



## Wine Industry Interlaboratory Program

### Summary Report #032- Summer 2009

---

[Introduction to the Wine Program](#)

[Explanation of Tables and Definitions of Terms](#)

Analysis	Analysis Name
<u><a href="#">901</a></u>	<u><a href="#">Ethanol (% of volume)</a></u>
<u><a href="#">902</a></u>	<u><a href="#">Total Sulfur Dioxide</a></u>
<u><a href="#">903</a></u>	<u><a href="#">Free Sulfur Dioxide</a></u>
<u><a href="#">904</a></u>	<u><a href="#">Titratable Acidity</a></u>
<u><a href="#">905</a></u>	<u><a href="#">Volatile Acidity</a></u>
<u><a href="#">906</a></u>	<u><a href="#">Specific Gravity</a></u>
<u><a href="#">907</a></u>	<u><a href="#">pH</a></u>
<u><a href="#">908</a></u>	<u><a href="#">Residual Sugar</a></u>
<u><a href="#">909</a></u>	<u><a href="#">L-Malic Acid</a></u>
<u><a href="#">910</a></u>	<u><a href="#">Glucose + Fructose</a></u>
<u><a href="#">915</a></u>	<u><a href="#">A420nm (1cm path)</a></u>
<u><a href="#">916</a></u>	<u><a href="#">A520nm (1cm path)</a></u>
<u><a href="#">950</a></u>	<u><a href="#">Research Property: Methanol Content</a></u>
<u><a href="#">951</a></u>	<u><a href="#">Research Property: Glucose</a></u>

---

## **About the Wine Industry Interlaboratory Program**

This interlaboratory survey was administered by Collaborative Testing Services, Inc. (CTS) through an agreement with The American Society for Enology and Viticulture (ASEV) with technical assistance provided by the Laboratory Proficiency Testing Guidance Committee (LPTGC) of the Technical Projects Committee (TPC). The purpose of the survey was to evaluate laboratory performance and assess the performance of the industry with respect to quality assurance testing conducted on commercially produced wine through an on-going interlaboratory testing program. Two bottles of differing wines were supplied to participant laboratories. The samples for each type of wine were chosen consecutively from a single production run, to minimize variation between bottles. Participating laboratories were asked to analyze the samples' ten properties in accordance with their normal laboratory procedures and return the results and methodology information to CTS.

### **About CTS**

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately - owned company that specializes in interlaboratory tests for a variety of sectors: including rubber, plastics, fasteners and metals, containerboard, paper, wine and color, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality assurance objectives. Labs from the U.S., as well as more than 55 countries, currently participate in the CTS programs.

For further information concerning this report contact:

Collaborative Testing Services, Inc.  
21331 Gentry Drive  
Sterling, Virginia 20166 USA

+1-571-434-1925  
FAX #: +1-571-434-1937  
wine@cts-interlab.com

(Toll-free fax within the U.S.: 1-866-fax-2cts)

Office Hours: 8:00 a.m. - 4:30 p.m. ET

## Key for Web Summary Report (Page 1 of 2)

<b>WebCode</b>	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Wine Web Summary Report published on the CTS web site. The WebCode for each analysis can be found in the Performance Analysis Report mailed to each participant.
<b>Lab Mean</b>	The average of the test results obtained by the participant.
<b>Grand Mean</b>	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
<b>Difference from Grand Mean</b>	The difference of the LAB MEAN from the GRAND MEAN.
<b>Between-Lab Standard Deviation</b>	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
<b>Comparative Performance Value</b>	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
<b>Data Flag</b>	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	<b>CAUTION</b> - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	<b>STOP</b> - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	<b>PROCEED</b> - lab was unable to report data for one sample.

**Graph** - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

---

### Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an \* that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

---

Labs flagged with an \* are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An \* should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 901

## Ethanol (% of volume)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1HSNYS		13.69	0.00	0.00	13.20	-0.01	-0.12
1REUDL		13.73	0.03	0.41	13.17	-0.04	-0.48
1TB6MJ	X	14.00	0.31	3.68	13.50	0.30	3.60
2K9CTQ		13.64	-0.05	-0.59	13.17	-0.04	-0.48
3KWCUE		13.75	0.05	0.65	13.20	-0.01	-0.12
3TE5DY		13.71	0.02	0.24	13.23	0.03	0.31
5UNH7R		13.59	-0.10	-1.19	13.11	-0.09	-1.15
6AKSAP		13.85	0.16	1.90	13.30	0.10	1.16
6AW15N		13.66	-0.04	-0.42	13.21	0.01	0.07
6JETQ7	X	13.30	-0.39	-4.63	12.98	-0.23	-2.80
6KFGQJ		13.71	0.02	0.24	13.25	0.04	0.49
6ZU8AW		13.57	-0.13	-1.49	13.17	-0.04	-0.48
72ZUGG		13.73	0.03	0.41	13.18	-0.03	-0.36
7592EM		13.71	0.02	0.24	13.23	0.02	0.25
7AS1HT		13.66	-0.03	-0.36	13.22	0.02	0.19
8E1S3S		13.83	0.13	1.60	13.26	0.06	0.67
987FFN	X	13.70	0.01	0.12	12.80	-0.40	-4.93
9GENSB	X	12.45	-1.24	-14.72	12.90	-0.30	-3.71
9K98BE		13.78	0.08	1.01	13.24	0.04	0.43
ACVA6E		13.72	0.02	0.30	13.21	0.00	0.00
AUJK93		13.60	-0.09	-1.07	13.10	-0.10	-1.28
BQW9SR		13.81	0.12	1.42	13.32	0.11	1.35
BYT2ZH		13.67	-0.02	-0.24	13.21	0.01	0.07
CLQLHN	*	13.78	0.08	1.01	13.16	-0.04	-0.54
CUKRBP		13.87	0.17	2.08	13.41	0.21	2.50
CUP395		13.61	-0.08	-0.95	13.12	-0.09	-1.09
DKLTHT		13.60	-0.09	-1.07	13.10	-0.10	-1.28
E5CKQA		13.71	0.01	0.18	13.21	0.00	0.00
ECP6DZ		13.59	-0.10	-1.19	13.12	-0.08	-1.03
EJNXDG		13.68	-0.02	-0.18	13.26	0.06	0.67
FKXMAL		13.79	0.09	1.13	13.29	0.08	0.98
FLPRLD		13.70	0.01	0.12	13.25	0.05	0.55
FT7K5X		13.78	0.08	1.01	13.27	0.07	0.80
GETV9M	X	13.37	-0.33	-3.86	13.33	0.12	1.47
GLSM94		13.79	0.09	1.13	13.27	0.07	0.80

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 901

## Ethanol (% of volume)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GXTD5U		13.64	-0.06	-0.65	13.16	-0.05	-0.61
HQE6KS		13.59	-0.10	-1.22	13.05	-0.15	-1.85
HWB81J		13.83	0.13	1.60	13.28	0.08	0.92
JJZ7WD		13.50	-0.19	-2.26	13.00	-0.20	-2.49
JSBZBM		13.70	0.01	0.12	13.22	0.01	0.13
K5EJMK		13.68	-0.02	-0.18	13.19	-0.01	-0.18
KUCTHJ	X	13.32	-0.37	-4.39	12.93	-0.28	-3.41
L81JHK		13.60	-0.09	-1.07	13.10	-0.10	-1.28
LHMK4W		13.69	-0.01	-0.06	13.17	-0.03	-0.42
M4CGRE		13.56	-0.13	-1.54	13.12	-0.08	-1.03
MB451X	X	13.35	-0.34	-4.04	12.85	-0.35	-4.32
MN97DE		13.73	0.04	0.47	13.29	0.09	1.04
MWHBXD	X	13.33	-0.37	-4.33	13.05	-0.16	-1.95
N6RN3T		13.60	-0.09	-1.07	13.20	0.00	-0.06
NJAPMV		13.55	-0.14	-1.66	13.16	-0.05	-0.61
NRUDEN		13.66	-0.04	-0.42	13.15	-0.05	-0.67
NW177X		13.61	-0.08	-0.95	13.17	-0.03	-0.42
P6DSRS		13.65	-0.04	-0.48	13.11	-0.09	-1.15
PLKLSV		13.65	-0.04	-0.48	13.22	0.01	0.13
QTFPU7		13.67	-0.02	-0.24	13.19	-0.02	-0.24
QTX532		13.74	0.05	0.59	13.28	0.07	0.86
R7L5LK		13.64	-0.05	-0.59	13.20	0.00	-0.06
RPLLQC		13.66	-0.03	-0.36	13.21	0.01	0.07
RV2ULG		13.63	-0.06	-0.71	13.07	-0.13	-1.64
RVKCQT		13.79	0.09	1.13	13.34	0.14	1.65
RZR3J8		13.62	-0.07	-0.83	13.15	-0.05	-0.67
T9X5PK	X	13.59	-0.11	-1.25	12.93	-0.27	-3.35
TZU1CB	X	14.10	0.41	4.87	13.60	0.40	4.82
UBCSAX		13.86	0.16	1.96	13.39	0.19	2.26
V14AQX		13.80	0.11	1.30	13.31	0.10	1.22
VNR2MU		13.76	0.06	0.77	13.30	0.10	1.16
WN66TB		13.68	-0.02	-0.18	13.23	0.02	0.25
WRUT96	X	13.55	-0.14	-1.66	12.94	-0.27	-3.29
X117AC		13.69	0.00	0.00	13.18	-0.02	-0.30
X8UC4D		13.65	-0.05	-0.54	13.22	0.01	0.13

# ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 901

### Ethanol (% of volume)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XT3E3L		13.70	0.01	0.12	13.15	-0.05	-0.67
Y6MTPC		13.86	0.17	2.02	13.41	0.21	2.50
Z4CYA7		13.71	0.01	0.18	13.24	0.04	0.43
ZH6L6C		13.60	-0.09	-1.07	13.10	-0.10	-1.28

Grand Means		Summary Statistics	
	13.690 percent		13.205 percent
Std Dev Btwn Labs			0.082 percent
	0.084 percent		
<b>Statistics based on 63 of 74 reporting participants</b>			

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

#### Comments on assigned Data Flags

- 1TB6MJ (X) - Data for both samples are high. Possible Systematic Error.
- 6JETQ7 (X) - Data for both samples are low.
- 987FFN (X) - Inconsistent in testing between samples, data for Sample SA62 are low.
- 9GENSB (X) - Data for both samples are low.
- GETV9M (X) - Inconsistent in testing between samples, data for Sample SA61 are low.
- KUCTHJ (X) - Data for both samples are low. Possible Systematic Error.
- MB451X (X) - Data for both samples are low. Possible Systematic Error.
- MWHBXD (X) - Inconsistent in testing between samples, data for Sample SA61 are low.
- T9X5PK (X) - Inconsistent in testing between samples, data for Sample SA62 are low.
- TZU1CB (X) - Data for both samples are high. Possible Systematic Error.
- WRUT96 (X) - Inconsistent in testing between samples, data for Sample SA62 are low.

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 901

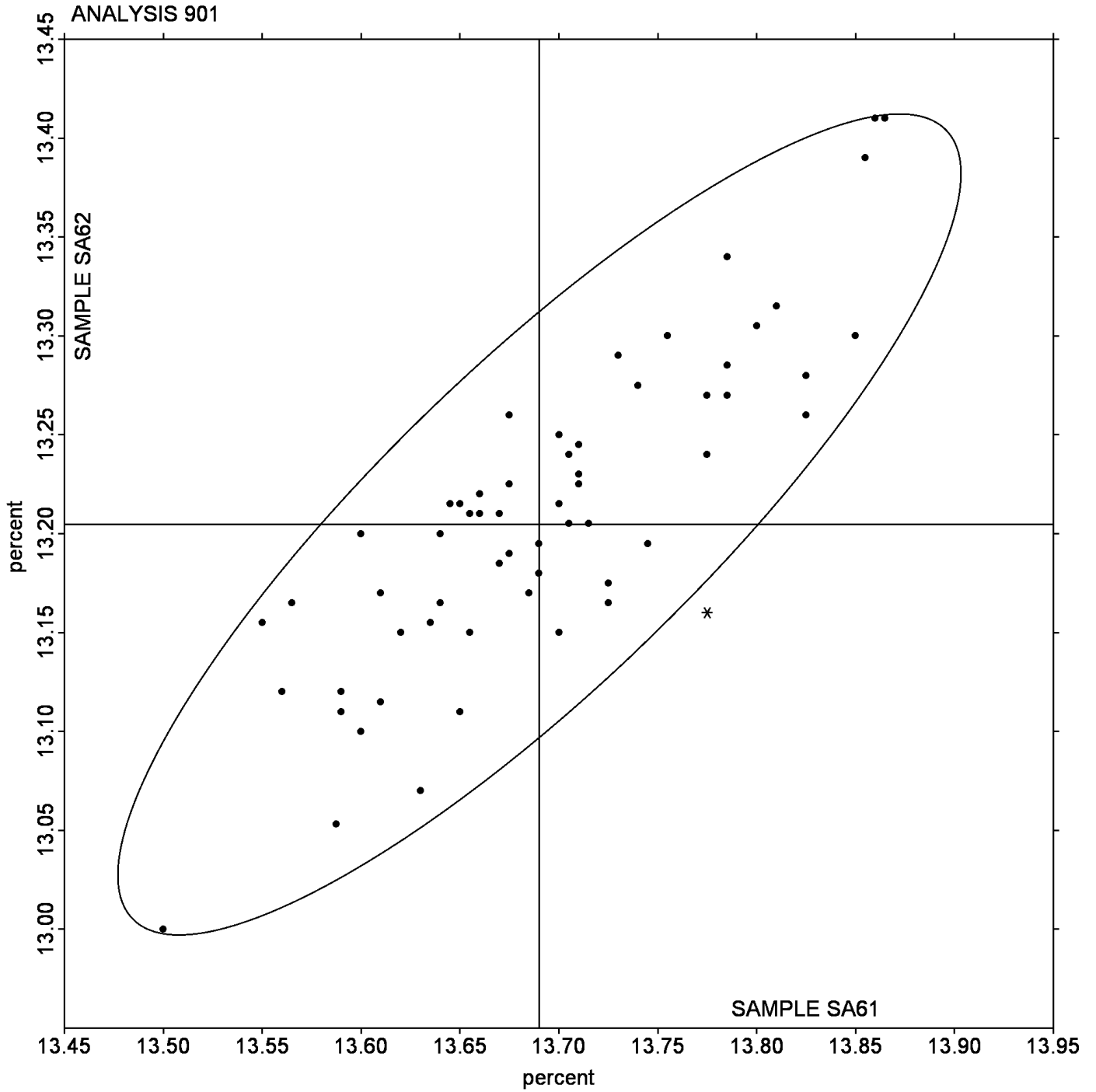
## Ethanol (% of volume)

## Results by Methodology (as reported by laboratory)

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Ebulliometer Method	13.688	0.118	-0.003	13.163	0.095	-0.042	4	8
Gas Chromatography Method	13.640	0.089	-0.050	13.146	0.097	-0.059	5	6
Near Infrared Method	13.688	0.062	-0.002	13.214	0.059	0.009	31	32
Dist. / Density Method	13.656	0.113	-0.034	13.185	0.119	-0.020	9	13
FTIR	13.733	0.093	0.043	13.241	0.087	0.037	12	14
Other _____	13.725	0.000	0.035	13.165	0.000	-0.040	1	1

Analysis 901

Ethanol (% of volume)



