

Bell Bay Pulp Mill
Environmental Performance Report Number 3.
Dec 2009 – Nov 2010.

Sections 1-3 Consolidated

- **Introduction and Atmospheric Monitoring**
 - **Terrestrial**
 - **Marine & Estuary**
-

Prepared for the Environmental Protection Authority (Tasmania)

in accordance with the *Pulp Mill Assessment Act 2007*

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Revision Status

Revision	Date	Revision Description	Prepared	Reviewed	Approved
A0	28/2/2011	For submission	BJY	LGH	TP

Introduction

Statement by the Project Director

This is the third in a series of Environmental Performance Reports (EPR) that will be published for the Gunns Limited Pulp Mill Project. The majority of monitoring activities that are required to be reported via this document have been suspended with agreement of State regulators, pending project financing or the commencement of significant on-site construction works. Nevertheless minor surveillance monitoring of some environmental aspects of the project has been undertaken within the reporting period covered by this report. Therefore it is appropriate to provide interested stakeholders with the resulting information in accordance with the standard reporting schedule.

This document has been developed and collated by Gunns Limited staff with input from key consultants who are expert in various fields of environmental science and technology. As Project Director, I acknowledge the contents of this annual Environmental Performance Report.

Timo Pilonen
Project Director
Gunns Limited Pulp Mill Project

Background

Gunns Limited (Gunns) proposes to develop an elemental chlorine free bleached Kraft pulp mill, and associated infrastructure, in the north-east of Tasmania. The pulp mill is to be established in the Bell Bay Industrial Zone on a site between the eastern bank of the River Tamar and the western side of the East Tamar Highway.

At the time of writing, the construction phase of the project has commenced at low intensity and was subsequently suspended, pending final project financing.

Regulatory Context.

On 21 August 2007, The Tasmanian Government granted approval for the construction and operation of a bleached Kraft pulp mill, proposed by Gunns Limited, to be located in the Bell Bay industrial zone of northern Tasmania. The project as defined in section 3(1) of the *Pulp Mill Assessment Act 2007* was granted approval subject to numerous and wide ranging conditions contained in the Pulp Mill Permit (State Permit) as defined under section 6(8) of that same act.

A specific requirement of the State Permit (Schedule LU1, condition 2AR 1.1) is that an Annual Environmental Performance Report (EPR) must be submitted to the Director of the Environment Protection Agency (the Director¹). The report itself has a required structure and content which is detailed in the Permit. The State Permit is attached to this document as Appendix 0.1 and the various supporting Schedules can be viewed on the State Government's website².

To meet the various reporting requirements this document has been collated to form the third Environmental Performance Report (EPR No.3). It presents information obtained by a number of baseline (before the mill commences operations) environmental monitoring activities for the reporting period of 1st December 2009 to 30th of November 2010. In addition, summaries of activities related to community consultation and communication for the same period are also included in EPR No.3. A number of report elements are excluded in these initial reports where the reporting element itself is only relevant to an operating facility (for example, mill emission estimates).

Scope

Environmental monitoring activities associated with the pulp mill project have been subdivided into two components. They are; 1) monitoring associated with construction activities and; 2) monitoring associated with operation of the mill. This is necessary as the nature, timing, location and type of actual or potential

¹ Formerly the Director of Environmental Management

² http://www.justice.tas.gov.au/justice/pulpmillassessment/pulp_mill_permit

environmental impact(s) are quite different for the two components. Construction impacts are typically single event based, where a disturbance occurs and is followed by remediation and a recovery period. Monitoring impacts for an operational facility such as a pulp mill are based on the life of the facility and are multifaceted by comparison.

A detailed plan covering monitoring for construction activities is included in the Construction Monitoring Plan (CMP), which has been approved by the Director and is publicly available on Gunns' web site³. A detailed plan for monitoring the operational phase of the mill to be titled "State Baseline and Operational Monitoring Plan" (S-BOMP) is currently under development in consultation with the Director and will also be published on the Gunns Limited web site after formal approval for the plan has been obtained. A number of monitoring activities described by the S-BOMP have commenced in order to meet or in some cases exceed required baseline temporal coverage requirements.

Reporting requirements of both components (CMP & S-BOMP) are included within this report unless the specific reporting requirement has already been met by a prior submission to the Director. The Director has formally agreed that the scope of the initial EPR was to cover monitoring activities up to the 30th November 2008 and therefore annually thereafter unless other arrangements to amend the reporting period are subsequently made.

³ <http://www.gunnspulpmill.com.au/permits/pma.php>

Report Structure

This report is structured to match the S-BOMP structure, which will be the longer term monitoring plan associated with the project. After this introductory section the body of the report is therefore divided into the following Sections, most of which will expand in future reports to include operational components after plant commissioning:

- **Section 1. Atmospheric**, which encompasses meteorology, air quality, emission (after commencement of operations) and environmental noise.
- **Section 2. Terrestrial**, which encompasses groundwater, ephemeral surface waters in natural drainage lines and soils of the mill and waste disposal sites.
- **Section 3. Effluent and Marine**, which encompasses effluent quality and quantity at source (after commencement of operations) and numerous ecological and qualitative variables in the receiving environment of Bass Strait. Information relating to the River Tamar is also presented in Section 3, mostly relating to construction activities.

Each Section contains a series of related monitoring activities, or Sub-sections. Activities within each Sub-section may be further broken down to Programs and Sub-Programs. For example, the structure of the monitoring activity whereby ambient air quality is monitored for sulphur dioxide concentration in the local airshed, the structure is:

Section: 1 Atmospheric

Sub-section: 1.1 Air & Meteorology

Program: 1.1.2 Chemical, Particulate Matter & Odour Monitoring

This document is indexed against the monitoring activity structure above rather than indexing to regulatory requirements to facilitate stakeholders with particular areas of interest easier access to relevant information.

Environmental Management System (EMS)

An Environment Management System (EMS) is a tool for managing the impacts of an organisation's activities on the environment. It provides a structured approach to planning and implementing environment protection measures.

An EMS monitors environmental performance, similar to the way a financial management system monitors expenditure and income and enables regular checks of a company's financial performance. An EMS integrates environmental management into a company's daily operations, long term planning and other quality management systems. The International Standards Organisation (ISO) has established voluntary standard (ISO 14001) that assists organisations to achieve environmental and financial gains through the implementation of effective environmental management. The ISO14001 standard provides a template to ensure environmental issues are well managed within participating organisations and further ensures an organisation own environmental policy is being appropriately implemented. A copy of the Gunns Limited Environment & Sustainability Policy attached to this document is attached as Appendix 0.2. This policy has been revised since the last reporting period.

A project to certify the pulp mill's EMS to ISO14001 or its equivalent will be completed prior to commencement of commissioning activities of the pulp mill. In the interim, all key elements of an ISO14001 certified EMS, consistent with Gunns existing EMS within other business units are in place or being further developed to meet the needs of the pulp mill project. A key component of further development of Gunns pulp mill EMS is those elements that relate to environmental monitoring which are far more extensive for this pulp mill project than for other similar activities.

To this end, extensive Quality Assurance and Quality Control (QA/QC) measures have been implemented to ensure the data presented herein is of high quality and traceable to appropriate standards.

Miscellaneous Reportable Information

As stated above under *Regulatory Context* the EPR is required to provide specified content. The table below addresses the required content.

Table 0.1 Reference table of required content elements as per Condition 2AR1.1 (LU1 Part 3) of the State Permit

Required content summary	Reference to location in EPR3	Note
Statement by the General Manager or Chief Executive Officer acknowledging the contents of the report	Introduction	
A list of any complaints received from the public during the reporting period and any actions that have resulted.	Introduction	
A listing of environmental incidents or non compliance incidents etc.	Introduction	
An assessment of compliance with Emission Limit Guidelines	Not Applicable	No emissions to date
A summary of environment – related procedural or process changes etc.	Not applicable	No procedural or process activity
A summary of monitoring data etc	Sections 1, 2 & 3	
A summary of environmental commitments made for the reporting period	Introduction	
A summary of the amounts of both solid and liquid wastes produced etc	Not applicable	No relevant activity
A summary of community consultation and communication undertaken during the reporting period.	Introduction	

Reportable Incident Summary

One reportable incident occurred during the reporting period as follows:

- On 29 June 2010 during routine surface water monitoring, turbidity levels were found to be 330 NTU at sample point SW11. This value exceeded the 130 NTU threshold as specified in condition LU1/3/3/3WW20.1, triggering the requirement for the collection of a sample for suspended solids analysis. The result of the laboratory analysis revealed a Non Filterable Residue (NFR) reading of 183mg/L. Rain was falling heavily at the time the sample was collected. A visual inspection of the immediate catchment for this site revealed the likely source to be a pre-existing fire trail that showed signs of disturbance caused by recent vehicle activity. An immediate response was formulated which involved the installation of shallow table drains adjacent to the fire trail capturing a greater proportion of the runoff and diverting it into harvesting slash within the construction footprint thereby reducing the amount of solids taken up in the flow. Construction activity was also temporarily suspended pending more favourable weather conditions. Work resumed on July 1 during which time the turbidity level at SW11 was measured at 16.6 NTU, a level that was consistent with previous background readings. No further deterioration of the fire trail was observed. The EPA was informed of this incident, the actions taken and the final outcome.

Community Consultation

During this reporting period Gunns Limited increased efforts to engage with a wide range of stakeholders regarding the Bell Bay Pulp Mill Project along with other aspects of our business. Developing Gunns' social licence is a key focus for the Gunns Limited Board and management.

A management system to record, track and address community issues was described in the prior Environmental Performance Report and this system remains in place. A major focus of consultation activities has related to Gunns' strategy to seek dual certification (see below) of the forestry aspects of the business.

Environmental Commitments

The major significant environmental commitment directly relating to the Bell Bay Pulp Mill Project made by Gunns Limited during the reporting period was to notify all stakeholders that when operational, the mill will utilise only plantation sourced feedstock to the exclusion of native forest based feedstock.

It is further anticipated, that due to the greater suitability that plantation feedstock possesses over native forest based material for efficient kraft pulping, that further downstream environmental benefits will be able to be realised through this change. Further details on this point will be provided as the detailed design process of the mill progress and become finalised.

Gunns' also made a number of other major environmental commitments within the forestry arm of the business relevant to this reporting period, relating to a strategic withdrawal from native forest ownership and a commitment to cease the use of the pesticide 1080 in plantation estates which are significant measures in themselves (albeit outside the scope of this report). The above measures were also related to Gunns' commitment to seek dual certification for the Company's forest management activities. In summary, the strategy is to seek accreditation to the Forest Stewardship Council (FSC) standard to add to the Company's existing certification to the Australian Forestry Standard (AFS).

Nevertheless, Gunns Limited continues to re-examine all environmental aspects of the business' activities in a systematic manner with the objective of continual improvement in energy efficiency and environmental performance in concert with other business factors.

Section 1

1.1 Air & Meteorology

Specific air requirements for the EPR are defined in condition 3AM 46.1 of the State Permit. Sub-clauses (a) to (g) of 3AM 46.1 are only relevant to an operating facility and are therefore were not included in previous EPR's or this document EPR No. 3. Sub-clauses (h) & (i) are relevant and are covered below.

A comprehensive meteorological station, measuring 9 parameters co-located with air quality analysers within a purpose-built facility in the Rowella area. This facility is in place and has been operating since mid 2005.

Due to a delay in project implementation the Rowella AQMS was suspended from operations immediately after the close of the 2008 calendar year. For this reason, there is no new continuous AQMS or meteorology data to report for the period of this EPR.

1.1.1 Meteorology December 2009 to November 2010

No sampling. Program to recommence prior to mill commissioning

1.1.2 Chemical, Particulate and Odour Monitoring Program

1.1.2.1 Continuous Air Quality Monitoring Stations

1.1.2.1.1 Rowella AQMS

No sampling. Program to recommence prior to mill commissioning

1.1.2.2 Discrete Air Quality Monitoring sub-program

1.1.2.2.1 Inorganic Chlorinated Compounds and Volatile Organic Compounds

No sampling. Program recommenced subsequent to the close of this reporting period and will be again re-suspended consistent with other similar programs.

1.1.2.2.2 Odour Monitoring System (Covey in-house protocol)

No sampling. Program to recommence prior to mill commissioning

1.1.2.2.3 Passive samplers (Radiello)

No sampling. Program recommenced subsequent to the close of this reporting period and will be again re-suspended consistent with other similar programs.

1.1.2.2.4 Dioxins in Ambient Air

No sampling. Program to recommence prior to mill commissioning

1.1.2.2.5 Dioxins in Dairy Produce

No sampling. Program to recommence prior to mill commissioning

Environmental Noise

Two noise programs have commenced. Program descriptions are detailed within the *Construction Monitoring Plan* and within the State Permit. They include:

- Continuous monitoring at up to two semi-permanent sites using *in-situ* field instruments reporting to a data logger by radio link for live data & periodic download of validated filed instrument logged data to a secure database.
- Attended field surveys.

Both programs are routinely reported to the Director via methods other than this EPR. To facilitate public inspection of validated⁴ continuous monitoring data, a series of charts are presented below of noise data up to the 30th November 2010 obtained from defined locations within the Rowella and proposed pulp mill site. A map showing the location of noise monitoring sites is included in the *Construction Monitoring Plan*. Future EPRs may alter the format of noise reporting to that presented below.

1.1.3 Environmental Noise Results

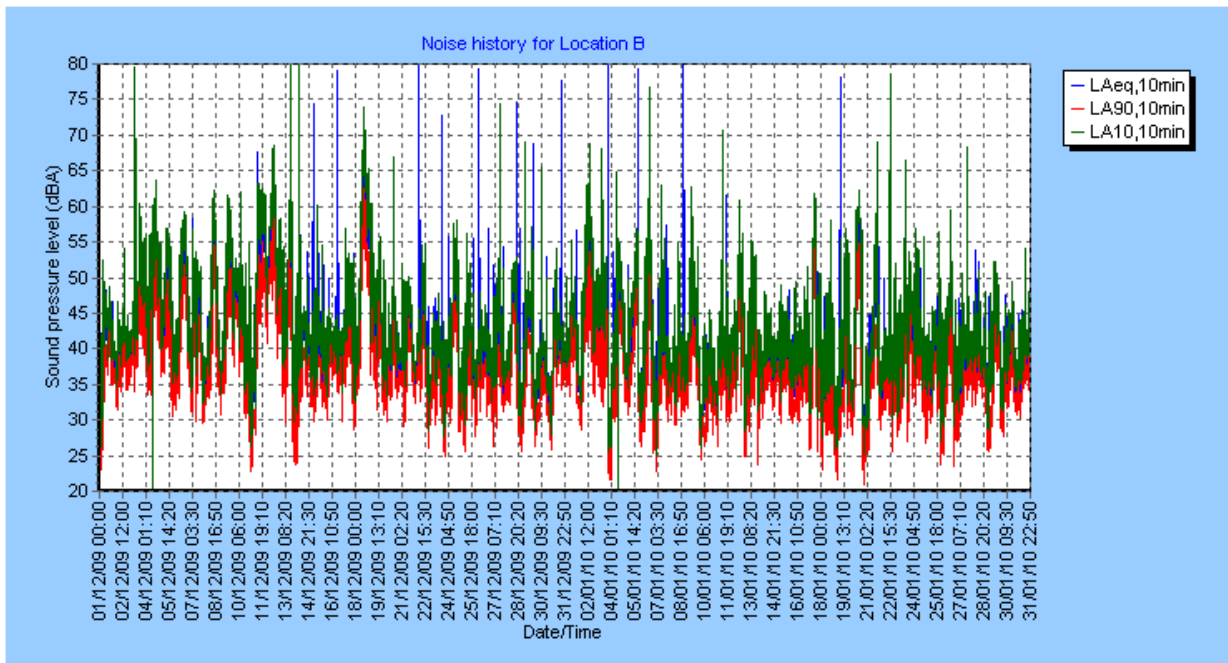


Figure 1.1-1 Environmental noise levels (LAeq 10 min), Location B for the period 1st December 2009 to 31st January 2010

Note: No simultaneous data is available for locations A and C for the period from 1st December 2009 to 31st January 2010. Location C was suspended due to no construction activity being then underway and for instrument maintenance during the reporting period.

⁴ Validation does not include identification of periods where wind speed is > 5m/sec.

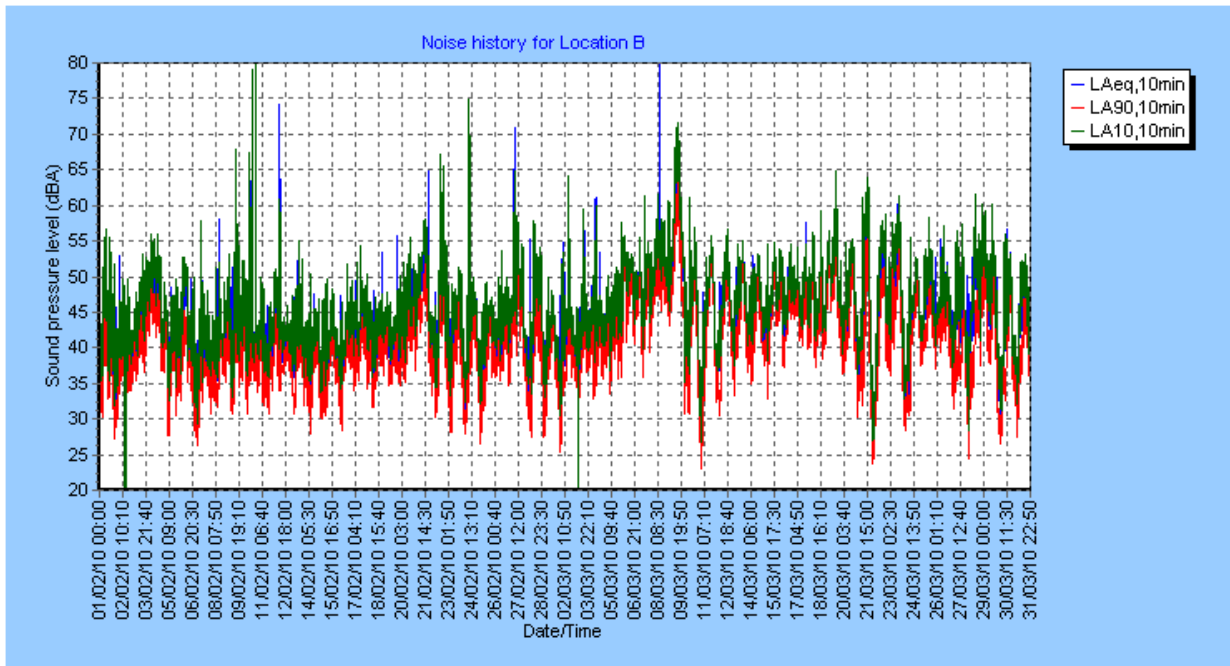


Figure 1.1-2 Environmental noise levels (LAeq 10 min), Location B for the period 1st February 2010 to 31st March 2010

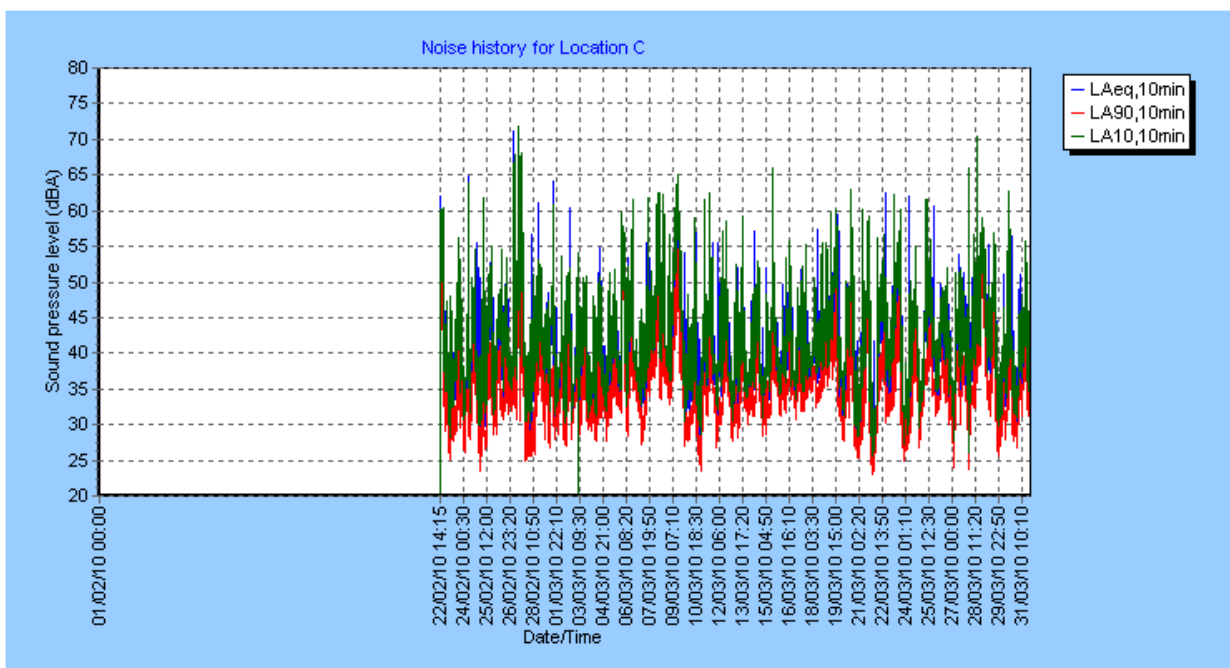


Figure 1.1-3 Environmental noise levels (LAeq 10 min), Location C for the period 1st February 2010 to 31st March 2010.

