Public Environmental Report
For the Forico Long Reach Mill
For the operating period 5 September 2014 to 30 June 2016
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The Long Reach and Surrey Hills Chip Mills, were purchased by the Tasmanian Forest Operating Sub-Trust (TFOST) in September 2014. TFOST subsequently engaged the services of Forico Pty Limited (Forico) to operate both facilities commencing from 05/09/2014. The activities comprise three woodchip mills that are regulated as two\(^1\) discrete Level 2 entities under the *Environmental Management and Pollution Control Act 1994* by the Tasmanian Environment Protection Authority (EPA). The main regulatory instrument that is applied for Level 2 activities in Tasmania is an Environment Protection Notice (EPN). In this context, the EPN is issued by the Director of the EPA (Director) as regulator and acts to vary the activity’s original Permit (former Licence to Operate Scheduled Premises) as judged by the Director to be appropriate to current circumstances.

After completion of formal notifications of ownership change, by both the vendor and the purchaser regarding the sale of both activities, the change in management control resulted in the formal transfer of EPN 7968/2 (Long Reach) and EPN 7476/2 (Surrey Hills) to Forico Pty Limited on 15\(^{th}\) of October 2014, as EPNs 7968/3 and 7473/3 respectively. At the time of transfer the Long Reach (South Mill sector) was operational, but the Long Reach (North Mill sector) and the Surrey Hills Mill were not. Following an extensive recommissioning project, the Surrey Hills Mill became operational in July 2015.

Conditions of both EPNs require submission of an *Annual Environmental Review* (AER) to the Director covering specific content requirements. This report document aims to meet the regulatory reporting requirements. The focus of this report however, is a single processing site of Long Reach Mill only, rather than the entire scope of Forico’s operations which encompasses a significantly broader scope of activities in the Forest and Wood Products industry sector.

\(^1\) The Long Reach Mill is comprised of two subsidiary woodchip mills (Long Reach North Mill and Long Reach South Mill) on adjacent titles that are regulated under a single EPN.
In fulfilment of Condition G5 of EPN No. 7968/3, we present the information below, which covers the operations of the Forico Long Reach Mill. Additionally, this report has been scoped and formatted to meet the requirements of a \textit{Public Environmental Report (PER)} as described by the \textit{Environmental Management and Pollution Control (General Fees) Regulations 2007 Annual Fee Remission Guidelines Second edition March 2010}.

The reporting period of this PER is from 5 September 2014 to 30 June 2016, corresponding to the period of Forico’s management control of the Long Reach Mill prior to the report’s closing date.

The purpose of this report is to:

- Review site based objectives and targets for the reporting period;
- Communicate site based objectives and targets for the coming period;
- Document the Long Reach facility’s compliance in relation to environmental monitoring, reporting and performance conditions detailed in EPN 7968/3.
- Provide a public record of environmental performance for one of Forico’s two wood fibre processing sites.

As Chief Executive Officer of Forico I endorse the following information as an accurate record of the activities of the Forico Long Reach Mill, for the period of Forico’s management control.

\[Signature\]

Bryan Hayes
Chief Executive Officer
Forico Pty Limited.

\[Date\]

22/09/2016.
An introduction to Forico.

As Tasmania’s largest private plantation management company, Forico Pty Limited represents the transition into a new era of plantation forestry in Tasmania.

Forico’s staff are strongly focused on supply chain management in an environment prioritising people and environmental performance. Forico’s management team have a depth of experience rarely equalled in today’s plantation resource sector, in some individual instances over 40 years.

Our management program focuses on optimising growth in our plantations whilst minimising impact on our natural values and communities in which we operate. Forico invests in globally competitive tree breeding science to deliver customers with premium plantation products and maintain Australia’s competitive edge in a global market.

Forico’s strong environmental credentials are supported by its forest management policies, including strict non conversion of natural vegetation and investment in the forest certification schemes: The Australian Forestry Standard (AFS) and Forest Stewardship Council® (FSC®).

1.1 Company Profile

Forico manages a fully integrated forest management and fibre processing business comprising:
- A tree breeding nursery at Somerset, NW Tas.
- Approximately 180,000 ha of freehold land, inclusive of 100,000 ha of plantations, dispersed mostly across the northern half of Tasmania (Forico estate).
- Plantation operations, harvesting and replanting activities, including the management of natural forests on the Forico estate.
- Administrative bases in Launceston and Ridgley.
- Fibre Technology Laboratory materials testing facility at Ridgley
- Surrey Hills Wood Chip Mill at Hampshire;
- Long Reach Wood Chip Mill and Fibre Export facility in the Tamar Valley;

Further information on Forico, can be obtained from Forico’s web site at www.forico.com.au
1.2 Woodchip Production Process

In essence, Forico’s entire wood chip production process; ‘from seed to port’ involves first culturing trees over an approximate 15 year grow out phase, then harvesting and transporting the de-barked logs to processing sites, where they are mechanically chipped to a form that is within our customer’s technical specifications for chip form and makeup and to a form that is amenable to bulk shipping transport to our international customers.

Our customers typically utilise our product as feed stock in their process to liberate the cellulose fibres from within the wood tissues via a physico-chemical refining process, to high value uses such as kraft pulp, leading on then to tissue, paper or even textile production. Biomass energy recovery from this phase of final production can also be achieved, depending on the configuration of the processing facility.

When considered from first principles, Forico’s raw materials in the overall chip production process from the point of seed germination is carbon dioxide (CO$_2$) and water (H$_2$O) that is fixed from the atmosphere or soils respectively by our plantations during their growth phase. Our main energy source for this biomass production, being radiation from the sun.

When considering the scope of Forico’s processing facilities however, (Long Reach and Surrey Hills Mills) the raw materials are the debarked logs in round form, leading to the final product of uniform size bulk wood chips. Residual by-products mostly comprise wood particles that are either too small and too large for customer specifications.

A conceptual process flow diagram of a Forico Processing facility is shown below as Figure 1.

![Conceptual process flow diagram of a Forico Processing facility.](image-url)
The main energy supply for Forico’s Processing facilities is High Voltage electrical energy, along with fossil fuels for the operation of on-site mobile plant.

1.3 Environmental and Sustainability Policy

Forico has developed and maintains an over-arching environmental policy document covering all aspects of the business titled as the Forico Environmental and Sustainability Policy. A copy of the current Policy document at the time of writing is provided as Appendix 1 and is also publically available in up-to-date form at any time on the Forico web site.

1.4 Environmental Management System

Forico manages environmental issues across the business under the broad umbrella of a Safety Health and Environmental Management System (SHE-system). Forico’s SHE system is structured on the Plan-Do-Check-Act (PDCA) activity model that is integral to most modern business practices. A diagram describing Forico’s PDCA business cycle process follows as Figure 2.
1.5 Certification

In application, the Forico SHE system has facilitated the company being formally accredited to a number of nationally and internationally recognised standards, based on environmental management, sustainable resource management and stewardship. These standards include:

- AS4707 – 2014 – Chain of Custody for Certified Wood and Forest Products
- AS4708 – 2013 - The Australian Forestry Standard
- FSC FM Woodmark Australia Generic Standard v5.1 May 2014
- FSC-STD-40-003 - FSC Standard for Multi-site Certification of Chain of Custody Operations
- FSC-STD-40-004 - FSC Standard for Chain of Custody Certification
- FSC-STD-40-005 – FSC Standard for Company Evaluation of FSC Controlled Wood

Of those listed above, two types of standards are highly relevant to Forico’s two Mills at Long Reach and Surrey Hills. The first are the ‘Chain of Custody’ standards, which provides assurance to stakeholders that Forico can provide a verification trail of the wood processed by the facility, to its sustainably managed source forest. The second is the AS/NZS ISO14001:2004 Standard, which provides stakeholders with an ‘arms-length’ verification of the rigor that Forico applies to environmental related issues through its own management policies and practices.
The most recent recertification audit against the requirements of AS/NZS ISO 14001:2004 was undertaken by the certification organisation DNV in August 2015. The August 2015 audit was an integrated audit covering all of Forico’s operations (not just the Long Reach Mill) to a suite of related Standards. Thus not all findings of the 2015 DNV audit report are relevant to the scope of this report. A summary of the findings of that audit, relevant to the Long Reach activity and to the requirements of ISO 14001 is provided as Appendix 2.

Forico’s current certificate relating to AS/NZS 14001:2004 which specifically includes both the Long Reach and Surrey Hills Mills within its scope, is provided as Appendix 3.

A number of changes were made to infrastructure or Forico’s SHE system as a result of the audit to correct the system and prevent recurrence. These measures included:

- A complete revision of Forico’s SHE System documentation to re-align the system with the detailed requirements of ISO14001:2015.
- Revision of pre-existing Emergency Management Plans at Surrey Hills and Long Reach specifically to include risk based mitigation measures.
- Upgrade flammable goods storage at the Long Reach Mill.
- Upgrade Assessment of Competence record keeping, relating to procedural documents at the Long Reach and Surrey Hills Mills.

The first dot point above remains incomplete at the time of writing. All other corrective and preventive measures have been implemented.

1.6 Community Engagement

Forico is committed to operating as a sustainable and widely respected business within the Tasmanian community.

We believe this can be achieved by an inclusive and collaborative approach to the way we conduct our business activities, backed by sound management of our forest based resources. The key assets of our business comprise plantations for the production of wood products, with associated processing and export facilities.
Given that community engagement in Forico’s context is not restricted to the Long Reach Mill, most community engagement activities and resources are managed through Forico’s corporate office. Organisations that are regularly consulted regarding Forico’s operations, including discussions that relate directly and indirectly to environmental matters associated with the Long Reach Mills include (but are not limited to):

- Members of the Tasmanian House of Assembly including the Tasmanian Premier, Minister for Resources and the Minister for the Environment and other Members representing all three political parties.
- State Government Departmental officers, including the Coordinator General and the Director of the EPA.
- Similarly, Tasmanian members of the Australian Senate and (then) members of the House of Representatives, representing Liberal, Labour and Greens political parties.
- Environmental Non-Government Organisations including The Wilderness Society and Environment Tasmania.
- Similarly, business groups such as the Tasmanian Chamber of Commerce and Industry and the Australian Forest Products Association have been consulted.

1.7 Training and Development

A key component of Forico’s SHE system is that which relates to training and development of our staff and contractors. These include ‘tailored’ inductions for contractors, of which there are two main classes routinely engaged at the Long Reach Mill. They are:

- Transport contractors for delivery of raw material in log form and;
- General engineering and maintenance contractors.
Given that the tasks and visitation patterns of the two classes are divergent, tailored inductions delivered in ‘movie’ form with subsequent documented assessment provides a pragmatic, thorough and consistent approach to be delivered to the significant number of non-permanently engaged staff who access the Long Reach site in the course of normal activities. At the time of writing, over 700 people have been inducted by Forico at the site into one or more induction classes. All inductees are provided with the then current Forico Environmental and Sustainability Policy at the point of induction. Additionally, Policy documents are displayed on-site notice boards.

Permanent staff and contractors also participate in training programs, beyond the induction level and include Risk Management and Environmental Awareness units that are heavily focussed on environmental and safety matters that relate directly to the Long Reach or Surrey Hills Mill site as appropriate.

Environmental Awareness sub-topics include the aspect and/or impact of:

- Environmental Noise
- Hydrocarbon Management
- Wastewater Quality
- Protected Environmental Values (PEVs) of the local River(s) and the importance of their ongoing protection.
- Legal accountabilities
- Forico’s Environmental and Sustainability Policy
2 Forico Long Reach Mill – Activity Profile

The current Forico Long Reach Mill (comprising two wood chip plants) was originally established as two discrete facilities by separate companies, both commencing their Long Reach operations in 1972. Forico acquired management control of both North and South Long Reach wood chip processing facilities in September 2014 in addition to other processing and plantation forestry assets.

At acquisition both the Long Reach North and South Mill facilities were in poor condition; particularly the northern facility, which at that time had not been operational for about 7 years. The southern facility was operational at acquisition and remains so; has since undergone substantive upgrade and with further planned upgrades is expected to continue to operate indefinitely servicing the plantation eucalyptus wood chip commodity export market.

The facility operates in the export wood chip commodity market, with customers located throughout Asia. The plant is technically able to operate on a 24/7/365 basis, although only operates on a five to six day per week - 20 hour per day work pattern, under current wood supply and product demand conditions. The scale of the operation is currently regulated to a maximum production level of 1,000,000 tonnes of woodchips produced.
The Long Reach Mill sources the majority of its raw material from Forico’s own plantation estate. Forico’s estate is predominantly of the *Eucalyptus nitens* species, with a smaller fraction of *Eucalyptus globulus*. Further details of raw material sourcing are extensively provided within Forico’s Sustainable Forest Management Report. Additionally, the site also accepts pre-chipped *Pinus radiata* chips for stockpiling and ship loading on behalf of a local sawmilling client on a toll handling basis. Activity level statistics for both chip production and toll chip handling are provided in Table 5 below.

