ENVIRONMENT IMPROVEMENT PLAN

CENTRAL VICTORIA LIVESTOCK EXCHANGE

PREPARED BY:

REGIONAL INFRASTRUCTURE PTY LTD

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1.1	24/08/16	Minor edits – draft for client review	M Haege/Geolyse	
2.0	25/08/16	Draft for submission with Development Plan	M Haege/Geolyse	
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5.0	6/7/18	Edits following EPA review.	M Haege/Geolyse	
6.0	20/9/18	Edits following EPA review. Final for operations.	M Haege/Geolyse	
7.0	10/10/18	Added wind speed definition in Section 5.9. Definition of odour strength in Section 5.10.	M Haege/Geolyse	

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ABBREVIATIONS

BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
cfu	Colony Forming Units
CVLX	Central Victoria Livestock Exchange
dm	Dry matter
EC	Electrical conductivity
EIP	Environment Improvement Plan
EPA	Environment Protection Authority
ha	Hectare
kL	Kilolitres (1,000 litres)
L	Litre
mg/L	Milligrams per litre
mL	Millilitre
ML	Megalitre (1,000,000 litres)
mm	Millimetre
RIPL	Regional Infrastructure Pty Ltd
t	Tonnes
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids

ENDORSEMENT

This Environment Improvement Plan (EIP) is a living document and sections of it will be periodically updated. Some sections of the EIP, such as the commissioning plans and initial noise and dust monitoring, will become obsolete and be removed after individual action items are completed and signed off. Other sections, such as Operational Procedures, will continue to grow if new initiatives are implemented and new procedures and responsibilities emerge.

For these reasons, document control is an important part of our environmental management system. It is critical that we always know who holds copies of the EIP (or individual sections of it), and that only the latest version is in use. Details of the version are recorded on each page of the EIP.

Revised and updated versions of the EIP will always be issued with a covering memo summarising the changes. When you receive a new insert, the old version is to be replaced.

In summary, this EIP is a functional document. It is meant to help personnel at the Central Victoria Livestock Exchange undertake their tasks with minimal environmental risk and understand their environmental responsibilities.

The structure and scope of this EIP reflects the requirements of EPA publication 739 *Guidelines for the Preparation of Environment Improvement Plans*, and in so doing, embodies the principles of best practice environmental management.

Through using this EIP, we will be able to improve, monitor and demonstrate our environmental performance. If you have any suggestions for amendments, additions or improvements, please discuss these with your supervisor

Regional Infrastructure Pty Ltd senior management and site management endorse this EIP to confirm their understanding of the plan's environmental management strategies and procedures, and to demonstrate commitment to the implementation of the EIP. Signatories are provided below.

EIP Endorsement

Date	Name	Position	Signature
		Company Executive (RIPL)	
		Site Manager (RIPL)	

Introduction

1.1 THE FACILITY

The Central Victoria Livestock Exchange (CVLX) is a regional cattle and sheep selling centre located approximately 10 kilometres north-west of Ballarat in Victoria. The CVLX is a state-of-the-art facility that provides livestock marketing and saleyard services for the Ballarat district and regional areas of central Victoria.

The CVLX is operated by Regional Infrastructure Pty Ltd.

1.2 EIP OBJECTIVES

This Environment Improvement Plan (EIP) provides operating procedures and an environmental management plan that establishes a commitment to environmental performance at the Central Victoria Livestock Exchange (CVLX).

The objectives of this EIP are to:

- comply with applicable environmental legislation;
- identify and manage environmental risk;
- comply with RIPL environmental guidelines and requirements;
- ensure all environmental safeguards are implemented correctly; and
- monitor, review and report on the environmental impact.

The EIP has been prepared in accordance with the EPA Victoria publication *Guidelines for the preparation of Environmental Improvement Plans* (Publication 739, June 2002) and prepared for the reuse scheme (irrigation scheme) in accordance with the *Guidelines for Environmental Management – Use of Reclaimed Water (2002)* (EPA publication 464), specifically using Appendix E of this document to inform the structure and content of the EIP.

1.3 EIP CONTEXT

The environmental assessment for the CVLX confirmed that the facility can operate with low risk to the environment subject to ongoing management and monitoring. Design features have been incorporated to facilitate recycling and reuse of resources and to manage environmental risk.

The starting premise for this EIP is that there is nothing to “improve”. It therefore outlines how each environmental risk is managed, monitored and reported.

RIPL will adopt an adaptive management approach for environmental management at CVLX. This provides a systematic approach for improving environmental management by predicting the outcomes of management activities and then strategically monitoring the actual outcomes to gather information to improve future management.

If the environmental monitoring program indicates that some component of the operation is not performing as predicted there may be a need to add improvement programs to this EIP. These would be developed and added to this EIP as required.

1.4 EIP STRUCTURE

The EIP contains seven sections as described below in **Table 1.1**.

Table 1.1 – EIP Structure

Section	Purpose
Section 1 – Introduction	Identifies the purpose of the EIP and structure.
Section 2 – Environmental Management	Outlines the RIPL environmental policy, site environmental management and responsibilities.
Section 3 – Site and Operations	Provides an overview of the site and the operations.
Section 4 – Environmental Risks	Identifies the environmental risks that need to be managed.
Section 5 – Operating Procedures	States the environmental objectives and provides operational procedures to manage environmental risk.
Section 6 – Monitoring	Details the monitoring program for assessing environmental performance.
Section 7 – Reporting and Review	Provides reporting requirements and details of the EIP review and auditing process.

Environmental Management

2.1 OPERATIONS

The CVLX is operated by Regional Infrastructure Pty Ltd (RIPL).

2.2 ENVIRONMENTAL POLICY

RIPL is a company that is focused on regional livestock exchange (RLX) development, and involved in RLX operations and management at various locations within Australia. We recognise the expectations of our own staff, suppliers, customers and the community in relation to environmental protection and food chain product quality.

We commit to managing our environmental effects and wastes in compliance with our legal obligations. Furthermore, we will strive to continually improve all our operations and specifically commit to:

- Work to achieve the environmental expectations of our staff, customers, suppliers and local community.
- Apply best practice standards for environmental management.
- Improve efficiency of operations to minimise water and raw material use, energy consumption, waste and pollution generation; in particular to:
  - Protect the beneficial uses of groundwater and surface water.
  - Prevent adverse environmental impacts in terms of the beneficial uses of surface-water, where the beneficial use onsite is agriculture and irrigation.
  - Maintain and where appropriate and practicable, improve the condition of the land environment sufficient to protect current and future beneficial uses of land from the detrimental effects of contamination.
  - Protect groundwater quality sufficient to protect existing and potential beneficial uses of groundwater.
  - Avoid structural changes to the soil or contamination (for example, soil salinity or sodicity) that may reduce the (short or long term) productivity of the land.
  - Avoid uptake of pathogens and/or metals and organic contaminants by vegetation, livestock and humans.
  - Protect human and stock health and improve wastewater quantities and quality.
  - Avoid contamination of the air environment by the production of offensive odours, spray drift and aerosols.
- Create awareness among our staff and suppliers of the potential environmental effect of operations with which they are involved, and how they can work towards minimising these environmental effects.
- Continue to conduct regular assessments of the environmental effects of our operations to identify potential areas for improvement, and to follow through with programs to achieve these improvements.

2.3 ENVIRONMENTAL MANAGEMENT

RLX Investment Trust are the owners of the facility and lease it to the RLX Operating Company. CVLX is managed and operated by Regional Infrastructure Pty Limited (RIPL) under a Management Agreement with the RLX Operating Company. The overall management structure is provided in **Figure 1**.

The RIPL Managing Director is responsible for the management of the following five departments:

- Safety and compliance;
- Business development (no responsibility for environmental management);
- Design and construction (no responsibility for environmental management);
- RLX sites; and
- Administration and Finance (no responsibility for environmental management).

The safety and compliance manager is responsible for (among other things) operational systems and operational management. This includes the preparation of the relevant documentation (e.g. site-based operations manuals, (SBOMs)) for the management of wastewater.

The design and construction manager is responsible for (among other things) design review, and design and construction supervision. This includes compliance to the sediment and soil erosion management during construction. The design and construction manager has no responsibility in operational environmental management.

The RLX site managers (site managers) are responsible for managing the site and related facilities, for environmental compliance and for meeting authority requirements. This includes responsibility for the day-to-day running of the saleyard in accordance with the relevant SBOMs.

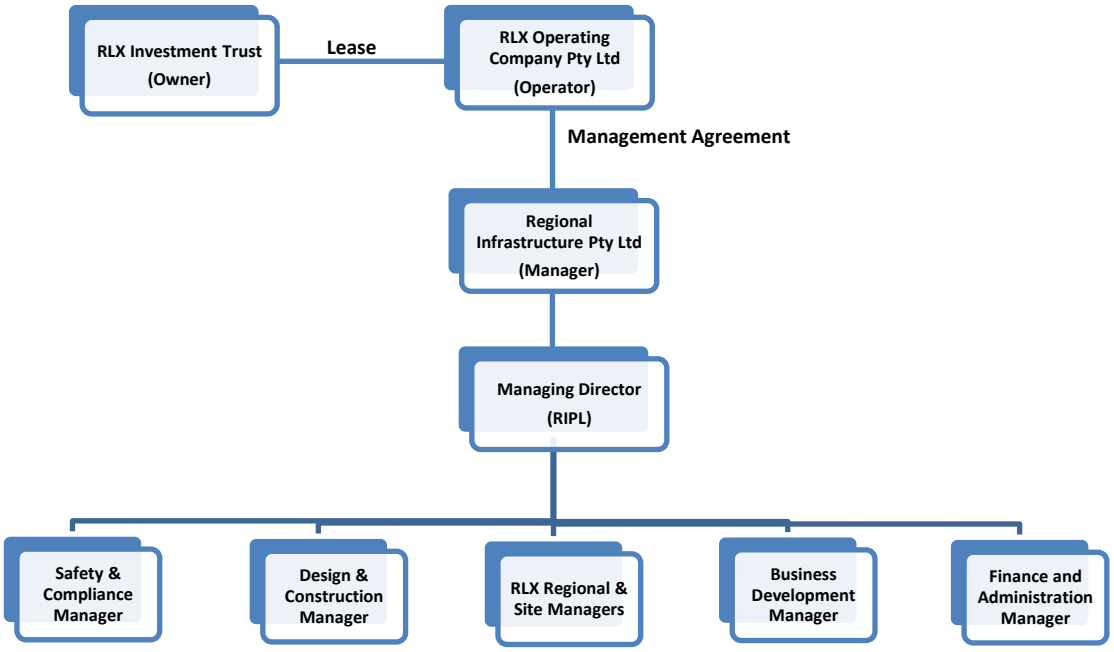

Figure 1: Management structure

A matrix of responsibilities for environmental management at the CVLX is provided in **Table 2.1**.