Note: No simultaneous data is available for location A for the period from 1st Feb 2010 to 31st Mar 2010. Location C was suspended due to no construction activity being then underway and for instrument maintenance during the reporting period.

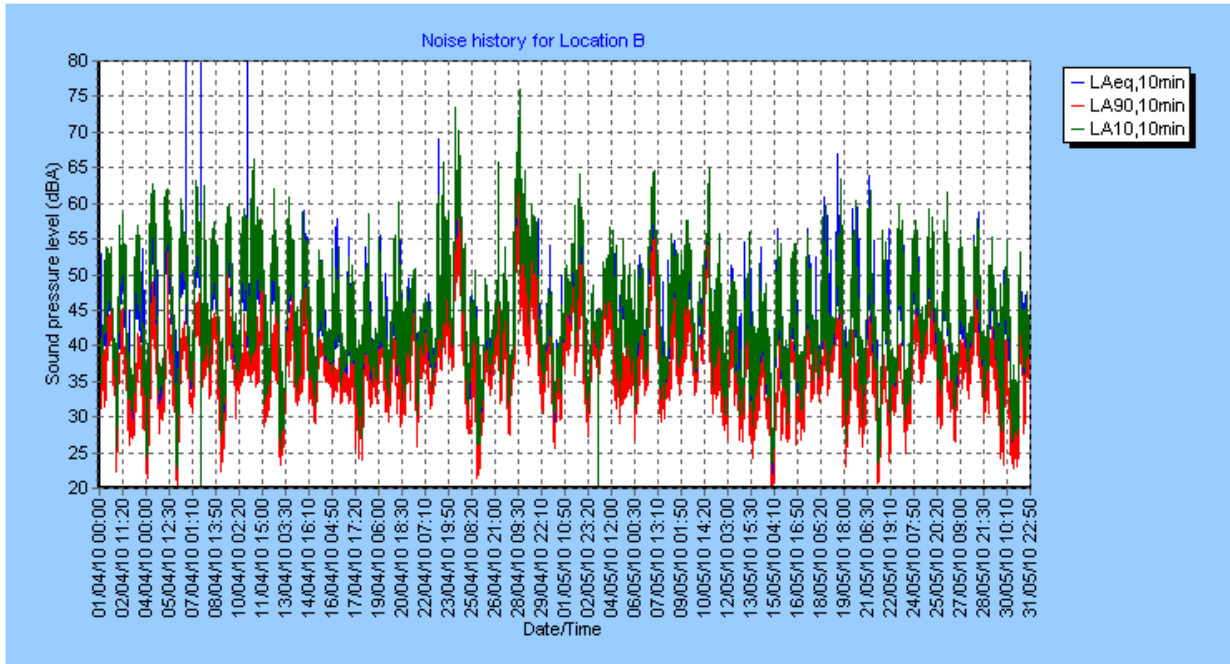


Figure 1.1-4 Environmental noise levels (LAeq 10 min), Location B for the period 1st April 2010 to 31st May 2010

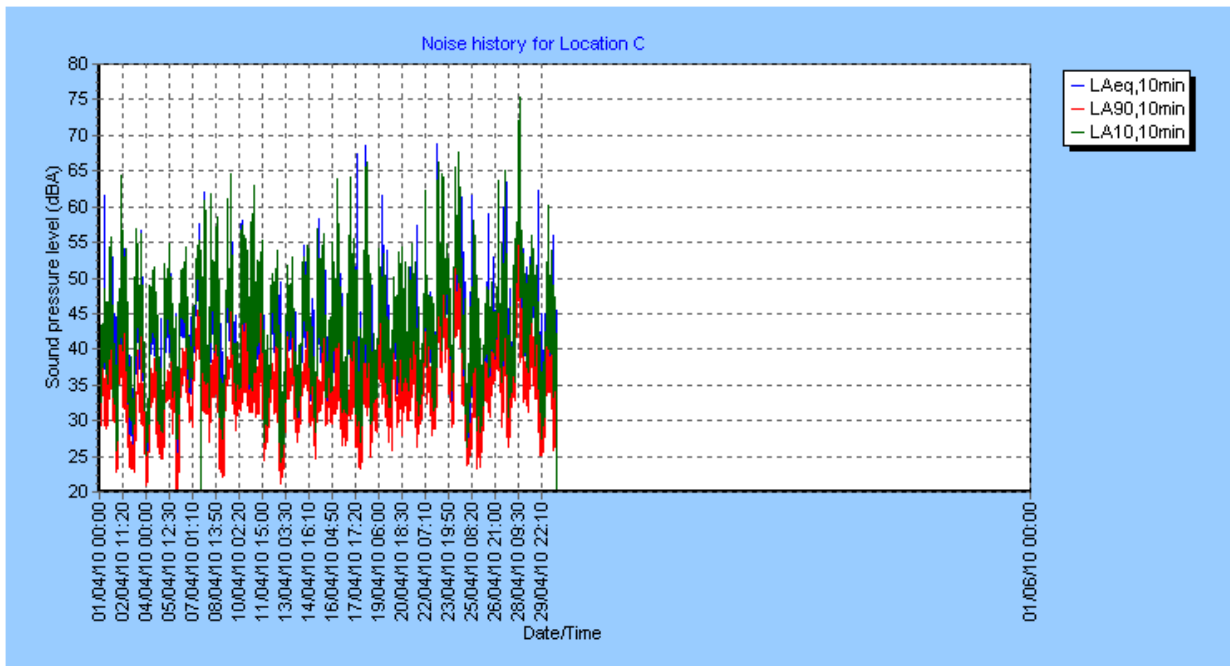


Figure 1.1-5 Environmental noise levels (LAeq 10 min), Location C for the period 1st April 2010 to 31st May 2010

Note: No simultaneous data is available for location C for the period from 1st April 2010 to 31st May 2010. Location C was suspended due to no construction activity being then underway and for instrument maintenance during the reporting period.

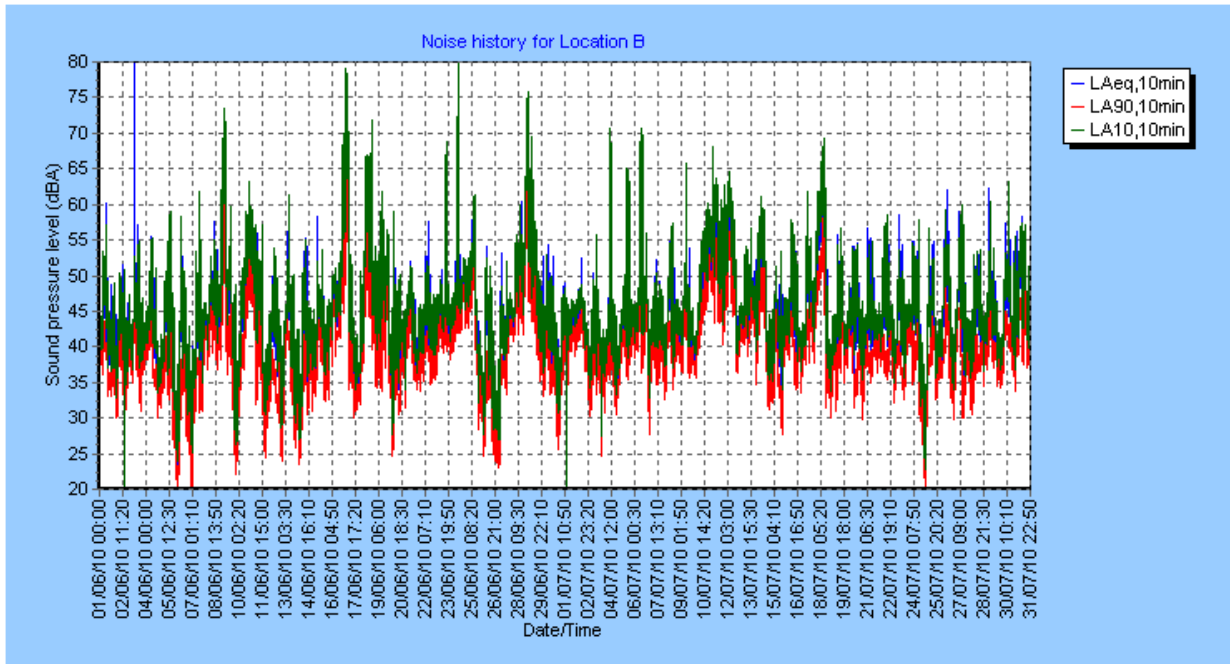


Figure 1.1-6 Environmental noise levels (LAeq 10 min), Location B for the period 1st June 2010 to 31st July 2010

Note: No simultaneous data is available for locations A & C for the period from 1st June 2010 to 31st July 2010. Location C was suspended due to no construction activity being then underway and for instrument maintenance during the reporting period.

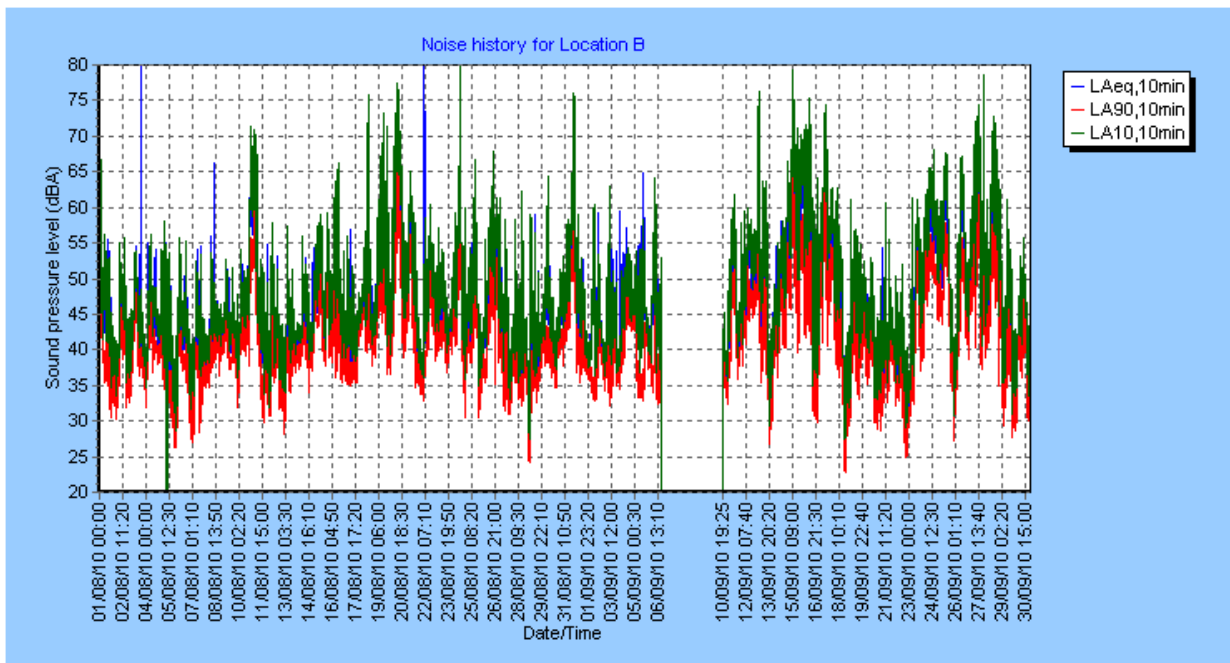


Figure 1.1-7 Environmental noise levels (LAeq 10 min), Location B for the period 1 August 2010 to 30th September 2010

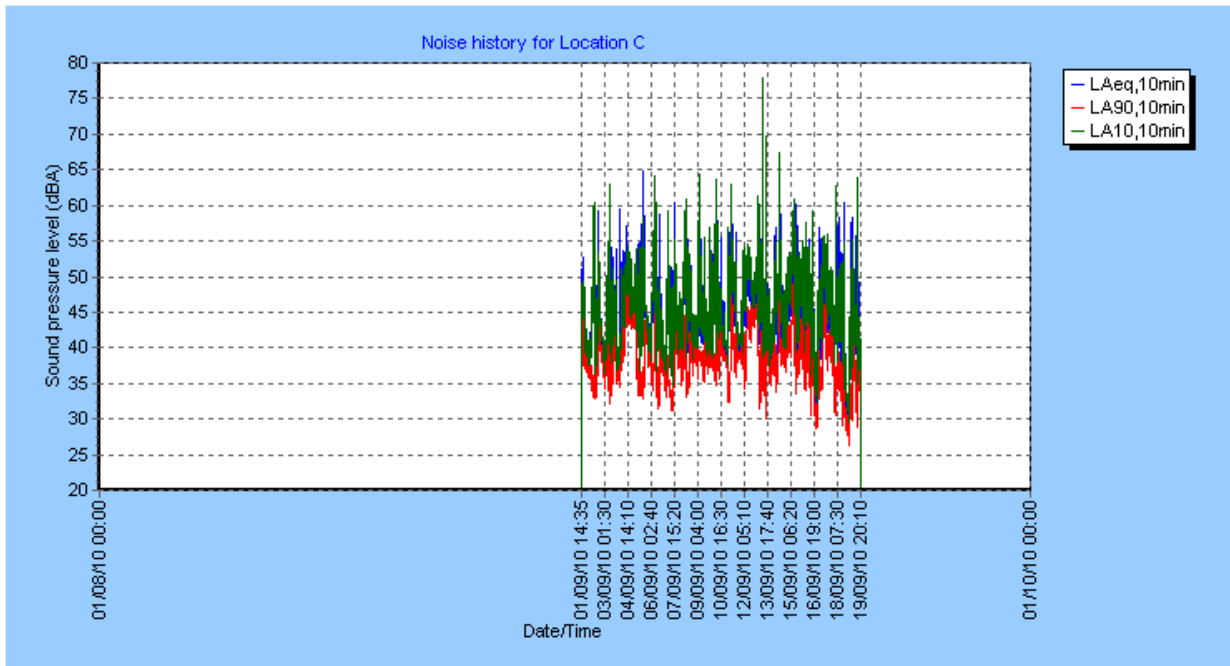


Figure 1.1-8 Environmental noise levels (LAeq 10 min), Location C for the period 1 August 2010 to 30th September 2010

Note: No simultaneous data is available for location A for the period from 1st August 2010 to 30th September 2010

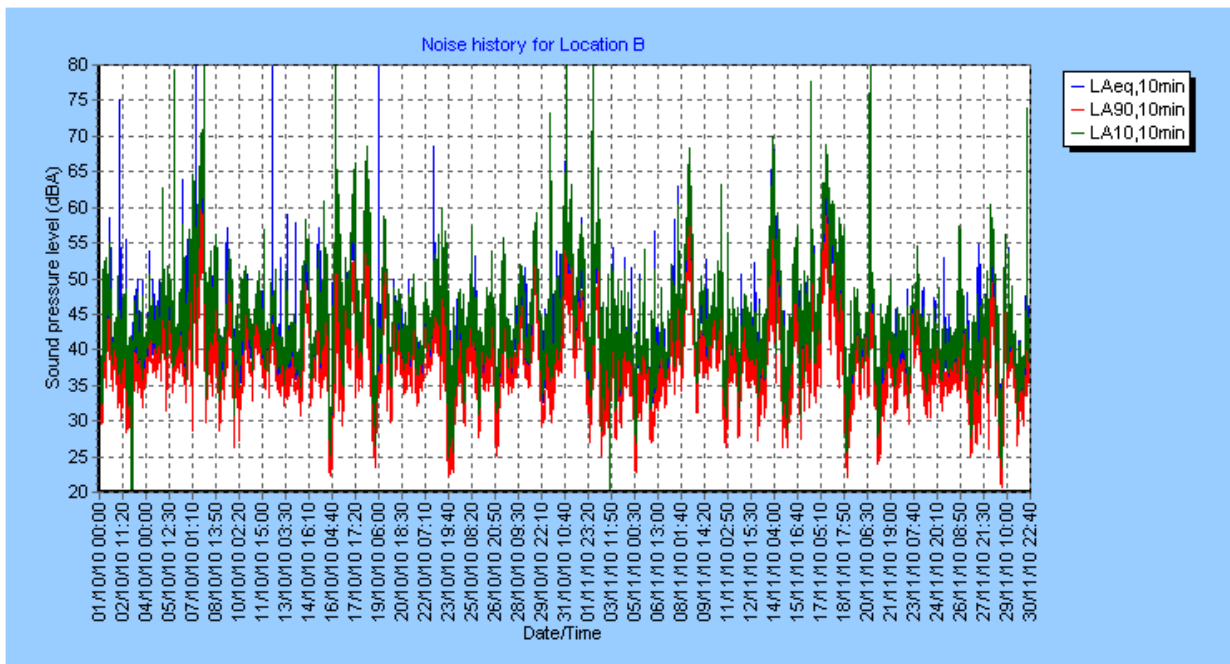


Figure 1.1-9 Environmental noise levels (LAeq 10 min), Location B for the period 1 October 2010 to 30th November 2010

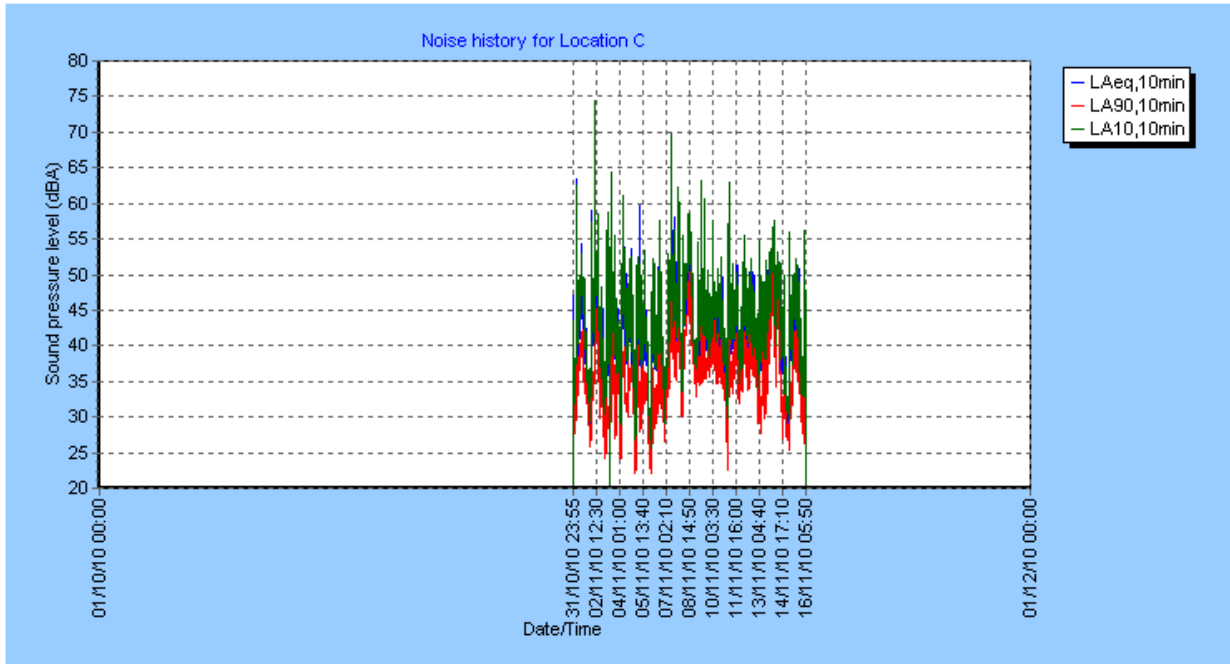


Figure 1.1-10 Environmental noise levels (LAeq 10 min), Location C for the period 1 October 2010 to 30th November 2010

Note: No simultaneous data is available for location A for the period from 1st October 2010 to 30th November 2010. Location C was suspended due to no construction activity being then underway and for instrument maintenance during the reporting period.

2 Terrestrial Monitoring

The Terrestrial Monitoring Section comprises three Sub-sections; Groundwater, Surface waters and Soils. The presentation of Section 2 data below focuses on a factual publication of baseline observations with minimal provision of interpretive information. Detailed interpretation of observations where appropriate will occur after the completion of subsequent project phases and therefore in future reports.

