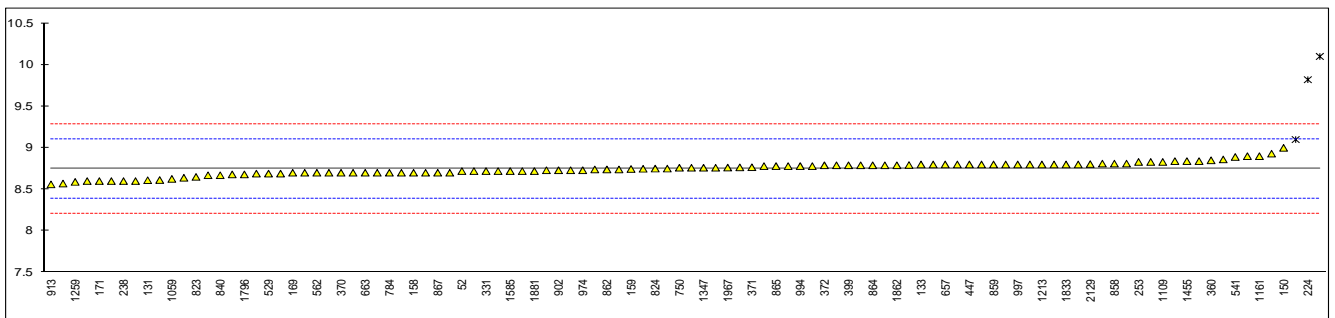


## Determination of API Gravity on sample #15001;

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		8.72		-0.15	621	D1298	10.1	C,R(0.01)	7.58
62	D4052	8.7	C	-0.26	631	D4052	8.69		-0.32
90	D4052	8.81		0.35	633		----		----
92		----		----	634		----		----
120	D4052	8.7		-0.26	657	D4052	8.8		0.30
131	D4052	8.61		-0.77	663	D4052	8.7		-0.26
132	D4052	8.84		0.52	671	D287	8.9		0.86
133	D287	8.8		0.30	704	D1250	8.79		0.24
140	D4052	8.83		0.47	732		----		----
150	D287	9.0		1.42	750	D1250	8.76		0.07
154	D287	8.70		-0.26	753	D1298	8.72		-0.15
158	D287	8.7		-0.26	781	D1250	8.748		0.01
159	D4052	8.745		-0.01	784	D1250	8.70		-0.26
168	D287	8.8		0.30	785		----		----
169	D287	8.7		-0.26	791		----		----
171	D287	8.6		-0.82	823	D4052	8.65		-0.54
175	D4052	8.8		0.30	824	D4052	8.75		0.02
193		----		----	840	ISO12185	8.67		-0.43
194	D4052	8.7		-0.26	851		----		----
212		----		----	855	ISO12185	8.78		0.19
221		----		----	858	D1298	8.81		0.35
224	D1298	9.82	C,R(0.01)	6.01	859	ISO12185	8.80		0.30
225	Calc.	8.8		0.30	862	D287	8.74		-0.04
228		----		----	863	ISO12185	8.70		-0.26
230		----		----	864	ISO12185	8.79		0.24
237	D4052	8.67		-0.43	865	ISO3675	8.78		0.19
238	D1298	8.6		-0.82	866	ISO12185	8.74		-0.04
242		----		----	867	ISO12185	8.7		-0.26
252		----		----	873		----		----
253		8.83		0.47	874		----		----
254		----		----	875		----		----
256	D1298	8.6		-0.82	886		----		----
273		8.6	C	-0.82	887		----		----
311		----		----	902	D4052	8.73		-0.09
313		----		----	904	D4052	8.73		-0.09
323		8.72		-0.15	912	D287	8.57		-0.99
331	ISO12185	8.72		-0.15	913	D287	8.56		-1.05
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963	D4052Calc.	8.78		0.19
337		----		----	971	ISO12185	8.76		0.07
340		----		----	974	Calc.	8.73		-0.09
342		----		----	982	Calc.	8.86		0.63
343		8.74		-0.04	994	ISO12185	8.78		0.19
349		----		----	995	D4052	8.8		0.30
351		----		----	996		----		----
353		----		----	997	D4052	8.8		0.30
356		----		----	1011		----		----
360	ISO12185	8.85		0.58	1026		----		----
370	D4052	8.7		-0.26	1040		----		----
371	ISO12185	8.766		0.11	1059	ISO12185	8.626		-0.68
372	D4052	8.79		0.24	1062		----		----
391		----		----	1065		----		----
398		----		----	1082		----		----
399	D1298	8.79		0.24	1109	D4052	8.83		0.47
440		----		----	1121	D4052	8.75		0.02
444		----		----	1126		----		----
445		----		----	1134	Calc.	8.80		0.30
447	D4052	8.8		0.30	1161	D287	8.9	C	0.86
463	D4052	8.79		0.24	1167		----		----
494	ISO12185	8.7	C	-0.26	1177		----		----
498		----		----	1191		----		----
507	D4052	8.73		-0.09	1200		----		----
511		----		----	1205		----		----
529	D5002	8.69		-0.32	1212		----		----
541	D5002	8.89		0.80	1213	D4052	8.80		0.30
551		----		----	1229		----		----
557		----		----	1233		----		----
562	D1298	8.7		-0.26	1254		----		----
575	D1298	9.1	R(0.01)	1.98	1259	D1298	8.59		-0.88
604	D4052	8.64		-0.60	1266		8.793		0.26
605	D4052	8.68		-0.37	1275		----		----
607		----		----	1347	D4052	8.76		0.07
608		----		----	1348		----		----

1356		----	----	1740		----	----
1381		----	----	1741		----	----
1385		----	----	1763		----	----
1389		----	----	1776		----	----
1392		----	----	1782		----	----
1395		----	----	1784		8.7	-0.26
1402		----	----	1796		8.68	-0.37
1404		----	----	1807		----	----
1412		8.79	0.24	1810		----	----
1428		----	----	1811		----	----
1431		----	----	1813		----	----
1455	D4052	8.84	0.52	1832		----	----
1459		----	----	1833	D4052	8.8	0.30
1510		----	----	1842		----	----
1520	D4052	8.765	0.10	1849		----	----
1546		----	----	1854		8.8	0.30
1556		----	----	1857	ISO12185	8.72	-0.15
1569		----	----	1862		8.79	0.24
1579		----	----	1881	D4052	8.720	-0.15
1583		----	----	1906		----	----
1585	D4052	8.72	-0.15	1936		----	----
1586		8.69	-0.32	1937		----	----
1610		----	----	1938		----	----
1613	D4052	8.76	0.07	1942	Calc.	8.6	-0.823
1616		----	----	1948		----	----
1622	D4052	8.8	0.30	1950		8.78	0.19
1631		----	----	1956		----	----
1636		----	----	1962		----	----
1643		----	----	1964		----	----
1654		----	----	1967	D1298	8.762	0.08
1677		----	----	1971		----	----
1710		----	----	1975	Calc.	8.93	1.03
1720		----	----	2129	D-Table 51	8.804	0.32
1724	D4052	8.81	0.35	7017		8.84	0.52
1728	D287	8.613	-0.75				
	normality	OK					
	n	103					
	outliers	3					
	mean (n)	8.747					
	st.dev. (n)	0.0799					
	R(calc.)	0.224					
	R(D1298:12b)	0.500					

Lab 62 : first reported 9.2  
 Lab 224 : first reported 9.14  
 Lab 273 : first reported 8.2  
 Lab 494 : first reported 9.9  
 Lab 621 ; first reported 17.63  
 Lab 1161 : first reported 9.3

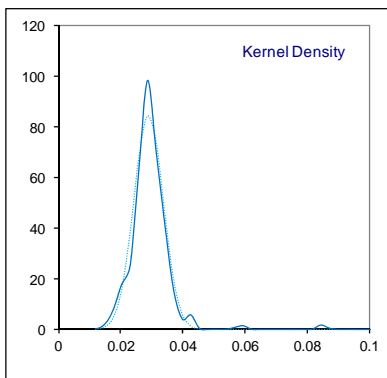
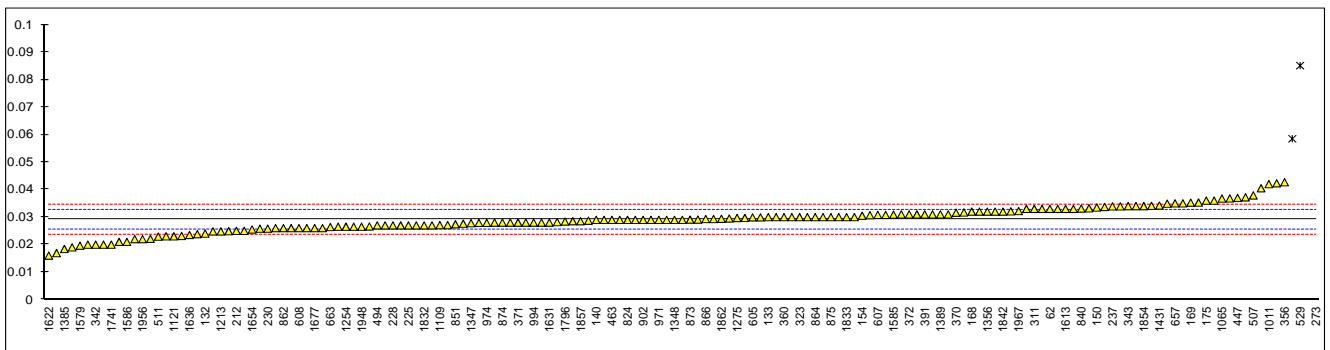


## Determination of Ash on sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D482	0.028		-0.60	621	D482	0.0405		6.40
62	D482	0.033		2.20	631	D482	0.0423		7.40
90	D482	0.0353		3.48	633	D482	0.0585	R(0.01)	16.48
92	D482	0.031		1.08	634	D482	0.02487		-2.36
120	D482	0.033		2.20	657	ISO6245	0.035		3.32
131	D482	0.0339		2.70	663	D482	0.0264		-1.50
132	ISO6245	0.024		-2.84	671	D482	0.02316		-3.31
133	D482	0.03		0.52	704	ISO6245	0.0258		-1.84
140	D482	0.029		-0.04	732	D482	0.027		-1.16
150	D482	0.0335		2.48	750	D482	0.030		0.52
154	D482	0.0305		0.80	753		----		----
158		----		----	781	ISO6245	0.028		-0.60
159	D482	0.029		-0.04	784	ISO6245	0.033		2.20
168	D482	0.032		1.64	785	D482	0.030		0.52
169	D482	0.03527		3.47	791		----		----
171	D482	0.027		-1.16	823	ISO6245	0.0291		0.01
175	D482	0.036		3.88	824	ISO6245	0.029		-0.04
193		----		----	840	D482	0.0331		2.25
194	D482	0.019		-5.64	851	ISO6245	0.02741		-0.93
212	ISO6245	0.025		-2.28	855	D482	0.029		-0.04
221	D482	0.030		0.52	858	D482	0.0299		0.46
224	D482	0.12	R(0.01)	50.92	859	ISO6245	0.029		-0.04
225	D482	0.027		-1.16	862	ISO6245	0.0260		-1.72
228	D482	0.027		-1.16	863	ISO6245	0.0310		1.08
230	ISO6245	0.0258		-1.84	864	D482	0.030		0.52
237	D482	0.0339		2.70	865	ISO6245	0.028		-0.60
238		----		----	866	ISO6245	0.0293		0.12
242	D482	0.027611		-0.82	867	D482	0.032		1.64
252		----		----	873	D482	0.0291		0.01
253	D482	0.026		-1.72	874	D482	0.028		-0.60
254		----		----	875	D482	0.030		0.52
256	D482	0.026		-1.72	886	D482	0.033		2.20
273	D482	0.72	R(0.01)	386.92	887		----		----
311	ISO6245	0.033		2.20	902	D482	0.029		-0.04
313		----		----	904	D482	0.029		-0.04
323	ISO6245	0.030		0.52	912	D482	0.0282		-0.49
331	ISO6245	0.0332		2.31	913	ISO6245	0.0265		-1.44
333		----		----	922	D482	0.0221		-3.91
334		----		----	962		----		----
336		----		----	963	ISO6245	0.0287		-0.21
337		----		----	971	ISO6245	0.0290		-0.04
340		----		----	974	D482	0.0279		-0.66
342	ISO6245	0.020		-5.08	982		----		----
343	ISO6245	0.034		2.76	994	D482	0.028		-0.60
349		----		----	995	D482	0.029		-0.04
351	ISO6245	0.0372		4.55	996		----		----
353		----		----	997	D482	0.028		-0.60
356	ISO6245	0.0427		7.63	1011	ISO6245	0.042		7.24
360	D482	0.030		0.52	1026	ISO6245	0.030		0.52
370	D482	0.0316		1.41	1040	ISO6245	0.034		2.76
371	ISO6245	0.028		-0.60	1059	ISO6245	0.0321		1.69
372	ISO6245	0.031		1.08	1062		----		----
391	D482	0.031		1.08	1065	D482	0.03675		4.30
398	ISO6245	0.030		0.52	1082		----		----
399	ISO6245	0.020		-5.08	1109	D482	0.0271		-1.11
440		----		----	1121	IP4	0.023		-3.40
444	D482	0.0238		-2.96	1126		----		----
445	IP4	0.0279		-0.66	1134	IP4	0.021		-4.52
447	IP4	0.037		4.44	1161	ISO6245	0.0266		-1.39
463	ISO6245	0.0290		-0.04	1167	ISO6245	0.0293	C	0.12
494	ISO6245	0.027		-1.16	1177		----		----
498		----		----	1191	ISO6245	0.0248		-2.40
507	ISO6245	0.0379		4.94	1200		----		----
511	D482	0.0229		-3.46	1205		----		----
529	D482	0.0851	R(0.01)	31.37	1212	ISO6245	0.0297		0.35
541		----		----	1213	D482	0.0248		-2.40
551		----		----	1229		----		----
557		----		----	1233	ISO6245	0.031		1.08
562	D482	0.0230		-3.40	1254	ISO6245	0.0265		-1.44
575		----		----	1259		----		----
604		----		----	1266	ISO6245	0.036		3.88
605	D482	0.0299		0.46	1275	IP4	0.02969		0.34
607	D482	0.0308		0.96	1347	D482	0.0278		-0.72
608	D482	0.026		-1.72	1348	D482	0.029		-0.04

1356	ISO6245	0.0320	1.64	1740	ISO6245	0.026	-1.72
1381	ISO6245	0.0307	0.91	1741	ISO6245	0.020	-5.08
1385	D482	0.0184	-5.98	1763	ISO6245	0.0349	3.26
1389	D482	0.031	1.08	1776	-----	-----	-----
1392	-----	-----	-----	1782	ISO6245	0.031	1.08
1395	-----	-----	-----	1784	ISO6245	0.033	2.20
1402	ISO6245	0.020	-5.08	1796	ISO6245	0.0284	-0.38
1404	ISO6245	0.0265	-1.44	1807	ISO6245	0.0169	-6.82
1412	-----	-----	-----	1810	-----	-----	-----
1428	ISO6245	0.0285	-0.32	1811	-----	-----	-----
1431	D482	0.03421	2.87	1813	D482	0.035	3.32
1455	ISO6245	0.026	-1.72	1832	ISO6245	0.0270	-1.16
1459	-----	-----	-----	1833	ISO6245	0.030	0.52
1510	-----	-----	-----	1842	IP4	0.032	1.64
1520	ISO6245	0.0368	4.32	1849	ISO6245	0.025	-2.28
1546	-----	-----	-----	1854	ISO6245	0.034	2.76
1556	ISO6245	0.0271	-1.11	1857	ISO6245	0.0285	-0.32
1569	ISO6245	0.0295	0.24	1862	ISO6245	0.0294	0.18
1579	ISO6245	0.0196	-5.31	1881	ISO6245	0.0341	2.81
1583	-----	-----	-----	1906	-----	-----	-----
1585	D482	0.0309	1.02	1936	-----	-----	-----
1586	ISO6245	0.021	-4.52	1937	-----	-----	-----
1610	-----	-----	-----	1938	-----	-----	-----
1613	D482	0.033	2.20	1942	D482	0.027	-1.16
1616	-----	-----	-----	1948	ISO6245	0.0265	-1.44
1622	D482	0.016	-7.32	1950	ISO6245	0.030	0.52
1631	ISO6245	0.028	-0.60	1956	ISO6245	0.022	-3.96
1636	ISO6245	0.0235	-3.12	1962	-----	-----	-----
1643	D482	0.0317	1.47	1964	-----	-----	-----
1654	ISO6245	0.0255	-2.00	1967	ISO6245	0.0322	1.75
1677	D482	0.026	-1.72	1971	-----	-----	-----
1710	ISO6245	0.022	-3.96	1975	ISO6245	0.0308	0.96
1720	-----	-----	-----	2129	ISO6245	0.029	-0.04
1724	D482	0.027	-1.16	7017	D482	0.0337	2.59
1728	ISO6245	0.032	1.64				
	normality	OK					
	n	159					
	outliers	4					
	mean (n)	0.0291					
	st.dev. (n)	0.00470					
	R(calc.)	0.0132					
	R(ISO6245:01)	0.0050					

Lab 1167 : first reported 0.0252



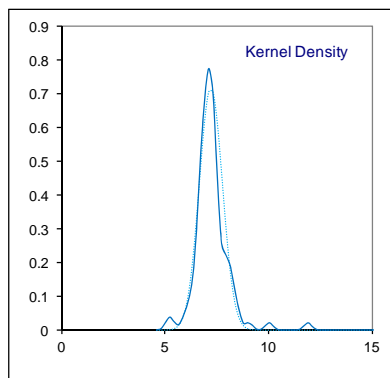
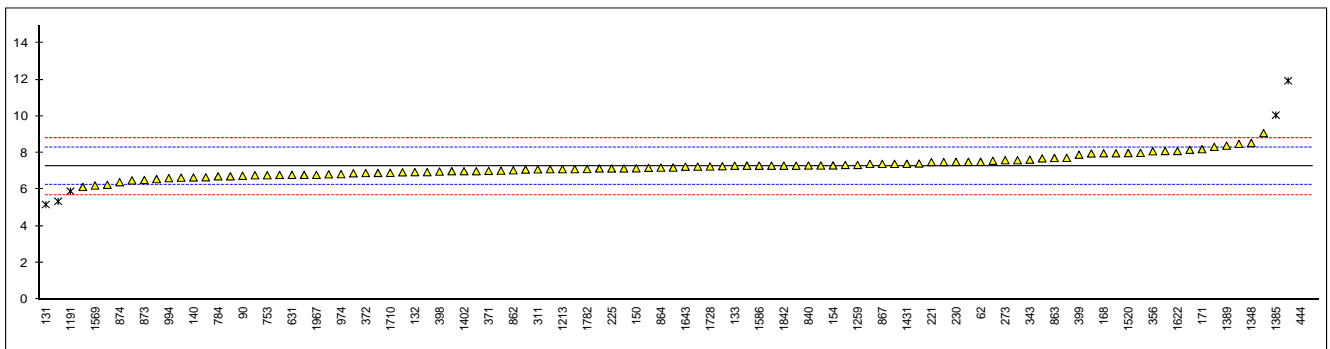
Determination of Asphaltenes on sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62	D6560	7.512		0.47	631	IP143	6.80		-0.90
90	IP143	6.75		-1.00	633		----		----
92		----		----	634		----		----
120	D3279	7.4		0.25	657	IP143	8.1	C	1.60
131	D6560	5.18	R(0.01)	-4.02	663		----		----
132	D6560	6.95		-0.61	671		----		----
133	D6560	7.3		0.06	704	IP143	6.94		-0.63
140	IP143	6.66		-1.17	732		----		----
150	IP143	7.16		-0.21	750		----		----
154	D6560	7.314		0.09	753	IP143	6.78		-0.94
158		----		----	781	IP143	6.26		-1.94
159		----		----	784	IP143	6.72		-1.06
168	D3279	7.98		1.37	785	D6560	6.14		-2.17
169		----		----	791		----		----
171	IP143	8.2		1.79	823	IP143	8.49		2.35
175		----		----	824		----		----
193		----		----	840	IP143	7.31		0.08
194		----		----	851		----		----
212		----		----	855	IP143	7.20		-0.13
221	D6560	7.5		0.45	858	IP143	7.31		0.08
224		----		----	859	IP143	7.15		-0.23
225	D6560	7.15		-0.23	862	IP143	7.05		-0.42
228		----		----	863	IP143	7.72		0.87
230	IP143	7.51		0.47	864	IP143	7.20		-0.13
237	D6560	5.355	C,R(0.01)	-3.69	865	IP143	7.27		0.00
238		----		----	866	IP143	7.73		0.89
242		----		----	867	IP143	7.4		0.25
252		----		----	873	IP143	6.52		-1.44
253		----		----	874	IP143	6.4		-1.67
254		----		----	875		----		----
256		----		----	886		----		----
273	IP143	7.6	C	0.64	887		----		----
311	IP143	7.1		-0.32	902		----		----
313		----		----	904		----		----
323		----		----	912		----		----
331		----		----	913		----		----
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963	IP143	8.00		1.41
337		----		----	971	IP143	7.03		-0.46
340		----		----	974	IP143	6.84		-0.83
342	IP143	7.97		1.35	982		----		----
343	IP143	7.63		0.70	994	IP143	6.62		-1.25
349		----		----	995	IP143	6.57		-1.35
351		----		----	996		----		----
353		----		----	997		----		----
356	IP143	8.09		1.58	1011		----		----
360	D6560	7.11		-0.31	1026		----		----
370	IP143	6.83		-0.84	1040		----		----
371	IP143	7.02		-0.48	1059		----		----
372	IP143	6.9		-0.71	1062	IP143	8.33		2.04
391	IP143	7.0		-0.52	1065	IP143	9.08		3.49
398	IP143	6.98		-0.56	1082	IP143	6.888		-0.73
399	IP143	7.90		1.22	1109		----		----
440		----		----	1121	IP143	7.3		0.06
444	IP143	32.59	C,R(0.01)	48.77	1126		----		----
445	IP143	6.669		-1.15	1134	IP143	57.423	R(0.01)	96.60
447	IP143	7.7		0.83	1161		----		----
463	IP143	6.65		-1.19	1167		----		----
494	IP143	11.93	R(0.01)	8.98	1177		----		----
498		----		----	1191	IP143	5.908	R(0.01)	-2.62
507		----		----	1200		----		----
511	D6560	6.905		-0.70	1205		----		----
529		----		----	1212	IP143	6.72		-1.06
541		----		----	1213	D6560	7.11		-0.31
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259	IP143	7.3431		0.14
604		----		----	1266		----		----
605	IP143	7.34		0.14	1275		----		----
607	IP143	6.78		-0.94	1347	IP143	7.42		0.29
608	IP143	7.98		1.37	1348	IP143	8.54		2.45



1356	D6560	8.17		1.74	1740	IP143	7.3	0.06
1381		----		----	1741		----	----
1385	IP143	10.06	R(0.01)	5.38	1763		----	----
1389	IP143	8.395		2.17	1776		----	----
1392		----		----	1782	IP143	7.12	-0.29
1395		----		----	1784	IP143	7.5	0.45
1402	IP143	7.0		-0.52	1796		----	----
1404	IP143	7.185		-0.16	1807		----	----
1412	D6560	6.80		-0.90	1810		----	----
1428		----		----	1811		----	----
1431	D6560	7.4047		0.26	1813		----	----
1455	IP143	6.5		-1.48	1832		----	----
1459		----		----	1833	IP143	7.6	0.64
1510		----		----	1842	IP143	7.3	0.06
1520	IP143	7.99		1.39	1849		----	----
1546		----		----	1854	IP143	7.4	0.25
1556	IP143	7.09		-0.34	1857	IP143	7.0	-0.52
1569	IP143	6.22		-2.02	1862	IP143	7.15	-0.23
1579		----		----	1881	IP143	7.57	0.58
1583		----		----	1906		----	----
1585	IP143	7.51		0.47	1936		----	----
1586	IP143	7.3		0.06	1937		----	----
1610		----		----	1938		----	----
1613		----		----	1942		----	----
1616		----		----	1948		----	----
1622	IP143	8.1		1.60	1950	IP143	6.95	-0.61
1631		----		----	1956		----	----
1636		----		----	1962		----	----
1643	D6560	7.247		-0.04	1964		----	----
1654		----		----	1967	IP143	6.80	-0.90
1677	IP143	6.795		-0.91	1971		----	----
1710	INH-459	6.91		-0.69	1975	IP143	7.25	-0.04
1720		----		----	2129	IP143	7.30	0.06
1724		----		----	7017	IP143	7.11	-0.31
1728	IP143	7.259		-0.02				
	normality	OK						
	n	97						
	outliers	7						
	mean (n)	7.269						
	st.dev. (n)	0.5439						
	R(calc.)	1.523						
	R(IP143:04)	1.454						

Lab 237 : first reported 12.355  
 Lab 273 : first reported 5  
 Lab 444 ; first reported 27.71  
 Lab 657 ; first reported 11.4



Determination of Calculated Carbon Aromaticity Index on sample #15001;

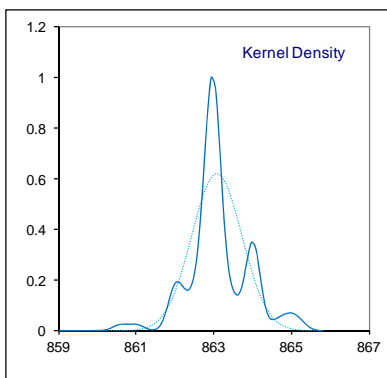
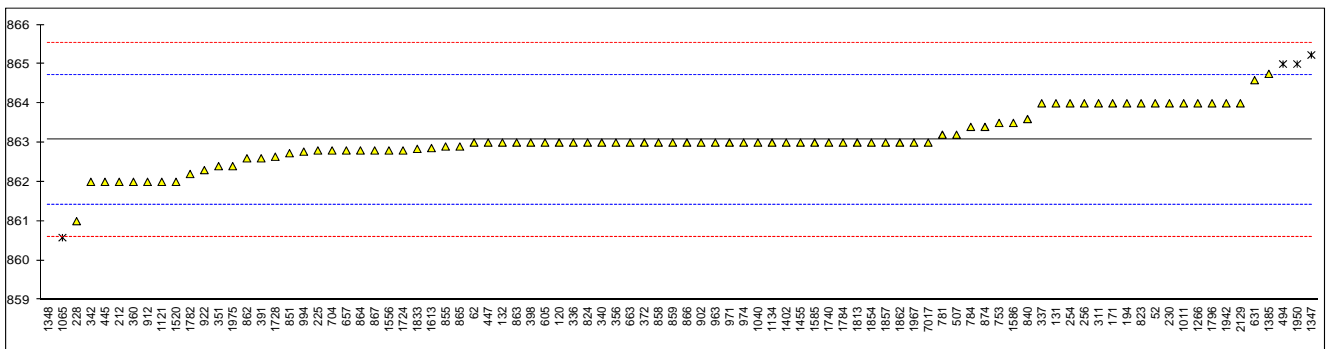
lab	method	Value	mark	z(targ)	lab	method	value	mark	z(targ)
52		864		1.10	621		----		----
62	ISO8217	863	C	-0.11	631	ISO8217	864.59		1.82
90		----		----	633		----		----
92		----		----	634		----		----
120	ISO8217	863		-0.11	657	ISO8217	862.8		-0.36
131	ISO8217	864		1.10	663	ISO8217	863		-0.11
132	ISO8217	863		-0.11	671		----		----
133		----		----	704	ISO8217	862.8		-0.36
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753	ISO8217	863.5		0.49
158		----		----	781	ISO8217	863.2		0.13
159		----		----	784	ISO8217	863.4		0.37
168		----		----	785		----		----
169		----		----	791		----		----
171	ISO8217	864		1.10	823	ISO8217	864		1.10
175		----		----	824	ISO8217	863		-0.11
193		----		----	840	ISO8217	863.6		0.62
194	ISO8217	864		1.10	851	ISO8217	862.73		-0.44
212	ISO8217	862		-1.33	855	ISO8217	862.9		-0.24
221		----		----	858	ISO8217	863		-0.11
224		----		----	859	ISO8217	863		-0.11
225	Calc.	862.8		-0.36	862	ISO8217	862.6		-0.60
228	ISO8217	861		-2.55	863	ISO8217	863.0		-0.11
230	ISO8217	864		1.10	864	ISO8217	862.8		-0.36
237		----		----	865	ISO8217	862.9		-0.24
238		----		----	866	ISO8217	863.0		-0.11
242		----		----	867	ISO8217	862.8		-0.36
252		----		----	873		----		----
253		----		----	874	ISO8217	863.4		0.37
254	ISO8217	864		1.10	875		----		----
256	ISO8217	864		1.10	886		----		----
273		----		----	887		----		----
311	ISO8217	864		1.10	902	ISO8217	863		-0.11
313		----		----	904		----		----
323		----		----	912	ISO8217	862		-1.33
331		----		----	913		----		----
333		----		----	922	ISO8217	862.3		-0.97
334		----		----	962		----		----
336	ISO8217	863		-0.11	963	ISO8217	863		-0.11
337	ISO8217	864		1.10	971	ISO8217	863		-0.11
340	ISO8217	863		-0.11	974	ISO8217	863		-0.11
342	ISO8217	862		-1.33	982		----		----
343		----		----	994	ISO8217	862.77		-0.39
349		----		----	995		----		----
351	ISO8217	862.4		-0.85	996		----		----
353		----		----	997		----		----
356	ISO8217	863		-0.11	1011	ISO8217	864		1.10
360	ISO8217	862		-1.33	1026		----		----
370		----		----	1040	ISO8217	863		-0.11
371		----		----	1059		----		----
372	ISO8217	863		-0.11	1062		----		----
391	ISO8217	862.6		-0.60	1065	ISO8217	860.58	R(0.05)	-3.06
398	ISO8217	863		-0.11	1082		----		----
399		----		----	1109		----		----
440		----		----	1121	ISO8217	862		-1.33
444		----		----	1126		----		----
445	ISO8217	862		-1.33	1134	ISO8217	863		-0.11
447	ISO8217	863		-0.11	1161		----		----
463		----		----	1167		----		----
494	ISO8217	865	ex,E	2.32	1177		----		----
498		----		----	1191		----		----
507	ISO8217	863.2		0.13	1200		----		----
511		----		----	1205		----		----
529		----		----	1212		----		----
541		----		----	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266	ISO8217	864		1.10
605	ISO8217	863		-0.11	1275		----		----
607		----		----	1347	ISO8217	865.23		2.60
608		----		----	1348	ISO8217	837	ex,E	-31.77

1356		----	----	1740	ISO8217	863		-0.11
1381		----	----	1741				----
1385	ISO8217	864.75	2.02	1763				----
1389		----	----	1776				----
1392		----	----	1782	ISO8217	862.2		-1.09
1395		----	----	1784	ISO8217	863		-0.11
1402	ISO8217	863	-0.11	1796	ISO8217	864		1.10
1404		----	----	1807				----
1412		----	----	1810				----
1428		----	----	1811				----
1431		----	----	1813	ISO8217	863		-0.11
1455	ISO8217	863	-0.11	1832				----
1459		----	----	1833	ISO8217	862.84		-0.31
1510		----	----	1842				----
1520	ISO8217	862.0	-1.33	1849				----
1546		----	----	1854	ISO8217	863		-0.11
1556	Calc.	862.8	-0.36	1857	ISO8217	863		-0.11
1569		----	----	1862	ISO8217	863		-0.11
1579		----	----	1881				----
1583		----	----	1906				----
1585	ISO8217	863	-0.11	1936				----
1586	ISO8217	863.5	0.49	1937				----
1610		----	----	1938				----
1613	ISO8217	862.86	-0.29	1942	Calc.	864		1.10
1616		----	----	1948				----
1622		----	----	1950	ISO8217	865	ex,E	2.32
1631		----	----	1956				----
1636		----	----	1962				----
1643		----	----	1964				----
1654		----	----	1967	ISO8217	863		-0.11
1677		----	----	1971				----
1710		----	----	1975	ISO8217	862.4		-0.85
1720		----	----	2129	Calc.	864		1.10
1724	ISO8217	862.8	-0.36	7017	ISO8217	863		-0.11
1728	ISO8217	862.64	-0.55					

normality suspect  
n 86  
outliers 1 (+ 3 excl)  
mean (n) 863.09  
st.dev. (n) 0.685  
R(calc.) 1.92  
R(D8217:12) 2.30

ex = excluded, see § 4.1, probably calculation error (E)

Lab 62 : first reported 860



## Determination of Carbon Residue Micro method on sample #15001; results in %M/M

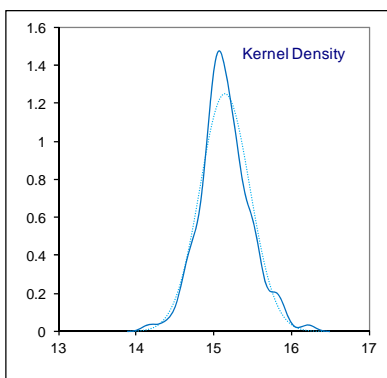
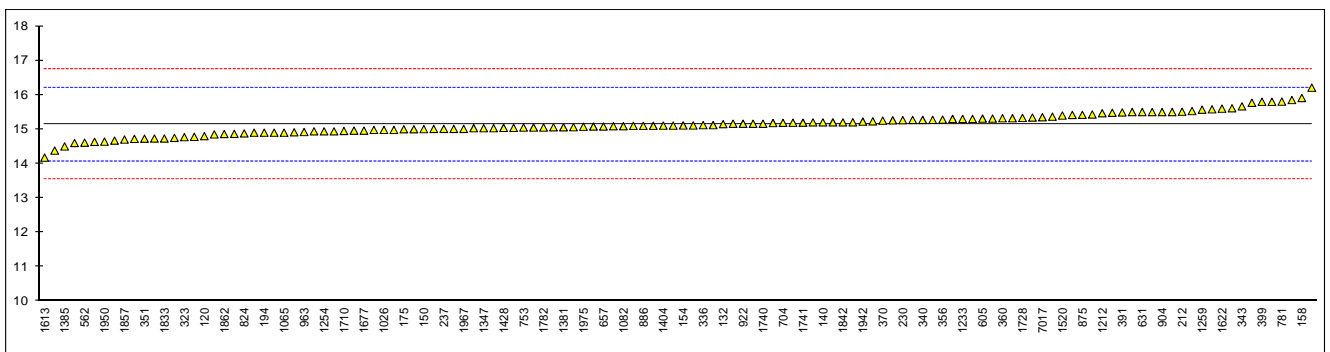
lab	method	Value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4530	15.34		0.36	621		----		----
62	D4530	14.9		-0.46	631	D4530	15.50		0.66
90		----		----	633		----		----
92	D4530	14.67		-0.89	634		----		----
120	D4530	14.8		-0.64	657	ISO10370	15.08		-0.12
131	D4530	15.77		1.17	663		----		----
132	ISO10370	15.15		0.01	671	D4530	14.6		-1.02
133	D4530	15.5		0.66	704	ISO10370	15.187		0.08
140	D4530	15.2		0.10	732		----		----
150	D4530	15.003		-0.27	750		----		----
154	D4530	15.11		-0.07	753	ISO10370	15.05		-0.18
158	D4530	15.91		1.43	781	ISO10370	15.804		1.23
159		----		----	784		----		----
168	D4530	14.85		-0.55	785	D4530	15.01		-0.25
169		----		----	791		----		----
171	D4530	14.9		-0.46	823	ISO10370	14.75		-0.74
175	D4530	15.0		-0.27	824	ISO10370	14.88		-0.49
193		----		----	840		----		----
194	ISO10370	14.9		-0.46	851	ISO10370	15.366		0.41
212	ISO10370	15.51		0.68	855	ISO10370	15.16		0.03
221		----		----	858		----		----
224		----		----	859		----		----
225	D4530	16.21		1.99	862	ISO10370	14.866		-0.52
228		----		----	863	ISO10370	15.301		0.29
230	ISO10370	15.265		0.22	864	D4530	15.26		0.21
237	D4530	15.01		-0.25	865	ISO10370	15.48		0.62
238		----		----	866	ISO10370	15.20		0.10
242		----		----	867		----		----
252	D4530	15.43		0.53	873	D4530	15.53		0.72
253		----		----	874	D4530	15.3		0.29
254		----		----	875	ISO10370	15.42		0.51
256		----		----	886	D4530	15.1		-0.08
273	D4530	15.27		0.23	887		----		----
311	ISO10370	15.2		0.10	902	D4530	15.5		0.66
313		----		----	904	D4530	15.5		0.66
323	ISO10370	14.77		-0.70	912	ISO10370	14.912		-0.44
331	ISO10370	15.056		-0.17	913	ISO10370	15.273		0.24
333		----		----	922	D4530	15.16		0.03
334	ISO10370	14.73		-0.77	962		----		----
336	ISO10370	15.12		-0.05	963	ISO10370	14.92		-0.42
337		----		----	971	ISO10370	15.06		-0.16
340	ISO10370	15.272		0.24	974	D4530	14.96		-0.35
342	ISO10370	15.10	C	-0.08	982		----		----
343	ISO10370	15.667		0.97	994		----		----
349	D4530	14.98		-0.31	995		----		----
351	ISO10370	14.725		-0.78	996		----		----
353		----		----	997		----		----
356	ISO10370	15.28		0.25	1011	ISO10370	15.8		1.22
360	D4530	15.32		0.33	1026	ISO10370	14.98		-0.31
370	D4530	15.25		0.20	1040	ISO10370	14.94		-0.38
371		----		----	1059		----		----
372	ISO10370	15.08		-0.12	1062		----		----
391	ISO10370	15.49		0.64	1065	D4530	14.9		-0.46
398	ISO10370	14.72		-0.79	1082	ISO10370	15.09		-0.10
399	ISO10370	15.8		1.22	1109	D4530	14.78		-0.68
440		----		----	1121	IP398	15.1		-0.08
444		----		----	1126		----		----
445	ISO10370	15.61		0.87	1134		----		----
447	ISO10370	15.23		0.16	1161		----		----
463		----		----	1167		----		----
494	ISO10370	15.09		-0.10	1177		----		----
498		----		----	1191	ISO10370	14.634		-0.95
507	ISO10370	15.202		0.11	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	ISO10370	15.466		0.60
541		----		----	1213	D4530	15.106		-0.07
551		----		----	1229		----		----
557		----		----	1233	ISO10370	15.3		0.29
562	D4530	14.61		-1.00	1254	ISO10370	14.94		-0.38
575		----		----	1259	ISO10370	15.569795		0.79
604		----		----	1266		----		----
605	D4530	15.31		0.31	1275		----		----
607		----		----	1347	D4530	15.03		-0.21
608	D4530	15.03		-0.21	1348	D4530	15.58		0.81

