

**DATA VALIDATION SUMMARY**

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

<b>Project Name:</b>	Orica Botany- December 2008 Quarterly	<b>Project/Task Number:</b>	43217910
<b>Analytical Laboratory:</b>	ALS Labmark Labmark	<b>Batch/Ref. Number(s):</b>	ES0818399 E041087 E041034
<b>Date Sampled:</b>	9/12/2008 to 11/12/08	<b>Sample Type:</b>	Water
<b>Sample Handling, Receipt and Holding Times</b>		<b>Yes/No</b>	<b>Comments</b>
COC completed adequately		Yes	
All requested analysis conducted		No	QC105 and Trip Blank03 were not received by the laboratory*
Samples received intact and chilled		Yes	0.9°C
Samples analysed within appropriate holding times per analytical methods.		Yes	

<b># of Primary Samples</b>	<b># of QAQC Samples</b>	<b># of Duplicate Samples</b>	<b># of Triplicate Samples</b>
29	1	4	2

**Blanks**  
**Method Blank (MB), Rinsate Blank (RB), Trip Blank (TB), Field Blank (FB)**

<b>Type</b>	<b>Comments</b>
MB, TB (Trip Blank 02)	All blanks have acceptable results less than the limits of reporting.

**Laboratory Control Samples (LCS)**

<b>Analyte</b>	<b>Comments</b>
VOC's	Recovery for 1,1-Dichloropropylene (81%) is less than the lower control limit (81.8%)

**Matrix Spike (MS)**

<b>Analyte</b>	<b>Comments</b>
	All matrix spike recoveries are within laboratory control limits

**Trip Spike /Control Trip Spike**

<b>Analyte</b>	<b>% R</b>	<b>Comments</b>
n/a		

**Duplicates**

<b>Laboratory Duplicates</b>	<b>Comments</b>
	All lab control samples have acceptable results within laboratory control limits

**Intra-Laboratory Duplicates**

	<b>Comments</b>
BP72_03.00 / QC103	All recoveries were within RPD control limits.
WG234S / QC104	All recoveries were within RPD control limits.
BP76_04.00 / QC106	RPD for 1,1-Dichloroethene (32.58%) and 1,2-Dichloroethane (41.67%) are outside of the control limits.
BP54_06.00 / QC107	All recoveries were within RPD control limits.

**Inter-Laboratory Duplicates**

	<b>Comments</b>
WG234S / QC204	RPD for Vinyl chloride (183.87%), 1,1,2-Trichloroethane (47.06%) are outside of the accepted control limits.
BP59_12.00 / QC205	RPD for 1,1,1,2-Tetrachloroethane (163.47%), 1,1,1-Trichloroethane (142.45%), Carbon disulfide (38.69%) and Vinyl chloride (57.19%) are outside of the accepted control limits.

**Surrogate Monitoring Compound Analyses**

<b>Analyte</b>	<b>Comments</b>
VOC / Toluene D8	BP58_06.00 recovered (83.1%), WG23S (87.8%), BP115_06.50 (86.2%), W231S (85.6%), WG234S (85.2%), WG227S (86.8%), QC104 (87.0%), BP56_06.00 (86.3), W233S (85.8%), BP57_03.00 (84.8%), BP95_03.00 (87.0%), BP54_06.00 (84.6%), BP76_04.00 (87.8%), BP89_06.00 (84.4%), QC107 (84.1%) are lower than the control limit (88%)

**Overall Comments**

\* It is noted that QC105 and Trip blank 03 were not received by the laboratory. The frequency of field duplicates for this sampling program is 1 in every 20 primary samples. A total of 79 primary samples and 7 duplicates samples have been analysed in this program. Therefore, the quality objectives have been achieved for this program.

The laboratory control sample (LCS) recovered of 1,1-Dichloropropylene (81.0%) is below the control limits (81.8%). But the difference is just marginal and it is unlikely that this exceedance will affect the quality of the data.

The intra-laboratory duplicates RPD's exceedance recovered for 1,1-Dichloroethene (32.58%) and 1,2-Dichloroethane (41.67%) are not considered to significantly affect the overall data quality of this batch. The concentrations recovered are of the same magnitude and as a conservative measure the highest value will be used for interpretation.