Comparison with data from the preceding reporting period is achieved by (a) dividing the consolidated database into two subsets identified as 'EPR2' from the prior reporting period & 'EPR3', being this reporting period or (b) presenting all the data obtained to the close of the reporting period as a linear time series.

2.1. Groundwater

The baseline Groundwater Monitoring Sub-section covers the broad geology of the pulp mill, landfill and dam site areas and the surrounding catchment area. It seeks to inform the current conceptual understanding of the groundwater hydrology of the area, including the nature and extent of aquifers, water table elevations, and the directions and rates of flow of groundwater. The baseline program also examines the physicochemical qualities of the groundwater, via routine sampling.

The Baseline Groundwater Monitoring Sub-section is intended to inform and further develop a Conceptual Hydrogeological Model (CHM) for the mill site and closely surrounding areas. The design is built on a series of 13 exploratory bores that were installed progressively during prior project development phases. Groundwater monitoring activities were reviewed for efficacy and to account for altered mill layout (Cromer 2007⁵) and as a result of that review expanded to a network of 23 bores in October 2007. After October 2007 the CHM was reviewed, following consideration of further field work during and subsequent to installation of the additional bores.

The Groundwater monitoring program has been progressively developed by Gunns Limited with key support by Gunns' consultants, Pitt & Sherry. A brief interpretive report on the results of the monitoring program data presented below has been prepared by Gunns Limited and is presented at the end of this section.

A final Groundwater Monitoring Sub-section baseline report will be developed around the time pulp mill commissioning activities commence. A map showing the location of monitoring bores in relation to planned infrastructure is presented below as Figure 2.1.1

⁵ Cromer, W. C. (2007). Initial Hydrogeological Assessment, Gunns Pulp Mill, Bell Bay. Final Draft Report by William C. Cromer Pty. Ltd. for Gunns Limited (9 May 2008)

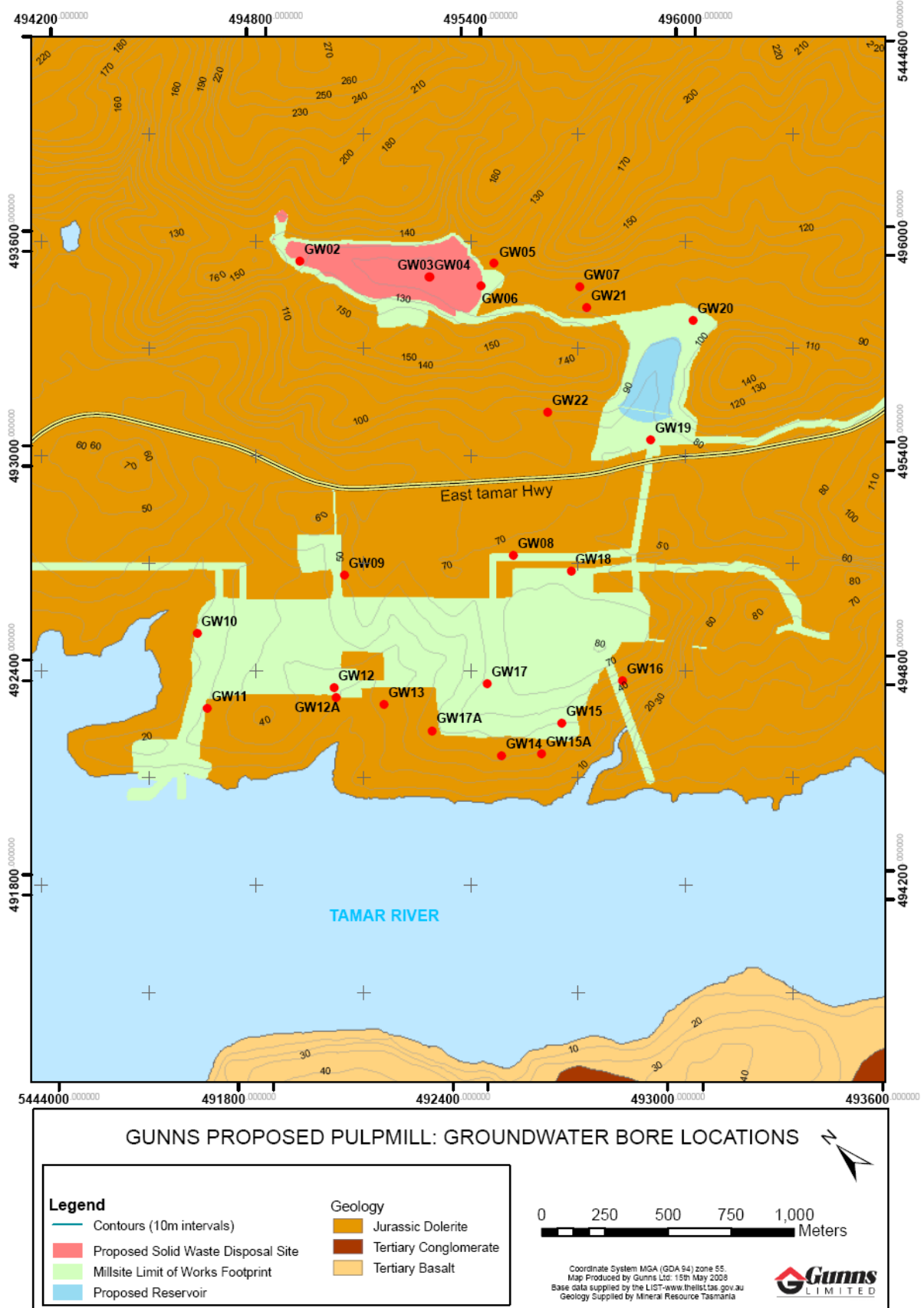


Figure 1.1.3 Map of groundwater monitoring bores and proposed mill infrastructure

2.1.1. Groundwater depth.

All groundwater depth charts below show the level of groundwater above Australian Height Datum (AHD).

The following time series charts have been standardised as follows:

- The x axis is linear date series and common to all charts including all data obtained prior to this reporting period, commencing after the first bores on the site we assessed for standing water level (14th April 2005) to the close of the reporting period for this report document of 30th November 2010.
- Two y axis ranges are presented. Bores on the eastern side of the East Tamar Highway are shown with linear range of 50 to 140m AHD, while those on the western side of the East Tamar Highway are shown with a linear range of 0 to 80m AHD. (Chart background colours are different to highlight the two chart ranges also. Light blue represents the lower strata and grey the higher strata)

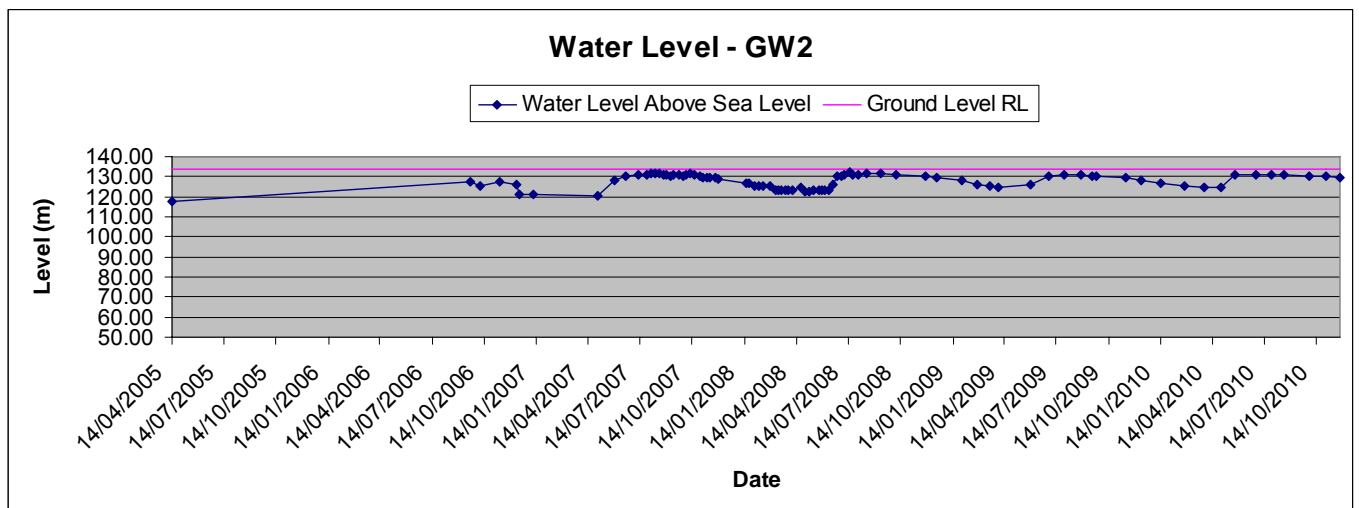


Figure 2.1.1-1 Standing water level at bore GW2 from bore commissioning within the period 14th April 2005 to 30th November 2010

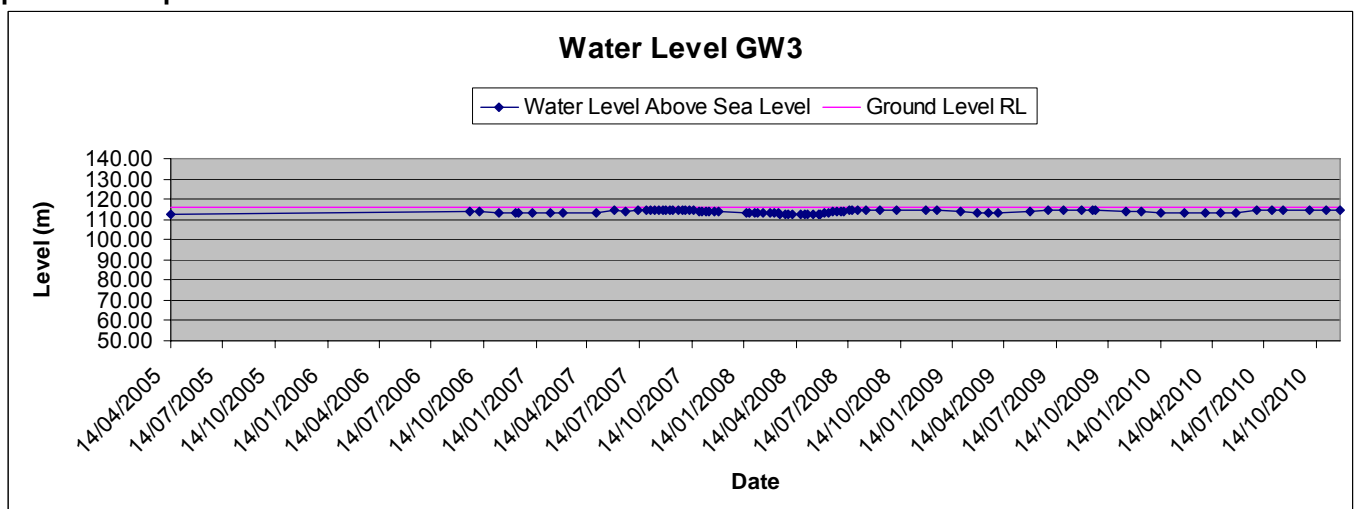


Figure 2.1.1-2 Standing water level at bore GW3 from bore commissioning within the period 14th April 2005 to 30th November 2010

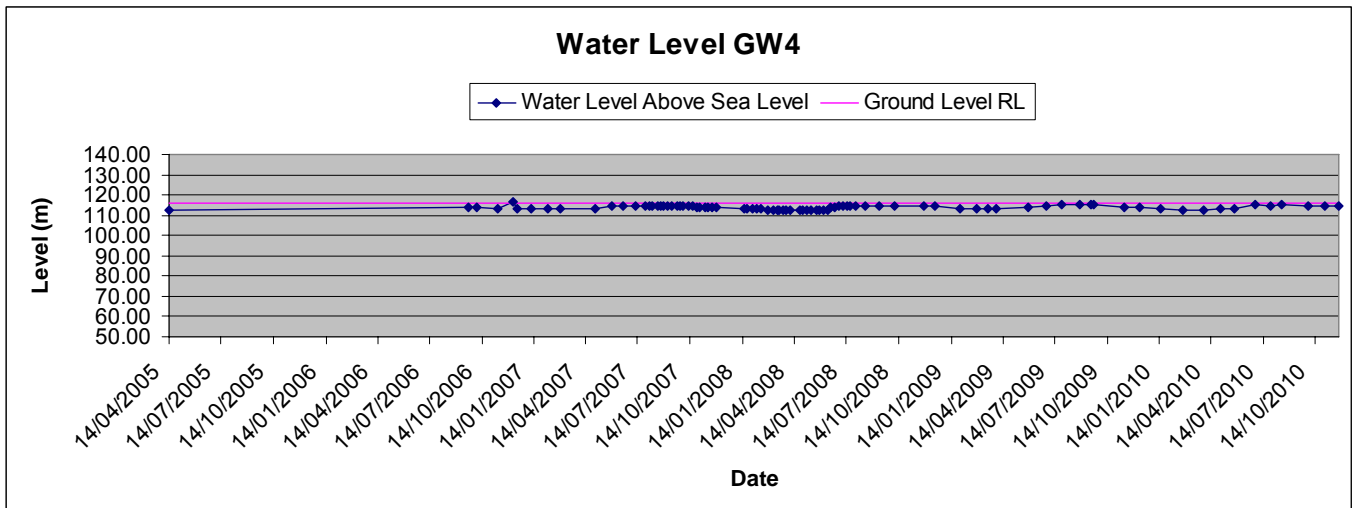


Figure 2.1.1-3 Standing water level at bore GW4 from bore commissioning within the period 14th April 2005 to 30th November 2010

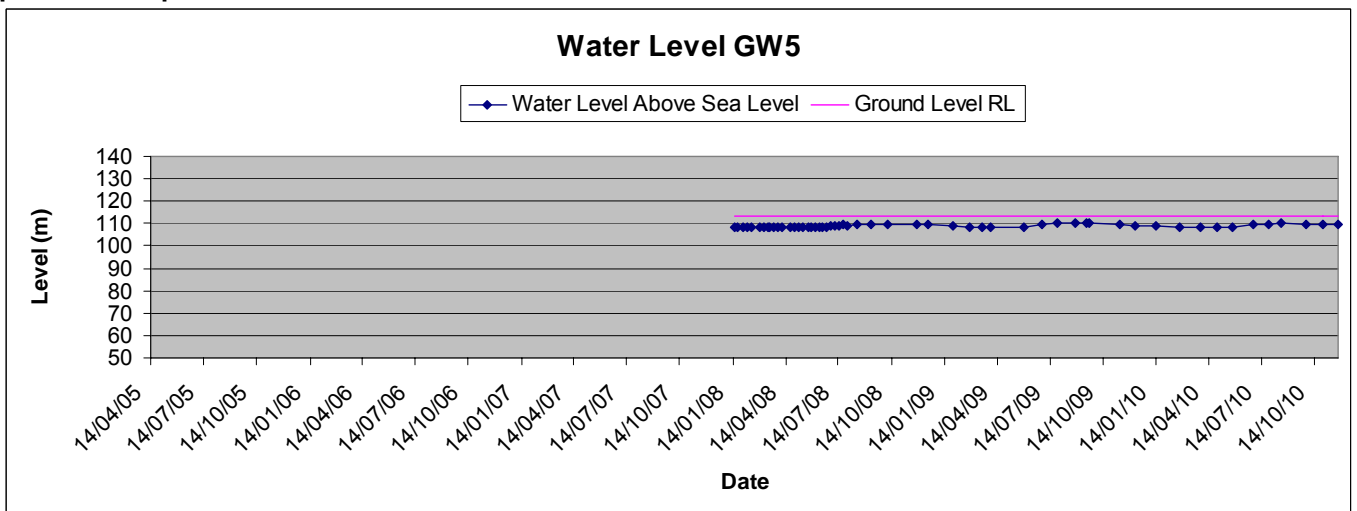


Figure 2.1.1-4 Standing water level at bore GW5 from bore commissioning within the period 14th April 2005 to 30th November 2010

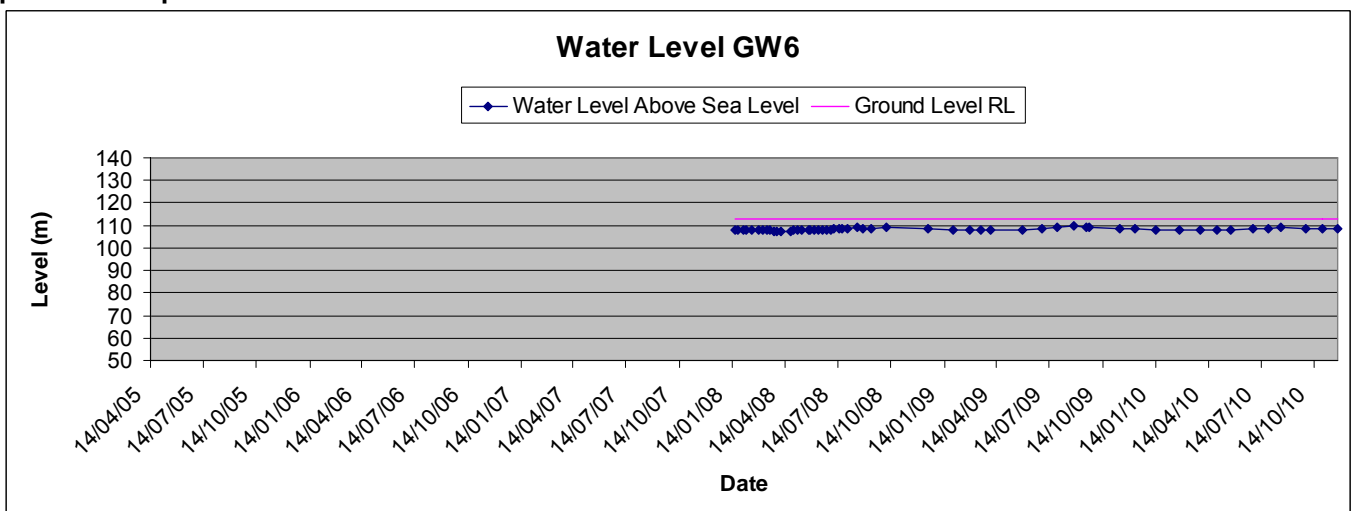


Figure 2.1.1-5 Standing water level at bore GW6 from bore commissioning within the period 14th April 2005 to 30th November 2010

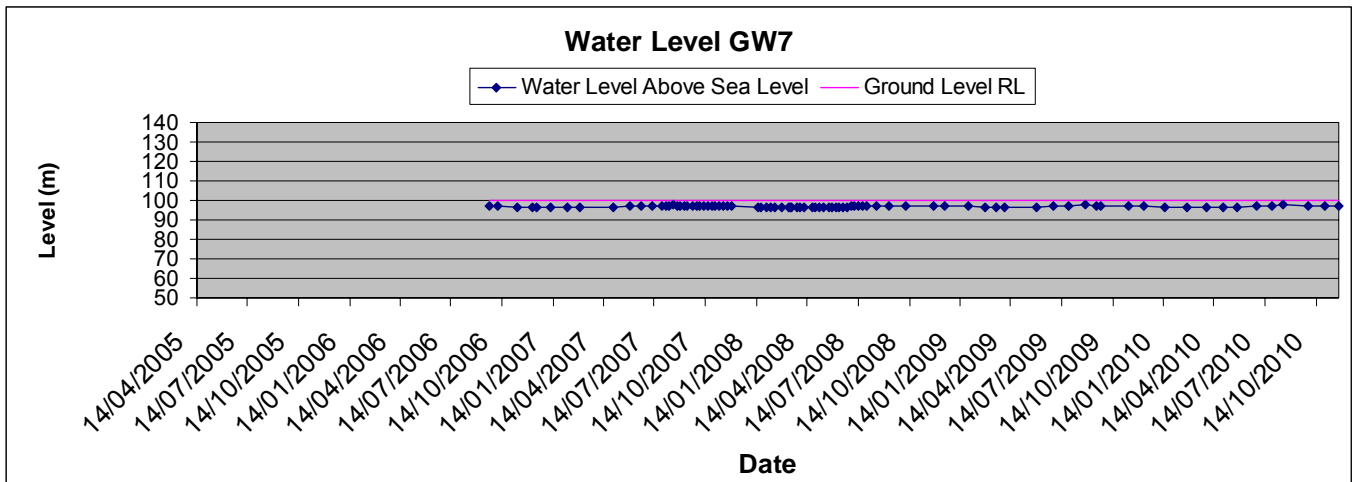


Figure 2.1.1-6 Standing water level at bore GW7 from bore commissioning within the period 14th April 2005 to 30th November 2010