1356	ISO10370	15.05	-0.18	1740	ISO10370	15.16	0.03
1381	ISO10370	15.056	-0.17	1741	ISO10370	15.192	0.09
1385	D4530	14.5	-1.20	1763		----	----
1389	D4530	15.16	0.03	1776		----	----
1392		----	----	1782	ISO10370	15.05	-0.18
1395		----	----	1784	ISO10370	15.0	-0.27
1402	ISO10370	14.94	-0.38	1796		----	----
1404	ISO10370	15.105	-0.07	1807		----	----
1412		----	----	1810		----	----
1428	ISO10370	15.04	-0.20	1811	ISO10370	15.19	0.08
1431		----	----	1813	D4530	14.98	-0.31
1455	ISO10370	15.5	0.66	1832		----	----
1459		----	----	1833	D4530	14.73	-0.77
1510		----	----	1842	D4530	15.2	0.10
1520	ISO10370	15.4	0.48	1849		----	----
1546		----	----	1854	ISO10370	15.04	-0.20
1556	ISO10370	15.32	0.33	1857	ISO10370	14.7	-0.83
1569	ISO10370	15.416	0.51	1862	ISO10370	14.86	-0.53
1579		----	----	1881	D4530	15.11	-0.07
1583		----	----	1906		----	----
1585	D4530	15.18	0.07	1936		----	----
1586	ISO10370	15.31	0.31	1937		----	----
1610		----	----	1938		----	----
1613	D4530	14.175	-1.81	1942	D4530	15.222	0.14
1616		----	----	1948		----	----
1622	D4530	15.6	0.85	1950	ISO10370	14.64	-0.94
1631		----	----	1956	ISO10370	15.12	-0.05
1636	ISO10370	15.030	-0.21	1962		----	----
1643		----	----	1964		----	----
1654		----	----	1967	D4530	15.01	-0.25
1677	D4530	14.96	-0.35	1971		----	----
1710	ISO10370	14.95	-0.36	1975	ISO10370	15.073	-0.13
1720	D4530	15.01	-0.25	2129	ISO10370	14.38	-1.43
1724	D4530	15.85	1.32	7017	D4530	15.35	0.38
1728	ISO10370	15.33	0.35				

normality OK  
n 128  
outliers 0  
mean (n) 15.145  
st.dev. (n) 0.3196  
R(calc.) 0.895  
R(ISO10370:93) 1.500

Compare R(D4530:11) = 0.849

Lab 342 : first reported 18.19



Determination of Conradson Carbon Residue on sample #15001; results in %M/M

lab	method	Value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621	D189	8.8493	R(0.01)	-7.57
62		----		----	631		----		----
90		----		----	633		----		----
92		----		----	634	D189	13.887		-1.75
120		----		----	657	D189	15.1		-0.35
131		----		----	663		----		----
132		----		----	671		----		----
133		----		----	704	D189	14.970		-0.50
140		----		----	732		----		----
150		----		----	750	D189	16.0		0.69
154		----		----	753		----		----
158		----		----	781	D189	15.96		0.64
159		----		----	784		----		----
168		----		----	785		----		----
169		----		----	791		----		----
171	D189	15.5		0.11	823	D189	14.92		-0.56
175		----		----	824		----		----
193		----		----	840	D189	16.11		0.81
194		----		----	851		----		----
212	D189	15.63		0.26	855		----		----
221	D189	16.83		1.64	858	D189	15.31		-0.11
224	D189	15.70	C	0.34	859	D189	15.20		-0.24
225		----		----	862	D189	15.302		-0.12
228	D189	14.62		-0.91	863		----		----
230	ISO10370	15.631	ex	0.26	864		----		----
237	D189	14.501		-1.05	865	D189	15.60		0.22
238		----		----	866		----		----
242		----		----	867		----		----
252		----		----	873		----		----
253		----		----	874		----		----
254	D189	15.54		0.15	875		----		----
256	D189	15.4		-0.01	886		----		----
273		----		----	887		----		----
311		----		----	902		----		----
313		----		----	904		----		----
323		----		----	912	D189	17.369		2.27
331		----		----	913	D189	16.451		1.21
333		----		----	922	D189	15.04		-0.42
334		----		----	962		----		----
336		----		----	963	D189	15.08		-0.38
337	D189	12.9		-2.89	971	D189	15.20		-0.24
340		----		----	974	D189	15.12		-0.33
342		----		----	982		----		----
343		----		----	994	D189	15.91		0.58
349		----		----	995	D189	15.8		0.46
351		----		----	996		----		----
353		----		----	997	D189	15.9		0.57
356	D189	14.83		-0.67	1011		----		----
360	D189	15.45		0.05	1026		----		----
370	D189	15.19		-0.25	1040		----		----
371	D189	15.52		0.13	1059	ISO10370	15.620	ex	0.25
372	D189	15.3		-0.12	1062		----		----
391		----		----	1065		----		----
398		----		----	1082		----		----
399		----		----	1109		----		----
440		----		----	1121		----		----
444	D189	20.77	C,R(0.01)	6.20	1126		----		----
445		----		----	1134	IP13	16.0		0.69
447		----		----	1161		----		----
463		----		----	1167		----		----
494		----		----	1177		----		----
498		----		----	1191		----		----
507	D189	15.148		-0.30	1200		----		----
511		----		----	1205		----		----
529		----		----	1212		----		----
541	D189	15.125		-0.32	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562	D189	16.10		0.80	1254	D189	15.48		0.09
575	D189	17.69		2.64	1259		----		----
604		----		----	1266		----		----
605		----		----	1275		----		----
607		----		----	1347	D189	13.92		-1.72
608		----		----	1348		----		----

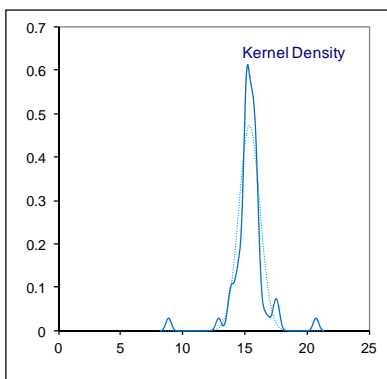
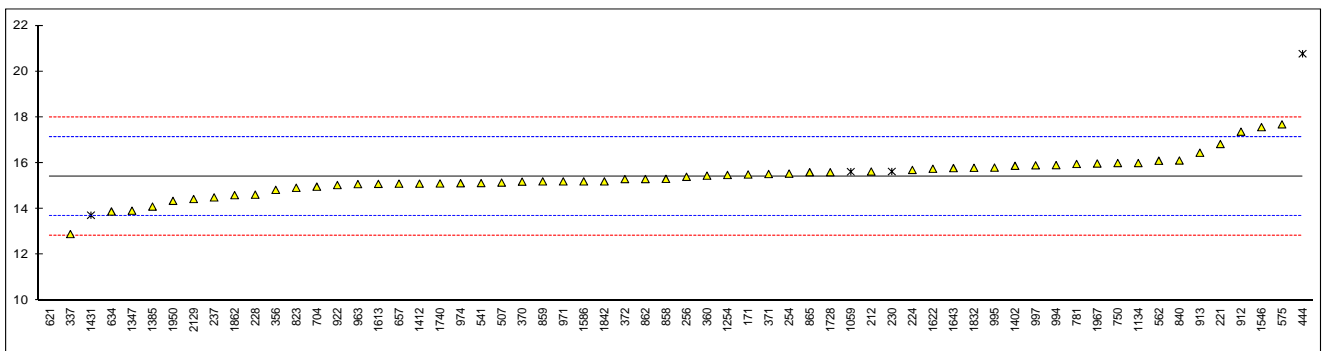
1356		----	----	1740	D189	15.11	-0.34
1381		----	----	1741		----	----
1385	D189	14.1	-1.51	1763		----	----
1389		----	----	1776		----	----
1392		----	----	1782		----	----
1395		----	----	1784		----	----
1402	D189	15.88	0.55	1796		----	----
1404		----	----	1807		----	----
1412	D189	15.1	-0.35	1810		----	----
1428		----	----	1811		----	----
1431	D524	13.7241	ex	1813		----	----
1455		----	----	1832	ISO6615	15.792	0.45
1459		----	----	1833		----	----
1510		----	----	1842	D189	15.2	-0.24
1520		----	----	1849		----	----
1546	ISO6615	17.568	2.50	1854		----	----
1556		----	----	1857		----	----
1569		----	----	1862	D189	14.60	-0.93
1579		----	----	1881		----	----
1583		----	----	1906		----	----
1585		----	----	1936		----	----
1586	D189	15.2	-0.24	1937		----	----
1610		----	----	1938		----	----
1613	D189	15.09	-0.36	1942		----	----
1616		----	----	1948		----	----
1622	D189	15.75	0.40	1950	D189	14.35	-1.22
1631		----	----	1956		----	----
1636		----	----	1962		----	----
1643	D189	15.78	0.43	1964		----	----
1654		----	----	1967	D189	15.98	0.66
1677		----	----	1971		----	----
1710		----	----	1975		----	----
1720		----	----	2129	D189	14.43	-1.13
1724		----	----	7017		----	----
1728	D189	15.60	0.25				
	normality	suspect					
	n	57					
	outliers	2 (+3 excl)					
	mean (n)	15.406					
	st.dev. (n)	0.8370					
	R(calc.)	2.344					
	R(D189:06)	2.424					

Lab 230 and Lab 1059 : result was excluded as result was reported according micromethod

Lab 1431 : result was excluded as reported method is Ramsbottom Carbon residue and is not comparable with Conradson Carbon Residue

Lab 224 : first reported 18.45

Lab 444 : first reported 19.39



Determination of Density at 15 °C on sample #15001; results in kg/m<sup>3</sup>

lab	method	Value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D4052	1008.6		0.58	621	D1298	998.3	C,R(0.01)	-18.64
62	D4052	1008.4	C	0.21	631	D4052	1008.7		0.77
90	D4052	1008.0		-0.54	633	D1298	1009.9		3.01
92	D4052	1008.3		0.02	634	D1298	1008.8	C	0.96
120	D4052	1008.6		0.58	657	ISO12185	1008.1		-0.35
131	D4052	1009.31		1.91	663	D4052	1008.6	C	0.58
132	D4052	1007.65		-1.19	671	D1298	1007.4		-1.66
133		----		----	704	ISO12185	1008.0		-0.54
140		----		----	732	ISO12185	1008.16		-0.24
150		----		----	750	D1298	1008.2		-0.16
154		----		----	753	ISO12185	1008.5		0.40
158		----		----	781	ISO3675	1008.3		0.02
159		----		----	784	ISO12185	1008.6		0.58
168		----		----	785	D1298	1008.8		0.96
169		----		----	791	D1298	1008.8	C	0.96
171	D1298	1009.4		2.08	823	ISO12185	1009.0		1.33
175	D4052	1007.9		-0.72	824	ISO12185	1008.3		0.02
193		----		----	840	ISO12185	1008.84		1.03
194	ISO12185	1008.6		0.58	851	ISO12185	1008.0		-0.54
212	ISO12185	1007.9		-0.72	855	ISO12185	1008.2		-0.16
221	D4052	1007.9	C	-0.72	858	ISO12185	1007.9		-0.72
224	D1298	1000.65	C,R(0.01)	-14.26	859	ISO12185	1007.9		-0.72
225	D4052	1008		-0.54	862	ISO12185	1008.0		-0.54
228	D4052	1006.9		-2.59	863	ISO12185	1008.40		0.21
230	ISO3675	1009.0		1.33	864	ISO12185	1008.1		-0.35
237	D4052	1008.5		0.40	865	ISO12185	1008.1		-0.35
238	D1298	1009.2	C	1.70	866	ISO12185	1008.3		0.02
242	D4052	1009.0		1.33	867	ISO12185	1008.2		-0.16
252		----		----	873		----		----
253	D4052	1007.7		-1.10	874	ISO12185	1008.5		0.40
254	D1298	1009.0		1.33	875	ISO12185	1008.5		0.40
256	D1298	1009.3		1.89	886	D4052	1010.2	C	3.57
273	D1298	1009.5	C	2.26	887		----		----
311	ISO12185	1008.8		0.96	902	D4052	1008.1		-0.35
313	ISO12185	1008.9		1.14	904	D4052	1008.0		-0.54
323	ISO12185	1008.5		0.40	912	D1298	1007.5	C	-1.47
331	ISO12185	1008.2		-0.16	913	D1298	1007.8	C	-0.91
333	ISO12185	1008.4		0.21	922	D4052	1007.7		-1.10
334	ISO12185	1008.2		-0.16	962		----		----
336	ISO12185	1008.6		0.58	963	ISO12185	1008.1		-0.35
337	ISO12185	1009.5		2.26	971	ISO12185	1008.2		-0.16
340	ISO12185	1008.7		0.77	974	D1298	1008.4		0.21
342	ISO12185	1007.59		-1.30	982	D1298	1007.5		-1.47
343	ISO12185	1008.1		-0.35	994	ISO12185	1008		-0.54
349		----		----	995	D4052	1008.2		-0.16
351	ISO3675	1007.6		-1.28	996		----		----
353	IP365	1008.0		-0.54	997	ISO12185	1008.3		0.02
356	ISO12185	1007.9		-0.72	1011	ISO12185	1009.2		1.70
360	ISO12185	1007.6		-1.28	1026	D4052	1008.5		0.40
370	D4052	1008.4		0.21	1040	ISO12185	1008.65		0.68
371	ISO12185	1008.2		-0.16	1059	ISO12185	1008.8		0.96
372	ISO12185	1008.0		-0.54	1062	ISO12185	1008.8		0.96
391	ISO12185	1008.1		-0.35	1065	D1298	1005.9	R(0.05)	-4.46
398	ISO12185	1008.35		0.12	1082	ISO12185	1008.3		0.02
399	D1298	1008.3		0.02	1109	D4052	1007.4	C	-1.66
440	D4052	1007.9		-0.72	1121	D4052	1008.0		-0.54
444	D4052	1009.55		2.36	1126	ISO12185	1006.7		-2.96
445	IP365	1008.2		-0.16	1134	IP365	1007.9		-0.72
447	IP365	1008.0		-0.54	1161	ISO3675	1007.8	C	-0.91
463	ISO12185	1008.0		-0.54	1167	ISO12185	1008.0		-0.54
494	ISO12185	1008.7		0.77	1177		----		----
498		----		----	1191	ISO12185	1008.3		0.02
507	ISO12185	1008.1		-0.35	1200		----		----
511	D4052	1009.1		1.52	1205		----		----
529	D5002	1008.7		0.77	1212	ISO12185	1007.8		-0.91
541	ISO12185	1007.9		-0.72	1213	D4052	1007.51		-1.45
551		----		----	1229	ISO12185	1008.1		-0.35
557		----		----	1233	ISO12185	1008.1		-0.35
562	D1298	1008.7		0.77	1254	ISO12185	1007.96		-0.61
575	D1298	1008.0	C	-0.54	1259	D1298	1009.4		2.08
604	D4052	1008.8		0.96	1266	ISO3675	1009.0		1.33
605	D1298	1009.0		1.33	1275	IP365	1007.6		-1.28
607	D1298	1008.9		1.14	1347	D4052	1007.9		-0.72
608	D4052	1008		-0.54	1348	D4052	1007.2		-2.03



1356	ISO12185	1008.1	-0.35	1740	ISO12185	1008.1	-0.35
1381	ISO12185	1008.21	-0.15	1741	ISO12185	1006.1	R(0.05) -4.08
1385	D4052	1008.2	-0.16	1763		----	----
1389	ISO12185	1008	-0.54	1776	ISO12185	1007.7	-1.10
1392	DIN51757	1007.5	-1.47	1782	D4052	1007.3	-1.84
1395		----	----	1784	ISO12185	1008.4	0.21
1402	ISO12185	1008.6	0.58	1796	ISO12185	1008.8	0.96
1404	ISO12185	1007.7	-1.10	1807	ISO3675	1007.8	-0.91
1412	D4052	1008.0	-0.54	1810	ISO12185	1009.6	2.45
1428	ISO12185	1008.9	1.14	1811	ISO12185	1009.2	1.70
1431	D4052	1008.1	-0.35	1813	D4052	1008.4	0.21
1455	ISO12185	1007.8	-0.91	1832	ISO12185	1007.8	-0.91
1459	ISO12185	1007.96	-0.61	1833	ISO12185	1007.9	-0.72
1510		----	----	1842	IP365	1008.4	0.21
1520	ISO12185	1007.9	-0.72	1849	ISO12185	1008.23	-0.11
1546	ISO3675	1008.9	1.14	1854	ISO12185	1008.3	0.02
1556	ISO12185	1007.8	-0.91	1857	ISO12185	1008.5	0.40
1569	ISO12185	1008.35	0.12	1862	ISO12185	1008.0	-0.54
1579	ISO3675	1007.6	-1.28	1881	ISO12185	1008.54	0.47
1583	D1298	1008.3	0.02	1906		----	----
1585	D1298	1008.5	0.40	1936	ISO12185	1008.6	0.58
1586	ISO12185	1008.7	0.77	1937	ISO12185	1008.0	-0.54
1610		----	----	1938	ISO12185	1007.9	-0.724
1613	D4052	1007.9	-0.72	1942	D7042	1009.4	2.08
1616		----	----	1948	ISO12185	1008.5	0.40
1622	D4052	1008.2	-0.16	1950	ISO12185	1008.1	-0.35
1631	ISO12185	1008.0	-0.54	1956	ISO3675	1009.4	2.08
1636	ISO3675	1008.6	0.58	1962		----	----
1643	ISO12185	1008.6	0.58	1964		----	----
1654	ISO12185	1006.9	-2.59	1967	D1298	1008.2	-0.16
1677	D4052	1007.9	-0.72	1971	ISO12185	1008.9	C 1.14
1710	ISO12185	1008	-0.54	1975	ISO12185	1007.7	-1.10
1720	D4052	1007.1	-2.22	2129	D4052	1007.9	-0.72
1724	D4052	1007.9	-0.72	7017	D1298	1007.7	-1.10
1728	ISO12185	1009.3	1.89				
	normality	OK					
	n	184					
	outliers	4					
	mean (n)	1008.29					
	st.dev. (n)	0.570					
	R(calc.)	1.59					
	R(ISO12185:96)	1.50					

Lab 62 : first reported 1005

Lab 221 : first reported 1.0079

Lab 224 : first reported 1005.5

Lab 238 : first reported 1.0092

Lab 273 : first reported 1012.2

Lab 356 : first reported 1.0079

Lab 575 : first reported 1005.8

Lab 621 : first reported 948.3

Lab 634 ; first reported 1005.7

Lab 663 : first reported 1.0086

Lab 791 : first reported 1.0088

Lab 886 : first reported 1.0102

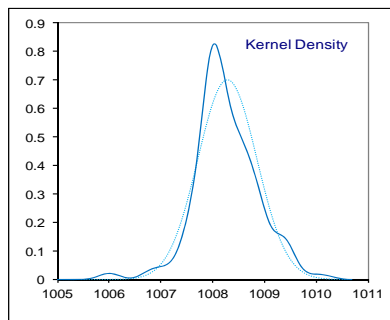
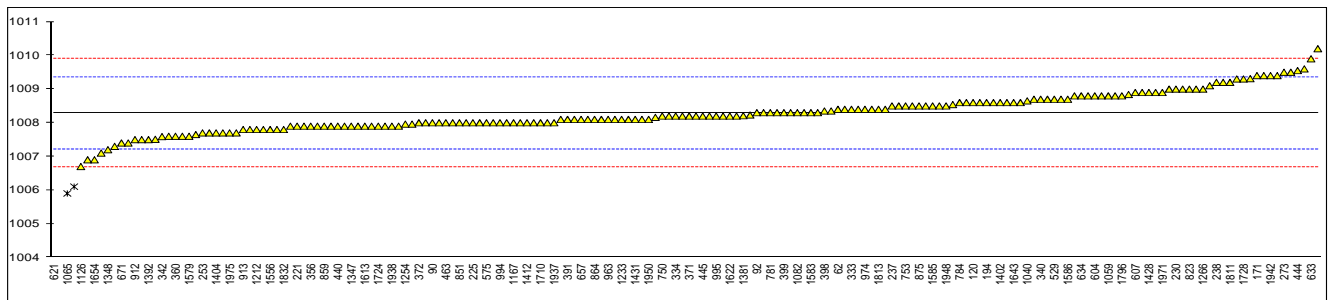
Lab 912 : first reported 1.0075

Lab 913 : first reported 1000.78

Lab 1161 : first reported 1005

Lab 1631 : first reported 1.0080

Lab 1971 : first reported 1000.77



## Determination of Flash Point PMcc on sample #15001; results in °C

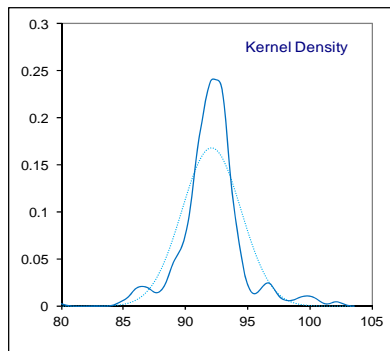
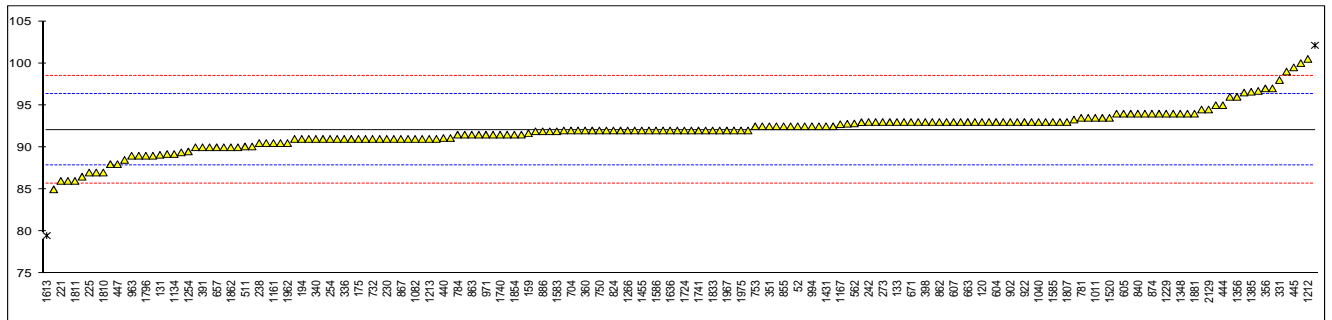
lab	method	value	mark	z(target)	lab	method	value	mark	z(target)
52	D93	92.5		0.20	621	D93	91.0		-0.50
62	D93	86.0		-2.84	631	D93	93	C	0.43
90	D93	89.4		-1.25	633	D93	96.0	C	1.83
92	D93	91.0		-0.50	634	D93	91	C	-0.50
120	D93	93		0.43	657	ISO2719	90.0		-0.97
131	D93	89.1		-1.39	663	D93	93.0		0.43
132	ISO2719	93.0		0.43	671	D93	93		0.43
133	D93	93		0.43	704	ISO2719	92.0		-0.04
140	D93	86.5		-2.60	732	ISO2719	91.0		-0.50
150		-----		-----	750	D93	92.0		-0.04
154	D93	92.8		0.34	753	ISO2719	92.5		0.20
158	D93	87.0		-2.37	781	ISO2719	93.5		0.66
159	D93	91.667		-0.19	784	ISO2719	91.5		-0.27
168	D93	93.3		0.57	785	D93	94.0		0.90
169	D93	91.1		-0.46	791		-----		-----
171	D93	91.5		-0.27	823	ISO2719	91.0		-0.50
175	D93	91		-0.50	824	ISO2719	92.0		-0.04
193		-----		-----	840	D93	94.0		0.90
194	D93	91.0		-0.50	851	ISO2719	92		-0.04
212	ISO2719	91		-0.50	855	D93	92.5		0.20
221	D93	86.0		-2.84	858	D93	93.0		0.43
224	D93	93.0		0.43	859	ISO2719	92.5		0.20
225	D93	87.0		-2.37	862	ISO2719	93.0		0.43
228	D93	92.0		-0.04	863	ISO2719	91.5		-0.27
230	ISO2719	91.0		-0.50	864	D93	92.5		0.20
237	D93	95		1.36	865	ISO2719	93.0		0.43
238	D93	90.5		-0.74	866	D93	91.5		-0.27
242	D93	93		0.43	867	D93	91.0		-0.50
252		-----		-----	873	D93	93.0		0.43
253	D93	91.0		-0.50	874	D93	94.0		0.90
254	D93	91.0		-0.50	875	ISO2719	92.5		0.20
256	D93	92.0		-0.04	886	D93	91.9		-0.08
273	D93	93.0		0.43	887	D93	91.0		-0.50
311	ISO2719	94.0		0.90	902	D93	93.0		0.43
313	ISO2719	92.5		0.20	904	D93	93.0		0.43
323		-----		-----	912	D93	100.0	C	3.70
331	ISO2719	98		2.76	913	D93	99.0		3.23
333	ISO2719	91.0		-0.50	922	D93	93.0		0.43
334	ISO2719	93.0		0.43	962		-----		-----
336	ISO2719	91.0		-0.50	963	ISO2719	89.0		-1.44
337		-----		-----	971	ISO2719	91.5		-0.27
340	ISO2719	91.0		-0.50	974	D93	93.0		0.43
342	ISO2719	90.0		-0.97	982	D93	89.2		-1.34
343	ISO2719	93.0		0.43	994	D93	92.5		0.20
349	D93	93		0.43	995	D93	93.5		0.66
351	ISO2719	92.5		0.20	996		-----		-----
353		-----		-----	997	D93	94.0		0.90
356	ISO2719	97.0		2.30	1011	ISO2719	93.5		0.66
360	D93	92.0		-0.04	1026		-----		-----
370	D93	92.0		-0.04	1040	ISO2719	93		0.43
371	ISO2719	90.1		-0.92	1059		-----		-----
372	ISO2719	90.0		-0.97	1062	D93	93		0.43
391	ISO2719	90.0		-0.97	1065		-----		-----
398	ISO2719	93.0		0.43	1082	ISO2719	91.0		-0.50
399	ISO2719	94.0		0.90	1109	D93	90.5		-0.74
440	D93	91.1		-0.46	1121	IP34	91.0		-0.50
444	D93	95.0		1.36	1126		-----		-----
445	IP34	99.5		3.46	1134	IP34	89.2		-1.34
447	D93	88.0		-1.90	1161	ISO2719	90.5		-0.74
463	ISO2719	93.0		0.43	1167	ISO2719	92.75		0.31
494	ISO2719	91.9		-0.08	1177		-----		-----
498	ISO2719	88		-1.90	1191	ISO2719	88.5		-1.67
507	ISO2719	90.0		-0.97	1200		-----		-----
511	D93	90.1		-0.92	1205	D93	92.0		-0.04
529		-----		-----	1212	ISO2719	100.5		3.93
541		-----		-----	1213	D93	91		-0.50
551		-----		-----	1229	ISO2719	94.0		0.90
557		-----		-----	1233	ISO2719	94.5		1.13
562	D93	92.83		0.35	1254	ISO2719	89.5		-1.20
575	D93	91		-0.50	1259	ISO2719	94.0		0.90
604	D93	93.0		0.43	1266	ISO2719	92.0		-0.04
605	D93	94.0		0.90	1275		-----		-----
607	D93	93.0		0.43	1347	D93	96.7		2.16
608	D93	97.0		2.30	1348	D93	94		0.90
1356	ISO2719	96		1.83	1740	ISO2719	91.5		-0.27

1381	ISO2719	92.00	-0.04	1741	ISO2719	92.0	-0.04
1385	D93	96.6	2.11	1763	-----	-----	-----
1389	-----	-----	-----	1776	ISO2719	92.0	-0.04
1392	-----	-----	-----	1782	D93	92.5	0.20
1395	-----	-----	-----	1784	ISO2719	91.5	-0.27
1402	ISO2719	92.5	0.20	1796	ISO2719	89.0	-1.44
1404	ISO2719	96.5	2.06	1807	ISO2719	93.0	0.43
1412	D93	93.5	0.66	1810	ISO2719	87	C -2.37
1428	ISO2719	91.5	-0.27	1811	ISO2719	86.0	-2.84
1431	D93	92.5	0.20	1813	D93	85.0	-3.30
1455	ISO2719	92.0	-0.04	1832	ISO2719	90.5	-0.74
1459	ISO2719	89.0	-1.44	1833	D93	92	-0.04
1510	-----	-----	-----	1842	D93	91	-0.50
1520	ISO2719	93.5	0.66	1849	ISO2719	94.0	0.90
1546	-----	-----	W	1854	ISO2719	91.5	-0.27
1556	ISO2719	92.0	-0.04	1857	ISO2719	92.0	-0.04
1569	ISO2719	91.9	-0.08	1862	ISO2719	90.0	-0.97
1579	ISO2719	102.12	4.68	1881	ISO2719	94.0	0.90
1583	ISO2719	91.9	-0.08	1906	-----	-----	-----
1585	IP34	93.0	0.43	1936	-----	-----	-----
1586	ISO2719	92.0	-0.04	1937	-----	-----	-----
1610	-----	-----	-----	1938	-----	-----	-----
1613	D93	79.5	R(0.01) -5.87	1942	-----	-----	-----
1616	-----	-----	-----	1948	ISO2719	91.5	-0.27
1622	-----	-----	W	1950	ISO2719	90.0	-0.97
1631	ISO2719	92	-0.04	1956	EN22719	89.0	-1.44
1636	ISO2719	92.0	-0.04	1962	D93	90.5	-0.74
1643	D93	92.98	0.42	1964	-----	-----	-----
1654	ISO2719	93.0	0.43	1967	ISO2719	92.0	-0.04
1677	D93	92.0	-0.04	1971	ISO2719	92.0	-0.04
1710	-----	-----	-----	1975	D93	92.0	-0.04
1720	-----	-----	-----	2129	ISO2719	94.5	C 1.13
1724	D93	92	-0.04	7017	D93	92	-0.04
1728	ISO2719	92	-0.04				
	normality	not OK					
	n	178					
	outliers	2					
	mean (n)	92.08					
	st.dev. (n)	2.376					
	R(calc.)	6.65					
	R(ISO2719:02)	6.00					

Lab 1546 : result withdrawn reported 81.5  
 Lab 1622 : result withdrawn reported 83.5

Lab 631 : first reported 80.0  
 Lab 633 : first reported 101.5  
 Lab 634 : first reported 85.0  
 Lab 912 : first reported 104

Lab 1579 : first reported 98.7  
 Lab 1810 : first reported 84  
 Lab 2129 : first reported 85.0



## Determination of Heat of Combustion Gross on sample #15001; results in MJ/kg

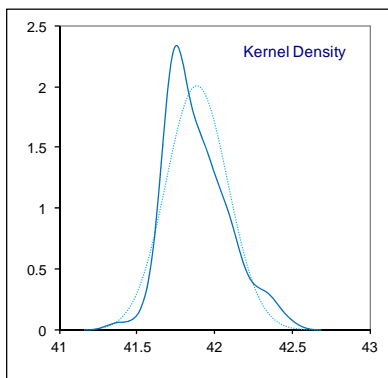
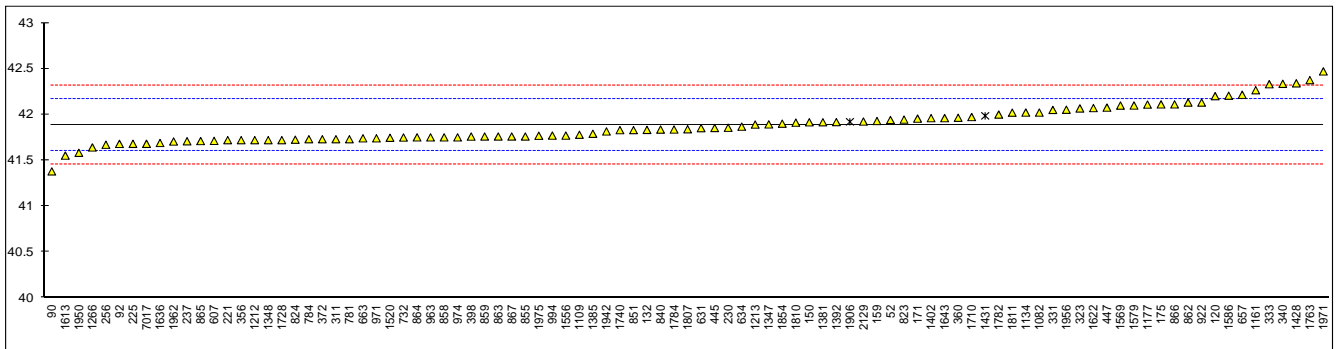
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		41.94		0.39	621		----		----
62		----		----	631	D240	41.851		-0.24
90	D240	41.379		-3.54	633		----		----
92	D240	41.679		-1.44	634	D240	41.867		-0.13
120	D240	42.2		2.21	657	D240	42.215		2.31
131		----		----	663	D4868	41.74		-1.01
132	D240	41.832		-0.37	671		----		----
133		----		----	704		----		----
140		----		----	732	D4868	41.749	C	-0.95
150	D240	41.915		0.21	750		----		----
154		----		----	753		----		----
158		----		----	781	D4868	41.73		-1.08
159	D240	41.92848		0.30	784	D4868	41.73		-1.08
168		----		----	785		----		----
169		----		----	791		----		----
171	D240	41.955		0.49	823	D240	41.9442		0.41
175	D240	42.11		1.58	824	D240	41.725		-1.12
193		----		----	840	D240	41.8355		-0.35
194		----		----	851	D4868	41.83		-0.38
212		----		----	855	D4868	41.76		-0.87
221	D4868	41.72		-1.15	858	D4868	41.75		-0.94
224		----		----	859	ISO8217	41.76		-0.87
225	D240	41.68		-1.43	862	D240	42.130		1.72
228		----		----	863	D4868	41.76		-0.87
230	D4868	41.855		-0.21	864	D4868	41.75		-0.94
237	D4868	41.708		-1.24	865	D4868	41.71		-1.22
238		----		----	866	D4868	42.11		1.58
242		----		----	867	D4868	41.76		-0.87
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875		----		----
256	D4868	41.67		-1.50	886		----		----
273		----		----	887		----		----
311	D240	41.730		-1.08	902		----		----
313		----		----	904		----		----
323	D240	42.066		1.27	912		----		----
331	D240	42.05		1.16	913		----		----
333	D240	42.330		3.12	922	D240	42.13		1.72
334		----		----	962		----		----
336		----		----	963	D4868	41.75		-0.94
337		----		----	971	D4868	41.74		-1.01
340	INH-07030	42.335		3.15	974	D4868	41.75		-0.94
342		----		----	982		----		----
343		----		----	994	D4868	41.77		-0.80
349		----		----	995		----		----
351		----		----	996		----		----
353		----		----	997		----		----
356	D240	41.72		-1.15	1011		----		----
360	D240	41.964		0.55	1026		----		----
370		----		----	1040		----		----
371		----		----	1059		----		----
372	D4868	41.73		-1.08	1062		----		----
391		----		----	1065		----		----
398	D240	41.759		-0.88	1082	D240	42.0208		0.95
399		----		----	1109	D4868	41.779		-0.74
440		----		----	1121		----		----
444		----		----	1126		----		----
445	D240	41.8523		-0.23	1134	D240	42.0207		0.95
447	D240	42.075		1.33	1161	D240	42.265		2.66
463		----		----	1167		----		----
494		----		----	1177	DIN51900	42.108		1.56
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	D240	41.720		-1.15
541		----		----	1213	D240	41.89		0.04
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266	D4868	41.64		-1.71
605		----		----	1275		----		----
607	D240	41.712		-1.21	1347	D4868	41.892		0.05
608		----		----	1348	D4868	41.72		-1.15

