Draft Sampling and Analysis Plan – Baseline Metals

Woodvale Evaporation Pond Complex, Bendigo

Prepared for:
Department Environment, Land, Water and Planning
Level 10, 8 Nicholson St
East Melbourne VIC 3002
Sampling and Analysis Plan,
Woodvale Evaporation Pond Complex, Bendigo

17 June 2015

Distribution

Copies Recipient
1 PDF Mr Martin Robinson
Department Environment, Land, Water and Planning
Level 10, 8 Nicholson St
East Melbourne VIC 3002

Copies Recipient
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Senversa Pty Ltd
ABN: 89 132 231 380
Ground Floor, 51 Clarke Street, Southbank Vic 3006
tel: + 61 3 9606 0070; fax: + 61 3 9606 0074
www.senversa.com.au

Primary Author
Belle Casement
Senior Environmental Scientist

Project Manager
Belle Casement
Senior Environmental Scientist

Technical Peer Review
Michael Charge
Principal

Project Director
Victoria Lazenby
Senior Associate
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- Figure 1: Proposed Sampling Plan – Soil

**Attachment 1:** Wind Roses from Bendigo Airport
### List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>Australian Standard</td>
</tr>
<tr>
<td>ANZECC</td>
<td>Australian and New Zealand Environment and Conservation Council</td>
</tr>
<tr>
<td>bgl</td>
<td>Below ground level</td>
</tr>
<tr>
<td>COC</td>
<td>Chain of custody</td>
</tr>
<tr>
<td>CoPC</td>
<td>Contaminant of potential concern</td>
</tr>
<tr>
<td>DO</td>
<td>Dissolved oxygen</td>
</tr>
<tr>
<td>DHHS</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>DELWP</td>
<td>Department of Environment, Land, Water and Planning</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority (Victoria)</td>
</tr>
<tr>
<td>LOR</td>
<td>Limit of reporting</td>
</tr>
<tr>
<td>m</td>
<td>Metre</td>
</tr>
<tr>
<td>NATA</td>
<td>National Association of Testing Authorities</td>
</tr>
<tr>
<td>NEPC</td>
<td>National Environment Protection Council</td>
</tr>
<tr>
<td>NEPM</td>
<td>National Environment Protection Measure</td>
</tr>
<tr>
<td>QA</td>
<td>Quality assurance</td>
</tr>
<tr>
<td>QC</td>
<td>Quality control</td>
</tr>
<tr>
<td>SAP</td>
<td>Sampling and analysis plan</td>
</tr>
<tr>
<td>SEPP</td>
<td>State Environment Protection Policy</td>
</tr>
<tr>
<td>SEPP PMCL</td>
<td>State Environment Protection Policy (Prevention and Management of Contaminated Land)</td>
</tr>
<tr>
<td>SEPP GoV</td>
<td>State Environment Protection Policy (Groundwaters of Victoria)</td>
</tr>
<tr>
<td>SEPP WoV</td>
<td>State Environment Protection Policy (Waters of Victoria)</td>
</tr>
<tr>
<td>TDS</td>
<td>Total dissolved solids</td>
</tr>
<tr>
<td>WEPC</td>
<td>Woodvale Evaporation Pond Complex</td>
</tr>
</tbody>
</table>
1.0 Introduction and Objectives

Senversa Pty Ltd (Senversa) has been engaged by Department of Environment, Land, Water and Planning (DELWP) to develop a sampling and analysis plan (SAP) for baseline metals sampling in soil and in rain water tanks in the vicinity of the Unity Mining Ltd Woodvale Evaporation Pond Complex (WEPC), Bendigo, Victoria (the site).

1.1 Background

The WEPC is used for management of groundwater associated with mine dewatering at nearby gold mining operations in Bendigo. The WEPC is located approximately 12 km north-northwest of Bendigo. The investigation area around the ponds as defined by DELWP is presented in Figure 1.

Investigations have reported that sediment at the WEPC has elevated salinities and also elevated concentrations of arsenic. There is a possibility that residual arsenic in the sediments at the WEPC could be mobilised by wind and could enter primary domestic rainwater tanks and/or the environment. Given community raised concerns associated with the potential for windborne sediment to migrate off-site, this SAP has been developed to guide the assessment of this pathway.