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 902

## Total Sulfur Dioxide

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
12W251		79.00	0.54	0.04	101.0	-6.8	-0.55
1BRTFY		63.50	-14.96	-1.20	102.0	-5.8	-0.47
2FQV7T		90.00	11.54	0.93	113.0	5.2	0.42
3QNPMQ		65.00	-13.46	-1.08	86.5	-21.3	-1.73
3WZFMG		83.50	5.04	0.41	106.0	-1.8	-0.14
3X7G79		86.00	7.54	0.61	104.5	-3.3	-0.27
4J4CD3		100.00	21.54	1.73	134.0	26.2	2.13
4UWBY6		69.00	-9.46	-0.76	100.0	-7.8	-0.63
4ZRTJK		90.00	11.54	0.93	126.5	18.7	1.52
5FRGYJ		67.50	-10.96	-0.88	104.0	-3.8	-0.31
629F4J		73.00	-5.46	-0.44	107.0	-0.8	-0.06
68SAWM		62.00	-16.46	-1.32	98.5	-9.3	-0.75
6C1X83		94.50	16.04	1.29	136.5	28.7	2.33
6Y646A		78.50	0.04	0.00	105.5	-2.3	-0.19
7ACL8X		72.00	-6.46	-0.52	108.5	0.7	0.06
7CPQ73		66.50	-11.96	-0.96	104.0	-3.8	-0.31
7RV5J5		82.00	3.54	0.28	106.0	-1.8	-0.14
7TQ53F		80.50	2.04	0.16	120.5	12.7	1.03
7ZSEAA		59.20	-19.26	-1.55	88.0	-19.8	-1.60
8B9DVW	*	102.50	24.04	1.93	110.0	2.2	0.18
8CBTV2		94.50	16.04	1.29	111.5	3.7	0.30
8D13QC		87.00	8.54	0.69	123.0	15.2	1.23
8LCYCB		86.50	8.04	0.65	117.0	9.2	0.75
A2XAUA		94.00	15.54	1.25	119.0	11.2	0.91
A4NH6K		82.50	4.04	0.32	103.5	-4.3	-0.35
BSZ98P		90.37	11.90	0.96	116.8	9.0	0.73
C411GP		82.00	3.54	0.28	108.5	0.7	0.06
CDTGGC	*	79.00	0.54	0.04	129.5	21.7	1.76
CHUYXY		66.50	-11.96	-0.96	98.0	-9.8	-0.79
CUHPCQ	X	93.50	15.04	1.21	89.5	-18.3	-1.48
DEDLDR		53.50	-24.96	-2.01	85.0	-22.8	-1.85
DMS4FH		76.00	-2.46	-0.20	103.0	-4.8	-0.39
DSV8WF		63.00	-15.46	-1.24	91.0	-16.8	-1.36
E46U2U		96.00	17.54	1.41	130.4	22.6	1.83
EA4VHM		66.00	-12.46	-1.00	99.0	-8.8	-0.71

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 902

## Total Sulfur Dioxide

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
ESWBCC		60.50	-17.96	-1.45	82.0	-25.8	-2.09
EXG4VK		79.50	1.04	0.08	99.0	-8.8	-0.71
F1YK7V		64.50	-13.96	-1.12	102.5	-5.3	-0.43
F6J8GL		82.00	3.54	0.28	106.0	-1.8	-0.14
G1SW3P		83.00	4.54	0.37	109.0	1.2	0.10
GXK5RU		85.00	6.54	0.53	105.0	-2.8	-0.23
HFLQ5G		78.00	-0.46	-0.04	103.0	-4.8	-0.39
JJ36GS		90.00	11.54	0.93	115.0	7.2	0.58
KF4NZY	*	86.50	8.04	0.65	94.5	-13.3	-1.08
KJWHCL	*	105.00	26.54	2.14	115.0	7.2	0.58
KX3B4X		72.23	-6.24	-0.50	98.4	-9.3	-0.76
LATTX8		72.00	-6.46	-0.52	106.0	-1.8	-0.14
LYB8Z7		70.00	-8.46	-0.68	102.0	-5.8	-0.47
LYQBED		73.60	-4.86	-0.39	96.8	-11.0	-0.89
M9WU4U		68.50	-9.96	-0.80	96.5	-11.3	-0.91
MJEDFD	*	103.00	24.54	1.97	142.5	34.7	2.81
MVQV6V		67.00	-11.46	-0.92	109.0	1.2	0.10
MWLJEJ		66.50	-11.96	-0.96	100.0	-7.8	-0.63
NW3CRT		66.50	-11.96	-0.96	95.0	-12.8	-1.04
QA7395		96.50	18.04	1.45	120.0	12.2	0.99
QSTL7C		67.50	-10.96	-0.88	100.0	-7.8	-0.63
R6ME85		80.00	1.54	0.12	114.0	6.2	0.50
T2XUAE		68.50	-9.96	-0.80	105.5	-2.3	-0.19
U6DGNK		74.64	-3.82	-0.31	102.0	-5.8	-0.47
UPR1H2		70.00	-8.46	-0.68	109.0	1.2	0.10
UQ8LE6		71.50	-6.96	-0.56	108.0	0.2	0.02
X8D5XD		79.00	0.54	0.04	100.0	-7.8	-0.63
XPP9DJ		102.00	23.54	1.89	133.5	25.7	2.08
XWY9NF		67.00	-11.46	-0.92	105.0	-2.8	-0.23
Y4THWD		72.00	-6.46	-0.52	105.5	-2.3	-0.19
YT4W6E		81.50	3.04	0.24	112.0	4.2	0.34
YXKCPL	X	96.00	17.54	1.41	97.0	-10.8	-0.87
Z1M59R		81.50	3.04	0.24	110.0	2.2	0.18
ZDVUCK		102.50	24.04	1.93	130.0	22.2	1.80
ZE3VXC		67.00	-11.46	-0.92	100.5	-7.3	-0.59

## Analysis 902

## Total Sulfur Dioxide

Grand Means		Summary Statistics	
	78.464 mg/L		107.79 mg/L
Std Dev Btwn Labs			12.34 mg/L
	12.426 mg/L		
<b>Statistics based on 68 of 70 reporting participants</b>			

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

CUHPCQ (X) - Inconsistent in testing between samples.

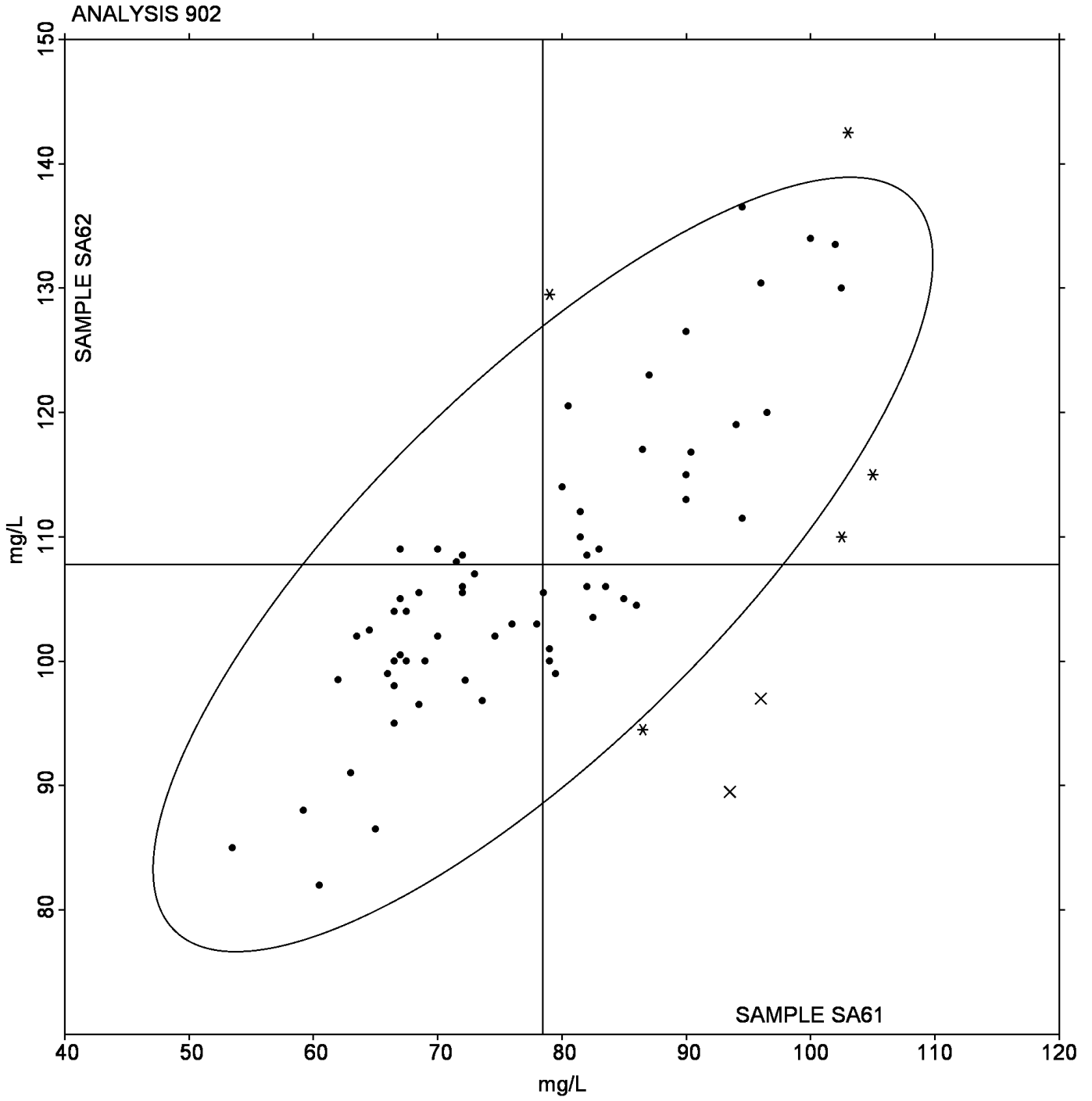
YXKCPL (X) - Inconsistent in testing between samples.

**Results by Methodology (as reported by laboratory)**

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Please specify method used	76.300	3.818	-2.164	98.90	2.97	-8.89	2	2
Ripper Method	87.380	8.048	8.917	113.06	10.26	5.27	22	27
Aeration Oxidation (AO) Method	70.265	9.554	-8.199	100.92	10.84	-6.86	21	22
Segmented Flow Analyzer	80.625	7.364	2.161	116.75	8.80	8.96	4	4
Colormetric Analyzer	70.188	5.567	-8.276	102.13	4.33	-5.66	8	8
Flow Injection Analysis	70.833	12.090	-7.630	108.25	14.27	0.46	6	7

Analysis 902

Total Sulfur Dioxide



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 903

## Free Sulfur Dioxide

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1NMU1F	*	19.00	-5.37	-1.94	20.50	-7.75	-2.61
2F6A4G		25.00	0.63	0.23	29.50	1.25	0.42
2JB3PN		20.50	-3.87	-1.40	28.00	-0.25	-0.08
2XSTB9		21.50	-2.87	-1.04	24.50	-3.75	-1.26
35GUWQ		23.00	-1.37	-0.50	30.00	1.75	0.59
3Y9BGM		24.00	-0.37	-0.13	28.00	-0.25	-0.08
52Y8QR		20.50	-3.87	-1.40	23.50	-4.75	-1.60
571C6P		20.50	-3.87	-1.40	22.00	-6.25	-2.10
5PRGNH	X	39.50	15.13	5.47	45.00	16.75	5.64
643WLC	*	31.50	7.13	2.58	32.00	3.75	1.26
6F4PG4		19.50	-4.87	-1.76	25.00	-3.25	-1.09
76BHES		30.00	5.63	2.03	33.00	4.75	1.60
7CXYNP		28.00	3.63	1.31	29.00	0.75	0.25
7WHJ3Y		26.00	1.63	0.59	33.00	4.75	1.60
8BKBV7		25.00	0.63	0.23	27.00	-1.25	-0.42
8DJ4EY		25.00	0.63	0.23	30.00	1.75	0.59
8RG8BK		20.50	-3.87	-1.40	25.00	-3.25	-1.09
99CW3E		22.50	-1.87	-0.68	27.00	-1.25	-0.42
9HGCP8		24.00	-0.37	-0.13	29.40	1.15	0.39
AW1RAZ		24.00	-0.37	-0.13	29.00	0.75	0.25
BPNKKT	X	11.00	-13.37	-4.83	13.00	-15.25	-5.13
BR29FZ		25.00	0.63	0.23	29.00	0.75	0.25
C4W8FN		24.50	0.13	0.05	31.50	3.25	1.09
C8KJSZ		24.00	-0.37	-0.13	30.00	1.75	0.59
C8KQYL		29.20	4.83	1.75	32.80	4.55	1.53
DAP7NM		25.92	1.55	0.56	31.68	3.43	1.15
DN3VMC		18.50	-5.87	-2.12	22.50	-5.75	-1.93
E6FU72		22.50	-1.87	-0.68	27.50	-0.75	-0.25
FXNW2D		26.00	1.63	0.59	28.50	0.25	0.08
G1NWZV		23.00	-1.37	-0.50	26.00	-2.25	-0.76
G6SRRJ		25.50	1.13	0.41	31.00	2.75	0.93
GDVM23	X	34.50	10.13	3.66	35.50	7.25	2.44
GQQ1XT	X	30.00	5.63	2.03	41.00	12.75	4.29
GQWEWU		27.50	3.13	1.13	31.50	3.25	1.09
GRWDA3		23.50	-0.87	-0.32	28.00	-0.25	-0.08

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 903

## Free Sulfur Dioxide

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GZNT1Z		26.00	1.63	0.59	28.00	-0.25	-0.08
H1AYSA		22.00	-2.37	-0.86	26.00	-2.25	-0.76
H5BFAJ		22.00	-2.37	-0.86	26.00	-2.25	-0.76
H9TRBU		28.00	3.63	1.31	32.00	3.75	1.26
HBTCTR		25.50	1.13	0.41	25.50	-2.75	-0.93
HP86WJ		25.50	1.13	0.41	30.50	2.25	0.76
JG935R		29.00	4.63	1.67	32.00	3.75	1.26
KRDS33		23.00	-1.37	-0.50	26.00	-2.25	-0.76
L44C4X	X	29.50	5.13	1.85	27.50	-0.75	-0.25
L8LQXX		22.00	-2.37	-0.86	26.00	-2.25	-0.76
LF8U8S	X	13.68	-10.69	-3.86	24.72	-3.53	-1.19
LS9M3H		22.00	-2.37	-0.86	26.25	-2.00	-0.67
N4VDNS		25.50	1.13	0.41	29.50	1.25	0.42
NKBM5W		23.50	-0.87	-0.32	28.50	0.25	0.08
NNJ97M		27.00	2.63	0.95	29.00	0.75	0.25
NWT62X		25.00	0.63	0.23	27.00	-1.25	-0.42
NX9Q2H		26.50	2.13	0.77	28.00	-0.25	-0.08
PBQFQ4		23.50	-0.87	-0.32	27.50	-0.75	-0.25
PEETKT		24.00	-0.37	-0.13	29.00	0.75	0.25
PHVBNV		28.00	3.63	1.31	30.50	2.25	0.76
PRX9R6		26.50	2.13	0.77	27.50	-0.75	-0.25
Q7FMG4		24.00	-0.37	-0.13	27.00	-1.25	-0.42
RMCW59		26.00	1.63	0.59	31.00	2.75	0.93
SBFQ6A		25.50	1.13	0.41	27.50	-0.75	-0.25
SLM48G		21.00	-3.37	-1.22	26.00	-2.25	-0.76
TNL9Y2		22.00	-2.37	-0.86	27.00	-1.25	-0.42
ULQ6M6		20.00	-4.37	-1.58	21.50	-6.75	-2.27
W162GD		24.00	-0.37	-0.13	30.00	1.75	0.59
W2587Y		24.50	0.13	0.05	29.00	0.75	0.25
W6CV9P		23.00	-1.37	-0.50	31.00	2.75	0.93
WD713Q		26.00	1.63	0.59	29.50	1.25	0.42
WWJRZ2		26.00	1.63	0.59	29.00	0.75	0.25
X73FH7		27.50	3.13	1.13	31.50	3.25	1.09
XLV3GU		21.50	-2.87	-1.04	23.00	-5.25	-1.77
XY8AP6		25.50	1.13	0.41	27.00	-1.25	-0.42

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 903

## Free Sulfur Dioxide

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Z8PL9H		29.43	5.05	1.83	35.31	7.06	2.38
ZG8B19		23.00	-1.37	-0.50	29.00	0.75	0.25

Grand Means		Summary Statistics	
	24.372 mg/L		28.249 mg/L
Stnd Dev Btwn Labs			2.972 mg/L
	2.767 mg/L		
Statistics based on 66 of 72 reporting participants			

Wines tested: SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

5PRGNH (X) - Data for both samples are high.

BPNKKT (X) - Data for both samples are low.

GDVM23 (X) - Inconsistent in testing between samples, data for Sample SA61 are high.

GQQ1XT (X) - Inconsistent in testing between samples, data for Sample SA62 are high.