### 2.1 Legal Requirements

#### 2.1.1 Major Obligatory Acts and Instruments

The principal environmental obligation for the Forico Long Reach Mill are those legislated under the *Environmental Management and Pollution Control Act 1994* (EMPCA). Tasmania enacts the requirements under EMPCA through a suite of inter related legislation which forms a framework for Tasmania’s resource management and planning systems, comprising the following:

- *Land Use Planning and Approvals Act 1993*;
- *Resource Planning and Development Commission Act 1997*;
- *State Policies and Projects Act 1993*;
- *Environmental Management and Pollution Control Act 1994*;
- *Historic Cultural Heritage Act 1995*; and
- *Major Infrastructure Development Approvals Act 1999*.

The Long Reach Mill’s main regulatory instrument is *Environment Protection Notice (EPN) No. 7968/3*. A copy of the current Long Reach Mill EPN is provided as Appendix 4. The EPN is issued by the Director EPA under EMPCA to Forico Pty Limited as the ‘responsible person’ for the Long Reach Mill activity.

The Long Reach EPN prescribes site specific requirements, which amongst other matters includes:

- Maximum scale or activity level, through an annual production limit.
- Monitoring and reporting requirements (Production, by-product wastes, noise, sewage and waste water)
- Specific emission points (Sewage and waste water)
- Emission qualitative limits (Sewage and waste water)
- Ambient noise limits, relating to the activity and when measured at specified locations.

#### 2.1.2 Other Relevant Legal Obligations

A series of relevant obligations, beyond or associated with the major Acts detailed above, are also relevant to the Long Reach Mill activity and include (but are not necessarily limited to) the:

- *(Commonwealth) Biosecurity Act 2015*
- *Roads and Jetties Act 1935*
- *Pollution of Waters by Oil and Noxious Substances Act 1987*
- *Plant Quarantine Act 1997*
- *Weed Management Act 1999*
Tasmanian policy under the *State Policies and Projects Act 1993* including:
- *Tasmanian Coastal Policy 1996*;
- *National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended May 2013*. Note: National Environment Protection Measures (NEPMs) are automatically adopted as State Policies under section 12A

Tasmanian Environment Protection Policies (EPPs are made under section 96K of EMPCA) and include:
- *Environment Protection Policy (Air Quality) 2004*
- *Environment Protection Policy (Noise) 2009*

### 2.1.3 Proceedings and Infringements

Forico did not incur any of the following during the reporting period or since its establishment through to 30/6/2016:
- Proceedings (prosecutions) issued under Tasmanian or Commonwealth environmental legislation, or the environmental provisions of other legislation; or
- Enforcement action taken under any other Tasmanian or Commonwealth environmental legislation, the environmental provisions of other legislation, or the environmental provision of council by-laws; or
- Infringements notices issued under EMPCA.

### 2.1.4 Description of the Physical Environment

The physical environment relating to the Long Reach Mill can be linked to:
- Socio-economic factors,
- Meteorology, noise and air quality,
- The aquatic receiving environment (River Tamar, centred on Long Reach).

Each of these context factors are discussed in more detail below.

#### 2.1.4.1 Socio-economic Context:

The Long Reach Mill is located inside the southern cusp of the Bell Bay Industrial Zone on the Eastern shore of the River Tamar estuary. In this area, the estuary also forms the boundary between two local government areas; being the George Town Municipality where the site itself is located, and the West Tamar Municipality, where the closest domestic residences are located in the Rowella area. The West Tamar’s Rowella area comprises low density rural/residential properties, interspersed with some industrial developments in the viticulture and aquaculture sectors.

The nearest adjacent significant township is to the North at George Town (Population 4304, ABS Census 2011), the regional centre of the George Town Municipality. Numerous heavy industrial facilities are also located to the North at Bell Bay. The Bell Bay zone also hosts a significant number of small industrial service and fabrication businesses, which have a mutually supporting relationship to the larger Bell Bay industrial facilities and the State’s industrial sector more generally.
The Long Reach and Bell Bay areas also host significant industrial port infrastructure and a marine farming zone. The Bell Bay Port is a key facility for the movement of bulk commodities into and out of the State. The marine farming zone hosts a salmonid production facility, which has its land base on the Western shore of the River Tamar, opposite the Long Reach Mill wharves.

Figure 4 Long Reach Socio-economic context map

2.1.4.2 Meteorology, Air and Noise Context:
Tasmania has a cool, temperate maritime climate with four distinct seasons. The Tamar Valley is a major topographical feature of the central North of Tasmania. The valley in the vicinity of the Long Reach Mill site is bounded to the East by the nearby Tippogoree Hills (~3.5km) and to the distant West Salisbury Hill and Cabbage Tree Hill (~11km). From a meteorological perspective, the Tamar Valley is notably influenced by mountains outside the valley which cause short periods of intermittent katabatic cold air drainage into the valley, which in turn can establish temperature inversions that tend to exacerbate ground level pollutant concentrations, particularly nearby the relevant pollutant’s emission source.

Given the topography, climate etc briefly described above, the atmospheric conditions for ventilation, dispersion and noise propagation in the area of the Long Reach Mill are highly variable. In addition, the local environment will also exhibit an existing signal of noise and atmospheric pollutants emanating from heavy and light industry, sea and land transport and primary industries. In the case of atmospheric pollutants, more distant population centres including the City of Launceston, located some 30km distant at the head of the Tamar Valley may also mildly influence air quality at Long Reach during periods of katabatic cold air drainage down the valley.
Consistent with the socio-economic context described above, the closest domestic residences regarding air quality and noise emissions, are located in the Rowella area.

2.1.4.3 River Tamar Estuary Context:

A description of the estuarine environment is relevant, as the River Tamar at Long Reach is the receiving environment for water flowing from the site directly as either surface water or via an outfall, or indirectly via runoff from irrigation areas that are used for waste water treatment.

The River Tamar is the largest estuarine habitat on the North coast of Tasmania, originating from the confluence of the North and South Esk Rivers at Launceston and following a meandering path on a general North West – South East axis to Bass Strait at the coast. The morphology is that of a drowned river valley and is approximately 100 km\(^2\) in surface area. The catchment of the River Tamar, including tributaries comprises a combined area of some 10,000 km\(^2\); approximately one fifth of Tasmania’s land mass. The region of Long Reach, being relatively close to the mouth of the River Tamar exhibits a maritime character for much of the time, with a median salinity of 22.5 Parts Per Thousand (PPT) when measured at the surface over all seasons. At times of high fresh water flux from tributaries, the salinity can fall to ~13 PPT in the same location.

The maximum water depth within Long Reach is approximately 30m, with the area immediately adjacent to the South and North Long Reach wharves approximately 15m deep. The combination of underwater topography, strong currents associated with a tidal range of some 2-3 metres in the area does tend to agitate and therefore ‘mix’ the water column. Nevertheless, measured median salinity levels in the area are greater at the bottom of the water column than the top by circa 2 PPT, indicating a mild ‘salt wedge’ condition, a characteristic of most estuaries, is often apparent in the Long Reach area.

Protected Environmental Values (PEVs) have been formally set for the estuarine habitat of the River Tamar under provisions of the *State Policy on Water Quality Management*. They include:

A: Protection of Aquatic Ecosystems
   (ii) Protection of modified (not pristine) ecosystems
       a. from which edible fish and Crustacea are harvested but not shellfish except where permitted by Marine Farming Licences under the *Living Marine Resources Management Act 1995*

B: Recreational Water Quality & Aesthetics
   (i) Primary contact water quality (where permitted)
   (ii) Secondary contact water quality
   (iii) Aesthetic water quality

E: Industrial Water Supply
   (Users specified)
2.1.5 Description of emissions.

The Long Reach Mill activity has a relatively simple environmental ‘footprint’ when compared to neighbouring heavy industries in the Bell Bay region. Nevertheless, each major environmental aspect and its corresponding actual or potential impact are described below under four environmental compartments:

2.1.5.1 Atmospheric emissions.

Emissions of criteria pollutants, such as nitrous oxides (NOx), Particulate Matter (PM\textsubscript{10}, PM\textsubscript{2.5}) etc are largely related to diesel powered mobile plant and equipment on the Long Reach site and due to the low intensity of such plant with the site and the dispersive nature of the environment, these aspects are relatively insignificant in the context of the Tamar Valley air shed.

Nevertheless, the key atmospheric emission for the Long Reach facility is that related to environmental noise, as perceived by the residents of Rowella. Noise emission points include:

- The South Mill Chipper building, emanating from chipper knife blade impact and motor noise.
- Mobile Plant, nominally log truck, log truck unloading vehicles and tracked plant such as dozers.

The character of noise emissions could be described as a variable and intermittent output in the frequency range of 50 – 1000Hz. Logically, the impacts of such noise emissions is the potential disturbance and amenity of residents in the Rowella area.
The Long Reach Mill in its current configuration has minimal capability to vary (ie reduce) noise output when operating, thus variation in the perception of environmental noise at Rowella can be mostly attributed to variations in atmospheric conditions and the presence or absence of other ambient noise sources.

2.1.5.2 Water emissions

Process and surface water emissions from the Long Reach Mill activity include emissions from current activities as well as those from past operations in the form of leachates from a disused landfill. In general, environmentally relevant water emissions from the Long Reach site are a function of rainfall, leading to leaching of wood based stockpiles of product (chip) or wastes (such as a disused landfill) and subsequent organic enrichment and eutrophication of those stormwaters.

Additionally, the use of hydrocarbons for lubrication and fuel by mobile plant are significant matters for routine management of the site, but due to controls and practices are an insignificant matter from a water emission perspective.

Water emission points are shown in Figure 16 below. They include:

- A ‘clean’ stormwater drain, which services the majority of the undeveloped or otherwise low risk areas of the Long Reach Mill site that drains directly to the River Tamar with no physical controls.
- A small sewage outfall from an on-site ‘Bio-Cycle’ plant
- An overflow outfall adjacent to the South Mill wharf.
- An overflow outfall from the final treatment pond (Pond 9) on the southern corner of the South Mill site.
- An indirect release point of surface and/or ground waters via an unnamed and heavily modified waterway shown in Figure 16 as Bypass Creek.

The management objective of the two overflow outfall points is to eliminate the occurrence of any direct outflow of the contained liquor. Nevertheless, overflows can and are known to have occurred, particularly as a result of (1) a failure or other non-availability of pumping infrastructure that is in place to transfer liquors and/or (2) a deluge rainfall event, prior to them reaching their respective overflow threshold levels.

Consequently, the Long Reach Mill’s management practice is to dispose of all organically enriched liquors via an irrigation network, which can then lead to an indirect surface water outflow via ‘Bypass Creek. In effect, liquors captured by the combined drainage network including most on-site detention and holding ponds are actively diverted to irrigation as a form of bio-physical water treatment. A further input to the ‘Bypass Creek is provided by a constructed wetland, which is a passive system draining a smaller residual catchment, not otherwise captured by the active system.

Water released via the Bypass Creek exhibits a significantly improved overall quality than if it were released directly via either overflow outfalls, thus mitigating impacts on the River Tamar that would otherwise likely include:

- Eutrophication via loading of dissolved nitrogen and phosphorous nutrient species
- Localised oxygen depletion or broader scale respiratory stresses, via organic enrichment.
- Aesthetic implications and water column light attenuation via the release of a dark coloured liquor.
An additional aspect of water emission relates to the pH of water in Bypass Creek after that waterway is indirectly influenced by Forico’s irrigation practices. This aspect is further discussed in detail in Section 2.7.2. Nevertheless, the pH shift (>8.5pH) described in Section 2.7.2 is not considered to be an issue of ‘impact’ on the River Tamar, in the direct way as are the three actual or potential matters listed above as the pH of the River Tamar, being ‘marine’ in character (circa pH8.1) is not substantially different to the emission.

Finally, the aspect of a small sewage outfall is not a significant emission point in the context of the River Tamar, but is nonetheless maintained, monitored, regulated and reported below for verification purposes.

2.1.5.3 Land/soil contamination

Contamination of soils and or land is chiefly a function of past practices and uses of the Long Reach Mill site, rather than current operations. Two aspects are apparent as follows:

- Localised hydrocarbon contamination sourced from legacy hydrocarbon storage or dispensing infrastructure.
- Localised disturbance of soil chemistry (sodicity/salinity/eutrophication) emanating from a legacy bark disposal area.

Legacy hydrocarbon contamination includes areas that are now fully decommissioned and under remediation (Exemplified by that detailed under Section 2.3.1 below) as well as areas that are identified, but not yet verified (accepted or rejected) as contaminated under a Preliminary Site Investigation further described under Section 2.3.2. Or those areas that are identified as potentially contaminated and not verified, but still under active use.

The localised disturbance of soil chemistry is a function of a bark disposal landfill area that ceased accepting materials in late 1992. At that time, bark was removed from wood on the mill site by a salt-water log wash, rather than the contemporary practice where it is removed mechanically at the point and site of harvest. The underlying salinity issue therefore is a function of the salt water used. Nevertheless, the aspect and legacy impact has minimal implication to environmental values or industrial land use, but does minimise opportunity for successful and ongoing bio remediation of the former landfill area.

2.1.5.4 Wastes

The Long Reach Mill generates two classes of waste streams. They are:

- Wood based process material by-products. Including Fines, Reject Chips and Bark.
- Non-process wastes, such as oils, packaging, tyres etc.

By-products are detailed here to align with the definition of ‘waste’ under EMPCA.