1.2 Objectives

The objective of the works described in this SAP is to carry out a baseline investigation, assessing if off-site migration of sediments sourced from the WEPC has resulted in elevated concentrations of metals in domestic rainwater tank water and in surface soils in the vicinity of the ponds.

The scope of works is to:

- Assess the concentrations of metals in primary domestic rainwater tanks used for drinking water supply in the vicinity of the WEPC.
- Establish the current baseline conditions of metal concentrations in surface soils in the vicinity of the WEPC.

This SAP has been prepared in a manner generally consistent with the National Environment Protection (Assessment of Site Contamination) Measure (as amended 2013) and Victorian Environmental Protection Authority (EPA) guidance documents.
2.0 Background Information

2.1 Key Site Information

Based on previous works at the WEPC, the following information is considered relevant to the development of this SAP.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Relevant Information from Previous Investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Area</td>
<td>The area of the WEPC is 154 hectares (ha). The complex is bound by Bendigo-Pyramid Rd to the west,</td>
</tr>
<tr>
<td></td>
<td>Downie Rd to the north, Camp Rd to the east, and Meurillion Rd to the south.</td>
</tr>
<tr>
<td></td>
<td>The site is zoned Farming.</td>
</tr>
<tr>
<td>WEPC Details</td>
<td>The complex comprises of Ponds 1, 2 and 3, and decommissioned Ponds 4 and 5 in the western portion of the site.</td>
</tr>
<tr>
<td>WEPC Surface Water</td>
<td>On-site</td>
</tr>
<tr>
<td></td>
<td>Pond water is a mix of groundwater extracted for mine dewatering, rainfall, and re-circulated groundwater</td>
</tr>
<tr>
<td></td>
<td>from seepage management bores installed at the site. Pond water quality is variable and significantly</td>
</tr>
<tr>
<td></td>
<td>influenced by climate.</td>
</tr>
<tr>
<td></td>
<td>Off-site</td>
</tr>
<tr>
<td></td>
<td>The primary ecological receptor off-site is Myers Creek and associated vegetation, located</td>
</tr>
<tr>
<td></td>
<td>approximately 500 m down gradient to the west. Current data indicates seepage water from the WEPC is</td>
</tr>
<tr>
<td></td>
<td>not reaching or impacting upon the creek.</td>
</tr>
<tr>
<td>Geology</td>
<td>The site is located over the Shepparton Formation, a fine grained alluvial unit, which overlies the Deep</td>
</tr>
<tr>
<td></td>
<td>Lead, comprised of courser grained buried channel deposits. These lithologies overly a low permeability</td>
</tr>
<tr>
<td></td>
<td>Castlemaine Group bedrock.</td>
</tr>
<tr>
<td>Groundwater</td>
<td>Groundwater at the site is classified as Segment C under the SEPP (Groundwaters of Victoria). Groundwater</td>
</tr>
<tr>
<td></td>
<td>mounding with elevated salinity has been observed at the complex, associated with seepage from the</td>
</tr>
<tr>
<td></td>
<td>evaporation ponds. Seepage water from the WEPC has not migrated off-site in the shallower Shepparton</td>
</tr>
<tr>
<td></td>
<td>Formation.</td>
</tr>
</tbody>
</table>

2.2 Field Work Preliminaries

Field work preliminaries are expected to include:

- The preparation of this SAP, which outlines investigation rationale and methods, locations, sample collection and analysis, including:
  - Assessment of the number of domestic rainwater tanks within the selected area.
  - Selection of all representative domestic rainwater tanks for sampling.
  - A soil sampling plan for up to 50 samples from 40 locations within the defined area.
  - Details of proposed analysis for the selected tank and soil sampling locations.
- A meeting between Senversa and DELPW and Department of Health and Human Services (DHHS) to discuss the SAP.
- Establishing any access requirements, and confirming that proposed locations are accessible.
- Preparation of a Health and Safety Management Plan.
3.0 Assessment Methodology

3.1 Standards and Guidance Documents

The investigation will be performed in accordance with the following guidelines and standards:

- National Environmental Protection Council (NEPC) - National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM), (2013).
- State Environment Protection Policy (Prevention and Management of Contamination of Land) No. S95, EPA Victoria, June 2002 (SEPP (PMCL)).
- State Environment Protection Policy (Waters of Victoria) No. S107, EPA Victoria, June 2003 (SEPP (WoV)).
- United States Environmental Protection Agency - Guidance on Environmental Data Verification and Data Validation EPA QA/G-8.