The inter-laboratory RPD exceedances may be due to the differences in sample handling between the two laboratories, and the dilution method necessary because of the high levels of contamination present in the samples. As a conservative measure, the highest values will be used in the interpretation of data for this batch.

The surrogate outlier for Toluene-D8 may result in over reporting of VOC analytes in this sample. However, the toluene-D8 aromatic surrogate is not representative of the analysis scan which targets aliphatic compounds and the other surrogate analysis conducted have acceptable results. Therefore, these exceedances are unlikely to significantly affect the overall data quality of this batch.

The results from this batch are acceptable for environmental interpretative use.

Performed By: C. Olmos                      Reviewed By: B. Gomez  
Date: 05-Jan-08                              Date: 08-Jan-09

DATA VALIDATION  
RPD Calculations

<b>Location</b>	BP59_12.00_11/12/08	BP59_12.00_11/12/08
<b>Sample ID</b>	BP59_12.00_11/12/08	QC205_11/12/2008
<b>Date Sampled</b>	12/11/2008	12/11/2008
<b>Sample Type</b>	<b>Primary</b>	<b>Tertiary</b>

Analyte	LOR1	LOR3	Units			Primary vs. Triplicate
1,1,1,2-Tetrachloroethane	200	5	µg/L	< 200	1990	<b>163.47%</b>
1,1,1-Trichloroethane	200	5	µg/L	< 200	1190	<b>142.45%</b>
1,1,2,2-Tetrachloroethane	1	5	µg/L	1110	1460	27.24%
1,1,2-Trichloroethane	1	5	µg/L	3480	3450	0.87%
1,1-Dichloroethane	1	5	µg/L	532	531	0.19%
1,1-Dichloroethene	1	5	µg/L	1280	1280	0.00%
1,2-Dichloroethane	1	5	µg/L	985000	848000	14.95%
cis-1,2-Dichloroethene	1	5	µg/L	2540	2760	8.30%
Tetrachloroethene	1	5	µg/L	3380	3660	7.96%
trans-1,2-Dichloroethene	1	5	µg/L	422	390	7.88%
Trichloroethene	1	5	µg/L	10100	10500	3.88%
Vinyl chloride	10	50	µg/L	20100	36200	<b>57.19%</b>
Carbon disulfide	1	5	µg/L	472	319	<b>38.69%</b>
Chloroform	1	5	µg/L	3320	3310	0.30%

DATA VALIDATION  
RPD Calculations

<b>Location</b>	BP72_03.00_09/12/08	BP72_03.00_09/12/08
<b>Sample ID</b>	BP72_03.00_09/12/08	QC103_09/12/08
<b>Date Sampled</b>	12/09/2008	12/09/2008
<b>Sample Type</b>	<b>Primary</b>	<b>Secondary</b>

Analyte	LOR1	LOR2	Units			Primary vs. Duplicate
1,2-Dichloroethane	1	1	µg/L	16	17	6.06%

DATA VALIDATION  
RPD Calculations

<b>Location</b>
<b>Sample ID</b>
<b>Date Sampled</b>
<b>Sample Type</b>

WG234S_10/12/08	WG234S_10/12/08	WG234S_10/12/08
WG234S_10/12/08	QC104_10/12/08	QC204_10/12/2008
12/10/2008	12/10/2008	12/10/2008
<b>Primary</b>	<b>Secondary</b>	<b>Tertiary</b>

Analyte	LOR1	LOR2	LOR3	Units				Primary vs. Duplicate	Primary vs. Triplicate
1,1,2-Trichloroethane	1	1	5	µg/L	39	44	63	12.05%	<b>47.06%</b>
1,1-Dichloroethane	1	1	5	µg/L	111	111	114	0.00%	2.67%
1,1-Dichloroethene	1	1	5	µg/L	67	84	75	22.52%	11.27%
1,2-Dichloroethane	1	1	5	µg/L	21600	22900	22400	5.84%	3.64%
cis-1,2-Dichloroethene	1	1	5	µg/L	408	411	415	0.73%	1.70%
Tetrachloroethene	20	20	5	µg/L	< 20	< 20	15	0.00%	28.57%
trans-1,2-Dichloroethene	1	1	5	µg/L	106	117	111	9.87%	4.61%
Trichloroethene	1	1	5	µg/L	1190	1260	1290	5.71%	8.07%
Vinyl chloride	10	10	50	µg/L	1190	1290	< 50	8.07%	<b>183.87%</b>
Chloroform	1	1	5	µg/L	191	197	162	3.09%	16.43%