The mass of all by-product materials is measured at the point of departure from the site. The monthly amounts of by-products including; Fines, Reject Chips and Bark consigned from the site for beneficial or other use are reported under Section 2.7.4 below, along with non-process wastes, inclusive of those classified as controlled wastes (Tyres, asbestos containing materials and hydrocarbon contaminated materials).
Fines are the most significant by-product waste by volume and potential value and segregated at the ‘Screening’ phase of the chip production process. (Figure 1, Items G H & I). Reject Chips can be generated at any time due to suspected contamination, sacrificial use for bulk product handling, biodegradation etc. Bark refers to miscellaneous woody debris generated mostly by log handling as log ‘de-barking’ does not actually occur on the Long Reach Mill site.

The most significant aspect of waste management at the Long Reach Mill site relates to optimising the opportunity cost presented to Forico by one or more of the wood by-product streams. On the one hand, the waste streams present an opportunity for recovery of value by either sale to another beneficial use in a raw form, or potentially transforming the material(s) to a value added product, such as a high value bio-fuel. Alternately, if neither class of opportunity can be realised at a sufficient rate to at least match generation rate, the material represents a potential liability for responsible off-site disposal.

In the interim, sales or disposal to other beneficial uses of by-products in raw form continues to be explored by Forico but success has only been achieved on a relatively ad hoc basis to date.

2.2 Register of Public Complaints

Forico maintains and tracks the views of the various stakeholders to our business. One element of that is a register of any complaints. Complaints relating to the operations of the Long Reach Mill activity relating to the reporting period are provided below.

Nil under Forico operational management control.

2.3 Environment related procedural or process changes (completed or commenced).

Three environmentally relevant equipment/process changes that relate to the Long Reach Chip Mill occurred during the reporting period. They included:

- The removal of a fuel depot formerly operated by United Petroleum
- The commencement of decommissioning of the Long Reach (North Mill) sector of the site
- Removal of a fuel depot used to supply mobile plant and equipment on the South Mill Log Yard.

Further description of each change follows.

2.3.1 Fuel Depot Removal

At acquisition the Long Reach Mill hosted a decommissioned fuel depot formerly operated by United Petroleum while under the prior owner’s tenure. Forico undertook the work promptly to directly address a legal requirement for removal of such underground infrastructure if not used for > 2 years.
Figure 6 Long Reach former United Petroleum Fuel Depot, prior to removal.

Figure 7 Long Reach UPSS removal showing decommissioned 12.5m³ UPSS tank immediately prior to lifting.
The fuel depot included two classes of storage infrastructure, being 2 x Underground Petroleum Storage Systems (UPSS) and 2 x Aboveground Diesel Storage Systems (ADSS), both with dispensing bowsers. The UPSS removal was reported to the Director EPA via a Decommissioning and Assessment Report as required by regulation 30(8) and 31(3) of the Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2010. The project followed the protocols detailed the EPA's technical guidelines; UPSS 1 and UPSS2. Contaminated Waste (soil) management implications from this project are referenced further under Section 2.4 below.

Removal of the ADSS was also undertaken at the time of UPSS removal Project, although there was no legal requirement to do so at the time. Both aspects of the Fuel Depot removal were reported to the Director within the Decommissioning and Assessment Report as a measure of completeness.
2.3.2 North Mill Decommissioning

Decommissioning of the Long Reach (North Mill) sector of the site commenced in late 2015. Note; the Forico Long Reach Mill site comprises two chip mills on adjacent titles. Site works were implemented under the current Decommissioning and Rehabilitation Plans (DRP) for the site. Demolition works completed to date include:

- Undertaking a detailed asbestos material survey of the Long Reach (North Mill) sector of the site.
- Obtaining local government approvals for building demolitions on the North Mill sector of the Long Reach site.
- Updating formal planning documents relating to demolition and remediation of the Long Reach site for EPA review and approval.
- Conducting a Preliminary Site Investigation for environmental contamination and related matters and providing a formal report to the EPA on same.
- Isolating electrical circuits for a range of buildings and plant pending their demolition under the DRP.
- Removing asbestos materials identified in the asbestos survey for a range of buildings and plant pending their demolition under the DRP.
- Removal of above-ground previously decommissioned hydrocarbon storages and dispensing facilities.
Figure 10 Asbestos removal works underway at the Long Reach North Mill site.

After removal of hydrocarbon storages and asbestos material concluding in April 2016, all further DRP works ceased, pending approval of any further works by Forico's Board.

2.3.3 Log Yard Fuel Depot Alteration

A fuel depot used to supply mobile plant and equipment on the South Mill Log Yard was replaced in February 2016. The fuel depot comprised a single APSS, with a dispensing bowser. The facility was replaced with a containerised transportable fuel dispensing facility integrating bowser, primary tank and secondary containment. The new facility was located within the former facility’s tank bund that was modified to form a three sided walled compound.
2.4 Summary of Solid and Liquid Wastes

Non-process material wastes
Waste disposal metrics for the full reporting period are provided below as annual totals of both liquid waste (Litres oil recovered and/or removed) and solid waste as scrap steel (tonnes) and general waste (m$^3$). Veolia Environmental Services (Aust) Pty Ltd and Tasmanian Oils Pty Ltd are the main waste services providers. Both handle one or more classes of Controlled Waste.

Veolia operate a Liquid Treatment Plant which itself is regulated under EPN 384/1. Veolia are registered waste handlers, holding Certificate of Registration No. CWTEMP129TA. Similarly, Tasmanian Oils Pty Limited operate under EPN 97691-1-1 and CWTEMP077TA.

<table>
<thead>
<tr>
<th>Variable Label / Year</th>
<th>2014/2015</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Rec/Rem (L)</td>
<td>3200</td>
<td>2200</td>
</tr>
<tr>
<td>Scrap metal (t)</td>
<td>0</td>
<td>5.94</td>
</tr>
<tr>
<td>Solid General (m$^3$)</td>
<td>35</td>
<td>123</td>
</tr>
</tbody>
</table>

Results for Site = LRM, Class = Waste

Several consignments of asbestos containing material were also removed from the Long Reach Mill site, mostly from the North Mill sector. Materials for disposal were consigned to:

- Dulverton Waste Management
• Launceston City Council (Remount Rd)

All site works, waste handling and transport were conducted by a licenced asbestos removal/transport organisation. Those engaged over the reporting period include:

Asbes-Tas; Class A Asbestos Removalist Licence No. 17190799.
Statewide Asbestos Solutions Pty Ltd. Class A Asbestos Removalist Licence No. 17210899

Table 2 Table of annual totals of special case waste metrics

<table>
<thead>
<tr>
<th>Variable Label / Year</th>
<th>2014/2015</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos Containing Materials</td>
<td>&lt;2Kg</td>
<td>13.5 t</td>
</tr>
<tr>
<td>Tyres</td>
<td>N/A</td>
<td>Nil</td>
</tr>
</tbody>
</table>

By-products

In addition to the above waste materials, the Long Reach Mill activity also produces several wood based by-product streams. The three streams of by-product are; Fines, Reject Chips and Bark and are presented below as Figure 13.

Figure 12 Time series of by-product monthly totals consigned from the site for the Long Reach Chip Mill during the period 5/9/14 to 30/6/16.

Initiatives

Waste management initiatives and programs designed to improve environmental and commercial outcomes for the Long Reach activity and the company more broadly, were identified as a priority
area for Forico’s first full year of operations (commencing with Forico’s 2015/16 financial year). Forico’s initial review of the company’s risk profile identified a number of isolated but related waste management issues which may provide the company with effective synergies for management of the materials. The issues included:

- Confirmed hydrocarbon contaminated soils that has been excavated from the former Long Reach fuel depot (Refer Section 2.3 above).
- The identification of new or novel value recovery options for wood by-products generated by the wood chip production process at both Long Reach.
- The potential for further contaminated materials to be generated by decommissioning works in redundant process areas. (Nominally, the North Mill area of the Long Reach site. Refer Section 2.5).

As a result, Forico established an internal project team with the following objective and target as one component of the Company’s strategic plan:

<table>
<thead>
<tr>
<th>Strategic Priority</th>
<th>Category</th>
<th>Objective</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated modern Processing Facilities</td>
<td>Integrated Processing</td>
<td>Low cost / High quality production</td>
</tr>
</tbody>
</table>

At the time of writing, this waste initiative objective is not complete. Forico’s system records for this Target includes the following notation:

- Tracking: Waste inventory for process by-products is tracked through site based Production Model. Hydrocarbon materials are tracked as I/O metrics.
- Divestment: “Doorknocking” for process by-products has met with limited success to date.
- Contaminated materials: Pilot LEMP developed.

Resources will continue to be allocated to this aspect to achieve the objective, however it is noted that current opportunities for divestment of significant volumes of a potentially valuable resource by-product (Fines) have been minimal to date.

2.5 Anticipated environmentally significant changes for 2016/17

Since Forico’s appointment as the Long Reach Chip Mill activity’s manager a great deal of re-development works has been undertaken on the site. The focus of this re-development has been on reducing the health and safety risk profile of the activity and this primary focus is anticipated to continue during the 2016/17 period. Nevertheless, environmental, production efficiency and market development issues will be integrated with many of the future planned re-development works.

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2 Landfarm Environmental Management Plan, yet to be formally submitted to the Director for treatment of contaminated soils held after decommissioning and removal of the former Long Reach United Petroleum Fuel Depot.
2.5.1 North Mill Decommissioning

To that end, the major environmentally relevant anticipated change for the 2016/17 and beyond period is anticipated to be the continued decommissioning of equipment on the North Mill sector of the Long Reach site, as it was during the 2015/16 period. The objective remains to facilitate a 'brownfield' site ready for a business development opportunity, ideally one with synergies to Forico’s current and future South Mill sector operations.

In summary, Forico has established an internal project team with the following objective and target as one component of the Company’s strategic plan:

<table>
<thead>
<tr>
<th>Strategic Priority</th>
<th>Category</th>
<th>Objective</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated modern Processing</td>
<td>Low cost / High quality production</td>
<td>Decommission Long Reach North Mill to ensure location is site ready for business development opportunity: Stage 1 – Removal of OCS stacking tower and associated infrastructure to manage identified safety risks. Stage 2 – Decommission other site premises and infrastructure.</td>
</tr>
</tbody>
</table>

Stage 1 focussed on reduction of safety risk under local government authority. Stage 2 related to general decommissioning.

At the time of writing, stage 1 is complete but Stage 2 is not, with progress already described above under Section 2.3.2.

2.5.2 South Mill Chipper

A further focus for the South Mill sector of the Long Reach mill will again be engineering studies to address the potential installation of new chipper infrastructure. One primary objective of this study will be to address noise emissions, although secondary issues to be addressed will include by-product generation rate and improvements to process water use and disposal.

In summary, Forico established an internal project team in 2015/16 with the following objective and target as one component of the Company’s strategic plan:

<table>
<thead>
<tr>
<th>Strategic Priority</th>
<th>Category</th>
<th>Objective</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated modern Processing</td>
<td>Low cost / High quality production</td>
<td>Engineering design for new chipper installation together with management of mill acoustics to enable compliance with EPN 7968/3 conditions N1 – N3.</td>
</tr>
</tbody>
</table>
At the time of writing, this objective is not complete. The project was suspended pending reconsideration of concept options for the entire Long Reach facility, including the North Mill redevelopment options previously mentioned.

2.5.3 Drainage Improvements

A series of alterations to the drainage system will be undertaken during the summer of 2016/17. The summer timing is necessary to avoid the winter time peak loading within the drainage network. The program will include maintenance of settling ponds to remove sediment, replacement of some elements and extension of the irrigation network as well as installation of a diversion line from Pond 9 to the head of the constructed wetland. This later change will allow a further water treatment option for some heavily loaded liquor collected at Pond 9 to be treated in the wetland, rather than the irrigation network, therefore reducing intensity of the irrigation load and ideally nutrient flux to ‘Bypass Creek. This project will be implemented over the 2016/17 summer, reviewed over the following autumn and early winter, followed by a development of a formal report on efficacy, that will be submitted to the Director by 11th July 2017.

2.6 Non-trivial environmental incidents and incidents of non-compliance.

Four non-trivial incidents and/or incidents of non-compliance relating to the activity occurred under Forico’s management during the reporting period.

One incident relates to a letter from the Director to Forico dated 13 May 2015 identifying a site based contractor’s fuel transfer trailer of >250L capacity observed being stored/used outside of designated bund or refuelling zone, with evidence of recent spillage to open ground nearby. (A non-conformity to Condition H1 of EPN 7968/3)

- The issue was initially addressed by the contractor concerned, removing the transfer trailer from site. A more comprehensive and final method of fuel transfer remains under development in cooperation with the Contractor. In the interim, this fuel transfer activity is being managed by utilising transportable bunded vessel(s) <250L, which is outside the scope of Condition H1 but under and consistent with the requirements of Condition H2 instead.

The second relates to water quality within the unnamed water course on the southern edge of the site, which was routinely monitored in accordance with Conditions M1 and M3 of EPN 7968/3. This watercourse receives, amongst other sources, leachate and/or run-off from an irrigation system used by the Long Reach Mill to control surface and process waters.

