



## ▶ ALS Automated Guideline Comparison Report for Victoria EPA, Industrial Waste Resource Guideline (IWRG 621)

ALS has recently developed a fully automated (LIMS generated) "Guideline Comparison Report" to interrogate the analytical data produced from a complete suite of IWRG 621 Analyses. This applies where IWRG 621 Table 2 'total concentration' analyses are selected (only) under ALS Package Code P16.

### Report Information

ALS package P16 provides the full suite of chemical analyses, compliant with the IWRG guideline LOR and analytical methodology requirements (e.g. Correct methodologies such as Total Fluoride and 'sums of' various suites of organics).

### Additional

The Automated Guideline Comparison Report is to be used with an understanding of EPA Victoria's Industrial Waste Resource Regulatory Framework and associated Guidelines.

### Soil Hazard Categorisation and Management

Potentially contaminated soil in Victoria destined for disposal via landfill must be classified as category A, B, C or Clean Fill (EPA Victoria- IWRG 621: June 2009). To categorize the soil, total concentrations of specified analytes are compared against the upper limits of the Soil Hazard Categorisation Thresholds, (Table 2 - Category B, C and Fill Material).

### What is included in the report?

The ALS automatically generated Guideline Comparison Report compares the total concentration results against limits of the Soil Hazard Categorisation Thresholds. Results that are equal to or above the upper limit are highlighted in red enabling simple identification (see Figure 2). The report assists the process of classification by removing the need for, or cross check any manual comparison of a large number of data points. Additionally a summary of all breaches is presented at the beginning of the report (see Figure 1). The aim of this report is to assist ALS clients in the accurate and rapid assessment facilitating, on-site management options or further categorization analysis as required (e.g. ASLP determination). Prior to this report being released to clients the reliability and accuracy of the report has been tested with real data from a number of projects and road tested with several key clients.

### How to receive the report

ALS will automatically provide the Guideline Comparison Report gratis for all complete P16 packages. Please note that this report is not available when using partial screens due to it highlighting by exception.



## Figure 1: Summary of Guidelines Reached or Exceeded

### Summary of Thresholds Reached or Exceeded

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Unit	Upper Limit	Result
Sample 2	EM1110114-002	Nickel	EN69/EG005T	2	mg/kg	60	600
Sample 2	EM1110114-002	Zinc	EN69/EG005T	5	mg/kg	200	60000
Sample 2	EM1110114-002	Total Polychlorinated biphenyls	ORG17A-EM/EP066-EM	0.10	mg/kg	2	2.00
Sample 2	EM1110114-002	Sum of Phenols (halogenated)	EP075-EM-SUM	0.03	mg/kg	1	1.00
Sample 2	EM1110114-002	Benzo(a)pyrene	ORG17A-EM/EP075-EM	0.5	mg/kg	1	<2.0
Sample 3	EM1110114-003	Cadmium	EN69/EG005T	1	mg/kg	3	600
Sample 3	EM1110114-003	Molybdenum	EN69/EG005T	2	mg/kg	40	1500
Sample 3	EM1110114-003	Mercury	EN69/EG035T	0.1	mg/kg	1	2.0
Sample 3	EM1110114-003	Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	1	6.00

Table 2: Soil Hazard Categorisation Thresholds : Category C

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Unit	Upper Limit	Result
Sample 2	EM1110114-002	Zinc	EN69/EG005T	5	mg/kg	35000	60000
Sample 3	EM1110114-003	Cadmium	EN69/EG005T	1	mg/kg	100	600
Sample 3	EM1110114-003	Molybdenum	EN69/EG005T	2	mg/kg	1000	1500
Sample 3	EM1110114-003	Vinyl chloride	ORG16-UT/EP074-UT	0.02	mg/kg	1.2	5.00

Table 2: Soil Hazard Categorisation Thresholds : Category B

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Unit	Upper Limit	Result
Sample 3	EM1110114-003	Cadmium	EN69/EG005T	1	mg/kg	400	600
Sample 3	EM1110114-003	Vinyl chloride	ORG16-UT/EP074-UT	0.02	mg/kg	4.8	5.00

## Figure 2: Example tabulation of Results in Comparison to IWRG Table 2 - Total Concentration Thresholds

### Analytical Results

EPA Victoria Publication IWRG 621 (2009)

Table 2: Soil Hazard Categorisation Thresholds : Fill Material

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Client sample ID Sampling date/time	Guideline Upper Limit	Sample 1	Sample 2	Sample 3
						09-SEP-2011	09-SEP-2011	09-SEP-2011
						EM1110114-001	EM1110114-002	EM1110114-003
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	EN69/EG005T	5	mg/kg	20	10	8	9	
Cadmium	EN69/EG005T	1	mg/kg	3	2	2	600	
Copper	EN69/EG005T	5	mg/kg	100	10	10	9	
Lead	EN69/EG005T	5	mg/kg	300	10	20	30	
Molybdenum	EN69/EG005T	2	mg/kg	40	10	20	1500	
Nickel	EN69/EG005T	2	mg/kg	60	10	600	50	
Selenium	EN69/EG005T	5	mg/kg	10	8	7	8	
Silver	EN69/EG005T	2	mg/kg	10	8	7	8	
Tin	EN69/EG005T	5	mg/kg	50	10	30	40	
Zinc	EN69/EG005T	5	mg/kg	200	10	60000	100	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	EN69/EG035T	0.1	mg/kg	1	0.5	<0.1	2.0	
<b>EG048: Hexavalent Chromium (Alkaline Digest)</b>								
Hexavalent Chromium	EG048PR/EG048	0.5	mg/kg	1	0.8	<0.5	0.5	
<b>EK026G: Total Cyanide By Discrete Analyser</b>								
Total Cyanide	EK026PR/EK026G	1	mg/kg	50	20	30	10	
<b>EK040T: Fluoride Total</b>								
Fluoride	EK040T-PR/EK040T	40	mg/kg	450	400	200	150	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	ORG17A-EM/EP066-EM	0.10	mg/kg	2	1.00	2.00	<0.10	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Benzene	ORG16-UT/EP074-UT	0.2	mg/kg	1	0.5	0.5	0.5	
Sum of monocyclic aromatic hydrocarbons	EP074-UT-SUM	0.2	mg/kg	7	4.0	3.0	3.0	
<b>EP074I: Volatile Halogenated Compounds</b>								
Sum of volatile chlorinated hydrocarbons	EP074-UT-SUM	0.01	mg/kg	1	0.90	0.90	6.00	