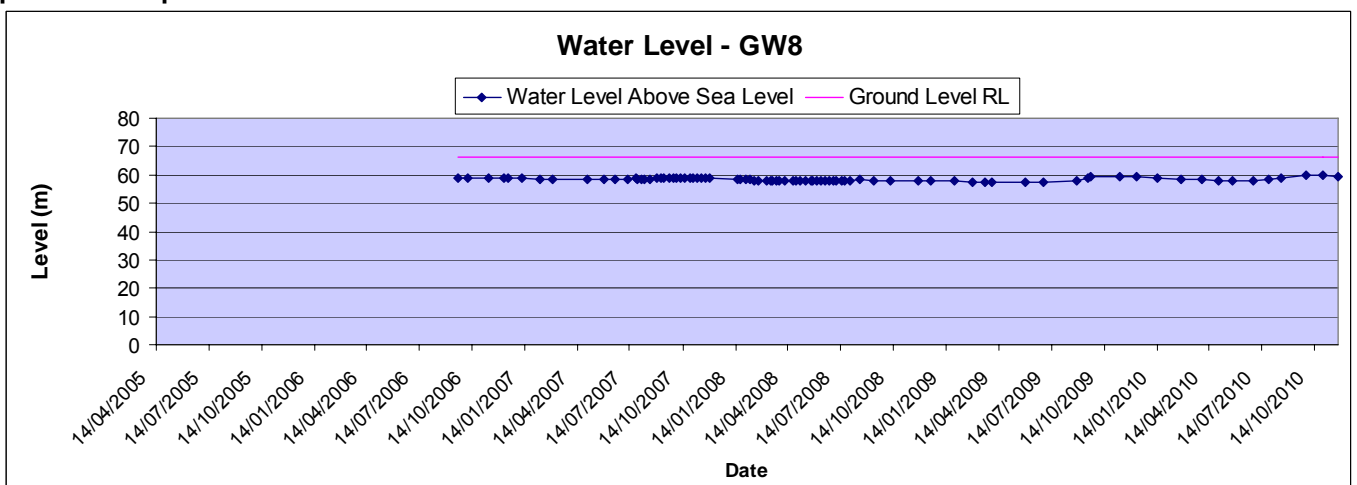


Figure 2.1.1-7 Standing water level at bore GW8 from bore commissioning within the period 14th April 2005 to 30th November 2010

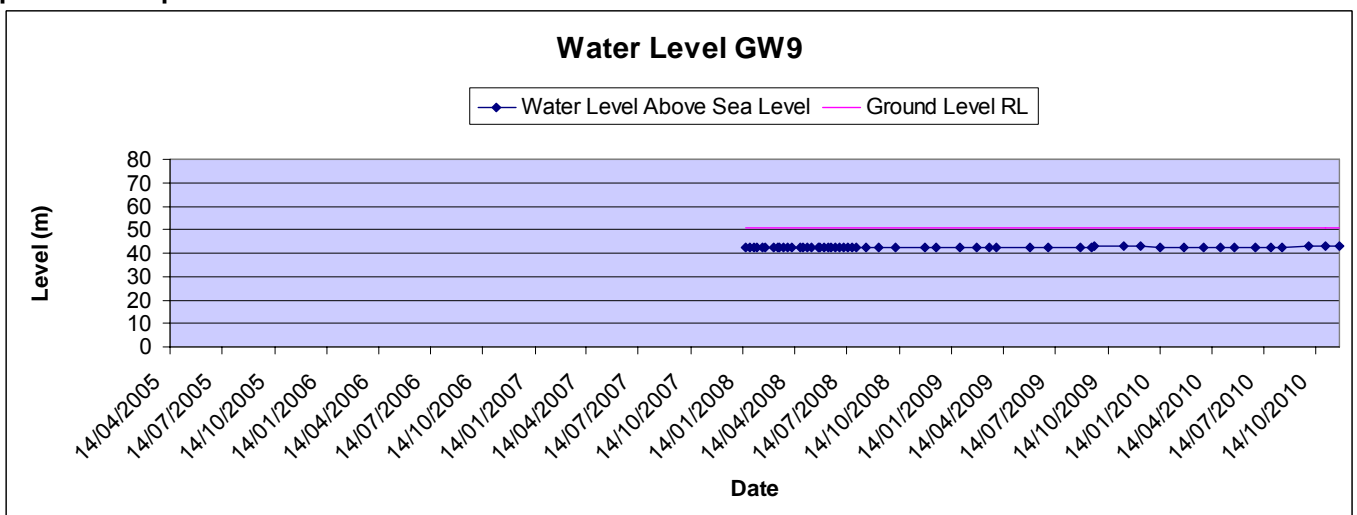


Figure 2.1.1-8 Standing water level at bore GW9 from bore commissioning within the period 14th April 2005 to 30th November 2010

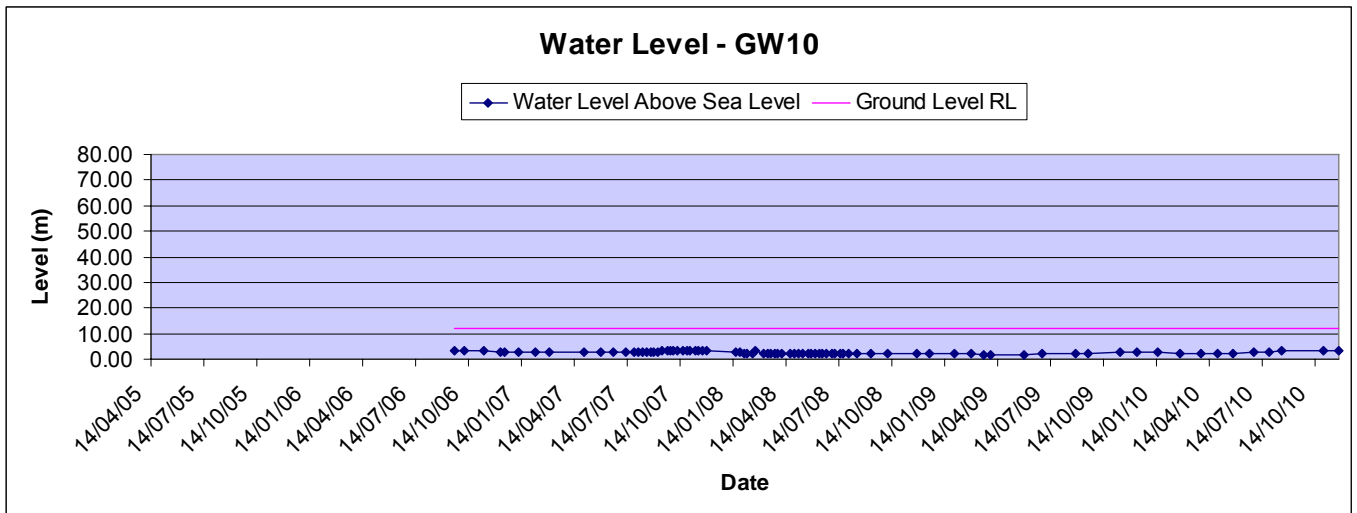


Figure 2.1.1-9 Standing water level at bore GW10 from bore commissioning within the period 14th April 2005 to 30th November 2010

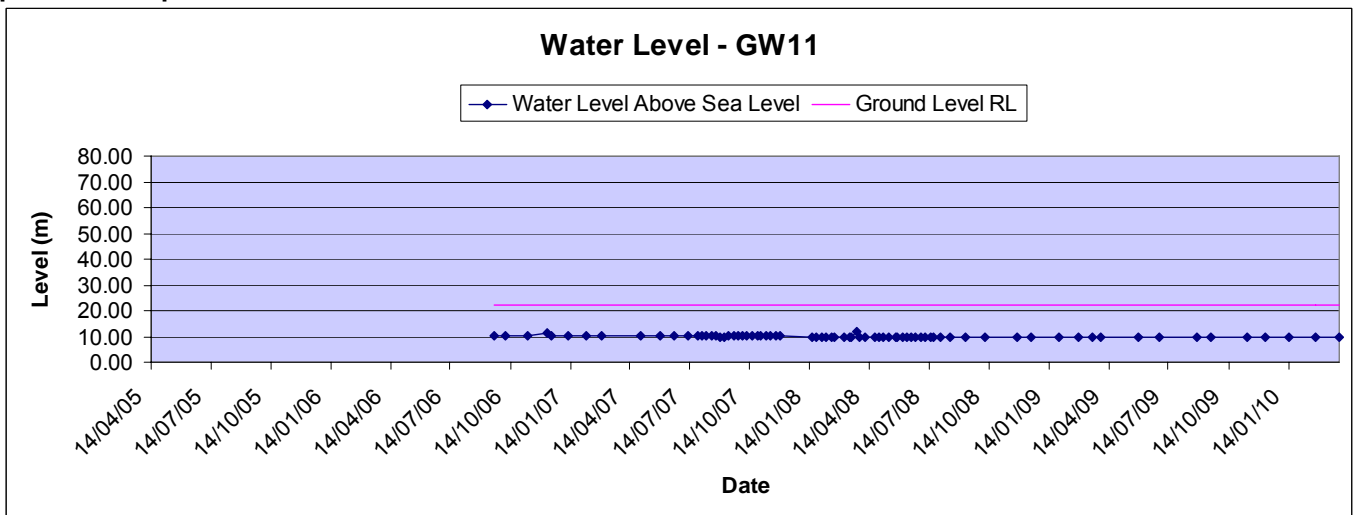


Figure 2.1.1-10 Standing water level at bore GW11 from bore commissioning within the period 14th April 2005 to 30th November 2010

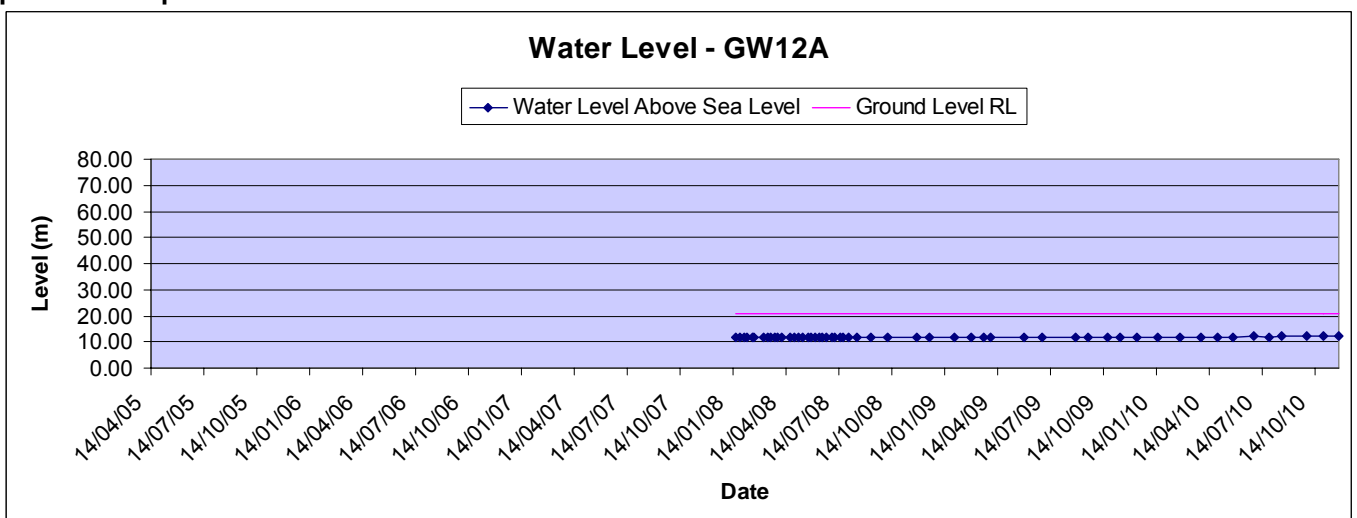


Figure 2.1.1-11 Standing water level at bore GW12-A from bore commissioning within the period 14th April 2005 to 30th November 2010

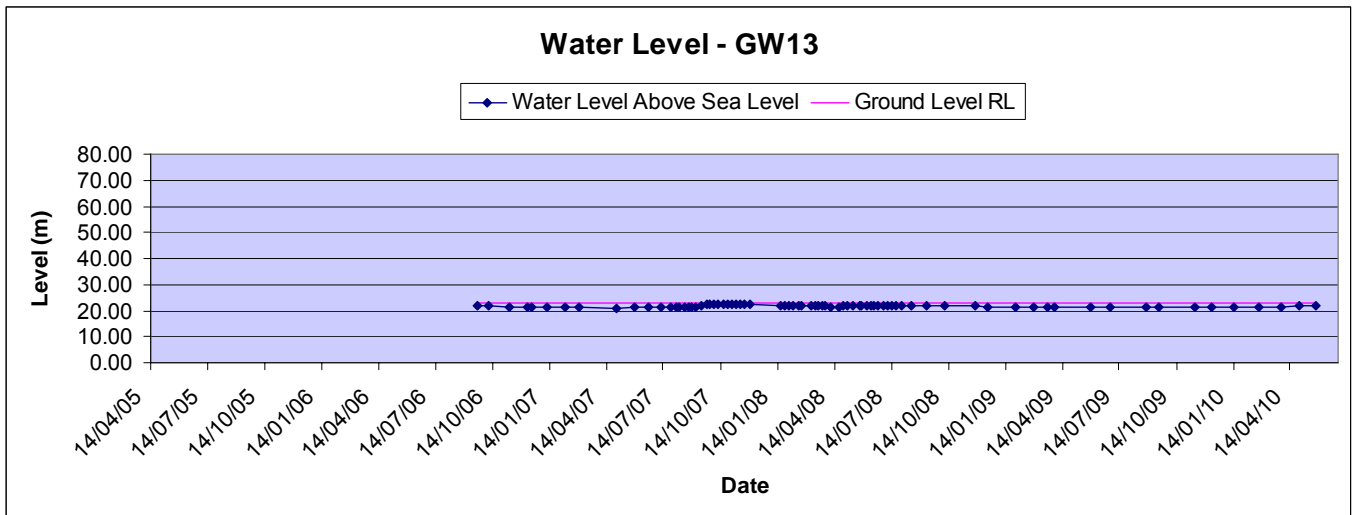


Figure 2.1.1-12 Standing water level at bore GW13 from bore commissioning within the period 14th April 2005 to 30th November 2010

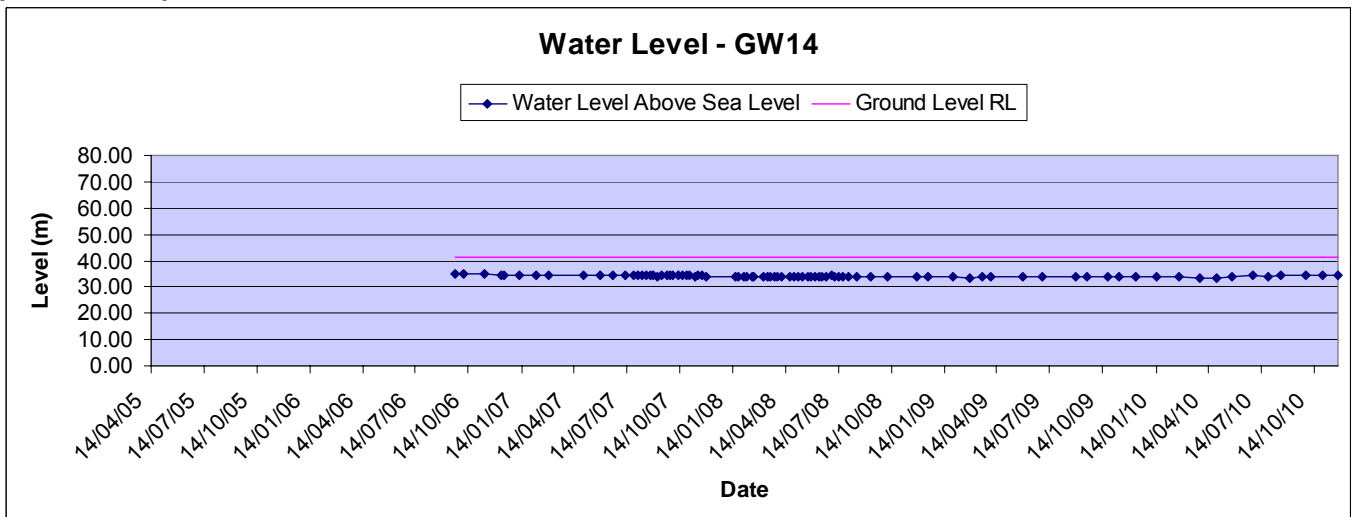


Figure 2.1.1-13 Standing water level at bore GW14 from bore commissioning within the period 14th April 2005 to 30th November 2010

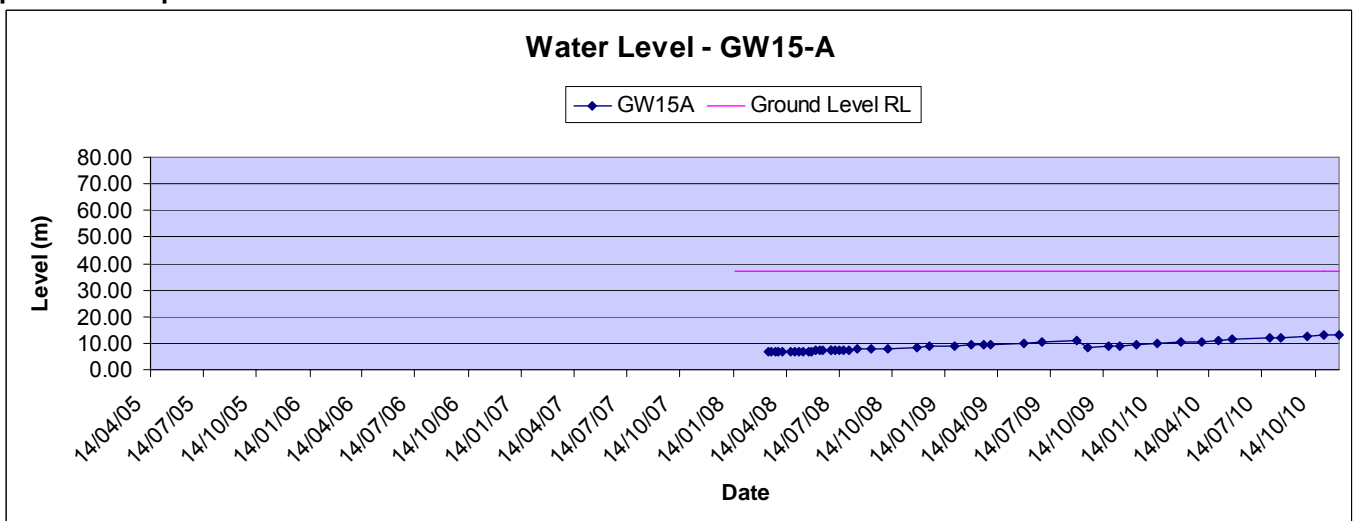


Figure 2.1.1-14 Standing water level at bore GW15-A from bore commissioning within the period 14th April 2005 to 30th November 2010

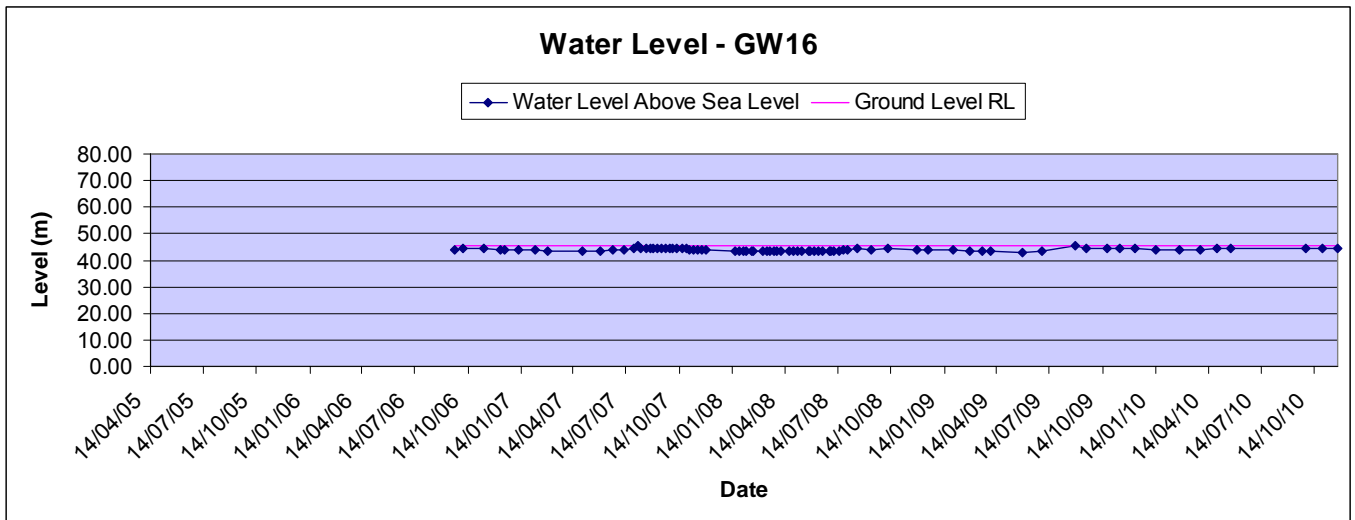


Figure 2.1.1-15 Standing water level at bore GW16 from bore commissioning within the period 14th April 2005 to 30th November 2010