- The monthly scheduled samples, corresponding to the beginning of Spring 2014 and Summer 2016 returned elevated pH readings, marginally higher than the upper threshold limit of pH 8.5 applying to water discharged from The Land. (Non-conformities to Condition EF5 of EPN 7968/3). The serial pH issue triggered a detailed Investigation program, comprising in-situ and extractive samples being collected and analysed over a three-month period of April to June 2016.
In summary, the investigation supported a prior hypothesis that had previously been communicated to the Director by Forico that the observed excursions in pH in the watercourse is indirectly related to Forico’s waste water treatment and/or legacy issues associated with a former waste bark storage area. The pH effect exhibits a diurnal change associated with algal blooms and subsequent photosynthetic activity in the watercourse during spring/summer and not an emission or leaching of an elevated pH liquor per se.

A contributing factor to the algal blooms, which drive the pH shift, is likely to be elevated nutrients emanating from a legacy bark dump on Forico’s Long Reach site and which also receives water and nutrients from the site via Forico’s irrigation practices.

Nevertheless, the issue is not one of environmental harm or nuisance as the key receiving water body is the River Tamar, which exhibits a marine pH profile in the area (circa pH 8.1) that is not compromised by pH excursions marginally over pH 8.5 in this small tributary. Further details and discussion relating to this issue are also provided in Section 2.7.2 below.

The third issue relates again to water quality, where a water treatment system holding pond overflowed after a period of intense rainfall events. On detection, the overflow was sampled even though there was no regulatory requirement to do so and assessed against EPN outfall limits. The analysis indicated an excursion beyond the Total Suspended Solids (TSS) concentration limit (A non-conformity to Condition EF5 of EPN 7968/3) and as such was reported to the Director.

- Regardless, Forico have a program of works scheduled for the summer of 2016/17 aimed at improving the efficacy of overall waste and stormwater management on site including reducing the potential for future pH excursions and storm related overflows (Ref 2.5.3).

The final issue is the identification of several instances of hydrocarbon storage facilities of varying compliance (from minor technical to material non-compliance) to the hydrocarbon storage provisions of EPN 7968/3 (Condition H1).

- The minor technically non-compliant storages were identified under a detailed internal audit process, and are being actioned to resolve as part of Forico’s internal Evaluation of Compliance protocols. In all cases, the aspects of compliance were a legacy of prior operations.
- The material non-compliance relates to the South Mill Log Yard Fuel System, previously mentioned in Section 2.3 and shown in Figure 11. This particular non-compliance is material in that the Director was not specifically notified of a pending change as required under Condition G3 of EPN 7968/3, although the issue was raised in concept (only) in the Forico Long Reach Annual Environmental Review 2014/15. Secondly, when altered, the new configuration did not meet specific sub-conditions of Condition H1 relating to apron design.
  - It is further noted that the detection of this non-conformity occurred after the close of the reporting period of this report, although the acts of non-compliance occurred within the reporting period. The mention here is intended to provide adequate disclosure and linkage to a future report(s), where the issue will be reported in full, with appropriate evidence of returning the facility concerned to a compliant state.
configuration. A revised plan for the facility is under development at time of writing in order that it will be submitted to the Director by 15/10/2016.
2.7 Review of monitoring programs and environmental standards

2.7.1 Long Reach Mill Sewage Treatment System Effluent Monitoring

![Image of Biocycle selectors](image)

Figure 13. Long Reach South Mill Sewage Treatment Plant ‘Biocycle’ selectors.

Surveillance monitoring of sewage exiting the South Mill sewage treatment plant of the Long Reach site was undertaken quarterly during the reporting period. A series of chart panels on a single time series chart for each measured analyte follows as Figure 14. The chart also shows a reference line for the date on which EPN 7968/3 was transferred to be served by Forico Pty Limited in October 2014. Note; the information presents all Y axis data as ‘LOR Adjusted Data’. This refers to the convention of wherever an analytical report returns a value below the analysing laboratory’s Limit of Reporting (LOR), a value of ½ that LOR is substituted. For example, an analytical report of ‘<10 Count/100mL’ would be substituted with a value of ‘5 Count/100mL’.

The scope of Forico’s monitoring sub-program for the Long Reach Sewage Treatment Plant is that required under Condition M2 of EPN 7963/3. Sampling for this monitoring sub-program was undertaken prior to Forico’s ownership and initially thereafter by an external specialist plumbing contractor using a third party laboratory for analytical services. Subsequently, sampling was undertaken by Forico’s Environmental Specialist, with analyses conducted by Analytical Services Tasmania (including subcontracted analyses of bacteriological samples by the Tasmanian Public Health Laboratory). All laboratory reports are retained by Forico and remain available to the Director EPA on request.
Monitoring results

Figure 14 Time series of quarterly Biological Oxygen Demand (5 day) (mgO₂/L) sampling and analysis of sewage samples collected from the South Mill Sewage Treatment Plant outlet sampling site, Long Reach for the period 5/9/14 to 30/6/16.

Commentary on monitoring results.

A non-conformity to the monitoring schedule occurred at the final sample event of 2014/15 year, where the contractor failed to report two of the required three analytes. On further investigation by Forico, a further non-conformity in the monitoring suite was detected, where one analyte was determined to be incorrectly specified to the laboratory. (E. coli and thermo-tolerant coliforms were analysed instead of enterococci.) Hence bacteriological analytes are shown in Figure 14 in three discrete panels, which did not run concurrently.

As a result of both of the above non-conformities, the sampling and laboratory submission protocols were altered to be conducted directly by Forico’s specialist staff using laboratory supplied sample bottles. A simultaneous change to Analytical Services Tasmania as the laboratory service provider was implemented to improve traceability standards. Finally, a change to the sampling point, being the discharge end of the outfall pipe (rather than the outlet of the sewage treatment plant) was also
trialled during 2015/16 to improve the sampling regime’s representative qualities. The two monitoring points applicable to the reporting period, are shown in Figure 14 as ‘Outfall’ being the end of pipe at low tide or; ‘Outlet’ where samples were taken within the final selector adjacent to the final outlet of the treatment plant. The outcome of the sampling point location trial was that neither were fit or appropriate for ongoing routine surveillance. Therefore, from July 2016, a sampling location that will be identified as ‘Sewage Treatment Plant Monitoring Point (STMP) will be utilised. This sampling location is a purpose built monitoring weir on the outlet side of the South Mill Sewage Treatment Plant’s final polishing pond. This same sampling location had been utilised by prior operators of the site, but had ceased to function &/or be used (overgrown by vegetation and leaked) at some point. The weir was refurbished for the purpose of monitoring during 2016 by Forico, is again available for sampling and will be used for this purpose into the foreseeable future.

Reported values for Biological Oxygen Demand 5 Day (BOD(5)) and Total Suspended Solids (TSS) were all %100 below compliance thresholds given in Condition EF5 of EPN 7968/3 for the three year reporting period. The reported bacteriological parameters (E. coli & thermotolerant coliforms) cannot be directly assessed to the EPN in the same way, due to the monitoring suite non-conformity detailed above. Nevertheless, the reported parameters are still a useful indicator for the monitoring objective which all indicate that South Mill Sewage Treatment Plant has been and continues to function well.

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4 The practicality consideration of the Outfall sampling point is due to its location within the inter-tidal zone of the River Tamar; therefore, it is not always accessible. The Outlet location is within the treatment plant and so is not necessarily representative of its post treatment effluent.
2.7.2 Long Reach ‘Stream to Tamar’ (Including Wastewater) Monitoring

Figure 15 Bypass Creek V-notch weir, The Long Reach Mill's Stream to Tamar monitoring sub-program's main water quality monitoring location.

The scope of Forico’s ‘Stream to Tamar’ monitoring sub-program for the Long Reach Mill is intended to encompass surveillance of spent process and other waste waters and also meet the regulatory monitoring schedule required under Condition M3 of EPN 7968/3 and where applicable (Investigation monitoring) Condition M4. In considering the results presented below, it is first necessary to understand how process water, leachates from stock piles as well as clean and potentially contaminated stormwaters are managed on the Long Reach site.

First, ‘clean’ stormwater from undeveloped or low risk sub-catchments of the site are released directly to the River Tamar via the ephemeral ‘Clean Stormwater’ drain shown on Figure 16. No monitoring is conducted on this drain and therefore this aspect of site water management will not be discussed further below.
Second, leachates from product and by-product stockpiles are combined with any storm water from the majority of the on-site developed areas in a network of surface and underground drains across the site. Additionally, process water used in the chipping process as a coolant/lubricant is captured into the same drainage network as the previously mentioned leachate and stormwaters and either pumped to or gravity fed through a series of sumps or ponds, ending up at the ‘Pond 9’ reservoir near the south eastern boundary of the site (Figure 16).

Thereafter, Pond 9 is equipped with two outlets:

- A pump, which can transfer the liquor from within Pond 9 to an irrigation network. This network has two main dispersal zones; a large zone above a former bark dump and a smaller zone amongst native forest within the south west corner of the site.
- An overflow weir, which leads directly to the River Tamar via a submerged outfall pipe. This outfall is the sole permitted direct outfall location for the combined contaminated waters from the site. (Condition EF4 of EPN 7968/3).
Forico’s management objective of Pond 9 is to minimise any potential for Pond 9 to overflow via the outfall, because the liquor held by Pond 9 is generally not fit for direct release to the River Tamar. Thus, irrigation is the preferred option. As a consequence, some of the irrigated liquor will inevitably enter an otherwise ephemeral and heavily modified stream which leads to the River Tamar via a concrete flume fitted with a V-notch weir. The stream has no formal name and is identified by Forico and prior operators as Bypass Creek.

Liquor released via irrigation enters Bypass Creek either directly as a surface runoff or indirectly through an aquifer discharge. By the time this water enters the creek and also within the creek, it will have been subject to a number of physicochemical and biological processes, resulting in a more benign overall quality prior to its eventual release into the River Tamar. Bypass Creek also drains a railway cutting and undeveloped lands both of which are off-site and a constructed wetland which captures drainage from a small on-site catchment which includes some leachate from a (Pine) chip stock pile.

Bypass Creek is the main monitoring point for the mill site as the main driver of its water quality is the Long Reach Mill activity, via irrigation runoff or the constructed wetland. Pond 9 overflow weir is not on a regular monitoring schedule (because it rarely flows), although it was sampled once during this reporting period during an overflow event associated with heavy rainfall.

Investigation monitoring during this reporting period also included sampling of Pond 9 liquor as it was released onto the irrigation area (Sample location ‘Irrigation Head’) and at an upstream location within Bypass Creek that would reflect water quality immediately after surface runoff from the irrigation area entered the creek. (Sample location ‘Barkland Culvert’). The investigation monitoring was undertaken in response to a series of excursions in water quality at the Bypass Creek monitoring point.
location. The investigative objective was to better inform managers of the physicochemical and biological processes that are occurring, to improve the overall quality of Pond 9 liquor prior to its ultimate release to the River Tamar via Bypass Creek.

**Monitoring results**

**Regular surveillance monitoring**

Surveillance monitoring of surface waters passing over a V-notch weir in the unnamed creek on the southern extremity of the Long Reach site was undertaken monthly during the reporting period. (Figure 16 & Figure 15)

The results of this surveillance monitoring is presented below in a series of time charts for each required analyte, showing reference lines for (1) the performance or compliance limit(s), if any, given in Condition EF5 of EPN 7968/3 and (2) for the date on which EPN 7968/3 was transferred to be served by Forico Pty Limited in October 2014. (Figure 18 to Figure 22). Note; as per Section 2.7.1 above, the information presents all Y axis data on these figures as ‘LOR Adjusted Data’. This refers to the convention of wherever an analytical report returns a value below its Limit of Reporting (LOR), a value of ½ that LOR is substituted.

As stated, compliance limits for water discharged from the land are set by Condition EF5 of EPN 7968/3. Four of the five parameters set under Condition EF5 are applicable to waste water discharges (the remaining parameter, enterococci, is relevant to sewage in this context).

Since acquisition of the Long Reach site, sampling for this monitoring sub-program was undertaken by Forico’s specialist staff using laboratory supplied sample bottles and a conventional ‘grab’ sample technique. Samples were chilled from the point of sampling and forwarded to the analytical service provider <24h post collection. Prior to July 2015, analytical services were provided by TasWater (NATA Accreditation No: 19462 Ti - Tree Bend Laboratory) under direct engagement by Forico or the prior operator. Subsequently, analytical services have been provided by Analytical Services Tasmanian (NATA Accreditation No: 5589 – New Town Laboratory). Laboratory reports and sample collection details are retained by Forico and remain available to the Director on request.
Figure 18 Time series of monthly Biological Oxygen Demand (5 day) (mgO$_2$/L) sampling and analysis of surface water samples collected from the South Mill V-notch weir and one sample from the Pond 9 overflow weir sampling site, Long Reach for the period 5/9/14 to 30/6/16.

Figure 19 Time series of monthly Conductivity (µS/cm) sampling and analysis of surface water samples collected from the South Mill V-notch weir, Irrigation Head, Barkland Culvert and Pond 9 overflow weir sampling sites, Long Reach for the period 5/9/14 to 30/6/16.
Figure 20 Time series of monthly Total Suspended Solid (mg/L) sampling and analysis of surface water samples collected from the South Mill V-notch weir and one sample from the Pond 9 overflow weir sampling site, Long Reach for the period 5/9/14 to 30/6/16.