1356		----		1740	D240	41.829		-0.39
1381	D240	41.9152		1741		----		----
1385	D4868	41.79	-0.66	1763		42.375	C	3.43
1389		----	----	1776		----		----
1392	D240	41.917	0.22	1782	ISO8217	41.999		0.80
1395		----	----	1784	D240	41.836		-0.34
1402	IP12	41.96	0.53	1796		----		----
1404		----	----	1807	D240	41.839		-0.32
1412		----	----	1810	D240	41.911		0.18
1428	D240	42.34	3.19	1811	D240	42.02		0.95
1431	D4809	41.985	ex, see §4.1	1813		----		----
1455		----	----	1832		----		----
1459		----	----	1833		----		----
1510		----	----	1842		----		----
1520	D4868	41.746	-0.97	1849		----		----
1546		----	----	1854	D240	41.900		0.11
1556	D4868	41.77	-0.80	1857		----		----
1569	D240	42.0975	1.49	1862		----		----
1579		42.098	1.49	1881		----		----
1583		----	----	1906	D4809	41.92	ex, see §4.1	0.25
1585		----	----	1936		----		----
1586	D240	42.205	2.24	1937		----		----
1610		----	----	1938		----		----
1613	D240	41.551	-2.34	1942	D240	41.815		-0.49
1616		----	----	1948		----		----
1622	D240	42.07	1.30	1950	D240	41.582		-2.12
1631		----	----	1956	INH-030	42.052		1.17
1636	D4868	41.689	-1.37	1962	D240	41.7054		-1.26
1643	D240	41.9602	0.53	1964		----		----
1654		----	----	1967		----		----
1677		----	----	1971	INH-4062	42.470		4.10
1710	INH-19954	41.972	0.61	1975	D4868	41.768		-0.82
1720		----	----	2129	D240	41.9229		0.27
1724		----	----	7017	D4868	41.68		-1.43
1728	D4868	41.72	C					
	normality	OK			<u>Only ASTM D4868</u>		<u>Only ASTM D240</u>	
	n	93			not OK		OK	
	outliers	0 (+2 excl)			33		50	
	mean (n)	41.885			0		0	
	st.dev. (n)	0.2007			41.777		41.919	
	R(calc.)	0.562			0.1337		0.2008	
	R(D240:14)	0.400			0.374		0.562	
					0.150		0.400	

Lab 732 ; first reported 50.270

Lab 1728 : first reported 42.94727

Lab 1763 : first reported 42.675



## Determination of Heat of Combustion Net on sample #15001; results in MJ/kg

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		----		----	631	D4868	39.506		-1.26
90		----		----	633		----		----
92		----		----	634		----		----
120	D240	39.9		1.50	657	D240	40.039		2.47
131		----		----	663	D4868	39.53		-1.09
132		----		----	671		----		----
133		----		----	704		----		----
140		----		----	732	D4868	39.534	C	-1.06
150		----		----	750		----		----
154		----		----	753		----		----
158		----		----	781	D4868	39.51		-1.23
159		----		----	784	D4868	39.52		-1.16
168		----		----	785		----		----
169		----		----	791		----		----
171		----		----	823	D240	39.7798		0.66
175		----		----	824		----		----
193		----		----	840	D4868	39.463		-1.56
194		----		----	851	D4868	39.614		-0.50
212		----		----	855	D4868	39.55		-0.95
221	D4868	39.51		-1.23	858	D4868	39.54		-1.02
224		----		----	859	ISO8217	39.54		-1.02
225	D240	39.47		-1.51	862		----		----
228		----		----	863	D4868	39.54		-1.02
230	D4868	39.63		-0.39	864	D4868	39.54		-1.02
237	D4868	39.498		-1.31	865	D4868	39.50		-1.30
238		----		----	866	D4868	39.87		1.29
242		----		----	867	D4868	39.55		-0.95
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875		----		----
256	D4868	39.46		-1.58	886		----		----
273		----		----	887		----		----
311	D240	39.500		-1.30	902		----		----
313		----		----	904		----		----
323	D240	39.880		1.36	912		----		----
331	D240	39.84		1.08	913		----		----
333		----		----	922	D240	40.34		4.58
334		----		----	962		----		----
336		----		----	963	D4868	39.54		-1.02
337		----		----	971	D4868	39.53		-1.09
340		----		----	974	D4868	39.54		-1.02
342		----		----	982		----		----
343		----		----	994	D4868	39.56		-0.88
349		----		----	995		----		----
351		----		----	996		----		----
353		----		----	997		----		----
356	D240	39.509		-1.24	1011		----		----
360	D240	39.777		0.64	1026		----		----
370		----		----	1040		----		----
371		----		----	1059		----		----
372	D4868	39.52		-1.16	1062		----		----
391		----		----	1065		----		----
398	D240	39.510		-1.23	1082	D240	39.8775		1.34
399		----		----	1109	D4868	39.563		-0.86
440		----		----	1121		----		----
444		----		----	1126		----		----
445	D240	39.7520		0.46	1134		----		----
447	D240	39.910		1.57	1161	D240	40.195		3.57
463		----		----	1167		----		----
494		----		----	1177	DIN51900	40.005		2.24
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	D240	39.556		-0.91
541		----		----	1213	D4868	39.48		-1.44
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266	D4868	39.44		-1.72
605		----		----	1275		----		----
607		----		----	1347	D4868	39.668	C	-0.12
608		----		----	1348	D4868	39.51		-1.23

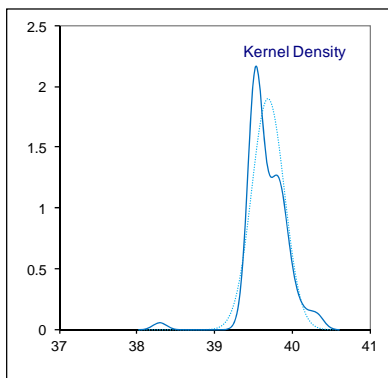
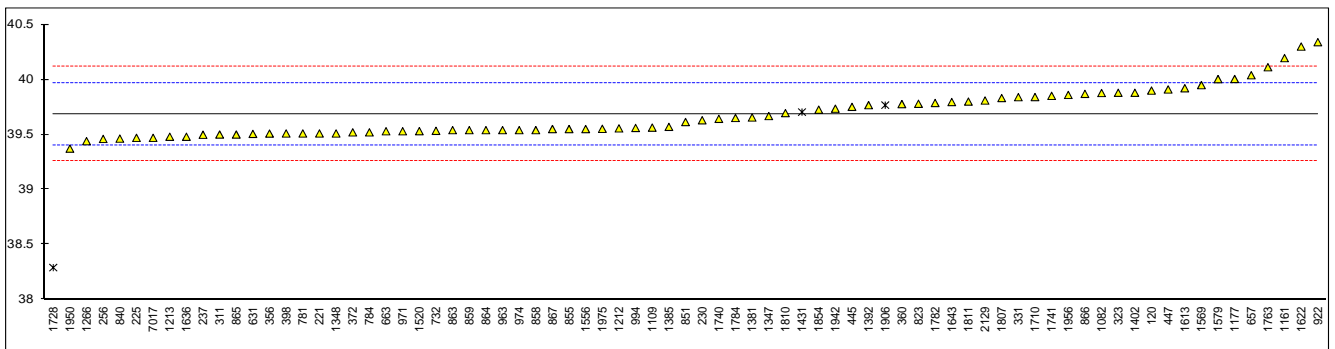
1356		----		----	1740	D240	39.643		-0.30
1381	D240	39.6551		-0.21	1741	D4868	39.852		1.16
1385	D4868	39.57		-0.81	1763		40.112		2.98
1389		----		----	1776		----		----
1392	D240	39.767		0.57	1782	ISO8217	39.787		0.71
1395		----		----	1784	D240	39.651		-0.24
1402	IP12	39.88		1.36	1796		----		----
1404		----		----	1807	D240	39.832		1.02
1412		----		----	1810	D240	39.695		0.07
1428		----		----	1811	D240	39.8		0.80
1431	D4809	39.704	ex, see §4.1	0.13	1813		----		----
1455		----		----	1832		----		----
1459		----		----	1833		----		----
1510		----		----	1842		----		----
1520	D4868	39.531		-1.08	1849		----		----
1546		----		----	1854	D240	39.726		0.28
1556	D4868	39.55		-0.95	1857		----		----
1569	D240	39.9495		1.85	1862		----		----
1579		40.004		2.23	1881		----		----
1583		----		----	1906	D4809	39.767	ex, see §4.1	0.57
1585		----		----	1936		----		----
1586		----		----	1937		----		----
1610		----		----	1938		----		----
1613	D240	39.921		1.65	1942	D240	39.735	C	0.35
1616		----		----	1948		----		----
1622	D240	40.30		4.30	1950	D240	39.372		-2.20
1631		----		----	1956	INH-030	39.860		1.22
1636	D4868	39.480		-1.44	1962		----		----
1643	D240	39.7958		0.77	1964		----		----
1654		----		----	1967		----		----
1677		----		----	1971		----		----
1710	INH-19954	39.841		1.09	1975	D4868	39.552		-0.94
1720		----		----	2129	D240	39.8094		0.87
1724		----		----	7017	D4868	39.47		-1.51
1728	D4868	38.29	C,R(0.01)	-9.77					
	normality	suspect				<u>Only ASTM D4868</u>	<u>Only ASTM D240</u>		
	n	74				not OK	OK		
	outliers	1 (+2 excl)				37	31		
	mean (n)	39.686				1	0		
	st.dev. (n)	0.2128				39.586	39.790		
	R(calc.)	0.596				0.1804	0.2258		
	R(D240:14)	0.400				0.505	0.632		
						0.150	0.400		

Lab 732 ; first reported 45.284

Lab 1347 ; first reported 40.539

Lab 1728 : first reported 40.66838

Lab 1942 : first reported 41.813



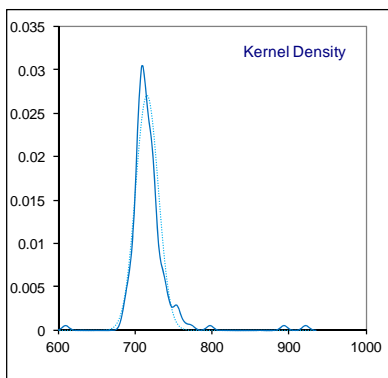
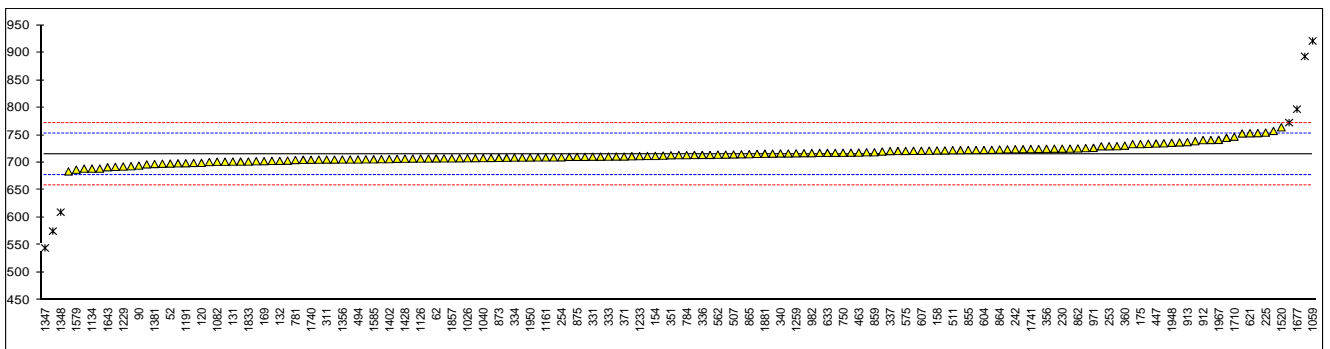
Determination of Kinematic Viscosity at 50°C on sample #15001; results in mm<sup>2</sup>/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D445	698.2		-0.91	621	D445	753.3	C	2.01
62	D445	707.6		-0.41	631	D445	705.61		-0.51
90	D445	694.54		-1.10	633	D7279	717.6		0.12
92	D445	716.27		0.05	634	D445	736.58		1.12
120	D445	699.5		-0.84	657	ISO3104	718.0		0.14
131	D445	701.8		-0.72	663	D445	715.85		0.03
132	ISO3104	703.16		-0.64	671	D445	693.4		-1.16
133	D445	709.4		-0.31	704	ISO3104	712.00		-0.18
140	D445	893.1	R(0.01)	9.40	732	D445	710.8		-0.24
150		----		----	750	D445	717.8		0.13
154	D445	712.03		-0.18	753	ISO3104	698.61		-0.88
158	D445	722.055		0.36	781	ISO3104	704.67		-0.56
159	D445	708.833		-0.34	784	ISO3104	713.58		-0.09
168	D445	713.9		-0.08	785	D445	708.1		-0.38
169	D445	702.53		-0.68	791		----		----
171	D445	752.9		1.99	823	ISO3104	717.11		0.09
175	D445	733.6		0.97	824	ISO3104	724.4		0.48
193		----		----	840	D445	713.85		-0.08
194	D445	684.0		-1.66	851	ISO3104	717.7		0.12
212	ISO3104	734.18		1.00	855	D445	722.81		0.40
221	D445	722.6		0.38	858	D445	721.4		0.32
224		----		----	859	ISO3104	718.7		0.18
225	D445	754.5		2.07	862	ISO3104	725.69		0.55
228	D445	740.95		1.35	863	ISO3104	729.83		0.77
230	ISO3104	725.28		0.53	864	D445	723.75		0.44
237	D445	753.58		2.02	865	ISO3104	715.3		0.00
238		----		----	866	ISO3104	725.25		0.52
242	D445	724.229016		0.47	867	D445	722.85		0.40
252		----		----	873	D445	708.49		-0.36
253	D445	729.7		0.76	874	D445	705.1		-0.54
254	D445	709.6		-0.30	875	D445	710.4		-0.26
256	D445	721.1		0.30	886	D445	745.1		1.57
273	D445	710.4		-0.26	887		----		----
311	ISO3104	705.5		-0.52	902	D445	703.0		-0.65
313	ISO3104	707.3		-0.43	904	D445	702.5		-0.68
323		----		----	912	D445	740.9		1.35
331	ISO3104	710.73		-0.24	913	D445	737.2		1.16
333	ISO3104	710.9		-0.23	922	D445	724.12		0.46
334	D445	709.1		-0.33	962		----		----
336	ISO3104	713.9		-0.08	963	ISO3104	723.2		0.42
337		720.9		0.29	971	ISO3104	726.8		0.61
340	ISO3104	716.50		0.06	974	D445	729.6		0.75
342	ISO3104	705.9		-0.50	982	D445	717.21		0.10
343	ISO3104	726.38		0.58	994	D445	714.5		-0.04
349		----		----	995	D445	708.4		-0.37
351	ISO3104	713.35		-0.11	996		----		----
353		----		----	997	D445	707.9		-0.39
356	ISO3104	725.09		0.52	1011	ISO3104	703.5		-0.63
360	D445	730.76		0.82	1026	ISO3104	708.0		-0.39
370	D445	710.99		-0.23	1040	ISO3104	708.2		-0.38
371	ISO3104	711.0		-0.23	1059	ISO3104	921.2	R(0.01)	10.89
372	ISO3104	706.3		-0.48	1062		----		----
391	ISO3104	733.6		0.97	1065	D445	721.6		0.33
398	ISO3104	720.11		0.25	1082	ISO3104	701.605		-0.73
399	ISO3104	710.44		-0.26	1109		----		----
440		----		----	1121	IP71	757.545		2.23
444		----		----	1126	ISO3104	707.431		-0.42
445	IP71	772.71	R(0.05)	3.03	1134	IP71	689.03		-1.39
447	D445	734.7		1.02	1161	ISO3104	709.4		-0.31
463	ISO3104	718.20		0.15	1167		----		----
494	ISO3104	705.65		-0.51	1177		----		----
498		----		----	1191	ISO3104	698.8		-0.87
507	ISO3104	714.82		-0.03	1200		----		----
511	D445	722.519		0.38	1205		----		----
529		----		----	1212		----		----
541		----		----	1213	D445	725.4		0.53
551		----		----	1229	ISO3104	692.9		-1.19
557		----		----	1233	ISO3104	711.7		-0.19
562	D445	714.40		-0.05	1254	ISO3104	707.64		-0.41
575	D445	721.2		0.31	1259	ISO3104	716.8286		0.08
604	D445	722.912		0.40	1266	ISO3104	738.8		1.24
605	D445	724.67		0.49	1275		----		----
607	D445	721.5		0.33	1347	D445	544.73	R(0.01)	-9.02
608	D445	718.7		0.18	1348	D445	609.8	R(0.01)	-5.58



1356	ISO3104	705.6		-0.52	1740	ISO3104	705.2	-0.54
1381	ISO3104	697.40		-0.95	1741	ISO3104	724.56	0.49
1385	D445	575.36	R(0.01)	-7.40	1763		----	----
1389	D445	722.1		0.36	1776		----	----
1392		----		----	1782		----	----
1395		----		----	1784	ISO3104	701.9	-0.71
1402	ISO3104	706.3		-0.48	1796	ISO3104	709.46	-0.31
1404	ISO3104	712.6		-0.14	1807		----	----
1412		----		----	1810		----	----
1428	ISO3104	707.1		-0.44	1811		----	----
1431		----		----	1813	D445	717.56	0.12
1455	ISO3104	689.0		-1.39	1832	ISO3104	706.945	-0.44
1459		----		----	1833	ISO3104	701.9	-0.71
1510		----		----	1842	IP71	701.0	-0.76
1520	ISO3104	764.17		2.58	1849		----	----
1546	ISO3104	711.48130		-0.20	1854	ISO3104	705.5	-0.52
1556	ISO3104	696.78		-0.98	1857	ISO3104	707.7	-0.40
1569		----		----	1862	ISO3104	709.12	-0.33
1579	ISO3104	687.05		-1.50	1881	ISO3104	716.1	0.04
1583	ISO3104	713.48		-0.10	1906		----	----
1585	D445	705.94		-0.50	1936		----	----
1586	ISO3104	715.1		-0.01	1937		----	----
1610		----		----	1938		----	----
1613	D445	699.405		-0.84	1942		----	----
1616		----		----	1948	ISO3104	736.04	1.09
1622	D445	705.4		-0.53	1950	ISO3104	709.25	-0.32
1631		----		----	1956	ISO3104	735.1	1.05
1636	ISO3104	701.63		-0.73	1962	D445	689.10	-1.39
1643	D445	691.54		-1.26	1964		----	----
1654		----		----	1967	ISO3104	741.36	1.38
1677	D445	797.1	C,R(0.01)	4.32	1971		----	----
1710	ISO3104	747.1		1.68	1975	D445	716.55	0.06
1720		----		----	2129	ISO3104	692.261	-1.22
1724	D445	707.46		-0.42	7017	D445	697.96	-0.92
1728		----		----				
	normality	OK						
	n	156						
	outliers	7						
	mean (n)	715.340						
	st.dev. (n)	14.7234						
	R(calc.)	41.226						
	R(ISO3104:94)	52.935						

Lab 621 : first reported 803.2  
 Lab 1677 : first reported 50.92



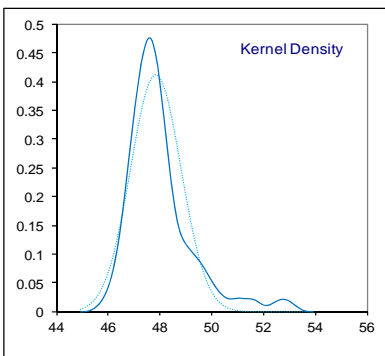
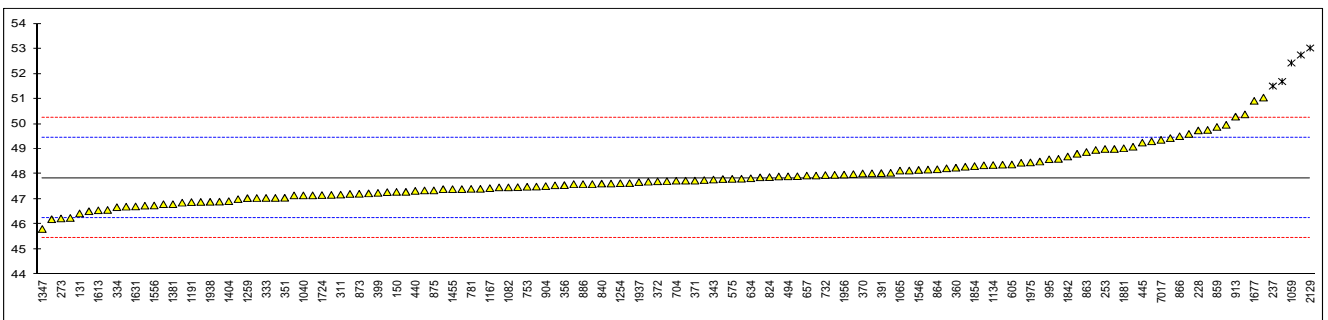
Determination of Kinematic Viscosity at 100°C on sample #15001; results in mm<sup>2</sup>/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621	D445	52.75	R(0.01)	6.15
62		----		----	631	D445	47.478		-0.46
90		----		----	633		----		----
92		----		----	634	D445	47.8322		-0.01
120		----		----	657	ISO3104	47.94		0.12
131	D445	46.43		-1.77	663	D445	48.608		0.96
132		----		----	671	D445	49.6		2.20
133	D445	47.8		-0.05	704	ISO3104	47.735		-0.13
140		----		----	732	D445	47.96		0.15
150	D445	47.289		-0.69	750		----		----
154		----		----	753	ISO3104	47.494		-0.44
158		----		----	781	ISO3104	47.409		-0.54
159		----		----	784	ISO3104	47.97		0.16
168		----		----	785	D445	47.64		-0.25
169	D445	47.4005		-0.55	791		----		----
171	D445	48.96		1.40	823	ISO3104	47.045		-1.00
175		----		----	824	ISO3104	47.88		0.05
193		----		----	840	D445	47.620		-0.28
194		----		----	851		----		----
212		----		----	855	D445	48.230		0.49
221		----		----	858	D445	49.76		2.41
224		----		----	859	ISO3104	49.88		2.56
225		----		----	862	ISO3104	49.435		2.00
228	D445	49.74		2.38	863	ISO3104	48.880		1.30
230	ISO3104	47.914		0.09	864	D445	48.192		0.44
237	D445	51.51	C,R(0.05)	4.60	865	ISO3104	48.05		0.26
238	D445	47.7377		-0.13	866	ISO3104	49.51	C	2.09
242		----		----	867		----		----
252		----		----	873	D445	47.213		-0.79
253	D445	49.0		1.45	874	D445	47.29		-0.69
254		----		----	875	D445	47.35		-0.62
256		----		----	886	D445	47.6		-0.30
273	D445	46.23	C	-2.02	887	D445	46.74		-1.38
311	ISO3104	47.18		-0.83	902		----		----
313	ISO3104	46.86		-1.23	904	D445	47.52		-0.40
323		----		----	912	D445	50.38	C	3.18
331	ISO3104	49.965		2.66	913	D445	50.29		3.07
333	ISO3104	47.05		-0.99	922		----		----
334	D445	46.68		-1.46	962		----		----
336	ISO3104	47.15		-0.87	963	ISO3104	46.80		-1.31
337		48.00		0.20	971	ISO3104	49.09		1.57
340	ISO3104	47.210		-0.79	974	D445	49.00		1.45
342		----		----	982	D445	47.468		-0.47
343	ISO3104	47.783		-0.07	994	D445	48.45		0.76
349		----		----	995	D445	48.59		0.94
351	ISO3104	47.055		-0.99	996		----		----
353	IP71	51.69	R(0.05)	4.82	997	D445	47.94		0.12
356	ISO3104	47.560		-0.35	1011	ISO3104	46.25		-1.99
360	D445	48.253		0.52	1026	D445	46.70		-1.43
370	D445	48.026		0.23	1040	ISO3104	47.15		-0.87
371	ISO3104	47.74		-0.13	1059	ISO3104	52.43	R(0.01)	5.75
372	ISO3104	47.71		-0.16	1062	D445	48.5		0.83
391	ISO3104	48.04		0.25	1065	D445	48.14		0.37
398	ISO3104	47.002		-1.05	1082	ISO3104	47.469		-0.47
399	ISO3104	47.25		-0.74	1109		----		----
440	D445	47.33164		-0.64	1121	IP71	48.81	C	1.21
444		----		----	1126		----		----
445	IP71	49.255		1.77	1134	IP71	48.36		0.65
447	D445	47.87		0.04	1161	ISO3104	47.05		-0.99
463	ISO3104	47.60		-0.30	1167	ISO3104	47.44		-0.50
494	ISO3104	47.91		0.09	1177		----		----
498		----		----	1191	ISO3104	46.884		-1.20
507	ISO3104	47.906		0.08	1200		----		----
511	D445	47.715		-0.16	1205		----		----
529		----		----	1212		----		----
541		----		----	1213	D445	48.35		0.64
551		----		----	1229		----		----
557		----		----	1233		----		----
562	D445	48.142		0.38	1254	ISO3104	47.635		-0.26
575	D445	47.81		-0.04	1259	ISO3104	47.0412		-1.00
604		----		----	1266		----		----
605	D445	48.383		0.68	1275		----		----
607		----		----	1347	D445	45.81		-2.55
608	D445	47.76		-0.10	1348		----		----

1356		----	----	1740	ISO3104	47.55		-0.37
1381	ISO3104	46.800	-1.31	1741	ISO3104	47.152		-0.86
1385	D445	47.4	-0.55	1763		----		----
1389		----	----	1776		----		----
1392		----	----	1782		----		----
1395		----	----	1784	ISO3104	48.18		0.42
1402	ISO3104	51.05	4.02	1796		----		----
1404	ISO3104	46.92	-1.15	1807	ISO3104	48.03	C	0.24
1412		----	----	1810		----		----
1428	ISO3104	47.62	-0.28	1811		----		----
1431		----	----	1813		----		----
1455	ISO3104	47.40	-0.55	1832		----		----
1459		----	----	1833	ISO3104	46.89		-1.19
1510		----	----	1842	IP71	48.70		1.08
1520	ISO3104	49.308	1.84	1849	ISO3104	46.57		-1.59
1546	ISO3104	48.16525	0.41	1854	ISO3104	48.32		0.60
1556	ISO3104	46.749	-1.37	1857	ISO3104	47.28		-0.70
1569	D445	48.375	0.67	1862	ISO3104	47.60		-0.30
1579	ISO3104	47.414	-0.54	1881	ISO3104	49.03		1.49
1583		----	----	1906		----		----
1585	D445	47.696	-0.18	1936		----		----
1586	ISO3104	47.17	-0.84	1937	ISO3104	47.68		-0.20
1610		----	----	1938	ISO3104	46.893		-1.189
1613	D445	46.554	-1.61	1942		----		----
1616		----	----	1948	ISO3104	47.815		-0.03
1622	D445	46.20	-2.06	1950	ISO3104	47.501		-0.43
1631	ISO3104	46.709	-1.42	1956	ISO3104	47.98		0.17
1636	ISO3104	47.348	-0.62	1962		----		----
1643	D445	46.518	-1.66	1964		----		----
1654	ISO3104	46.90	-1.18	1967		----		----
1677	D445	50.92	3.86	1971	ISO3104	48.295		0.57
1710	ISO3104	47.23	-0.77	1975	D445	48.465		0.78
1720		----	----	2129	ISO3104	53.026	C,R(0.01)	6.50
1724	D445	47.162	-0.85	7017	D445	49.366		1.91
1728		----	----					
normality		suspect						
n		132						
outliers		5						
mean (n)		47.841						
st.dev. (n)		0.9687						
R(calc.)		2.712						
R(ISO3104:94)		2.234						

Lab 237 : first reported 55.63  
 Lab 273 : first reported 50.5  
 Lab 866 : first reported 51.900  
 Lab 912 : first reported 51.95  
 Lab 1121 : first reported 52.04  
 Lab 1677 : first reported 797.1

Lab 1807 : first reported 48.03  
 Lab 2129 : first reported 50.370

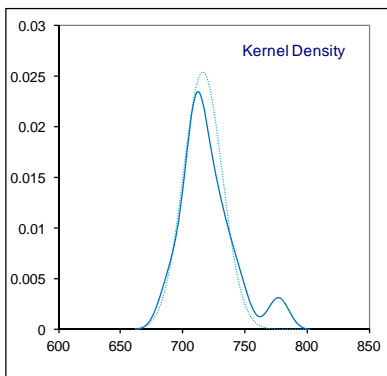
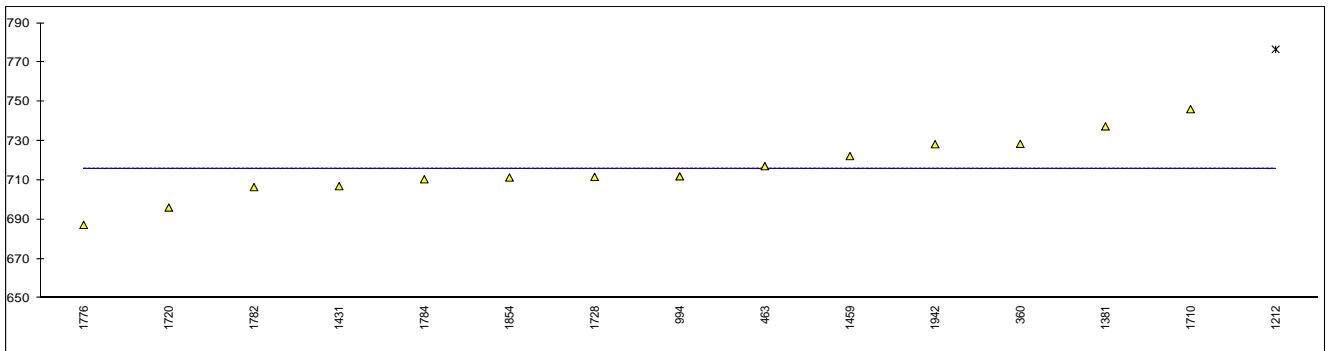


Determination of Viscosity Stabinger at 50°C on sample #15001; results in mm<sup>2</sup>/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		----		----	631		----		----
90		----		----	633		----		----
92		----		----	634		----		----
120		----		----	657		----		----
131		----		----	663		----		----
132		----		----	671		----		----
133		----		----	704		----		----
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753		----		----
158		----		----	781		----		----
159		----		----	784		----		----
168		----		----	785		----		----
169		----		----	791		----		----
171		----		----	823		----		----
175		----		----	824		----		----
193		----		----	840		----		----
194		----		----	851		----		----
212		----		----	855		----		----
221		----		----	858		----		----
224		----		----	859		----		----
225		----		----	862		----		----
228		----		----	863		----		----
230		----		----	864		----		----
237		----		----	865		----		----
238		----		----	866		----		----
242		----		----	867		----		----
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875		----		----
256		----		----	886		----		----
273		----		----	887		----		----
311		----		----	902		----		----
313		----		----	904		----		----
323		----		----	912		----		----
331		----		----	913		----		----
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963		----		----
337		----		----	971		----		----
340		----		----	974		----		----
342		----		----	982		----		----
343		----		----	994	D7042	712.0		----
349		----		----	995		----		----
351		----		----	996		----		----
353		----		----	997		----		----
356		----		----	1011		----		----
360	D7042	728.56		----	1026		----		----
370		----		----	1040		----		----
371		----		----	1059		----		----
372		----		----	1062		----		----
391		----		----	1065		----		----
398		----		----	1082		----		----
399		----		----	1109		----		----
440		----		----	1121		----		----
444		----		----	1126		----		----
445		----		----	1134		----		----
447		----		----	1161		----		----
463	D7042	717.17		----	1167		----		----
494		----		----	1177		----		----
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	D7042	776.68	G(0.05)	----
541		----		----	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266		----		----
605		----		----	1275		----		----
607		----		----	1347		----		----
608		----		----	1348		----		----

1356		----		1740		----
1381	D7042	737.44		1741		----
1385		----		1763		----
1389		----		1776	D7042	687.27
1392		----		1782	D7042	706.5
1395		----		1784	D7042	710.5
1402		----		1796		----
1404		----		1807		----
1412		----		1810		----
1428		----		1811		----
1431	D7042	707.0		1813		----
1455		----		1832		----
1459	D7042	722.3		1833		----
1510		----		1842		----
1520		----		1849		----
1546		----		1854	D7042	711.4
1556		----		1857		----
1569		----		1862		----
1579		----		1881		----
1583		----		1906		----
1585		----		1936		----
1586		----		1937		----
1610		----		1938		----
1613		----		1942	D7042	728.35
1616		----		1948		----
1622		----		1950		----
1631		----		1956		----
1636		----		1962		----
1643		----		1964		----
1654		----		1967		----
1677		----		1971		----
1710	D7042	746.2		1975		----
1720	D7042	696.1		2129		----
1724		----		7017		----
1728	D7042	711.7	C			
	normality	OK				
	n	14				
	outliers	1				
	mean (n)	715.892				
	st.dev. (n)	15.6929				
	R(calc.)	43.940				
	R(D7042:14)	(unknown)				

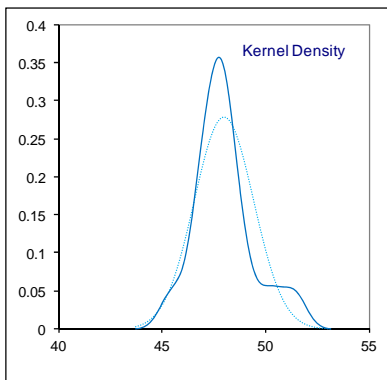
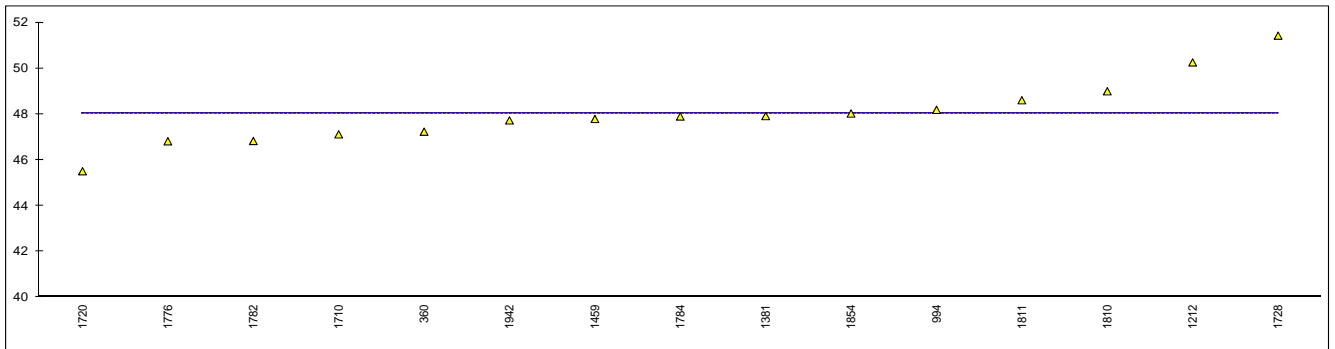
Lab 1728 : first reported 834.36



Determination of Viscosity Stabinger at 100°C on sample #15001; results in mm<sup>2</sup>/s

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		----		----	631		----		----
90		----		----	633		----		----
92		----		----	634		----		----
120		----		----	657		----		----
131		----		----	663		----		----
132		----		----	671		----		----
133		----		----	704		----		----
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753		----		----
158		----		----	781		----		----
159		----		----	784		----		----
168		----		----	785		----		----
169		----		----	791		----		----
171		----		----	823		----		----
175		----		----	824		----		----
193		----		----	840		----		----
194		----		----	851		----		----
212		----		----	855		----		----
221		----		----	858		----		----
224		----		----	859		----		----
225		----		----	862		----		----
228		----		----	863		----		----
230		----		----	864		----		----
237		----		----	865		----		----
238		----		----	866		----		----
242		----		----	867		----		----
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875		----		----
256		----		----	886		----		----
273		----		----	887		----		----
311		----		----	902		----		----
313		----		----	904		----		----
323		----		----	912		----		----
331		----		----	913		----		----
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963		----		----
337		----		----	971		----		----
340		----		----	974		----		----
342		----		----	982		----		----
343		----		----	994	D7042	48.19		----
349		----		----	995		----		----
351		----		----	996		----		----
353		----		----	997		----		----
356		----		----	1011		----		----
360	D7042	47.237		----	1026		----		----
370		----		----	1040		----		----
371		----		----	1059		----		----
372		----		----	1062		----		----
391		----		----	1065		----		----
398		----		----	1082		----		----
399		----		----	1109		----		----
440		----		----	1121		----		----
444		----		----	1126		----		----
445		----		----	1134		----		----
447		----		----	1161		----		----
463		----		----	1167		----		----
494		----		----	1177		----		----
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	D7042	50.260		----
541		----		----	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266		----		----
605		----		----	1275		----		----
607		----		----	1347		----		----
608		----		----	1348		----		----