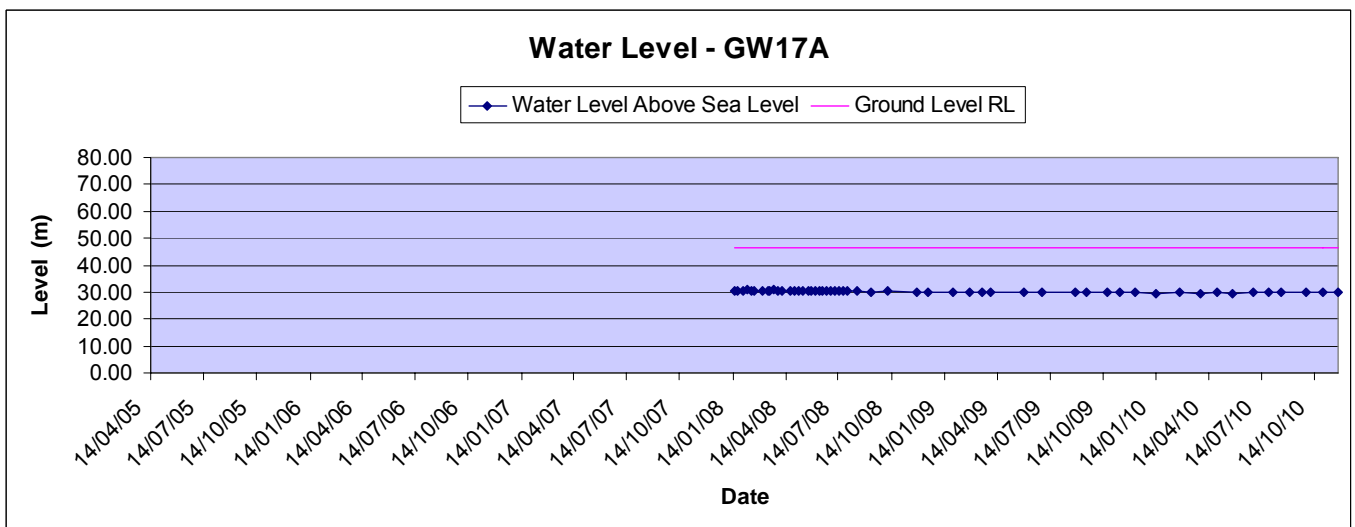


Figure 2.1.1-16 Standing water level at bore GW17-A from bore commissioning within the period 14th April 2005 to 30th November 2010

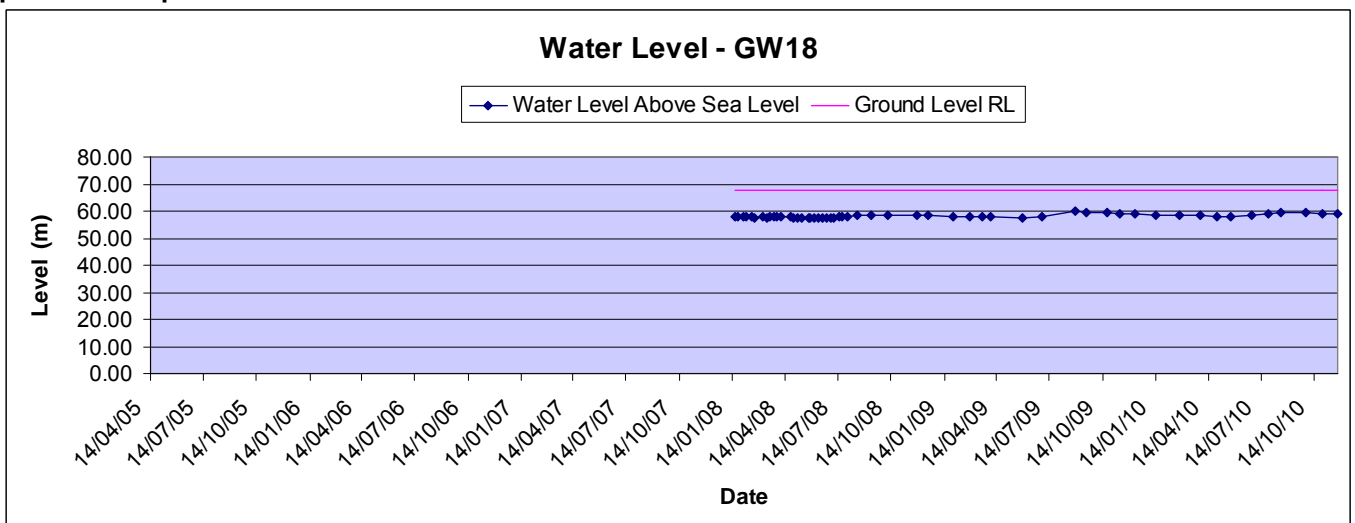


Figure 2.1.1-17 Standing water level at bore GW18 from bore commissioning within the period 14th April 2005 to 30th November 2010

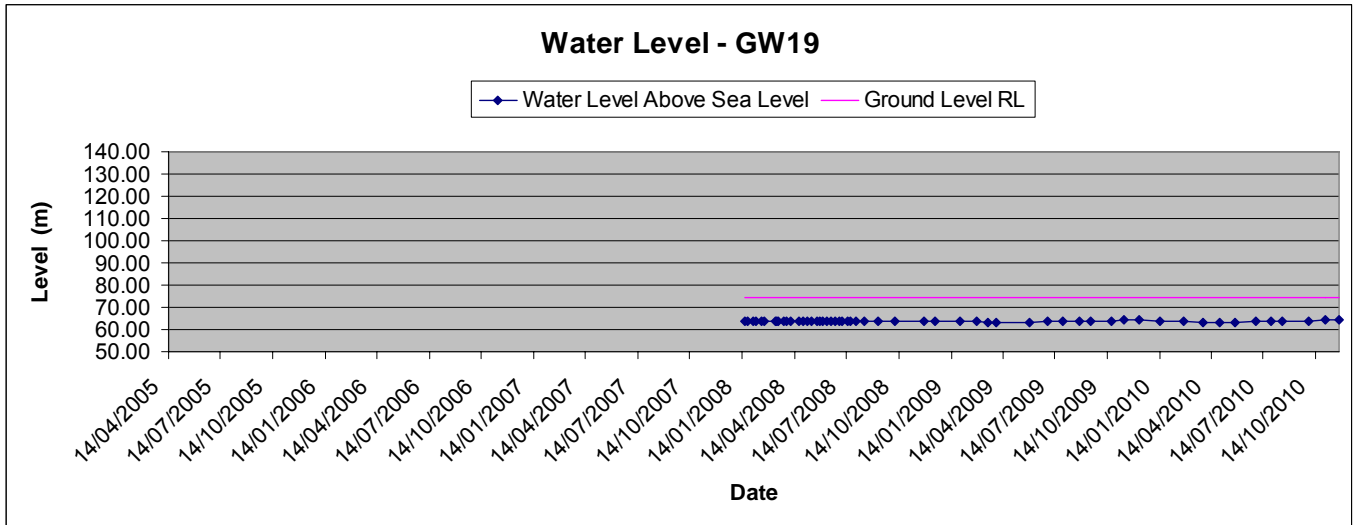


Figure 2.1.1-18 Standing water level at bore GW19 from bore commissioning within the period 1st April 2005 to 30th November 2010

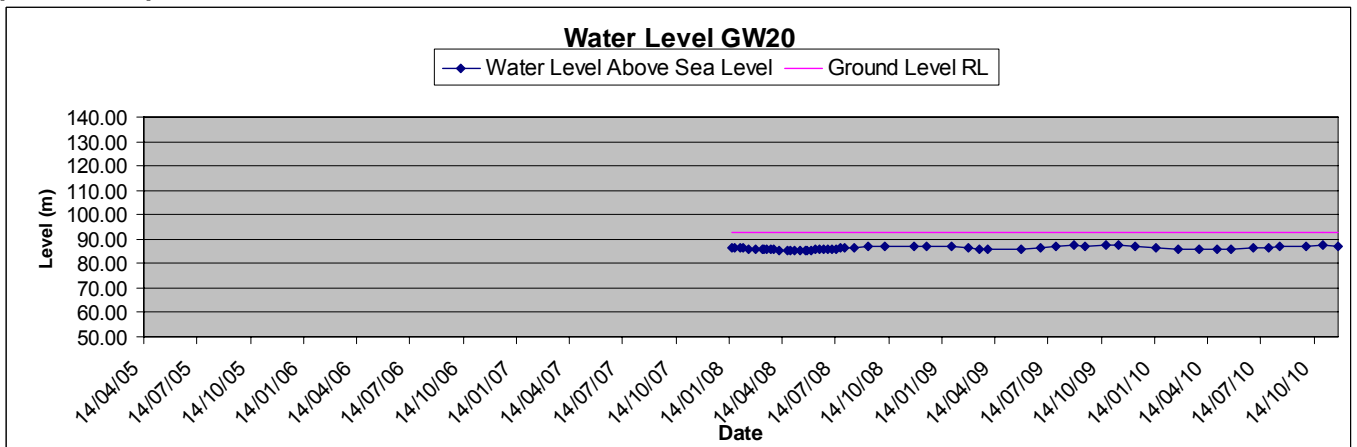


Figure 2.1.1-19 Standing water level at bore GW20 from bore commissioning within the period 14th April 2005 to 30th November 2010

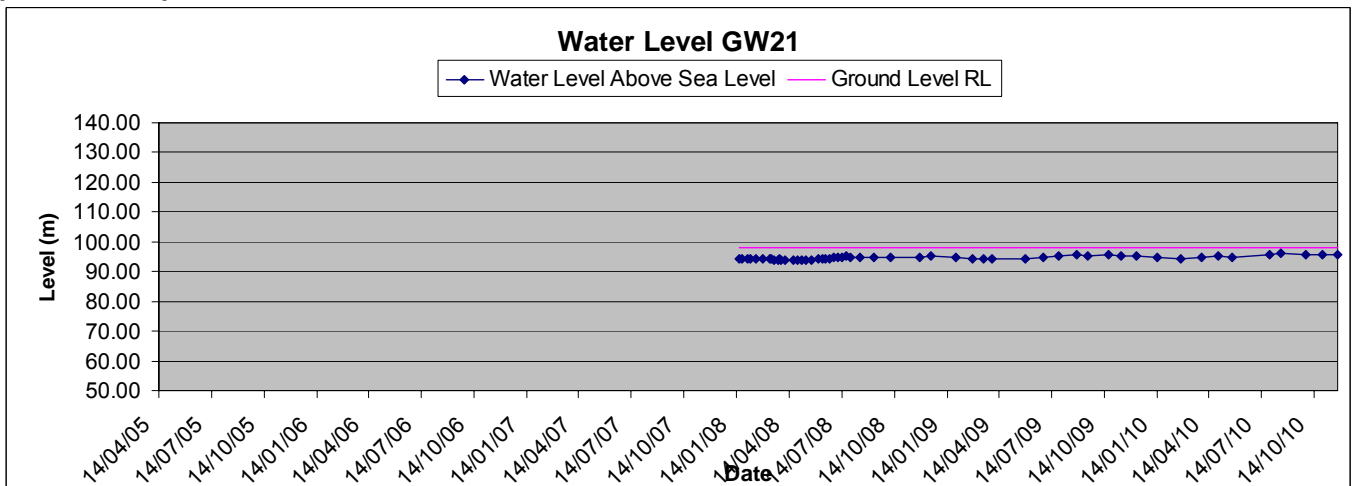


Figure 2.1.1-20 Standing water level at bore GW21 from bore commissioning within the period 14th April 2005 to 30th November 2010

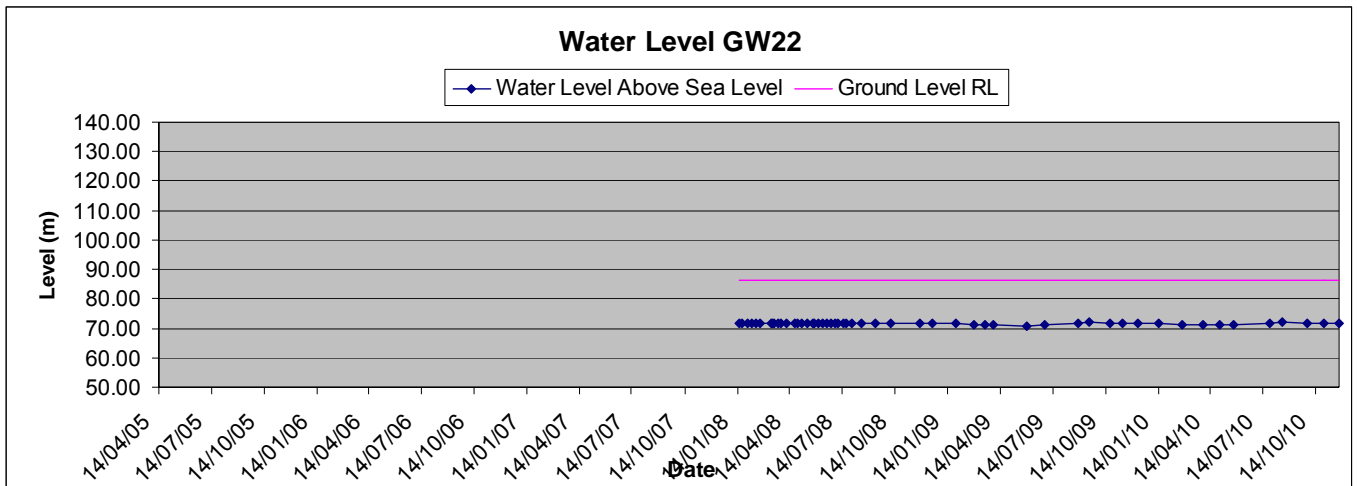


Figure 2.1.1-21 Standing water level at bore GW22 from bore commissioning within the period 14th April 2005 to 30th November 2010

2.1.2. Chemical Analyses

Data is presented below as probability plots (Normal or Log-normal distribution). Probability plots are an appropriate method of data presentation as they condense a large amount of data and statistical information (eg percentiles) to a manageable form, particularly where trend analysis is not a central interest for the study (as is the case for baseline monitoring).

2.1.1.1 Group A – Physico-chemical

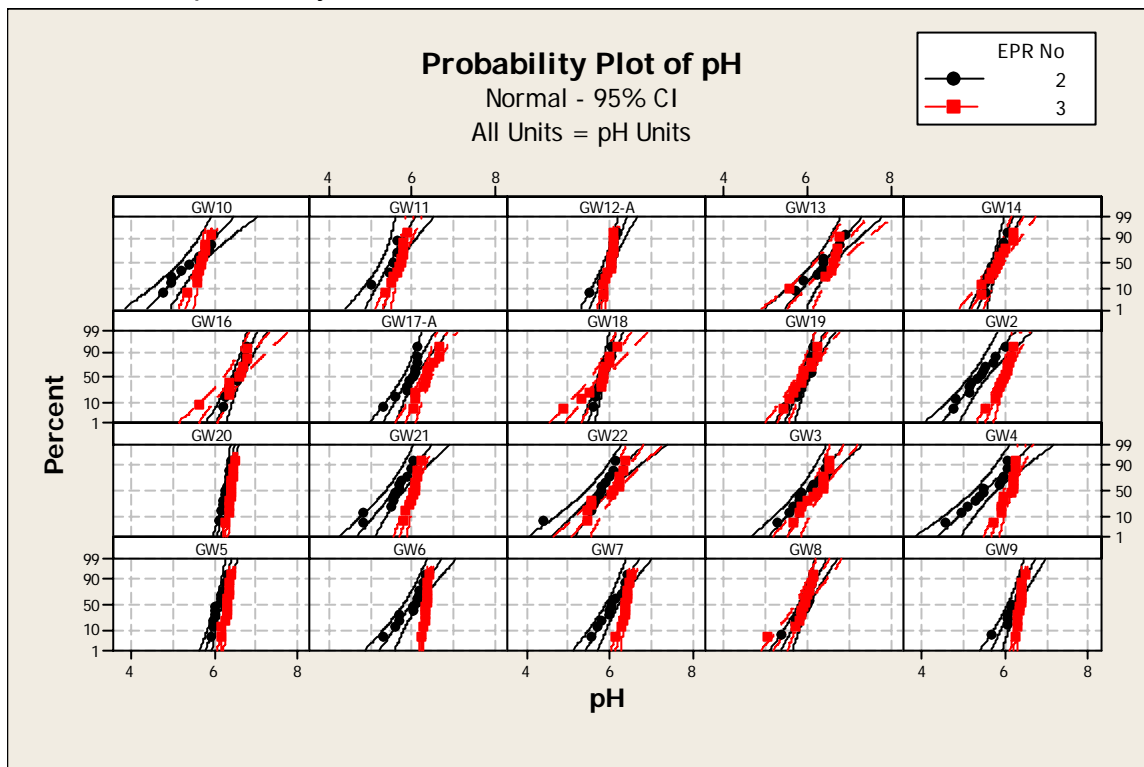


Figure 2.1.2-1 Probability plot of pH to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

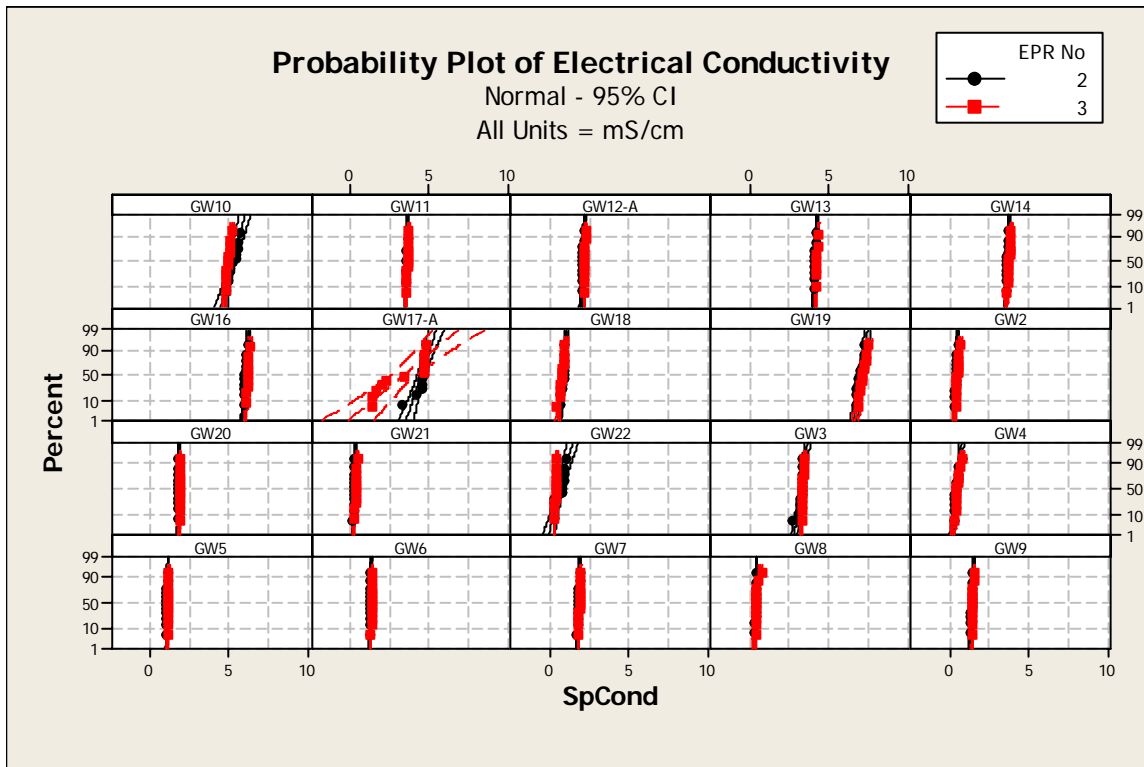


Figure 2.1.2-2 Probability plot of Electrical Conductivity to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