Table 2.1 – Environmental responsibility matrix

Responsibility	RIPL Managing Director	Safety & Compliance Manager	CVLX Site Manager
Corporate environmental management	✓	✓	
EIP implementation and effectiveness	✓	✓	✓
EIP review	✓	✓	✓
EIP audit		✓	✓
Administrative support		✓	
Reporting/records		✓	✓
Community liaison	✓		✓
Environmental awareness/training		✓	✓
Monitoring/checking			✓
Operational control			✓
Non-conformance/corrective actions		✓	✓
Compliance with legal & other requirements	✓	✓	✓
Point of emergency contact			✓

Site and Operations

3.1 SITE

The site is located approximately 10 km north-west of Ballarat and approximately 1.2 km south west of Miners Rest, between the Western Highway and Sunraysia Highway. The site is accessed from Sunraysia Highway.

The location, surrounding areas and sensitive receptors are shown in **Figure 2**.

3.2 SITE LAYOUT

Layout of the facility is shown on **Figure 3** and includes:

- A roofed cattle saleyard with holding pens, sale pens, drafting, loading/unloading facilities and uncovered holding yards.
- A sheep saleyard with uncovered receival and delivery pens, roofed sales pens, drafting, loading/unloading facilities and uncovered holding yards.
- A central amenities building with offices, amenities and café.
- Parking for trucks and cars.
- A truck wash down area for four (4) trucks (with 24 hour/7 day access).
- A maintenance shed and feed store.
- Secure compound for maintenance equipment and stores.
- Solids removal system and solids stockpile area.
- Clean soft floor laydown area.
- Paddocks for the temporary accommodation of stock held over at the facility.
- A surface water wetland.
- A rainwater pond.
- A solids trap and treatment ponds to provide primary wastewater treatment;
- A sequencing batch reactor (SBR) wastewater treatment plant to treat effluent for irrigation.
- An 15.2 ha irrigation area and associated irrigation infrastructure.
- Landscaping.
- Business identification signage.

3.3 OPERATIONS

3.3.1 OPERATING HOURS

The facility will operate 24/7 to provide access to the truck wash and to facilitate stock receival and delivery requirements.

3.3.2 SALE DAYS

The facility hosts around 112 sales per annum including monthly store cattle sales, weekly prime cattle sales and weekly sheep sales. Additional special cattle sales can occur as required by market conditions.

Sales are held as follows:

- Prime cattle Monday (every week except Christmas)
- Store Cattle Friday (once per month with 2 sales in January)
- Special Tuesday (every week expect Christmas)

Stock are received the day before sale day generally between 2:00pm to 9:00pm, with weighing from 4:00pm to 6:00am.

Sales typically start at 8:00am and go through to around 2:00pm with stock delivery commencing around 10:00am. Stock deliveries may continue through to the following day as required.

3.4 MAJOR PLANT AND EQUIPMENT

The operation of the facility does not require the use of specialised plant or equipment with all equipment to be used typical of plant and machinery associated with the general agricultural use of the land.

Plant and equipment will include:

- Transport, access and maintenance machinery including all-terrain vehicles, tractors, feeding machines, power harrows and bobcats (or similar);
- Adjustable and fixed ramps for loading/unloading of stock;
- Yards, fences and weighing areas;
- A rainwater pond for roof water harvesting and associated pumps and tanks;
- Water pumps and tanks for facility and truck wash-down areas;
- First flush pond and associated solids traps and transfer pumps for the management of surface water;
- Ponds for the treatment and management of liquid wastes with associated mechanical aeration and pumps;
- SBR treatment system to reuse of effluent for irrigation;
- Water pumps to distribute irrigation water around the site;
- Plant and equipment associated with the administrative building; and
- General maintenance equipment including handheld power tools, a generator.

3.5 ENERGY CONSUMPTION

The main use of energy on the site is lighting. Energy efficient lighting is incorporated into the design and accompanied with natural lighting of the pavilion yards. The facility does not comprise any processes that require significant amounts of energy.

3.6 PROCESSES

The operation of the site generally involves the transportation, holding and sale of livestock. The associated processes are typical of general agricultural use, albeit with an increased level of activity on the site during sale periods. The truck wash and associated wastewater treatment process is the only non-routine process that would not be typically found on a general agricultural site. A summary of site processes and their environmental interaction is provided in **Table 3.1**.

Table 3.1 – Processes and environmental interactions

Process	Description	Environmental Interaction
Livestock sales	Receipt of livestock (typically the day before), livestock penning, sale activity, livestock delivery.	• Noise • Air (odour) • Air (dust) • Surface water • Traffic
Truck wash	Wash down of vehicles using the truck wash facility which is open 24/7.	• Noise • Air (odour) • Surface water • Groundwater
First flush water management	Solids traps and pond system for the collection of site runoff from exposed yards and trafficable areas. Transfer pumps to effluent treatment system.	• Air (odour) • Surface water • Groundwater
Effluent treatment	Solids separation system followed by a primary biological pond system and packaged SBR.	• Noise • Air (odour) • Surface water • Groundwater
Treated effluent reuse	Irrigation of treated effluent across cropping areas.	• Surface water • Groundwater • Soil
Soft floor system	Regular replacement of soiled cattle yard soft floor material	• Air (odour) • Air (dust)
Solid waste management	Separation of solids waste from the truck wash effluent stream, collection of solids waste from the sheep yards, removal of soft floor material	• Air (odour) • Air (dust) • Surface water
Temporary livestock holding	Temporary holding of livestock either before or after sales.	• Noise • Air (dust) • Air (odour) • Surface water
Cropping	Establishment of crops/pasture in the effluent irrigation areas with associated maintenance and harvesting.	• Noise • Air (odour) • Air (dust) • Surface water
Water harvesting	Capture of roof runoff and surface water runoff for reuse through the facility to reduce potable water demand.	• Surface water

3.7 WATER CYCLE MANAGEMENT

3.7.1 WATER DEMAND AND SUPPLY

Water for the facility is provided through a combination of roof water harvesting, surface water harvesting, groundwater, recycling and connection to reticulated water supply. Water demand and supply are summarised in **Table 3.2**.

Table 3.2 - Water demand and supply

Demand	Main Supply	Primary Top-up Supply	Secondary Top-up Supply
Stock water	Roof water pond	Reticulated potable	NA
Domestic – potable	Reticulated potable	NA	NA
Truck wash	Surface water	Bore water	Reticulated potable
Yard wash down	Surface water	Bore water	Reticulated potable
Dust suppression	Roof water pond	Reticulated potable	NA
Scale wash down	Roof water pond	Reticulated potable	NA
Water trough cleaning	Roof water pond	Reticulated potable	NA
Irrigation	Recycled Class C	NA	NA
Fire services	Surface water	Bore water	Reticulated potable

The total modelled average annual water demand is approximately 51 ML/year. On-site harvesting and reuse makes up about 16 ML/year; approximately 31% of the annual demand.

3.7.2 LIQUID WASTE MANAGEMENT

All liquid wastes are managed on site using an effluent treatment system with treated effluent being reused for irrigation.

Liquid wastes are generated from the truck wash, trough washing, sheep yard wash down, first flush surface water catchment and rainfall runoff from the truck wash and solids stockpile area. Domestic effluent generated from the central amenities building and transport operator's amenities is managed using on-site effluent management systems for primary treatment with the treated effluent then further treated through the facility's effluent treatment system.

3.7.2.1 Effluent Quality

The effluent treatment system provides Class C water for reuse across irrigation areas.

Class C Water

The effluent treatment system is designed to achieve Class C effluent in accordance with the *EPA Publication 464.2: Guidelines for Environmental Management – Use of Reclaimed Water (2003)* (see **Table 3.3**).

Table 3.3 – EPA classification criterion for reclaimed water

Class	Water quality objectives (medians unless specified)[1,2]	Treatment processes[a]	Range of uses
C	- <1000 E.coli org/100 mL - pH 6 – 9[5] - < 20 / 30 mg/L BOD / TSS[8]	Secondary and pathogen reduction[7] (including helminth reduction for cattle grazing use schemes).	Urban (non-potable) with controlled public access. Agricultural: e.g. human food crops cooked/processed, grazing/fodder for livestock Industrial: systems with no potential worker exposure.
D	- <10000 E.coli org/100 mL - pH 6 – 9[5] - < 20 / 30 mg/L BOD / TSS[8]	Secondary	Agricultural: non-food crops, including instant turf, woodlots, and flowers.

Source: EPA Victoria (2003)

Notes to Table 4.1

1. *Medians to be determined over a 12-month period. Refer table 6 for Notification / reclassification limits.*

2. *Refer also to Chapter 6 and 7, and Waste Water Irrigation Guideline (EPA Victoria, 1991 Publication 168) for additional guidance on water quality criteria and controls for salts, nutrients and toxicants.*

5. *pH range is 90th percentile. A higher upper pH limit for lagoon-based systems with algal growth may be appropriate, provided it will not be detrimental to receiving soils and disinfection efficacy is maintained.*

7. *Guidance on pathogen reduction measures and required pre-treatment levels for individual disinfection processes are described in GEM: Disinfection of Reclaimed Water (EPA Victoria, 2003 Publication 730.1). Helminth reduction is either detention in a pondage system for greater than or equal to 30 days, or by an NRE and EPA Victoria approved disinfection system (for example, sand or membrane filtration).*

8. *Where Class C or D is via treatment lagoons, although design limits of 20 milligrams per litre BOD and 30 milligrams per litre SS apply, only BOD is used for ongoing confirmation of plant performance. A correlation between process performance and BOD / filtered BOD should be established and in the event of an algal bloom, the filtered BOD should be less than 20 milligrams per litre.*

a. *Where schemes pose a significant risk of direct off-site movement of reclaimed water, nutrient reductions to nominally five milligrams per litre total nitrogen and 0.5 milligrams per litre total phosphorous will be required.*

3.7.2.2 Helminth Reduction

EPA Publication 464.2: Guidelines for Environmental Management – Use of Reclaimed Water (EPA, 2003) notes that helminth removal can be achieved by pondage for greater than or equal to 30 days or other method such as sand or membrane filtration (refer to note 7 under **Table 3.3**).