1356		----	1740		----
1381	D7042	47.918	1741		----
1385		----	1763		----
1389		----	1776	D7042	46.818
1392		----	1782	D7042	46.83
1395		----	1784	D7042	47.90
1402		----	1796		----
1404		----	1807		----
1412		----	1810	D7042	49.00
1428		----	1811	D7042	48.61
1431		----	1813		----
1455		----	1832		----
1459	D7042	47.79	1833		----
1510		----	1842		----
1520		----	1849		----
1546		----	1854	D7042	48.03
1556		----	1857		----
1569		----	1862		----
1579		----	1881		----
1583		----	1906		----
1585		----	1936		----
1586		----	1937		----
1610		----	1938		----
1613		----	1942	D7042	47.73
1616		----	1948		----
1622		----	1950		----
1631		----	1956		----
1636		----	1962		----
1643		----	1964		----
1654		----	1967		----
1677		----	1971		----
1710	D7042	47.12	1975		----
1720	D7042	45.51	2129		----
1724		----	7017		----
1728	D7042	51.428			
	normality	suspect			
	n	15			
	outliers	0			
	mean (n)	48.025			
	st.dev. (n)	1.4322			
	R(calc.)	4.010			
	R(D7042:14)	Unknown			

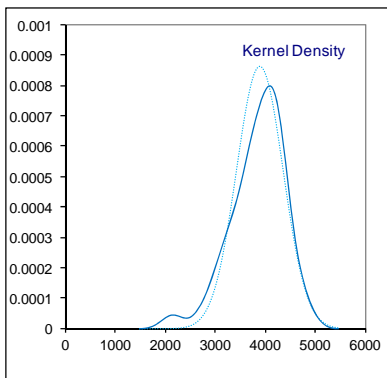
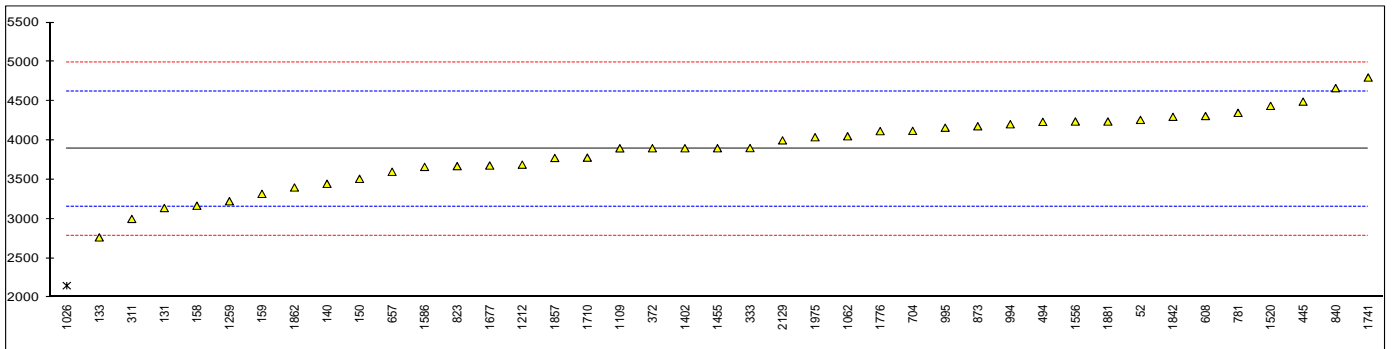


Determination of Nitrogen on sample #15001; results in µg/g

lab	method	value	mark	method	z(targ)	lab	method	value	mark	method	z(targ)
52		4260.38		----	1.01	621		----		----	----
62		----		----	----	631		----		----	----
90		----		----	----	633		----		----	----
92		----		----	----	634		----		----	----
120		----		----	----	657	D5762	3600		Gravimetric	-0.78
131	D4629	3139		----	-2.03	663		----		----	----
132		----		----	----	671		----		----	----
133	D5762	2765		Volumetric	-3.04	704	D5762	4121.3		Volumetric	0.63
140	D5762	3447		Gravimetric	-1.20	732		----		----	----
150	D5762	3510.4		Gravimetric	-1.02	750		----		----	----
154		----		----	----	753		----		----	----
158	D5762	3168		Volumetric	-1.95	781	D3228	4350		----	1.25
159	D4629	3319		----	-1.54	784		----		----	----
168		----		----	----	785		----		----	----
169		----		----	----	791		----		----	----
171		----		----	----	823	D5762	3672		Volumetric	-0.59
175		----		----	----	824		----		----	----
193		----		----	----	840	D3228	4665		----	2.10
194		----		----	----	851		----		----	----
212		----		----	----	855		----		----	----
221		----		----	----	858		----		----	----
224		----		----	----	859		----		----	----
225		----		----	----	862		----		----	----
228		----		----	----	863		----		----	----
230		----		----	----	864		----		----	----
237		----		----	----	865		----		----	----
238		----		----	----	866		----		----	----
242		----		----	----	867		----		----	----
252		----		----	----	873	D3228	4180		----	0.79
253		----		----	----	874		----		----	----
254		----		----	----	875		----		----	----
256		----		----	----	886		----		----	----
273		----		----	----	887		----		----	----
311	D5762	3000		Gravimetric	-2.41	902		----		----	----
313		----		----	----	904		----		----	----
323		----		----	----	912		----		----	----
331		----		----	----	913		----		----	----
333	D5762	3902		Volumetric	0.04	922		----		----	----
334		----		----	----	962		----		----	----
336		----		----	----	963		----		----	----
337		----		----	----	971		----		----	----
340		----		----	----	974		----		----	----
342		----		----	----	982		----		----	----
343		----		----	----	994	D5762	4205		Gravimetric	0.86
349		----		----	----	995	D3228	4161		----	0.74
351		----		----	----	996		----		----	----
353		----		----	----	997		----		----	----
356		----		----	----	1011		----		----	----
360		----		----	----	1026	D5762	2150	R(0.05)	----	-4.71
370		----		----	----	1040		----		----	----
371		----		----	----	1059		----		----	----
372	D5762	3900		Volumetric	0.03	1062	D5762	4052		Gravimetric	0.44
391		----		----	----	1065		----		----	----
398		----		----	----	1082		----		----	----
399		----		----	----	1109	D4629	3899		----	0.03
440		----		----	----	1121		----		----	----
444		----		----	----	1126		----		----	----
445	D5762	4493.5		Volumetric	1.64	1134		----		----	----
447		----		----	----	1161		----		----	----
463		----		----	----	1167		----		----	----
494	D5762	4236		Gravimetric	0.94	1177		----		----	----
498		----		----	----	1191		----		----	----
507		----		----	----	1200		----		----	----
511		----		----	----	1205		----		----	----
529		----		----	----	1212	D5762	3691		Gravimetric	-0.54
541		----		----	----	1213		----		----	----
551		----		----	----	1229		----		----	----
557		----		----	----	1233		----		----	----
562		----		----	----	1254		----		----	----
575		----		----	----	1259	D5762	3225		Gravimetric	-1.80
604		----		----	----	1266		----		----	----
605		----		----	----	1275		----		----	----
607		----		----	----	1347		----		----	----
608	D5762	4310		Gravimetric	1.14	1348		----		----	----



1356					1740				
1381					1741	D5762	4800.0		2.47
1385					1763				
1389					1776	D5762	4118	Gravimetric	0.62
1392					1782				
1395					1784				
1402	D5762	3900	Gravimetric	0.03	1796				
1404					1807				
1412					1810				
1428					1811				
1431					1813				
1455	D5762	3900	Gravimetric	0.03	1832				
1459					1833				
1510					1842	D5762	4300	Volumetric	1.11
1520	D5762	4439.0	Volumetric	1.49	1849				
1546					1854				
1556	D5762	4240	Volumetric	0.95	1857	D5762	3776	Gravimetric	-0.31
1569					1862	D5762	3400	Volumetric	-1.32
1579					1881	D5762	4240	Gravimetric	0.95
1583					1906				
1585					1936				
1586	D5762	3662.5		-0.61	1937				
1610					1938				
1613					1942				
1616					1948				
1622					1950				
1631					1956				
1636					1962				
1643					1964				
1654					1967				
1677	D5762	3680	Gravimetric	-0.56	1971				
1710	INH-11794	3780	Volumetric	-0.29	1975	D5762	4040.0	Gravimetric	0.41
1720					2129	D3228	4000.11		0.30
1724					7017				
1728									
	normality	OK				<u>Only Volumetric</u>		<u>Only Gravimetric</u>	
	n	40				OK		OK	
	outliers	1				11		17	
	mean (n)	3888.68				0		0	
	st.dev. (n)	462.984				3854.62		3819.44	
	R(calc.)	1296.35				554.141		378.284	
	R(D5762:12)	1034.39				1551.59		1059.20	
						1025.33		1015.97	

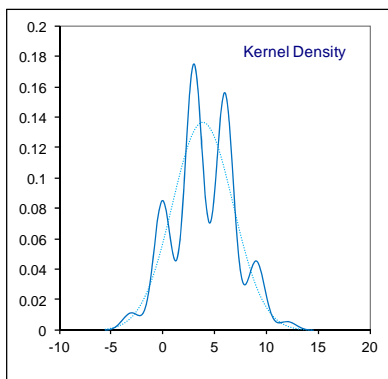
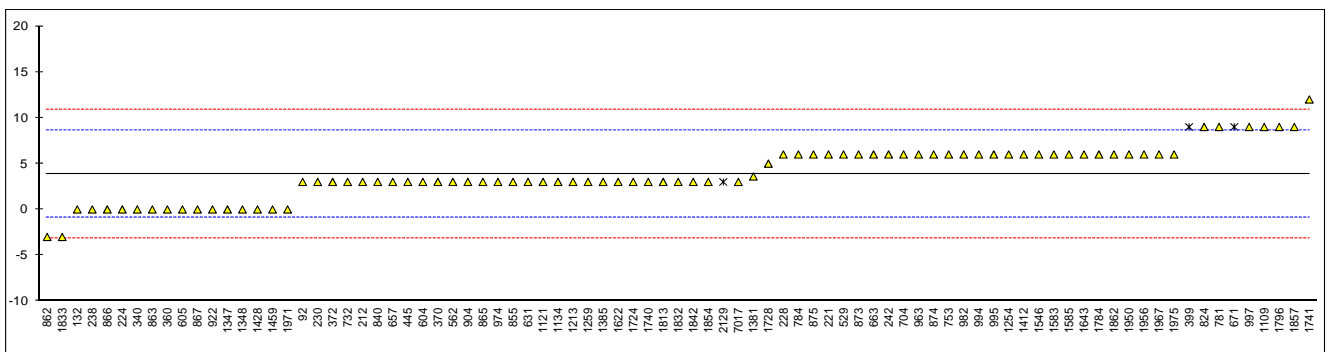


## Determination of Pour Point (Lower) on sample #15001; results in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		----		----	631	D97	3		-0.37
90		----		----	633		----		----
92	D97	3		-0.37	634		----		----
120		----		----	657	ISO3016	3		-0.37
131		----		----	663	D97	6		0.90
132	ISO3016	0		-1.65	671	D97	9	ex	2.18
133		----		----	704	ISO3016	6		0.90
140		----		----	732	D97	3		-0.37
150		----		----	750		----		----
154		----		----	753	ISO3016	6		0.90
158		----		----	781	ISO3016	9		2.18
159		----		----	784	ISO3016	6		0.90
168		----		----	785		----		----
169		----		----	791		----		----
171		----		----	823		----		----
175		----		----	824	ISO3016	9		2.18
193		----		----	840	D97	3		-0.37
194		----		----	851		----		----
212	ISO3016	3		-0.37	855	D97	3		-0.37
221	D97	6		0.90	858		----		----
224	D97	0.0		-1.65	859		----		----
225		----		----	862	ISO3016	-3		-2.92
228	D97	6		0.90	863	ISO3016	0		-1.65
230	ISO3016	3		-0.37	864		----		----
237		----		----	865	ISO3016	3		-0.37
238	D97	0		-1.65	866	ISO3016	0		-1.65
242	D97	6		0.90	867	D97	0		-1.65
252		----		----	873	D97	6		0.90
253		----		----	874	D97	6		0.90
254		----		----	875	D97	6		0.90
256		----		----	886		----		----
273		----		----	887		----		----
311		----		----	902		----		----
313		----		----	904	D97	3		-0.37
323		----		----	912		----		----
331		----		----	913		----		----
333		----		----	922	D97	0		-1.65
334		----		----	962		----		----
336		----		----	963	ISO3016	6		0.90
337		----		----	971		----		----
340	ISO3016	0		-1.65	974	D97	3		-0.37
342		----		----	982	D97	6		0.90
343		----		----	994	D97	6		0.90
349		----		----	995	D97	6		0.90
351		----		----	996		----		----
353		----		----	997	D97	9		2.18
356		----		----	1011		----		----
360	D97	0		-1.65	1026		----		----
370	D97	3		-0.37	1040		----		----
371		----		----	1059		----		----
372	ISO3016	3		-0.37	1062		----		----
391		----		----	1065		----		----
398		----		----	1082		----		----
399	ISO3016	9	ex	2.18	1109	D97	9		2.18
440		----		----	1121	IP15	3		-0.37
444		----		----	1126		----		----
445	ISO3016	3		-0.37	1134	IP15	3		-0.37
447		----		----	1161		----		----
463		----		----	1167		----		----
494		----		----	1177		----		----
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529	D97	6		0.90	1212		----		----
541		----		----	1213	D97	3		-0.37
551		----		----	1229		----		----
557		----		----	1233		----		----
562	D97	3.0		-0.37	1254	D97	6		0.90
575		----		----	1259	ISO3016	3		-0.37
604	D97	3		-0.37	1266		----		----
605	D97	0		-1.65	1275		----		----
607		----		----	1347	D97	0		-1.65
608		----		----	1348	D97	0		-1.65

1356		----	----	1740	ISO3016	3		-0.37
1381	ISO3016	3.6	-0.12	1741	ISO3016	12		3.45
1385	D97	3	-0.37	1763		----		----
1389		----	----	1776		----		----
1392		----	----	1782		----		----
1395		----	----	1784	ISO3016	6		0.90
1402		----	----	1796	ISO3016	9		2.18
1404		----	----	1807		----		----
1412	ISO3016	6	0.90	1810		----		----
1428	ISO3016	0	-1.65	1811		----		----
1431		----	----	1813	D97	3		-0.37
1455		----	----	1832	ISO3016	3		-0.37
1459	ISO3016	0	-1.65	1833	D97	-3		-2.92
1510		----	----	1842	D5853	3		-0.37
1520		----	----	1849		----		----
1546	ISO3016	6	0.90	1854	ISO3016	3		-0.37
1556		----	----	1857	ISO3016	9		2.18
1569		----	----	1862	ISO3016	6		0.90
1579		----	----	1881		----		----
1583	ISO3016	6	0.90	1906		----		----
1585	D97	6	0.90	1936		----		----
1586		----	----	1937		----		----
1610		----	----	1938		----		----
1613		----	----	1942		----		----
1616		----	----	1948		----		----
1622	D97	3	-0.37	1950	ISO3016	6		0.90
1631		----	----	1956		6		0.90
1636		----	----	1962		----		----
1643	D97	6	0.90	1964		----		----
1654		----	----	1967	ISO3016	6		0.90
1677		----	----	1971	ISO3016	0.0		-1.65
1710		----	----	1975	D97	6		0.90
1720		----	----	2129	ISO3016	3	ex	-0.37
1724	D97	3	-0.37	7017	D97	3		-0.37
1728	ISO3016	5	0.48					
	normality	OK						
	n	82						
	outliers	0 (+3 excl)						
	mean (n)	3.87						
	st.dev. (n)	2.916						
	R(calc.)	8.17						
	R(ISO3016:94)	6.59						

ex = excluded, PP lower > PP upper

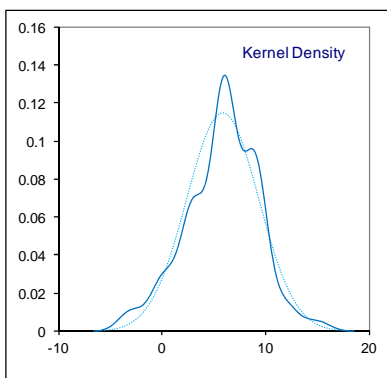
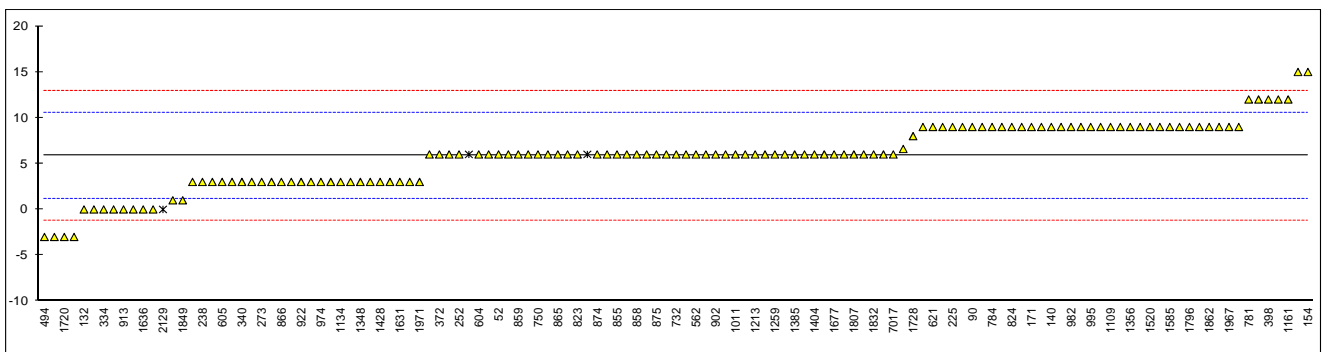


## Determination of Pour Point (Upper) on sample #15001; results in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52	D97	6		0.06	621	D97	9.00		1.33
62		----		----	631		----		----
90	D97	9		1.33	633		----		----
92	D97	6		0.06	634		----		----
120	D97	15		3.88	657	ISO3016	6		0.06
131		----		----	663	D97	9		1.33
132	ISO3016	0		-2.49	671	D97	6	ex	0.06
133	D97	12		2.60	704	ISO3016	9		1.33
140	D97	9		1.33	732	D97	6		0.06
150		----		----	750	D97	6		0.06
154	D97	15		3.88	753	ISO3016	6		0.06
158		----		----	781	ISO3016	12		2.60
159		----		----	784	ISO3016	9		1.33
168	D97	12		2.60	785		----		----
169	D97	6		0.06	791		----		----
171	D97	9		1.33	823	ISO3016	6		0.06
175		----		----	824	ISO3016	9		1.33
193		----		----	840	D97	6		0.06
194		----		----	851	ISO3016	3		-1.22
212		----		----	855	D97	6		0.06
221	D97	9		1.33	858	D97	6		0.06
224	D97	1.0		-2.07	859	ISO3016	6		0.06
225	D97	9		1.33	862	ISO3016	3		-1.22
228		----		----	863	ISO3016	3		-1.22
230	ISO3016	6		0.06	864	D97	6		0.06
237	D97	9		1.33	865	ISO3016	6		0.06
238	D97	3		-1.22	866	ISO3016	3		-1.22
242		----		----	867	D97	3		-1.22
252	D97	6		0.06	873	D97	6		0.06
253	D97	0		-2.49	874	D97	6		0.06
254		----		----	875	D97	6		0.06
256	D97	6		0.06	886		----		----
273	D97	3		-1.22	887		----		----
311		----		----	902	D97	6		0.06
313		----		----	904	D97	6		0.06
323		----		----	912	D97	0		-2.49
331		----		----	913	D97	0		-2.49
333		----		----	922	D97	3		-1.22
334	D97	0		-2.49	962		----		----
336		----		----	963	ISO3016	9		1.33
337		----		----	971	ISO3016	3		-1.22
340	ISO3016	3		-1.22	974	D97	3		-1.22
342		----		----	982	D97	9		1.33
343		----		----	994	D97	9		1.33
349		----		----	995	D97	9		1.33
351		----		----	996		----		----
353		----		----	997	D97	9		1.33
356	ISO3016	3		-1.22	1011	D97	6		0.06
360	D97	3		-1.22	1026		----		----
370	D97	6		0.06	1040		----		----
371	ISO3016	6		0.06	1059		----		----
372	ISO3016	6		0.06	1062		----		----
391	ISO3016	9		1.33	1065		----		----
398	ISO3016	12		2.60	1082	ISO3016	3		-1.22
399	ISO3016	6	ex	0.06	1109	D97	9		1.33
440		----		----	1121	IP15	6		0.06
444		----		----	1126		----		----
445	ISO3016	6		0.06	1134	IP15	3		-1.22
447	ISO3016	9		1.33	1161	ISO3016	12.0		2.60
463		----		----	1167		----		----
494	ISO3016	-3		-3.77	1177		----		----
498		----		----	1191	ISO3016	<9		----
507	ISO3016	6		0.06	1200		----		----
511		----		----	1205		----		----
529	D97	9		1.33	1212	ISO3016	3		-1.22
541		----		----	1213	D97	6		0.06
551		----		----	1229	ISO3016	6		0.06
557		----		----	1233	ISO3016	0		-2.49
562	D97	6.0		0.06	1254	D97	9		1.33
575		----		----	1259	ISO3016	6		0.06
604	D97	6		0.06	1266		----		----
605	D97	3		-1.22	1275		----		----
607		----		----	1347	D97	6		0.06
608		----		----	1348	D97	3		-1.22

1356	ISO3016	9	1.33	1740	ISO3016	6	0.06
1381	ISO3016	6.6	0.31	1741		----	----
1385	D97	6	0.06	1763		----	----
1389	D97	6	0.06	1776		----	----
1392		----	----	1782		----	----
1395		----	----	1784		----	----
1402	ISO3016	3	-1.22	1796	ISO3016	9	1.33
1404	ISO3016	6	0.06	1807	D97	6	0.06
1412	ISO3016	9	1.33	1810		----	----
1428	ISO3016	3	-1.22	1811		----	----
1431		----	----	1813	D97	6	0.06
1455		----	----	1832	ISO3016	6	0.06
1459		----	----	1833	D97	0	-2.49
1510		----	----	1842	D5853	3	-1.22
1520	ISO3016	9	1.33	1849	ISO3016	1	-2.07
1546	ISO3016	9	1.33	1854	ISO3016	6	0.06
1556	ISO3016	-3	-3.77	1857	ISO3016	9	1.33
1569		----	----	1862	ISO3016	9	1.33
1579		----	----	1881	ISO3016	-3	-3.77
1583	ISO3016	6	0.06	1906		----	----
1585	D97	9	1.33	1936		----	----
1586	ISO3016	3	-1.22	1937		----	----
1610		----	----	1938		----	----
1613		----	----	1942		----	----
1616		----	----	1948		----	----
1622	D97	9	1.33	1950	ISO3016	9	1.33
1631	ISO3016	3	-1.22	1956		----	----
1636	ISO3016	0	-2.49	1962		----	----
1643		----	----	1964		----	----
1654		----	----	1967	ISO3016	9	1.33
1677	D97	6	0.06	1971	ISO3016	3.0	-1.22
1710		----	----	1975	D97	9	1.33
1720	D97	-3.0	-3.77	2129	ISO3016	0	-2.49
1724		----	----	7017	D97	6	0.06
1728	ISO3016	8	0.91				
	normality	OK					
	n	126					
	outliers	0 (+3 excl)					
	mean (n)	5.87					
	st.dev. (n)	3.486					
	R(calc.)	9.76					
	R(ISO3016:94)	6.59					

ex = excluded, PP lower > PP upper

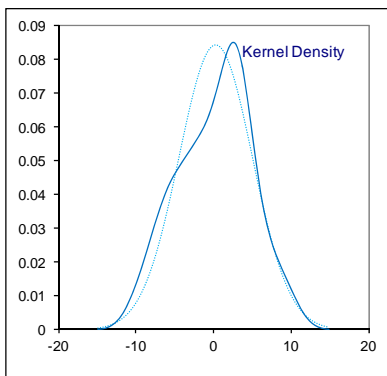
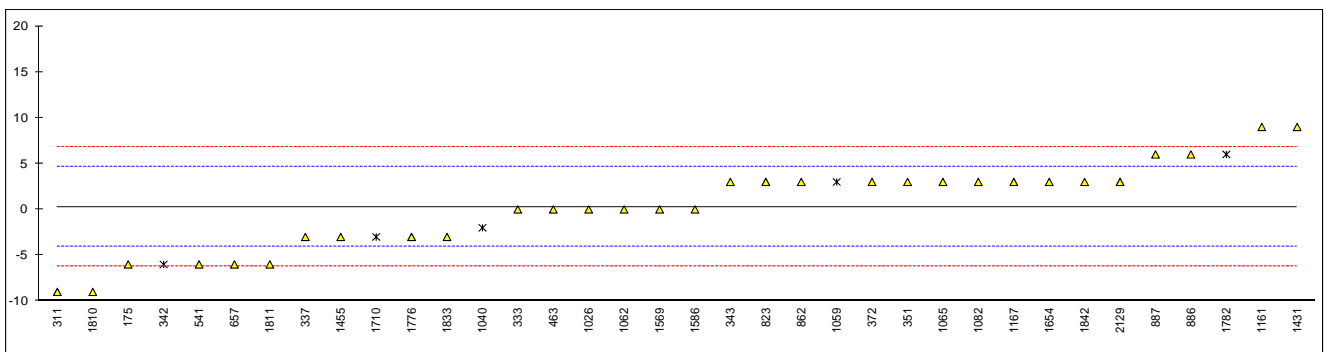


Determination of Pour Point (Automated) on sample #15001; results in °C

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		----		----	631		----		----
90		----		----	633		----		----
92		----		----	634		----		----
120		----		----	657	D5950	-6		-2.89
131		----		----	663		----		----
132		----		----	671		----		----
133		----		----	704		----		----
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753		----		----
158		----		----	781		----		----
159		----		----	784		----		----
168		----		----	785		----		----
169		----		----	791		----		----
171		----		----	823	D5950	3		1.24
175	D5950	-6		-2.89	824		----		----
193		----		----	840		----		----
194		----		----	851		----		----
212		----		----	855		----		----
221		----		----	858		----		----
224		----		----	859		----		----
225		----		----	862	D5950	3		1.24
228		----		----	863		----		----
230		----		----	864		----		----
237		----		----	865		----		----
238		----		----	866		----		----
242		----		----	867		----		----
252		----		----	873		----		----
253		----		----	874		----		----
254		----		----	875		----		----
256		----		----	886	D5950	6		2.62
273		----		----	887	D6749	6		2.62
311	D5950	-9		-4.26	902		----		----
313		----		----	904		----		----
323		----		----	912		----		----
331		----		----	913		----		----
333	D5950	0		-0.13	922		----		----
334		----		----	962		----		----
336		----		----	963		----		----
337	D5950	-3		-1.51	971		----		----
340		----		----	974		----		----
342	ISO3016	-6	ex	-2.89	982		----		----
343	D5950	3		1.24	994		----		----
349		----		----	995		----		----
351	D6749	3		1.24	996		----		----
353		----		----	997		----		----
356		----		----	1011		----		----
360		----		----	1026	D5950	0		-0.13
370		----		----	1040	ISO3016	-2	ex	-1.05
371		----		----	1059	ISO3016	3	ex	1.24
372	D5950	3		1.24	1062		0		-0.13
391		----		----	1065	D5950	3		1.24
398		----		----	1082	D5950	3		1.24
399		----		----	1109		----		----
440		----		----	1121		----		----
444		----		----	1126		----		----
445		----		----	1134		----		----
447		----		----	1161	D5950	9.0		4.00
463	D6892	0.0		-0.13	1167	D6749	3		1.24
494		----		----	1177		----		----
498		----		----	1191		----		----
507		----		----	1200		----		----
511		----		----	1205		----		----
529		----		----	1212		----		----
541	D5990	-6		-2.89	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254		----		----
575		----		----	1259		----		----
604		----		----	1266		----		----
605		----		----	1275		----		----
607		----		----	1347		----		----
608		----		----	1348		----		----

1356		----		----	1740		----	----
1381		----		----	1741		----	----
1385		----		----	1763		----	----
1389		----		----	1776	D5950	-3	-1.51
1392		----		----	1782	D97	6	2.62
1395		----		----	1784		----	----
1402		----		----	1796		----	----
1404		----		----	1807		----	----
1412		----		----	1810	D5950	-9	-4.26
1428		----		----	1811	D5950	-6	-2.89
1431	D5950	9		4.00	1813		----	----
1455	D5950	-3		-1.51	1832		----	----
1459		----		----	1833	D5950	-3	-1.51
1510		----		----	1842	D5950	3	1.24
1520		----		----	1849		----	----
1546		----		----	1854		----	----
1556		----		----	1857		----	----
1569	D5950	0		-0.13	1862		----	----
1579		----		----	1881		----	----
1583		----		----	1906		----	----
1585		----		----	1936		----	----
1586	D5950	0		-0.13	1937		----	----
1610		----		----	1938		----	----
1613		----		----	1942		----	----
1616		----		----	1948		----	----
1622		----		----	1950		----	----
1631		----		----	1956		----	----
1636		----		----	1962		----	----
1643		----		----	1964		----	----
1654	D5950	3.0		1.24	1967		----	----
1677		----		----	1971		----	----
1710	ISO3016	-3	ex	-1.51	1975		----	----
1720		----		----	2129	D5950	3	1.24
1724		----		----	7017		----	----
1728		----		----				
	normality	OK						
	n	31						
	outliers	0 (+5 excl)						
	mean (n)	0.29						
	st.dev. (n)	4.734						
	R(calc.)	13.26						
	R(D5950:14)	6.10						

Ex = excluded, see §4.1 (manual method)



Determination of Sediment by Extraction on sample #15001; results in %M/M

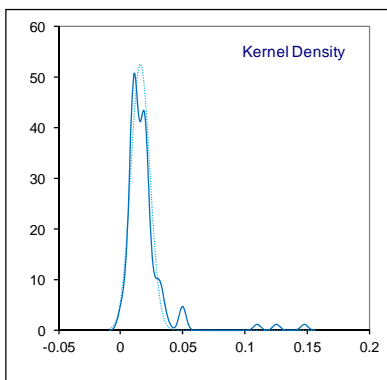
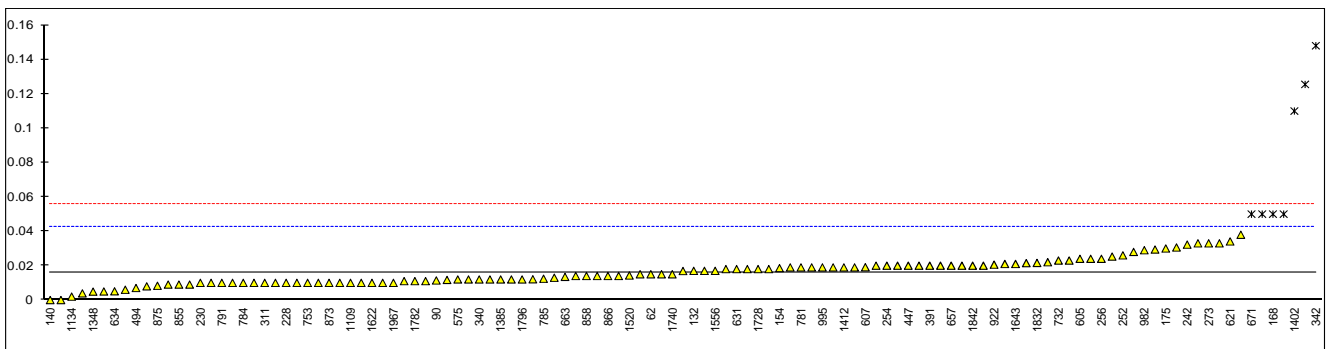
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		0.008		-0.61	621	D473	0.0341		1.36
62	D473	0.015		-0.08	631	D473	0.018		0.15
90	D473	0.0114		-0.35	633		----		----
92	D473	0.02		0.30	634	D473	0.0051		-0.83
120	D473	0.02		0.30	657	D473	0.02		0.30
131	D473	0.01		-0.46	663	D473	0.0135		-0.19
132	D473	0.017		0.07	671	D473	0.05	R(0.01)	2.56
133	D473	0.01		-0.46	704	D473	0.024		0.60
140	D473	0.0		-1.21	732	D473	0.023		0.52
150		----		----	750	D473	0.01		-0.46
154	D473	0.0186		0.19	753	D473	0.010		-0.46
158	D473	0.0117		-0.33	781	D473	0.019		0.22
159	D473	0.1255	R(0.01)	8.26	784	D473	0.01		-0.46
168	D473	0.05	R(0.01)	2.56	785	D473	0.0124		-0.28
169		----		----	791	D473	0.01		-0.46
171	D473	0.02		0.30	823	D473	0.012		-0.31
175	D473	0.03		1.05	824	D473	0.011		-0.38
193		----		----	840	D473	0.02		0.30
194		----		----	851		----		----
212	D473	0.05	R(0.01)	2.56	855	D473	0.009		-0.53
221	D473	<0.01		----	858	D473	0.014		-0.16
224	D473	<0.1		----	859	D473	0.014		-0.16
225	D473	0.006		-0.76	862	D473	0.033		1.28
228	D473	0.01		-0.46	863	D473	0.009		-0.53
230	D473	0.010		-0.46	864	D473	0.010		-0.46
237	D473	0.0039		-0.92	865	D473	0.012		-0.31
238		----		----	866	D473	0.014		-0.16
242	D473	0.03225		1.22	867		----		----
252	D473	0.026		0.75	873	D473	0.01		-0.46
253		----		----	874	D473	0.01		-0.46
254	D473	0.02		0.30	875	D473	0.0083		-0.59
256	D473	0.024		0.60	886		----		----
273	D473	0.033		1.28	887		----		----
311	D473	0.01		-0.46	902		----		----
313		----		----	904		----		----
323	D473	0.02		0.30	912		----		----
331		----		----	913	D473	0.0169		0.06
333	D473	<0.01		----	922	D473	0.0206		0.34
334		----		----	962		----		----
336		----		----	963	D473	0.028		0.90
337		----		----	971	D473	0.018		0.15
340	D473	0.012		-0.31	974	D473	0.023		0.52
342	D473	0.148	C,R(0.01)	9.96	982	D473	0.029		0.98
343	D473	0.014	C	-0.16	994	D473	0.019		0.22
349		----		----	995	D473	0.019		0.22
351		----		----	996		----		----
353		----		----	997		----		----
356	D473	0.015		-0.08	1011		----		----
360	D473	0.009		-0.53	1026		----		----
370	D473	0.010		-0.46	1040		----		----
371	D473	0.015		-0.08	1059		----		----
372	D473	0.01		-0.46	1062		----		----
391	D473	0.02		0.30	1065		----		----
398	D473	0.018		0.15	1082		----		----
399	D473	0.019		0.22	1109	D473	0.010		-0.46
440		----		----	1121	IP53	0.01		-0.46
444		----		----	1126		----		----
445	D473	<0.01		----	1134	IP53	0.002		-1.06
447	D473	0.02		0.30	1161	ISO3735	0.05	R(0.01)	2.56
463		----		----	1167		----		----
494	D473	0.007		-0.68	1177		----		----
498		----		----	1191		----		----
507		----		----	1200		----		----
511	D473	0.0306		1.10	1205		----		----
529		----		----	1212	D473	0.017		0.07
541		----		----	1213	D473	0.019		0.22
551		----		----	1229		----		----
557		----		----	1233		----		----
562	D473	0.033		1.28	1254	D473	0.0253		0.70
575	D473	0.012		-0.31	1259		----		----
604		----		----	1266		----		----
605	D473	0.024		0.60	1275		----		----
607	D473	0.0191		0.23	1347	D473	0.038		1.66
608	D473	<0.01		----	1348	D473	0.0049		-0.84