3.2 Quality Assurance / Quality Control

The data QA/QC procedures proposed provide a consistent approach to evaluation of whether the data quality objectives (DQOs) required by the project have been achieved. The process focuses on assessment of the useability of the data in terms of accuracy and reliability in forming conclusions on the condition of the element of the environment being investigated.

<table>
<thead>
<tr>
<th>QA/QC Element</th>
<th>Data Quality Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical Laboratories</td>
<td>Sediment and soil samples will be submitted to chemical laboratories, with methods used to be accredited by the National Association of Testing Authorities (NATA).</td>
</tr>
</tbody>
</table>
| Analytical QA/QC Guidance | Adopt a QA/QC approach that is based on guidance from the following sources:  
  - United States Environmental Protection Agency - Guidance on Environmental Data Verification and Data Validation EPA QA/G-8. |
<p>| QA/QC Procedures | The QA/QC procedures applied will include the use of equipment decontamination, chain of custody documentation, laboratory data verification and the use of quality control samples in accordance with Section 8.2 of AS4482.1-2005. |
| QC Samples – Duplicates | Quality control samples in the form of intra-laboratory (field) duplicates and inter-laboratory (secondary) duplicate samples will be analysed at a frequency of one in 20 primary samples analysed. |
| QC Samples – Rinsate Blanks | For each day of soil sampling, one equipment rinsate blank sample will be collected and analysed for seven metals (As, Cd, Cr, Cu, Ni, Pb, Zn). |</p>
<table>
<thead>
<tr>
<th>QA/QC Element</th>
<th>Data Quality Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC Samples –Trip Blanks</td>
<td>Trip blank samples are not warranted based on the Contaminants of potential concern (CoPC) being predominantly inorganic and non-volatile.</td>
</tr>
</tbody>
</table>

### 3.3 Communication with Land Owners

It is assumed that liaison with the local community and access to properties will be facilitated through a local DHHS representative. Assistance from Woodvale Progress Association will also be sought.

Meetings will be held between DELWP, community representatives and Senversa prior to field works commencing, to ensure access to private properties are appropriately planned and communicated.

The sampling program will be undertaken on a voluntary basis, and only those land owners or tenants within the defined area who nominate to participate in the sampling program will have their primary domestic tank/s sampled.
4.0 Soil Investigation

4.1 Sampling Rationale

The sampling program proposed is aimed at developing an understanding of the level and variability in concentrations of contaminants of potential concern around the WEPC.

Senversa reviewed wind roses from the Bendigo airport produced by the Bureau of Meteorology (see Attachment 1) and found no significant prevailing winds in the area which would cause a directional preference for dust deposition. It is therefore considered appropriate to collect samples from all areas surrounding the WEPC. A systematic sampling pattern around the WEPC has therefore been adopted. This sampling strategy avoids the clustering of sampling points and is easy to survey. The data will also provide insight as to whether areas closer to the WEPC are more impacted that those further away.

A total of 40 surface sampling locations have been proposed. The density of sampling, although reasonably low relative to the site area (according to AS 4482.1 Table 2, Minimal Sampling Points for Site Characterisation), is considered sufficient as an initial investigation to assess the potential impact to areas surrounding the WEPC. Of these 40 locations, ten locations will also include the collection of a deeper sample, to assess potential surface deposition relative to deeper natural soils. These ten locations will be spread across the sampling area.

Senversa notes the following critical assumptions made during development of this scope of works:

- The sampling locations are approximate only, and may shift due to access restrictions. This is not anticipated to affect the outcome of the assessment.
- Samples will be collected a minimum of 20 m away from road edges to avoid potential impacts from imported materials for road construction and grading.
- Samples will not be collected in areas where the surface shows evidence of recent activity or soil disturbance.
- The extent of surface deposition of arsenic and salts, if any, may be difficult to assess due to the elevated concentrations of these compounds in regional soils.
- It is assumed that DELWP and DHHS will conduct all coordination and communications with community members.