The Class C system therefore includes multimedia filtration downstream of the SBR for helminth removal.

3.7.2.3 Irrigation Loads

Hydraulic Load

The integrated water cycle assessment (refer to **Figure 4**) shows an average of 56 ML/year will be irrigated across the 15.2 ha irrigation area. This is a low average annual hydraulic load of 3.7 ML/ha/year. The hydraulic loading on the effluent irrigation area is low given the need to balance nutrient loadings.

Nutrient Loads

The principle objective of the effluent irrigation scheme is to use or immobilise the added nutrients quickly to prevent potential contamination of surface water and/or groundwater. To achieve this, the amount of each nutrient applied in the treated effluent must be less than or similar to the amount removed from the site as well as the fixing of phosphorus by the soil. The nutrients of greatest environmental concern are nitrogen and phosphorus.

The effluent availability dictates the annual application rate, not the crop water demand. That is, there is not sufficient treated effluent volume to meet the crop water demands. This would be reflected in reduced crop yields, which is factored into the nutrient balances

Nutrient balances for the irrigation reuse scheme are summarised in **Table 3.4**. The nutrient balance shows a nitrogen deficit across the irrigation area and a slight phosphorus excess. The phosphorus excess can be assimilated by the soil profile with an expected capacity exceeding 500 years.

Table 3.4 - Nutrient balances – ryegrass

Component	Units	Nitrogen	Phosphorous
Irrigation Area (15.2 ha)			
Average effluent applied	ML/year	56.1	56.1
Nutrients in effluent	mg/L	35	5
Nutrients applied in effluent	kg	1,962	280
Total nutrient uptake in 6 t(dm)/ha/yr	kg	3,100	274
Average net balance over two years	kg	- 1,138	6
Years before phosphorous threshold	years	-	> 500

Organic Load

The organic content of the treated effluent is expected to be <10 mg/L. Based on the average application of 369 mm, the organic loading will be 37 kg/ha/year which is well below guideline values.

Salt Loading and Management

The treated effluent is expected to a have an electrical conductivity (EC) of approximately 1,900 µS/cm; salinity Class 3 in accordance with *EPA Publication 168* (EPA, 1991). Management will be required to control salinity levels in the soil profile.

A leaching fraction will be the key management tool to control soil salinity. The required leaching fraction can be calculated using equation 5-5 from EPA Publication 168 as follows:

Leaching required = $100 \times EC_{iw}/EC_{dw}$

Where EC_{iw} = electrical conductivity of the irrigation water = 1.9 dS/m
ECdw = electrical conductivity of the drainage water at which the relative crop yield is 50% = 12.2 dS/m (Table 13 EPA Publication 168)

Therefore the leaching required is 16%, or 21 mm.

Modelling shows that with irrigation, the average annual deep soil drainage increases by 22 mm which indicates that the majority of the required leaching fraction is achieved without special leaching events. The requirement for additional leaching would be based on profile monitoring.

3.7.2.4 Wet Weather Storage

The site water cycle model indicates an average of 55 ML/year enters the holding pond. An average of 56 ML/year will be irrigated across 15.2 ha. The holding pond captures direct rainfall due to its HDPE liner.

SEPP (Waters of Victoria) requires that effluent reuse schemes should be designed and constructed to contain all wastes in at least the 90th percentile wet year. The daily water cycle modelling of the reuse scheme determined that the holding pond spills in 10 years of the 125 years modelled; a spill frequency of 1 in 12.5 years which exceeds the 90th percentile design criteria (spill frequency of 1 in 10 years on average).

3.7.3 SURFACE WATER MANAGEMENT

Runoff from dirty catchments (uncovered yards) and a portion of the trafficable areas is managed through a first flush system (refer to **Figure 3**). Captured water is pumped to the solids removal system and then enters the effluent management system. Once the first flush pond is full, further runoff diverts to the surface water wetland.

The remainder of the site is managed using an integrated surface water management system incorporating grass swales and a constructed surface water wetland. All surface water runoff is directed to the surface water wetland and discharges off-site following treatment through the wetland. The surface water wetland provides surface water quantity (peak flow and volume) and quality control.

3.7.4 WATER CYCLE

The integrated water cycle for the facility is shown on **Figure 4**.

3.8 WASTE MANAGEMENT

The types and volumes of waste generated by site operations is provided in **Table 3.5**.

Table 3.5 – Operational waste types and volumes

Waste Type	Source	Quantity	Management
Liquid waste	Truck wash, wash down, trough washing and runoff from the solid stockpile area	Average = 54.9 ML/year	Treated through an on-site pond system and packaged SBR and reused through irrigation across 15.2 ha
Domestic effluent	Site amenities	Average = 0.78 ML/year	Primary treatment in septic tanks. Then combined with other liquid waste for further treatment through the effluent treatment ponds and reuse through irrigation.
Solids wastes	Solids separated from truck wash effluent and used soft floor	Average = 2,500 m^3/year	Temporarily stored in windrows on a nominated solids stockpile are before being removed off-site for further processing at an appropriately licenced facility.
Stock mortalities	Stock	Average 1 beast per sale	Removed from site to a licenced landfill facility within 24 hours of sale.
General refuse	Employees, site workers, patrons and contractors	One 6 m^3 skip bin per week	Appropriate receptacles and space will be provided for the temporary storage of garbage and recyclables to ensure separation of waste products.

3.9 TEMPORARY STOCK HOLDING

The CVLX includes multiple resting paddocks for livestock to rest and freshen up before or after sales or transport. Some of these paddocks are in areas that are used for effluent irrigation. It is important that the majority of the effluent reuse area is managed as a cut and carry program to ensure nutrients are removed from the site.