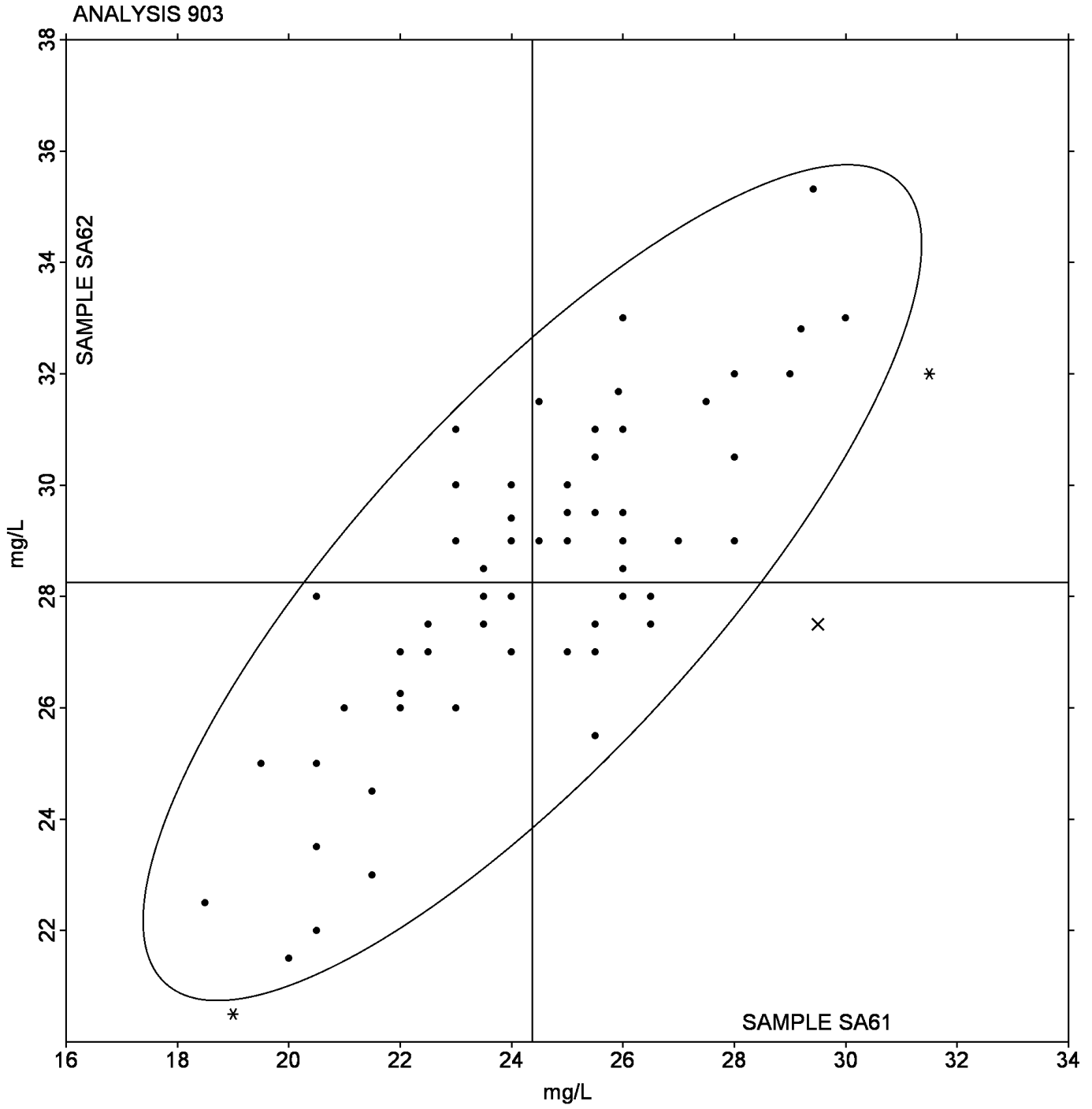
L44C4X (X) - Inconsistent in testing between samples.

LF8U8S (X) - Inconsistent in testing between samples, data for Sample SA61 are low.

**Results by Methodology (as reported by laboratory)**

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Please specify method used	27.600	2.263	3.228	31.900	1.273	3.651	2	2
Ripper Method	26.607	2.002	2.235	29.679	2.700	1.429	14	16
Aeration Oxidation (AO) Method	23.721	2.332	-0.651	28.238	2.862	-0.011	31	35
Segmented Flow Analyzer	25.500	3.536	1.128	29.500	0.707	1.251	2	3
Colormetric Analyzer	23.375	2.167	-0.997	25.813	1.981	-2.437	8	9
Flow Injection Analysis	22.429	1.367	-1.943	27.393	1.767	-0.856	7	7

Analysis 903  
Free Sulfur Dioxide



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 904

## Titratable Acidity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1L2J64		6.300	0.060	0.33	5.650	-0.033	-0.20
1SN2JZ	X	0.620	-5.620	-30.92	0.560	-5.123	-31.72
23J55K		6.415	0.175	0.96	5.760	0.077	0.48
3GUJTP		6.265	0.025	0.14	5.555	-0.128	-0.79
3QCBD8	X	5.345	-0.895	-4.93	4.930	-0.753	-4.66
3Z8ZWG		6.130	-0.110	-0.61	5.640	-0.043	-0.26
4L45WU		6.065	-0.175	-0.96	5.620	-0.063	-0.39
57XB5H		6.375	0.135	0.74	5.740	0.057	0.35
5C5YVY		6.300	0.060	0.33	5.735	0.052	0.32
5KFQUQ		6.295	0.055	0.30	5.775	0.092	0.57
6HCL6E	X	6.485	0.245	1.35	6.240	0.557	3.45
6ZY53L		6.350	0.110	0.60	5.800	0.117	0.73
748R6R		6.265	0.025	0.14	5.785	0.102	0.63
74VKD2		6.300	0.060	0.33	5.700	0.017	0.11
7B82LW	X	6.250	0.010	0.05	6.100	0.417	2.58
7HNGUC		6.270	0.030	0.16	5.710	0.027	0.17
7SX9G9		5.900	-0.340	-1.87	5.430	-0.253	-1.56
7ZGZ6D		6.550	0.310	1.70	6.000	0.317	1.96
85GN21	X	5.830	-0.410	-2.26	5.815	0.132	0.82
9869UG		6.235	-0.005	-0.03	5.680	-0.003	-0.02
9VKFGA		6.175	-0.065	-0.36	5.665	-0.018	-0.11
9YFR7T		6.260	0.020	0.11	5.685	0.002	0.01
A8TDHF		6.260	0.020	0.11	5.690	0.007	0.05
AMCCFP	X	5.750	-0.490	-2.70	5.465	-0.218	-1.35
BJ55EN		6.600	0.360	1.98	5.900	0.217	1.35
BP3XX4	X	6.850	0.610	3.35	6.550	0.867	5.37
BVEM56		6.270	0.030	0.16	5.740	0.057	0.35
BXLRGN	*	5.775	-0.465	-2.56	5.420	-0.263	-1.63
D7XRZ1		6.000	-0.240	-1.32	5.400	-0.283	-1.75
DEFJGX		6.300	0.060	0.33	5.750	0.067	0.42
E29RPK		6.300	0.060	0.33	5.700	0.017	0.11
EKMAJ3	X	6.900	0.660	3.63	6.500	0.817	5.06
EWCP8T		6.195	-0.045	-0.25	5.670	-0.013	-0.08
FDT1PQ	*	6.390	0.150	0.82	5.990	0.307	1.90
FG3MH3		6.000	-0.240	-1.32	5.400	-0.283	-1.75

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 904

## Titratable Acidity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FYP3NK	X	6.100	-0.140	-0.77	0.555	-5.128	-31.75
G92R7A	X	6.400	0.160	0.88	6.150	0.467	2.89
GUVTHY		6.245	0.005	0.03	5.625	-0.058	-0.36
HHWZLZ		6.335	0.095	0.52	5.760	0.077	0.48
HPEUE3		6.280	0.040	0.22	5.865	0.182	1.13
HUZHQU		6.563	0.322	1.77	5.951	0.269	1.66
HV4WT8		6.350	0.110	0.60	5.875	0.192	1.19
JMCNZ5		6.300	0.060	0.33	5.700	0.017	0.11
K42ZCQ		6.175	-0.065	-0.36	5.600	-0.083	-0.51
K6Y26J		6.295	0.055	0.30	5.755	0.072	0.45
K7MNDQ		6.200	-0.040	-0.22	5.650	-0.033	-0.20
KP86BW		6.350	0.110	0.60	5.700	0.017	0.11
MEVLR4		6.100	-0.140	-0.77	5.600	-0.083	-0.51
ML8AZ6		6.285	0.045	0.25	5.725	0.042	0.26
MNVQCU		6.260	0.020	0.11	5.600	-0.083	-0.51
N9H5TZ		6.000	-0.240	-1.32	5.600	-0.083	-0.51
NNQSE4	X	7.650	1.410	7.76	5.800	0.117	0.73
PZDRQJ		6.350	0.110	0.60	5.750	0.067	0.42
Q3W5TK		6.400	0.160	0.88	5.900	0.217	1.35
Q4CW83		6.075	-0.165	-0.91	5.465	-0.218	-1.35
Q98VWU		5.900	-0.340	-1.87	5.500	-0.183	-1.13
QNMXWA	*	5.750	-0.490	-2.70	5.200	-0.483	-2.99
SHHCZG		6.000	-0.240	-1.32	5.450	-0.233	-1.44
SLEP9F		6.075	-0.165	-0.91	5.475	-0.208	-1.29
SM6SZ2		6.300	0.060	0.33	5.900	0.217	1.35
SRQF13		6.200	-0.040	-0.22	5.600	-0.083	-0.51
TEXQYF		6.300	0.060	0.33	5.700	0.017	0.11
TU3PGD		6.370	0.130	0.71	5.850	0.167	1.04
TWGLEB		6.350	0.110	0.60	5.700	0.017	0.11
WEM4XJ	X	5.570	-0.670	-3.69	5.100	-0.583	-3.61
WN44UE	*	5.770	-0.470	-2.59	5.320	-0.363	-2.25
X3X1NW		6.265	0.025	0.14	5.630	-0.053	-0.33
X79Q5K	X	5.850	-0.390	-2.15	5.630	-0.053	-0.33
XE42S1	X	0.590	-5.650	-31.08	0.560	-5.123	-31.72
XV1JBC		6.225	-0.015	-0.08	5.675	-0.008	-0.05

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 904

## Titratable Acidity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YQJBVL		6.400	0.160	0.88	5.835	0.152	0.94
YRS13G		6.400	0.160	0.88	5.700	0.017	0.11
Z68Q4B		6.500	0.260	1.43	5.900	0.217	1.35
ZSSZFQ		6.400	0.160	0.88	5.800	0.117	0.73
ZYQXKS		6.350	0.110	0.60	5.700	0.017	0.11

Grand Means	Summary Statistics
6.2403 g/L as tartaric acid	5.6827 g/L as tartaric acid
Stnd Dev Btwn Labs	
0.1818 g/L as tartaric acid	0.1615 g/L as tartaric acid
<b>Statistics based on 61 of 75 reporting participants</b>	

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

### Comments on assigned Data Flags

1SN2JZ (X) - Data for both samples are low. Default unit used but data may be in g/100mL Tartaric.

3QCBD8 (X) - Data for both samples are low.

6HCL6E (X) - Inconsistent in testing between samples, data for Sample SA62 are high.

7B82LW (X) - Inconsistent in testing between samples.

85GN21 (X) - Inconsistent in testing between samples.

AMCCFP (X) - Inconsistent in testing between samples.

BP3XX4 (X) - Data for both samples are high.

EKMAJ3 (X) - Data for both samples are high.

FYP3NK (X) - Inconsistent in testing between samples, data for Sample SA62 are low. Sample SA62 may be off by a factor of 10.

G92R7A (X) - Inconsistent in testing between samples, data for Sample SA62 are high.

NNQSE4 (X) - Inconsistent in testing between samples, data for Sample SA61 are high. Also inconsistent in testing within both sample sets.

WEM4XJ (X) - Data for both samples are low. Possible Systematic Error.

X79Q5K (X) - Inconsistent in testing between samples.

XE42S1 (X) - Data for both samples are low. Data appear to be off by a factor of 10.

## ASEV-CTS Wine Industry Interlaboratory Testing Program

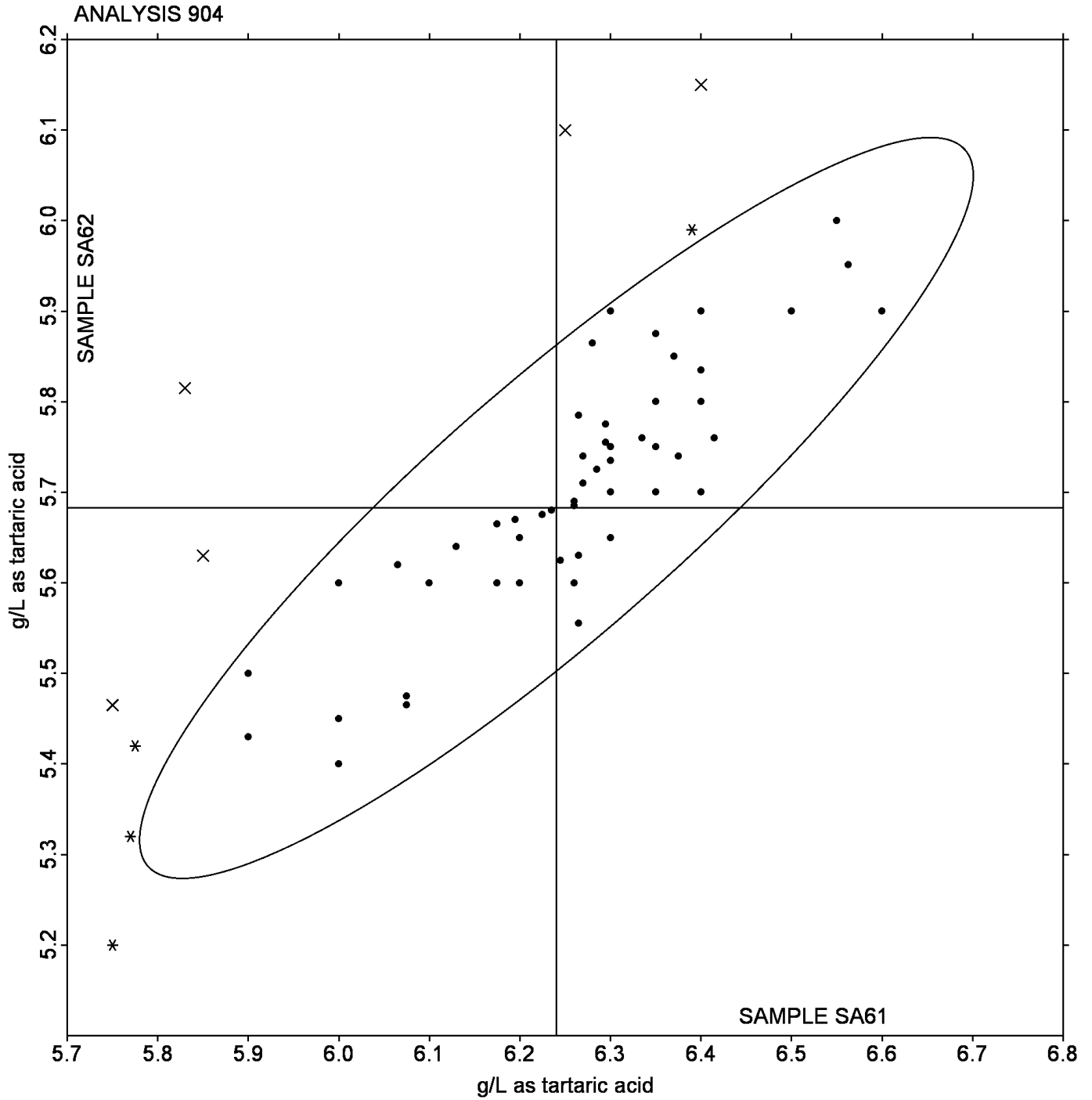
## Analysis 904

## Titratable Acidity

## Results by Methodology (as reported by laboratory)

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Autotitration	6.2781	0.1495	0.0378	5.7044	0.1276	0.0216	31	37
Manual Titration	6.2325	0.1599	-0.0078	5.6769	0.1479	-0.0058	19	27
FTIR	6.3225	0.0402	0.0822	5.7700	0.0530	0.0873	6	10
Segmented Flow Analyzer	6.0000	0.0000	-0.2403	5.4000	0.0000	-0.2827	1	1