4.2 Soil Sampling Methodology

The soil investigation works methodology is summarised in the following table:

<table>
<thead>
<tr>
<th>Component of Field Investigation and Objectives</th>
<th>Field Investigation Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Management Planning</td>
<td>A draft HASP will be provided to DELWP for review, given the nature of public involvement in the project. It is anticipated that the safety plan will identify hazards and management approaches to the sampling of soil and tank water in remote regional locations.</td>
</tr>
<tr>
<td></td>
<td>It is assumed that underground service or utility clearance is not required for the sampling locations, given the rural nature of the area, the shallow sampling and the sampling method.</td>
</tr>
</tbody>
</table>
## Component of Field Investigation and Objectives

### Field Investigation Methodology

| Determination of Sample Locations | Proposed sampling locations are shown on Figure 1. Coordinates have been produced based on this map, and a hand help GPS unit will be used in the field to target the approximate sampling locations. The accuracy of such a method will be to within 5-10 m of the coordinates. The sampling pattern is based on an approximate 540 m x 540 m grid across the sampling area, in order to assess the potential impacts to soil from all wind directions. |
| Sample collection techniques | Sampling will be undertaken with reference to IWRG701, AS4482.1 and AS4482.2, and will include the following:  
- Surface samples (0-0.1 m below ground level (bgl)) will be collected from a total of 40 locations.  
- Soil sampling will be undertaken using a stainless steel trowel and/or a hand auger. Soil samples will be collected directly from the trowel or hand auger using disposable nitrile gloves and placed in a laboratory supplied glass jar for sample analytical purposes.  
- A deeper sample (approximately 0.5 m bgl) will be collected from one in five bore holes. The depth of sampling at each location will be noted during field works.  
- Collection of quality control samples as per Section 3.2.  
- Where re-useable sampling equipment is used, such as hand augers and trowels, this equipment will be decontaminated prior to collection of another sample. |
| Sample equipment decontamination | Decontamination of non-dedicated sampling equipment (i.e. hand auger) will be undertaken between each sample collection, using Decon 90 solution, followed by rinsing each piece of equipment with potable water. |
| Field observation and measurements | In accordance with AS4482.2, field observations will be made of soil descriptions such as odour, discoloration, presence of unusual materials such as waste, etc. GPS sample locations will be recorded together with notes on the sample location relative to any fixed structures or nearby surface features. |
| Field documentation (i.e. field notes, borelogs and chain of custody records) | Field documentation including field notes, borelogs and chain of custody documents will be completed to a satisfactory standard in accordance with AS4482.1, AS4482.2, NEPM B2. |
| Sample handling, preservation and storage | Soil samples will be collected in sample jars, stored and transported in chilled containers in accordance with IWRG701 and NEPM B2. |
| Reinstatement | Soil samples locations will involve minimal disturbance and soil sample locations will be nominally reinstated and compacted using upon completion. |

### 4.3 Soil Laboratory Analytical Program

Soil samples will be submitted to a National Association of Testing Authorities Australia (NATA) accredited analytical laboratory for the analysis of chemicals of interest.

The proposed analysis focusses on the contaminants of potential concern (CoPCs) identified in on-site sediment, and which are considered to be of key interest for the site. The proposed laboratory analytical schedule includes:

- Selected metals and metalloids – arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), mercury (Hg), manganese (Mn), molybdenum (Mo), nickel (Ni), lead (Pb), antimony (Sb), tin (Sn), selenium (Se), vanadium (V) and zinc (Zn).
- Electrical conductivity and pH.
- Selected Ionic species – potassium (K), calcium (Ca), magnesium (Mg), sodium (Na), sulphate (SO$_4$) and chloride (Cl).
Intra-laboratory (field) duplicates and inter-laboratory (secondary) duplicate samples will be analysed for all of these analyses, at a rate of one in twenty, and analysed for all CoPC listed above.

Rinsate samples will collected each day of sampling, and analysed for seven metals (As, Cd, Cr, Cu, Ni, Pb, Zn).
5.0 Tank Water Investigation

5.1 Sampling Plan

Primary domestic tanks within the defined sample area are to be targeted for sampling. A review of the aerial photographs of the sampling area shows approximately 20 locations (houses or groups of sheds) which appear to have one or more tanks. Most locations appear to have three tanks. It is noted that this is an estimate only, with the review based on an aerial photograph from November 2014. Small, recently installed or underground tanks are unlikely to be included in the estimate. Additionally, not all tanks are necessarily collecting rainwater run-off.