DATA VALIDATION  
RPD Calculations

<b>Location</b>
<b>Sample ID</b>
<b>Date Sampled</b>
<b>Sample Type</b>

BP76_04.00_11/12/08	BP76_04.00_11/12/08
BP76_04.00_11/12/08	QC106_11/12/08
12/11/2008	12/11/2008
<b>Primary</b>	<b>Secondary</b>

Analyte	LOR1	LOR2	Units			Primary vs. Duplicate
1,1,2-Trichloroethane	1	1	µg/L	27	26	3.77%
1,1-Dichloroethane	1	1	µg/L	131	122	7.12%
1,1-Dichloroethene	1	1	µg/L	282	203	<b>32.58%</b>
1,2-Dichloroethane	1	1	µg/L	87	57	<b>41.67%</b>
cis-1,2-Dichloroethene	1	1	µg/L	294	261	11.89%
trans-1,2-Dichloroethene	1	1	µg/L	27	24	11.77%
Trichloroethene	1	1	µg/L	4	4	0.00%
Vinyl chloride	10	10	µg/L	900	690	26.42%
Chloroform	1	1	µg/L	32	24	28.57%

DATA VALIDATION  
RPD Calculations

<b>Location</b>	BP54_06.00_11/12/08	BP54_06.00_11/12/08
<b>Sample ID</b>	BP54_06.00_11/12/08	QC107_11/12/08
<b>Date Sampled</b>	12/11/2008	12/11/2008
<b>Sample Type</b>	<b>Primary</b>	<b>Secondary</b>

Analyte	LOR1	LOR2	Units			Primary vs. Duplicate
Chloroform	1	1	µg/L	3	3	0.00%



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<b>Project Name:</b>	Orica Botany- December 2008 Quarterly	<b>Project/Task Number:</b>	43217910
<b>Analytical Laboratory:</b>	ALS Labmark	<b>Batch/Ref. Number(s):</b>	ES0818217 E040968
<b>Date Sampled:</b>	8/12/2008	<b>Sample Type:</b>	Water

Sample Handling, Receipt and Holding Times	Yes/No	Comments
COC completed adequately	Yes	
All requested analysis conducted	Yes	
Samples received intact and chilled	Yes	4.6°C Ice present
Samples analysed within appropriate holding times per analytical methods.	Yes	

# of Primary Samples	# of QAQC Samples	# of Duplicate Samples	# of Triplicate Samples
50	1	3	2

**Blanks**

**Method Blank (MB), Rinsate Blank (RB), Trip Blank (TB), Field Blank (FB)**

Type	Comments
MB, TB (Trip Blank 01)	All blanks have acceptable results less than the limits of reporting

**Laboratory Control Samples (LCS)**

Analyte	Comments
	All lab control samples have acceptable results within laboratory control limits

**Matrix Spike (MS)**

Analyte	Comments
	All matrix spike recoveries are within laboratory control limits

**Trip Spike /Control Trip Spike**

Analyte	% R	Comments
n/a		

**Duplicates**

Laboratory Duplicates	Comments
	Laboratory Duplicates (LD) have acceptable results less than the limits of reporting or RPDs within control limits

**Intra-Laboratory Duplicates**

Duplicates	Comments
BP42_0.1_L / QC100	All recoveries were within RPD control limits.
MWF15D / QC 101	All recoveries were within RPD control limits.
BP64_0.2_L / QC102	All recoveries were within RPD control limits.

**Inter-Laboratory Duplicates**

Duplicates	Comments
MWF15D / QC 201	All recoveries were within RPD control limits.
BP64_0.2_L / QC202	RPD for 1,2-Dichloroethene (109.09%), trans-1,2-Dichloroethene (141.18%), cis-1,2-Dichloroethene (141.18%), Vinyl Chloride (88.89%) is outside of the accepted control limits.