Analysis 904  
Titratable Acidity



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 905

## Volatile Acidity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
17YUV2		0.3800	-0.0611	-0.97	0.4300	-0.0856	-1.48
1899AH		0.4050	-0.0361	-0.57	0.4900	-0.0256	-0.44
2XUK4Q		0.5150	0.0739	1.17	0.6100	0.0944	1.64
3BCZXW	X	0.0625	-0.3786	-6.00	0.0720	-0.4436	-7.69
3JTMU5		0.3300	-0.1111	-1.76	0.4400	-0.0756	-1.31
4BZ1U4		0.4200	-0.0211	-0.33	0.5100	-0.0056	-0.10
5J6XNU		0.4150	-0.0261	-0.41	0.4750	-0.0406	-0.70
63RJ35		0.4300	-0.0111	-0.18	0.5050	-0.0106	-0.18
69EKKN	X	0.4600	0.0189	0.30	0.4000	-0.1156	-2.00
6UWD94	*	0.6050	0.1639	2.60	0.6100	0.0944	1.64
72ZQ6C		0.4200	-0.0211	-0.33	0.4900	-0.0256	-0.44
782UZG		0.4150	-0.0261	-0.41	0.5050	-0.0106	-0.18
7QXXBL	X	0.6650	0.2239	3.55	0.4950	-0.0206	-0.36
8GWZTH		0.4250	-0.0161	-0.25	0.4950	-0.0206	-0.36
8Z9QQV		0.4250	-0.0161	-0.25	0.5150	-0.0006	-0.01
9MXPLP		0.4940	0.0529	0.84	0.5430	0.0274	0.47
B2DTBM		0.3850	-0.0561	-0.89	0.4400	-0.0756	-1.31
B8CKB4		0.3950	-0.0461	-0.73	0.4600	-0.0556	-0.96
CCWDXX	X	0.3700	-0.0711	-1.13	0.6350	0.1194	2.07
DU1Q1C		0.4400	-0.0011	-0.02	0.5100	-0.0056	-0.10
E3ZKZP		0.4400	-0.0011	-0.02	0.5000	-0.0156	-0.27
F5N7GJ		0.4600	0.0189	0.30	0.5400	0.0244	0.42
FCJ9HU		0.4100	-0.0311	-0.49	0.4750	-0.0406	-0.70
FPDZ63	X	0.3750	-0.0661	-1.05	0.5500	0.0344	0.60
FW5DWZ		0.3800	-0.0611	-0.97	0.5000	-0.0156	-0.27
G3S26H		0.3900	-0.0511	-0.81	0.5250	0.0094	0.16
GE5E95		0.4165	-0.0246	-0.39	0.4735	-0.0421	-0.73
H6WJAB		0.4900	0.0489	0.77	0.5500	0.0344	0.60
H9RT6Z		0.5400	0.0989	1.57	0.6000	0.0844	1.46
HDYNK8	*	0.6000	0.1589	2.52	0.6900	0.1744	3.02
HENXDG		0.4150	-0.0261	-0.41	0.5100	-0.0056	-0.10
JWQF2E		0.3850	-0.0561	-0.89	0.4600	-0.0556	-0.96
KREKYN		0.4100	-0.0311	-0.49	0.5100	-0.0056	-0.10
L69PH5		0.4250	-0.0161	-0.25	0.4950	-0.0206	-0.36
LXEJP4		0.4000	-0.0411	-0.65	0.4700	-0.0456	-0.79

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 905

## Volatile Acidity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
M2MD1T		0.3960	-0.0451	-0.71	0.5040	-0.0116	-0.20
MKFHJ8		0.5150	0.0739	1.17	0.5700	0.0544	0.94
MUS87S		0.4350	-0.0061	-0.10	0.4750	-0.0406	-0.70
NA64SL		0.4050	-0.0361	-0.57	0.5250	0.0094	0.16
NGU5A6		0.4350	-0.0061	-0.10	0.5300	0.0144	0.25
NP4AP2		0.4600	0.0189	0.30	0.5400	0.0244	0.42
P931BC		0.5100	0.0689	1.09	0.5700	0.0544	0.94
P9DCNK		0.3250	-0.1161	-1.84	0.4100	-0.1056	-1.83
PC9UFZ		0.4250	-0.0161	-0.25	0.5250	0.0094	0.16
PG43PT		0.4500	0.0089	0.14	0.5400	0.0244	0.42
PQQEC1		0.3250	-0.1161	-1.84	0.4150	-0.1006	-1.74
Q6X5CQ		0.4150	-0.0261	-0.41	0.4900	-0.0256	-0.44
QCSAFE		0.3600	-0.0811	-1.28	0.4600	-0.0556	-0.96
QXYNK8		0.4250	-0.0161	-0.25	0.5000	-0.0156	-0.27
RSU38M	*	0.5382	0.0971	1.54	0.6558	0.1402	2.43
SGKLSV	X	0.3750	-0.0661	-1.05	0.5700	0.0544	0.94
SN2UN1		0.5200	0.0789	1.25	0.5700	0.0544	0.94
SQFNU7		0.3600	-0.0811	-1.28	0.4450	-0.0706	-1.22
T2L8MY		0.5300	0.0889	1.41	0.5750	0.0594	1.03
THJ14L		0.5250	0.0839	1.33	0.5500	0.0344	0.60
U27AED		0.4350	-0.0061	-0.10	0.5350	0.0194	0.34
U6TWXE		0.4600	0.0189	0.30	0.5250	0.0094	0.16
UR2ULG		0.4250	-0.0161	-0.25	0.4900	-0.0256	-0.44
W4KYMH		0.4150	-0.0261	-0.41	0.4900	-0.0256	-0.44
W7GW69		0.4800	0.0389	0.62	0.5450	0.0294	0.51
X6MSUD	X	0.5385	0.0974	1.54	0.6975	0.1819	3.15
XGNKP5	*	0.5250	0.0839	1.33	0.5300	0.0144	0.25
XHZS2T		0.5550	0.1139	1.80	0.6450	0.1294	2.24
XS7YQM		0.4875	0.0464	0.74	0.5500	0.0344	0.60
XUJ7YU	X	0.3550	-0.0861	-1.36	0.3200	-0.1956	-3.39
YQYJ2A	X	0.5130	0.0719	1.14	0.4540	-0.0616	-1.07
Z2HAJA		0.3850	-0.0561	-0.89	0.4200	-0.0956	-1.66

## ASEV-CTS Wine Industry Interlaboratory Testing Program

**Analysis 905**  
**Volatile Acidity**

Grand Means	Summary Statistics	
0.44107 g/L as acetic acid	0.51563 g/L as acetic acid	
Std Dev Btwn Labs	0.06314 g/L as acetic acid	0.05771 g/L as acetic acid
<b>Statistics based on 58 of 67 reporting participants</b>		

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

3BCZXW (X) - Data for both samples are low. Default unit was used but data may be in g/100mL Acetic.

69EKKN (X) - Inconsistent in testing between samples.

7QXXBL (X) - Inconsistent in testing between samples, data for Sample SA61 are high.

CCWDXX (X) - Inconsistent in testing between samples.

FPDZ63 (X) - Inconsistent in testing between samples.

SGKLSV (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample SA62.

X6MSUD (X) - Inconsistent in testing between samples, data for Sample SA62 are high.

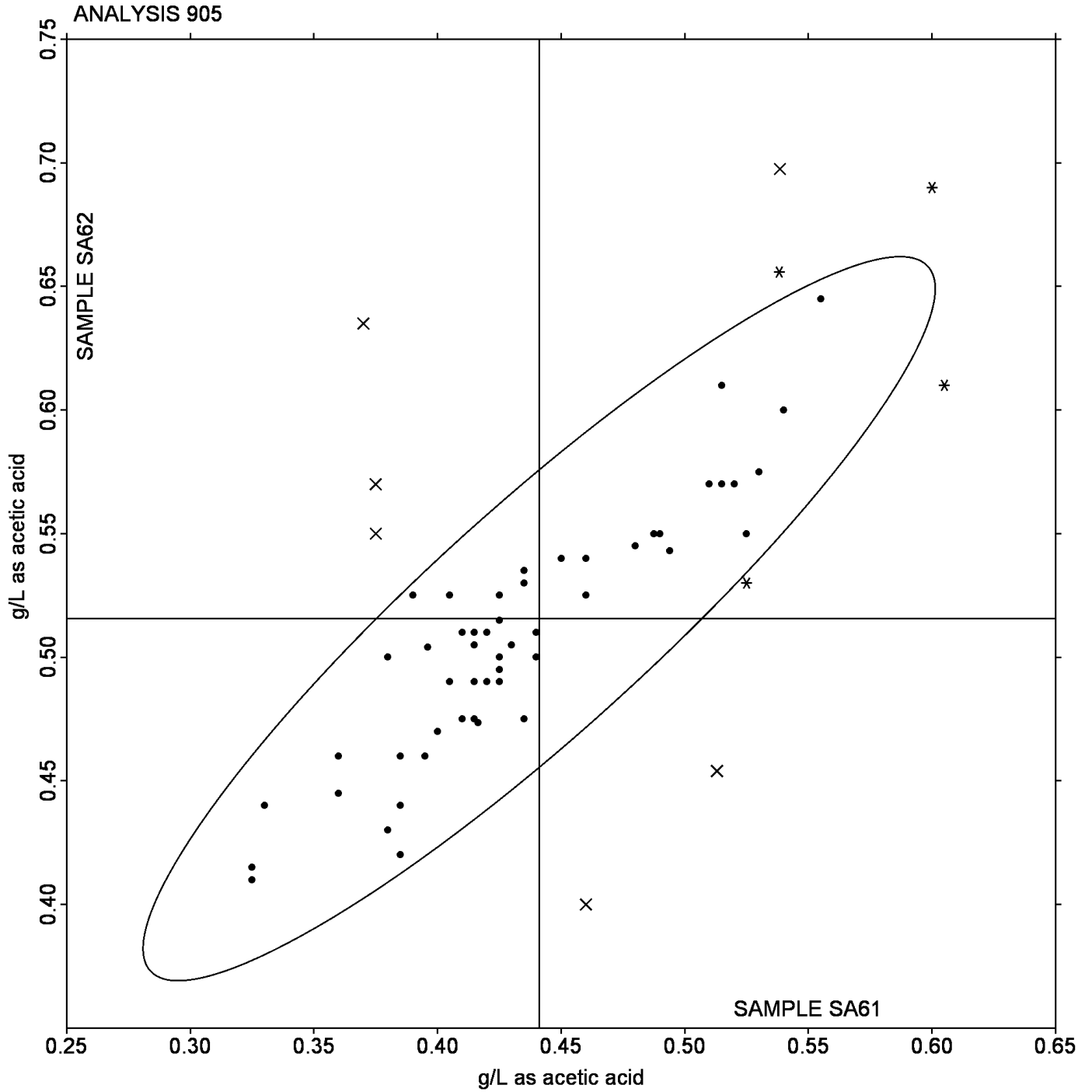
XUJ7YU (X) - Inconsistent in testing between samples, data for Sample SA62 are low.

YQYJ2A (X) - Inconsistent in testing between samples.

**Results by Methodology (as reported by laboratory)**

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Cash Still method	0.44837	0.05428	0.00730	0.52304	0.05204	0.00742	23	30
Enzymatic method	0.39618	0.03475	-0.04490	0.47765	0.03505	-0.03798	17	20
GC	0.40050	0.00636	-0.04057	0.51450	0.01485	-0.00113	2	2
Seg. Flow / Colorimetric Analyzer	0.47630	0.05554	0.03523	0.53870	0.05660	0.02307	5	6
FTIR	0.44057	0.05341	-0.00050	0.50686	0.03957	-0.00877	7	9

Analysis 905  
Volatile Acidity



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 906

## Specific Gravity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1E8AAP		0.9983	0.0000	-0.01	0.9951	0.0000	-0.02
1L1VHY		0.9982	0.0000	-0.03	0.9951	0.0000	-0.04
1UKCPL		0.9983	0.0000	-0.01	0.9951	0.0000	-0.02
2DZSF7		0.9982	-0.0001	-0.07	0.9951	-0.0001	-0.07
3TA3TE		0.9999	0.0017	1.84	0.9969	0.0017	1.92
45QKTN		1.0003	0.0020	2.23	0.9971	0.0019	2.15
48A8TN		0.9965	-0.0017	-1.89	0.9934	-0.0017	-1.92
4C9Z3T		0.9975	-0.0008	-0.83	0.9945	-0.0007	-0.79
55AT2X		0.9983	0.0000	0.04	0.9952	0.0000	0.05
5D1D7X		0.9983	0.0000	0.04	0.9952	0.0000	0.05
6FKQJ8	X	1.0040	0.0057	6.28	1.0010	0.0058	6.48
6K25VJ	*	1.0006	0.0023	2.50	0.9975	0.0023	2.60
6VZHYJ		0.9984	0.0001	0.15	0.9953	0.0001	0.16
7AYN2E	X	1.0166	0.0183	20.07	1.0134	0.0182	20.23
7VDLCQ	X	0.9966	-0.0017	-1.82	0.9930	-0.0022	-2.45
8LDX5Y	X	0.9983	0.0000	0.03	0.9934	-0.0017	-1.91
8V9PFZ		0.9980	-0.0003	-0.34	0.9950	-0.0002	-0.23
9D52GR		0.9983	0.0000	0.05	0.9952	0.0000	0.04
9DH7MN	X	0.9980	-0.0003	-0.29	0.9955	0.0003	0.38
9SP1EZ		0.9984	0.0001	0.15	0.9952	0.0000	0.05
9ZPBT5	X	0.9980	-0.0003	-0.29	0.9965	0.0013	1.46
A9BTV2		0.9983	0.0000	0.04	0.9951	-0.0001	-0.07
ANHL1N		0.9991	0.0008	0.86	0.9960	0.0008	0.88
DK2ZPW	X	0.9967	-0.0016	-1.71	0.9934	-0.0018	-1.95
DQZYHE	X	0.9947	-0.0036	-3.95	0.9912	-0.0040	-4.45
DY3L6Z		0.9983	0.0000	0.00	0.9952	0.0000	-0.01
EMEAGD		0.9982	0.0000	-0.03	0.9952	0.0000	-0.01
F3M1G5		0.9965	-0.0018	-1.97	0.9934	-0.0018	-1.97
H93S18	X	0.9990	0.0007	0.81	0.9970	0.0018	2.04
HL6CWT		0.9984	0.0001	0.12	0.9953	0.0001	0.12
JV6NH2		0.9982	0.0000	-0.03	0.9951	0.0000	-0.03
JZ7CDN		0.9986	0.0004	0.41	0.9956	0.0004	0.45
KDDK8C		0.9983	0.0000	0.01	0.9952	0.0000	0.01
L5SGA4	X	0.9946	-0.0037	-4.01	0.9916	-0.0036	-3.95
LQ1JKT		0.9982	-0.0001	-0.06	0.9951	-0.0001	-0.07

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 906

## Specific Gravity

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LVWR6V	X	0.9973	-0.0010	-1.06	0.9937	-0.0015	-1.63
MDD565		0.9991	0.0008	0.91	0.9959	0.0007	0.81
MRKYXG	X	0.9972	-0.0011	-1.22	0.9948	-0.0004	-0.45
N6MQQQ		0.9982	-0.0001	-0.12	0.9951	-0.0001	-0.07
NEURB		0.9989	0.0006	0.67	0.9957	0.0005	0.58
P955UQ	*	0.9956	-0.0027	-2.91	0.9926	-0.0026	-2.84
PGPUMJ		0.9983	0.0000	0.03	0.9952	0.0000	0.01
PSJLWH		0.9982	0.0000	-0.03	0.9951	0.0000	-0.04
Q9PK7D		0.9982	0.0000	-0.05	0.9951	0.0000	-0.02
QR3ATR		0.9982	0.0000	-0.03	0.9951	0.0000	-0.03
QWHRF2		0.9983	0.0000	0.00	0.9952	0.0000	0.00
QXYE18		0.9983	0.0000	-0.01	0.9953	0.0001	0.10
RNU1YS	*	0.9998	0.0015	1.68	0.9968	0.0016	1.81
S7FK5Q		0.9984	0.0001	0.10	0.9952	0.0000	-0.01
SAN76E		0.9983	0.0000	-0.01	0.9952	0.0000	-0.01
U6YM7P	X	0.9986	0.0004	0.41	0.9952	0.0001	0.07
UAM28A		0.9963	-0.0020	-2.15	0.9932	-0.0020	-2.17
UDZXMU		0.9984	0.0001	0.10	0.9952	0.0000	0.05
VAE9LU	X	0.9984	0.0001	0.14	0.9949	-0.0003	-0.33
VSPXNN		0.9983	0.0001	0.06	0.9953	0.0001	0.12
VTSTFC		0.9984	0.0001	0.12	0.9953	0.0001	0.16
WEBPWA		0.9985	0.0002	0.26	0.9954	0.0002	0.27
WTUV7W	X	1.0018	0.0035	3.87	0.9978	0.0026	2.92
XJKDPH		0.9982	-0.0001	-0.12	0.9950	-0.0002	-0.23
XWSAVR		0.9985	0.0002	0.26	0.9953	0.0001	0.16
Y5MGLB		0.9965	-0.0018	-1.93	0.9935	-0.0017	-1.84
YGQ62K	X	1.0018	0.0035	3.87	0.9988	0.0036	4.03
YWEEKQ	X	0.9981	-0.0002	-0.22	0.9953	0.0002	0.19

**Analysis 906**  
**Specific Gravity**

---

Grand Means	Summary Statistics	
0.99826 sp gr 20/20 C	0.99516	sp gr 20/20 C
Std Dev Btwn Labs	0.00091	sp gr 20/20 C
0.00091 sp gr 20/20 C	0.00090	sp gr 20/20 C
<b>Statistics based on 46 of 63 reporting participants</b>		

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

- 6FKQJ8 (X) - Data for both samples are high.
- 7AYN2E (X) - Data for both samples are high.
- 7VDLCQ (X) - Inconsistent in testing between samples.
- 8LDX5Y (X) - Inconsistent in testing between samples.
- 9DH7MN (X) - Inconsistent in testing between samples.
- 9ZPBT5 (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample SA62.
- DK2ZPW (X) - Inconsistent in testing between samples.
- DQZYHE (X) - Data for both samples are low. Possible Systematic Error.
- H93S18 (X) - Inconsistent in testing between samples.
- L5SGA4 (X) - Data for both samples are low. Possible Systematic Error.
- LVWR6V (X) - Inconsistent in testing between samples.
- MRKYXG (X) - Inconsistent in testing between samples.
- U6YM7P (X) - Inconsistent in testing between samples.
- VAE9LU (X) - Inconsistent in testing between samples.
- WTUV7W (X) - Data for both samples are high. Possible Systematic Error.
- YGQ62K (X) - Data for both samples are high. Possible Systematic Error.
- YWEEKQ (X) - Inconsistent in testing between samples.