As the local area does not receive a reticulated water supply, all homes and buildings within the study area are expected to use rainwater as their primary supply, and may have several tanks present which are used for storage of drinking water. It is also expected that tanks may be filled from alternative sources during dry periods, including having water transported via water truck from Bendigo. Therefore, the sampling program will target kitchen taps as the key area for collecting samples, as being representative of actual exposures by residents. Additionally, field staff will collect information on the following:

- Number, volume, condition and type (i.e. galvanised iron, or polyethylene, etc.) of tanks;
- Uses for tanks (i.e. drinking water, stock watering etc.);
- Sources of water for filling tanks, including non-rainwater sources;
- Whether a first flush device is in use;
- Other general maintenance factors, such as regularity of tank cleaning, condition of flashing or tank covers, condition and type of roof or rain catchment surfaces, etc.

As the objective of this study is to assess baseline metals concentrations in primary drinking water supply tanks in the vicinity of the WEPC, only those tanks which are used for this purpose will be sampled. Where multiple tanks are in use, all tanks will be sampled. If all tanks are interconnected and well mixed, a judgement call will be made as to whether all tanks should be sampled. If it is uncertain how tanks may be plumbed or interconnected, every tank may be sampled, with selected samples submitted for analyses and additional samples placed on hold with the laboratory.

Samples may be collected directly from a tank (either via a tap or by accessing the top of the tank) or from a house tap (either indoor or outdoor) depending on resident preference and access restrictions.

Additionally, a background tank sample will be targeted for collection, from a location approximately 2 to 5 kms away. This background location would be targeted to be representative of normal metals concentrations for rainwater tanks in the area.
5.2 Proposed Sampling Methodology

The tank water investigation works are anticipated to involve the following:

<table>
<thead>
<tr>
<th>Component of Field Investigation and Objectives</th>
<th>Field Investigation Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample collection techniques</td>
<td>Sampling will be undertaken with reference to EPA668 and EPA669, and will consist of:</td>
</tr>
<tr>
<td></td>
<td>• Collect sample from main kitchen sink or tap.</td>
</tr>
<tr>
<td></td>
<td>• Run water for approximately 30 seconds prior to filling sample bottles.</td>
</tr>
<tr>
<td></td>
<td>• If kitchen tap cannot be accessed, the sample will be collected directly from the nearest tap or water outlet attached to the tank.</td>
</tr>
<tr>
<td></td>
<td>• If sample is to be collected directly from within the tank, a disposable bailer will be used and the sample will be collected from approximately mid-way through the tank water column, minimising sediment collection.</td>
</tr>
<tr>
<td></td>
<td>• Measure field parameters for pH, temperature, total dissolved solids (TDS), redox potential and dissolved oxygen using field water quality meter.</td>
</tr>
<tr>
<td></td>
<td>• Excess water will be poured down the sink or into accessible drains or ground surface, where appropriate.</td>
</tr>
<tr>
<td></td>
<td>• Collection of quality control samples as per Section 3.2, including field duplicate and secondary duplicates.</td>
</tr>
<tr>
<td></td>
<td>• Preservation and delivery of water samples under chain of custody (COC) protocols to the laboratory for analytical testing.</td>
</tr>
<tr>
<td>Field observation and measurements</td>
<td>• Field observations such as odour and colour will be noted.</td>
</tr>
<tr>
<td></td>
<td>• Field observations in relation to water tanks and resident supplied information will be recorded on a standard sampling farm. This will typically include:</td>
</tr>
<tr>
<td></td>
<td>▪ The number, condition and use of all water tanks at each property assessed.</td>
</tr>
<tr>
<td></td>
<td>▪ Any known diverters or filter systems present.</td>
</tr>
<tr>
<td></td>
<td>▪ The dwelling roof construction materials.</td>
</tr>
<tr>
<td></td>
<td>• Calibration certificates for the operation of the water quality meters will be provided.</td>
</tr>
<tr>
<td>Field documentation (i.e. field notes, borelogs and chain of custody records)</td>
<td>Field documentation including field notes, water quality parameters recorded and chain of custody documents will be completed to a satisfactory standard in accordance with AS4482.1, AS4482.2, NEPM B2.</td>
</tr>
<tr>
<td>Sample handling, preservation and storage</td>
<td>Water samples will be collected in sample jars, stored and transported in chilled containers in accordance with EPA669 and NEPM B2.</td>
</tr>
</tbody>
</table>

5.3 Laboratory Analytical Program

Tank water samples will be submitted to a NATA accredited analytical laboratory for the analysis of chemicals of interest, which are consistent with the soil analytical suite, for assessment of sediment deposition.