**Surrogate Monitoring Compound Analyses**

Analyte	Comments
VOC / 1,2 - Dichloroethane-D4	MWF15D recovered (121%), SW046 (121%), SW030 (125%), SW060 (122%), SW053 (124%), SW029 (122%), SW028 (123%), SW048 (122%), SW031(122%), BP64_00.10_L (122%), BP64_02.00_L (122%), BP65_00.10_L (121%), BP65_00.50_L (122%), BP65_02.00_L (121%), BP42_00.10_L (122%), BP42_00.50_L (121%), BP43_00.10_L (121%), BP42_02.00_H (123%) are higher than the control limit (120%)
VOC / Toluene D8	BP01_10.00 recovered (87.8%) is lower than the control limit (88%)

**Overall Comments**

The inter-laboratory duplicates analysis recovered RPD's for 1,2-Dichloroethene (109.09%), trans-1,2-Dichloroethene (141.18%), cis-1,2-Dichloroethene (141.18%), Vinyl Chloride (88.89%) are above the control limits. It is not expected that these exceedances will significantly affect the overall data quality of this batch considering the minor variations in the results. As a conservative measure, the highest reported value will be used for interpretation.

The exceedances in surrogate recoveries could lead to over reporting of VOC's for the relevant samples. However, majority of surrogate recoveries are within the control limits and is considered not to significantly affect the overall data quality of this batch.

This batch is suitable for interpretative use.

Performed By: C. Olmos      Reviewed By: B. Gomez  
Date: 22-Dec-08      Date: 08-Jan-09

DATA VALIDATION  
RPD Calculations

<b>Location</b>
<b>Sample ID</b>
<b>Date Sampled</b>
<b>Sample Type</b>

MWF15D_08/12/08	MWF15D_08/12/08	MWF15D_08/12/08
MWF15D_08/12/08	QC101_08/12/08	QC201_08/12/2008
12/08/2008	12/08/2008	12/08/2008
<b>Primary</b>	<b>Secondary</b>	<b>Tertiary</b>

Analyte	LOR1	LOR2	LOR3	Units				Primary vs. Duplicate	Primary vs. Triplicate
1,1,2,2-Tetrachloroethane	1	1	5	µg/L	4	4	< 5	0.00%	22.22%
1,1,2-Trichloroethane	1	1	5	µg/L	2	2	< 5	0.00%	85.71%
1,2-Dichloroethane	1	1	5	µg/L	5	4	< 5	22.22%	0.00%
cis-1,2-Dichloroethene	1	1	5	µg/L	3	2	< 5	40.00%	50.00%
Tetrachloroethene	1	1	5	µg/L	3	2	< 5	40.00%	50.00%
Trichloroethene	1	1	5	µg/L	10	8	10	22.22%	0.00%

DATA VALIDATION  
RPD Calculations

Location
Sample ID
Date Sampled
Sample Type

BP64_02.00_L	BP64_02.00_L	BP64_02.00_L
BP64_02.00_L	QC102_08/12/08	QC202_08/12/2008
12/08/2008	12/08/2008	12/08/2008
Primary	Secondary	Tertiary

Analyte	LOR1	LOR2	LOR3	Units				Primary vs. Duplicate	Primary vs. Triplicate
1,1,2-Trichloroethane	1	1	5	µg/L	1	1	< 5	0.00%	133.33%
1,1-Dichloroethane	1	1	5	µg/L	7	6	< 5	15.39%	33.33%
1,1-Dichloroethene	1	1	5	µg/L	2	2	< 5	0.00%	85.71%
1,2-Dichloroethane	1	1	5	µg/L	17	16	< 5	6.06%	109.09%
cis-1,2-Dichloroethene	1	1	5	µg/L	29	27	< 5	7.14%	141.18%
trans-1,2-Dichloroethene	1	1	5	µg/L	12	10	< 5	18.18%	82.35%
Trichloroethene	1	1	5	µg/L	1	1	< 5	0.00%	133.33%
Vinyl chloride	10	10	50	µg/L	130	100	< 50	26.09%	88.89%
Chloroform	1	1	5	µg/L	2	2	< 5	0.00%	85.71%