## ASEV-CTS Wine Industry Interlaboratory Testing Program

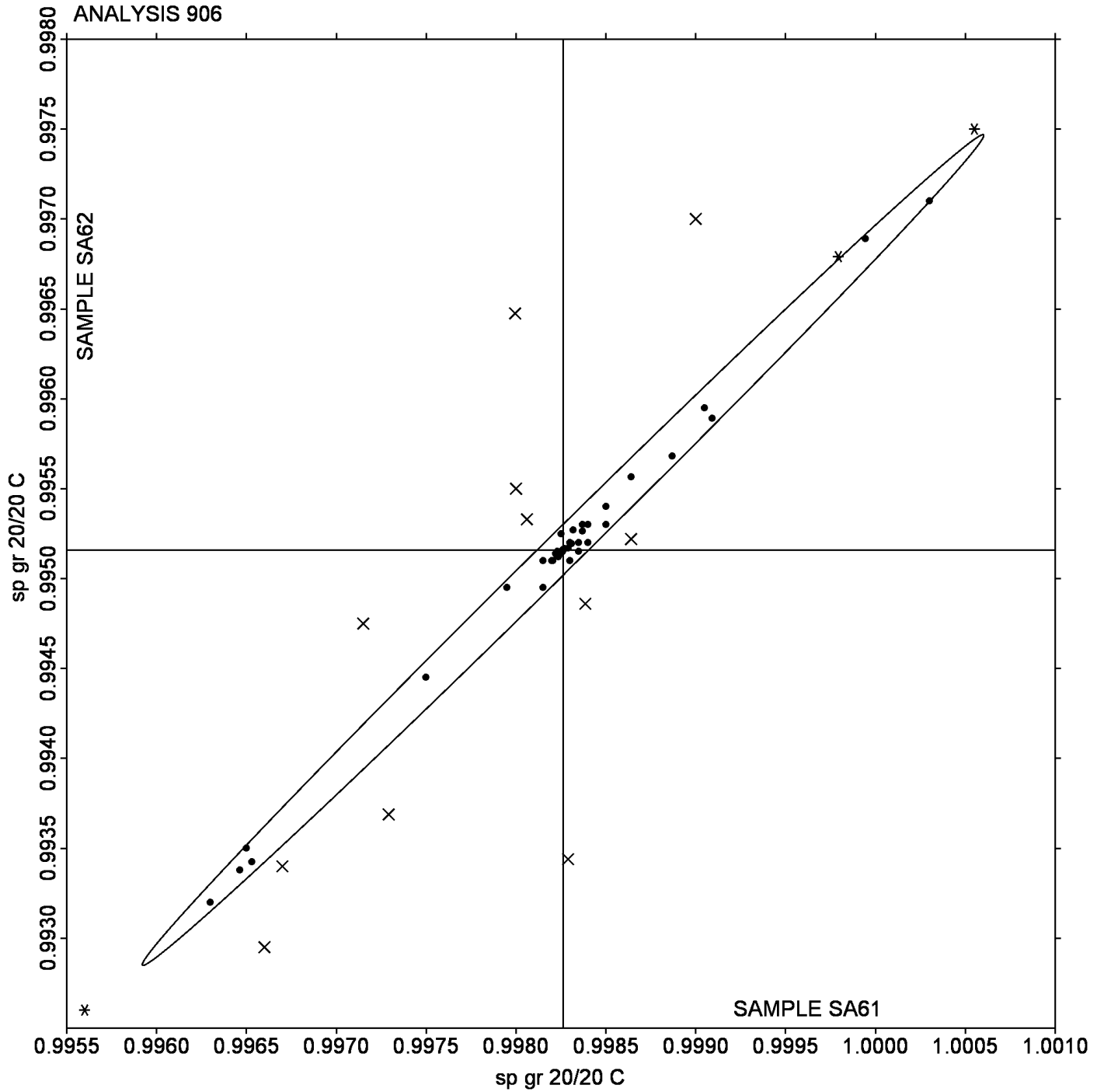
## Analysis 906

## Specific Gravity

## Results by Methodology (as reported by laboratory)

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Pycnometer	0.99815	0.00000	-0.00011	0.99495	0.00000	-0.00021	1	1
Hydrometer	0.99866	0.00037	0.00040	0.99550	0.00034	0.00034	3	8
Densitometer	0.99819	0.00077	-0.00007	0.99509	0.00075	-0.00007	38	50
FTIR	0.99864	0.00000	0.00038	0.99557	0.00000	0.00041	1	3

Analysis 906  
Specific Gravity



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 907

## pH

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1E4CYM		3.565	0.011	0.40	3.500	0.024	0.83
1ZSA96	X	3.450	-0.104	-3.76	3.380	-0.096	-3.42
226822		3.540	-0.014	-0.50	3.465	-0.011	-0.40
2HL1UJ		3.525	-0.029	-1.05	3.445	-0.031	-1.11
2RNVND		3.560	0.006	0.22	3.490	0.014	0.48
3H81U9	*	3.625	0.071	2.58	3.540	0.064	2.25
3T87UM		3.605	0.051	1.85	3.515	0.039	1.37
58361F		3.500	-0.054	-1.95	3.425	-0.051	-1.82
5Z827E	X	3.680	0.126	4.57	3.585	0.109	3.85
67VFAJ		3.520	-0.034	-1.23	3.450	-0.026	-0.94
6GRGQ2		3.550	-0.004	-0.14	3.475	-0.001	-0.05
6HS5RD		3.560	0.006	0.22	3.490	0.014	0.48
6RZ68L		3.570	0.016	0.58	3.500	0.024	0.83
6VAL9W	X	3.700	0.146	5.29	3.620	0.144	5.09
7H3V99		3.600	0.046	1.67	3.505	0.029	1.01
7QN7TQ		3.545	-0.009	-0.32	3.470	-0.006	-0.23
8VWYGE		3.550	-0.004	-0.14	3.480	0.004	0.13
9HLWC8		3.550	-0.004	-0.14	3.460	-0.016	-0.58
BN7XTL		3.565	0.011	0.40	3.500	0.024	0.83
CKYKCC		3.485	-0.069	-2.50	3.410	-0.066	-2.35
CS1RAZ		3.580	0.026	0.95	3.500	0.024	0.83
CSWEBJ		3.545	-0.009	-0.32	3.460	-0.016	-0.58
DUPFGX		3.590	0.036	1.31	3.500	0.024	0.83
E2G2VA		3.560	0.006	0.22	3.485	0.009	0.30
EAZUEU		3.545	-0.009	-0.32	3.450	-0.026	-0.94
EVL21J		3.580	0.026	0.95	3.500	0.024	0.83
F2YWCC		3.550	-0.004	-0.14	3.485	0.009	0.30
FGZLEB	*	3.470	-0.084	-3.04	3.390	-0.086	-3.06
FH1EM7		3.555	0.001	0.04	3.485	0.009	0.30
GA83N1		3.560	0.006	0.22	3.480	0.004	0.13
GC4JAG	X	3.635	0.081	2.94	3.510	0.034	1.19
GKZLCS		3.530	-0.024	-0.87	3.460	-0.016	-0.58
GQ5DCS		3.560	0.006	0.22	3.480	0.004	0.13
GV536P		3.560	0.006	0.22	3.490	0.014	0.48
HTNW2D		3.520	-0.034	-1.23	3.430	-0.046	-1.64

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 907

## pH

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
KQMNCG		3.520	-0.034	-1.23	3.440	-0.036	-1.29
L3R7NE		3.610	0.056	2.03	3.535	0.059	2.07
LALCFF		3.530	-0.024	-0.87	3.470	-0.006	-0.23
LNGYQ5	*	3.525	-0.029	-1.05	3.475	-0.001	-0.05
LQS6HJ		3.575	0.021	0.76	3.510	0.034	1.19
LZJKLP		3.555	0.001	0.04	3.480	0.004	0.13
M7MPPK		3.540	-0.014	-0.50	3.465	-0.011	-0.40
MLLVE9		3.560	0.006	0.22	3.480	0.004	0.13
N3P8R4		3.545	-0.009	-0.32	3.480	0.004	0.13
N89TDJ	X	3.685	0.131	4.75	3.595	0.119	4.20
NF5VEV		3.585	0.031	1.13	3.520	0.044	1.54
NFMCNQ	X	3.540	-0.014	-0.50	3.525	0.049	1.72
NP63FH		3.540	-0.014	-0.50	3.475	-0.001	-0.05
NU32BB		3.570	0.016	0.58	3.490	0.014	0.48
P2612T		3.560	0.006	0.22	3.480	0.004	0.13
P3AAJ		3.575	0.021	0.76	3.500	0.024	0.83
PKTLVK		3.575	0.021	0.76	3.490	0.014	0.48
Q5QJRH		3.530	-0.024	-0.87	3.430	-0.046	-1.64
QRSCV2		3.530	-0.024	-0.87	3.450	-0.026	-0.94
RMX9R7	*	3.535	-0.019	-0.68	3.430	-0.046	-1.64
RSDHMB		3.570	0.016	0.58	3.490	0.014	0.48
S5XTLE		3.560	0.006	0.22	3.480	0.004	0.13
STW1RN		3.550	-0.004	-0.14	3.460	-0.016	-0.58
SYMEBP	X	3.610	0.056	2.03	3.565	0.089	3.14
TVH6HY		3.530	-0.024	-0.87	3.460	-0.016	-0.58
V2G8Z4		3.560	0.006	0.22	3.465	-0.011	-0.40
VT88NM		3.550	-0.004	-0.14	3.480	0.004	0.13
W81BJY		3.530	-0.024	-0.87	3.450	-0.026	-0.94
WVFGCZ	X	3.655	0.101	3.66	3.455	-0.021	-0.76
WLGUT6	X	3.545	-0.009	-0.32	3.555	0.079	2.78
WYFYRS		3.545	-0.009	-0.32	3.465	-0.011	-0.40
X66158		3.575	0.021	0.76	3.510	0.034	1.19
XQE34F		3.540	-0.014	-0.50	3.470	-0.006	-0.23
XZ86D2		3.560	0.006	0.22	3.485	0.009	0.30
Y3YGP7		3.575	0.021	0.76	3.480	0.004	0.13

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 907

## pH

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Z7YKDD		3.575	0.021	0.76	3.485	0.009	0.30
ZEG8AN		3.595	0.041	1.49	3.520	0.044	1.54

Grand Means		Summary Statistics	
	3.5539 pH		3.4764 pH
Std Dev Btwn Labs			0.0282 pH
	0.0276 pH		
<b>Statistics based on 63 of 72 reporting participants</b>			

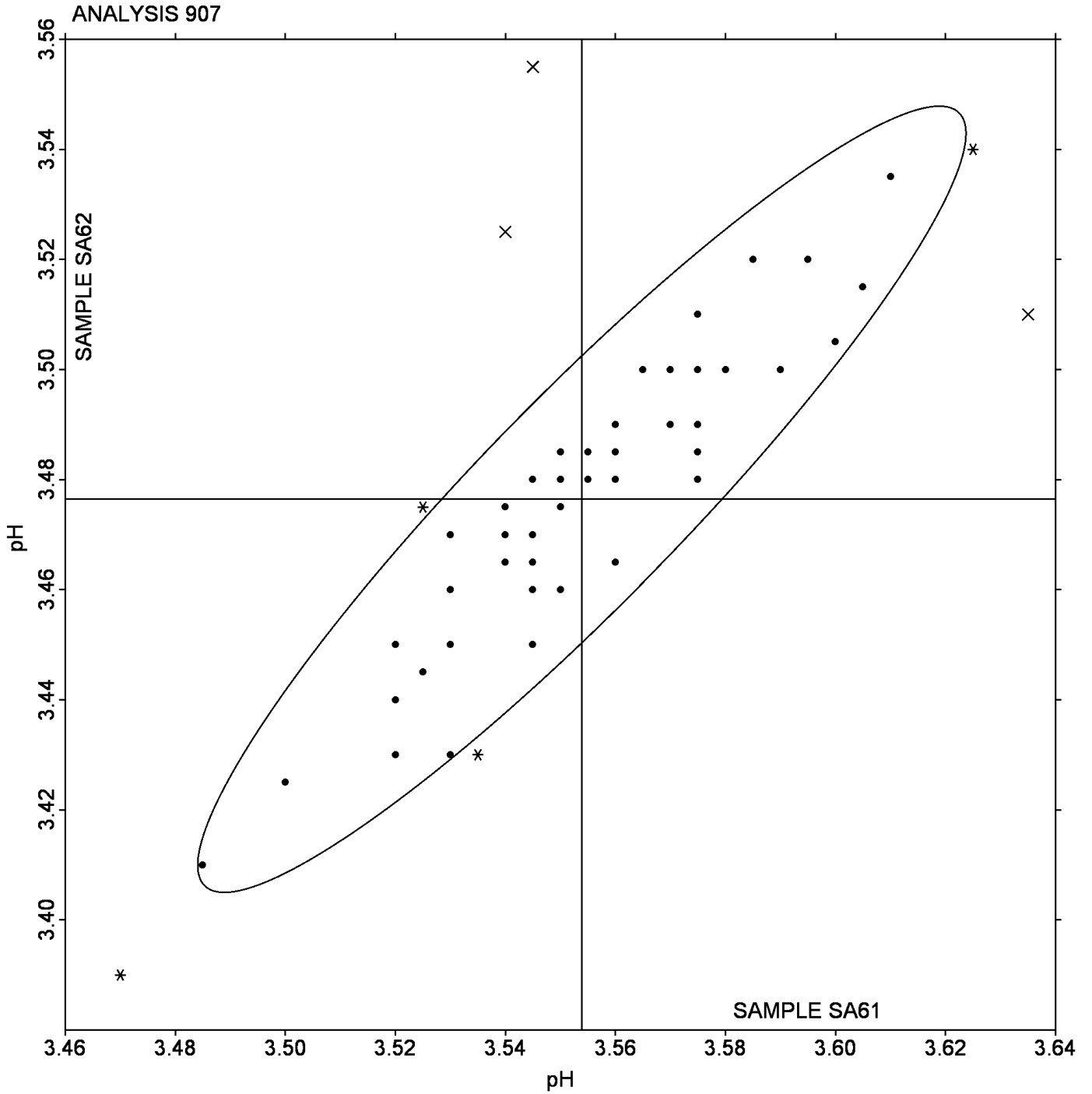
**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

### Comments on assigned Data Flags

- 1ZSA96 (X) - Data for both samples are low. Possible Systematic Error.
- 5Z827E (X) - Data for both samples are high. Possible Systematic Error.
- 6VAL9W (X) - Data for both samples are high.
- GC4JAG (X) - Inconsistent in testing between samples, data for Sample SA61 are high.
- N89TDJ (X) - Data for both samples are high. Possible Systematic Error.
- NFMCNQ (X) - Inconsistent in testing between samples and inconsistent within the determinations for both samples.
- SYMEBP (X) - Inconsistent in testing between samples, data for Sample SA62 are high.
- WFVGCZ (X) - Inconsistent in testing between samples, data for Sample SA61 are high.
- WLGUT6 (X) - Inconsistent in testing between samples, data for Sample SA62 are high.