1356		----		----	1740	D473	0.015		-0.08
1381		----		----	1741		----		----
1385	D473	0.012		-0.31	1763		----		----
1389		----		----	1776		----		----
1392		----		----	1782	D473	0.011		-0.38
1395		----		----	1784	D473	0.014		-0.16
1402	D473	0.11	R(0.01)	7.09	1796	D473	0.012		-0.31
1404		----		----	1807	ISO3735	0.01		-0.46
1412	D473	0.019		0.22	1810		----		----
1428		----		----	1811		----		----
1431		----		----	1813		----		----
1455	D473	0		-1.21	1832	INH-6370	0.0216		0.42
1459		----		----	1833		----		----
1510		----		----	1842	D473	0.02		0.30
1520	D473	0.0143		-0.13	1849		----		----
1546		----		----	1854	D473	0.013		-0.23
1556	ISO3735	0.017		0.07	1857	D473	0.02		0.30
1569		----		----	1862	D473	0.019		0.22
1579		----		----	1881	D473	0.011		-0.38
1583	D473	0.0121		-0.30	1906		----		----
1585	D473	0.021		0.37	1936		----		----
1586	D473	0.012		-0.31	1937		----		----
1610		----		----	1938		----		----
1613	D473	0.0215		0.41	1942		----		----
1616		----		----	1948		----		----
1622	D473	0.01		-0.46	1950	D473	0.018		0.15
1631		----		----	1956		----		----
1636		----		----	1962		----		----
1643	D473	0.0210		0.37	1964		----		----
1654		----		----	1967	D473	0.01		-0.46
1677	D473	0.0294		1.01	1971		----		----
1710		----		----	1975	D473	0.022		0.45
1720		----		----	2129	D473	0.005		-0.83
1724		----		----	7017		----		----
1728	D473	0.018		0.15					
normality		OK							
n		112							
outliers		7							
mean (n)		0.0161							
st.dev. (n)		0.00760							
R(calc.)		0.0213							
R(D473:07)		0.0371							

Lab 342 : first reported 0.418

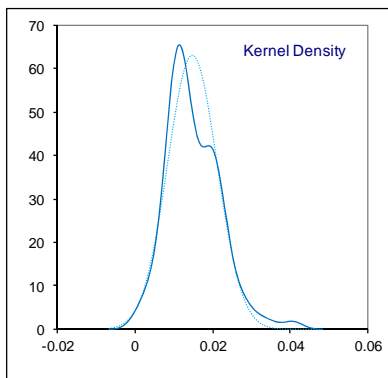
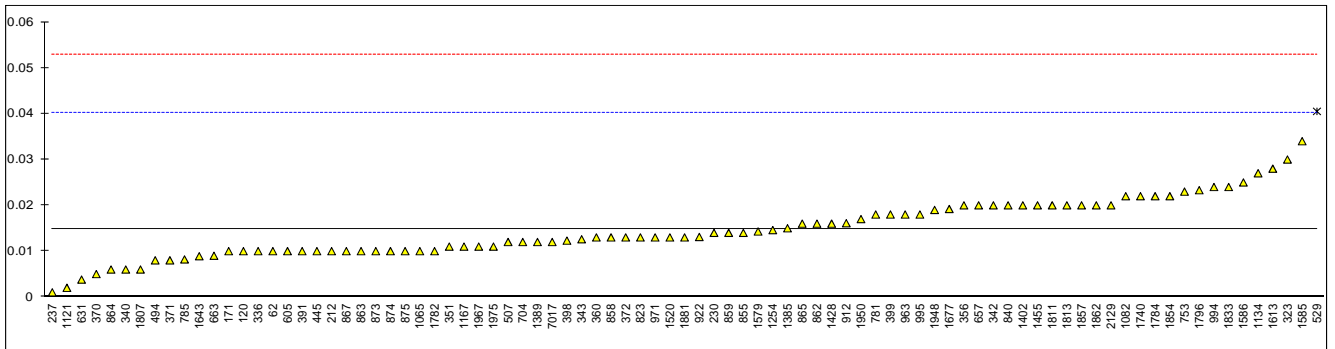
Lab 343 ; first reported 0.136



## Determination of Total Sediment by hot filtration of sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62	D4870	0.01		-0.37	631	IP375	0.0038		-0.86
90		----		----	633		----		----
92		----		----	634		----		----
120	D4870	0.01		-0.37	657	IP375	0.02		0.41
131		----		----	663	IP375	0.009		-0.45
132	ISO10307-1	<0.01		----	671		----		----
133		----		----	704	IP375	0.012		-0.21
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753	IP375	0.023		0.65
158		----		----	781	IP375	0.018		0.26
159		----		----	784		----		----
168		----		----	785	IP375	0.0082		-0.51
169		----		----	791		----		----
171	IP375	0.01		-0.37	823	IP375	0.013		-0.14
175		----		----	824		----		----
193		----		----	840	D4870	0.02		0.41
194		----		----	851		----		----
212	ISO10307-1	0.01		-0.37	855	ISO10307-1	0.014		-0.06
221		----		----	858	D4870	0.013		-0.14
224		----		----	859	IP375	0.014		-0.06
225		----		----	862	IP375	0.016		0.10
228		----		----	863	IP375	0.010		-0.37
230	ISO10307-1	0.014		-0.06	864	ISO10307-1	0.006		-0.68
237	D4870	0.00101		-1.08	865	IP375	0.016		0.10
238		----		----	866		----		----
242		----		----	867	D4870	0.01		-0.37
252		----		----	873	IP375	0.01		-0.37
253		----		----	874	IP375	0.01		-0.37
254		----		----	875	IP375	0.01		-0.37
256		----		----	886		----		----
273		----		----	887		----		----
311	IP375	<0.01		----	902		----		----
313		----		----	904		----		----
323	IP375	0.03		1.20	912	ISO10307-1	0.0161		0.11
331		----		----	913		----		----
333		----		----	922	ISO10307-1	0.0131		-0.13
334		----		----	962		----		----
336	IP375	0.01		-0.37	963	IP375	0.018		0.26
337		----		----	971	IP375	0.013		-0.14
340	ISO10307-1	0.006		-0.68	974		----		----
342	ISO10307-1	0.02		0.41	982		----		----
343	ISO10307-1	0.0126		-0.17	994	IP375	0.024		0.73
349		----		----	995	D4870	0.018		0.26
351	ISO10307-1	0.011		-0.29	996		----		----
353		----		----	997		----		----
356	IP375	0.020		0.41	1011		----		----
360	IP375	0.013		-0.14	1026		----		----
370	IP375	0.005		-0.76	1040		----		----
371	IP375	0.008		-0.53	1059		----		----
372	IP375	0.013		-0.14	1062		----		----
391	IP375	0.01		-0.37	1065	IP375	0.01		-0.37
398	ISO10307-1	0.0123		-0.19	1082	ISO10307-1	0.022		0.57
399	IP375	0.018		0.26	1109		----		----
440		----		----	1121	IP375	0.002		-1.00
444		----		----	1126		----		----
445	IP375	0.010		-0.37	1134	IP375	0.027		0.96
447		----		----	1161		----		----
463		----		----	1167	ISO10307-1	0.011		-0.29
494	ISO10307-1	0.008		-0.53	1177		----		----
498		----		----	1191	ISO10307-1	<0.01		----
507	IP375	0.012		-0.21	1200		----		----
511		----		----	1205		----		----
529	D4807	0.0405	R(0.01)	2.02	1212	ISO10307-1	<0.01		----
541		----		----	1213		----		----
551		----		----	1229	ISO10307-1	<0.01		----
557		----		----	1233		----		----
562		----		----	1254	IP375	0.0146		-0.01
575		----		----	1259		----		----
604		----		----	1266		----		----
605	IP375	0.01		-0.37	1275		----		----
607		----		----	1347		----		----
608		----		----	1348		----		----
1356		----		----	1740	IP375	0.022		0.57

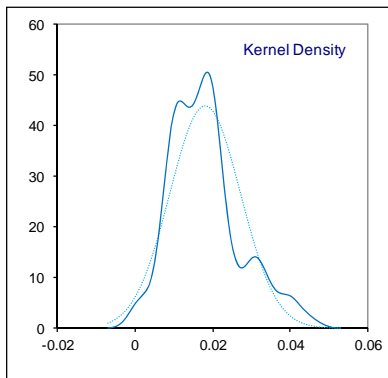
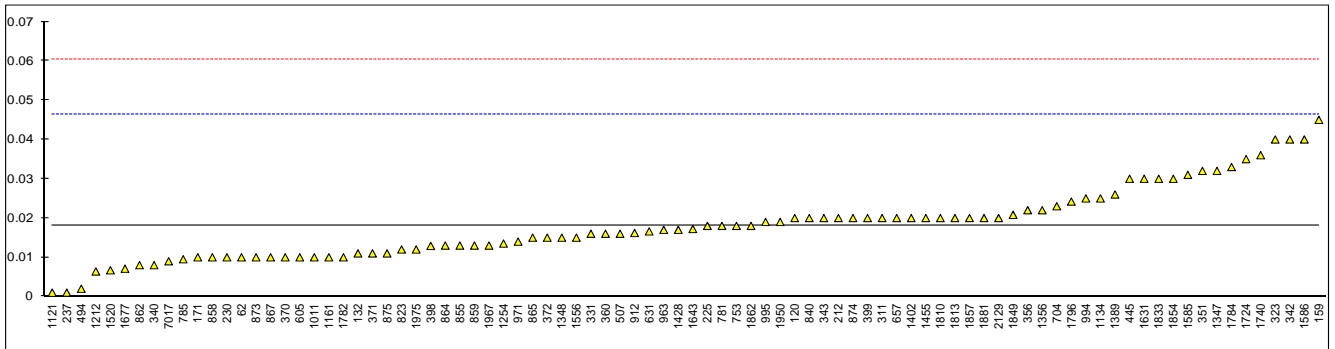
1381		----	----	1741		----	----
1385	IP375	0.015	0.02	1763		----	----
1389	IP375	0.012	-0.21	1776		----	----
1392		----	----	1782	IP375	0.01	-0.37
1395		----	----	1784	IP375	0.022	0.57
1402	IP375	0.02	0.41	1796	IP375	0.0233	0.67
1404	ISO10307-1	<0.01	----	1807	D4870	0.006	-0.68
1412		----	----	1810		----	----
1428	ISO10307-1	0.016	0.10	1811	IP375	0.02	0.41
1431		----	----	1813	D4870	0.02	0.41
1455	ISO10307-1	0.02	0.41	1832		----	----
1459		----	----	1833	IP375	0.024	0.73
1510		----	----	1842		----	----
1520	IP375	0.013	-0.14	1849		----	----
1546		----	----	1854	IP375	0.022	0.57
1556		----	----	1857	IP375	0.02	0.41
1569		----	----	1862	IP375	0.020	0.41
1579	INH-2876	0.0143	-0.03	1881	IP375	0.013	-0.14
1583		----	----	1906		----	----
1585	IP375	0.034	1.51	1936		----	----
1586	IP375	0.025	0.81	1937		----	----
1610		----	----	1938		----	----
1613	IP375	0.028	1.04	1942		----	----
1616		----	----	1948	IP375	0.019	0.34
1622		----	----	1950	IP375	0.017	0.18
1631		----	----	1956		----	----
1636		----	----	1962		----	----
1643	ISO10307-1	0.0089	-0.46	1964		----	----
1654		----	----	1967	IP375	0.011	-0.29
1677	IP375	0.0192	0.35	1971		----	----
1710		----	----	1975	IP375	0.011	-0.29
1720		----	----	2129	IP375	0.020	0.41
1724		----	----	7017	IP375	0.012	-0.21
1728		----	----				
	normality	OK					
	n	86					
	outliers	1					
	mean (n)	0.0147					
	st.dev. (n)	0.00633					
	R(calc.)	0.0177					
	R(IP375:99)	0.0357					



Determination of Total Sediment (Accelerated) of sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		0.01		-0.57	631	IP390	0.0166		-0.11
90		----		----	633		----		----
92		----		----	634		----		----
120	ISO10307-2	0.02		0.14	657	IP390	0.02		0.14
131		----		----	663		----		----
132	ISO10307-2	0.011		-0.50	671		----		----
133		----		----	704	IP390	0.023		0.35
140		----		----	732		----		----
150		----		----	750		----		----
154		----		----	753	IP390	0.018		-0.01
158		----		----	781	IP390	0.018		-0.01
159	D4870	0.045		1.91	784		----		----
168		----		----	785	IP390	0.0095		-0.61
169		----		----	791		----		----
171	IP390	0.01		-0.57	823	IP390	0.012		-0.43
175		----		----	824		----		----
193		----		----	840	ISO10307-2	0.02		0.14
194		----		----	851		----		----
212	ISO10307-2	0.02		0.14	855	ISO10307-2	0.013		-0.36
221		----		----	858	D4870	0.010		-0.57
224		----		----	859	IP390	0.013		-0.36
225	IP390	0.018		-0.01	862	IP390	0.008		-0.71
228		----		----	863		----		----
230	ISO10307-2	0.010		-0.57	864	ISO10307-2	0.013		-0.36
237	D4870	0.00101		-1.21	865	IP390	0.015		-0.22
238		----		----	866		----		----
242		----		----	867	IP390	0.01		-0.57
252		----		----	873	IP390	0.01		-0.57
253		----		----	874	IP390	0.02		0.14
254		----		----	875	IP390	0.011		-0.50
256		----		----	886		----		----
273		----		----	887		----		----
311	IP390	0.02		0.14	902		----		----
313		----		----	904		----		----
323	IP390	0.04		1.55	912	ISO10307-2	0.0162		-0.13
331	ISO10307-2	0.016		-0.15	913		----		----
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963	IP390	0.017		-0.08
337		----		----	971	IP390	0.014		-0.29
340	ISO10307-2	0.008		-0.71	974		----		----
342	ISO10307-2	0.04		1.55	982		----		----
343	ISO10307-2	0.020		0.14	994	IP390	0.025		0.49
349		----		----	995	IP390	0.019		0.06
351	ISO10307-2	0.032		0.98	996		----		----
353		----		----	997		----		----
356	IP390	0.022		0.28	1011	ISO10307-2	0.01		-0.57
360	IP390	0.016		-0.15	1026		----		----
370	IP390	0.010		-0.57	1040		----		----
371	IP390	0.011		-0.50	1059		----		----
372	IP390	0.015		-0.22	1062	IP390	<0.01		----
391		----		----	1065		----		----
398	ISO10307-2	0.0129		-0.37	1082		----		----
399	IP390	0.02		0.14	1109		----		----
440		----		----	1121	IP390	0.001		-1.21
444		----		----	1126		----		----
445	IP390	0.030		0.84	1134	IP390	0.025		0.49
447		----		----	1161	ISO10307-2	0.01		-0.57
463		----		----	1167		----		----
494	ISO10307-2	0.002		-1.14	1177		----		----
498		----		----	1191		----		----
507	IP390	0.016		-0.15	1200		----		----
511		----		----	1205		----		----
529		----		----	1212	ISO10307-2	0.0064		-0.83
541		----		----	1213		----		----
551		----		----	1229		----		----
557		----		----	1233		----		----
562		----		----	1254	IP390	0.0135		-0.33
575		----		----	1259		----		----
604		----		----	1266		----		----
605	IP390	0.01		-0.57	1275		----		----
607		----		----	1347	D4870	0.032		0.98
608		----		----	1348	D4870	0.015		-0.22

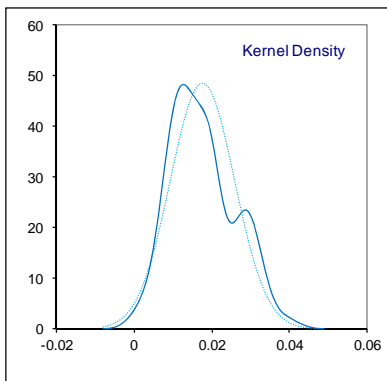
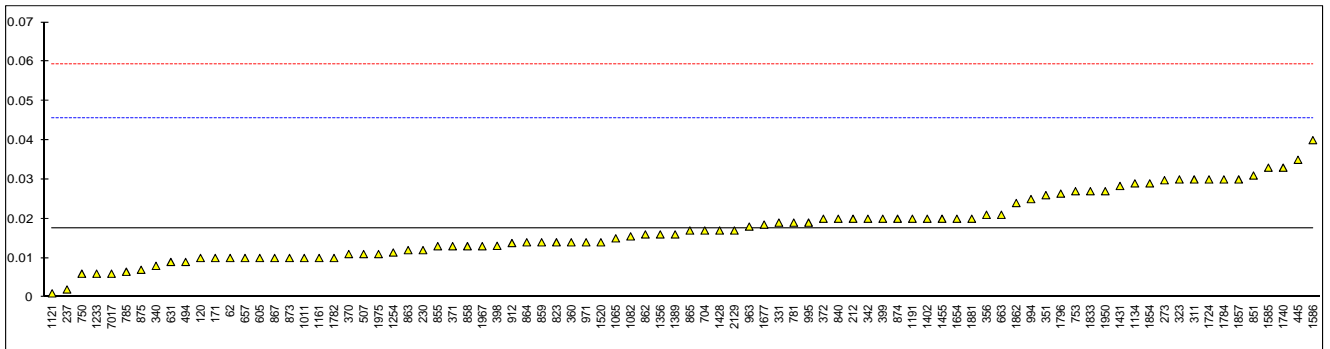
1356	ISO10307-2	0.022	0.28	1740	IP390	0.036	1.27
1381	----	----	----	1741	----	----	----
1385	----	----	----	1763	----	----	----
1389	IP390	0.026	0.56	1776	----	----	----
1392	----	----	----	1782	IP390	0.01	-0.57
1395	----	----	----	1784	IP390	0.033	1.06
1402	IP390	0.02	0.14	1796	IP390	0.0242	0.43
1404	ISO10307-2	<0.01	----	1807	----	----	----
1412	----	----	----	1810	IP390	0.02	0.14
1428	ISO10307-2	0.017	-0.08	1811	----	----	----
1431	----	----	----	1813	D4870	0.02	0.14
1455	ISO10307-2	0.02	0.14	1832	----	----	----
1459	----	----	----	1833	IP390	0.03	0.84
1510	----	----	----	1842	----	----	----
1520	IP390	0.0067	-0.81	1849	ISO10307-2	0.0208	0.19
1546	----	----	----	1854	IP390	0.030	0.84
1556	ISO10307-2	0.015	-0.22	1857	IP390	0.02	0.14
1569	----	----	----	1862	IP390	0.018	-0.01
1579	----	----	----	1881	IP390	0.020	0.14
1583	----	----	----	1906	----	----	----
1585	IP390	0.031	0.91	1936	----	----	----
1586	IP390	0.04	1.55	1937	----	----	----
1610	----	----	----	1938	----	----	----
1613	----	----	----	1942	----	----	----
1616	----	----	----	1948	----	----	----
1622	----	----	----	1950	IP390	0.019	0.06
1631	ISO10307-2	0.03	0.84	1956	----	----	----
1636	----	----	----	1962	----	----	----
1643	ISO10307-2	0.0172	-0.06	1964	----	----	----
1654	----	----	----	1967	IP390	0.013	-0.36
1677	IP390	0.0071	-0.78	1971	----	----	----
1710	----	----	----	1975	IP390	0.012	-0.43
1720	----	----	----	2129	IP390	0.020	0.14
1724	IP390	0.035	1.20	7017	IP390	0.009	-0.64
1728	----	----	----				
	normality	OK					
	n	88					
	outliers	0					
	mean (n)	0.0181					
	st.dev. (n)	0.00909					
	R(calc.)	0.0255					
	R(IP390:11)	0.0395					



Determination of Total Sediment (Potential) of sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		----		----	621		----		----
62		0.01		-0.55	631	IP390	0.009		-0.62
90		----		----	633		----		----
92		----		----	634		----		----
120	ISO10307-2	0.01		-0.55	657	IP390	0.01		-0.55
131		----		----	663	IP390	0.021		0.24
132	ISO10307-2	<0.01		----	671		----		----
133		----		----	704	IP390	0.017		-0.04
140		----		----	732		----		----
150		----		----	750	IP390	0.006		-0.83
154		----		----	753	IP390	0.027		0.67
158		----		----	781	IP390	0.019		0.10
159		----		----	784		----		----
168		----		----	785	IP390	0.0065		-0.80
169		----		----	791		----		----
171	IP390	0.01		-0.55	823	IP390	0.014		-0.26
175		----		----	824		----		----
193		----		----	840	ISO10307-2	0.02		0.17
194		----		----	851	IP390	0.031		0.96
212	ISO10307-2	0.02		0.17	855	ISO10307-2	0.013		-0.33
221		----		----	858	D4879	0.013		-0.33
224		----		----	859	IP390	0.014		-0.26
225		----		----	862	IP390	0.016		-0.12
228		----		----	863	IP390	0.012		-0.40
230	ISO10307-2	0.012		-0.40	864	ISO10307-2	0.014		-0.26
237	D4870	0.00198		-1.12	865	IP390	0.017		-0.04
238		----		----	866		----		----
242		----		----	867	IP390	0.01		-0.55
252		----		----	873	IP390	0.01		-0.55
253		----		----	874	IP390	0.02		0.17
254		----		----	875	IP390	0.007		-0.76
256		----		----	886		----		----
273	IP390	0.0298		0.88	887		----		----
311	IP390	0.03		0.89	902		----		----
313		----		----	904		----		----
323	IP390	0.03		0.89	912	ISO10307-2	0.0138		-0.27
331	ISO10307-2	0.019		0.10	913		----		----
333		----		----	922		----		----
334		----		----	962		----		----
336		----		----	963	IP390	0.018		0.03
337		----		----	971	IP390	0.014		-0.26
340	ISO10307-2	0.008		-0.69	974		----		----
342	ISO10307-2	0.02		0.17	982		----		----
343	ISO10307-2	<0.01		----	994	IP390	0.025		0.53
349		----		----	995	IP390	0.019		0.10
351	ISO10307-2	0.026		0.60	996		----		----
353		----		----	997		----		----
356	IP390	0.021		0.24	1011	ISO10307-2	0.01		-0.55
360	IP390	0.014		-0.26	1026		----		----
370	IP390	0.011		-0.47	1040	ISO10307-2	<0,01		----
371	IP390	0.013		-0.33	1059		----		----
372	IP390	0.02		0.17	1062	IP390	<0.01		----
391		----		----	1065	IP390	0.015		-0.19
398	ISO10307-2	0.0131		-0.32	1082	ISO10307-2	0.0155		-0.15
399	IP390	0.02		0.17	1109		----		----
440		----		----	1121	IP390	0.001		-1.19
444		----		----	1126		----		----
445	IP390	0.035		1.25	1134	IP390	0.029		0.82
447		----		----	1161	ISO10307-2	0.01		-0.55
463		----		----	1167		----		----
494	ISO10307-2	0.009		-0.62	1177		----		----
498		----		----	1191	ISO10307-2	0.02		0.17
507	IP390	0.011		-0.47	1200		----		----
511		----		----	1205		----		----
529		----		----	1212		----		----
541		----		----	1213		----		----
551		----		----	1229	ISO10307-2	<0,01		----
557		----		----	1233	ISO10307-2	0.006		-0.83
562		----		----	1254	IP390	0.0114		-0.45
575		----		----	1259		----		----
604		----		----	1266		----		----
605	IP390	0.01		-0.55	1275		----		----
607		----		----	1347		----		----
608		----		----	1348		----		----
1356	ISO10307-2	0.016		-0.12	1740	IP390	0.033		1.10

1381		----	----	1741		----	----
1385		----	----	1763		----	----
1389	IP390	0.016	-0.12	1776		----	----
1392		----	----	1782	IP390	0.01	-0.55
1395		----	----	1784	IP390	0.030	0.89
1402	IP390	0.02	0.17	1796	IP390	0.0264	0.63
1404	ISO10307-2	<0.01	----	1807		----	----
1412		----	----	1810		----	----
1428	ISO10307-2	0.017	-0.04	1811		----	----
1431	D4870	0.02834	0.77	1813		----	----
1455	ISO10307-2	0.02	0.17	1832		----	----
1459		----	----	1833	IP390	0.027	0.67
1510		----	----	1842		----	----
1520	IP390	0.014	-0.26	1849		----	----
1546		----	----	1854	IP390	0.029	0.82
1556		----	----	1857	IP390	0.03	0.89
1569		----	----	1862	IP390	0.024	0.46
1579		----	----	1881	IP390	0.020	0.17
1583		----	----	1906		----	----
1585	IP390	0.033	1.10	1936		----	----
1586	IP390	0.04	1.61	1937		----	----
1610		----	----	1938		----	----
1613		----	----	1942		----	----
1616		----	----	1948		----	----
1622		----	----	1950	IP390	0.027	0.67
1631		----	----	1956		----	----
1636		----	----	1962		----	----
1643		----	----	1964		----	----
1654	ISO10307-2	0.02	0.17	1967	IP390	0.013	-0.33
1677	IP390	0.0185	0.06	1971		----	----
1710		----	----	1975	IP390	0.011	-0.47
1720		----	----	2129	IP390	0.017	-0.04
1724	IP390	0.030	0.89	7017	IP390	0.006	-0.83
1728		----	----				
normality	OK						
n	86						
outliers	0						
mean (n)	0.0176						
st.dev. (n)	0.00825						
R(calc.)	0.0231						
R(IP390:11)	0.0390						



## Determination of Total Sulphur on sample #15001; results in %M/M

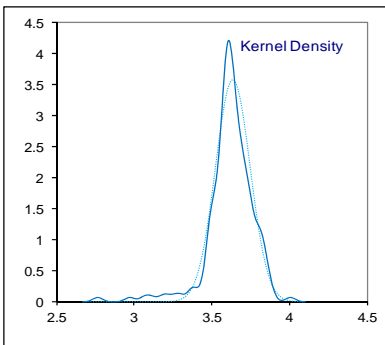
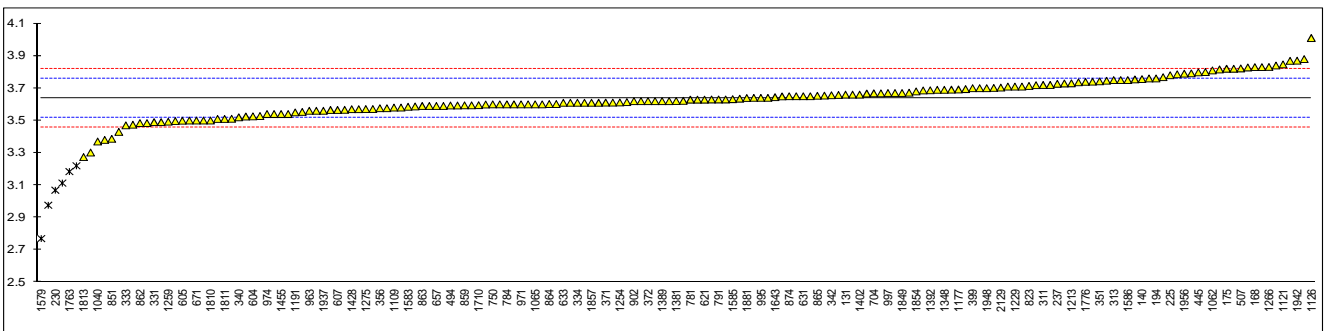
lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		3.7539		1.93	621	D4294	3.629		-0.16
62	D4294	3.8280		3.17	631	D4294	3.65		0.19
90	D4294	3.816		2.97	633	D4294	3.6098	C	-0.48
92	D4294	3.869		3.86	634	D4294	3.63	C	-0.15
120	D4294	3.88		4.04	657	D4294	3.59		-0.82
131	D4294	3.66	C	0.36	663	D4294	3.614		-0.41
132	ISO8754	3.746		1.80	671	D4294	3.50		-2.32
133	D4294	3.84		3.37	704	D4294	3.668		0.49
140	D4294	3.7558		1.96	732	D4294	3.565		-1.23
150	D4294	3.79147		2.56	750	D4294	3.60		-0.65
154	D4294	3.7679		2.17	753	D4294	3.649		0.17
158	D4294	3.8300		3.21	781	D4294	3.629		-0.16
159	D4294	3.7015		1.05	784	D4294	3.60		-0.65
168	D4294	3.83		3.21	785	D4294	3.658		0.32
169	D4294	3.6666		0.47	791	D4294	3.63		-0.15
171	D4294	3.61		-0.48	823	D4294	3.714		1.26
175	D4294	3.82		3.04	824	D4294	3.75		1.87
193		----		----	840	D4294	3.760		2.03
194	D4294	3.76		2.03	851	ISO8754	3.3867		-4.22
212	ISO8754	3.62		-0.31	855	D4294	3.590		-0.82
221	D4294	3.720		1.36	858	D4294	3.60		-0.65
224		----		----	859	D4294	3.594		-0.75
225	D4294	3.78		2.37	862	D2622	3.484		-2.59
228	D4294	3.113	R(0.01)	-8.81	863	D4294	3.590		-0.82
230	ISO8754	3.069	C,R(0.01)	-9.55	864	D4294	3.602		-0.61
237	D4294	3.727		1.48	865	D4294	3.653		0.24
238	D4294	3.6944		0.93	866	D4294	3.528		-1.85
242		----		----	867		----		----
252		----		----	873	D4294	3.654		0.26
253	D4294	3.50		-2.32	874	D4294	3.65		0.19
254	D4294	3.80		2.70	875	D4294	3.66		0.36
256	D4294	3.74		1.70	886		----		----
273		----		----	887		----		----
311	D4294	3.72		1.36	902	D4294	3.62		-0.31
313	D4294	3.75		1.87	904	D4294	3.65		0.19
323	D4294	3.60		-0.65	912	D4294	3.553		-1.44
331	ISO8754	3.49		-2.49	913	D4294	3.511		-2.14
333	D4294	3.47		-2.83	922	D4294	3.622		-0.28
334	D4294	3.61		-0.48	962		----		----
336		----		----	963	D4294	3.56		-1.32
337		----		----	971	D4294	3.60		-0.65
340	D4294	3.52		-1.99	974	D4294	3.54		-1.65
342	ISO8754	3.6564		0.30	982	D4294	3.7184		1.34
343	IP336	3.635		-0.06	994	D4294	3.60		-0.65
349		----		----	995	D4294	3.64		0.02
351	ISO8754	3.742		1.73	996		----		----
353		----		----	997	D4294	3.67		0.53
356	D4294	3.576		-1.05	1011	ISO8754	3.49		-2.49
360	D4294	3.71		1.20	1026	D2622	3.63		-0.15
370	D4294	3.64		0.02	1040	ISO8754	3.37		-4.50
371	D4294	3.611		-0.46	1059	EN14596	3.38		-4.34
372	D4294	3.62		-0.31	1062	ISO8754	3.81		2.87
391	ISO8754	3.69		0.86	1065	IP336	3.60		-0.65
398	ISO8754	3.629		-0.16	1082	ISO8754	3.593		-0.77
399	D4294	3.70		1.03	1109	D4294	3.58		-0.98
440		----		----	1121	IP336	3.847		3.49
444		----		----	1126	in house	4.01		6.22
445	IP336	3.798		2.67	1134	IP336	3.54		-1.65
447	IP336	3.51		-2.16	1161	ISO8754	3.4	C	-3.50
463	D4294	3.566		-1.22	1167		----		----
494	D4294	3.593		-0.77	1177	DIN51900	3.692		0.89
498		----		----	1191	ISO8754	3.55		-1.49
507	D4294	3.822		3.07	1200		----		----
511		----		----	1205	EN14596	3.736		1.63
529		----		----	1212	D4294	3.587		-0.87
541		----		----	1213	D4294	3.73		1.53
551		----		----	1229	ISO8754	3.71		1.20
557		----		----	1233	ISO8754	3.67		0.53
562		----		----	1254	D4294	3.6116		-0.45
575		----		----	1259	ISO8754	3.493		-2.44
604	D4294	3.526		-1.89	1266	ISO8754	3.831		3.22
605	D4294	3.499		-2.34	1275	IP336	3.571		-1.13
607	D4294	3.565		-1.23	1347	D4294	3.220	R(0.05)	-7.02
608	D4294	3.691		0.88	1348	D4294	3.69		0.86
1356	ISO8754	3.62		-0.31	1740	ISO8754	3.71		1.20



1381	D4294	3.621	-0.30	1741	ISO8754	3.672		0.56
1385	D4294	3.474	-2.76	1763		3.18	C,R(0.05)	-7.62
1389	D4294	3.62	-0.31	1776	ISO8754	3.739	C	1.68
1392	D1552	3.687	0.81	1782	D4294	3.62		-0.31
1395		-----	-----	1784	D4294	3.70		1.03
1402	IP336	3.66	0.36	1796	D4294	3.599		-0.66
1404	ISO8754	3.65	0.19	1807	ISO8754	3.82		3.04
1412	D4294	3.61	-0.48	1810	D4294	3.50		-2.32
1428	ISO8754	3.57	-1.15	1811	D4294	3.51		-2.16
1431		-----	-----	1813	D2622	3.274		-6.11
1455	D2622	3.54	-1.65	1832	ISO8754	3.602		-0.61
1459	ISO8754	3.58	-0.98	1833	ISO8754	3.60		-0.65
1510		-----	-----	1842		-----		-----
1520	D4294	3.576	-1.05	1849	ISO8754	3.67		0.53
1546		-----	-----	1854	D4294	3.68		0.69
1556	ISO8754	3.594	-0.75	1857	D4294	3.61		-0.48
1569	ISO8754	3.571	-1.13	1862	D4294	3.61		-0.48
1579	INH-8428	2.77	-14.56	1881	D4294	3.639		0.01
1583	D4294	3.585	-0.90	1906	D5623	3.302	C	-5.64
1585	D4294	3.632	-0.11	1936		-----		-----
1586	D4294	3.75	1.87	1937	ISO8754	3.56		-1.32
1610		-----	-----	1938	D4294	3.640		0.02
1613		-----	-----	1942	D4294	3.87		3.88
1616		-----	-----	1948	D4294	3.70		1.03
1622	D4294	3.56	-1.32	1950	D4294	3.611		-0.46
1631	ISO8754	3.5	-2.32	1956	ISO8754	3.79		2.54
1636	ISO8754	3.729	1.51	1962	ISO8754	2.976	C,R(0.01)	-11.11
1643	D1552	3.6442	0.09	1964		-----		-----
1654	ISO8754	3.497	-2.37	1967	D4294	3.484		-2.59
1677	D4294	3.57	-1.15	1971	ISO8754	3.668		0.49
1710	EN14596	3.595	-0.73	1975	D4294	3.525		-1.91
1720	D4294	3.686	0.79	2129	D4294	3.7035		1.09
1724	IP336	3.54	-1.65	7017	D4294	3.786		2.47
1728	D4294	3.59	-0.82					
	normality	OK						
	n	175						
	outliers	6						
	mean (n)	3.639						
	st.dev. (n)	0.1115						
	R(calc.)	0.312						
	R(D4294:10)	0.167						

Lab 131 : first reported 1.95  
 Lab 230 : first reported 3.213  
 Lab 633 : first reported 2.7755  
 Lab 634 : first reported 2.780  
 Lab 1161 : first reported 3.3  
 Lab 1579 : first reported 2.63

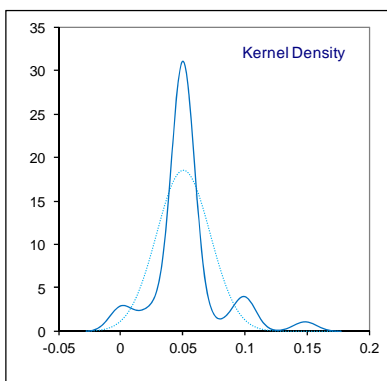
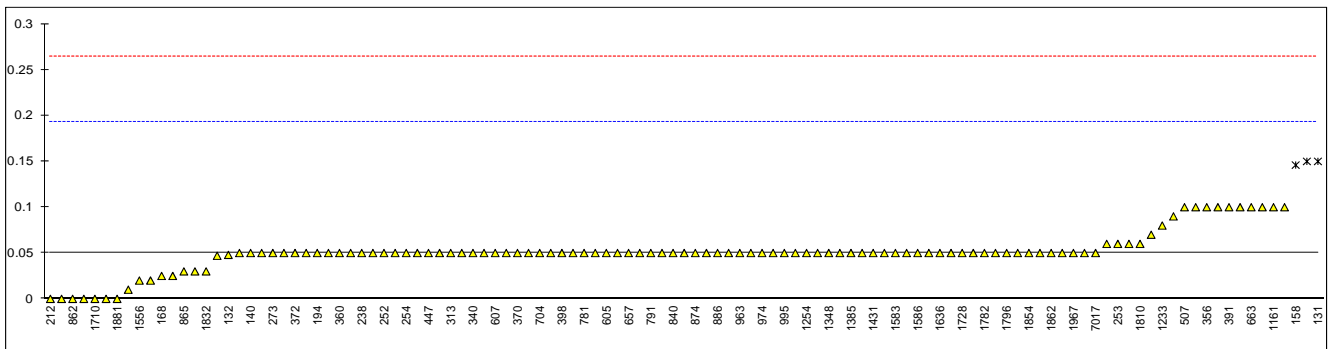
Lab 1720 : first reported 2.916  
 Lab 1763 : first reported 5.09  
 Lab 1776 : first reported 3.08  
 Lab 1962 : first reported 3.291