Figure 21 Time series of monthly pH (pH unit) sampling and analysis of surface water samples collected from the South Mill V-notch weir, Irrigation Head, Barkland Culvert and Pond 9 overflow weir sampling sites, Long Reach for the period 5/9/14 to 30/6/16.
Figure 22 Time series of monthly Total Oil and Grease (mg/L) sampling and analysis of surface water samples collected from the South Mill V-notch weir and Pond 9 overflow weir sampling site, Long Reach for the period 5/9/14 to 30/6/16.

Investigation monitoring.

Field Measurements

In addition to the regular surveillance (Lab based) analyses, in situ readings of the water quality parameters; pH, dissolved oxygen, Oxygen-Reduction Potential (ORP) and conductivity were also recorded (commencing (2/2016) coinciding with extractive sample collection, utilising a pre-calibrated water quality field meter (In-situ Inc. smarTROLL MP ®).

The objective of undertaking these in-field readings was to improve understanding of water quality issues (nominally pH variability at the Creek V-notch weir sampling point) which had been exhibiting dynamic behaviour, as well as examining the efficacy of the laboratory based measurement system for pH required under EPN 7968/3. A limited scope of pH measurements of in situ field measurements paired to their applicable laboratory measurements are presented below as Table 3.

Table 3 Summary table of pH measurements taken at Bypass Creek V-notch weir, Feb 2016 to June 2016 comparing in-situ measurements (Forico) to extractive samples collected by Forico and subsequently analysed by Analytical Services Tasmania (AST) - New Town laboratory.

<table>
<thead>
<tr>
<th>Program</th>
<th>Sample Site</th>
<th>Date Sampled</th>
<th>Analyte</th>
<th>Unit</th>
<th>Measure by</th>
<th>Max</th>
<th>Min</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream to Tamar</td>
<td>Creek V-notch weir</td>
<td>16/02/2016</td>
<td>pH</td>
<td>pH</td>
<td>AST</td>
<td>8.7</td>
<td>8.7</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Forico</td>
<td>8.5</td>
<td>8.5</td>
<td>1</td>
</tr>
</tbody>
</table>
Lab measurements

Additional samples were taken of some regulated parameters during the reporting period. Results have been presented above in Figure 19 and Figure 21 where these measurements align with the regular surveillance monitoring.

The investigation monitoring suite however was not restricted to field measurements nor the regulated water quality parameters. Other factors that were considered by professional judgement of Forico’s Environmental Specialist to be influencing or involved in the physicochemical and biological processes that were occurring, were also examined.

These additional factors included an assessment of the major species of nutrients, anions and cations as well as physical and bulk properties of alkalinity(s) and Chemical Oxygen Demand (COD).

Measurements sites selected were to represent three key points:

- The waste water liquor prior to being deposited onto the irrigation area (Irrigation Head)
- Bypass Creek immediately downstream of the irrigation network, but upstream of where the in-stream algal beds can be observed. (Barkland Culvert)
- At the V-notch weir, in Bypass Creek, where normal compliance sampling is undertaken. Representing final water quality emanating from the Mill Site and a surrounding catchment that thereafter enters the River Tamar. (Creek V-notch weir).

Refer to Figure 16 for all locations.

A table presenting all Investigation Monitoring results not otherwise already presented is provided below as Table 4.

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Sample Site</th>
<th>12/4/16</th>
<th>4/5/16</th>
<th>20/6/16</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>Barkland Culvert</td>
<td>160</td>
<td>93</td>
<td>100</td>
<td>mgO2/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>150</td>
<td>87</td>
<td>150</td>
<td>mgO2/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>430</td>
<td>320</td>
<td>330</td>
<td>mgO2/L</td>
</tr>
<tr>
<td>Alkalinity CO3</td>
<td>Barkland Culvert</td>
<td>&lt;2</td>
<td>&lt;2</td>
<td>&lt;2</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>10</td>
<td>2</td>
<td>9</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>&lt;2</td>
<td>&lt;2</td>
<td>&lt;2</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td>Alkalinity HCO3</td>
<td>Barkland Culvert</td>
<td>446</td>
<td>120</td>
<td>135</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>484</td>
<td>171</td>
<td>383</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>209</td>
<td>67</td>
<td>126</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td>Alkalinity Total</td>
<td>Barkland Culvert</td>
<td>448</td>
<td>120</td>
<td>135</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>494</td>
<td>173</td>
<td>392</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>210</td>
<td>67</td>
<td>126</td>
<td>mg CaCO3/L</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Barkland Culvert</td>
<td>0.17</td>
<td>0.071</td>
<td>0.086</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>0.006</td>
<td>0.013</td>
<td>0.031</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Analyte</td>
<td>Sample Site</td>
<td>12/4/16</td>
<td>4/5/16</td>
<td>20/6/16</td>
<td>Units</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------------</td>
<td>---------</td>
<td>--------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.54</td>
<td>0.064</td>
<td>0.34</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Bromide</td>
<td>Barkland Culvert</td>
<td>3.9</td>
<td>&lt;0.5</td>
<td>0.3</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>3.5</td>
<td>0.8</td>
<td>0.7</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.4</td>
<td>&lt;0.5</td>
<td>0.2</td>
<td>mg/L</td>
</tr>
<tr>
<td>Ca Dissolved</td>
<td>Barkland Culvert</td>
<td>123</td>
<td>47</td>
<td>29.8</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>137</td>
<td>49.7</td>
<td>69.3</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>43.2</td>
<td>17.6</td>
<td>33.4</td>
<td>mg/L</td>
</tr>
<tr>
<td>Chloride</td>
<td>Barkland Culvert</td>
<td>1170</td>
<td>103</td>
<td>119</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>1000</td>
<td>294</td>
<td>223</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>107</td>
<td>45</td>
<td>74.5</td>
<td>mg/L</td>
</tr>
<tr>
<td>Fluoride</td>
<td>Barkland Culvert</td>
<td>&lt;0.5</td>
<td>0.11</td>
<td>&lt;0.10</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>&lt;0.5</td>
<td>&lt;0.20</td>
<td>&lt;0.20</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.32</td>
<td>0.17</td>
<td>0.18</td>
<td>mg/L</td>
</tr>
<tr>
<td>Ion Balance</td>
<td>Barkland Culvert</td>
<td>-1.6</td>
<td>-1.7</td>
<td>-1.7</td>
<td>% Difference</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>-0.6</td>
<td>0.3</td>
<td>1</td>
<td>% Difference</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>2.7</td>
<td>5.1</td>
<td>1.8</td>
<td>% Difference</td>
</tr>
<tr>
<td>K Dissolved</td>
<td>Barkland Culvert</td>
<td>43.7</td>
<td>16.4</td>
<td>13.1</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>44.7</td>
<td>17.5</td>
<td>32.4</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>47.6</td>
<td>26.6</td>
<td>20.1</td>
<td>mg/L</td>
</tr>
<tr>
<td>Mg Dissolved</td>
<td>Barkland Culvert</td>
<td>137</td>
<td>25.5</td>
<td>17.2</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>133</td>
<td>43.8</td>
<td>42.2</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>19.6</td>
<td>6.91</td>
<td>15.2</td>
<td>mg/L</td>
</tr>
<tr>
<td>Na Dissolved</td>
<td>Barkland Culvert</td>
<td>539</td>
<td>72.1</td>
<td>81.9</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>448</td>
<td>160</td>
<td>187</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>63.6</td>
<td>24.1</td>
<td>52.7</td>
<td>mg/L</td>
</tr>
<tr>
<td>Nitrate</td>
<td>Barkland Culvert</td>
<td>0.19</td>
<td>3.8</td>
<td>0.093</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>&lt;0.002</td>
<td>1.8</td>
<td>0.61</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.002</td>
<td>0.004</td>
<td>&lt;0.002</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Nitrate + Nitrite</td>
<td>Barkland Culvert</td>
<td>0.21</td>
<td>3.9</td>
<td>0.1</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>0.004</td>
<td>1.8</td>
<td>0.62</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.031</td>
<td>0.023</td>
<td>0.026</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Nitrite</td>
<td>Barkland Culvert</td>
<td>0.021</td>
<td>0.034</td>
<td>0.008</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>0.006</td>
<td>0.026</td>
<td>0.015</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.029</td>
<td>0.019</td>
<td>0.037</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Nitrogen, Total</td>
<td>Barkland Culvert</td>
<td>1.3</td>
<td>6.3</td>
<td>1.2</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>1</td>
<td>3.2</td>
<td>2</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>4.6</td>
<td>4.4</td>
<td>3.1</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Nitrogen, Total Kjeldahl</td>
<td>Barkland Culvert</td>
<td>1.1</td>
<td>2.4</td>
<td>1.1</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>1</td>
<td>1.4</td>
<td>1.4</td>
<td>mg-N/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>4.5</td>
<td>4.4</td>
<td>3.1</td>
<td>mg-N/L</td>
</tr>
<tr>
<td>Phosphorus, Dissolved Reactive</td>
<td>Barkland Culvert</td>
<td>0.029</td>
<td>0.023</td>
<td>0.011</td>
<td>mg-P/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>0.017</td>
<td>0.022</td>
<td>0.022</td>
<td>mg-P/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>0.17</td>
<td>0.17</td>
<td>0.14</td>
<td>mg-P/L</td>
</tr>
<tr>
<td>Phosphorus, Total</td>
<td>Barkland Culvert</td>
<td>0.06</td>
<td>0.07</td>
<td>0.05</td>
<td>mg-P/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>0.04</td>
<td>0.03</td>
<td>0.05</td>
<td>mg-P/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>1.8</td>
<td>1</td>
<td>0.88</td>
<td>mg-P/L</td>
</tr>
<tr>
<td>Sulphate</td>
<td>Barkland Culvert</td>
<td>61.8</td>
<td>129</td>
<td>46.5</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Creek V-notch weir</td>
<td>37</td>
<td>73.6</td>
<td>67.1</td>
<td>mg/L</td>
</tr>
<tr>
<td></td>
<td>Irrigation Head</td>
<td>5.6</td>
<td>11.7</td>
<td>42.9</td>
<td>mg/L</td>
</tr>
</tbody>
</table>
Commentary on monitoring results.

The unregulated parameter; Conductivity, has provided additional context and confirmation regarding the expected dilution effect of higher winter flows and vice versa for periods of low flow, with peaks in Conductivity corresponding with low flows between November and March (An inverse relationship).

Reported values of the regulated parameters; Total Oil and Grease (TOG) and Biological Oxygen Demand (5 day) were 100% below compliance thresholds given in Condition EF5 of EPN 7968/3. Reported values of the regulated parameter Total Suspended Solids was %100 below compliance threshold at the Bypass Creek V-notch weir, but non-compliant in the single sample collected from a Pond 9 weir overflow event. Reported values for the regulated parameter pH showed regular excursions above its upper threshold limit when measured at the Bypass Creek V-notch weir. Notably:

- pH was just compliant above the lower threshold (6.5) when measured at the Pond 9 overflow weir.
- All elevated pH excursions occurred during Spring/Summer conditions.

These excursions in pH were the trigger for the Investigation monitoring at the Irrigation Head, Barkland Culvert and Creek V-notch weir sites. The investigations coincided with regular monitoring schedule of Bypass Creek and examined both a comparison of the measurement system for the key regulated parameter of pH, comparing in-situ measurements to laboratory measures as well as measuring non-regulated water quality parameters.

The comparison of field measurements of pH to laboratory based measurements do not align to an acceptable extent, in that laboratory based measurements report exceedances over the regulatory threshold that are not reflected in the field measurements. Assuming that field measurements are undertaken with best practice quality assurance protocols, field measurements should be the preferred measurement method for this aspect. In this case, strong evidence presented above shows that excursions in water quality are being reported and responded to, that are not likely to be actually occurring in situ.

Examination of laboratory measurements for non-regulated water quality parameters shows that liquor with high levels of nutrients (N species and P species) and organic content and a neutral pH (pH 7) is being dispersed over the Long Reach Irrigation area. It also demonstrates that these nutrients are attenuated between the Irrigation dispersal area and the River Tamar, while pH levels rise to circa pH 8.3-8.5, particularly in summer.

Dissolved species that are indicative of salinity (Na, Cl, K) show low levels at the point of dispersal (Irrigation Head), some elevation at Barkland Culvert followed by further elevation at the V-notch weir site. This may be a function of Bypass Creek receiving water that has leached through saltwater contaminated landfill matrix, between the Barkland Culvert and the V-notch weir points. Logically, if dissolved salt species are entering the creek in this way, then other dissolved species emanating from the landfill would be too.

All of these factors support the observation that the pH shift is a function of photosynthetic activity in within the heavily modified Bypass Creek. While this treatment process may not be ‘best practice’, it
is at least effective in maintaining the Protected Environmental Values of the River Tamar from further significant eutrophication and organic loading. Further, the irrigation practice may be assisting remediation of the legacy waste landfill containing saltwater contaminated bark, via a very slow leaching process.

2.7.3 Noise Monitoring

Environmental noise surveys, examining noise levels in the Rowella receiving environment emanating from Long Reach Chip Mill were undertaken during October 2014 (Reported to Director EPA November 2014) and August 2015 (Reported to Director EPA October 2015). Both surveys followed a then-approved protocol, nevertheless both protocols were slightly different in approach and therefore offer somewhat reduced opportunity for direct temporal comparison.