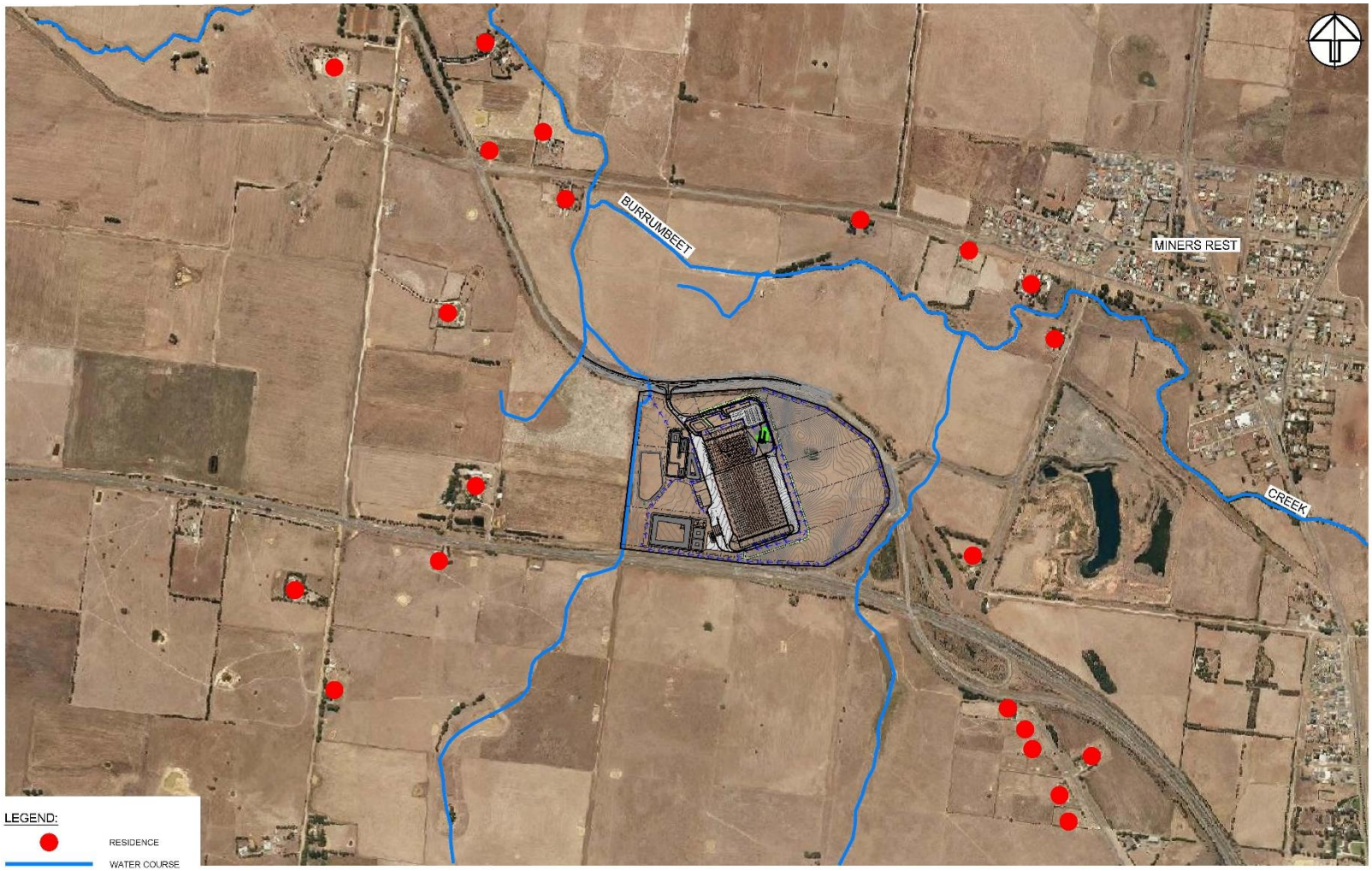

Figure 2: Site and surrounds

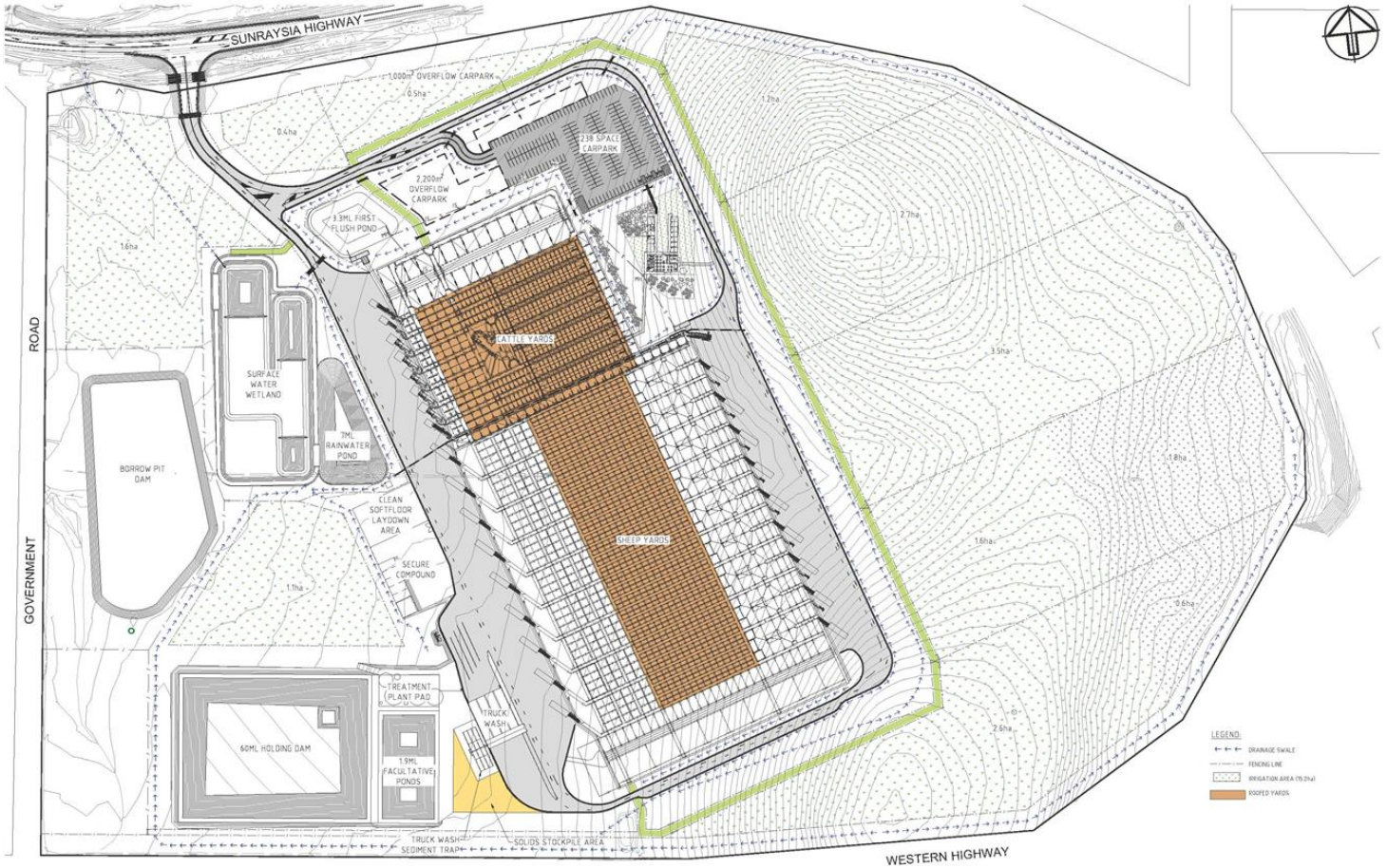

Figure 3: Site layout

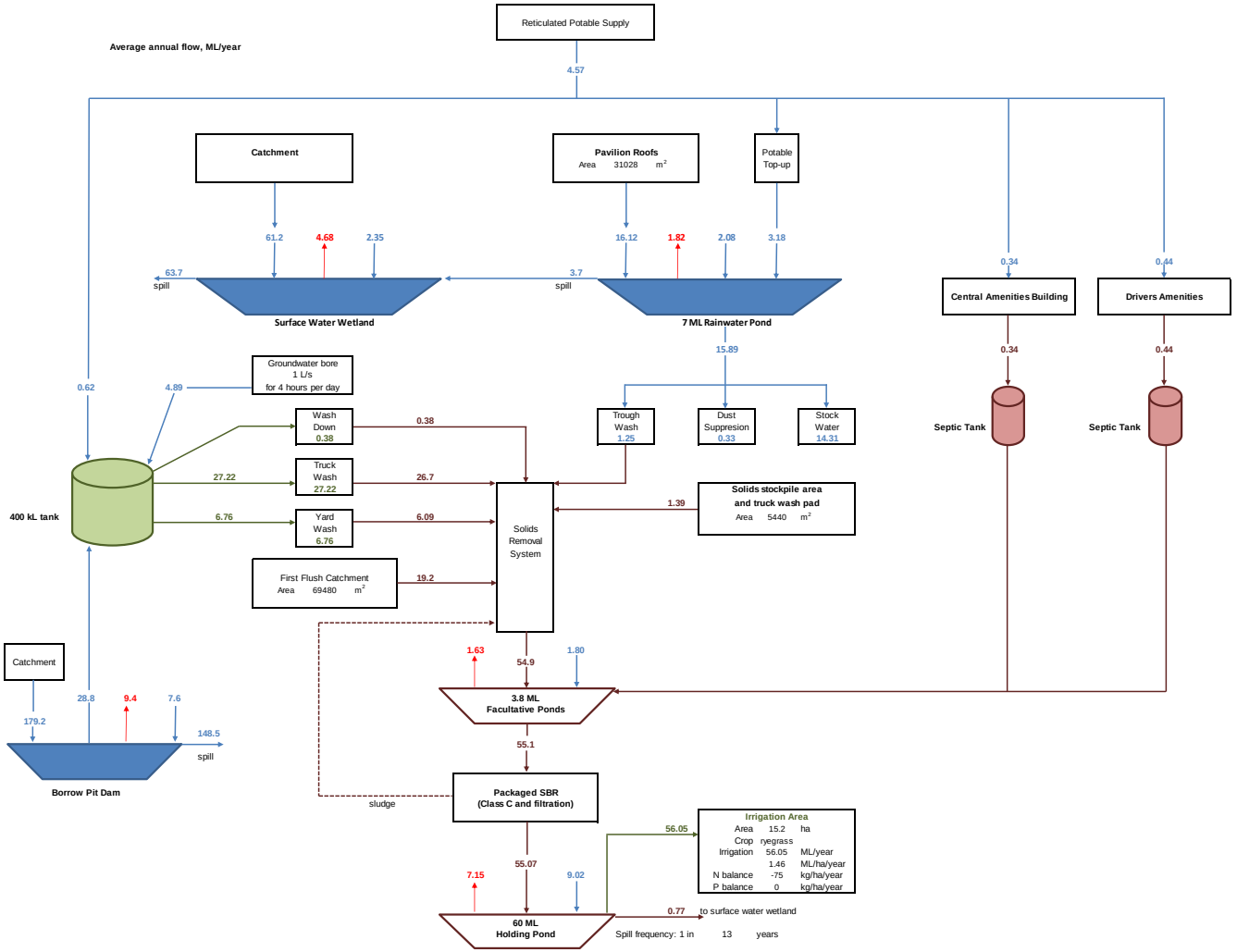

Figure 4: CVLX water cycle schematic – average annual volume in ML/year

Risk Assessment

4.1 INTRODUCTION

This section of the EIP identifies potential environmental impacts associated with operating the CVLX. Potential impacts have been identified through consideration of the activities to be undertaken, as well as issues identified in the environmental impact assessment, as well as matters raised by stakeholders during the approvals process.

These potential impacts are treated as risks that need to be managed through environmental management activities, controls and monitoring designed to prevent or minimise these risks being realised.

4.2 RISK ASSESSMENT

The environmental risk rating of an identified impact is measured in terms of consequence (severity) and likelihood (probability) of the event happening. The risk assessment matrix and rating is provided below.

		CONSEQUENCE				
		1 Insignificant	**2 Minor**	**3 Moderate**	**4 Major**	**5 Catastrophic**
LIKELIHOOD	A. Rare	Low	Low	Low	High	High
	B. Unlikely	Low	Low	Moderate	High	Very High
	C. Possible	Low	Moderate	High	Very High	Very High
	D. Likely	Low	Moderate	High	Very High	Very High
	E. Almost certain	Low	Moderate	High	Very High	Very High

Figure 5: Risk assessment matrix

The qualitative measures of likelihood and consequence are shown in **Tables 4.1** and **4.2**.

Table 4.1 – Qualitative measures of likelihood

Level	Descriptor	Example description
A	Rare	Uncommon, unusual: not likely to occur within a 10 year period
B	Unlikely	Not expected to happen: may occur once every 5 to 10 years
C	Possible	Could happen: will probably occur between 1 to 5 years
D	Likely	Expected to happen: expected to occur at least once in a 6 to 12 month period
E	Almost certain	Will happen: imminent or will occur in 1 to 6 months

Table 4.2 – Qualitative measures of consequence or impact

Level	Descriptor	Example description
1	Insignificant	Negligible impact, little disruption to normal operation, low increase in normal operation costs
2	Minor	Minor impact for small population, some manageable operation disruption, some increase in operating costs
3	Moderate	Minor impact for large population, significant modification to normal operation but manageable, operation costs increased, increased monitoring
4	Major	Major impact for small population, systems significantly compromised and abnormal operation if at all, high level of monitoring required s
5	Catastrophic	Severe impact for large population, complete failure of systems

4.3 RISK ASSESSMENT SUMMARY

Appendix A: Risk Management contains a list of potential environmental risks associated with the operation of the CVLX and how they will be managed.

Section 5 outlines the operating procedures and control measures that will be used to prevent or minimise environmental risks and impacts.

Operating Procedures

5.1 FORTNIGHTLY ENVIRONMENTAL CHECKLIST

5.1.1 OBJECTIVE

To provide a checklist of regular management and inspection activities relating to environmental management.