Analysis 907

pH



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 908

## Residual Sugar

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3UB4MB		13.85	3.29	2.09	7.635	2.338	2.06
4928RY		12.10	1.55	0.98	7.200	1.903	1.68
6K12FP		11.90	1.35	0.86	6.150	0.853	0.75
6LT6TU		10.97	0.42	0.26	5.297	0.000	0.00
841ZSF		11.15	0.60	0.38	5.350	0.053	0.05
A3NLK4		9.46	-1.09	-0.69	4.800	-0.497	-0.44
HR3APD		10.00	-0.55	-0.35	5.100	-0.197	-0.17
KRM5S6		8.95	-1.60	-1.02	4.850	-0.447	-0.39
L4WZ2N		10.02	-0.53	-0.34	4.900	-0.397	-0.35
L98T7K		8.63	-1.93	-1.23	3.645	-1.652	-1.46
NJG78K		9.80	-0.75	-0.48	4.750	-0.547	-0.48
Q3LTHG		11.61	1.06	0.67	5.925	0.628	0.55
R554US		11.28	0.73	0.46	5.075	-0.222	-0.20
T4LC5M		9.75	-0.80	-0.51	4.600	-0.697	-0.61
TC7L8U		7.47	-3.09	-1.96	3.630	-1.667	-1.47
TGV28F		7.65	-2.90	-1.85	3.150	-2.147	-1.89
UY5GEN		11.30	0.75	0.47	6.050	0.753	0.66
VB1M1K		12.40	1.85	1.17	5.950	0.653	0.58
WK9JA9	*	10.92	0.36	0.23	7.100	1.803	1.59
XNBCVE		11.24	0.69	0.44	5.300	0.003	0.00
XNY52Q		12.05	1.50	0.95	5.670	0.373	0.33
ZM9A86		9.70	-0.85	-0.54	4.400	-0.897	-0.79

## Grand Means

10.554 g/L

## Summary Statistics

5.2967 g/L

## Std Dev Btwn Labs

1.574 g/L

1.1338 g/L

Statistics based on 22 of 22 reporting participants

Wines tested: SA61: Cabernet Sauvignon; SA62: Merlot

## ASEV-CTS Wine Industry Interlaboratory Testing Program

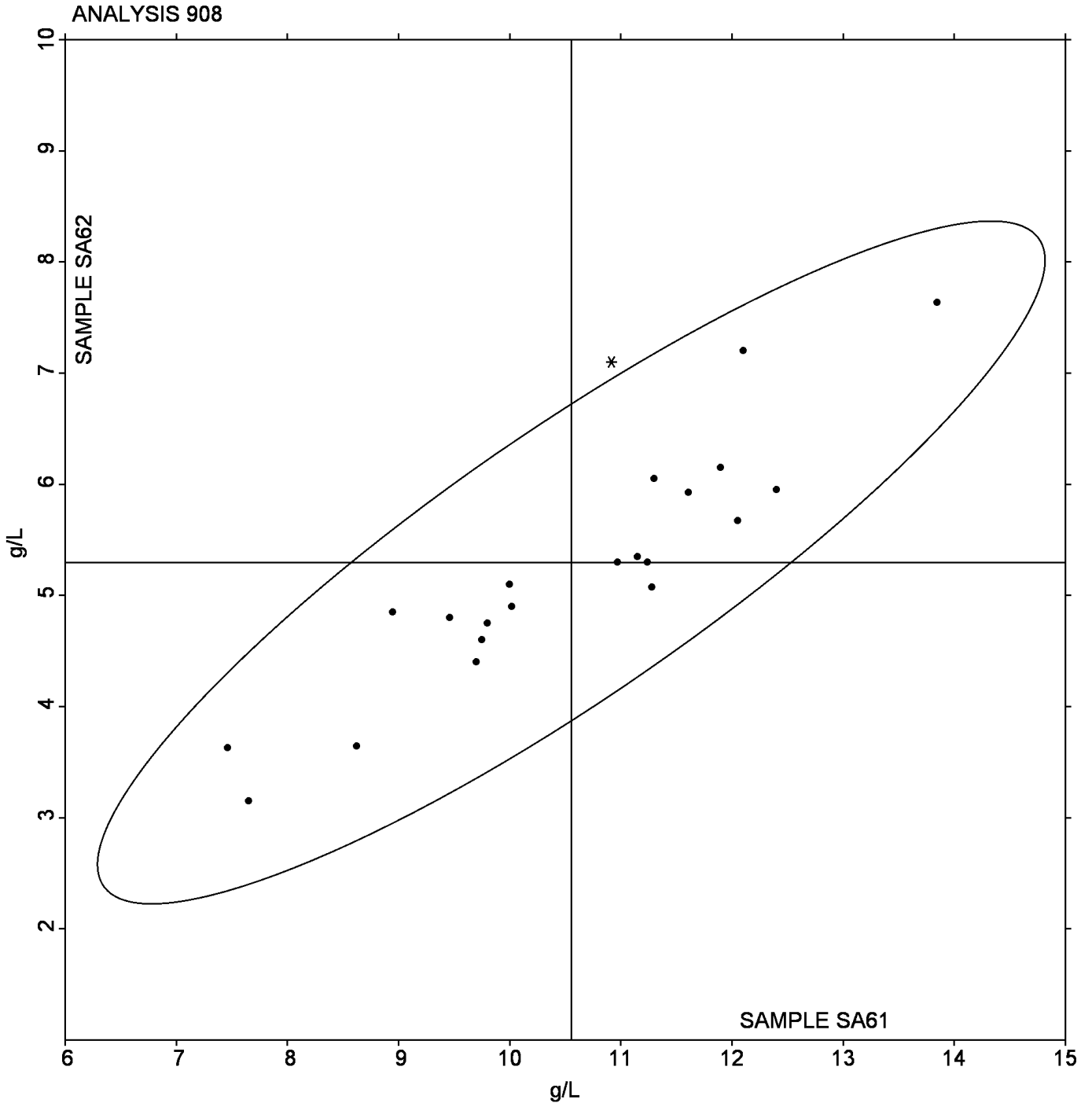
## Analysis 908

## Residual Sugar

## Results by Methodology (as reported by laboratory)

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Cu Reduction Method	10.870	1.477	0.316	5.3595	0.9487	0.0628	16	16
Segmented Flow	10.900	1.697	0.346	5.8000	1.9799	0.5033	2	2
FTIR	9.043	0.590	-1.511	4.2225	0.8167	-1.0742	2	3
Other _____	7.465	0.000	-3.089	3.6300	0.0000	-1.6667	1	1

Analysis 908  
Residual Sugar



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 909

## L-Malic Acid

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1KFZXY		0.2645	-0.0129	-0.18	0.1000	-0.0220	-0.46
1LYH2A		0.2950	0.0176	0.25	0.1150	-0.0070	-0.15
3V4GC4		0.1650	-0.1124	-1.58	0.0400	-0.0820	-1.70
4X758R		0.3305	0.0531	0.75	0.1675	0.0455	0.94
52HK92		0.3050	0.0276	0.39	0.0900	-0.0320	-0.66
799MPJ		0.2950	0.0176	0.25	0.1100	-0.0120	-0.25
7DFCGY		0.2450	-0.0324	-0.46	0.0950	-0.0270	-0.56
7JKF4S		0.3260	0.0486	0.68	0.1205	-0.0015	-0.03
7Z9LEQ		0.3290	0.0516	0.73	0.1495	0.0275	0.57
8PTWCE		0.2850	0.0076	0.11	0.1750	0.0530	1.10
98ZNU7		0.2710	-0.0064	-0.09	0.1035	-0.0185	-0.38
9FT1Q2		0.3400	0.0626	0.88	0.1900	0.0680	1.41
9TQBMU		0.2905	0.0131	0.18	0.1260	0.0040	0.08
ATCEBT		0.3500	0.0726	1.02	0.1500	0.0280	0.58
BPDXGT	X	0.0500	-0.2274	-3.20	0.2250	0.1030	2.13
CXDE9A		0.2440	-0.0334	-0.47	0.0550	-0.0670	-1.39
DLEJN7		0.2500	-0.0274	-0.39	0.0750	-0.0470	-0.97
E71WPG		0.1900	-0.0874	-1.23	0.1000	-0.0220	-0.46
ELB9DM		0.2800	0.0026	0.04	0.1000	-0.0220	-0.46
FFXXS6		0.2795	0.0021	0.03	0.1200	-0.0020	-0.04
FMMY9R		0.2050	-0.0724	-1.02	0.1200	-0.0020	-0.04
FWVW43		0.2625	-0.0149	-0.21	0.0840	-0.0380	-0.79
HYZKZP		0.2430	-0.0344	-0.48	0.0640	-0.0580	-1.20
K67JJV	*	0.1850	-0.0924	-1.30	0.1950	0.0730	1.51
KKAV32		0.2850	0.0076	0.11	0.0850	-0.0370	-0.77
KW15HP		0.2650	-0.0124	-0.17	0.1550	0.0330	0.68
LCKH9M		0.3300	0.0526	0.74	0.1600	0.0380	0.79
LPLA4C		0.2150	-0.0624	-0.88	0.1500	0.0280	0.58
MLYZM1		0.3550	0.0776	1.09	0.1150	-0.0070	-0.15
MY6NXJ		0.4500	0.1726	2.43	0.2000	0.0780	1.61
P824QY		0.1300	-0.1474	-2.08	0.0975	-0.0245	-0.51
P9U5CQ	*	0.2050	-0.0724	-1.02	0.0000	-0.1220	-2.52
PCMSNH		0.2635	-0.0139	-0.20	0.0990	-0.0230	-0.48
PN8XR1		0.3000	0.0226	0.32	0.1300	0.0080	0.17
PTQ31H		0.2350	-0.0424	-0.60	0.0400	-0.0820	-1.70

**ASEV-CTS Wine Industry Interlaboratory Testing Program**  
**Analysis 909**  
**L-Malic Acid**

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PU5U3S	*	0.1000	-0.1774	-2.50	0.1000	-0.0220	-0.46
PWLG27		0.3760	0.0986	1.39	0.2045	0.0825	1.71
QF7ZPQ		0.3045	0.0271	0.38	0.1495	0.0275	0.57
QK3D3K		0.3700	0.0926	1.30	0.2400	0.1180	2.44
R2EDHE		0.2750	-0.0024	-0.03	0.1000	-0.0220	-0.46
RB6SLK		0.2900	0.0126	0.18	0.1500	0.0280	0.58
RHT949		0.3450	0.0676	0.95	0.1650	0.0430	0.89
SSCUY6		0.2250	-0.0524	-0.74	0.0950	-0.0270	-0.56
T8EC8U		0.2500	-0.0274	-0.39	0.1900	0.0680	1.41
TKWXZW		0.3450	0.0676	0.95	0.1900	0.0680	1.41
U9G8WK		0.2350	-0.0424	-0.60	0.0900	-0.0320	-0.66
VMBAKK		0.2285	-0.0489	-0.69	0.0845	-0.0375	-0.78
X3PJAJ	X	29.5400	29.2626	411.87	11.1150	10.9930	227.41
XBHP4K		0.3195	0.0421	0.59	0.1295	0.0075	0.15
YVNNN6		0.1965	-0.0809	-1.14	0.0740	-0.0480	-0.99
Z61A9C	X	0.1100	-0.1674	-2.36	0.3000	0.1780	3.68
ZJYM3P	*	0.4700	0.1926	2.71	0.1400	0.0180	0.37

Grand Means		Summary Statistics	
	0.27743 g/L		0.12201 g/L
Stnd Dev Btwn Labs			
	0.07105 g/L		0.04834 g/L
<b>Statistics based on 49 of 52 reporting participants</b>			

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

BPDXTG (X) - Low data for Sample SA61.

X3PJAJ (X) - Extreme data. Lab indicated reporting in g/L, but data appear to be in mg/100mL.

Z61A9C (X) - High data for Sample SA62.

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 909

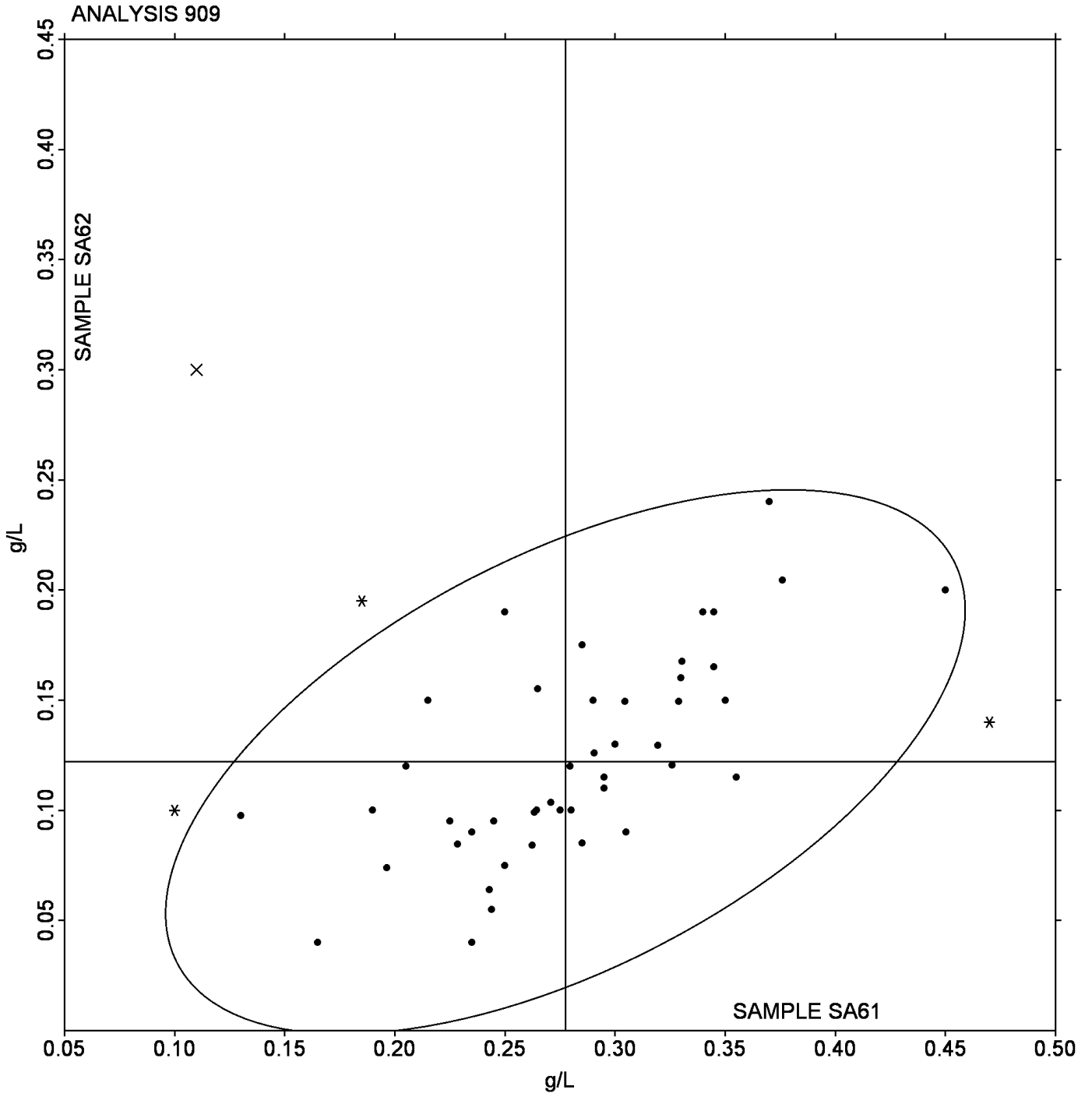
## L-Malic Acid

## Results by Methodology (as reported by laboratory)

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Enzymatic	0.28010	0.05246	0.00267	0.12034	0.04298	-0.00167	40	41
HPLC	0.16500	0.00000	-0.11243	0.04000	0.00000	-0.08201	1	1
FTIR	0.31625	0.10594	0.03882	0.17250	0.02630	0.05049	4	9