- Selected ionic species – fluoride, potassium (K), calcium (Ca), magnesium (Mg), sodium (Na), sulphate (SO₄) and chloride (Cl).
- Selected metals and metalloids – arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), mercury (Hg), manganese (Mn), molybdenum (Mo), nickel (Ni), lead (Pb), antimony (Sb), tin (Sn), selenium (Se), vanadium (V) and zinc (Zn).

Quality control (both intra-laboratory field duplicate and inter-laboratory secondary duplicate) samples will be analysed for all of these analyses, at a rate of one in twenty. Rinsate samples are not required for the tank water assessment, as samples will be collected directly into laboratory provided sample bottles.
6.0 Reporting

On completion of the site investigations, Senversa will provide:

- An overall draft factual report, including:
  - A summary of the environmental setting of the area investigated.
  - A summary of the scope of works, sampling procedures and adopted assessment criteria.
  - Rationale for sampling.
  - Overall results of the sampling undertaken. These will be presented in a de-identified manner, such that results cannot be associated with a given individual or property.
  - Figure(s) showing general sample locations and analytical data (where warranted, given the need for privacy of information).
  - Appendices, including information such as site photographs, borehole logs, laboratory data and QA/QC data validation.

An allowance has been made for one round of consolidated comments from DELWP prior to report finalisation.
7.0 Revisions, Limitations and Uncertainty

Environmental reports are typically based on a limited set of data. Additional sampling and information may improve the confidence or yield different results, due to a range of factors such as the variable or heterogeneous nature of environmental impacts. Extreme care should be taken, and no warranty is provided, in the application of any costs or contingent liabilities derived using the data or conclusions derived from investigations undertaken in accordance with this SAP.

The SAP is based on a review of the information made available to Senversa at the time of its preparation.

Reasonable care has been taken to avoid reliance upon data and information that may be inaccurate. Senversa’s conclusions and scope of work presented in this report are therefore based on the information available during the assessment. DELWP may consider amending the proposed scope to best achieve the project objectives.

The scope has been developed for the purpose of assessing potential extent of impacts in the area under investigation, to enable DELWP to undertake an assessment of off-site conditions and potential management requirements. Any other person’s use of, or reliance on, the findings, conclusions, recommendations or any other material presented herein, is at that person’s sole risk.
8.0 References

- State Environment Protection Policy (Prevention and Management of Contamination of Land) No. S95, EPA Victoria, June 2002 (SEPP (PMCL)).
- State Environment Protection Policy (Groundwaters of Victoria), No. S160, EPA Victoria, December 1997 (SEPP (GoV)).
- State Environment Protection Policy (Waters of Victoria) No. S107, EPA Victoria, June 2003 (SEPP (WoV)).
- United States Environmental Protection Agency - Guidance on Environmental Data Verification and Data Validation EPA QA/G-8.
Figures

Figure 1: Proposed Sampling Plan – Soil
Attachment 1: Wind Roses from Bendigo Airport
Rose of Wind direction versus Wind speed in km/h (28 Oct 1991 to 30 Sep 2010)

Custom times selected, refer to attached note for details

BENDIGO AIRPORT
Site No: 081123 • Opened Oct 1991 • Still Open • Latitude: -36.7395° • Longitude: 144.3266° • Elevation 208m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

3 pm
6895 Total Observations

Calm 1%
Rose of Wind direction versus Wind speed in km/h (28 Oct 1991 to 30 Sep 2010)

Custom times selected, refer to attached note for details

BENDIGO AIRPORT
Site No: 081123 • Opened Oct 1991 • Still Open • Latitude: -36.7395° • Longitude: 144.3266° • Elevation 208m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

9 am
6898 Total Observations

Calm 6%