5.1.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Entire site	
When:	Every second Thursday	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake inspections and complete **Form 1 – Environmental Checklist** every second Thursday.	SM
2.	The Site Manager shall undertake and/or coordinate remedial action if required as a result of completing **Form 1 – Environmental Checklist**.	SM
3.	The Site Manager shall record on **Form 1 – Environmental Checklist** if a non-compliance has triggered the need for an Incident Report. If required, an Incident Report shall be prepared in accordance with **Section 5.14**.	SM
4.	The Workers will be responsible for undertaking any remedial action as directed by the Site Manager.	W
5.	The Site Manager shall inspect and sign-off on **Form 1 – Environmental Checklist** when remedial action work has been adequately completed.	SM
6.	The Site Manager shall ensure that the **Form 1 – Environmental Checklist** is appropriately filed (hard copy or electronic copy) and that records are kept on site for a minimum of four (4) years, and are available to the EPA on request.	SM
Records:	Form 1 – Environmental Checklist	
References:	nil	

5.2 EFFLUENT SYSTEM MANAGEMENT

5.2.1 OBJECTIVE

The effluent treatment system shall be managed to minimise odour generation and achieve Class C effluent for reuse through irrigation. Relevant Class C targets are:

- pH 6 to 9
- BOD < 20 mg/L
- Total suspended solids < 30 mg/L
- Microbiological < 1000 E.coli org/100 mL

Other relevant targets are:

- Total nitrogen < 50 mg/L
- Phosphorus < 10 mg/L

The above targets are median values derived over 12 months.

5.2.2 MANAGEMENT

Effluent is generated from:

- The truck wash;
- Wash down of the external yards;
- First flush runoff from the external yards and parts of the sealed trafficable areas;
- Domestic effluent from the central facilities building and amenities; and
- Runoff from the truck wash bay and solids stockpile area.

The effluent system is separated from the surface water system through land forming, kerb and gutter and drains. The effluent management system is totally isolated from the rainwater system.

Effluent treatment and management will include:

- Solids removal primary treatment in facultative ponds;
- Secondary and tertiary treatment in a packaged SBR wastewater treatment plant;
- Filtration for Helminth removal;
- Storage in a wet weather holding pond to balance irrigation demand; and
- Reuse of treated effluent for irrigation of holding paddocks.

5.2.3 PROCEDURES

Who:	Site Manager (SM)
Where:	Effluent treatment system
When:	Every second Thursday

Actions:		**Responsible Person(s)**
1.	The effluent management system shall be managed in accordance with the Effluent System Commissioning Plan attached as **Appendix B** for the first 12 months of operations. Once fully commissioned the effluent treatment system shall be managed in accordance with the following procedures, or as modified by the SBR provider. The Effluent System Commissioning Plan shall then be removed from this EIP.	SM
2.	The Site Manager shall undertake fortnightly inspections of the effluent treatment system which includes: – Surface water management systems to ensure separation of clean and dirty catchments – The solid separation basin and transfer pump(s) – Facultative ponds – Effluent sump – SBR – Filtration system – Holding pond – Irrigation system Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
3.	Observations to be made at each pond are: – Pond colour or changes from previous inspections – Pond odour rated as low, moderate or strong – Any solids build-up or floating scum layers – Any damage to HDPE liners (if present) – Aerator cables and anchor points Any observations shall be recorded on **Form 1 – Environmental Checklist**.	SM

Who:	Site Manager (SM)	
Where:	Effluent treatment system	
When:	Every second Thursday	
Actions:		**Responsible Person(s)**
4.	The Site Manager shall immediately report any fault or alarm from the SBR to the equipment supplier. The alarm list includes: – power_failure – emergency stop_activated – fault_pump station pump 1 – fault_pump station pump 2 – fault_inlet screen – fault_aeration blower – fault_was aerator – fault_decant pump – fault_was pump – fault_backwash pump – fault_chlorine dosing pump – fault_pac dosing pump – pump station_high level – process tank_high level	SM
5.	The Site Manager shall ensure monthly monitoring of the effluent treatment system is undertaken in accordance with **Section 6.3**.	SM
6.	If the effluent management system is not meeting Class C, the Site Manager shall commission appropriate investigations and shall employ the following management actions: – Notify the SBR supplier to commence investigation; – Applying minimum buffer distance of 50 m to the site boundary to minimise the possibility of spray drift into adjoining properties; – Using a low pressure travelling irrigator to minimise spray drift; – Irrigating only under suitable wind conditions; – Adopting deficit irrigation scheduling to ensure the irrigation area does not become saturated due to irrigation. – Withholding stock from the reuse area.	SM
7.	If effluent is unsuitable for irrigation and/or reuse the Site Manager shall adopt one or all the following contingency measures: – Removing part or all of the effluent load from the site by tanker; and/or – Reducing effluent generation.	SM
8.	Effluent monitoring data shall be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Annual Environmental Management Report	
References:	EPA Victoria (2003) *Guidelines for environmental management, Use of reclaimed water. Publication 464.2*.	

5.3 SOLID WASTE MANAGEMENT

5.3.1 OBJECTIVE

To ensure solid wastes are managed to:

- prevent surface water pollution;
- minimise odour generation;
- minimise the quantity held on site; and
- record quantities and end use.

5.3.2 MANAGEMENT

Solid wastes are generated from:

- The cow yards soft floor system;
- Cleaning of the sheep yards;
- Sediment traps;
- Truck wash solids trap; and
- The effluent treatment system.

All solids removed from the various areas and/or components will be stored in the solids stockpile area only. Solids will be removed from the site as detailed in the procedures.

Clean soft floor material will be stockpiled in a designated area.

5.3.3 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Solids stockpile, solids separation basin, cattle soft floor	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the cattle area soft floor system and observe that it is dry and odour free. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall schedule weekly (or as required) scarifying of the soft floor system at a time that does not interfere with livestock sales.	SM, W
3.	The Site Manager shall schedule rolling replacement of the soft floor system as required. Triggers for soft floor removal shall be moisture and odour generation.	SM
4.	The Site Manager shall ensure that all new (clean) soft floor material is stored in the designated area indicated on **Figure 3** at the northern end of the secure compound.	SM

Who:	Site Manager (SM), Workers (W)
Where:	Solids stockpile, solids separation basin, cattle soft floor
When:	Fortnightly and as required

Actions:		**Responsible Person(s)**
5.	Workers removing spent soft floor shall ensure that it is placed in the designated stockpile area indicated on **Figure 3**. Soft floor material shall be stockpiled in triangular windrows separate to the effluent system solids.	W
6.	Workers shall wash solids from the truck wash bays each work day morning.	W
7.	The external sheep yards shall be dry cleaned on a weekly or as need basis following sales. Material removed from the sheep yards shall be placed in the solids stockpile area. Sheep yards solids shall be stockpiled with the solids removed from the solids separation basin.	W
8.	The Site Manager shall inspect the external sheep yards following dry cleaning and determine if a wash down is required.	SM
9.	If the sheep yards are washed down, the Workers shall inspect the surface water solids traps and removed solids as require after they have sufficiently drained. Solids shall be placed in the solids stockpile area.	W
10.	The truck wash solids separation basin shall be checked daily by the Site Manager. Once the operational side reaches capacity, the flow will be diverted to the clean side. The stored solids will be allowed to drain for several days before the solids are removed and placed in the solids stockpile area. Solids removed from the solids separation basin shall be stored separate to the used soft floor material.	SM, W
11.	The Site Manager shall undertake fortnightly inspections of the solids stockpile area to observe that all solids are in appropriate areas and that the stockpiles are odour free. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**. More frequent inspections (daily, when on site) shall be undertaken during: – rainfall periods; – warm/hot, humid conditions; and – windy conditions.	SM
12.	All site workers must notify the Site Manager as soon as practicable if a moderate to strong odour is noticed from the solids stockpiles.	W
13.	The Site Manager shall direct workers to turn the solids stockpiles: – at least once every fortnight to promote drying and aeration, unless the stockpile is stable and odour free; and/or – as soon as practicable if a moderate to strong odour is being generated.	SM, W

Who:	Site Manager (SM), Workers (W)	
Where:	Solids stockpile, solids separation basin, cattle soft floor	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
14.	The Site Manager shall arrange removal within 48 hours of any stockpiled solids that are generating a strong odour that is noticeable at the site boundary in a downwind direction.	SM
15.	The quantity of solids stockpiled on site shall be recorded on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
16.	The Site Manager shall ensure that, where possible, the maximum quantity of stockpiled soft floor and effluent system solids stored on site shall not exceed: – Used soft floor 200 m^3 – Effluent system solids 180 m^3 The approximate triangular windrow stockpile dimensions corresponding to these maximum volumes are as follows. Soft floor: – Base width 6 m – Height 3 m – Batters 1:1 – Length 28 m – No. of rows 1 Effluent system solids: – Base width 4 m – Height 2 m – Batters 1:1 – Length 28 m – No. of rows 1.7 In an emergency and/or unforeseen circumstances, temporary stockpiles of up to two (2) times the above values may be permitted for up to two (2) weeks **but only with prior consent/notification to the EPA**.	SM
17.	A vacuum truck (or similar) shall be used to remove solids from the facultative ponds (infrequent event). Facultative pond solids shall be removed direct from the site using an appropriately licensed contractor.	SM
18.	The Site Manager shall arrange for the removal of stockpiled solid waste as required to comply with Action 14. Organic solid waste shall be removed to an appropriately licenced/approved facility. Where possible, organic waste shall be removed for composting in preference to waste disposal (landfill). Organic waste may also be used off-site for agricultural land improvement.	SM
19.	The Site Manager shall ensure that if the solid waste cannot be managed to prevent environmental harm (odour generation) that RIPL will implement increased frequency of waste removal.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Solids stockpile, solids separation basin, cattle soft floor	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
20.	The Site Manager shall require that any vehicles removing solid waste: – Are appropriately sealed/waterproof to avoid any potential leakage; and – Are covered to prevent dust.	SM
21.	In the event of dead stock, immediate action will be taken to remove the dead stock as follows: – Sheep – shall be placed into the site truck for offsite transport. The shade cloth tray cover shall be used in hot weather. – Cattle – shall be moved as soon as practicable to the solids stockpile area for temporary storage prior to removal offsite. Alternatively, they may be removed directly from site. The Site Manager shall arrange the following: – Cattle – collected by a knackery (Victorian Petfood Processors (VPP) in Camperdown, VIC) – Sheep – will be disposed of at Council's licenced landfill facility located on the Glenelg Highway approximately 2km north of Smythesdale Dead stock shall be removed as soon as practicable and generally within 12 hours of notification. Dead stock shall not be held on site for more than 24 hours.	SM, W
22.	The Site Manager shall ensure that the appropriate saleyards staff member records the location, description, tail tag number, owner and number of dead stock on the **Form 2 – Dead Stock Register**.	SM, W
23.	In the event of mass stock death or notifiable disease, the Site Manager shall refer to the *Biosecurity Management Plan* to determine the appropriate management strategy.	SM
24.	General refuse and rubbish will be placed in bins located around the complex by all staff members and visitors. All staff are responsible for ensuring general refuse is placed in bins.	SM, W
25.	Workers shall empty waste receptacles as required to a central skip bin for collection.	W
26.	The Site Manager shall ensure that receptacles are provided for the separation of recyclables.	SM
27.	The Site Manager shall ensure that no solid wastes are spread or reused on site and that no dead stock are buried on site.	SM
28.	The Site Manager shall ensure that records of all solid waste removed from the site are kept on **Form 3 – Solid Waste Removal Record**.	SM
29.	The quantity of solid waste removed from the site shall be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Solids stockpile, solids separation basin, cattle soft floor	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
Records:	Form 2 – Dead Stock Register Form 3 – Solid Waste Removal Record Annual Environmental Management Report	
References:	Nil	