Determination of Water by distillation on sample #15001; results in %V/V

Lab	Method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		0.05		-0.01	621	D95	<0.05		----
62	D95	0.15	R(0.01)	1.39	631	D95	0.025		-0.36
90	D95	>0.1		----	633	D95	<0.05		----
92	D95	0.05		-0.01	634	D95	<0.05		----
120	D95	0.10		0.69	657	D95	0.05		-0.01
131	D95	0.15	R(0.01)	1.39	663	D95	0.1		0.69
132	ISO3733	0.048		-0.04	671	D95	<0.10		----
133		----		----	704	D95	0.05		-0.01
140	D95	0.05		-0.01	732	INH-2477	0.06		0.13
150	D95	0.10		0.69	750	D95	0.05		-0.01
154	D95	0.05		-0.01	753	D95	0.05		-0.01
158	D95	0.146	R(0.01)	1.34	781	D95	0.05		-0.01
159	D95	<0.01		----	784	D95	0.05		-0.01
168	D95	0.025		-0.36	785	D95	0.05		-0.01
169		----		----	791	D95	0.05		-0.01
171	D95	0.0		-0.71	823	D95	0.05		-0.01
175	D95	0.05		-0.01	824	D95	<0.05		----
193		----		----	840	D95	0.05		-0.01
194	D95	0.05		-0.01	851	ISO3733	<0.05		----
212	ISO3733	0.00		-0.71	855	D95	<0.05		----
221	D95	<0.05		----	858	D95	<0.05		----
224		----		----	859	D95	<0.05		----
225	D95	0.05		-0.01	862	D95	0.00		-0.71
228	D95	<0.05		----	863	D95	<0.05		----
230	ISO3733	0.05		-0.01	864	D95	<0.05		----
237	D95	<0.05		----	865	D95	0.03		-0.29
238	D95	0.05		-0.01	866	D95	<0.05		----
242	D95	0.05		-0.01	867	D95	<0.05		----
252	D95	0.05		-0.01	873	D95	0.05		-0.01
253	D95	0.06		0.13	874	D95	0.05		-0.01
254	D95	0.05		-0.01	875	D95	0.05		-0.01
256	D95	0.05		-0.01	886	D95	0.05		-0.01
273	D95	0.05		-0.01	887	D95	0.05		-0.01
311	D95	0.05		-0.01	902	D95	<0.1		----
313	D95	0.05		-0.01	904	D95	<0.10		----
323	D95	0.05		-0.01	912	D95	0.10		0.69
331	ISO3733	<0.05		----	913	D95	<0.1		----
333		----		----	922	D95	<0.10		----
334		----		----	962		----		----
336		----		----	963	D95	0.05		-0.01
337	D95	<0.1		----	971	D95	0.05		-0.01
340	D95	0.05		-0.01	974	D95	0.05		-0.01
342	ISO3733	0.1		0.69	982	D95	<0.05		----
343	D95	<0.1		----	994	D95	0.05		-0.01
349	D95	<0.1		----	995	D95	0.05		-0.01
351	ISO3733	<0.10		----	996		----		----
353		----		----	997	D95	0.05		-0.01
356	D95	0.10		0.69	1011	ISO3733	<0.10		----
360	D95	0.05		-0.01	1026	D95	<0.1		----
370	D95	0.05		-0.01	1040		----		----
371	D95	0.05		-0.01	1059	ISO3733	<0.05		----
372	D95	0.05		-0.01	1062		----		----
391	D95	0.10		0.69	1065		----		----
398	ISO3733	0.05		-0.01	1082	ISO3733	<0.1		----
399	D95	0.05		-0.01	1109	D95	<0.05		----
440		----		----	1121	IP74	<0.05		----
444	D95	<0.05		----	1126	D95	<0.05		----
445	D95	<0.05		----	1134	IP74	<0.05		----
447	D95	0.05		-0.01	1161	D95	0.1		0.69
463		----		----	1167	EN1428	<0.1		----
494		----		----	1177		----		----
498		----		----	1191		----		----
507	D95	0.10		0.69	1200		----		----
511	D95	<0.05		----	1205		----		----
529		----		----	1212	D95	<0.1		----
541	D95	0.05		-0.01	1213	D95	<0.1		----
551		----		----	1229		----		----
557		----		----	1233	D95	0.08		0.41
562	D95	0.05		-0.01	1254	D95	0.05		-0.01
575	D95	0.05		-0.01	1259	ISO3733	0.1		0.69
604		----		----	1266	D95	0.05		-0.01
605	D95	0.05		-0.01	1275	IP74	<0.10		----
607	D95	0.05		-0.01	1347	D95	0		-0.71
608	D95	<0.05		----	1348	D95	0.05		-0.01

1356	D95	0.03	-0.29	1740	ISO3733	0.05	-0.01
1381	D95	0.05	-0.01	1741	ISO3733	<0.05	----
1385	D95	0.05	-0.01	1763		----	----
1389	D95	<0.1	----	1776		----	----
1392		----	----	1782	D95	0.05	-0.01
1395		----	----	1784	D95	0.05	-0.01
1402	D95	<0.05	----	1796	D95	0.05	-0.01
1404	ISO6296	0.047	-0.05	1807	D95	0	-0.71
1412	D95	<0.05	----	1810	D95	0.06	0.13
1428	EN1428	0.05	-0.01	1811		----	----
1431	D95	0.05	-0.01	1813	D95	<0.05	----
1455	D95	<0.1	----	1832	INH-3477	0.03	-0.29
1459	in house	0.09	0.55	1833	D95	<0.1	----
1510		----	----	1842		----	----
1520	D95	<0.05	----	1849	EN1428	0.05	-0.01
1546	ISO3733	0.06	0.13	1854	D95	0.05	-0.01
1556	D6304	0.02	-0.43	1857	D95	0.05	-0.01
1569	D95	<0.1	----	1862	D95	0.05	-0.01
1579	ISO3733	0.05	-0.01	1881	D95	0.00	-0.71
1583	D95	0.05	-0.01	1906		----	----
1585	D95	0.05	-0.01	1936	EN1428	<0.1	----
1586	D95	0.05	-0.01	1937	EN1428	0.01	-0.57
1610		----	----	1938	D95	<0.1	----
1613	D95	<0.05	----	1942	D95	0.07	0.27
1616		----	----	1948	D95	<0.1	----
1622	D95	0.05	-0.01	1950	D95	0.05	-0.01
1631		<0.05	----	1956	INH-113	<0.1	----
1636	ISO3733	0.05	-0.01	1962	D95	<0.1	----
1643	D95	0.02	-0.43	1964		----	----
1654	ISO3733	0.05	-0.01	1967	D95	0.05	-0.01
1677	D95	<0.05	----	1971		----	----
1710	ISO9029	0.00	-0.71	1975	D95	<0.05	----
1720		----	----	2129	D95	0.05	-0.01
1724	D95	<0.05	-0.01	7017	D95	0.05	-0.01
1728	D95	0.05	-0.01				
normality		suspect					
n		112					
outliers		3					
mean (n)		0.051					
st.dev. (n)		0.0216					
R(calc.)		0.060					
R(D95:13e1)		0.200					

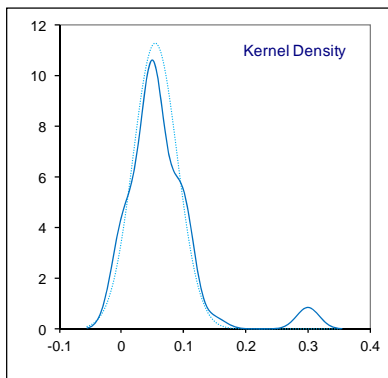
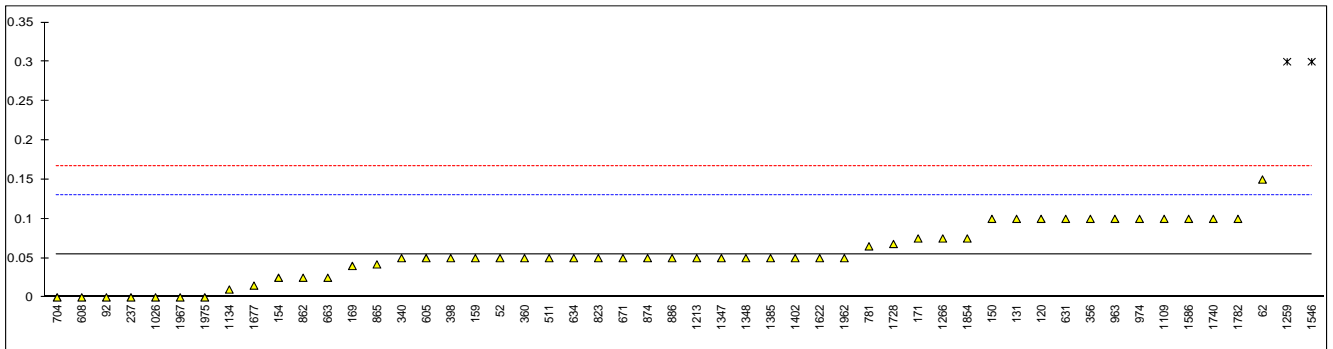


## Determination of Water and sediment on sample #15001; results in %M/M

lab	method	value	mark	z(targ)	lab	method	value	mark	z(targ)
52		0.05		-0.13	621	D1796	<0.05		----
62	D1796	0.15		2.54	631	D1796	0.10		1.21
90		----		----	633				----
92	D1796	0		-1.46	634	D1796	0.05		-0.13
120	D1796	0.10		1.21	657	D1796	<0.025		----
131	D1796	0.100		1.21	663	D1796	0.025		-0.79
132	D1796	<0.05		----	671	D1796	0.05		-0.13
133		----		----	704	D1796	0.00		-1.46
140		----		----	732				----
150	D1796	0.10		1.21	750				----
154	D1796	0.025		-0.79	753				----
158		----		----	781	D1796	0.065		0.27
159	D1796	0.05		-0.13	784				----
168		----		----	785				----
169	D1796	0.040		-0.39	791				----
171	D1796	0.075		0.54	823	D1796	0.05		-0.13
175		----		----	824	D1796	<0.05		----
193		----		----	840				----
194		----		----	851				----
212		----		----	855				----
221		----		----	858				----
224		----		----	859				----
225		----		----	862	D1796	0.025		-0.79
228		----		----	863				----
230		----		----	864				----
237	D1796	0.00		-1.46	865	D1796	0.042		-0.34
238		----		----	866				----
242		----		----	867				----
252		----		----	873				----
253		----		----	874	D1796	0.05		-0.13
254		----		----	875				----
256		----		----	886	D1796	0.05		-0.13
273		----		----	887				----
311		----		----	902				----
313		----		----	904				----
323		----		----	912				----
331		----		----	913				----
333		----		----	922	D1796	<0.10		----
334		----		----	962				----
336		----		----	963	D1796	0.10		1.21
337		----		----	971				----
340	D1796	0.050		-0.13	974	D1796	0.10		1.21
342		----		----	982				----
343	D1796	<0.05		----	994				----
349		----		----	995				----
351		----		----	996				----
353		----		----	997				----
356	D1796	0.10	C	1.21	1011				----
360	D1796	0.05		-0.13	1026	D1798	0		-1.46
370		----		----	1040				----
371		----		----	1059	ISO3734	<0.05		----
372		----		----	1062				----
391		----		----	1065				----
398	D1796	0.05		-0.13	1082				----
399		----		----	1109	D1796	0.10		1.21
440		----		----	1121				----
444		----		----	1126				----
445		----		----	1134	D1796	0.010		-1.19
447		----		----	1161				----
463		----		----	1167				----
494		----		----	1177				----
498		----		----	1191				----
507		----		----	1200				----
511	D1796	0.05		-0.13	1205				----
529		----		----	1212				----
541		----		----	1213	D1796	0.05		-0.13
551		----		----	1229				----
557		----		----	1233				----
562		----		----	1254				----
575		----		----	1259	ISO3734	0.3	R(0.01)	6.54
604		----		----	1266	D1796	0.075		0.54
605	D1796	0.05		-0.13	1275				----
607		----		----	1347	D1796	0.05		-0.13
608	D4007	0		-1.46	1348	D1796	0.05		-0.13
1356		----		----	1740	D1796	0.10		1.21

1381		----		----	1741		----		----
1385	D1796	0.05		-0.13	1763		----		----
1389	D1796	<0.025			1776		----		----
1392		----			1782	D1796	0.10		1.21
1395		----			1784		----		----
1402	D1796	0.05		-0.13	1796		----		----
1404		----			1807		----		----
1412		----			1810		----		----
1428		----			1811		----		----
1431		----			1813		----		----
1455		----			1832		----		----
1459		----			1833		----		----
1510		----			1842		----		----
1520		----			1849		----		----
1546	INH-15862	0.30	R(0.01)	6.54	1854	D1796	0.075		0.54
1556		----			1857		----		----
1569		----			1862		----		----
1579		----			1881		----		----
1583		----			1906		----		----
1585		----			1936		----		----
1586	D1796	0.10		1.21	1937		----		----
1610		----			1938		----		----
1613	D1796	<0.05			1942		----		----
1616		----			1948		----		----
1622	D1796	0.05		-0.13	1950		----		----
1631		----			1956		----		----
1636		----			1962	D1796	0.05		-0.13
1643		----			1964		----		----
1654		----			1967	D1796	0		-1.46
1677	D1796	0.015		-1.06	1971		----		----
1710		----			1975	D1796	0		-1.46
1720		----			2129		----		----
1724		----			7017		----		----
1728		0.068		0.35					
	normality	OK							
	n	50							
	outliers	2							
	mean (n)	0.0548							
	st.dev. (n)	0.0353							
	R(calc.)	0.099							
	R(D1796:11e1)	0.105							

Lab 356 : first reported 0.20



Vacuum Distillation according to ASTM D1160 on sample #15001, results in °C

lab	method	IBP	5%	10%	20%	30%	40%	50%	FBP
120	D1160	214.9	289.0	336.0	427.6	471.1	504.0	534.5	557.2
158	D1160	<u>150</u>	<b>193</b>	<b>233</b>	----	----	----	<b>398</b>	<b>418</b>
171	D1160	244	284	333	425	470	503	534	559
311	D1160	194.8	271.9	317.4	417.2	464.8	495.3	517.9	518.9
323	D1160	204	274	321	418	466	498	527	540
334	D1160	179	266	313	419	471	502	----	524
360	D1160	205	276	324	422	469	502	----	520
371	D1160	----	271.0	318.5	416.5	469.0	505.0	----	----
372	D1160	199	273	323	426	472	504	----	----
398	D1160	199.7	255.6	302.8	407.6	464.3	491.1	513.1	----
445	D1160	195	273	319	419	467	499	526	532
494	D1160	191.2	274.0	320.2	416.4	465.6	495.5	520.5	523.8
704	D1160	183	266	314	421	471	500	524	527
753	D1160	192	257	312	408	463	496	520	525
781	D1160	185.0	265.6	313.0	416.4	469.4	497.7	522.0	526.5
784	D1160	200.0	263.0	315.0	409.0	464.0	498.0	523.0	527.0
823	D1160	205.0	285.5	326.9	426.3	477.2	507.7	541.1	560.3
873	D1160	181.3	260.0	311.4	405.2	462.8	496.0	518.9	520.3
874	D1160	183.0	261	314	406	462	496	520.0	525.5
875	D1160	192	261	315	410	465	496	520	527
963	D1160	174.7	255.3	297.8	397.0	455.9	482.5	501.8	506.9
994	D1160	192.0	261	308	406	460	494	523	525
995	D1160	188.0	263.0	311.0	414.0	465.0	497.0	523.0	526.5
1065	D1160	221	280	323	434	----	----	----	----
1212	D1160	192	255	301	398	460	491	518	525
1254	D1160	181	268	312	410	466	499	529	545
1402	D1160	217	290	334	418	466	497	528	543
1585	D1160	169.5	253.5	300.0	412.5	463.5	498.5	531.0	531.0
1586	D1160	176	262	310	405	442	----	----	<b>455</b>
1613	D1160	198.6	270.4	318.5	421.0	<b>467.3</b>	498.8	----	----
1677	D1160	196	276	324	413	458	494	528	552
1741	D1160	180.6	257.2	300.5	394.4	452.1	482.0	508.2	529.1
1782	D1160	<b>283.5</b>	<b>326.3</b>	<b>381.2</b>	<b>434.9</b>	<b>476.9</b>	<b>499.2</b>	----	<b>454.5</b>
1784	D1160	222	291	340	432	473	504	527	533
1854	D1160	229.4	273.1	340	<b>457.0</b>	<b>499.0</b>	512.5	536.0	545.0
1857	D1160	164.5	267.1	308.9	408.5	467.6	489.6	509.5	511.6
1881	D1160	212	278	322	419	468	501	536	536
1950	D1160	158.4	265.3	313.2	410.3	462.2	489.1	504.7	512.3
1975	D1160	190.1	268.7	321.8	421.4	471.6	500.8	518.6	518.6
2129	D1160	197.0	261.0	319.0	420.0	472.0	503.0	526.0	556.0
	normality	OK	OK	OK	OK	OK	suspect	OK	OK
	n	37	38	38	37	35	36	31	32
	outliers	2	2	2	1 (+1 excl)	2 (+1 excl)	0 (+1 excl)	1	3
	mean (n)	194.80	269.01	317.21	414.87	466.07	497.78	522.90	531.55
	st.dev. (n)	17.928	10.172	10.514	9.252	5.162	6.260	9.173	14.149
	R(calc.)	50.20	28.48	29.44	25.91	14.45	17.53	25.69	39.62
	R(D1160:13)	49.00	25.93	23.60	21.15	16.65	14.27	10.45	27.00

Only laboratories that reported test results were listed.

The results underlined and bold are statistical outliers acc. Rosner outlier test

The results underlined and italic were excluded, see §4.1

Lab 158 : first reported resp. 302, 355, 403, 603, 635

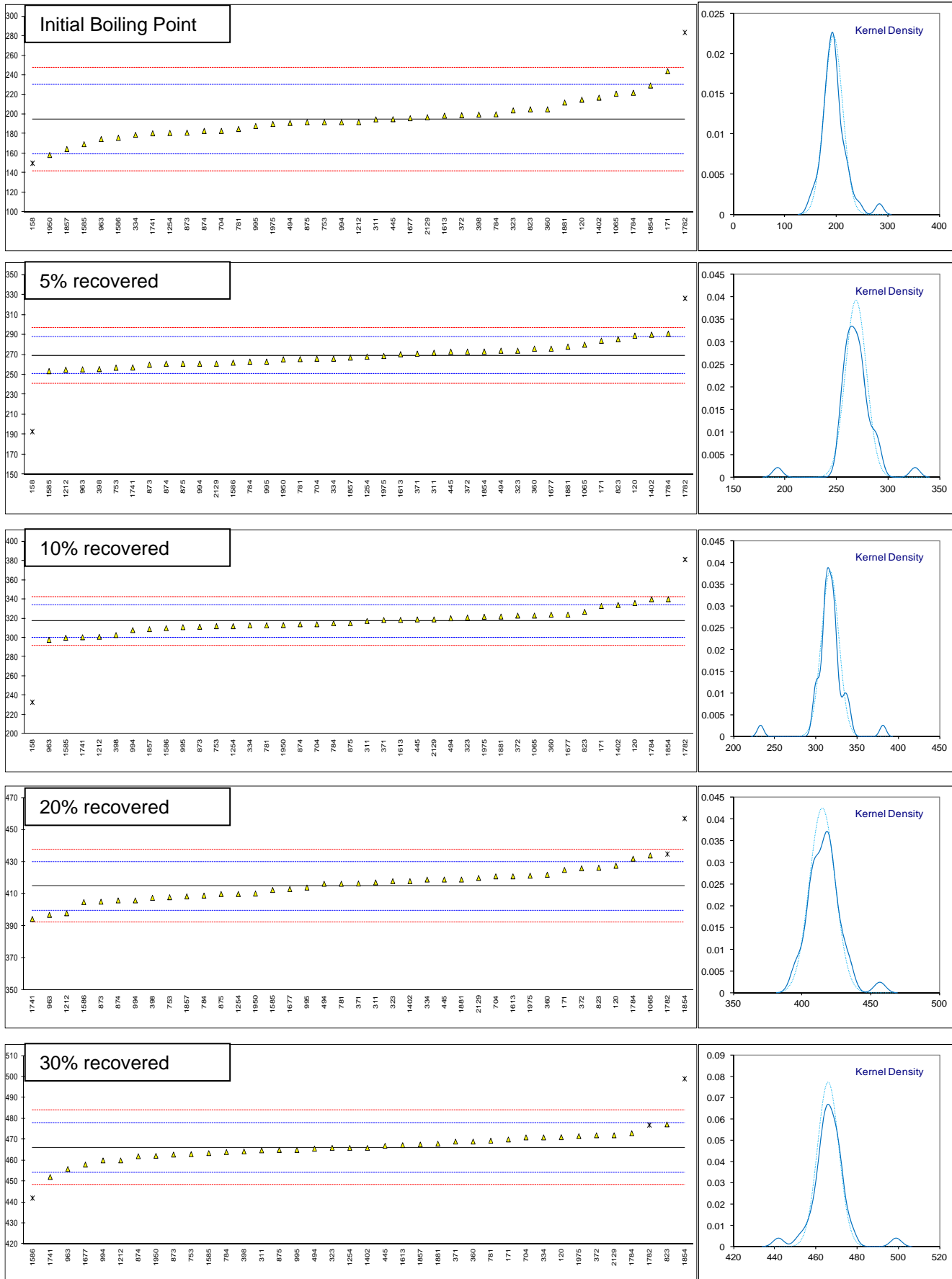
Lab 823 : first reported 586.2 (FBP)

Lab 1782 : first reported resp. 245.3, 330.1, 382.6, 467.5 , 515.3, 536.4, 555.3, 526.9

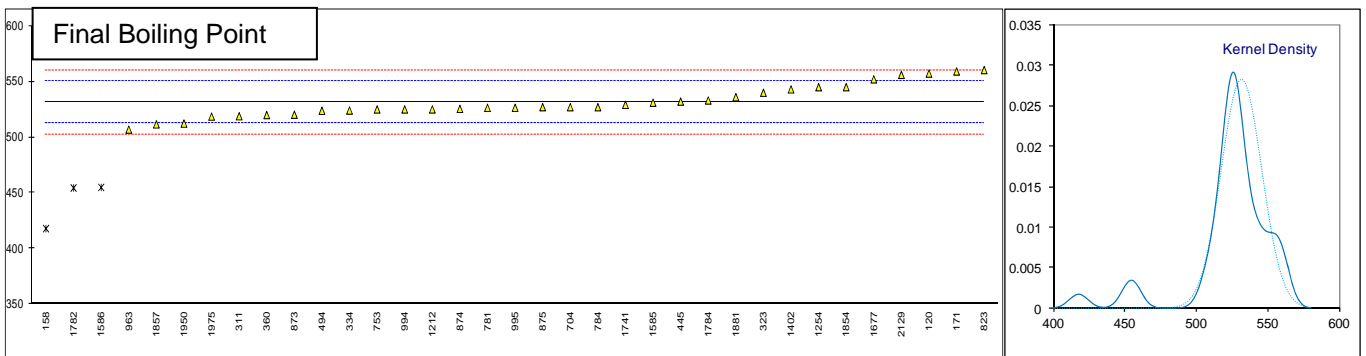
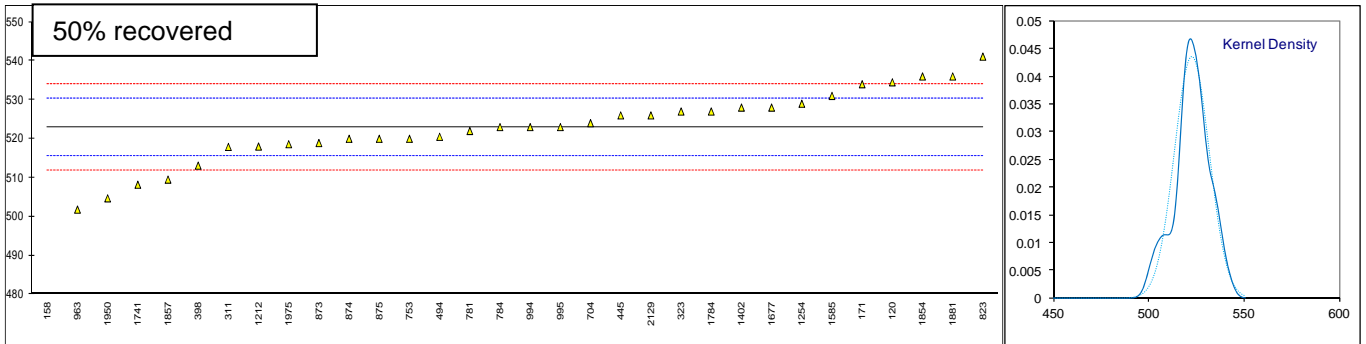
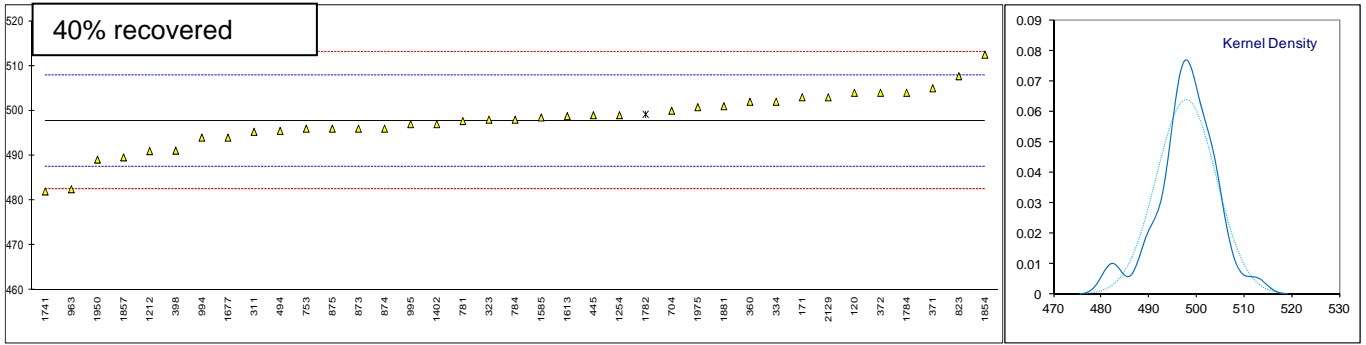
z-scores Vacuum Distillation according to ASTM D1160 on sample #15001

lab	IBP	5%	10%	20%	30%	40%	50%	FBP
120	1.15	2.16	2.23	1.68	0.85	1.22	3.11	2.66
158	-2.56	-8.21	-9.99	----	----	----	-33.46	-11.78
171	2.81	1.62	1.87	1.34	0.66	1.02	2.97	2.85
311	0.00	0.31	0.02	0.31	-0.21	-0.49	-1.34	-1.31
323	0.53	0.54	0.45	0.41	-0.01	0.04	1.10	0.88
334	-0.90	-0.32	-0.50	0.55	0.83	0.83	----	-0.78
360	0.58	0.76	0.81	0.94	0.49	0.83	----	-1.20
371	----	0.22	0.15	0.22	0.49	1.42	----	----
372	0.24	0.43	0.69	1.47	1.00	1.22	----	----
398	0.28	-1.45	-1.71	-0.96	-0.30	-1.31	-2.62	----
445	0.01	0.43	0.21	0.55	0.16	0.24	0.83	0.06
494	-0.21	0.54	0.36	0.20	-0.08	-0.45	-0.64	-0.80
704	-0.67	-0.32	-0.38	0.81	0.83	0.44	0.30	-0.47
753	-0.16	-1.30	-0.62	-0.91	-0.52	-0.35	-0.78	-0.68
781	-0.56	-0.37	-0.50	0.20	0.56	-0.02	-0.24	-0.52
784	0.30	-0.65	-0.26	-0.78	-0.35	0.04	0.03	-0.47
823	0.58	1.78	1.15	1.51	1.87	1.95	4.88	2.98
873	-0.77	-0.97	-0.69	-1.28	-0.55	-0.35	-1.07	-1.17
874	-0.67	-0.86	-0.38	-1.17	-0.68	-0.35	-0.78	-0.63
875	-0.16	-0.86	-0.26	-0.65	-0.18	-0.35	-0.78	-0.47
963	-1.15	-1.48	-2.30	-2.37	-1.71	-3.00	-5.65	-2.56
994	-0.16	-0.86	-1.09	-1.17	-1.02	-0.74	0.03	-0.68
995	-0.39	-0.65	-0.74	-0.12	-0.18	-0.15	0.03	-0.52
1065	1.50	1.19	0.69	2.53	----	----	----	----
1212	-0.16	-1.51	-1.92	-2.23	-1.02	-1.33	-1.31	-0.68
1254	-0.79	-0.11	-0.62	-0.65	-0.01	0.24	1.64	1.40
1402	1.27	2.27	1.99	0.41	-0.01	-0.15	1.37	1.19
1585	-1.45	-1.67	-2.04	-0.31	-0.43	0.14	2.17	-0.06
1586	-1.07	-0.76	-0.86	-1.31	-4.05	----	----	-7.94
1613	0.22	0.15	0.15	0.81	0.21	0.20	----	----
1677	0.07	0.76	0.81	-0.25	-1.36	-0.74	1.37	2.12
1741	-0.81	-1.28	-1.98	-2.71	-2.35	-3.10	-3.94	-0.25
1782	5.07	6.19	7.59	2.65	1.82	0.28	----	-7.99
1784	1.55	2.38	2.70	2.27	1.17	1.22	1.10	0.15
1854	1.98	0.44	2.70	5.58	5.54	2.89	3.51	1.40
1857	-1.73	-0.21	-0.99	-0.84	0.26	-1.61	-3.59	-2.07
1881	0.98	0.97	0.57	0.55	0.32	0.63	3.51	0.46
1950	-2.08	-0.40	-0.48	-0.61	-0.65	-1.70	-4.87	-2.00
1975	-0.27	-0.03	0.54	0.86	0.93	0.59	-1.15	-1.34
2129	0.13	-0.86	0.21	0.68	1.00	1.02	0.83	2.54

Vacuum Distillation according to ASTM D1160 on sample #15001, results in °C (Graphics)







## Determination of Total Carbon, Hydrogen and Nitrogen on sample #15001; results in %M/M

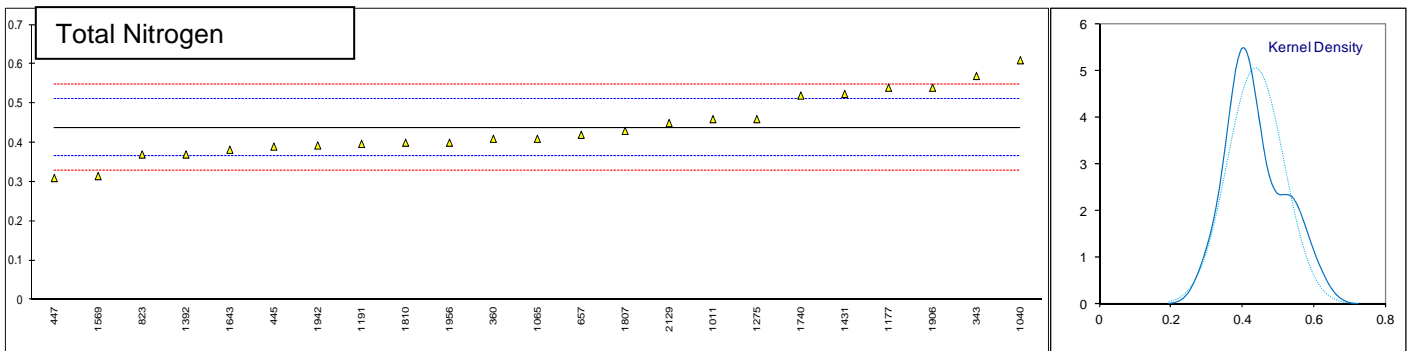
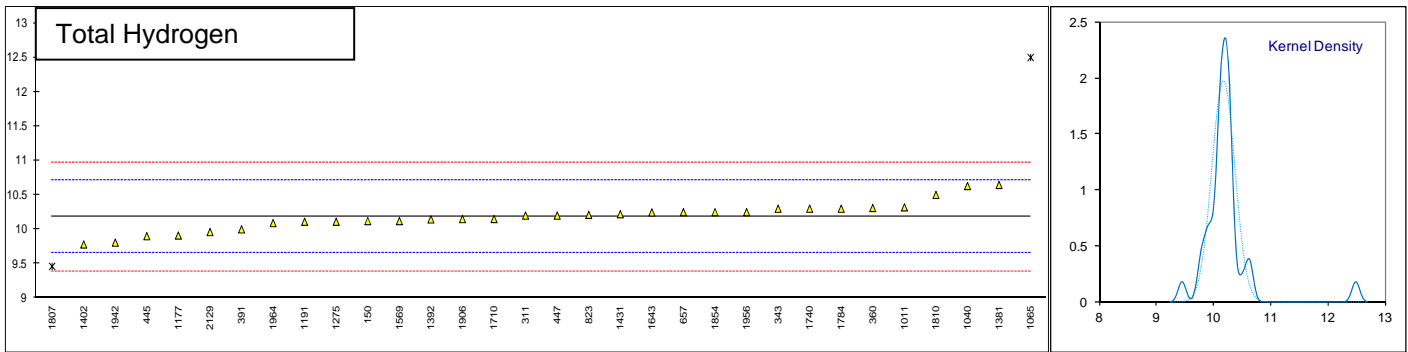
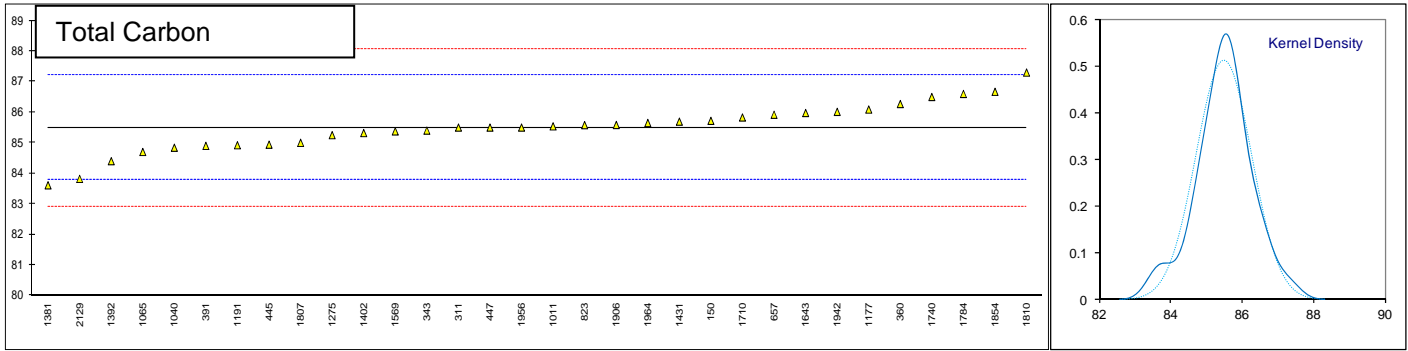
Lab	method	Tot.Carbon	mark	z(targ)	Tot.Hydrogen	mark	z(targ)	Tot.Nitrogen	mark	z(targ)
150	D5291 - D	85.72		0.26	10.12		-0.24	----		----
311	D5291 - A	85.5		0.00	10.2		0.07	----		----
343	D5291 - A	85.4		-0.11	10.3		0.44	0.57	C	3.63
360	D5291 - A	86.27		0.90	10.31		0.48	0.41		-0.77
391	D5291 - A	84.9		-0.69	10.0		-0.69	<0.75		----
445	D5291 - C	84.94		-0.65	9.90		-1.07	0.39		-1.31
447	D5291 - B	85.5		0.00	10.2		0.07	0.31		-3.51
657	D5291 - D	85.92		0.49	10.25		0.26	0.42		-0.49
823	D5291 - A	85.58		0.10	10.21		0.10	0.37		-1.86
1011	D5291 - A	85.54		0.05	10.32		0.52	0.46		0.61
1040	DIN51732	84.84		-0.76	10.63		1.70	0.61		4.73
1065	D5291 - D	84.7		-0.93	12.5	R(0.01)	8.79	0.41		-0.77
1177	D5291 - D	86.09		0.69	9.91		-1.03	0.54		2.80
1191	D5291 - A	84.92		-0.67	10.11		-0.28	0.397		-1.12
1275	D5291 - D	85.25		-0.29	10.11		-0.28	0.46		0.61
1381	in house	83.61		-2.19	10.646		1.76	----		----
1392	D5291 - A	84.40		-1.27	10.144		-0.15	0.370		-1.86
1402	D5291 - C	85.32		-0.21	9.78		-1.53	----		----
1431	D5291 - C	85.694		0.23	10.22		0.14	0.524		2.36
1569	D5291 - A	85.375		-0.14	10.12		-0.24	0.315		-3.37
1643	D5291 - A	85.976		0.56	10.246		0.24	0.382		-1.53
1710	D5291 - B	85.83		0.39	10.15		-0.12	----		----
1740	D5291 - A	86.5		1.16	10.3		0.44	0.52		2.25
1784	D5291 - C	86.60		1.28	10.30		0.44	----		----
1807	D5291 - A	85.00		-0.58	9.46	R(0.05)	-2.74	0.43		-0.22
1810	D240	87.3		2.09	10.5		1.20	0.4		-1.04
1854	D5291 - C	86.67		1.36	10.25		0.26	----		----
1906	D5291	85.585		0.10	10.149		-0.13	0.54	C	2.80
1942	D5291 - D	86.014		0.60	9.806		-1.43	0.393		-1.23
1956	D5291 - C	85.5		0.00	10.25		0.26	0.40		-1.04
1964	in house	85.649		0.18	10.09		-0.35	<0.6		----
2129	D1160 - D	83.82		-1.95	9.96		-0.84	0.45		0.33
	normality	OK			OK			OK		
	n	32			30			23		
	outliers	0			2			0		
	mean (n)	85.497			10.183			0.4379		
	st.dev. (n)	0.7771			0.2021			0.07914		
	R(calc.)	2.176			0.566			0.2216		
	R(D5291:10)	2.412			0.738			0.1020		

Only laboratories that reported test results were listed.