Analysis 909

L-Malic Acid



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 910

## Glucose + Fructose

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1WJ3Q1		7.600	0.087	0.11	3.200	-0.121	-0.30
22NBLV		7.375	-0.138	-0.18	3.245	-0.076	-0.19
26P21S		6.980	-0.533	-0.70	3.090	-0.231	-0.58
2FA8R5		7.335	-0.178	-0.23	3.420	0.099	0.25
3MD9V5	X	9.350	1.837	2.41	5.000	1.679	4.23
42GYZA	*	6.600	-0.913	-1.20	2.315	-1.006	-2.54
4XDTRB		7.200	-0.313	-0.41	3.160	-0.161	-0.41
5TU6QA		7.420	-0.093	-0.12	3.340	0.019	0.05
5YEUI2	X	6.780	-0.733	-0.96	3.840	0.519	1.31
62Y5CC	X	8.750	1.237	1.62	6.250	2.929	7.39
6MQL5T	*	7.350	-0.163	-0.21	3.850	0.529	1.33
77H4EZ		7.330	-0.183	-0.24	3.090	-0.231	-0.58
95V5N1		7.450	-0.063	-0.08	3.110	-0.211	-0.53
A6UB1B		7.900	0.387	0.51	3.400	0.079	0.20
ADC4KV		7.625	0.112	0.15	3.350	0.029	0.07
AJAX3B		7.700	0.187	0.25	3.350	0.029	0.07
BC152C		7.900	0.387	0.51	3.600	0.279	0.70
BT61DD		8.000	0.487	0.64	3.700	0.379	0.96
C7BG5S		7.600	0.087	0.11	3.400	0.079	0.20
CANJL5		7.600	0.087	0.11	3.100	-0.221	-0.56
CPYXA9		6.950	-0.563	-0.74	3.050	-0.271	-0.68
DS298G		7.430	-0.083	-0.11	3.275	-0.046	-0.12
EGDPCJ	X	2.780	-4.733	-6.21	1.680	-1.641	-4.14
EV5RBA	X	5.505	-2.008	-2.64	3.260	-0.061	-0.15
FQG1MY		7.500	-0.013	-0.02	3.400	0.079	0.20
FSK4A9		7.775	0.262	0.34	3.515	0.194	0.49
H3DYLF		8.000	0.487	0.64	3.250	-0.071	-0.18
H7XLMF		7.960	0.447	0.59	3.840	0.519	1.31
HURTV3		8.300	0.787	1.03	3.800	0.479	1.21
KTWJKT		7.300	-0.213	-0.28	3.170	-0.151	-0.38
KU4K4J		7.450	-0.063	-0.08	3.250	-0.071	-0.18
L8WGKU	X	7.015	-0.498	-0.65	1.825	-1.496	-3.77
LAD5J9	*	5.750	-1.763	-2.31	2.800	-0.521	-1.31
MBN2EJ	*	9.750	2.237	2.94	4.350	1.029	2.60
MUYM6T		7.195	-0.318	-0.42	3.055	-0.266	-0.67

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 910

## Glucose + Fructose

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MW7CDP		7.815	0.302	0.40	3.360	0.039	0.10
MYEAKX		7.150	-0.363	-0.48	3.350	0.029	0.07
NQGVGB		7.050	-0.463	-0.61	3.200	-0.121	-0.30
PEBYNL		6.850	-0.663	-0.87	3.200	-0.121	-0.30
PMKYXG		6.141	-1.372	-1.80	2.511	-0.810	-2.04
PZMQ6G	X	0.690	-6.823	-8.96	0.295	-3.026	-7.63
QF8K5J		7.850	0.337	0.44	3.415	0.094	0.24
RQHG82		8.100	0.587	0.77	3.500	0.179	0.45
S5PK7E		7.700	0.187	0.25	3.300	-0.021	-0.05
SCZDYV	X	9.400	1.887	2.48	3.300	-0.021	-0.05
SZSHRM	*	9.545	2.032	2.67	4.425	1.104	2.78
T4CGET		7.465	-0.048	-0.06	3.630	0.309	0.78
TMSXGM	*	5.470	-2.043	-2.68	2.495	-0.826	-2.08
TVT4KW	*	8.800	1.287	1.69	3.500	0.179	0.45
UER2V9		6.655	-0.858	-1.13	2.955	-0.366	-0.92
UWCLSG		7.450	-0.063	-0.08	3.150	-0.171	-0.43
V9WZD8	X	6.200	-1.313	-1.72	0.260	-3.061	-7.72
YTXXPZ		7.400	-0.113	-0.15	3.125	-0.196	-0.49
Z14RR1		8.200	0.687	0.90	3.850	0.529	1.33
ZNKFRV		7.630	0.117	0.15	3.320	-0.001	0.00

## Grand Means

7.5130 g/L

## Summary Statistics

3.3209 g/L

## Std Dev Btwn Labs

0.7617 g/L

0.3965 g/L

Statistics based on 46 of 55 reporting participants

Wines tested: SA61: Cabernet Sauvignon; SA62: Merlot

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 910

## Glucose + Fructose

**Comments on assigned Data Flags**

3MD9V5 (X) - High data for Sample SA62.

5YEU12 (X) - Inconsistent in testing between samples.

62Y5CC (X) - High data for Sample SA62. Also inconsistent in testing within both sample sets.

EGDPCJ (X) - Data for both samples are low.

EV5RBA (X) - Inconsistent in testing between samples.

L8WGKU (X) - Low data for Sample SA62

PZMQ6G (X) - Data for both samples are low. Default unit used but data may be in g/100mL.

SCZDYV (X) - High data for Sample SA61.

V9WZD8 (X) - Low data for Sample SA62

**Results by Methodology (as reported by laboratory)**

Test Methodology	Sample SA61 <i>Cabernet Sauvignon</i>			Sample SA62 <i>Merlot</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Enzymatic/Spectrophotometric	7.4923	0.4396	-0.0206	3.3233	0.2655	0.0024	35	45
FTIR	7.5500	0.5408	0.0370	3.2000	0.1323	-0.1209	3	5
Other _____	7.4500	0.0000	-0.0630	3.1100	0.0000	-0.2109	1	2



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 915

## A420nm (1cm path)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
1YUZZK5		3.370	-0.285	-1.30	2.465	-0.093	-0.81
22XNFS		3.745	0.090	0.41	2.540	-0.018	-0.15
26KXAC		4.000	0.345	1.58	2.613	0.055	0.49
2S69BL		3.635	-0.020	-0.09	2.559	0.001	0.01
44MJPW		3.830	0.175	0.80	2.560	0.002	0.02
61274Z	*	3.000	-0.655	-2.99	2.486	-0.072	-0.63
7JUV6K	X	0.733	-2.922	-13.35	0.513	-2.045	-17.93
AYP395		3.580	-0.075	-0.34	2.390	-0.168	-1.47
BSMCJC		3.870	0.215	0.98	2.550	-0.008	-0.07
C9BKPA	X	0.367	-3.288	-15.02	0.258	-2.300	-20.16
CA82XS		3.545	-0.110	-0.50	2.415	-0.143	-1.25
DSCD27		4.025	0.370	1.69	2.825	0.267	2.34
DZ8F4J	X	0.187	-3.468	-15.84	0.121	-2.436	-21.35
E7G4JC	X	1.984	-1.671	-7.64	1.330	-1.228	-10.76
F1PE5T	X	4.540	0.885	4.04	5.640	3.082	27.02
F2C5Z5		3.660	0.005	0.02	2.573	0.015	0.13
FZB81J		3.730	0.075	0.34	2.635	0.077	0.68
G14JFJ		3.515	-0.140	-0.64	2.425	-0.133	-1.16
GZ4Q7C	X	0.380	-3.275	-14.96	0.264	-2.294	-20.11
H487B5	*	3.880	0.225	1.03	2.895	0.337	2.96
H63G7U		3.540	-0.115	-0.52	2.440	-0.118	-1.03
HBG3AZ		3.471	-0.184	-0.84	2.733	0.175	1.53
HCZLEB		3.685	0.030	0.14	2.570	0.012	0.11
HS5H74		4.110	0.455	2.08	2.690	0.132	1.16
LHW67X		3.485	-0.170	-0.78	2.510	-0.048	-0.42
N7GSTE		3.595	-0.060	-0.27	2.485	-0.073	-0.64
NR4W8M		3.500	-0.155	-0.71	2.440	-0.118	-1.03
NZY21N	X	0.327	-3.328	-15.20	0.228	-2.330	-20.42
Q9P7EY	X	1.990	-1.665	-7.61	1.990	-0.568	-4.97
QP184E		3.630	-0.025	-0.11	2.560	0.002	0.02
SNAE7M		3.810	0.155	0.71	2.570	0.012	0.11
W8178U		3.592	-0.063	-0.29	2.550	-0.008	-0.07
WHRN4Q		3.770	0.115	0.53	2.575	0.017	0.15
X9RSGD		3.455	-0.200	-0.91	2.545	-0.013	-0.11
XQJNRG		3.612	-0.043	-0.19	2.507	-0.051	-0.45

**ASEV-CTS Wine Industry Interlaboratory Testing Program**  
**Analysis 915**  
**A420nm (1cm path)**

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YBCX8N		3.661	0.006	0.03	2.505	-0.053	-0.46
ZHF4YA	X	0.355	-3.300	-15.08	0.238	-2.320	-20.33
ZRA6ZL		3.685	0.030	0.14	2.560	0.002	0.02

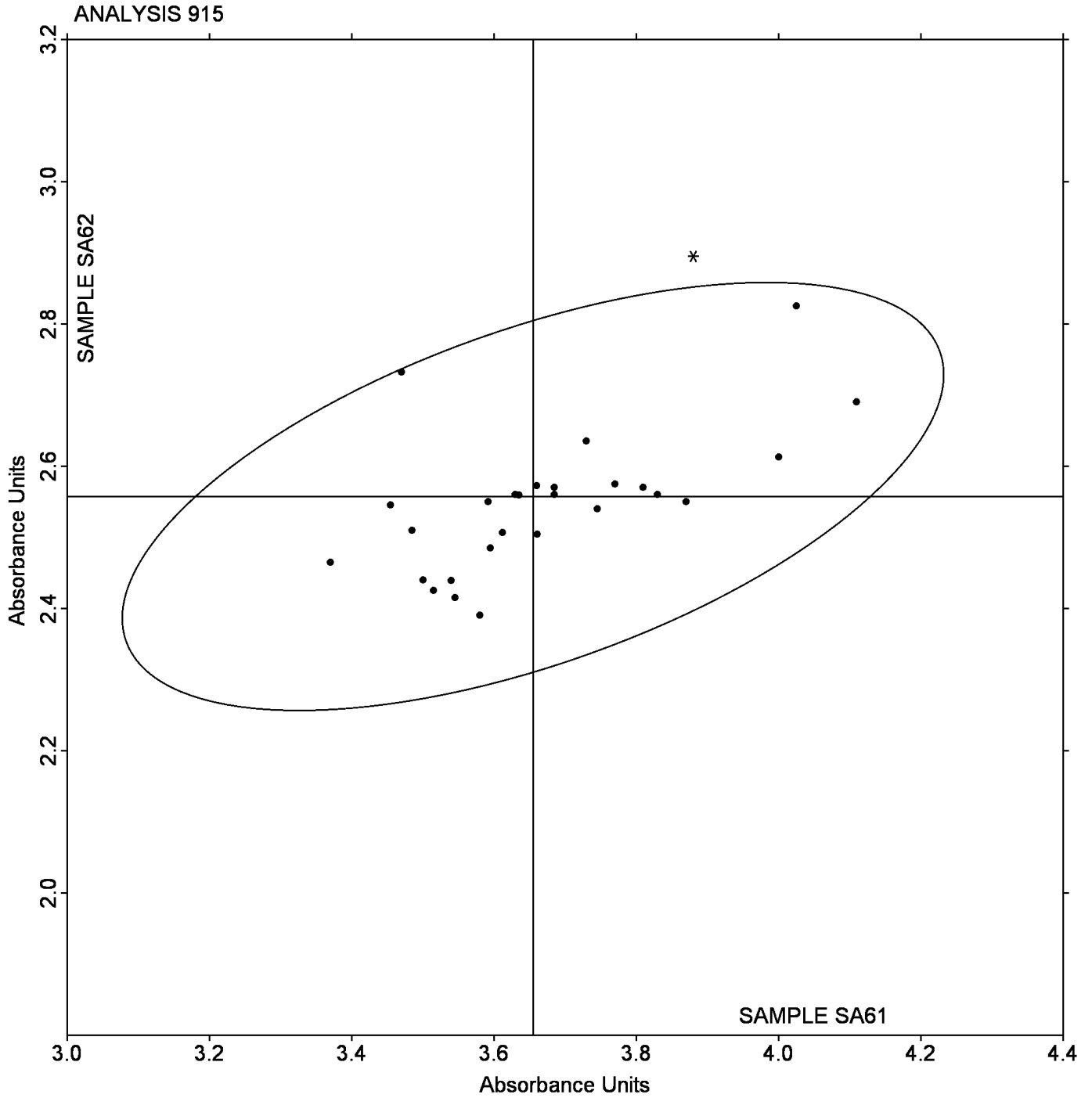
Grand Means		Summary Statistics	
	3.6547 Absorbance Units		2.5575 Absorbance Units
Std Dev Btwn Labs			0.1141 Absorbance Units
	0.2189 Absorbance Units		
<b>Statistics based on 29 of 38 reporting participants</b>			

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

**Comments on assigned Data Flags**

- 7JUV6K (X) - Data for both samples are low. Lab indicated dillution of sample.
- C9BKPA (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- DZ8F4J (X) - Data for both samples are low.
- E7G4JC (X) - Data for both samples are low. Lab indicated dillution of sample.
- F1PE5T (X) - Data for both samples are high.
- GZ4Q7C (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- NZY21N (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- Q9P7EY (X) - Data for both samples are low.
- ZHF4YA (X) - Extreme data. Data appear to be off by a factor of 10.

Analysis 915  
A420nm (1cm path)



## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 916

## A520nm (1cm path)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
153THS		4.770	0.645	0.99	3.030	0.045	0.30
2AX8G6	X	3.130	-0.995	-1.53	3.695	0.710	4.65
2VYEEB		4.840	0.715	1.10	3.020	0.035	0.23
4GBAJ8		3.500	-0.625	-0.96	2.795	-0.190	-1.24
6S2944		3.270	-0.855	-1.32	2.840	-0.145	-0.95
8A7TMB	X	0.423	-3.702	-5.70	0.275	-2.710	-17.76
8VFVV1	X	0.461	-3.665	-5.65	0.284	-2.701	-17.69
9PML1N	X	0.244	-3.881	-5.98	0.155	-2.830	-18.54
AHTGGC	X	0.479	-3.647	-5.62	0.312	-2.673	-17.51
CD4WHL		4.715	0.590	0.91	3.160	0.175	1.15
CL46XR		4.485	0.360	0.55	2.920	-0.065	-0.42
D2DRBF		4.660	0.535	0.82	3.055	0.070	0.46
DGN7UW		4.875	0.750	1.15	3.140	0.155	1.02
FKXZ21		3.530	-0.595	-0.92	3.111	0.126	0.82
FN1GA9	X	2.463	-1.662	-2.56	1.594	-1.391	-9.11
GADYJW		3.957	-0.169	-0.26	2.960	-0.025	-0.16
HDXAV7		3.224	-0.902	-1.39	2.780	-0.205	-1.34
L1J1CZ		4.725	0.600	0.92	3.050	0.065	0.43
L92TWJ		3.110	-1.015	-1.56	2.720	-0.265	-1.73
LZ3CRT		4.625	0.500	0.77	2.880	-0.105	-0.69
MM4HCR		4.000	-0.125	-0.19	3.263	0.278	1.82
N4D278		4.650	0.525	0.81	3.200	0.215	1.41
PKNMMW		4.703	0.577	0.89	3.143	0.158	1.03
PS6E6F		4.560	0.435	0.67	3.030	0.045	0.30
PX4CYY		3.374	-0.751	-1.16	2.886	-0.099	-0.65
RC4F43	X	0.479	-3.647	-5.62	0.307	-2.678	-17.54
SAA1FC		3.000	-1.125	-1.73	2.844	-0.141	-0.92
SF8Y8V	*	3.490	-0.635	-0.98	3.260	0.275	1.80
ULWU6R		4.815	0.690	1.06	3.035	0.050	0.33
VCSMXW	X	0.938	-3.187	-4.91	0.620	-2.365	-15.50
VDGPAS	X	7.610	3.485	5.37	4.150	1.165	7.63
VQK6DM		3.155	-0.970	-1.49	2.740	-0.245	-1.60
W44M5C		4.365	0.240	0.37	2.855	-0.130	-0.85
WKTVPZP		4.177	0.051	0.08	2.946	-0.038	-0.25
WQT9F6		4.225	0.100	0.15	2.970	-0.015	-0.10

## ASEV-CTS Wine Industry Interlaboratory Testing Program

## Analysis 916

## A520nm (1cm path)

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WW4CQ7		4.585	0.460	0.71	2.955	-0.030	-0.19
XSXXBV	X	1.990	-2.135	-3.29	1.990	-0.995	-6.52