5.4 IRRIGATION MANAGEMENT

5.4.1 OBJECTIVE

To ensure that irrigation is undertaken in a manner that:

- does not result in runoff during irrigation;
- matches the soil's capacity to assimilate the hydraulic and nutrient load;
- does not cause unacceptable odour beyond the site boundary;
- does not cause spray drift across the site boundary.

5.4.2 IMPORTANT OPERATIONAL CONSIDERATIONS

As effluent irrigation schemes are designed to accommodate wetter years, the stored effluent will run out in average and dry years in around mid-summer leaving only the daily flow of effluent. This means that in some years, full irrigation of the entire 15.2 ha area will not be possible. It is important however that the irrigation areas are rotated to ensure nutrients are distributed across the entire area.

RIPL will irrigate year round as soil moisture conditions allow for optimum utilisation of recycled water. Irrigation will be more frequent from September/October through to March/April, depending on weather and soil conditions at the time. RIPL will aim to eliminate the discharge of treated effluent by:

1. managing the wet weather storage to prevent, as far as is practicable, any discharge of treated effluent. This may include using the pond freeboard in very wet years; and
2. achieving optimum draw down of the wet weather storage (whilst maintaining the maturation pond volume) by the end of the irrigation season to provide the maximum capacity for the non-irrigation season.

This operational aim will exceed EPA requirements.

5.4.3 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Effluent irrigation area	
When:	Fortnightly and during irrigation	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall ensure that prominent warning signs in compliance with AS 1319 - Safety Signs for the Occupational Environment are displayed around the perimeter of the effluent irrigation area. All fencing, gates and signage shall be inspected in accordance with **Section 5.1** and maintained to ensure public and livestock access control.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Effluent irrigation area	
When:	Fortnightly and during irrigation	
Actions:		**Responsible Person(s)**
2.	The Site Manager shall undertake fortnightly inspections of the effluent irrigation system which includes the pumps, distribution mains and irrigator(s). Observations will include: – Any signs of leaks, spills or runoff – Any failure of irrigation system including overshooting of irrigators (failure of auto-stop device) – Any unauthorised access by livestock and humans (workers, public, etc.) – Any signs of land degradation such as extended waterlogging or ponding, salinity, soil compaction (structure problems due to sodicity), plant/crop damage (e.g. stunting) – Any damaged fences and gates, missing warning signs, possible vandalism Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
3.	A weather station shall be installed on the site to record rain and wind (speed and direction). Weather data shall be logged and stored electronically so that data can be examined in the event of an Incident Report (refer to **Section 5.14**).	SM
4.	Irrigation areas shall be sown with suitable crops that can be harvested for nutrient removal. Local agronomy advice shall be sought for crop selection.	SM
5.	The Site Manager shall ensure that Workers undertake inspections of the irrigation equipment and irrigation area prior to and after each irrigation event to ensure soil conditions are suitable to commence irrigation and also to observe soil and plant conditions after completion of irrigation to check for runoff.	SM, W
6.	The Workers shall inspect the irrigation area during irrigation to ensure that: – excessive ponding and/or runoff are not occurring; and – there is no spray drift across the site boundary.	W
7.	The Site Managers and Workers shall ensure that no stock are present in irrigation areas while treated effluent is being irrigated. Stock shall be withheld from the irrigation area for at least four (4) hours following the cessation of irrigation. Harvested crops shall be dried or ensiled. No dairy animals or pigs shall be permitted to graze on pasture irrigated with treated effluent.	SM, W

Who:	Site Manager (SM), Workers (W)	
Where:	Effluent irrigation area	
When:	Fortnightly and during irrigation	
Actions:		**Responsible Person(s)**
8.	The Site Manager shall ensure the irrigation scheme is managed on a moisture deficit irrigation approach to help prevent effluent runoff from the irrigation area. Soil moisture observations and irrigator experience will be used to check how much water can be applied on a day-to-day basis.	SM
9.	The Site Manager shall ensure that the extent of the wetted area from irrigation is more than 10 m from the perimeter drainage swales and shall ensure that this 10 m buffer remains well vegetated.	SM
10.	The Site Manager shall check the weather forecast and ensure that no irrigation takes place if greater than 10 mm of rainfall is forecast in the next 48 hours.	SM
11.	The Site Manager shall ensure that all irrigation ceases in the event of unexpected rainfall commencing during irrigation.	SM
12.	The Site Manager shall ensure that all irrigation ceases in the event of strong winds (> 26 knots or approximately 50 km/hour).	SM
13.	The Site Manager shall maintain a water balance for the irrigation area using **Form 4 – Irrigation Water Balance** that shall record: – Evaporation (mm) – pan evaporation as measured at Melbourne Airport (station 086282) http://www.bom.gov.au/climate/dwo/IDCJDW3049.latest.shtml – Crop water requirements (mm) – estimated from daily pan evaporation and crop factors (refer to **Table 5.1**) – Effective rainfall (mm) – as measured in the on-site weather station less 5 mm – Amount of irrigation applied (kL and mm) – The estimated soil moisture content at the end of the day (calculation) These water balance calculations are estimates only based on a typical 2.25 ha irrigation block to help guide irrigation management.	SM
14.	The volume irrigated should be limited to less than 10 mm in any one day (225 kL over 2.25 ha). This is to match the infiltration capacity of the soil profile.	SM
15.	Irrigation records shall be maintained on **Form 5 – Irrigation Record** and shall include: – The date – The time irrigation started and stopped – The volume irrigated (either through meter read or pump run time calculation) – The section of the irrigation area irrigated (Area ID) – Wind direction and speed – Details of any incidents	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Effluent irrigation area	
When:	Fortnightly and during irrigation	
Actions:		**Responsible Person(s)**
16.	The Site Manager shall ensure monitoring of the effluent treatment system is undertaken in accordance with **Section 6.3**. This will provide a record of irrigation water quality.	SM
17.	The Site Manager shall ensure that crop monitoring is undertaken in accordance with **Section 6.8**.	SM
18.	Effluent irrigation data shall including all relevant effluent, soil and crop monitoring data be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Form 4 – Irrigation Water Balance Form 5 – Irrigation Record Annual Environmental Management Report	
References:	EPA Victoria (2003) *Guidelines for environmental management, Use of reclaimed water. Publication 464.2*.	

Table 5.1 – Crop factors

Month	Rye Grass	Lucerne
January	0.70	0.95
February	0.70	0.90
March	0.65	0.85
April	0.60	0.80
May	0.50	0.70
June	0.45	0.55
July	0.45	0.55
August	0.45	0.65
September	0.55	0.75
October	0.65	0.85
November	0.70	0.95
December	0.70	1.00

5.5 SOIL MANAGEMENT

5.5.1 OBJECTIVE

To effectively manage the soil resource on the site to:

- Minimise soil loss through erosion;
- Prevent soil structural decline;
- Control soil salinity levels; and
- Prevent the build-up of nutrients through the soil profile.

5.5.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	General site, stock holding paddocks and irrigation area	
When:	Fortnightly	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the general site, grass swales, holding paddocks and irrigation area. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall identify any areas of exposed soil that may be prone to erosion and include remedial action on **Form 1 – Environmental Checklist**. Particular attention will be made to the grass swale drains and pond embankments.	SM
3.	The Site Manager shall ensure a good and adequate grass cover is present in all holding paddocks used for the temporary holding of stock. Paddocks with inadequate grass cover shall not be used until grass is re-established. This shall be noted on **Form 1 – Environmental Checklist**.	SM
4.	Site Workers shall advise the Site Manager as soon as practicable if they observe any areas where grass cover is poor or active erosion is present. The Site Manager shall inspect the area and determine appropriate remedial action which may include: – Withholding grazing until such time as the grass cover has improved; – Improving grass cover through seeding/planting; and/or – Implementing drainage control and restoration works in eroded areas. Any inspection and remedial action shall be noted on **Form 1 – Environmental Checklist**.	W, SM
5.	The Site Manager shall ensure that all directional and advisory signage is in place during the fortnightly inspection. All traffic movement and parking shall be restricted to paved or gravelled areas. No public vehicle movement across grassed areas shall be permitted.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	General site, stock holding paddocks and irrigation area	
When:	Fortnightly	
Actions:		**Responsible Person(s)**
6.	The Site Manager shall ensure that effluent irrigation is undertaken in accordance with **Section 5.4**. This shall include making sure that the entire irrigation area is used in rotation ensure the nutrient load is fully distributed.	SM
7.	The soil monitoring program outlined in **Section 6.5** shall be the main management tool to manage soil structural decline, manage soil salinity and prevent the build-up of nutrients. The Site Manager shall coordinate this monitoring and ensure it is undertaken in accordance with the schedule outlined.	SM
8.	The soil monitoring undertaken in accordance with Action 7 and **Section 6.5** shall be used to identify any adverse soil structural changes that may trigger the need for remedial actions which may include : – Undertaking an irrigation leaching event to improve the soil salinity – Adding soil ameliorants such as gypsum – Cropping rotation – Cultivation; or – Resting a particular paddock. The need for any of the above actions would be identified in the Annual Environmental Management Report prepared in accordance with **Section 7.1**. The Site Manager shall be responsible for undertaking these actions if they are required.	SM
9.	The site assessment indicates that the land is suitable for managed effluent irrigation and there is adequate land to ensure hydraulic and nutrient loads can be managed on site. In the very unlikely event that issues arise, the following contingency measures could be undertaken: – Using non-irrigated paddocks on the site for temporary effluent irrigation; – Supplying all or part of the treated effluent to off-site users nominated under authority approved contractual arrangements; – Removing part or all of the effluent load from the site by road tanker; or – Limiting the truck wash operation. The need for any of the above actions would be identified in the Annual Environmental Management Report prepared in accordance with **Section 7.1**. The Site Manager shall be responsible for undertaking these actions if they are required.	SM
10.	The Site Manager shall ensure soil monitoring undertaken in accordance with **Section 6.5**.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	General site, stock holding paddocks and irrigation area	
When:	Fortnightly	
Actions:		**Responsible Person(s)**
11. Soil monitoring data shall be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.		SM
Records:	Form 1 – Environmental Checklist Annual Environmental Management Report	
References:	EPA Victoria (2003) *Guidelines for environmental management, Use of reclaimed water. Publication 464.2*.	