Nevertheless, the outcome of both Surveys was to conclude that the Long Reach Mill facility was compliant to the then existing noise regulatory regime detailed in EPN 7968/3.

The 2015 report shows that in the future, as the regulatory regime thresholds are scheduled to reduce, it is reasonable to expect that compliance under a 'business as usual' scenario may not be as clear cut and that future compliance may be 'marginal' when other ambient noise levels diminish to the low levels that are known to occur in the Rowella region overnight.

The 2014 report also recommended that the 8:00am threshold between Day and Night time limits in EPN7968/3 be revised (at the next opportunity) as it does not reflect the anthropogenic nature of the environment. A more realistic day to night threshold would be 6:00am, to match traffic movements.
from both domestic residential properties and industries. The local industries include aquaculture and viticulture, both of which are associated with significant noise emissions, particularly early in the day from bird scarers (seasonal) and their industrial infrastructure.

The 2014 Report was authored by Forico utilising data gathered by Forico. The 2015 report was authored by Vipac Pty Limited utilising data gathered by Vipac.

Given that noise monitoring and interpretation is a highly technical process, with voluminous measurement data and statistics that are easily misunderstood, only a subset summary of the data observed during the 2015 Survey are presented here.

![Table 9 from the Long Reach chip mill Environmental noise survey - 2015 report, authored by Vipac Pty Ltd.](image)

Additionally, Figure 1 from the 2015 Report, showing measurement locations and the final conclusion and recommendations from the same report is also presented as a closing summary.
Conclusions and recommendations

1. Vipac conducted an environmental noise survey of the LRCM between 5 and 21 August 2015. All measurements were taken in accordance with the Tasmanian Noise Measurement Procedures Manual and measurement positions from the 2014 survey were utilised.

2. At positions 3 and 7 measured LAeq,10min levels were controlled by sources external to the LRCM. This was also the case at position 4 during the day and evening and at position 2, 5 and 6 during the day.

3. At positions 2, 5 and 6 during the evening and night and position 4 during the night LRCM noise emissions were dominant, chipper operations in particular. Measured LAeq,10min levels didn’t exceed EPN noise emission limits (applicable under condition N1(2), from 1 September 2015).

4. No potential breaches of the site EPN noise emission limits (applicable under condition N1(2), from 1 September 2015) were measured.

5. At position 6 during the evening LAeq,10min levels were in excess of the 40 dBA. Under EPN noise emission limits applicable from 1 September 2022 (conditions N1(3)) this would have constituted a potential breach (excluding frog activity). Observation during the survey suggests that weather conditions for this measurement assisted the transmission of noise to this location. This indicates that exceedances of 40 dBA from LRCM noise emissions are possible under the certain meteorological conditions at residential locations at the south-eastern end of Rowella.

NB: It should also be noted that there are residential locations that adjoin the Tamar River near to positions 5 and 6 that may have greater exposure to noise from the LRCM than the locations surveyed here. Access to these locations during the survey was not possible.

6. To reduce the potential for breaches of the 40 dBA EPN noise emission limit reduction of noise from chipper operations at the LRCM would be required. Consideration would need to be given to enclosing the chipper casing and silencing the throat and outfeed.
2.7.4 Activity Level

Activity level metrics for the full year are provided graphically below for:

- Monthly energy usage
- Annual totals for chip production and chip material handling and

Figure 26 Time series of monthly energy usage as Electricity (kWh) for the Long Reach Chip Mill during the period 5/9/14 to 30/6/1.
Table 5 Activity level - annual totals (tonnes) for hardwood chip production and softwood material handling, Long Reach Chip Mill for the period 5/9/14 to 30/6/16.

<table>
<thead>
<tr>
<th>Variable Label</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chip Production*</td>
<td>398,434</td>
<td>478,930</td>
</tr>
<tr>
<td>Toll Chip Handling</td>
<td>100,649</td>
<td>115,959</td>
</tr>
</tbody>
</table>

* Condition Q1 of EPN 7968/3 regulates the scale of the activity to 1 million tonnes per year of woodchips produced, thus actual production was <50% of this limit.
2.8 Summary of Environmental Commitments

The following table summarises environmental commitments made within this report.

<table>
<thead>
<tr>
<th>Strategic Priority</th>
<th>Category</th>
<th>Objective</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated Processing Facilities</td>
<td>Integrated modern Processing</td>
<td>Low cost / High quality production</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Integrated and coordinated approach to waste management. Establish approved waste management solutions across all processing facilities.</td>
</tr>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated Processing Facilities</td>
<td>Decommission Long Reach North Mill to ensure location is site ready for business development opportunity:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 1 – Removal of OCS stacking tower and associated infrastructure to manage identified safety risks. (Completed)</td>
<td></td>
</tr>
<tr>
<td>Goal 1 Priority 2</td>
<td>Integrated Processing Facilities</td>
<td>Engineering design for new chipper installation together with management of mill acoustics to enable compliance with EPN 7968/3 conditions N1 – N3.</td>
<td></td>
</tr>
</tbody>
</table>

Stage 2 – Decommission other site premises and infrastructure. (Commenced)
ENVIRONMENTAL AND SUSTAINABILITY POLICY

1 Purpose

Forico Pty Limited (Forico) is committed to sustainability and the responsible management of the environment. Forico respects and acknowledges the rights and interests of all those who live and work in the communities in which it operates. Forico will consult with and provide feedback to stakeholders, who are affected by or have interest in its business to achieve a balance between economic viability, social contribution and environmental and cultural heritage responsibility.

2 Scope

The Environmental and Sustainability Policy applies to all operations of Forico.

3 References

Forico Sustainable Forest Management Reports.
Forico Legal and Other Register.

4 Definitions

AFS:    Australian Forestry Standard.
FMU:  A clearly defined forest area with mapped boundaries managed by a single management unit.
FSC:    Forest Stewardship Council.
GMO:  Genetically Modified Organism. As defined by Commonwealth legislation.
HHC:  Highly Hazardous Chemical. Pesticides assessed against published technical indicators and associated thresholds.
ISO14001:  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.

5 Procedural Principles

Forico is committed to continuous improvement of its sustainable forest management performance through:

- Demonstrating compliance with all relevant legislation and other voluntary requirements, regulatory frameworks, permits and codes of practice;
- A process of regular review of the forest management system;
- Implementing and managing a robust integrated, systematic management system that complies with the PEFC recognised AFS, ISO14001, and FSC certification standards that can be audited independently;
- Not participating in forest conversion to plantations or non-forest land uses, unless required as a consequence of infrastructure development and maintenance;
- Optimising production of wood products from responsibly and sustainably managed plantation sources, maintaining long term capacity of forests and the land;
- Managing the entire forest estate for economic benefits whilst providing for maintaining social, biodiversity, soil and water, cultural, historical values;
- Identifying, maintaining and enhancing natural vegetation within the FMU for biodiversity and conservation values;
- Investigating alternative techniques to the use of chemical pesticides and fertilisers and develop a strategic and coordinated approach to manage invasive plants and diseases within the forest estate;
- Not applying HHC’s unless authorised through a temporary derogation;
- Not using GMO’s or research technology into the use of GMO’s;
- Providing appropriate training of employees to ensure skills and resources are provided in sustainable management practices;
- Ensuring suppliers and contractors share Forico’s commitment to sustainability and responsible environmental management;
- Proactively engaging and communicating in an open and transparent fashion with interested and affected stakeholders, the community and other parties or agencies;
- Minimising pollution, the generation of waste and facilitate carbon capture and manage efficient energy use;
- Providing a safe and healthy working environment for employees and contractors through identifying operational impacts to eliminate or control hazards through effectively managing risks.

Authorisation: Bryan Hayes – Chief Executive Officer/Director

Signature: 

Date: 3rd August 2015
### Scope of Audit: Forico Pty Limited sites to the requirements of AS/NZS 14001:2004, AS4707 & AS4708. (This summary filtered to include AS14001:2004 only).

Audit Date: August 2015.


<table>
<thead>
<tr>
<th>Account Name</th>
<th>Audit Date</th>
<th>NC No.</th>
<th>Status</th>
<th>Title</th>
<th>Description (Requirement, Failure and Evidence)</th>
<th>Focus Area</th>
<th>Category of Finding</th>
<th>Standard</th>
<th>Clause</th>
<th>DNV-Auditor’s Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC 01 Open</td>
<td>Compliance Review not interacting with identified requirements</td>
<td>Requirements: FPL shall implement ... a procedure(s) for periodically evaluating compliance with applicable legal requirements.</td>
<td>Non Conformance: FPL may not be evaluating compliance with all applicable legal and other requirements.</td>
<td>Evidence: FPL have (a) C8 ‘Evaluation of Compliance’ and (b) ‘Periodic Evaluation of Legal &amp; Other Requirements Compliance Schedule’. The former is a procedure, and the latter is, among other things, a form used by FPL managers to record FPL’s compliance with the matters listed on the Schedule. Neither interacts with the arrangements that FPL have in place (the Aspects Register and the Envirolaw service) to identify ‘applicable legal requirements’. There may be some applicable legal requirements that are not being evaluated.</td>
<td>Criterion 1 – Systematic Management</td>
<td>CAT2 (Minor)</td>
<td>AS4708:2013/ISO14001</td>
<td>1.4 4.5.2 Evaluation of compliance</td>
</tr>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC 02 Open</td>
<td>Emergency Response and Environmental Impact mitigation</td>
<td>Requirements: FPL shall ... implement ... a procedure(s) to identify potential emergency situations and potential accidents that can have an impact(s) on the environment and how it will respond to them. [...] shall respond to actual emergency situations and accidents and prevent or mitigate associated adverse environmental impacts.</td>
<td>Non Conformance: FPL may not have identified all emergency situations nor planned the mitigation of all environmental impacts.</td>
<td>Evidence: 1. At the nursery, the occurrence of Myrtle Rust is an anticipated emergency that has not been identified in the Nursery's Emergency Response Plan. 2. At Surrey Hills, the Emergency Response Plan does not document the actions to be taken to mitigate the environmental impacts of all emergencies, eg. contaminated fire-water' caused by on-site fire fighting.</td>
<td>Criterion 1 – Systematic Management</td>
<td>CAT2 (Minor)</td>
<td>AS4708:2013/ISO14001</td>
<td>1.3 4.4.7 Emergency preparedness and response</td>
</tr>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC 03 Open</td>
<td>FMP: EMS not interacting with Aspects</td>
<td>FPL use a complicated method to identify unique Environmental Impacts. In some instances the data in 3 separate columns of the Register need to be referred to. This does not facilitate the interaction of these Environmental Impacts with other elements of the EMS.</td>
<td>Evidence: 1. The Plan does not document the actions to be taken to mitigate the environmental impacts of all emergencies, eg. contaminated fire-water' caused by on-site fire fighting.</td>
<td>Criterion 1 – Systematic Management</td>
<td>Observation</td>
<td>AS4708:2013/ISO14001</td>
<td>1.2 4.3.1 Environmental aspects</td>
<td>RES</td>
</tr>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC 04 Open</td>
<td>Information on Legal &amp; Other Requirements is not specific</td>
<td>FPL have in place a number of elements that comprise its method for identifying Legal &amp; Other Requirements. The Aspects and Impacts Register provides an index and signpost to the repository of a requirement relevant to an Environmental Aspect. But does not detail what the requirement is. FPL also subscribe to Envirolaw and SafetyLaw subscription services which are compendiums containing Legal &amp; Other requirements. But these do not show how the requirements relate to the Environmental Aspects. The register information contains insufficient detail and the subscriptions contain too much that is not relevant.</td>
<td>Evidence: FPL at LRM have a program of inspecting and maintaining the oily-water triple interceptor at the vehicle wash down bay. This process is not documented, there is not documented relevant competency for this task and records are not kept.</td>
<td>Criterion 1 – Systematic Management</td>
<td>Observation</td>
<td>AS4708:2013/ISO14001</td>
<td>1.2 4.3.2 Legal and other environmental requirements</td>
<td>RES</td>
</tr>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC 05 Open</td>
<td>LRM Triple Interceptor Inspections</td>
<td>FPL at LRM have a program of inspecting and maintaining the oily-water triple interceptor at the vehicle wash down bay. This process is not documented, there is not documented relevant competency for this task and records are not kept.</td>
<td></td>
<td></td>
<td></td>
<td>AS4708:2013/ISO14001</td>
<td>4.5.1 Monitoring and measurement</td>
<td>RES</td>
</tr>
<tr>
<td>Account Name</td>
<td>Audit Date</td>
<td>NC No.</td>
<td>Status</td>
<td>Title</td>
<td>Description (Requirement, Failure and Evidence)</td>
<td>Focus Area</td>
<td>Category of Finding</td>
<td>Standard</td>
<td>Clause</td>
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</tr>
<tr>
<td>Forico Pty Limited</td>
<td>2015-Aug-10</td>
<td>RC_11</td>
<td>Open</td>
<td>Storage of small Flammable Goods</td>
<td>At LRM storeroom FPL have on placarded shelves a variety of small amounts of flammable goods of Classes DG2 &amp; 3. At Surrey Hills Mill, such materials are being stored in a dedicated Flammable Goods cabinet and this is a good example of an appropriate level of control.</td>
<td>Observation</td>
<td>ISO 14001:2004</td>
<td>4.4.6</td>
<td>RES</td>
<td></td>
</tr>
<tr>
<td>2015-Aug-10</td>
<td>NA</td>
<td></td>
<td>Intensive and effective review</td>
<td>The processes that Forico have established and are implementing of constant review based on thorough monitoring are providing an excellent driver of continual improvement. The involvement of top management and the provision of resources are integrated in a highly effective manner with the review process.</td>
<td>Criterion 1 - Systematic Management</td>
<td>Noteworthy Effort</td>
<td>AS4708:2013/ISO14001</td>
<td>1.5</td>
<td>4.4.1 &amp; 4.6</td>
<td>RES</td>
</tr>
</tbody>
</table>
MANAGEMENT SYSTEM CERTIFICATE


This is to certify that the management system of

Forico Pty Limited
10 Techno Park Drive, Kings Meadow Tasmania 7250

has been found to conform to the Environmental Management System standard:

AS/NZS ISO 14001:2004

This certificate is valid for the following scope:

Sustainable forest management activities of hardwood and softwood plantations within the defined forest area over which Forico Pty Limited has management control.