Lab 343 : first reported 1.4

Lab 1906 : first reported 3.022

Method ASTM D5291 has four different procedures, named: A, B, C, D.



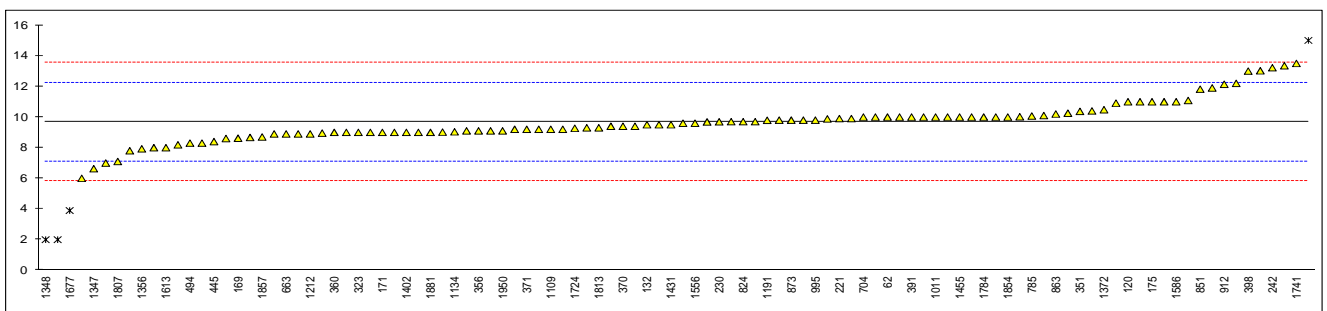
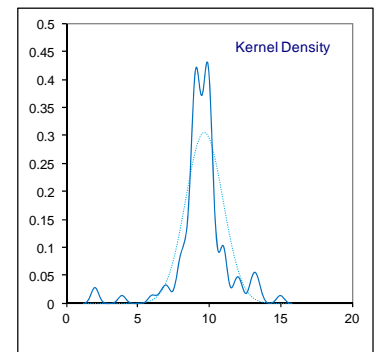
## Determination of Aluminium on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	11		1.03	
62	IP470	10		0.26	
92	D5184	9.2		-0.36	
120	IP501	11		1.03	
131	IP501	8.953		-0.56	
132	IP470	9.5		-0.13	
133		-----		-----	
140	IP501	8.187		-1.15	
150	IP501	10		0.26	
158	IP501	9.0		-0.52	
159		-----		-----	
169	D5184	8.62		-0.81	
171	IP501	9		-0.52	
175	D5184	11		1.03	
193		-----		-----	
194		-----		-----	
212	IP470	6		-2.85	
221	IP470	9.9		0.18	
230	IP470	9.69		0.02	
237	IP501	10.25		0.45	
242	IP501	13.22		2.76	
254	D5184	13.35		2.86	
273	IP470	11		1.03	
311	IP501	10		0.26	
323	IP501	9		-0.52	
331	IP501	7.8		-1.45	
333	IP501	10		0.26	
334	IP470	7		-2.07	
340	IP501	9.1		-0.44	
342	IP501	9.8		0.10	
343	IP501	<5		-----	False negative result?
349		-----		-----	
351	IP501	10.37		0.54	
356	IP501	9.1	C	-0.44	First reported 15.6
357	IP501	8.9		-0.60	
360	IP501	9		-0.52	
370	IP470	9.4		-0.21	
371	IP470	9.2		-0.36	
372	IP470	9		-0.52	
391	IP501	10		0.26	
398	IP501	13	C	2.59	First reported 18.0
399	IP501	15	R(0.05)	4.14	
444		-----		-----	
445	IP501	8.4		-0.98	
447	IP470	9.4	C	-0.21	First reported 15
494	IP501	8.3		-1.06	
507	IP501	9.3		-0.29	
511		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
605		-----		-----	
608	IP501	8.67		-0.77	
631	IP470	12.2		1.96	
657	IP501	9.6		-0.05	
663	IP501	8.9		-0.60	
704	IP470	10.0		0.26	
781	IP501	9.7		0.02	
785	IP470	10.07		0.31	
791		-----		-----	
823	IP501	8.3		-1.06	
824	IP501	9.7		0.02	
840	IP470	9.1		-0.44	
851	IP501	11.82		1.67	
855	IP470	8.9		-0.60	
862	IP501	9.7		0.02	
863	IP501	10.2		0.41	
864	IP501	9.4		-0.21	
865	IP501	9.2		-0.36	
873	IP470	9.8		0.10	
874	IP470	9.8		0.10	
875	IP501	9.88		0.16	
902	IP470	8	C	-1.29	First reported <5
904		-----		-----	

912	IP501	12.140		1.92	
913		----		----	
922	IP470	10.4		0.57	
963	IP501	10.02		0.27	
971	IP501	9.02		-0.50	
993	IP501	9.5		-0.13	
994	IP501	11.08		1.10	
995	IP470	9.8		0.10	
1011	IP377	10		0.26	
1026		----		----	
1109	IP470	9.2		-0.36	
1121	IP501	10.91		0.96	
1126	IP501	8.6		-0.83	
1134	IP501	9.04		-0.49	
1191	ISO10478	9.79		0.09	
1212	IP501	8.9		-0.60	
1229	ISO10478	13.02		2.60	
1233	IP501	9		-0.52	
1347	in house	6.63		-2.36	
1348	in house	2	R(0.01)	-5.95	
1356	IP501	7.926		-1.35	
1372	IP501	10.480	C	0.63	First reported 14.699
1381	ISO10478	11.9		1.73	
1385		----		----	
1389		----		----	
1402	IP501	9		-0.52	
1404	IP470	10		0.26	
1431	in house	9.5		-0.13	
1455	IP501	10		0.26	
1510		----		----	
1520	IP470	9.9		0.18	
1556	IP470	9.6		-0.05	
1586	IP501	11		1.03	
1610		----		----	
1613	IP470	8.0		-1.29	
1616		----		----	
1643		----		----	
1677	IP501	3.9	C,R(0.01)	-4.48	First reported 5.5
1720		----		----	
1724	IP501	9.27		-0.31	
1740	IP501	10		0.26	
1741	IP470	13.5		2.97	
1776		----		----	
1782	IP501	9		-0.52	
1784	IP501	10.0		0.26	
1807	D5184	7.1		-1.99	
1810		----		----	
1813	IP501	9.3		-0.29	
1833	IP501	9.68		0.01	
1842	IP501	10.0		0.26	
1854	IP501	10.0		0.26	
1857	IP501	8.7		-0.75	
1862	IP501	9.2		-0.36	
1881	IP470	9.0		-0.52	
1950	IP470	9.1		-0.44	
1973	ISO10478	<1.0		----	False negative result?
1975		----	W	----	Result withdrawn, reported 15.7
2129	IP377	10.1		0.33	
7017	IP470	2	R(0.01)	-5.95	

normality suspect  
n 102  
outliers 4  
mean (n) 9.668  
st.dev. (n) 1.3096  
R(calc.) 3.667  
R(IP470:05) 3.608

Compare R(IP501) = 3.258



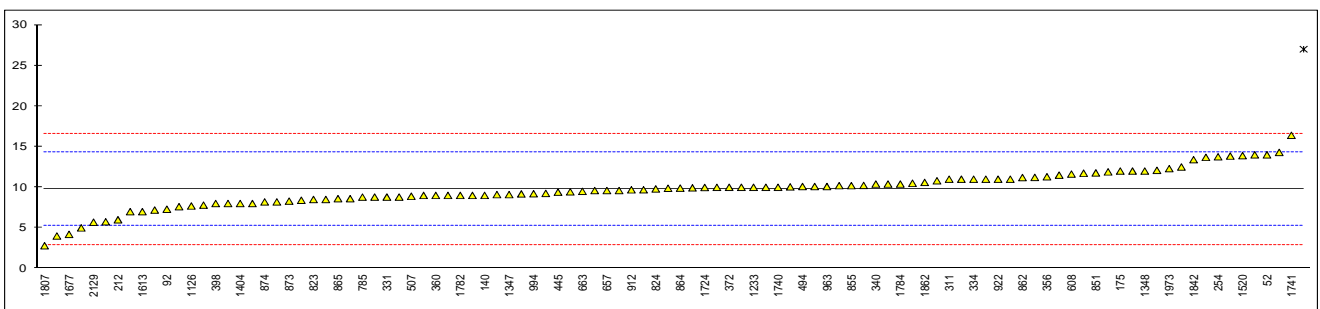
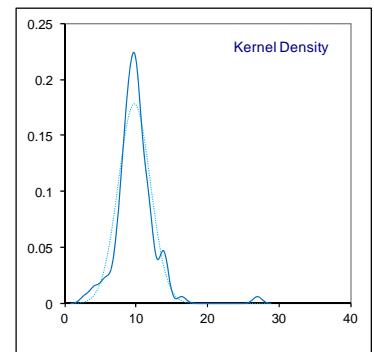
## Determination of Silicon on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	14		1.85	
62	IP470	<10		-----	
92	D5184	7.3		-1.08	
120	IP501	11		0.54	
131	IP501	11.74		0.86	
132	IP470	9.6		-0.08	
133		-----		-----	
140	IP501	9.002		-0.34	
150	IP501	10		0.10	
158	IP501	8.8		-0.43	
159		-----		-----	
169	D5184	5.75		-1.76	
171	IP501	5		-2.09	
175	D5184	12		0.97	
193		-----		-----	
194		-----		-----	
212	IP470	6		-1.65	
221	IP470	11.9		0.93	
230	IP470	9.18		-0.26	
237	IP501	10.05		0.12	
242	IP501	13.69		1.71	
254	D5184	13.76		1.75	
273	IP470	27	C,R(0.01)	7.54	First reported 4
311	IP501	11		0.54	
323	IP501	<10		-----	
331	IP501	8.8		-0.43	
333	IP501	11		0.54	
334	IP470	11		0.54	
340	IP501	10.4		0.27	
342	IP501	7.2		-1.13	
343	IP501	<10		-----	
349		-----		-----	
351	IP501	9.25		-0.23	
356	IP501	11.3	C	0.67	First reported 15.9
357	IP501	7.0		-1.22	
360	IP501	9		-0.34	
370	IP470	9.0		-0.34	
371	IP470	10.2		0.19	
372	IP470	10		0.10	
391	IP501	8		-0.78	
398	IP501	8.0		-0.78	
399	IP501	14		1.85	
444		-----		-----	
445	IP501	9.4		-0.16	
447	IP470	12		0.97	
494	IP501	10.1		0.14	
507	IP501	8.9		-0.38	
511		-----		-----	
541		-----		-----	
551		-----		-----	
557		-----		-----	
605		-----		-----	
608	IP501	11.63		0.81	
631	IP470	11.5		0.76	
657	IP501	9.6		-0.08	
663	IP501	9.5		-0.12	
704	IP470	9.1		-0.30	
781	IP501	7.8		-0.86	
785	IP470	8.79		-0.43	
791		-----		-----	
823	IP501	8.5		-0.56	
824	IP501	9.8		0.01	
840	IP470	10.8		0.45	
851	IP501	11.77		0.87	
855	IP470	10.2		0.19	
862	IP501	11.2		0.62	
863	IP501	10.1		0.14	
864	IP501	9.9		0.05	
865	IP501	8.6		-0.51	
873	IP470	8.3		-0.65	
874	IP470	8.2		-0.69	
875	IP501	9.88		0.05	
902	IP470	<10		-----	
904		-----		-----	

912	IP501	9.692		-0.04	
913		----		----	
922	IP470	11.0		0.54	
963	IP501	10.10		0.14	
971	IP501	10.23		0.20	
993	IP501	8.4		-0.60	
994	IP501	9.21		-0.25	
995	IP470	8.2		-0.69	
1011	IP377	9		-0.34	
1026		----		----	
1109	IP470	9.6		-0.08	
1121	IP501	11.22		0.63	
1126	IP501	7.7		-0.91	
1134	IP501	9.44		-0.15	
1191	ISO10478	9.93		0.07	
1212	IP501	8.5		-0.56	
1229	ISO10478	12.09		1.01	
1233	IP501	10		0.10	
1347	in house	9.10		-0.30	
1348	in house	12		0.97	
1356	IP501	9.693		-0.04	
1372	IP501	7.613		-0.95	
1381	ISO10478	14.3		1.98	
1385		----		----	
1389		----		----	
1402	IP501	10		0.10	
1404	IP470	8		-0.78	
1431	in house	12.5		1.19	
1455	IP501	8		-0.78	
1510		----		----	
1520	IP470	13.9		1.81	
1556	IP470	10.4		0.27	
1586	IP501	11		0.54	
1610		----		----	
1613	IP470	7.0		-1.22	
1616		----		----	
1643		----		----	
1677	IP501	4.2	C	-2.44	First reported 5.7
1720		----		----	
1724	IP501	9.98		0.09	
1740	IP501	10		0.10	
1741	IP470	16.4		2.90	
1776		----		----	
1782	IP501	9		-0.34	
1784	IP501	10.4		0.27	
1807	D5184	2.8		-3.05	
1810		----		----	
1813	IP501	8.6		-0.51	
1833	IP501	9.99		0.09	
1842	IP501	13.4		1.59	
1854	IP501	10.5		0.32	
1857	IP501	8.8		-0.43	
1862	IP501	10.6		0.36	
1881	IP470	9.0		-0.34	
1950	IP470	13.85		1.78	
1973	ISO10478	12.3	C	1.11	First reported 15.6
1975		----	W	----	Result withdrawn, reported 20.3
2129	IP377	5.7		-1.78	
7017	IP470	4		-2.53	

normality suspect  
n 103  
outliers 1  
mean (n) 9.775  
st.dev. (n) 2.2430  
R(calc.) 6.280  
R(IP470:05) 6.394

Compare R(IP501) = 3.245



## Determination of Total Aluminium + Silicon on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	25		2.12	
62	IP470	19.0		-0.17	
92	D5184	16.5		-1.12	
120	IP501	22		0.98	
131	IP501	20.693		0.48	
132	IP470	19.1		-0.13	
133		----		----	
140	IP501	17.189		-0.86	
150	IP501	20		0.21	
158		----		----	
159		----		----	
169		----		----	
171	IP501	14		-2.08	
175	D5184	23		1.36	
193		----		----	
194		----		----	
212		----		----	
221	IP470	21.8		0.90	
230	IP470	18.87		-0.22	
237	IP501	20.3		0.33	
242		----		----	
254	D5184	27.11		2.92	
273		----		----	
311	IP501	21		0.59	
323	IP501	<19		----	
331	IP501	16.6		-1.08	
333	IP501	21		0.59	
334	IP470	18		-0.55	
340	IP501	19.4		-0.02	
342	IP501	17.0		-0.93	
343	IP501	<15		----	
349		----		----	
351	IP501	19.62		0.07	
356	IP501	20.4	C	0.36	First reported 31.5
357	IP501	15.9		-1.35	
360	IP501	18		-0.55	
370	IP470	18.4		-0.40	
371	IP470	19.4		-0.02	
372	IP470	19		-0.17	
391	IP501	18		-0.55	
398	IP501	21	C	0.59	First reported 26.1
399	IP501	29	R(0.05)	3.64	
444		----		----	
445	IP501	17		-0.93	
447	IP470	9.4	C,R(0.05)	-3.83	First reported 27
494	IP501	18.4		-0.40	
507	IP501	18.2		-0.47	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	20.30		0.33	
631	IP470	23.7		1.62	
657	IP501	19.2		-0.09	
663	IP501	18.4		-0.40	
704	IP470	19.1		-0.13	
781	IP501	17.5		-0.74	
785	IP470	18.86		-0.22	
791		----		----	
823	IP501	16.8		-1.01	
824	IP501	19.5		0.02	
840	IP470	19.9		0.17	
851	IP501	23.59		1.58	
855	IP470	19.1		-0.13	
862	IP501	20.9		0.56	
863	IP501	20.3		0.33	
864	IP501	19.3		-0.05	
865	IP501	17.8		-0.63	
873	IP470	18.1		-0.51	
874	IP470	18.0		-0.55	
875	IP501	19.76		0.12	
902	IP470	<15		----	
904		----		----	



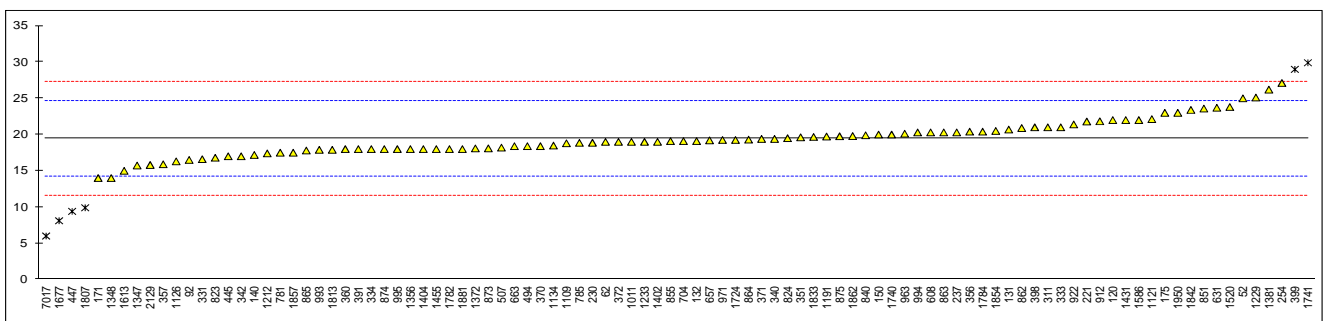
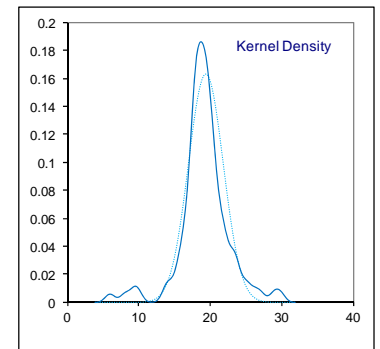
912	IP501	21.832		0.91
913		----		----
922	IP470	21.4		0.75
963	IP501	20.12		0.26
971	IP501	19.25		-0.07
993	IP501	17.9		-0.59
994	IP501	20.29		0.32
995	IP470	18.0		-0.55
1011	IP377	19		-0.17
1026		----		----
1109	IP470	18.8		-0.25
1121	IP501	22.13		1.02
1126	IP501	16.3		-1.20
1134	IP501	18.48		-0.37
1191	ISO10478	19.73		0.11
1212	IP501	17.4		-0.78
1229	ISO10478	25.11		2.16
1233	IP501	19		-0.17
1347	in house	15.73		-1.42
1348	in house	14		-2.08
1356	IP501	18		-0.55
1372	IP501	18.093	C	-0.51
1381	ISO10478	26.2		2.58
1385		----		----
1389		----		----
1402	IP501	19		-0.17
1404	IP470	18		-0.55
1431	in house	22.0		0.98
1455	IP501	18		-0.55
1510		----		----
1520	IP470	23.8		1.66
1556		----		----
1586	IP501	22		0.98
1610		----		----
1613	IP470	15.0		-1.69
1616		----		----
1643		----		----
1677	IP501	8.1	C,R(0.05)	-4.33
1720		----		----
1724	IP501	19.25		-0.07
1740	IP501	20		0.21
1741	IP470	29.9	R(0.05)	3.99
1776		----		----
1782	IP501	18		-0.55
1784	IP501	20.4		0.36
1807	D5184	9.9	R(0.05)	-3.64
1810		----		----
1813	IP501	17.9		-0.59
1833	IP501	19.67		0.09
1842	IP501	23.4		1.51
1854	IP501	20.5		0.40
1857	IP501	17.5		-0.74
1862	IP501	19.8		0.14
1881	IP470	18		-0.55
1950	IP470	23		1.36
1973		----		----
1975		----	W	----
2129	Calc.	15.8		-1.39
7017	IP470	6	R(0.05)	-5.13

First reported 22.312

First reported 11.2

Result withdrawn, reported 36

Compare R(IP501) = 4.599



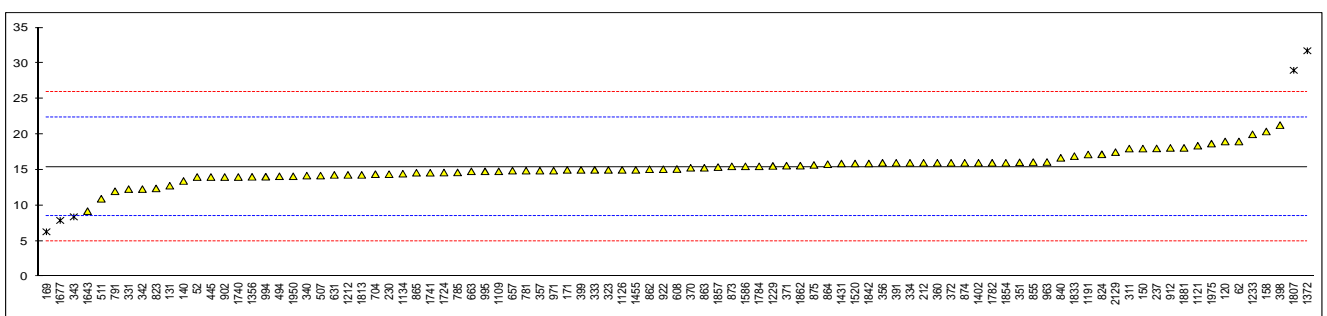
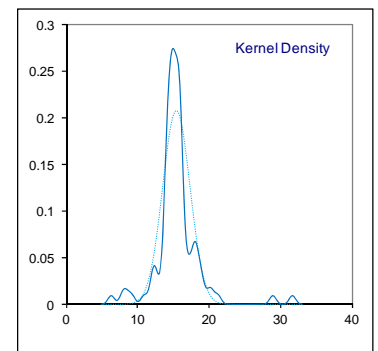
## Determination of Iron on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	14		-0.42	
62	IP470	19		1.02	
92		----		----	
120	IP501	19		1.02	
131	IP501	12.78		-0.77	
132		----		----	
133		----		----	
140	IP501	13.445		-0.57	
150	IP501	18		0.73	
158	IP501	20.4		1.42	
159		----		----	
169	D5863	6.3	R(0.01)	-2.63	
171	IP501	15		-0.13	
175		----		----	
193		----		----	
194		----		----	
212	IP470	16		0.16	
221		----		----	
230	IP470	14.4	C	-0.30	First reported 76.0
237	IP501	18.02		0.74	
242		----		----	
254		----		----	
273		----		----	
311	IP501	18		0.73	
323	IP501	15		-0.13	
331	IP501	12.3		-0.90	
333	IP501	15		-0.13	
334	IP470	16		0.16	
340	IP501	14.2		-0.36	
342	IP501	12.3		-0.90	
343	D5708	8.4	C,R(0.05)	-2.02	First reported 9.1
349		----		----	
351	IP501	16.06		0.18	
356	IP501	16.0		0.16	
357	IP501	14.9		-0.16	
360	IP501	16		0.16	
370	IP470	15.3		-0.04	
371	IP470	15.6		0.04	
372	IP470	16		0.16	
391	IP501	16		0.16	
398	IP501	21.3		1.68	
399	IP501	15		-0.13	
444		----		----	
445	IP501	14.0		-0.42	
447		----		----	
494	IP501	14.1		-0.39	
507	IP501	14.2		-0.36	
511	D5863	10.94		-1.29	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	15.13		-0.09	
631	IP470	14.3		-0.33	
657	IP501	14.9		-0.16	
663	IP501	14.8		-0.19	
704	IP470	14.4		-0.30	
781	IP501	14.9		-0.16	
785	IP470	14.64		-0.23	
791	IP501	12		-0.99	
823	IP501	12.4		-0.87	
824	IP501	17.2		0.50	
840	IP470	16.7		0.36	
851		----		----	
855	IP470	16.1		0.19	
862	IP501	15.1		-0.10	
863	IP501	15.3		-0.04	
864	IP501	15.8		0.10	
865	IP501	14.6		-0.24	
873	IP470	15.5		0.02	
874	IP470	16.0		0.16	
875	IP501	15.7		0.07	
902	IP470	14		-0.42	
904		----		----	

912	IP501	18.090		0.76
913		----		----
922	IP470	15.1		-0.10
963	IP501	16.11		0.19
971	IP501	14.90		-0.16
993		----		----
994	IP501	14.05		-0.40
995	D5863	14.8		-0.19
1011		----		----
1026		----		----
1109	IP470	14.8		-0.19
1121	IP501	18.40		0.85
1126	IP501	15.0		-0.13
1134	IP501	14.47		-0.28
1191	ISO10478	17.17		0.49
1212	IP501	14.3		-0.33
1229	ISO10478	15.56		0.03
1233	IP501	20		1.31
1347		----		----
1348		----		----
1356	IP501	14.03		-0.41
1372	D5708	31.748	C,R(0.01)	4.68
1381		----		----
1385		----		----
1389		----		----
1402	IP501	16		0.16
1404		----		----
1431	in house	15.9		0.13
1455	IP501	15		-0.13
1510		----		----
1520	IP470	15.9		0.13
1556		----		----
1586	IP501	15.5		0.02
1610		----		----
1613		----		----
1616		----		----
1643	D5185	9.198		-1.79
1677	IP501	7.9	C,R(0.05)	-2.17
1720		----		----
1724	IP501	14.63		-0.23
1740	IP501	14		-0.42
1741	IP470	14.6		-0.24
1776		----		----
1782	IP501	16		0.16
1784	IP501	15.5		0.02
1807	D5708	29	R(0.01)	3.89
1810		----		----
1813	IP501	14.3		-0.33
1833	IP501	16.94		0.43
1842	IP501	15.9		0.13
1854	IP501	16		0.16
1857	IP501	15.4		-0.01
1862	IP501	15.6		0.04
1881	IP470	18.1		0.76
1950	IP470	14.1		-0.39
1973		----		----
1975	IP470	18.7		0.93
2129	IP470	17.5		0.59
7017		----		----

normality suspect  
n 88  
outliers 5  
mean (n) 15.446  
st.dev. (n) 1.9220  
R(calc.) 5.382  
R(IP470:05) 9.751

Compare R(IP501) = 4.225



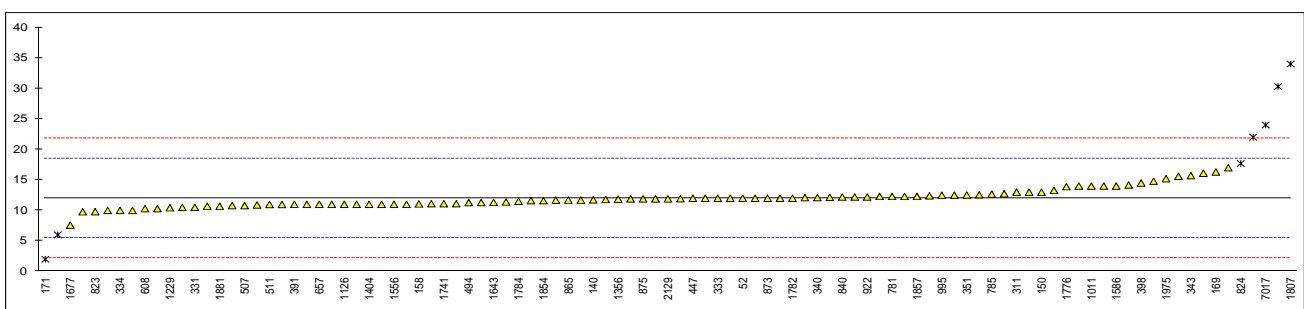
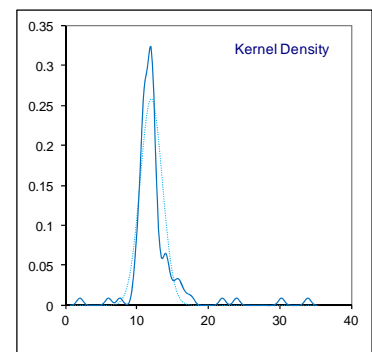
## Determination of Nickel on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	12		0.00	
62	IP470	13.3		0.39	
92		----		----	
120	IP501	14		0.61	
131	IP501	9.779		-0.68	
132		----		----	
133		----		----	
140	IP501	11.735		-0.08	
150	IP501	13		0.30	
158	IP501	11.07		-0.29	
159		----		----	
169	D5863	16.3		1.31	
171	IP501	2	R(0.01)	-3.06	
175	D5863	13		0.30	
193		----		----	
194		----		----	
212	IP470	11		-0.31	
221		----		----	
230	IP470	14.8		0.85	
237	IP501	12.57		0.17	
242		----		----	
254		----		----	
273		----		----	
311	IP501	13		0.30	
323	IP501	12		0.00	
331	IP501	10.5		-0.46	
333	IP501	12		0.00	
334	IP470	10		-0.62	
340	IP501	12.1		0.03	
342		----		----	
343	D5708	15.7		1.13	
349		----		----	
351	IP501	12.52		0.16	
356	IP501	15.6		1.10	
357	IP501	16.1		1.25	
360	IP501	12		0.00	
370	IP470	11.6		-0.13	
371	IP470	12.3		0.09	
372	IP470	12		0.00	
391	IP501	11		-0.31	
398	IP501	14.5		0.76	
399	IP501	17		1.53	
444		----		----	
445	IP501	11.1		-0.28	
447	IP470	12.0	C	0.00	First reported 36
494	IP501	11.3		-0.22	
507	IP501	10.8		-0.37	
511	D5863	10.97		-0.32	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	10.29		-0.53	
631	IP470	10.8		-0.37	
657	IP501	11.0		-0.31	
663	IP501	10.5		-0.46	
704	IP470	12.2		0.06	
781	IP501	12.3		0.09	
785	IP470	12.68		0.20	
791	IP501	6	R(0.05)	-1.84	
823	IP501	9.8		-0.68	
824	IP501	17.7	R(0.05)	1.74	
840	IP470	12.2		0.06	
851		----		----	
855	IP470	12.1		0.03	
862	IP501	10.0		-0.62	
863	IP501	11.0		-0.31	
864	IP501	11.7		-0.10	
865	IP501	11.7		-0.10	
873	IP470	12.0		0.00	
874	IP470	11.9		-0.03	
875	IP501	11.9		-0.03	
902	IP470	10		-0.62	
904		----		----	

912	IP501	11.687		-0.10
913		----		----
922	IP470	12.2		0.06
963	IP501	11.91		-0.03
971	IP501	10.3		-0.52
993	IP501	12.0		0.00
994	IP501	12.3		0.09
995	D5863	12.5		0.15
1011	D5863	14		0.61
1026		----		----
1109	IP470	11.8		-0.06
1121	IP501	12.74		0.22
1126	IP501	11.0		-0.31
1134	IP501	10.97		-0.32
1191	ISO10478	11.90		-0.03
1212	IP501	11.3		-0.22
1229	in house	10.44		-0.48
1233	IP501	22	R(0.01)	3.05
1347		----		----
1348		----		----
1356	IP501	11.85		-0.05
1372	D5708	14.169		0.66
1381		----		----
1385		----		----
1389		----		----
1402	IP501	11		-0.31
1404	IP470	11		-0.31
1431	in house	12.5		0.15
1455	IP501	11		-0.31
1510		----		----
1520	IP470	14.0		0.61
1556	ISO14597	11		-0.31
1586	IP501	14		0.61
1610		----		----
1613	IP470	30.3	R(0.01)	5.59
1616		----		----
1643	D5185	11.33		-0.21
1677	IP501	7.6		-1.35
1720		----		----
1724	IP501	11.38		-0.19
1740	IP501	11		-0.31
1741	IP470	11.1		-0.28
1776	D5708	13.9		0.58
1782	IP501	12		0.00
1784	IP501	11.5		-0.16
1807	D5708	34	R(0.01)	6.72
1810		----		----
1813	IP501	10.9		-0.34
1833	IP501	12.15		0.04
1842	IP501	10.7		-0.40
1854	IP501	11.6		-0.13
1857	IP501	12.3		0.09
1862	IP501	12.4		0.12
1881	IP470	10.7		-0.40
1950	IP470	11.1		-0.28
1973		----		----
1975	IP470	15.2		0.98
2129	IP470	11.9		-0.03
7017	IP470	24	R(0.01)	3.67

normality suspect  
n 94  
outliers 7  
mean (n) 12.011  
st.dev. (n) 1.5474  
R(calc.) 4.333  
R(IP470:05) 9.156

Compare R(IP501) = 6.598



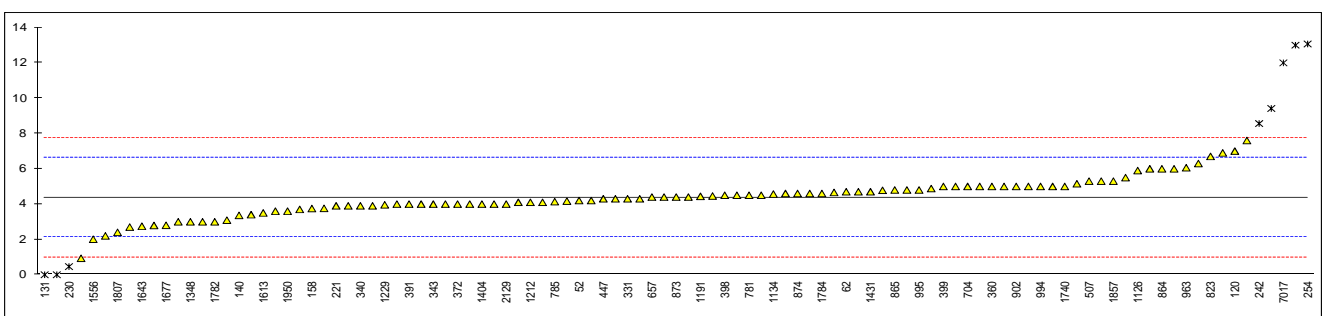
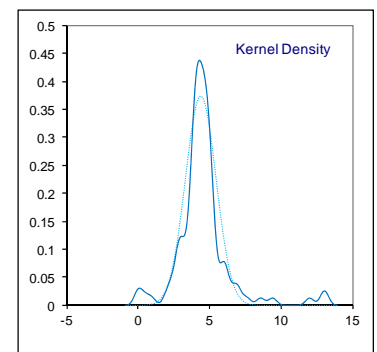
## Determination of Sodium on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	4.2		-0.16	
62	IP470	4.7		0.29	
92		----		----	
120	IP501	7		2.33	
131	IP501	0	ex	-3.88	Result excluded, zero is not a real result
132	IP470	3.9		-0.42	
133		----		----	
140	IP501	3.36		-0.90	
150	IP501	5		0.55	
158	IP501	3.748		-0.56	
159		----		----	
169	D5863	2.2		-1.93	
171	IP501	13	R(0.01)	7.64	
175		----		----	
193		----		----	
194		----		----	
212	IP470	4		-0.33	
221	IP470	3.9		-0.42	
230	IP470	0.46	C,R(0.05)	-3.47	First reported 1.08
237		----		----	
242	IP501	8.56	C,R(0.05)	3.71	First reported 12.89
254	IP464	13.07	R(0.01)	7.71	
273		----		----	
311	IP501	5		0.55	
323	IP501	4		-0.33	
331	IP501	4.3		-0.07	
333	IP501	3		-1.22	
334	IP470	4		-0.33	
340	IP501	3.9		-0.42	
342	IP501	4.6		0.20	
343	IP501	4.0		-0.33	
349		----		----	
351	IP501	3.09		-1.14	
356	IP501	4.3		-0.07	
357	IP501	4.7		0.29	
360	IP501	5		0.55	
370	IP470	4.4		0.02	
371	IP470	4.1		-0.24	
372	IP470	4		-0.33	
391	IP501	4		-0.33	
398	IP501	4.5		0.11	
399	IP501	5		0.55	
444		----		----	
445	IP501	4.5		0.11	
447	IP470	4.3	C	-0.07	First reported 9
494	IP501	3.4		-0.86	
507	IP501	5.3		0.82	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	7.60		2.86	
631	IP470	6	C	1.44	First reported 18.0
657	IP501	4.4		0.02	
663	IP501	0.0	ex	-3.88	Result excluded, zero is not a real result
704	IP470	5.0		0.55	
781	IP501	4.5		0.11	
785	IP470	4.14		-0.21	
791	IP501	5		0.55	
823	IP501	6.7	C	2.06	First reported 8.7
824	IP501	6.3		1.71	
840	IP470	5.5		1.00	
851		----		----	
855	IP470	4.8		0.38	
862	IP501	5.3		0.82	
863	IP501	3.9		-0.42	
864	IP501	6.0		1.44	
865	IP501	4.8		0.38	
873	IP470	4.4		0.02	
874	IP470	4.6		0.20	
875	IP501	4.17		-0.18	
902	IP470	5		0.55	
904		----		----	