5.6 SURFACE WATER MANAGEMENT

5.6.1 OBJECTIVE

To provide an integrated surface water management system that:

- Limits peak site discharge from the developed site to less than existing levels;
- Uses best management practices to manage the quality of the surface water leaving the site so that it is consistent with, or better, than adjacent catchment runoff; and
- Prevents the potential for surface water pollution.

5.6.2 MANAGEMENT

The CVLX surface water management system separates the development into four catchments and manages runoff according to the level of potential contamination present. The four catchment types are: clean water; first flush water; general surface water and effluent system. Drains, embankments, diversion banks/bunds and ground shaping are used to define and separate the catchments.

The roofs of the pavilions provide the clean water catchment and roof runoff is piped to the rainwater pond. Water from the rainwater pond is used to supply stock drinking water and dust suppression water. A potable supply is provided to the rainwater pond so that it can be supplemented during dry periods. Only water sourced from the rainwater pond will be used for stock watering and dust suppression.

5.6.3 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	General site, grass swales and surface water wetland	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
1.	The constructed surface water wetland system shall be managed in accordance with the Wetland Commissioning Plan attached as **Appendix C** for the first 18-24 months of operations. Once fully commissioned the constructed surface water wetland system shall be managed in accordance with the following procedures. The Wetland Commissioning Plan shall then be removed from this EIP.	SM
2.	The Site Manager shall undertake fortnightly inspections of the surface water management system including drains, surface water solids traps, first flush basin and transfer pump, grass swales and constructed surface water wetland including the outlet orifice. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
3.	The Site Manager shall ensure that all fuel, oils and chemicals used on site are stored in the approved and bunded lockable chemical shed located near the workshop.	SM
4.	In the event of a fuel or chemical spill, all efforts will be made by all Workers to contain and clean up the spill, but ONLY where safe to do so.	SM, W

Who:	Site Manager (SM), Workers (W)	
Where:	General site, grass swales and surface water wetland	
When:	Fortnightly and as required	
Actions:		**Responsible Person(s)**
5.	A fuel or chemical spill or other chemical handling incident will be reported as an incident by the Worker(s) involved and the Site Manager shall complete the Environmental Incident Report in accordance with **Section 5.14**.	SM, W
6.	The rainwater pond shall be used as a point of supply for non-potable water use at the facility to supply stock water and dust suppression. The rainwater pond shall be topped up with potable water as required. Potable top-up shall commence when the pond falls below the minimum level marker.	SM
7.	The truck wash shall be supplied with surface water drawn from the borrow pit dam. This will be topped up, as required, from the borrow pit dam. Potable water top-up to the truck wash system shall only be used when there is an inadequate supply from the borrow pit dam and bore.	SM
8.	The Site Manager shall ensure that water extracted from the borrow pit dam is acceptable quality. If required, the water shall be dosed with a coagulant and allowed to settle before transfer.	SM
9.	The Site Manager shall ensure that the wetland system is maintained in accordance with the Wetland Maintenance Plan attached as **Appendix D**.	SM
10.	The Workers shall ensure that all solids wastes are stored in the designated solids stockpile area. Inspection of the solids stockpile area shall be undertaken fortnightly in accordance with **Section 5.1**.	W, SM
11.	The Site Manager shall ensure that effluent irrigation is undertaken in accordance with **Section 5.4**. This shall include regular inspection to avoid surface runoff during irrigation.	SM
12.	The Site Manager shall ensure surface water monitoring undertaken in accordance with **Section 6.6**.	SM
13.	Surface water monitoring data shall be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Annual Environmental Management Report	
References:	Nil	

5.7 GROUNDWATER MANAGEMENT

5.7.1 OBJECTIVE

To manage the site to prevent measurable changes to groundwater conditions from up gradient to down gradient of the facility.

5.7.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Effluent ponds, irrigation area and surface water wetland	
When:	Weekly	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the effluent treatment ponds to identify any damage to the liner. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall ensure that effluent irrigation is undertaken in accordance with **Section 5.4**. This shall include regular inspection to avoid surface runoff and ponding during irrigation.	SM
3.	The Site Manager shall ensure that all fuel, oils and chemicals used on site are stored in the approved and bunded lockable chemical shed located near the workshop.	SM, W
4.	In the event of a fuel or chemical spill, all efforts will be made by all Workers to contain and clean up the spill, but ONLY where safe to do so.	SM, W
5.	A fuel or chemical spill or other chemical handling incident will be reported as an incident by the Worker(s) involved and the Site Manager shall complete the Environmental Incident Report in accordance with **Section 5.14**.	SM, W
6.	The Workers shall ensure that all solids wastes are stored in the designated solids stockpile area. Inspection of the solids stockpile area shall be undertaken fortnightly in accordance with **Section 5.1**.	W, SM
7.	The Site Manager shall ensure groundwater monitoring undertaken in accordance with **Section 6.7**.	SM
8.	Groundwater monitoring data shall be reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Annual Environmental Management Report	
References:	Nil	

5.8 STOCK HOLDING MANAGEMENT

5.8.1 OBJECTIVE

To manage the stock holding paddocks to prevent soil structural decline and minimise the potential for dust generation.

5.8.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Irrigation area and stock holding paddocks	
When:	Weekly	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the holding paddocks. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall ensure a good and adequate grass cover is present in all holding paddocks used for the temporary holding of stock. Paddocks with inadequate grass cover shall not be used until grass is re-established. This shall be noted on **Form 1 – Environmental Checklist**.	SM
3.	The Site Manager and Workers shall ensure that stock are not held in paddocks where the soil surface is too wet and/or boggy.	SM, W
4.	The Site Manager and Workers shall follow the following management principles: – using non-irrigated paddocks as the first area for temporary stock holding – ensuring withholding period of 4 hours (or dry pasture) following irrigation – this can be achieved through rotational irrigation – ensuring adequate feed and water is available for stock to minimise impact on pasture – monitoring the number of stock using the resting paddocks – monitoring the status of pasture in the resting paddocks – ensuring some resting paddocks are used as solely cut and carry on a rotational basis (i.e. no stock holding) – applying more effluent in areas that do not have stock holding to match nitrogen loads; and – adjusting the irrigation, cropping and stock holding regime based on the results of monitoring.	SM, W
5.	Records of stock held in paddocks shall be maintained and reported in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Annual Environmental Management Report	
References:	Nil	

5.9 DUST MANAGEMENT

5.9.1 OBJECTIVE

To ensure that operations are undertaken in a manner that minimises the potential for dust generation and impacts on local air quality.

5.9.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Trafficable areas, cattle yards, irrigation area and stock holding paddocks	
When:	Weekly and as required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the site to identify if there are any areas of potential dust generation and inspect the dust monitoring stations. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall ensure a good and adequate grass cover is present in all holding paddocks used for the temporary holding of stock. Paddocks with inadequate grass cover shall not be used until grass is re-established. This shall be noted on **Form 1 – Environmental Checklist**.	SM
3.	The stock holding paddocks shall be managed in accordance with **Section 5.8** to ensure an adequate grass cover is maintained.	SM
4.	The Site Manager and Workers are responsible for continually monitoring dust generation and employing dust control measures as required. Appropriate dust control measures shall include: – Strategic watering – Sweeping and/or cleaning of hard surfaces – Controlling stock movements – Not undertaking potential dust generating activities in unfavourable conditions (e.g. in strong winds (> 26 knots or approximately 50 km/hour), or when winds are in the direction of off-site receivers). Check on site weather station as required to confirm wind direction and speed.	SM, W
5.	Landscaping shall be watered and maintained until well established to provide barriers to wind and dust movement.	SM, W
6.	The cattle yards soft floor system shall be inspected by the Site Manager prior to each sale. Dust suppression sprinklers will be used to moisten to soft floor if required.	SM, W
7.	Dust monitoring shall be undertaken in accordance with the Noise and Air Commissioning Plan attached as **Appendix H** for the first 4 months of operations.	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Trafficable areas, cattle yards, irrigation area and stock holding paddocks	
When:	Weekly and as required	
Actions:		**Responsible Person(s)**
8.	The Site Manager shall ensure the dust monitoring stations are functional at all times and maintained in accordance with manufactures instructions.	SM
9.	The Site Manager shall ensure that all drivers adhere to posted speed limits.	SM
10.	General traffic movement will be restricted to sealed and/or gravelled areas.	SM
11.	Dust shall be monitored in accordance with **Section 6.9** and by recording any complaints received on the Complaints Register in accordance with **Section 5.13 – Complaints Management**. A summary of any dust complaints, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Form 7 – Complaints Register Annual Environmental Management Report	
References:	Nil	

5.10 ODOUR MANAGEMENT

5.10.1 OBJECTIVE

To ensure that operations are undertaken in a manner that minimises the potential for odour generation and impacts on local air quality.