Coverage includes planning and management of nursery and tree improvement operations, plantation establishment and maintenance, roading, quarry works, harvesting, extraction, transportation, and processing of forest products.

Natural forest within the defined forest area will be managed for non-wood production values.

Place and date:
Sydney, 24, August, 2015

For the issuing office:
DNV-GL Business Assurance
Level 7, 124 Walker Street
North Sydney NSW 2060
Australia

Yngve Amundsen  
Management Representative

Accreditation by the joint accreditation system of Australia and New Zealand, Acc e 1590196 AS  
Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid. Refer to appendix for current certificate site address.  
URL: www.jas-anz.org/register  
ACCREDITED UNIT: DNV GL Business Assurance Australia Pty Limited, Level 7, 124 Walker Street, North Sydney NSW 2060, Australia.  
TEL:+61 299 00 9500. www.dnvba.com.au
15 October 2014

Mr James Davies
Chairman
Forico Pty Limited
Level 23, 141 Walker Street
NORTH SYDNEY NSW 2060

Dear Mr Davies,

TRANSFER OF ENVIRONMENT PROTECTION NOTICES 7476/2 & 7968/2
WOOD CHIP MILLS – HAMPSHIRE AND LONG REACH

In accordance with Section 45A of the Environmental Management & Pollution Control Act 1994 (EMPCA), the attached Environment Protection Notices (EPNs) are hereby served upon Forico Pty Limited, being the person responsible for the wood chip mills situated at 2753 Ridgley Highway, Hampshire and 3523 East Tamar Highway, Long Reach, Tasmania.

EPNs Nos. 7476/2 and 7968/2 are hereby amended in accordance with section 45A(1) of EMPCA by substituting the name of the person to whom these EPNs were issued with the following:

Forico Pty Limited (ACN 169 204 059)
Level 23, 141 Walker Street
NORTH SYDNEY NSW 2060

The attached EPNs will hereinafter be identified as EPN No. 7476/3 for the Hampshire mill and 7968/3 for the Long Reach mill.

The EPNs take effect on the day on which they are served. In accordance with section 44(3) of the EMPCA, you are required to comply with the conditions contained in Schedule 2 of the EPNs.

Please note that each of these level 2 activities attract an annual permit fee, which is payable in advance.

If you have any queries regarding this correspondence, please contact this office using the details at the head of this correspondence.

Yours sincerely

John Mollison
Delegate for the Director, Environment Protection Authority

Encl: EPNs 7476/3 and 7968/3.

cc: Mr Bryan Hayes, Chief Executive Officer & Executive Director, Forico Pty Limited, PO Box 5316, LAUNCESTON TAS 7250
ENVIRONMENT PROTECTION NOTICE No. 7968/2

Issued under the Environmental Management and Pollution Control Act 1994

Issued to:

- GUNNS LIMITED (RECEIVERS AND MANAGERS APPOINTED) (IN LIQUIDATION)
  AGN 009 428 148
  233B CHARLES ST
  LAUNCESTON TAS 7250
- FORICO PTY LIMITED
  ACN 169 204 059
  LEVEL 23 141 WALKER STREET
  NORTH SYDNEY NSW 2060

Environmentally relevant activity: The operation of a woodchip mill (ACTIVITY TYPE: Woodchip Mills)
Relevant Activity: LONG REACH CHIP MILL, 3523 EAST TAMAR HWY

GROUNDs

I, Alex Schap, Director, Environment Protection Authority, being satisfied in accordance with section 44(1)(d) of the Environmental Management and Pollution Control Act 1994 (the BMPCA) and in relation to the above-mentioned environmentally relevant activity that it is desirable to vary the conditions of a permit (see table below) hereby issue this environment protection notice to the above-mentioned person as the person responsible for the activity.

<table>
<thead>
<tr>
<th>Permit No.</th>
<th>Date Granted</th>
<th>Granted By</th>
</tr>
</thead>
<tbody>
<tr>
<td>3370</td>
<td>19 October 1995</td>
<td>Director of Environmental Management</td>
</tr>
<tr>
<td>3428</td>
<td>04 August 1993</td>
<td>Director of Environmental Control</td>
</tr>
</tbody>
</table>

PARTICULARS

The particulars of the grounds upon which this notice is issued are:

1. The permitted quantity of materials processed and/or produced by the activity needs to be varied to reflect future production levels.

2. The permit conditions need to be varied and consolidated to reflect current or updated terminology and/or to clarify the meaning of the conditions and to ensure that there are adequate safeguards against environmental harm or nuisance being caused by the activity.

3. The permit noise conditions need to be varied to require a progressive reduction in noise emissions from the activity and to require noise surveys.

4. The permit conditions need to be varied to provide clarity and to ensure the appropriate management of stormwater.

5. The permit conditions need to be varied to reflect continuous improvement consistent with the objectives of BMPCA.

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY
DEFINITIONS

Unless the contrary appears, words and expressions used in this Notice have the meaning given to them in Schedule 1 of this Notice and in the EMPA. If there is any inconsistency between a definition in the EMPA and a definition in this Notice, the EMPA prevails to the extent of the inconsistency.

REQUIREMENTS

In accordance with s.44(3) of the EMPA, the person responsible for the activity is required to comply with the conditions contained in Schedule 2 of this Notice. These conditions prevail over the terms of the permit to the extent of any inconsistency.

INFORMATION

Attention is drawn to Schedule 3, which contains important additional information.

PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice, that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding 1000 penalty units in the case of a body corporate or 500 penalty units in any other case (at the time of issuance of this Notice one penalty unit is equal to $130.00).

NOTICE TAKES EFFECT

This Notice takes effect on the date on which it is served upon you.

APPEAL RIGHTS

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in the notice, within 14 days from the date on which the notice is served, by writing to:

The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
Hobart TAS 7001

Signed: [Signature]
DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date: 6 NOV 2015
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Attachment 4: Site Locations Map (modified: 20/08/2013 14:42). .................................................. 1 page
Schedule 1: Definitions

Activity means any environmentally relevant activity (as defined in Section 3 of BEMPCA) to which this document relates, and includes more than one such activity.

Authorized Officer means an authorized officer under section 20 of BEMPCA.

Control Location (Noise) means a location chosen to represent the general ambient sound without contribution from noise sources at the activity.

Controlled Waste has the meaning described in Section 3(1) of BEMPCA.

Decommissioning and Rehabilitation Plan means the Initial Decommissioning and Rehabilitation Plan for the Gunns Ltd Tamor North and South Woodchip Mills, dated August 2006, and includes any amendment to or substitution of this document(s), approved in writing by the Director.

Director means the Director, Environment Protection Authority holding office under Section 18 of BEMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

DRP means Decommissioning and Rehabilitation Plan.

EMP means the Environmental Management Plan Review Report - Gunns Limited Tamor Operations prepared by Gunns Limited dated October 2003 and includes any amendment to or substitution of this document(s), including an EMP Operations, approved in writing by the Director.


Environmental Harm and Material Environmental Harm and Serious Environmental Harm each have the meanings ascribed to them in Section 5 of BEMPCA.

Environmental Nuisance and Pollutant each have the meanings ascribed to them in Section 3 of BEMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils and chemicals.

Noise-Sensitive Premises means residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

Nominated Sewage Treatment Plant Monitoring Point means the location at the input to the effluent pipeline from the South Mill sewage treatment plant, as delineated in Attachment 4.

Nominated Wastewater Monitoring Point means the location at the y-notch weir in Bypass Creek downstream of the irrigation system and wetlands overflow, as delineated in Attachment 4.

North Mill means the portion of The Land delineated in Attachment 1, and covered by Title Reference 136962/4 as shown in Attachment 2, of this Notice.

North Mill's Pond System means the system of ponds identified in Attachment 3 of this Notice.

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of Issue: 6 NOV 2013
Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Reporting Period means the 12 months ending on 30 June of each year.

Sewage Treatment Plant means the sewage treatment plant shown in Attachment 4 of this Notice.

South Mill means the portion of The Land delineated in Attachment 1, and covered by Title Reference 136962/2 as shown in Attachment 2, of this Notice.

Stormwater means water traversing the surface of the land as a result of rainfall.


The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

1. The map shown in Attachment 1 - The Land; and
2. Certificate of Title References 136962/1, 136962/2 and 128436/1 - Attachment 2.

Waste has the meaning ascribed to it in Section 3 of BPMCA.

Wastewater means spent or used water (whether from industrial or domestic sources) containing a pollutant and includes stormwater which becomes mixed with wastewater.

Wood Waste means any planings, shavings, sawdust, woodfibre and dockings produced by the activity, but does not include treated timber or timber contaminated with other wastes.
Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits
   1 The activity must not exceed the following limits (annual fees are derived from these figures):
      1.1 1,000,000 tonnes per year of woodchips produced.

General

G1 Access to and awareness of conditions and associated documents
   A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G2 Incident response
   If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G3 No changes without approval
   1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the Land Use Planning and Approvals Act 1993, or approved in writing by the Director:
      1.1 a change to a process used in the course of carrying out the activity; or
      1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or
      1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G4 Change of ownership
   If the person responsible for the activity is not the owner of The Land upon which the activity is carried out and the owner of The Land changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change, the person responsible must notify the Director in writing of the change of ownership.

G5 Annual Environmental Review
   1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:
      1.1 a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of Issue: 6 Nov 2013
1.2 subject to the Personal Information Protection Act 2004, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm caused by the activity and a description of any actions taken as a result of those complaints;

1.3 details of environment-related procedural or process changes that have been implemented during the reporting period;

1.4 a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;

1.5 details of all non-trivial environmental incidents and/or incidents of non-compliance with permit or environment protection notice conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;

1.6 a summary of the monitoring data and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;

1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in any relevant DPEMP or BMP, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;

1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;

1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments;

1.10 a summary of any community consultation and communication undertaken during the reporting period; and

1.11 strategic consideration of potential changes to the activity during the next 12 months that may have potential environmental impacts.

G6 Complaints register

1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

1.1 the time at which the complaint was received;

1.2 contact details for the complainant (where provided);

1.3 the subject-matter of the complaint;

1.4 any investigations undertaken with regard to the complaint; and

1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.

2 Complaint records must be maintained for a period of at least 3 years.

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G7 Environmental Management Plan (EMP)
If required in writing by the Director, a revised BMP document must be prepared and submitted to the Director for approval by a date to be specified by the Director.

Atmospheric
A1 Covering of vehicles
Vehicles carrying loads containing material which may blow or spill must be equipped with effective control measures to prevent the escape of the materials from the vehicles when they leave The Land or travel on public roads. Effective control measures may include tarps and load dampening.

A2 Dust emissions from traffic areas
Dust emissions from areas of The Land used by vehicles must be limited or controlled by dampening or by other effective measures.

A3 Storage stockpiles
Product storage stockpiles on The Land must be centred and maintained so as to minimize loss of woodblown chips and fine particles of wood fibre.

A4 Restrictions for burning on-site
Unless otherwise approved in writing by the Director, burning of sawdust, wood chips and other wood wastes must not be undertaken on The Land except in a boiler approved for this purpose.

Effluent
EF1 North Mill process water and stormwater
1 All process water from the North Mill and stormwater from the contaminated stormwater catchment area of the North Mill, as shown in Attachment 3 of this Notice, must be directed to the North Mill’s Pond system prior to transfer to the South Mill’s wastewater treatment facilities, excluding uncontaminated stormwater from:
   1.1 the main car park area and roofs of the technical service buildings; and
   1.2 the area immediately to the east and southeast of the North Mill log yard.

EF2 South Mill process water and stormwater
1 In addition to the wastewater collected from the North Mill, all process water and stormwater from the South Mill must be treated in the South Mill wastewater treatment facilities prior to discharge to the Tamar, excluding:
   1.1 runoff from the former bark disposal area which is directed to the Tamar River via the creek that drains that area; and
   1.2 uncontaminated stormwater collected from the area immediately to the northeast of the South Mill log yard.