912	IP501	9.413	R(0.05)	4.47
913		----		----
922	IP470	4.6		0.20
963	IP501	6.06		1.49
971	IP501	5		0.55
993	IP501	4.78		0.36
994	IP501	5.0		0.55
995	D5863	4.8		0.38
1011	D5863	3.6		-0.69
1026		----		----
1109	IP470	4.2		-0.16
1121	IP501	3.76		-0.55
1126	IP501	5.9	C	1.35
1134	IP501	4.57		0.17
1191	ISO10478	4.44		0.06
1212	IP501	4.1		-0.24
1229	in house	3.96		-0.37
1233	IP501	5		0.55
1347	in house	4.88		0.45
1348	in house	3		-1.22
1356	IP501	2.792		-1.40
1372	IP501	5.152		0.69
1381		----		----
1385	in house	4		-0.33
1389		----		----
1402	IP501	6		1.44
1404	IP470	4		-0.33
1431	in house	4.7		0.29
1455	IP501	3		-1.22
1510		----		----
1520	IP470	0.93		-3.05
1556	EN241	2.01		-2.10
1586	IP501	4		-0.33
1610		----		----
1613	D5863	3.5		-0.78
1616		----		----
1643	D5185	2.748		-1.44
1677	IP501	2.8		-1.40
1720		----		----
1724	IP501	4.46		0.08
1740	IP501	5		0.55
1741		----		----
1776	D5708	2.7		-1.48
1782	IP501	3		-1.22
1784	IP501	4.6		0.20
1807	D5708	2.4		-1.75
1810		----		----
1813	IP501	4.3		-0.07
1833	IP501	4.66		0.25
1842	IP501	6.9		2.24
1854	IP501	4.4		0.02
1857	IP501	5.3		0.82
1862	IP501	4.1		-0.24
1881	IP470	4.5		0.11
1950	IP470	3.6		-0.69
1973		----		----
1975	IP470	3.7		-0.60
2129	IP470	4.0		-0.33
7017	IP470	12	R(0.01)	6.76

normality suspect  
n 97  
outliers 6 (+2 excl)  
mean (n) 4.375  
st.dev. (n) 1.0708  
R(calc.) 2.998  
R(IP470:05) 3.159

Compare R(IP501) = 2.402



## Determination of Vanadium on sample #15002; results in mg/kg

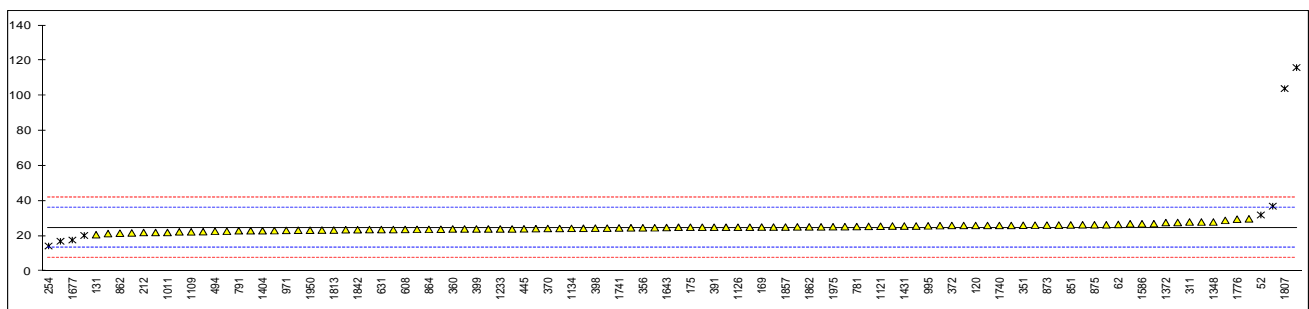
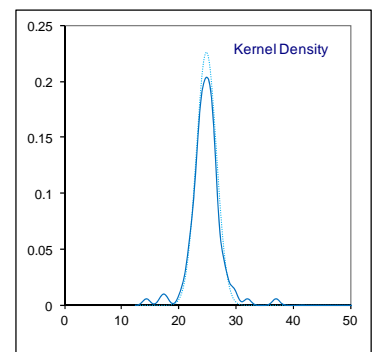
lab	method	value	mark	z(targ)	remarks
52	IP470	32	R(0.01)	1.24	
62	IP470	26.6		0.31	
92		----		----	
120	IP501	26		0.20	
131	IP501	20.76		-0.70	
132	IP470	25.0		0.03	
133		----		----	
140	IP501	24.715		-0.02	
150	IP501	28		0.55	
158	IP501	24.00		-0.14	
159		----		----	
169	D5863	25.1		0.05	
171	IP501	27		0.38	
175	D5863	25		0.03	
193		----		----	
194		----		----	
212	IP470	22		-0.49	
221		----		----	
230	IP470	22.7		-0.36	
237	IP501	24.4		-0.07	
242		----		----	
254	D5863	14.32	R(0.01)	-1.81	
273	IP470	25	C	0.03	First reported 9
311	IP501	28		0.55	
323	IP501	26		0.20	
331	IP501	23.7		-0.19	
333	IP501	25		0.03	
334	IP470	24		-0.14	
340	IP501	24.7		-0.02	
342	IP501	23.8		-0.18	
343	D5708	29.8		0.86	
349		----		----	
351	IP501	26.12		0.22	
356	IP501	24.7		-0.02	
357	IP501	23.3		-0.26	
360	IP501	24		-0.14	
370	IP470	24.3		-0.09	
371	IP470	23.6		-0.21	
372	IP470	26		0.20	
391	IP501	25		0.03	
398	IP501	24.5		-0.05	
399	IP501	24		-0.14	
444		----		----	
445	IP501	24.1		-0.12	
447	IP470	28.9	C	0.70	First reported 80
494	IP501	22.7		-0.36	
507	IP501	24.3		-0.09	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	23.75		-0.18	
631	D5863	23.7		-0.19	
657	IP501	27.7		0.50	
663	IP501	24.2		-0.11	
704	IP470	25.7		0.15	
781	IP501	25.4		0.10	
785	IP470	26.18		0.24	
791	IP501	23		-0.31	
823	IP501	22.5		-0.40	
824	IP501	26.4		0.27	
840	IP470	23.0		-0.31	
851	IP501	26.33		0.26	
855	IP470	22.4		-0.42	
862	IP501	21.6		-0.55	
863	IP501	25.9		0.19	
864	IP501	23.8		-0.18	
865	IP501	23.4		-0.24	
873	IP470	26.2		0.24	
874	IP470	25.5		0.12	
875	IP501	26.4		0.27	
902	IP470	22		-0.49	
904		----		----	



912	IP501	27.027		0.38
913		----		----
922	IP470	21.4		-0.59
963	IP501	25.23		0.07
971	IP501	23.2		-0.28
993		----		----
994	IP501	24.5		-0.05
995	D5863	25.8		0.17
1011	D5863	22		-0.49
1026		----		----
1109	IP470	22.4		-0.42
1121	IP501	25.58		0.13
1126	IP501	25.0		0.03
1134	IP501	24.36		-0.08
1191	ISO10478	25.34		0.09
1212	IP501	26.4		0.27
1229	in house	23.07		-0.30
1233	IP501	24		-0.14
1347	in house	17.00	R(0.01)	-1.35
1348	in house	28		0.55
1356	IP501	21.765		-0.53
1372	D5708	27.652		0.49
1381		----		----
1385	in house	20.3	R(0.01)	-0.78
1389		----		----
1402	IP501	26		0.20
1404	IP470	23		-0.31
1431	in house	25.7		0.15
1455	IP501	24		-0.14
1510		----		----
1520		----		----
1556	ISO14597	25		0.03
1586	IP501	27		0.38
1610		----		----
1613	D5863	37.0	R(0.01)	2.10
1616		----		----
1643	D5185	24.82		0.00
1677	IP501	17.7	R(0.01)	-1.23
1720		----		----
1724	IP501	23.85		-0.17
1740	IP501	26		0.20
1741	IP470	24.6		-0.04
1776	D5708	29.6		0.82
1782	IP501	26		0.20
1784	IP501	25.2		0.07
1807	D5708	104	R(0.01)	13.65
1810		----		----
1813	IP501	23.4		-0.24
1833	IP501	26.25		0.25
1842	IP501	23.6		-0.21
1854	IP501	25.1		0.05
1857	IP501	25.1		0.05
1862	IP501	25.2		0.07
1881	IP470	25.7		0.15
1950	IP470	23.3		-0.26
1973		----		----
1975	IP470	25.3		0.08
2129	IP470	23.7		-0.19
7017	IP470	116	R(0.01)	15.72

normality OK  
n 98  
outliers 8  
mean (n) 24.816  
st.dev. (n) 1.7601  
R(calc.) 4.928  
R(IP470:05) 16.240

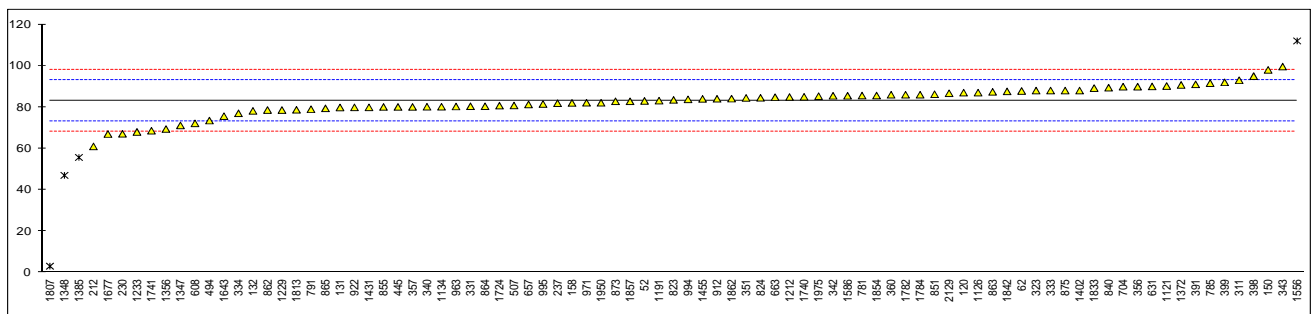
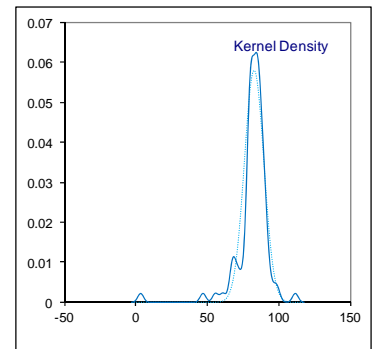
Compare R(IP501) = 11.538



## Determination of Calcium on sample #15002; results in mg/kg

lab	method	value	mark	z(targ)	remarks
52	IP470	83		0.00	
62	IP470	87.8		0.97	
92		----		----	
120	IP501	87		0.80	
131	IP501	79.84		-0.63	
132	IP470	78.2		-0.96	
133		----		----	
140		----		----	
150	IP501	98		3.01	
158	IP501	82.03		-0.19	
159		----		----	
169		----		----	
171		----		----	
175		----		----	
193		----		----	
194		----		----	
212	IP470	61		-4.42	
221		----		----	
230	IP470	67.1		-3.19	
237	IP501	81.87		-0.23	
242		----		----	
254		----		----	
273		----		----	
311	IP501	93		2.01	
323	IP501	88		1.01	
331	IP501	80.4		-0.52	
333	IP501	88		1.01	
334	IP470	77		-1.20	
340	IP501	80.2		-0.56	
342	IP501	85.5		0.50	
343	IP051	99.6		3.34	
349		----		----	
351	IP501	84.46		0.29	
356	IP501	89.9		1.39	
357	IP501	80.1		-0.58	
360	IP501	86		0.60	
370		----		----	
371		----		----	
372		----		----	
391	IP501	91		1.61	
398	IP501	95.0		2.41	
399	IP501	92		1.81	
444		----		----	
445	IP501	80.1		-0.58	
447		----		----	
494	IP501	73.5		-1.91	
507	IP501	80.8		-0.44	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	72.15		-2.18	
631	IP470	90	C	1.41	First reported 3.8
657	IP501	81.3		-0.34	
663	IP501	84.8		0.36	
704	IP470	89.9		1.39	
781	IP501	85.6		0.52	
785	IP470	91.60	C	1.73	First reported 101.60
791	IP501	79		-0.80	
823	IP501	83.5		0.10	
824	IP501	84.5		0.30	
840	IP470	89.4		1.29	
851	IP501	86.22		0.65	
855	IP470	80.1		-0.58	
862	IP501	78.6		-0.88	
863	IP501	87.4		0.89	
864	IP501	80.4		-0.52	
865	IP501	79.4		-0.72	
873	IP470	82.8		-0.04	
874		----		----	
875	IP501	88.0		1.01	
902		----		----	
904		----		----	

912	IP501	84.045		0.21	
913		----		----	
922	IP470	79.9		-0.62	
963	IP501	80.31		-0.54	
971	IP501	82.10		-0.18	
993		----		----	
994	IP501	83.75		0.15	
995	D5863	81.5		-0.30	
1011		----		----	
1026		----		----	
1109		----		----	
1121	IP501	90.21		1.45	
1126	IP501	87.0		0.80	
1134	IP501	80.20		-0.56	
1191	ISO10478	83.14		0.03	
1212	IP501	84.9		0.38	
1229	in house	78.6		-0.88	
1233	IP501	68		-3.01	
1347	in house	71.16		-2.38	
1348	in house	47	R(0.01)	-7.23	
1356	IP501	69.41		-2.73	
1372	IP501	90.727		1.55	
1381		----		----	
1385	in house	55.7	R(0.05)	-5.48	
1389		----		----	
1402	IP501	88		1.01	
1404		----		----	
1431	in house	79.9		-0.62	
1455	IP501	84		0.20	
1510		----		----	
1520		----		----	
1556	INH-1129	112	R(0.05)	5.83	
1586	IP501	85.5		0.50	
1610		----		----	
1613		----		----	
1616		----		----	
1643	D5185	75.62		-1.48	
1677	IP501	67.0	C	-3.21	First reported 59.2
1720		----		----	
1724	IP501	80.71		-0.46	
1740	IP501	85		0.40	
1741	IP470	68.6		-2.89	
1776		----		----	
1782	IP501	86		0.60	
1784	IP501	86.0		0.60	
1807	D5708	3.1	R(0.01)	-16.05	
1810		----		----	
1813	IP501	78.7		-0.86	
1833	IP501	89.2		1.25	
1842	IP501	87.6		0.93	
1854	IP501	85.6		0.52	
1857	IP501	82.8		-0.04	
1862	IP501	84.1		0.22	
1881		----		----	
1950	IP470	82.1		-0.18	
1973		----		----	
1975	IP470	85.3		0.46	
2129	IP470	86.7	C	0.74	First reported 38.3
7017		----		----	
	normality	suspect			
	n	83			
	outliers	4	<u>Spike</u>		
	mean (n)	82.993	85.1		Recovery <98%
	st.dev. (n)	6.8644			
	R(calc.)	19.220			
	R(IP470:05)	13.941			Compare R(IP501) = 11.383



## Determination of Phosphorus on sample #15002; results in mg/kg

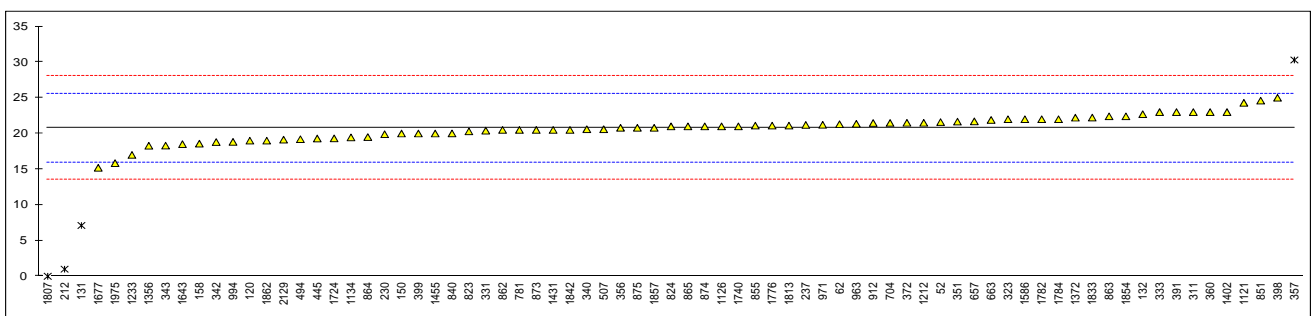
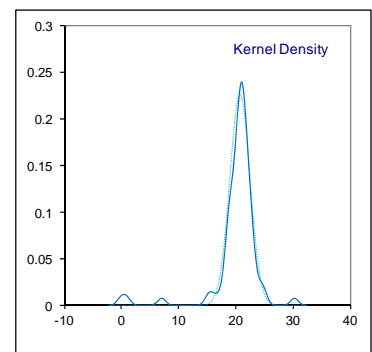
lab	method	value	mark	z(targ)	remarks
52	IP500	21.6		0.34	
62	IP500	21.3		0.22	
92		----		----	
120	IP501	19		-0.73	
131	IP501	7.115	R(0.01)	-5.65	
132	IP500	22.7		0.80	
133		----		----	
140		----		----	
150	IP501	20		-0.32	
158	IP501	18.58		-0.91	
159		----		----	
169		----		----	
171	IP501	<1		<-8.18	False negative result?
175		----		----	
193		----		----	
194		----		----	
212	IP500	1	R(0.01)	-8.18	
221		----		----	
230	IP500	19.9		-0.36	
237	IP501	21.20		0.18	
242		----		----	
254		----		----	
273		----		----	
311	IP501	23		0.92	
323	IP501	22		0.51	
331	IP501	20.4		-0.16	
333	IP501	23		0.92	
334		----		----	
340	IP501	20.6		-0.07	
342	IP501	18.8		-0.82	
343	IP501	18.3		-1.02	
349		----		----	
351	IP501	21.66		0.37	
356	IP501	20.8		0.01	
357	IP501	30.3	R(0.01)	3.94	
360	IP501	23		0.92	
370		----		----	
371		----		----	
372	IP500	21.5		0.30	
391	IP501	23		0.92	
398	IP501	25.0		1.75	
399	IP501	20		-0.32	
444		----		----	
445	IP501	19.3		-0.61	
447		----		----	
494	IP501	19.2		-0.65	
507	IP501	20.6		-0.07	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608		----		----	
631		----		----	
657	IP501	21.7		0.38	
663	IP501	21.9		0.47	
704	IP500	21.48		0.29	
781	IP501	20.5		-0.11	
785		----		----	
791		----		----	
823	IP501	20.3		-0.20	
824	IP501	21.0		0.09	
840	IP500	20.01		-0.32	
851	IP501	24.60		1.58	
855	IP500	21.1		0.13	
862	IP501	20.5		-0.11	
863	IP501	22.4		0.67	
864	IP501	19.5		-0.53	
865	IP501	21.0		0.09	
873	IP500	20.5		-0.11	
874	IP500	21.0		0.09	
875	IP501	20.8		0.01	
902		----		----	
904		----		----	

912	IP501	21.472	0.29
913		----	----
922		----	----
963	IP501	21.36	0.24
971	IP501	21.22	0.18
993		----	----
994	IP501	18.83	-0.80
995		----	----
1011		----	----
1026		----	----
1109		----	----
1121	IP501	24.30	1.46
1126	IP501	21.0	0.09
1134	IP501	19.45	-0.55
1191		----	----
1212	IP501	21.5	0.30
1229		----	----
1233	IP501	17	-1.56
1347		----	----
1348		----	----
1356	IP501	18.285	-1.03
1372	IP501	22.218	0.60
1381		----	----
1385		----	----
1389		----	----
1402	IP501	23	0.92
1404		----	----
1431	in house	20.5	-0.11
1455	IP501	20	-0.32
1510		----	----
1520		----	----
1556		----	----
1586	IP501	22	0.51
1610		----	----
1613		----	----
1616		----	----
1643	D5185	18.51	-0.94
1677	IP501	15.2	-2.31
1720		----	----
1724	IP501	19.32	-0.60
1740	IP501	21	0.09
1741		----	----
1776	D7691	21.1	0.13
1782	IP501	22	0.51
1784	IP501	22.0	0.51
1807	IP501	0	-8.59
1810		----	----
1813	IP501	21.1	0.13
1833	IP501	22.23	0.60
1842	IP501	20.5	-0.11
1854	IP501	22.4	0.67
1857	IP501	20.8	0.01
1862	IP501	19.0	-0.73
1881		----	----
1950		----	----
1973		----	----
1975	IP500	15.85	-2.04
2129	IP500	19.14	-0.68
7017		----	----

normality suspect  
n 71  
outliers 3 (+ 1 excl) Spike  
mean (n) 20.775 21.2  
st.dev. (n) 1.7674  
R(calc.) 4.949  
R(IP501:05) 6.771

Recovery <98%

Compare R(IP500) = 4.073



## Determination of Zinc on sample #15002; results in mg/kg

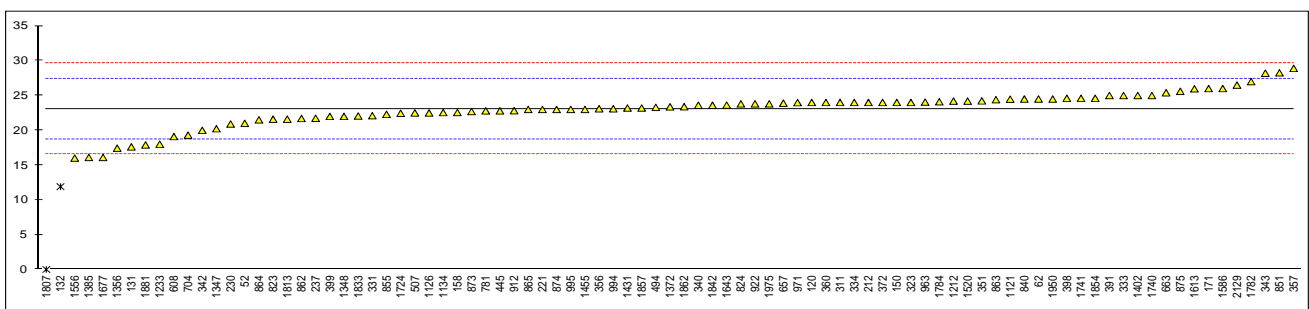
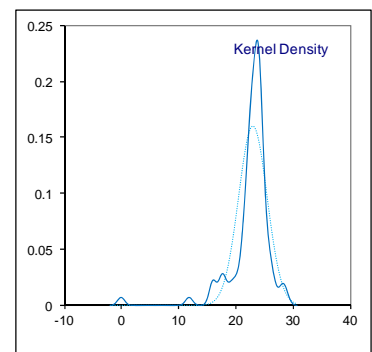
lab	method	value	mark	z(targ)	remarks
52	IP470	21		-0.95	
62	IP470	24.5		0.66	
92		----		----	
120	IP501	24		0.43	
131	IP501	17.62		-2.50	
132	IP470	11.9	R(0.01)	-5.12	
133		----		----	
140		----		----	
150	IP501	24	C	0.43	First reported 38
158	IP501	22.56		-0.23	
159		----		----	
169		----		----	
171	IP501	26		1.35	
175		----		----	
193		----		----	
194		----		----	
212	IP470	24		0.43	
221	IP470	23		-0.03	
230	IP470	20.9		-0.99	
237	IP501	21.73		-0.61	
242		----		----	
254		----		----	
273		----		----	
311	IP501	24		0.43	
323	IP501	24		0.43	
331	IP501	22.1		-0.44	
333	IP501	25		0.89	
334	IP470	24		0.43	
340	IP501	23.6		0.25	
342	IP501	20.0		-1.41	
343	IP501	28.2		2.36	
349		----		----	
351	IP501	24.23		0.54	
356	IP501	23.1		0.02	
357	IP501	28.9		2.68	
360	IP501	24		0.43	
370		----		----	
371		----		----	
372	IP470	24		0.43	
391	IP501	25		0.89	
398	IP501	24.6		0.70	
399	IP501	22		-0.49	
444		----		----	
445	IP501	22.8		-0.12	
447		----		----	
494	IP501	23.3		0.11	
507	IP501	22.5		-0.26	
511		----		----	
541		----		----	
551		----		----	
557		----		----	
605		----		----	
608	IP501	19.10		-1.82	
631	IP470	<1		----	False negative result?
657	IP501	23.9		0.38	
663	IP501	25.4		1.07	
704	IP470	19.3		-1.73	
781	IP501	22.8		-0.12	
785		----		----	
791		----		----	
823	IP501	21.6		-0.67	
824	IP501	23.8		0.34	
840	IP470	24.5		0.66	
851	IP501	28.26		2.38	
855	IP470	22.3		-0.35	
862	IP501	21.7		-0.63	
863	IP501	24.4		0.61	
864	IP501	21.5		-0.72	
865	IP501	23.0		-0.03	
873	IP470	22.7		-0.17	
874	IP470	23.0		-0.03	
875	IP501	25.6		1.16	
902		----		----	
904		----		----	

912	IP501	22.825	-0.11
913		----	----
922	IP470	23.8	0.34
963	IP501	24.05	0.45
971	IP501	23.98	0.42
993		----	----
994	IP501	23.1	0.02
995	D5863	23.0	-0.03
1011		----	----
1026		----	----
1109		----	----
1121	IP501	24.47	0.65
1126	IP501	22.5	-0.26
1134	IP501	22.55	-0.24
1191		----	----
1212	IP501	24.2	0.52
1229		----	----
1233	IP501	18	-2.32
1347	in house	20.23	-1.30
1348	in house	22	-0.49
1356	IP501	17.43	-2.58
1372	IP501	23.377	0.14
1381		----	----
1385	in house	16.1	-3.19
1389		----	----
1402	IP501	25	0.89
1404		----	----
1431	in house	23.2	0.06
1455	IP501	23	-0.03
1510		----	----
1520	IP470	24.2	0.52
1556	INH-1129	16	-3.24
1586	IP501	26	1.35
1610		----	----
1613	IP470	25.96	1.33
1616		----	----
1643	D5185	23.62	0.26
1677	IP501	16.1	-3.19
1720		----	----
1724	IP501	22.45	-0.28
1740	IP501	25	0.89
1741	IP470	24.6	0.70
1776		----	----
1782	IP501	27	1.81
1784	IP501	24.1	0.48
1807	IP501	0	-10.58
1810		----	----
1813	IP501	21.6	-0.67
1833	IP501	22.05	-0.46
1842	IP501	23.6	0.25
1854	IP501	24.6	0.70
1857	IP501	23.2	0.06
1862	IP501	23.4	0.15
1881	IP470	17.9	-2.37
1950	IP470	24.5	0.66
1973		----	----
1975	IP470	23.8	0.34
2129	IP470	26.5	1.58
7017		----	----

normality suspect  
n 87  
outliers 1 (+ 1 excl) Spike  
mean (n) 23.063 24.1  
st.dev. (n) 2.4954  
R(calc.) 6.987  
R(IP470:05) 6.104

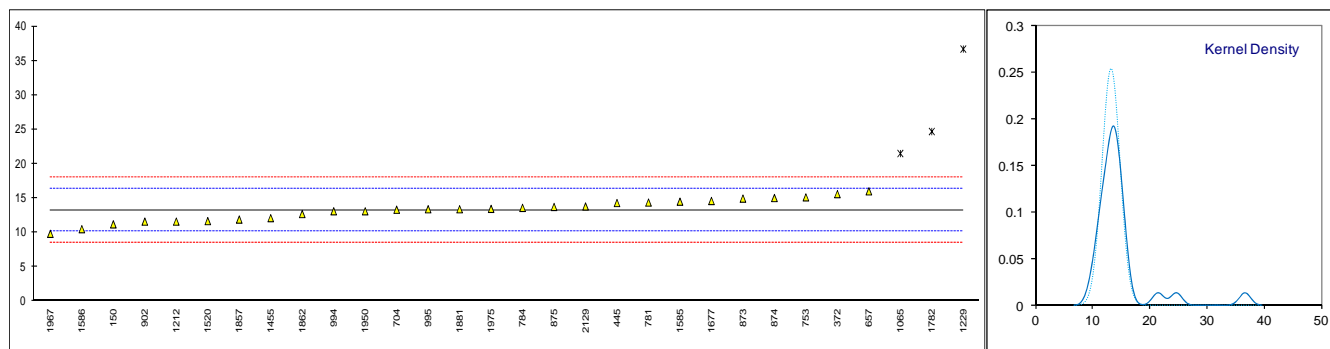
Recovery <96%

Compare R(IP501) = 4.572



Determination of Bromine Number on distillate <360°C AET on sample #15003; results in g Br<sub>2</sub>/100g

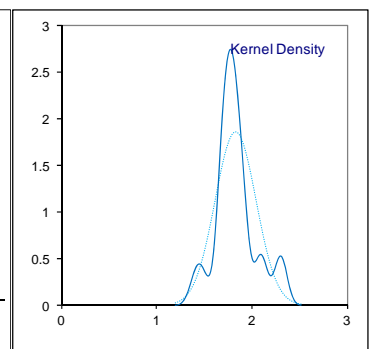
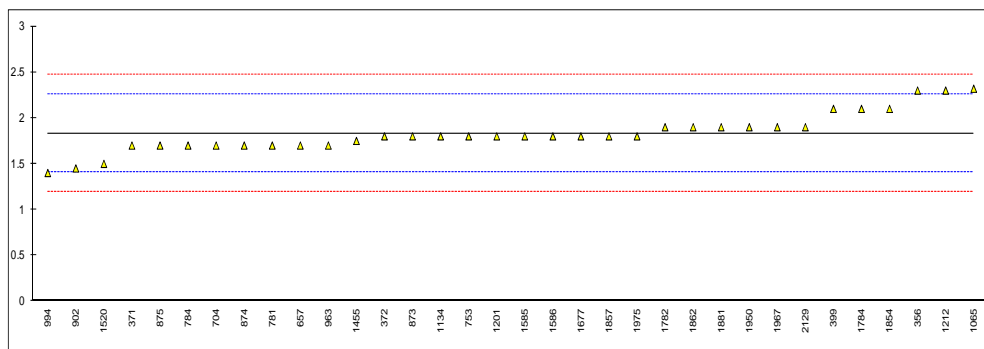
lab	method	value	mark	z(targ)	Remarks
150	D1159	11.2		-1.32	
342		----		----	
356		----		----	
371		----		----	
372	D1159	15.6		1.48	
399		----		----	
445	D1159	14.3		0.65	
657	D1159	16.0		1.73	
704	D1159	13.33		0.03	
753	D1159	15.13		1.18	
781	D1159	14.37		0.70	
784	D1159	13.6		0.21	
823		----		----	
873	D1159	14.95		1.06	
874	D1159	15.03		1.12	
875	D1159	13.73		0.29	
902	D1159	11.6		-1.07	
963		----		----	
994	D1159	13.1		-0.11	
995	D1159	13.4		0.08	
1011		----		----	
1065	D1159	21.5	R(0.01)	5.23	
1134		----		----	
1201		----		----	
1212	D1159	11.60		-1.07	
1229	ISO3839	36.7	R(0.01)	14.90	
1455	D1159	12.1		-0.75	
1520	D1159	11.67		-1.02	
1585	D1159	14.5		0.78	
1586	D1159	10.5		-1.77	
1677	D1159	14.6		0.84	
1782	D1159	24.7	C,R(0.01)	7.27	First reported 21.15
1784		----	W	----	Result withdrawn, reported 22.9
1807		----		----	
1833		----		----	
1854		----	W	----	Result with drawn, reported 23.1
1857	D1159	11.9		-0.88	
1862	D1159	12.7		-0.37	
1881	D1159	13.4		0.08	
1950	D1159	13.1		-0.11	
1967	D1159	9.82		-2.20	
1975	D1159	13.45		0.11	
2129	D1159	13.8		0.33	
normality		OK			
n		27			
outliers		3			
mean (n)		13.277			
st.dev. (n)		1.5703			
R(calc.)		4.397			
R(D1159:07)		4.401			





Determination of P-Value on sample #15003;

lab	method	value	mark	z(targ)	remarks
150		----		----	
342		----		----	
356	SMS1600	2.3	C	2.18	First reported 2.9
371	INH-50837.5	1.70		-0.62	
372	SMS1600	1.8		-0.15	
399	UNI20011	2.10		1.25	
445		----		----	
657	SMS1600	1.7		-0.62	
704	SMS1600	1.7		-0.62	
753	SMS1600	1.8		-0.15	
781	SMS1600	1.70		-0.62	
784		1.70		-0.62	
823		----		----	
873	SMS1600	1.8		-0.15	
874	SMS1600	1.70		-0.62	
875	INH-50837.5	1.70		-0.62	
902	SMS1600	1.45		-1.79	
963	SMS1600	1.7		-0.62	
994	SMS1600	1.40		-2.02	
995		----		----	
1011		----		----	
1065	D7157	2.32		2.27	
1134	SMS1600	1.8		-0.15	
1201	SMS1600Mod.	1.8		-0.15	
1212	SMS1600	2.3		2.18	
1229		----		----	
1455	SMS1600	1.75		-0.39	
1520	SMS1600	1.5		-1.55	
1585	SMS1600	1.80		-0.15	
1586	SMS1600	1.8		-0.15	
1677	SMS1600	1.8		-0.15	
1782		1.9	C	0.31	First reported 2.3
1784		2.1	C	1.25	First reported 2.2
1807		----		----	
1833		----		----	
1854		2.1	C	1.25	First reported 2.3
1857	INH-001	1.80		-0.15	
1862	SMS1600	1.90		0.31	
1881	SMS1600	1.90		0.31	
1950	SMS1600	1.90		0.31	
1967	INH-001	1.90		0.31	
1975	SMS1600	1.80		-0.15	
2129	SMS1600	1.9		0.31	
normality		OK			
n		34			
outliers		0			
mean (n)		1.833			
st.dev. (n)		0.2145			
R(calc.)		0.601			
R(target)		0.600			



**APPENDIX 2****Number of participants per country**

1 lab in ARGENTINA	2 labs in LITHUANIA
2 labs in AUSTRALIA	1 lab in MACEDONIA
3 labs in AZERBAIJAN	4 labs in MALAYSIA
5 labs in BELGIUM	2 labs in MALTA
2 labs in BRAZIL	1 lab in MAURITIUS
3 labs in BULGARIA	1 lab in MEXICO
4 labs in CANADA	1 lab in MOROCCO
1 lab in CHILE	6 labs in NETHERLANDS
9 labs in CHINA, People's Republic	2 labs in NIGERIA
1 lab in CONGO Brazzaville	1 lab in PAKISTAN
1 lab in COLOMBIA	1 lab in PANAMA
1 lab in COTE D'IVOIRE	1 lab in PERU
2 labs in CROATIA	3 labs in PHILIPPINES
2 labs in CYPRUS	2 labs in POLAND
2 labs in CZECH REPUBLIC	2 labs in PORTUGAL
1 lab in DENMARK	1 lab in QATAR
1 lab in DJIBOUTI	1 lab in ROMANIA
1 lab in EGYPT	16 labs in RUSSIAN FEDERATION
4 labs in ESTONIA	3 labs in SAUDI ARABIA
3 labs in FINLAND	1 lab in SENEGAL
9 labs in FRANCE	1 lab in SERBIA
2 labs in GEORGIA	1 lab in SINGAPORE
3 labs in GERMANY	1 lab in SLOVENIA
5 labs in GREECE	1 lab in SOUTH AFRICA
1 lab in GUAM	2 labs in SOUTH KOREA
1 lab in GUINEA REPUBLIC	9 labs in SPAIN
1 lab in HONG KONG	1 lab in SUDAN
1 lab in HUNGARY	5 labs in SWEDEN
2 labs in INDIA	2 labs in TAIWAN
2 labs in INDONESIA	1 lab in TANZANIA
2 labs in IRAN, Islamic Republic of	1 lab in THAILAND
1 lab in IRELAND	1 lab in TOGO
1 lab in ISRAEL	14 labs in TURKEY
3 labs in ITALY	1 lab in TURKMENISTAN
1 lab in JORDAN	2 labs in UKRAINE
1 lab in KAZAKHSTAN	2 labs in UNITED ARAB EMIRATES
1 lab in KENYA	14 labs in UNITED KINGDOM
3 labs in LATVIA	12 labs in UNITED STATES OF AMERICA
3 labs in LEBANON	1 lab in VIETNAM

**APPENDIX 3****Abbreviations:**

C	= final result after checking of first reported suspect result
C(0.01)	= outlier in Cochran's outlier test
C(0.05)	= straggler in Cochran's outlier test
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 outlier test
R(0.05)	= straggler in Rosner outlier test
E	= error in calculations
U	= reported in a different unit
W	= result withdrawn on request of participant
ex	= excluded from calculations
n.a.	= not applicable
n.d.	= not detected
fr.	= first reported
SDS	= Safety Data Sheet

**Literature:**

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