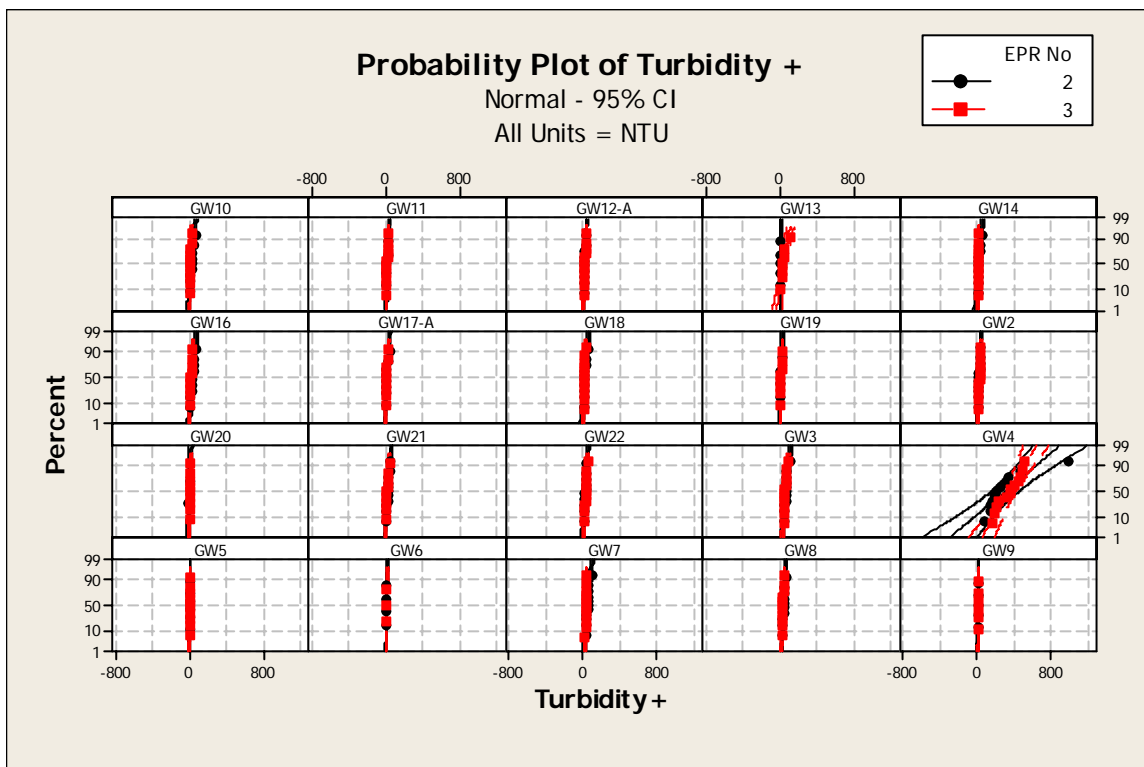


Figure 2.1.2-3 Probability plot of turbidity to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

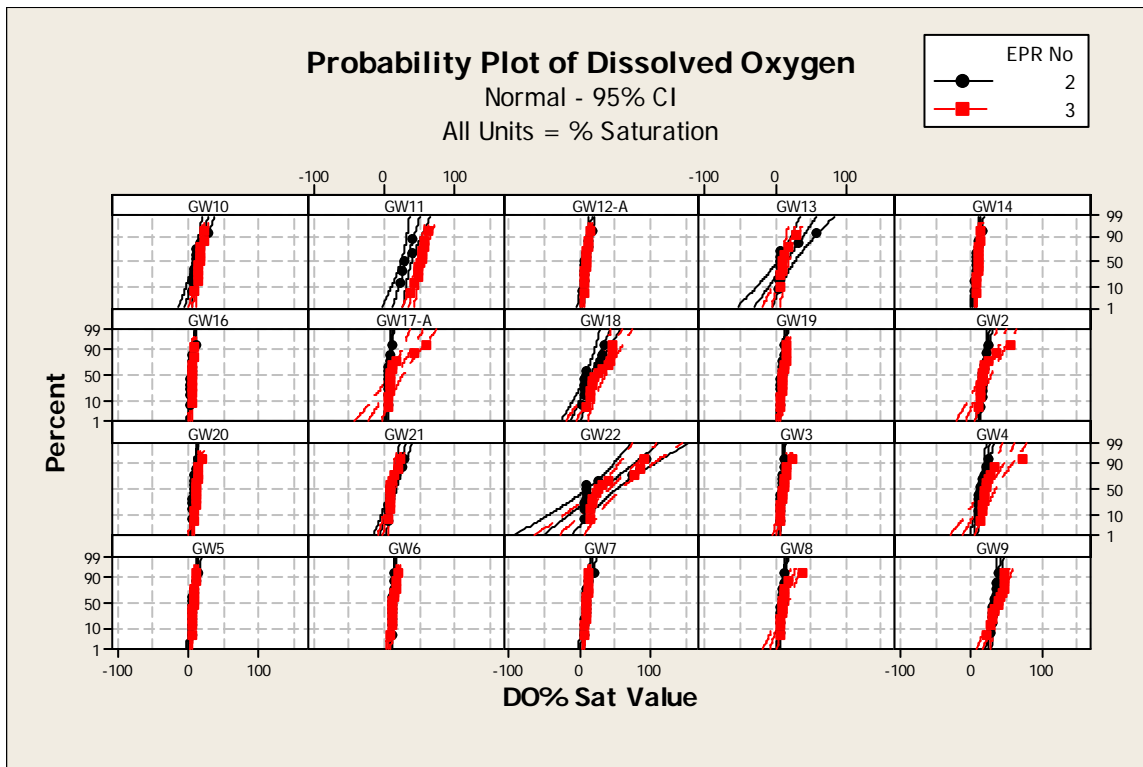


Figure 2.1.2-4 Probability plot of observed dissolved oxygen saturation to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

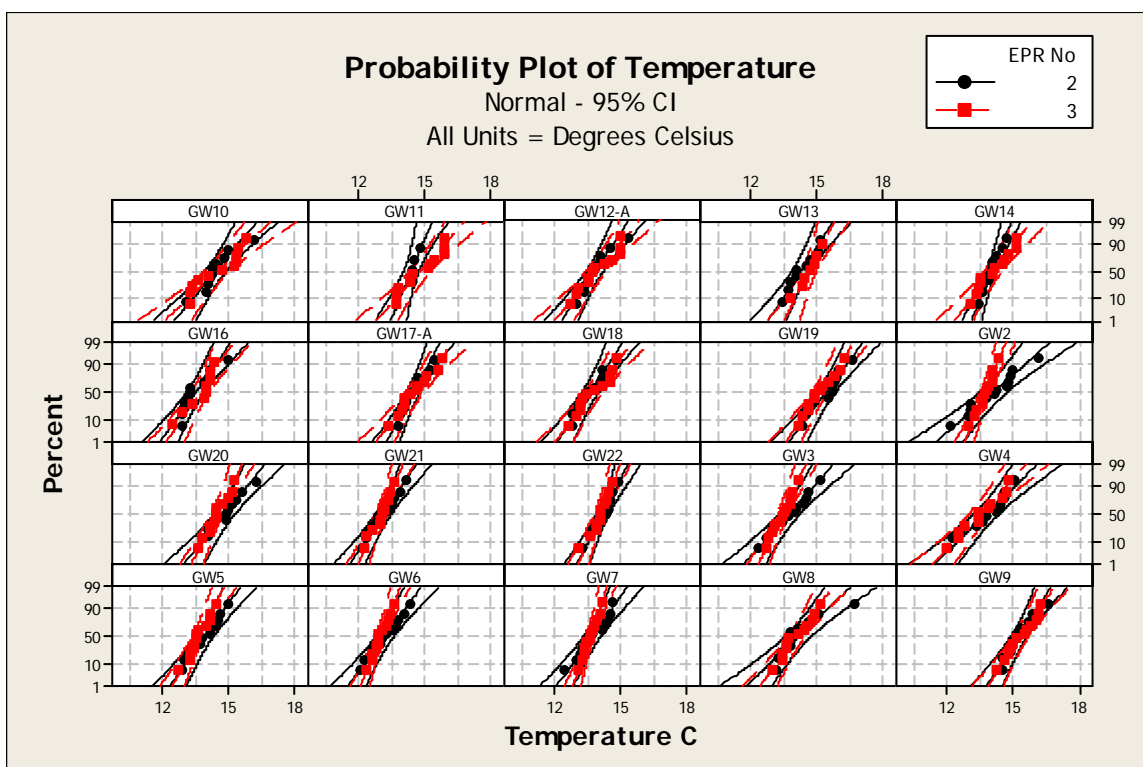


Figure 2.1.2-5 Probability plot of temperature to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

2.1.1.2 Group B – General

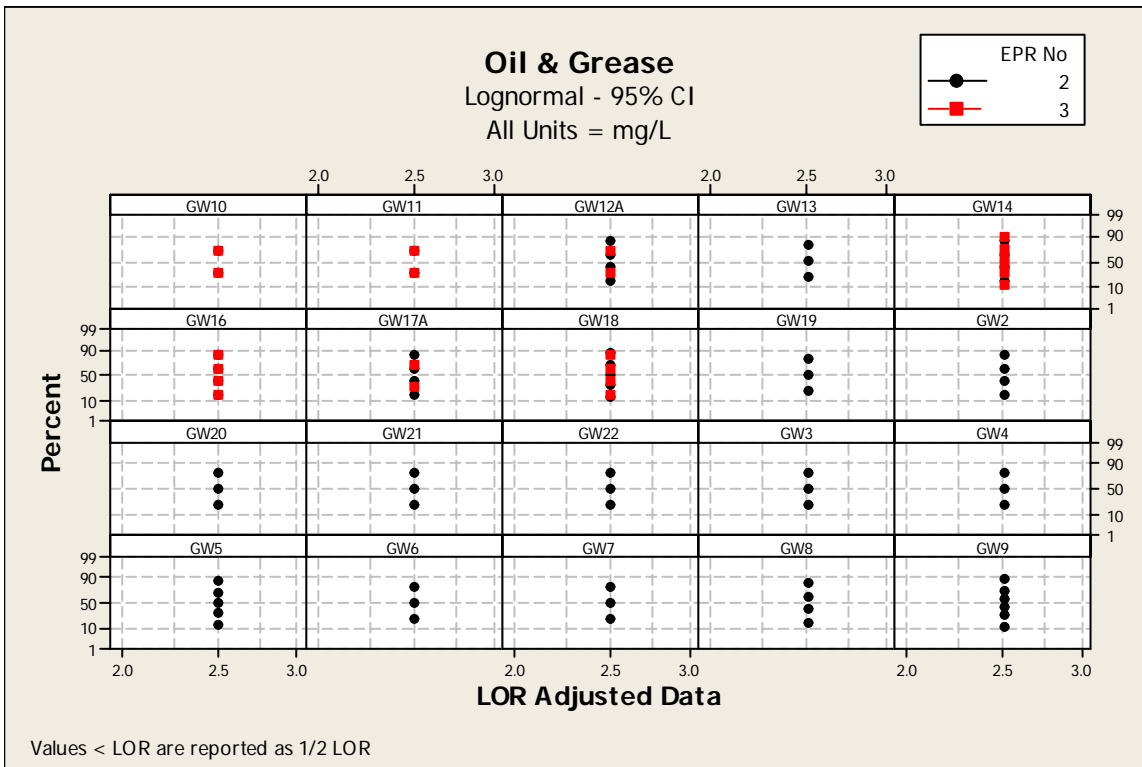


Figure 2.1.2-6 Probability plot of oil & grease to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

2.1.1.3 Group G – Organics (hydrocarbons)

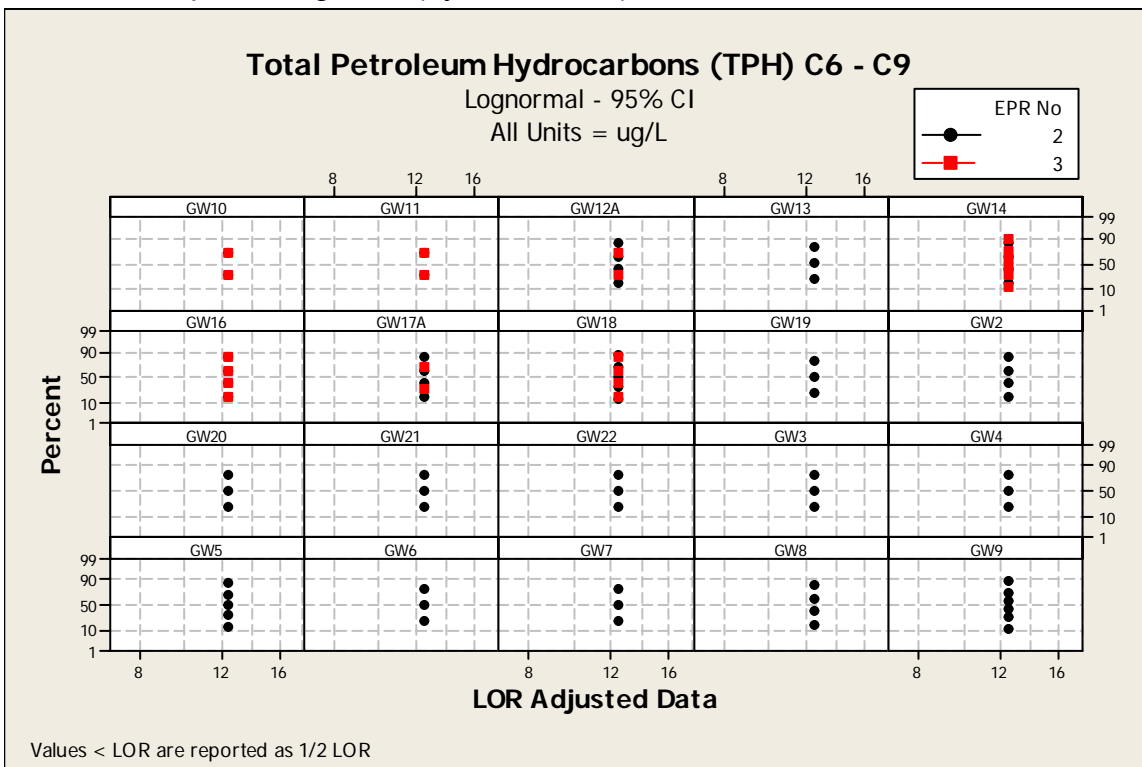


Figure 2.1.2-7 Probability plot of TPH C6 – C9 to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

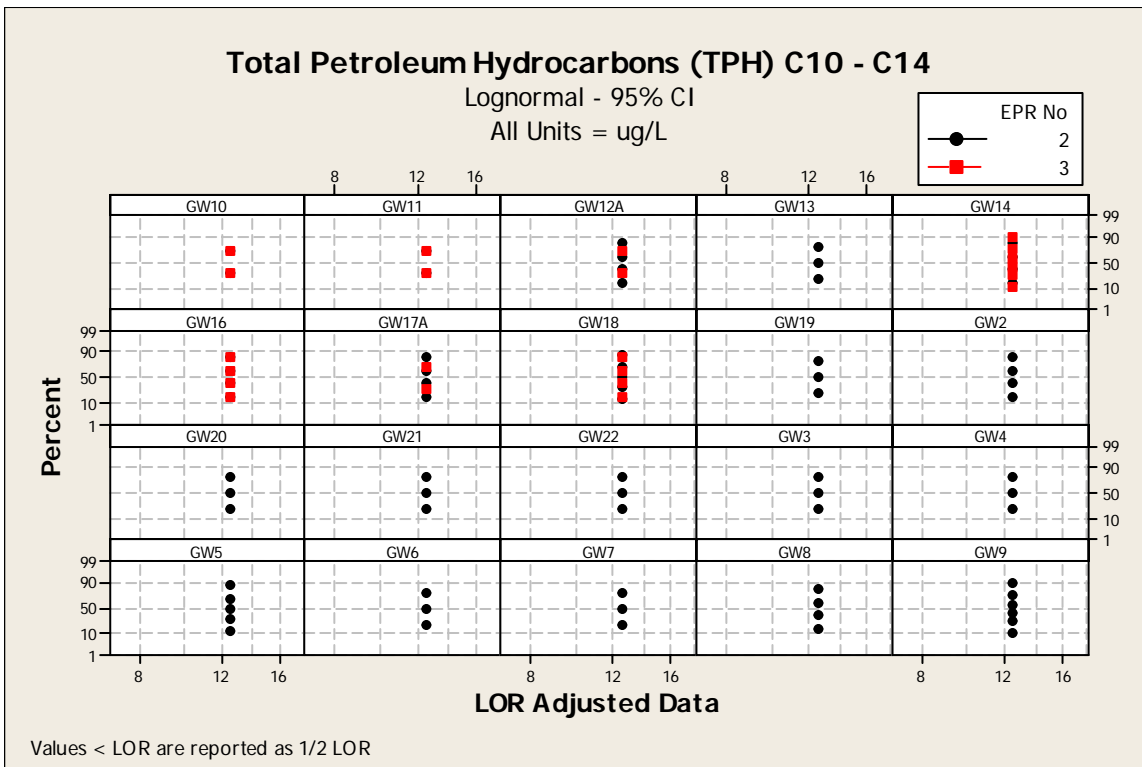


Figure 2.1.2-8 Probability plot of TPH C10 – C14 to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

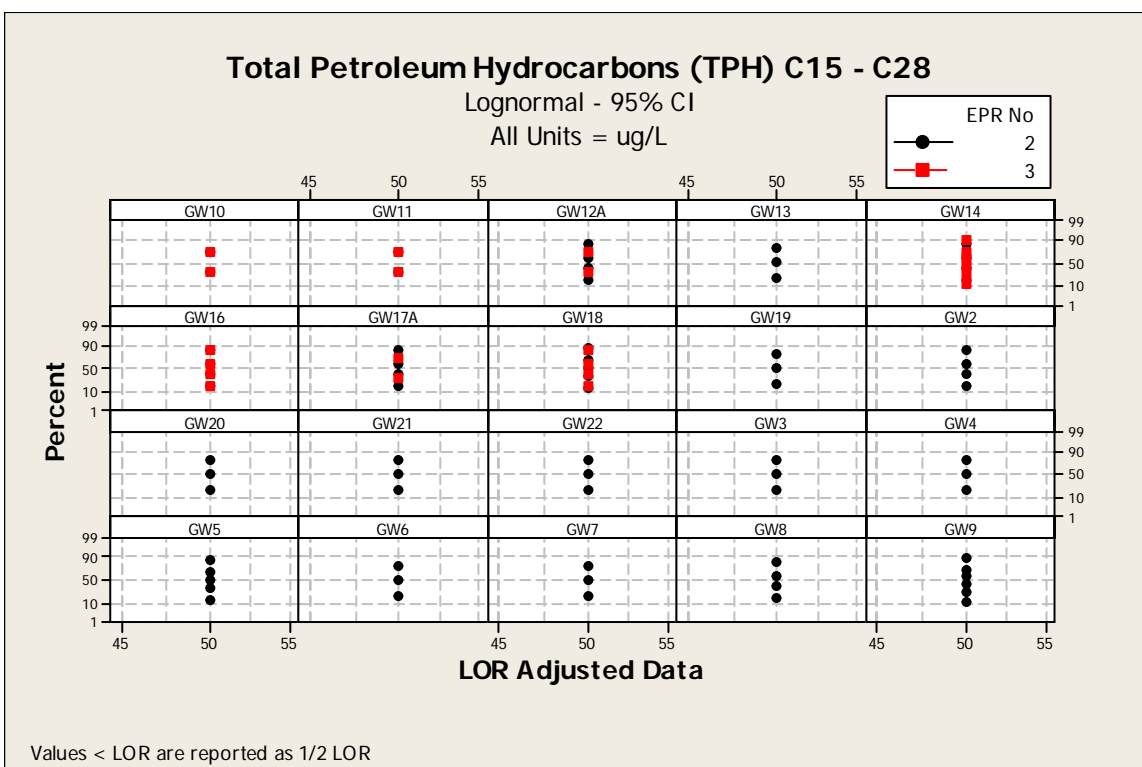


Figure 2.1.2-9 Probability plot of TPH C15 – C28 to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

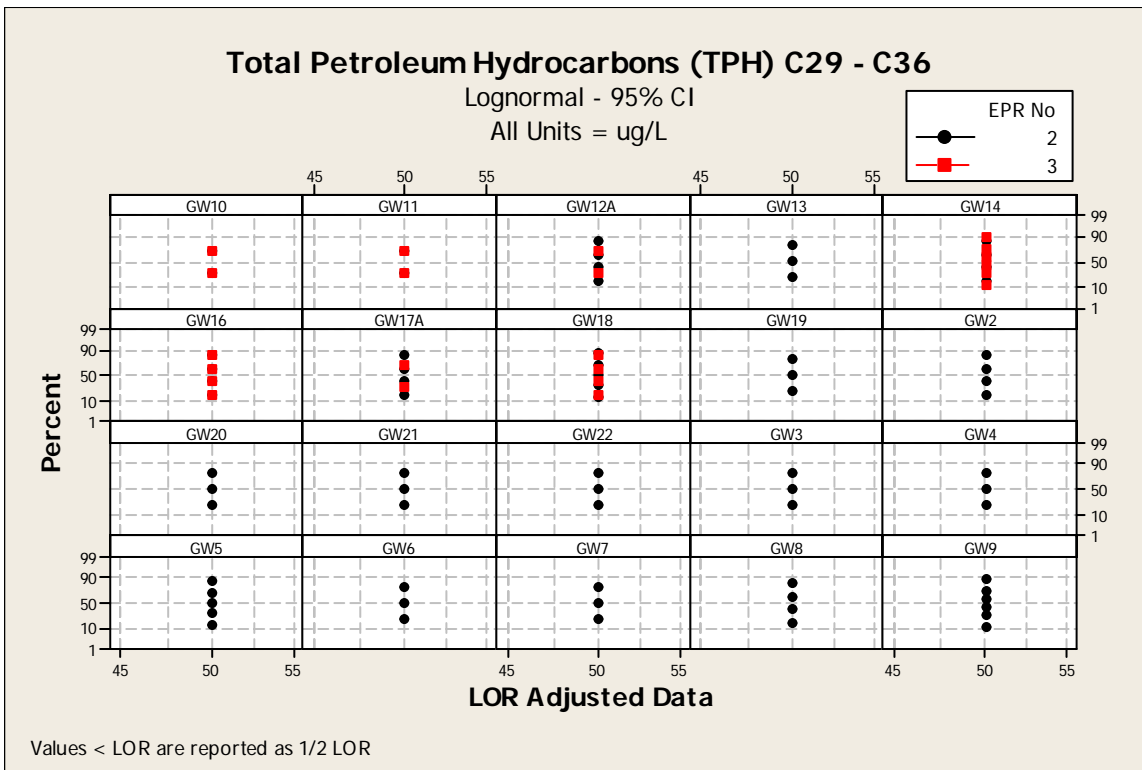


Figure 2.1.2-10 Probability plot of TPH C29 – C36 to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in ground water bores.