EF3 Sewage treatment
All untreated sewage from the North Mill must be pumped via the North Mill sewage transfer system to the South Mill sewage treatment plant. All untreated sewage from the South Mill, excluding sewage from the wharf facility and the visitor centre, which in each case must be directed to nearby septic tanks, must also be directed to the South Mill sewage treatment plant.
EF4. Treated wastewater and sewage discharge points
1. Sewage must not be discharged other than via the purpose-built discharge drains, pipelines and submarine outfall facilities from the final treatment pond and from the sewage treatment plant, located on the South Mill.
2. Waste water must not be discharged other than via the purpose-built discharge drains, pipelines and submarine outfall facilities from the final treatment pond and from the sewage treatment plant, located on the South Mill.
3. Pollutants must not be based or otherwise released into stormwater or other drains that do not lead to an appropriate treatment facility.

EF5. Discharge limits
The concentration in the water discharged from The Land of a pollutant specified in Column 1 must not exceed the limit specified in Column 2 in respect of that pollutant.

<table>
<thead>
<tr>
<th>Column 1: Specified Substance</th>
<th>Column 2: Maximum Concentration or range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand (BOD₅)</td>
<td>40 mg/L</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>60 mg/L</td>
</tr>
<tr>
<td>Oil and Grease</td>
<td>10 mg/L</td>
</tr>
<tr>
<td>pH</td>
<td>6.5-8.5</td>
</tr>
<tr>
<td>Enterococci</td>
<td>200 cfs per 100mL</td>
</tr>
</tbody>
</table>

EF6. Maintenance of settling ponds
Sediment settling ponds must be periodically cleaned out to ensure that the pond design capacity is maintained. Sediment removed during this cleaning must be securely deposited such that sediment will not be transported off The Land by surface run-off.

Hazardous Substances

H1. Storage and handling of hazardous materials
1. Unless otherwise approved in writing by the Director, all environmentally hazardous materials, including all chemicals, fuels, and oils, held on The Land in volumes exceeding 250 litres must be stored and handled in accordance with the following:
   1.1 Any storage facility must be contained within a spill collection bund with a net capacity of whichever is the greater of the following:
      1.1.1 at least 110% of the combined volume of any interconnected vessels within that bund; or
      1.1.2 at least 110% of the volume of the largest storage vessel; or
      1.1.3 at least 25% of the total volume of all vessels stored in that spill collection bund; or
      1.1.4 the capacity of the largest tank plus the output of any firefighting system over a twenty minute period.
   1.2 All activities that involve a significant risk of spillages, including the loading and unloading of bulk materials, must take place in a bunded containment area or on a transport vehicle loading apron.
   1.3 Bunded containment areas and transport vehicle loading aprons must:
      1.3.1 be made of materials that are impervious to any environmentally hazardous material stored within the bund;
1.3.2 be graded or drained to a sump to allow recovery of liquids;
1.3.3 be chemically resistant to the chemicals stored or transferred;
1.3.4 be designed and managed such that any leakage or spillage is contained within the bunded area (including where such leakage emanates vertically higher than the bund wall);
1.3.5 be designed and managed such that the transfer of materials is adequately controlled by valves, pumps and meters and other equipment wherever practical. The equipment must be adequately protected (for example, with bollards) and contained in an area designed to permit recovery of any released chemicals;
1.3.6 be designed such that chemicals which may react dangerously if they come into contact have measures in place to prevent mixing; and
1.3.7 be managed such that the capacity of the bund is maintained at all times (for example, by regular inspections and removal of obstructions).

II2 Hazardous materials (<250 litres)
Unless otherwise approved in writing by the Director, each environmentally hazardous material, including chemicals, fuels and oils, held on The Land in discrete volumes not exceeding 250 litres, but not including discrete volumes of 25 litres or less, must, as far as practical and to the reasonable satisfaction of the Director, be located within bunded areas or spill trays which are designed to contain at least 110% of the volume of the largest container.

II3 Spill kits
Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spill environmentally hazardous materials.

II4 Inventory of hazardous materials
An inventory must be kept of all environmentally hazardous materials stored and handled on The Land. The inventory must specify the location of storage facilities and the maximum quantities of each environmentally hazardous material likely to be kept in storage and must include material safety data sheets for those environmentally hazardous materials.

Monitoring
M1 Dealing with samples obtained for monitoring
1 Any sample or measurement required to be obtained under these conditions must be taken and processed in accordance with the following:

1.1 Australian Standards, NATA approved methods, the American Public Health Association Standard Methods for the Analysis of Water and Waste Water or other standard(s) approved in writing by the Director;
1.2 measurement equipment must be maintained and operated in accordance with the manufacturer's specifications;
1.3 samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a laboratory approved in writing by the Director, for the specified test;
1.4 results of measurements and analysis of samples and details of methods employed in taking measurements and samples must be retained for at least three years after the date of collection; and
1.5 noise measurements must be undertaken in accordance with the Tasmanian Noise Measurement Procedures Manual.

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M2 Sewage treatment plant discharge monitoring
Representative samples must be collected from the nominated sewage treatment plant monitoring point, as shown in Attachment 4, and must be analysed for the parameters specified in Column 1 and reported in the units specified in Column 2 at the frequency specified in Column 3.

<table>
<thead>
<tr>
<th>Column 1 Specified Substances</th>
<th>Column 2 Units</th>
<th>Column 3 Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand (BOD₅)</td>
<td>mg/L</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>mg/L</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Enterococci</td>
<td>CFU/100mL</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

M3 Wastewater monitoring
Representative samples must be collected from the nominated wastewater monitoring point, as shown in Attachment 4, and must be analysed for the parameters specified in Column 1 and reported in the units specified in Column 2 at the frequency specified in Column 3.

<table>
<thead>
<tr>
<th>Column 1 Specified Substances</th>
<th>Column 2 Units</th>
<th>Column 3 Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand (BOD₅)</td>
<td>mg/L</td>
<td>Monthly</td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>mg/L</td>
<td>Monthly</td>
</tr>
<tr>
<td>pH</td>
<td>units</td>
<td>Monthly</td>
</tr>
<tr>
<td>Oil and Grease</td>
<td>mg/L</td>
<td>Monthly</td>
</tr>
<tr>
<td>Conductivity</td>
<td>µS/cm</td>
<td>Monthly</td>
</tr>
</tbody>
</table>

M4 Investigation monitoring
1 In the event that any of the discharge limits specified in this Notice are exceeded:
   1.1 The Director must be notified within 24 hours of the person responsible becoming aware of the exceedance;
   1.2 A report must be forwarded to the Director within 30 days of becoming aware of the exceedance. The report must include, but not necessarily be limited to, the following:
      1.2.1 the reported concentration;
      1.2.2 an explanation as to why the discharge limit was exceeded;
      1.2.3 the results of re-sampling of the nominated monitoring point/s at which the exceedance was recorded; and
      1.2.4 strategies to limit the concentration to less than the discharge limit.
   1.3 The strategies, as amended from time to time with the approval of the Director, must be implemented.

Noise Control
N1 Noise emission limits
1 Until 1 September 2015 noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

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1.1 55 dB(A) between 0800 hours and 1800 hours (Day time); and
1.2 50 dB(A) between 1800 hours and 2200 hours (Evening time); and
1.3 45 dB(A) between 2200 hours and 0800 hours (Night time).
2 Unless otherwise approved in writing by the Director, at all times after 1 September 2015, noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:
   2.1 50 dB(A) between 0800 hours and 1800 hours (Day time); and
   2.2 45 dB(A) between 1800 hours and 2200 hours (Evening time); and
   2.3 40 dB(A) between 2200 hours and 0800 hours (Night time).
3 Notwithstanding the above, unless otherwise approved in writing by the Director, at all times after 1 September 2022, noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:
   3.1 45 dB(A) between 0800 hours and 1800 hours (Day time); and
   3.2 40 dB(A) between 1800 hours and 2200 hours (Evening time); and
   3.3 40 dB(A) between 2200 hours and 0800 hours (Night time).
4 Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise levels by at least 5 dB(A).
5 The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified by the Director.
6 Measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the Tasmanian Noise Measurement Procedures Manual.
7 All methods of measurement must be in accordance with the Tasmanian Noise Measurement Procedures Manual, issued by the Director.

N2 Noise survey requirements
1 Unless otherwise approved by the Director, a noise survey must be carried out:
   1.1 within 12 months from the date on which these conditions take effect and annually thereafter.

N3 Noise survey method and reporting requirements
1 Noise surveys must be undertaken in accordance with a survey method approved in writing by the Director, as may be amended from time to time with written approval of the Director.
2 Without limitation, the survey method must address the following:
   2.1 measurements must be carried out at day, evening and night times (where applicable) at each location; and
   2.2 measurement locations, and the number thereof, must be specified, with one location established as a control location (noise).
3 Measurements and data recorded during the survey must include:
   3.1 operational status of noise producing equipment and throughput of the activity;
   3.2 subjective descriptions of the sound at each location;
   3.3 details of meteorological conditions relevant to the propagation of noise;
3.4 the equivalent continuous ($L_{eq}$) and $L_{min}$, $L_{max}$, $L_{mean}$ and $L_{peak}$ A-weighted sound pressure levels measured over a period of 10 minutes or an alternative time interval approved by the Director;
3.5 one-third octave spectra over suitably representative periods of not less than 1 minute; and
3.6 narrow-band spectra over suitably representative periods of not less than 1 minute.
4 A noise survey report must be forwarded to the Director within 30 days from the date on which the noise survey is completed.
5 The noise survey report must include the following:
   5.1 the results and interpretation of the measurements required by these conditions;
   5.2 a map of the area surrounding the activity with the boundary of The Land, measurement locations, and noise sensitive premises clearly marked on the map;
   5.3 any other information that will assist with interpreting the results and whether the activity is in compliance with these conditions and EMPCA; and
   5.4 recommendations of appropriate mitigation measures to manage any noise problems identified by the noise survey.

N4 Log drops
Log being unloaded from a vehicle and/or stockpile must not be dropped directly onto the ground.

Rehabilitation

R1 Notification of cessation
Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

R2 Decommissioning and Rehabilitation Plan
1 Unless otherwise approved in writing by the Director, a revised Decommissioning and Rehabilitation Plan (DRP) must be submitted to the Director for approval:
   1.1 when changes to the conduct of the activity are to occur that will result in significant changes to decommissioning and rehabilitation obligations; and
   1.2 within 30 days of the Director being notified of the likely cessation of operations; and
   1.3 where required by notice in writing, by a date specified in writing by the Director.
2 The DRP must be prepared in accordance with guidelines issued by the Director. If no guidelines have been issued by the Director the measures described in this plan must include, but should not necessarily be limited to, the following:
   2.1 completion of a site history, site contamination assessment and contamination remediation plan (including consideration of groundwater);
   2.2 removal of all equipment, structures and waste materials unless they are considered by the Director to be beneficial to a future use of The Land;
   2.3 grading and levelling/contouring and revegetation (or other approved method of soil stabilisation) of the surface of the disturbed area;
   2.4 management of drainage on The Land so as to reduce erosion and prevent release of a pollutant from The Land;
   2.5 maintenance of the rehabilitated area for a period of not less than three years from the date of cessation of operations;

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2.6 an itemised estimate of the costs of carrying out the works listed in the DRP and a statement of how these costs will be provided for; and
2.7 any other detail requested in writing by the Director.

R3 Rehabilitation following cessation
1 Following permanent cessation of the activity, and unless otherwise approved in writing by the Director, The Land must be rehabilitated including:
1.1 stabilisation of any land surfaces that may be subject to erosion;
1.2 removal or mitigation of all environmental hazards or land contamination, that might pose an on-going risk of causing environmental harm; and
1.3 decommissioning of any equipment that has not been removed.
2 Where a Decommissioning and Rehabilitation Plan (DRP) has been approved by the Director, decommissioning and rehabilitation must be carried out in accordance with that plan.

R4 Temporary suspension of activity
1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.
2 During temporary suspension of the activity:
2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and
2.2 If required by the Director, the person responsible must prepare and implement a Care and Maintenance Plan to the satisfaction of the Director.
3 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

Waste Management

WM1 Controlled waste transport
Transport of controlled wastes to and from The Land must be undertaken only by persons authorised to do so under EMPCA or subordinate legislation.
Schedule 3: Information

Legal Obligations

LO1 EMPCA
The activity must be conducted in accordance with the requirements of the Environmental Management and Pollution Control Act 1994 and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of these requirements.

LO2 Storage and handling of Dangerous Goods, Explosives and dangerous substances
1 The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:
1.1 Work Health and Safety Act 2012 and subordinate regulations;
1.2 Explosives Act 2012 and subordinate regulations; and
1.3 Dangerous Goods (Road and Rail Transport) Act 2010 and subordinate regulations.

LO3 Change of responsibility
If the person responsible for the activity ceases to be responsible for the activity, they must notify the Director in accordance with Section 45 of the EMPCA.

Other Information

OI1 Notification of incidents under section 32 of EMPCA
Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

OI2 Waste management hierarchy
1 Wastes should be managed in accordance with the following hierarchy of waste management:
1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;
1.2 waste should be re-used or recycled to the maximum extent that is practicable; and
1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.
ATTACHMENT 1
The Land
ATTACHMENT 3
North Mill Water Drainage Plan