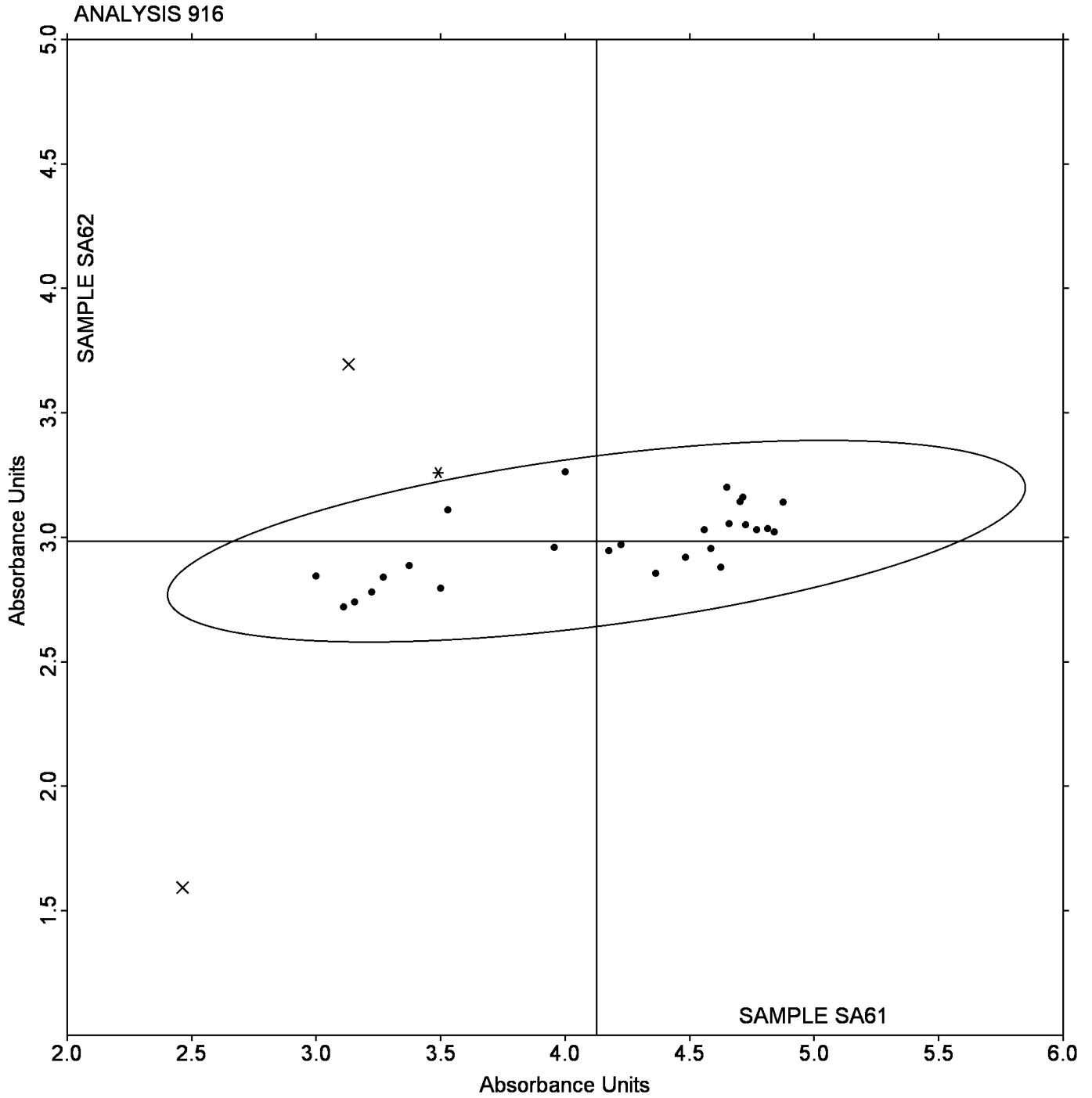
Grand Means		Summary Statistics	
	4.1253 Absorbance Units		2.9847 Absorbance Units
Std Dev Btwn Labs			0.1526 Absorbance Units
	0.6492 Absorbance Units		
<b>Statistics based on 27 of 37 reporting participants</b>			

**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

### Comments on assigned Data Flags

- 2AX8G6 (X) - High data for Sample SA62.
- 8A7TMB (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- 8VFV1 (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- 9PML1N (X) - Data for both samples are low.
- AHTGGC (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- FN1GA9 (X) - Data for both samples are low. Lab indicated dilution of sample.
- RC4F43 (X) - Data for both samples are low. Data appear to be off by a factor of 10.
- VCSMXW (X) - Data for both samples are low. Lab indicated dilution of sample.
- VDGPAS (X) - Data for both samples are high.
- XSXXBV (X) - Data for both samples are low.

Analysis 916  
A520nm (1cm path)



**ASEV-CTS Wine Industry Interlaboratory Testing Program**  
**Research Property 950**  
**Research Property - Methanol Content**

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Target Value	% Diff from Target Value	Lab Mean	Diff from Target Value	% Diff from Target Value
15A8E8		247.5	-13.3	-5.1%	165.0	-26.4	-13.8%
5B3WJU		153.0	-107.8	-41.3%	251.0	59.6	31.1%
5RHLE4		218.0	-42.8	-16.4%	166.0	-25.4	-13.3%
CH99L7		245.0	-15.8	-6.0%	185.0	-6.4	-3.4%
F7BJFP		330.0	69.2	26.5%	225.0	33.6	17.5%
HMYUPA		244.0	-16.8	-6.4%	152.1	-39.3	-20.5%
NDFJFQ		250.0	-10.8	-4.1%	210.0	18.6	9.7%
Q9LGBV		246.5	-14.3	-5.5%	159.5	-31.9	-16.7%
R327SB		234.5	-26.3	-10.1%	132.0	-59.4	-31.0%
WVG7QE		270.0	9.2	3.5%	165.0	-26.4	-13.8%
XUVAQS		430.0	169.2	64.9%	295.0	103.6	54.1%

**Research Property Target Value**

Target Value	<b>260.77</b> mg/L	<b>191.42</b> mg/L
--------------	--------------------	--------------------

CTS has chosen to use the Grand Mean as the target value for this round.

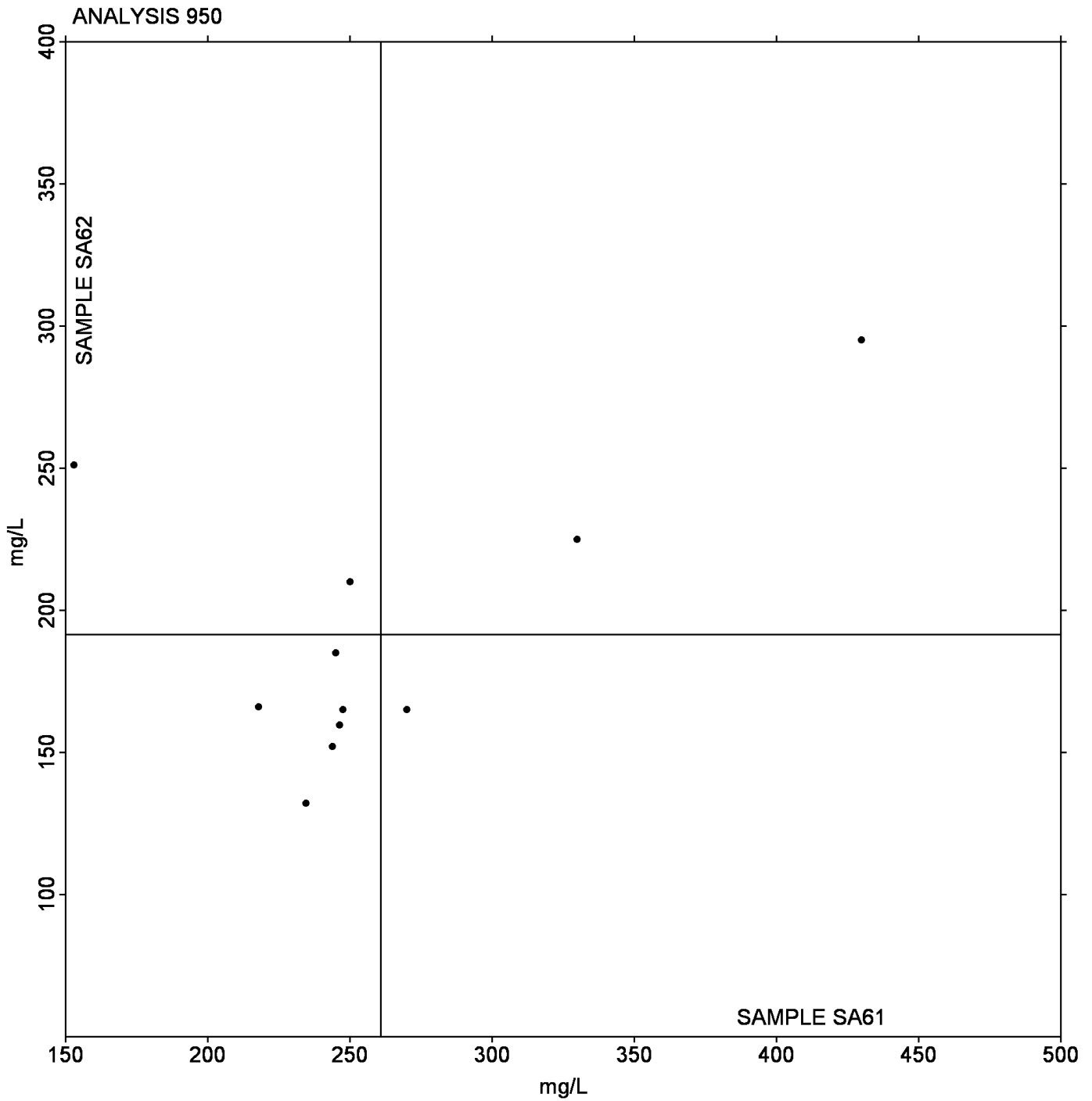
**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

Consensus Average (may differ from target value)	260.77 mg/L	191.42 mg/L
-----------------------------------------------------	-------------	-------------

*This consensus average is based on 11 reporting participants.*

Research Property 950

Research Property - Methanol Content



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.

**ASEV-CTS Wine Industry Interlaboratory Testing Program**

**Research Property 951**

**Research Property: Glucose**

WebCod	Data Flag	Sample SA61			Sample SA62		
		Lab Mean	Diff from Target Value	% Diff from Target Value	Lab Mean	Diff from Target Value	% Diff from Target Value
2M5ALA		0.3750	0.0037	1.0%	0.1600	-0.0059	-3.6%
4RHTWJ		0.4250	0.0537	14.5%	0.1650	-0.0009	-0.5%
58C7TF		0.4355	0.0642	17.3%	0.2330	0.0671	40.4%
6619ZB		0.3480	-0.0233	-6.3%	0.1500	-0.0159	-9.6%
6XDC5Q		0.4790	0.1077	29.0%	0.3215	0.1556	93.8%
72KAWG		0.4095	0.0382	10.3%	0.1845	0.0186	11.2%
88PES2		0.3430	-0.0283	-7.6%	0.1450	-0.0209	-12.6%
BRFUV3		0.4700	0.0987	26.6%	0.2000	0.0341	20.6%
C69RPK		0.3320	-0.0393	-10.6%	0.1530	-0.0129	-7.8%
E1RG6D		0.3630	-0.0083	-2.2%	0.1545	-0.0114	-6.9%
G3JTQV		0.3310	-0.0403	-10.9%	0.1235	-0.0424	-25.6%
H9L2WQ		0.3700	-0.0013	-0.4%	0.1550	-0.0109	-6.6%
HP3P5T		0.3565	-0.0148	-4.0%	0.1510	-0.0149	-9.0%
WRMCTD		0.3000	-0.0713	-19.2%	0.1200	-0.0459	-27.7%
XGU6PE		0.3400	-0.0313	-8.4%	0.1450	-0.0209	-12.6%
XJ3T5K		0.3550	-0.0163	-4.4%	0.1530	-0.0129	-7.8%
YLL78L		0.3700	-0.0013	-0.4%	0.1700	0.0041	2.5%
Z9EGF4		0.2811	-0.0902	-24.3%	0.1023	-0.0636	-38.3%

<b>Research Property Target Value</b>		
Target Value	<b>0.37130</b> g/L	<b>0.16590</b> g/L
<i>CTS has chosen to use the Grand Mean as the target value for this round.</i>		

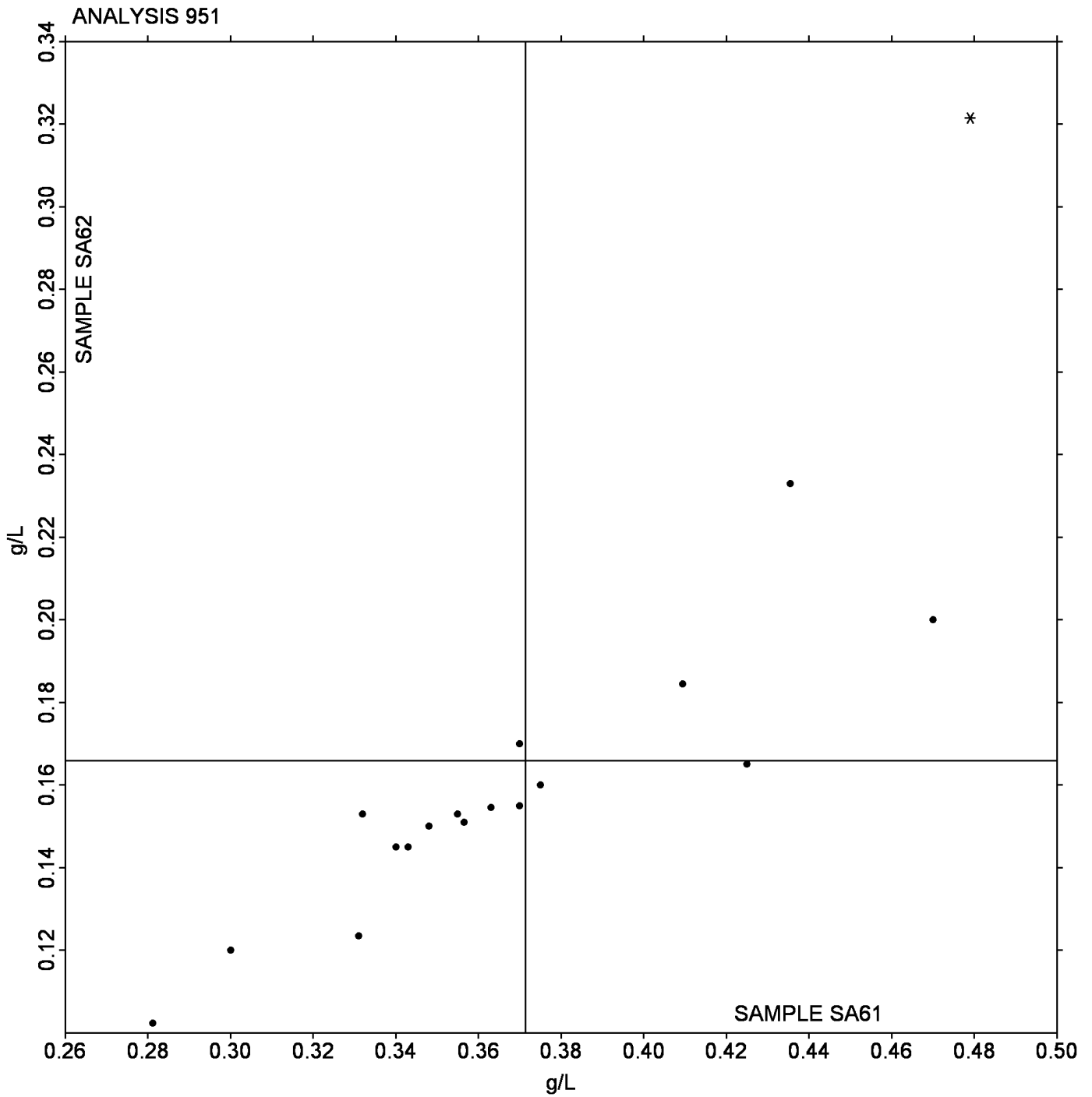
**Wines tested:** SA61: Cabernet Sauvignon; SA62: Merlot

Consensus Average (may differ from target value)      0.37131 g/L      0.16591 g/L

*This consensus average is based on 18 reporting participants.*

Research Property 951

Research Property: Glucose



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.