Groundwater Interpretation

Levels

Monitoring has continued to show moderate seasonal variation in water levels in the groundwater bores, both on the eastern side of the East Tamar Highway (the landfill and water supply dam site) and the western side (the mill site). The apparent variation is broadly consistent with recharge from rainfall.

Levels and inferred flow directions

The depths of water below ground as at November 2010 range from about 1m to 29m but there continues to be no discernible areal pattern. Recalculation of depth to water as a height of the water level above sea level produces data similar to previous monitoring results, with some recharge occurring in many bores during the higher rainfall period. These results are consistent with conclusions drawn in the initial hydrogeological assessment of the site⁶ and prior reports.

Baseline detailed chemical and physico-chemical condition of groundwater

Analyte Group A - Physicochemical

All physicochemical parameters measured show some degree of variability, pH having an approximate range from 4.5 to 7, with most bores showing more stability than the prior reporting period. Electrical conductivity (EC) an approximate range from 2000 to 8,000 $\mu\text{S}/\text{cm}$, likewise with greater stability than previously observed.

Analyte Group B – General

Total Oil & Grease was the only Group B extractive samples collected and analysed for the EPR3 reporting period in order to provide surveillance of low intensity construction activities. Unlike the prior reporting period, no sample detected an Oil & Grease signature above its applicable LOR.

Total Petroleum Hydrocarbons (TPH), reported in three fractions were the only Group H extractive samples collected and analysed for the EPR3 reporting period in order to provide surveillance of low intensity construction activities. No sample detected a TPH signature above its applicable LOR.

⁶ Cromer 2007.

2.2. Surfacewater

2.2.1. Surface water flow

Due to generally higher rainfall within this reporting period and limited construction activity, a greater number of surface water sampling events were possible and or required this reporting period when compared to the prior reporting period.

2.2.2. Chemical Analyses

Presentation of Surfacewater data follows the same protocol as described in the Groundwater section above. During the previous reporting period, a temporary surrogate site (SW8A on Williams Creek) was established, due to inaccessibility of site SW8 which itself has been reinstated as access is again available for subsequent & ongoing monitoring.

Group A – Physicochemical parameters

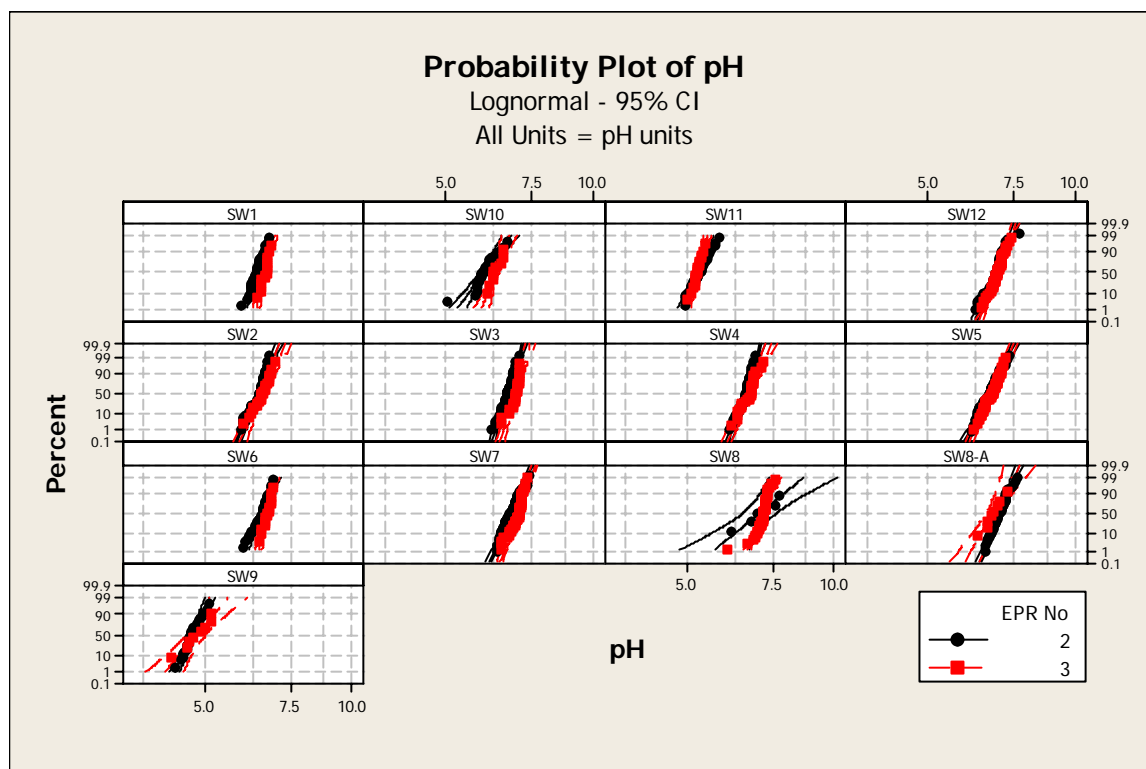


Figure 2.2.2-1 Probability plot of observed pH to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

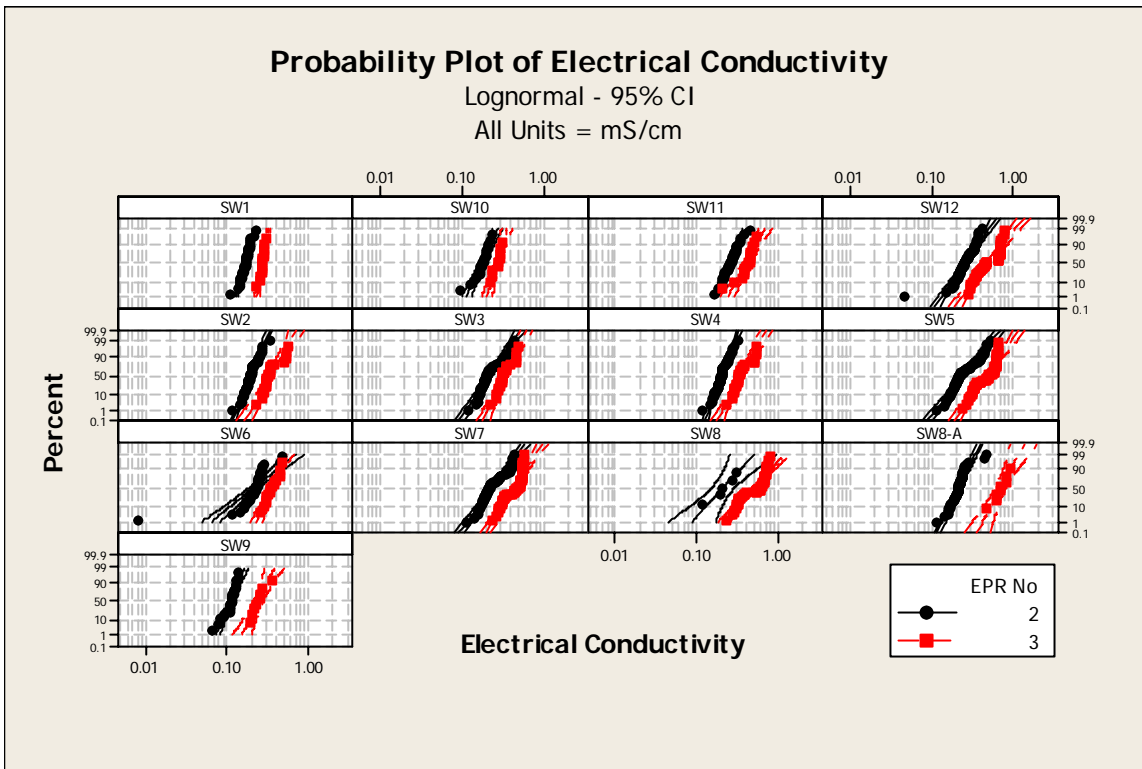


Figure 2.2.2-2 Probability plot of observed Electrical Conductivity to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

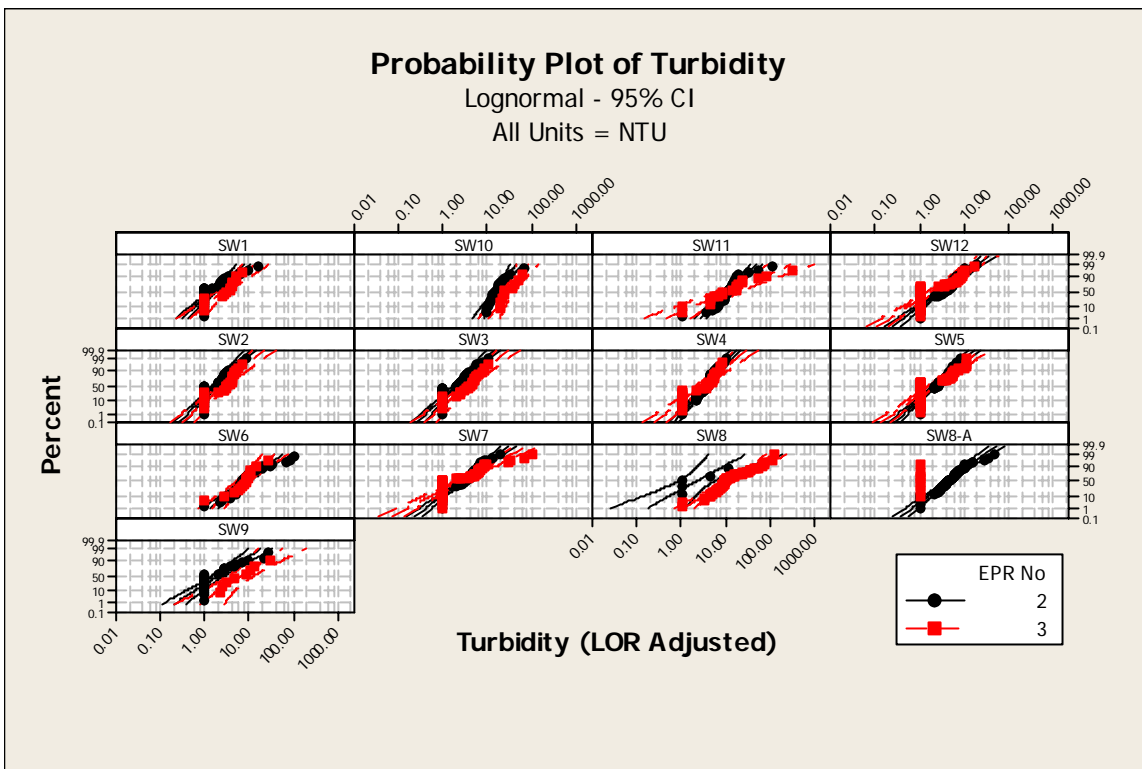


Figure 2.2.2-3 Probability plot of observed Turbidity to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

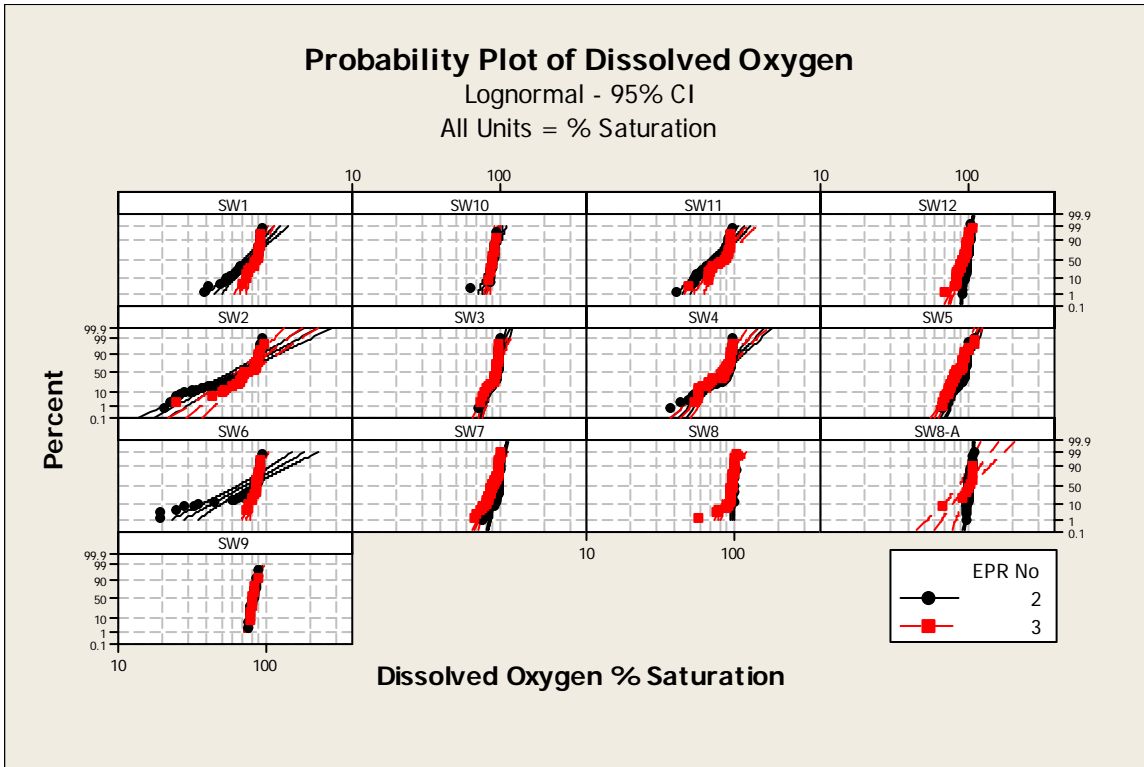


Figure 2.2.2-4 Probability plot of observed Dissolved Oxygen Saturation to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

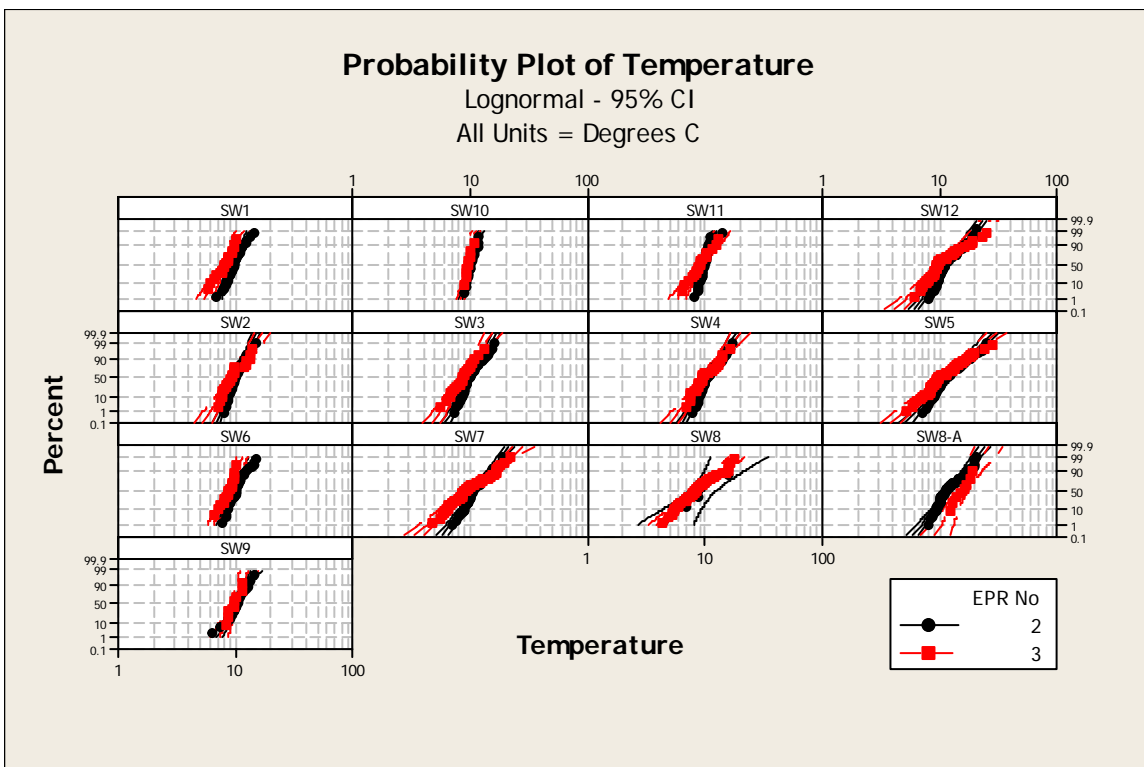


Figure 2.2.2-5 Probability plot of observed Temperature to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

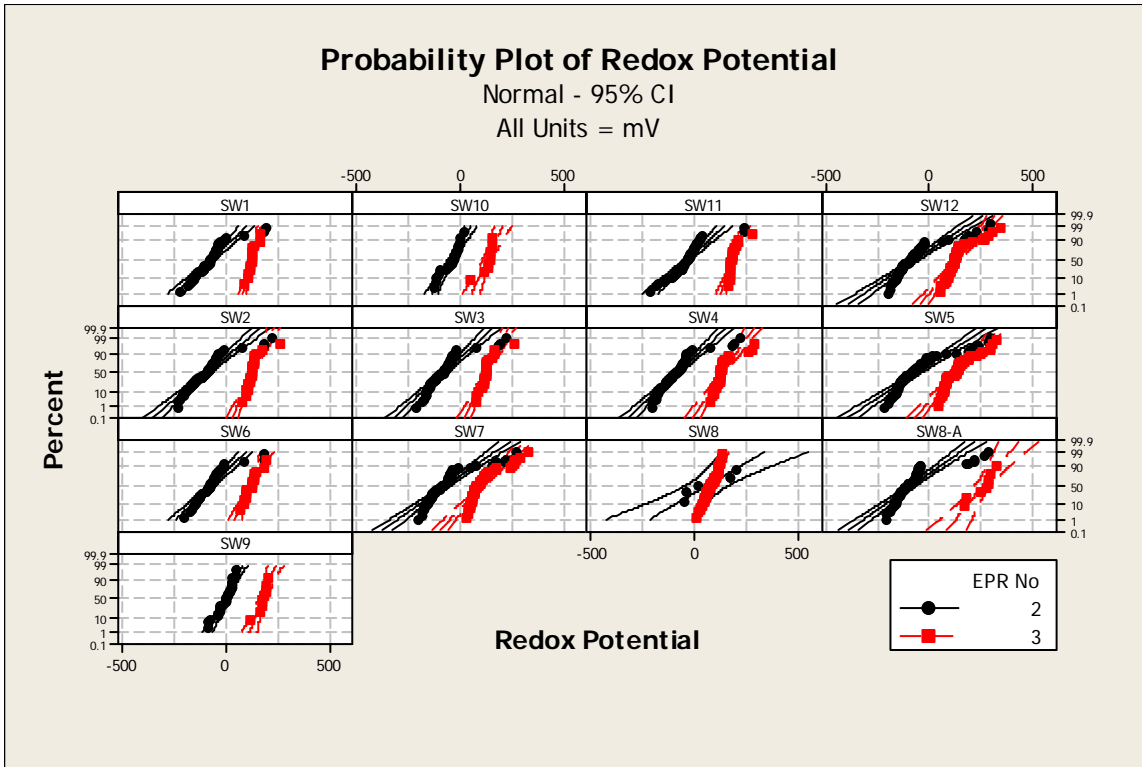


Figure 2.2.2-6 Probability plot of observed Redox Potential to end of November 2009 (EPR 2) compared with the period from December 2009 to November 2010 (EPR 3) in Surfacewater

2.3. Soils

No sampling. Nil to report for all analyte classes listed below. Sampling will recommence in the post operational period at the request of the Director.

3 Marine & Estuary Section

The Marine Estuary Section comprises three Sub-sections; Effluent, Marine Receiving Environment and Estuary. The first Sub-section (Effluent) can only commence after an operating mill commences outfall and is thus only mentioned to indicate its relative location within the EPR in future reports. The second Sub-section (Marine) will provide a surveillance regime to ensure the impact of the operational sites outfall remains insignificant within the context of the local area of Bass Strait as planned. The third Sub-Section (Estuary) mainly relates to construction activities at various locations within the River Tamar.

It should be noted that the information presented below primarily comprises baseline data obtained between the close of the reporting period for EPR 2 (30th November 2009) to the 30th November 2010. The vast majority of programs within this Section have been suspended or partially suspended during this reporting period.

3.1 Effluent Qualitative & Quantitative programs.

Section 3.1 of the monitoring program has not yet commenced as no effluent has been produced.

3.2 Marine Receiving Environment

3.2.1 Marine Ecological Surveys incorporating Sediment Quality

No further reportable data is available to the 30th of November 2010 for the Marine Ecological surveys. A series of further surveys will be completed prior to the commencement of operations of the pulp mill facility and be presented in a future report(s).

3.2.2 Marine (Bass Strait) Water Quality

No further reportable data is available to the 30th of November 2010 for the Marine Water Quality program. The majority of baseline surveys to characterise Bass Strait water quality has concluded and been reported in full via EPR 1 & EPR 2. A series of minor surveys focusing on *in-situ* sampling of water clarity will be completed prior to the commencement of operations of the pulp mill facility and be presented in a future report(s).

3.2.3 Marine (Bass Strait) Sediment Chemistry

No reportable data is available to the 30th of November 2009 for the Marine (Bass Strait) Sediment Chemistry program due to a planned delay in the commencement of the program. A minimum of two annual sediment chemistry surveys will be completed prior to the commencement of operations of the pulp mill facility and be presented in a future report(s). The completion of hydrodynamic modelling activities will now facilitate finalisation of sampling locations, which is a necessary pre-cursor to commencement of this particular program.

3.2.4 Marine Sentinel Biota including Chemical Residue programs

No reportable data is available to the 30th of November 2010 for the Marine (Bass Strait) Sentinel Biota & Chemical Residue programs due to a planned delay in the commencement of the programs. As part of this delay to the re-commencement of these baselines activities, some limited monitoring did take place during the reporting year in that a 'pilot' mussel monitoring program commenced, but had not been completed at the time of writing.

Further details of the outcome of the pilot trial will be provided in a future report. The intent of undertaking a pilot trial is to test a potential methodology to ensure that the selected methodology and detailed program design factors themselves are fit for purpose. Consequently, the results of pilot trials are valuable in identifying opportunities for improvement before the actual 'baseline' sampling commences. Baseline sampling for the 'Musselwatch' program will be run over two calendar years prior to mill commissioning.

3.3 Estuary (River Tamar) Monitoring

The following River Tamar Water Quality & Sediment surveys and reports are detailed to meet the reporting requirements detailed within the *Construction Monitoring Plan* (BBA-PLN-1000-1400-001H-B-00) for Marine Water Monitoring only.

3.3.1 Estuary (River Tamar) Water Quality

Water Quality Monitoring for a defined list of determinands detailed within the *Construction Monitoring Plan* was placed in suspension as the baseline characterisation process has concluded. Monitoring will recommence in accordance with the *Construction Monitoring Plan* when relevant construction activities recommence.

3.3.2 Estuary (River Tamar) Sediment Surveys

No Estuary Sediment sampling occurred during this reporting period, therefore nil to report. Monitoring will recommence in accordance with the *Construction Monitoring Plan* when relevant construction activities recommence.



PULP MILL PERMIT

21 August 2007

Preamble

The consultant appointed by me under section 4(1) of the *Pulp Mill Assessment Act 2007* has reported that the project should proceed.

In accordance with section 6(4) of the *Pulp Mill Assessment Act 2007* I requested relevant persons to recommend to me the conditions, if any, that should apply to the project.

Those relevant persons have recommended to me conditions that should apply to the project and, in relation to those conditions, have specified the other matters stipulated in section 6(7) of the *Pulp Mill Assessment Act 2007*.

In accordance with section 6(8) of the *Pulp Mill Assessment Act 2007* I have prepared the attached Pulp Mill Permit that contains the substance of the conditions recommended to me by each relevant person in accordance with section 6(4) of the *Pulp Mill Assessment Act 2007* and other matters specified by those persons in accordance with section 6(7) of the *Pulp Mill Assessment Act 2007*.

Therefore, if the Pulp Mill Permit is accepted by each House of Parliament, pursuant to section 7(1) of the *Pulp Mill Assessment Act 2007*, then in accordance with section 8(1) of the *Pulp Mill Assessment Act 2007*:

- a The Pulp Mill Permit comes into effect;
- b Notwithstanding any other Act, the project may proceed on the conditions specified in the Pulp Mill Permit;
- c A permit, licence or other approval is taken to have been issued under the Act specified in the Pulp Mill Permit in relation to each condition and that Act applies as if such a permit, licence or other approval has been issued on the condition set out in the Pulp Mill Permit in relation to that Act; and
- d The person, body or State Service Agency responsible for the enforcement of each condition must enforce the condition to the extent of its powers.

The Pulp Mill Permit does not provide any permit, licence or approval required for the project by the Commonwealth Government, which must be applied for, and granted, separately.

Hon Steven Kons LLB MHA
Minister for Planning

PULP MILL PERMIT

This permit is the Pulp Mill Permit prepared in accordance with section 6(8) of the *Pulp Mill Assessment Act 2007*.

The project defined in section 3(1) of the *Pulp Mill Assessment Act 2007* is permitted to proceed on the conditions contained in the schedules to this permit, of which the interpretation provisions, appendices, schedules and annexes to the permit form part.

Interpretation

- 1 Unless the contrary intention appears, an expression used in the Pulp Mill Permit has the same meaning as it has in:
 - a The *Pulp Mill Assessment Act 2007*; or
 - b Appendix 1 of the Pulp Mill Permit – *Definitions*; or
 - c The definitions section of a Schedule included in Appendix 2 of the Pulp Mill Permit in which the expression is used.
- 2 Where a definition of an expression in the *Pulp Mill Assessment Act 2007* is inconsistent with a definition of that expression in Appendix 1 of the Pulp Mill Permit, the definition in Appendix 1 of the Pulp Mill Permit takes precedence in the Permit.
- 3 Where a definition of an expression in Appendix 1 of the Pulp Mill Permit is inconsistent with a definition of that expression in a Schedule of Appendix 2 of the Pulp Mill Permit, the definition in the Schedule of Appendix 2 of the Pulp Mill Permit takes precedence, in relation to an expression used in that Schedule.
- 4 Unless the contrary intention appears, the *Acts Interpretation Act 1931* applies to the Pulp Mill Permit.
- 5 In the Pulp Mill Permit a term of inclusion is not to be interpreted to be a term of limitation.
- 6 If a body referred to in a provision of the Pulp Mill Permit changes its name, a reference in the Permit to the former name of the body is to be read as a reference to the changed name of the body.
- 7 In interpreting the Pulp Mill Permit consideration may be given to extrinsic material, including:
 - a The source Act or other Acts relevant to a condition;
 - b The opinion of the relevant person who recommended that condition, pursuant to section 6(4) of the *Pulp Mill Assessment Act 2007*;
 - c The opinion of the regulatory authority responsible for enforcing that condition, pursuant to section 8(1)(d) of the *Pulp Mill Assessment Act 2007*; and
 - d Any document referred to in the Pulp Mill Permit in relation to a condition.

PULP MILL PERMIT

- 8 Every requirement in a condition of the Pulp Mill Permit is to be read as requiring that the action to which it refers is to be substantially performed to the reasonable satisfaction of the regulatory authority responsible for the enforcement of that condition in such a manner as to promote the objective of the requirement as identified by that authority.
- 9 A requirement in a condition of the Pulp Mill Permit is taken to have been substantially performed to the reasonable satisfaction of the regulatory authority responsible for the enforcement of that condition, unless the regulatory authority provides the person responsible with notice in writing that the condition is not being substantially performed to its reasonable satisfaction in such a manner as to promote the objective of the requirement as identified by that authority.
- 10 Where a condition requires the person responsible to apply for other permits, licences, or other approvals as may be necessary for the project, that condition will not be taken to be satisfied until such a licence, permit or other approval is obtained.

APPENDIX 1

DEFINITIONS

In the Pulp Mill Permit, unless the contrary intention is expressed:

“**activity**” in relation to a Schedule of the Pulp Mill Permit means the activity related to the project to which the Schedule relates, and includes more than one such activity;

“**annex**”, “**appendix**”, “**clause**”, “**condition**”, or “**schedule**”, includes any annex, appendix, clause, condition, or schedule in or to it;

“**anything**” (including an amount) is a reference to all or any part of it,

“**commencement**” in relation to a condition of the Pulp Mill Permit, means the time of coming into operation, or taking effect, of that condition;

“**commissioning**” means the testing of major items of equipment;

“**communication**” means a notice, agreement, consent, direction, representation, advice or statement;

“**condition**” means a condition contained in the Pulp Mill Permit;

“**construction activities**” means activities on or in the terrestrial or marine environment associated with the construction phase of an activity related to the project including, but not limited to, activities associated with:

- clearance of vegetation;
- site works to create a level site;
- road construction;
- construction of a quarry;
- construction of the buildings;
- installation of processing equipment and associated infrastructure, including infrastructure for water supply, power and natural gas;
- construction of a pipeline to discharge wastewater to the Bass Strait outfall;
- construction of a warehouse for pulp storage;
- construction of a pipeline to discharge stormwater to the Tamar River;
- construction of a new shipping berth facility in the Tamar River;
- construction of infrastructure for solid waste disposal;
- construction of other infrastructure to be used in conjunction with the pulp mill, including water supply pumping station and pipelines;
- construction of road and rail infrastructure or upgrade of existing road and rail infrastructure;
- temporary accommodation for construction workers;
- construction of a chemical plant;
- construction of an effluent treatment plant; and
- construction or upgrading of woodchipping facilities and associated infrastructure;

APPENDIX 1

DEFINITIONS

“contractor” means any person, not being an employee or officer of the person responsible, who has entered into a contract with a person responsible to do any work or supply any materials necessary for the project and includes a sub-contractor;

“Crown land” means land that is vested in the Crown, and which is not contracted to be granted in fee simple; and includes land granted in fee simple which has reverted in the Crown by way of purchase or otherwise;

“Department” means the State Service Agency or other government body that is responsible to the Minister administering the source Act relating to a provision of the Pulp Mill Permit in which the expression occurs;

“DIIS” means the document entitled ‘Gunns Limited, Draft Integrated Impact Statement, July 2006’ dated 14 July 2006, submitted to the Resource Planning and Development Commission and includes the document entitled ‘Gunns Limited, Bell Bay Pulp Mill, Draft Integrated Impact Statement, Supplementary Information, January 2007’ dated 31 January 2007, and the associated technical reports submitted to the Resource Planning and Development Commission;

“group of persons” includes one or more of them;

“infrastructure” means any infrastructure forming part of the project;

“land” includes

- a messuages, tenements, and hereditaments, houses, and buildings of any tenure and any estate or interest therein;
- b land covered by the sea or other waters; and
- c the part of the sea or those waters covering that land;

“maintenance activity” means any activity associated with the maintenance of a development, facility or infrastructure related to the project;

“person responsible” means Gunns Limited (ACN 009 478 148), including its officers, employees, agents or contractors, or any body corporate or joint venture, or other person, their officers, employees, agents and contractors, to which Gunns Limited sells, assigns or otherwise transfers in whole or in part its rights and obligations under the Pulp Mill Permit;

“regulatory authority” means a person, body or State Service Agency identified by a relevant person as being responsible for the enforcement of each condition, pursuant to section 6(7)(c) of the *Pulp Mill Assessment Act 2007*;

“reserved land” means any land declared under the *Nature Conservation Act 2002* to be reserved land, and any land taken to be been so declared, or land reserved under the *Crown Lands Act 1976*;

“remove or take” includes attempting to remove or take, or assisting in the taking or removal; and

“source Act” means the Act specified by a relevant person, pursuant to section 6(7)(b) of the *Pulp Mill Assessment Act 2007* in relation to a condition.

APPENDIX 2 SCHEDULES

A Land Use Planning Schedules

Department of Tourism, Arts and the Environment

George Town Council

Launceston City Council

West Tamar Council

Land Use Planning and Approvals Act 1993

Environmental Management and Pollution Control Act 1994

- | | |
|-----|---|
| LU1 | Land Use and Development Permit – Pulp mill and associated infrastructure (George Town) |
| LU2 | Land Use and Development Permit - Workers accommodation facility (George Town) |
| LU3 | Land Use and Development Permit - Water supply (Launceston) |
| LU4 | Land Use and Development Permit - Water supply (West Tamar) |

Department of Tourism, Arts and the Environment

Environmental Management and Pollution Control Act 1994

- | | |
|-----|--|
| EM1 | Environment Protection Notice – Wastewater pipeline (offshore) |
|-----|--|

APPENDIX 2 SCHEDULES

B Other Schedules

Department of Primary Industries and Water

Department of Tourism, Arts and the Environment

Crown Lands Act 1976

CL1	Authorisation for activities associated with the construction and use of the wharf facility
CL1A	Authorisation for activities associated with the construction and use of the wharf facility
CL2	Authorisation for activities associated with the construction and use of the Water Pipeline
CL2A	Authorisation for activities associated with the construction and use of the Water Pipeline
CL3	Authorisation for activities associated with the construction and use of the Effluent Pipeline
CL4	Authorisation for activities associated with the construction and use of the Balance Control Tank

Department of Primary Industries and Water

Water Management Act 1999

WM1	Water licence
WM2	Dam Works Permit – Water Reservoir
WM3	Dam Works Permit – Landfill Pond
WM4	Dam Works Permit – miscellaneous stormwater storage dams and treatment pond dams

Department of Primary Industries and Water

Animal Welfare Act 1993

AW1	Licence to undertake research and approval of animal research
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Threatened Species Protection Act 1995

TS1	Permit to take threatened flora and fauna species subject to conditions
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Nature Conservation Act 2002

NC1	Permit to take wildlife or products of wildlife subject to conditions
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APPENDIX 2 SCHEDULES

B Other Schedules (continued)

Department of Tourism, Arts and the Environment

Aboriginal Relics Act 1975

AR1 Approval to undertake specific activities in relation to Aboriginal Relics and other Aboriginal Heritage Objects

National Parks and Reserves Management Act 2002

NP1 Reserve Activity Condition

Historic Cultural Heritage Act 1995

HC1 Approval to commence any clearing or construction activities associated with the project on a place permanently entered in the Tasmanian Heritage Register

Department of Justice

Workplace Health and Safety Act 1995

WH1 Approval to commission, use or operate any item of high-risk plant

WH2 Registration of the manufacture, supply, hire or lease of specified items of high-risk plant

WH3 Permit to use hazardous substances

WH4 Permit to undertake diving work

WH5 Permit to undertake specified construction activities related to the project

Department of Justice

Dangerous Goods Act 1998

DG1 Approval to import, store, use and transport dangerous goods

Electricity Industry Safety and Administration Act 1997

EI1 A permit to commission or operate electrical generation equipment

Gas Act 2000

GA1 Permits and approvals to construct, commission, operate or use any complex gas installations and type B gas appliances

APPENDIX 2 SCHEDULES

B Other Schedules (continued)

Department of Infrastructure, Energy and Resources

Electricity Supply Industry Act 1995

ES1 Electricity generation licence

Gas Pipelines Act 2000

GP1 Licences to construct, or operate and maintain a gas pipeline

Forest Practices Act 1985

FP1 Approval to carry out Forest Practices

Department of Infrastructure, Energy and Resources

Roads and Jetties Act 1935

RJ1 A road reservation works permit for the upgrading of the existing mill access and proposed landfill site access, along with other temporary construction accesses on the East Tamar Highway

RJ2 A road reservation excavation permit for the installation of water supply and effluent disposal pipelines, along with associated infrastructure

Traffic Act 1925

TA1 Approval for traffic management facilities

Vehicle and Traffic Act 1999

VT1 Permit for the transport of oversize or over-mass indivisible items associated with the project

Tasmania Fire Service

Fire Service Act 1979

FS1 Tasmania Fire Service Conditions applicable to building occupancy

FS2 Tasmania Fire Service Conditions applicable to provision of suitable water supplies for fire-fighting

FS3 Tasmania Fire Service conditions applicable to hot work

FS4 Tasmania Fire Service Conditions applicable to the installation of fire protection equipment

APPENDIX 2 SCHEDULES

B **Other Schedules** (continued)

Department of Health and Human Services

Poisons Act 1971

PA1 Authorisation to manufacture, obtain, possess, sell, supply or use a dangerous poison

Radiation Protection Act 2005

RP1 Licence to deal with a radiation source

Public Health Act 1997

PH1 Certificate of Registration of a regulated system

Food Act 2003

FA1 Certificate of Registration of a food business



PULP MILL PERMIT

Appendix 2A

21 August 2007

APPENDIX 2A

LAND USE PLANNING SCHEDULES

Department of Tourism, Arts and the Environment

George Town Council

Launceston City Council

West Tamar Council

Land Use Planning and Approvals Act 1993

Environmental Management and Pollution Control Act 1994

- | | |
|-----|--|
| LU1 | Land Use and Development Permit – Pulp mill and associated infrastructure
(George Town) |
| LU2 | Land Use and Development Permit - Workers accommodation facility
(George Town) |
| LU3 | Land Use and Development Permit - Water supply
(Launceston) |
| LU4 | Land Use and Development Permit - Water supply
(West Tamar) |

Department of Tourism, Arts and the Environment

Environmental Management and Pollution Control Act 1994

- | | |
|-----|--|
| EM1 | Environment Protection Notice – Wastewater pipeline (offshore) |
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ENVIRONMENTAL AND SUSTAINABILITY POLICY

1 Purpose

We at Gunns are committed to sustainability and the responsible management of our environment. We seek to optimise the production of wood products from our natural, renewable resources while minimising our environmental footprint.

We respect and acknowledge the rights and interests of all those who live and work in the communities in which we operate. We believe in the importance of corporate social responsibility and we will consult with and provide feedback to all stakeholders, who are affected by or have interest in, our business to achieve a balance between economic viability, social contribution and environmental responsibility. This approach is critical in achieving environmental sustainability and in maintaining a social license for our business.

2 Scope

Forestry and Timber Divisions

3 References

- Gunns Forest Management Statement
- Gunns Annual Reports
- Gunns Sustainable Forest Management Reports
- Gunns Website - www.gunns.com.au

4 Definitions

Gunns adopts the internationally recognised definition of environmentally sustainable development as the underlying management principle i.e. development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

AFS = Australian Forestry Standard.

ISO14001 = is a family of internationally recognised standards for environmental management systems that is applicable to any business or organisation, regardless of size, location or income.

PEFC = Program for the Endorsement of Forest Certification Schemes.

FSC = Forest Stewardship Council.

5 Procedural Principles

Gunns is committed to continuous improvement of its environmental performance and to demonstrate our commitment we will:

- Only produce wood products from responsibly and sustainably managed wood sources. We shall choose independent, recognised and credible certification systems that can measure and audit our processes to verify this, including maintaining certification to PEFC recognised AFS and ISO14001 and pursuing certification to FSC.

- Implement systems that trace the origins of our forest products to legally and sustainably managed resource.
- Ensure our suppliers and contractors share our commitment to sustainability and responsible environmental management.
- Provide appropriate training of employees in our sustainable management procedures and provide industry leadership to drive towards best practice systems, practices and products.
- Reserve a significant portion of our estate purely for conservation values, recreational and educational purposes.
- Manage our estate for conservation values including; soil, water & air quality, biological diversity, threatened species, wildlife habitat, old growth forest and cultural heritage.
- Implement and manage a robust integrated management system that delivers the high standards we set and complies with internationally recognised standards.
- Set challenging objectives and targets relating to resource sustainability and environmental policy which will be regularly reviewed as we strive to continually improve environmental outcomes.
- Minimise pollution and the generation of waste.
- Facilitate carbon capture and manage efficient energy use.
- Communicate our environmental performance to our employees, contractors, directors, shareholders and community stakeholder on a regular basis.
- Engage third parties to assess our performance against commitments made in this policy.
- Comply with all legislation, codes of practice and regulatory frameworks.

We will do all this to make sure we meet the needs of the present, without compromising the ability of future generations to meet their own needs. This is what we mean by "Making Sustainability Our Business"

6 Revision History

This document is identified as 'Environmental and Sustainability Policy'. A new version will be issued whenever significant changes occur.

Version	Changes	Date
V1.0	Original	June 2006
V2.0	Revised	January 2009
V3.0	Revised	May 2010

Author:	Frances Duffy
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Next Revision Date:	May 2011