5.10.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Truck wash, cattle yards, effluent treatment system and irrigation area	
When:	Weekly and as required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the site to identify if there are any areas of potential odour generation. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	Odour measurements shall be undertaken in accordance with the Noise and Air Commissioning Plan attached as **Appendix H**.	SM
3.	The Site Manager shall ensure that solid wastes are managed in accordance with **Section 5.3** to minimise the amount of solid waste stockpiled onsite.	SM
4.	The SM shall direct workers to turn the solids stockpiles as soon as practicable if a distinct to strong odour is being generated. Refer to **Table 5.2** for odour intensity rating.	SM, W
5.	The Site Manager shall arrange removal within 48 hours of any stockpiled solids that are generating a strong odour that is noticeable at the site boundary in a downwind direction. Refer to **Table 5.2** for odour intensity rating.	SM
6.	The effluent treatment system shall be managed in accordance with **Section 5.2** to ensure aerators are working.	SM
7.	Effluent irrigation shall be managed in accordance with **Section 5.4**.	SM
8.	Odour shall be monitored by recording any complaints received on the Complaints Register in accordance with **Section 5.13 – Complaints Management**. A summary of any odour complaints, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Form 7 – Complaints Register Annual Environmental Management Report	
References:	ERM Australia (2016) *Central Victoria Livestock Exchange Odour Impact Assessment, Works Approval Application Technical Assessment*	

Table 5.2 – Odour intensity rating scale

Rating	Description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

5.11 NOISE MANAGEMENT

5.11.1 OBJECTIVE

To ensure that operations are undertaken in a manner that minimises the potential for noise generating activities to impact on the local amenity.

5.11.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
1.	Potential noise generating activities (outside of normal sale activities e.g. construction/maintenance activities, cropping activities) shall be restricted to day-time hours (0700 hr to 1800 hr Monday to Friday and 0700hr to 1300hr on Saturday).	SM
2.	Noise measurements shall be undertaken in accordance with the Noise and Air Commissioning Plan attached as **Appendix H**.	SM
3.	The CVLX online induction for transport operators shall include awareness of the sensitive surrounding uses and potential noise impacts during the later evening/night periods (e.g. after 6 pm). This shall include: – Providing control over impact generating activities (dropping decks, gate operations etc.) in both the cattle/sheep areas and the truck wash areas – Minimising the use of engine brakes and horns	SM
4.	The site staff training shall include awareness of the sensitive surrounding uses and potential noise impacts during the later evening/night periods consistent with Action 3.	SM
5.	Site signage shall be used to reinforce the need to minimise noise consistent with Action 3.	SM
6.	The Site Manager shall ensure that the public address system is not used between 2000hr and 0700hr.	SM
6.	Following completion of the Noise Compliance Verification Report, noise shall be monitored by recording any complaints received on the Complaints Register in accordance with **Section 5.13 – Complaints Management**. A summary of any noise complaints, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Form 7 – Complaints Register Annual Environmental Management Report	
References:	SLR Consulting Australia (2016) *Ballarat Saleyards EPA Works Approval – Acoustical Assessment Report*	

5.12 TRAFFIC MANAGEMENT

5.12.1 OBJECTIVE

To manage traffic movement on site to:

- Reduce heavy vehicle/light vehicle conflict points;
- Reduce vehicle/pedestrian interaction; and
- To minimise the potential for dust generation.

5.12.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall undertake fortnightly inspections of the site to identify if there are any traffic movement or parking issues. Record of the inspection shall be maintained on **Form 1 – Environmental Checklist** in accordance with **Section 5.1**.	SM
2.	The Site Manager shall ensure that general traffic movement is restricted to defined sealed and/or gravelled areas.	SM
3.	The CVLX online induction for transport operators shall include details of internal speed limits and traffic movement areas.	SM
4.	The Site Manager shall ensure that all drivers adhere to posted speed limits.	SM
5.	Parking will be only in defined parking areas that are sealed or gravelled.	SM
6.	Traffic impacts shall be monitored by recording any complaints received on the Complaints Register in accordance with **Section 5.13 – Complaints Management**. A summary of any traffic complaints, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 1 – Environmental Checklist Form 7 – Complaints Register Annual Environmental Management Report	
References:	TraffixGroup (2016) *Car Parking and Traffic Management Plan Central Victoria Livestock Exchange (CVLX), Sunraysia Highway, Miners Rest*	

5.13 COMPLAINTS MANAGEMENT

5.13.1 OBJECTIVE

To ensure any complaint received is recorded and kept correctly, investigated, and options for avoiding recurrence are considered.

5.13.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall ensure that the public is aware of the site's telephone number for complaints, and that it is operational during operating hours.	SM
2.	Any complaint received by any staff member at the saleyards shall be reported immediately to the Site Manager.	SM, W
3.	All details of any complaint and subsequent investigation will be recorded on **Form 6 – Complaint Form** by the Site Manager.	SM
4.	The Site Manager will ensure that the record of a complaint will be kept for at least four (4) years after the complaint was made, and that the records are available to any authorised officer of the EPA who asks to see them.	SM
5.	The Site Manager shall be responsible for follow-up investigation for all complaints received, and assessing options for avoiding recurrence.	SM
6.	Where required, the Site Manager shall provide acknowledgement and feedback to community members following closure of a compliant raised by a community member.	SM
7.	A summary of complaints, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 6 – Complaints Form Form 7 – Complaints Register Annual Environmental Management Report	
References:	Nil	

5.14 ENVIRONMENTAL INCIDENT MANAGEMENT

5.14.1 OBJECTIVE

To ensure that all incidents with the potential to impact adversely on the environment are investigated and documented, and that options for avoiding recurrence are implemented.

5.14.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
1.	All incidents that may result in an adverse impact on the environment must be reported by Workers immediately (once safe and practicable to do so) to the Site Manager. **Site Manager: 0419 302 850**	SM, W
2.	The Site Manager is responsible for notifying RIPL senior management of any environmental incident. **Senior Management: 07 3153 8815**	SM
3.	In the event of an environmental incident resulting in an emergency situation, immediate action should be taken and the Site Manager shall contact the appropriate immediately to arrange assistance (i.e. Country Fire Authority, VIC Police, Ambulance Victoria).	SM
4.	The Site Manager will immediately (after becoming aware) notify all relevant authorities of incidents of pollution, environmental hazard or other activities potentially harmful to the environment.	SM
5.	Notification of environmental incidents of pollution, environmental hazard or other activities potentially harmful to the environment will be made by telephoning the EPA 24-hour pollution hotline – 1300 372 842 (1300 EPA VIC).	SM
6.	In the event of an environmental incident involving workplace, health and safety, and dangerous goods, the Site Manager must notify WorkSafe Victoria immediately by calling 132 360 and then in writing within 48 hours using an online form available at http://www.worksafe.vic.gov.au/safety-and-prevention/health-and-safety-topics/incident-notification	SM
7.	All environmental incidents shall be recorded on **Form 8 – Environment Incident Report**.	SM
8.	All incidents with the potential to impact adversely on the environment shall be investigated by the Site Manager, and options for avoiding recurrence are implemented. Corrective actions shall be noted on **Form 8 – Environmental Incident Report**.	SM
9.	Periodic testing of this operating procedure shall be coordinated by the Site Manager (e.g. mock environmental incidents).	SM

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
10.	A summary of environmental incidents, causes and corrective actions shall be provided in the Annual Environmental Management Report in accordance with **Section 7.1**.	SM
Records:	Form 8 – Environmental Incident Report Annual Environmental Management Report	
References:	Nil	

5.15 STAFF TRAINING

5.15.1 OBJECTIVE

To ensure all current and new staff are trained in the appropriate EIP procedures, are aware of and comply with the requirements of the EIP, and are aware of their responsibilities with respect to environmental management.

5.15.2 PROCEDURES

Who:	Site Manager (SM), Workers (W)	
Where:	Site	
When:	As required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall ensure that all site staff have received the appropriate operator training.	SM
2.	The Site Manager shall ensure that all site staff have received training in the following: – Role and use of the EIP – Role and use of the EIP Operating Procedures	SM, W
3.	All staff who complete training shall sign off on the **Form 9 – Staff Training Register**.	SM, W
4.	Records of training shall be maintained by the Site Manager.	AM
Records:	Form 9 – Staff Training Register	
References:	Nil	

5.16 COMMUNITY ENGAGEMENT

5.16.1 OBJECTIVE

To ensure effective stakeholder engagement and access to information for the operation of the CVLX.

5.16.2 PROCEDURES

Who:	Site Manager (SM)	
Where:	Site	
When:	Annually and as required	
Actions:		**Responsible Person(s)**
1.	The Site Manager shall ensure that the Community Liaison Committee (CLC) is established in accordance with the Community Engagement Plan included in **Appendix F**.	SM
2.	The Site Manager shall implement the Community Engagement Plan included in **Appendix F**.	SM
3.	The Site Manager shall ensure a current copy of this EIP and the latest AEMR (refer Section 7.1) are available at CVLX for viewing by any interested community member.	SM
Records:	Web site documents	
References:	Nil	

Monitoring

6.1 ENVIRONMENTAL MONITORING SCHEDULE

An annual environmental monitoring schedule is provided in **Appendix G**.

For *noise monitoring*, *odour monitoring*, *dust monitoring*, *effluent monitoring* and *surface water monitoring* this schedule will apply after the completion of the commissioning period outlined in the respective commissioning plans.

All other monitoring will commence when the CVLX commences operations.

The monitoring program will be reviewed after two (2) years of operation.

6.2 WATER CYCLE

Water movement will be monitored by recording the following flow meters fortnightly (refer to **Section 5.1**):

- Meter No. 1 (main potable meter recording water use from the supply main)
- Meter No. 2 (CFB building)
- Meter No. 3 (supply meter at the rainwater pond)
- Meter No. 4 (truck wash/wash down pump – truck wash data determined from AvData)
- Meter No. 5 and 6 (borrow pit dam pump/bore pump)
- Meter No. 7 (irrigation meter)

The approximate location of these meters is shown on **Figure 6**. Data will be recorded on **Form 1 – Environmental Checklist**.

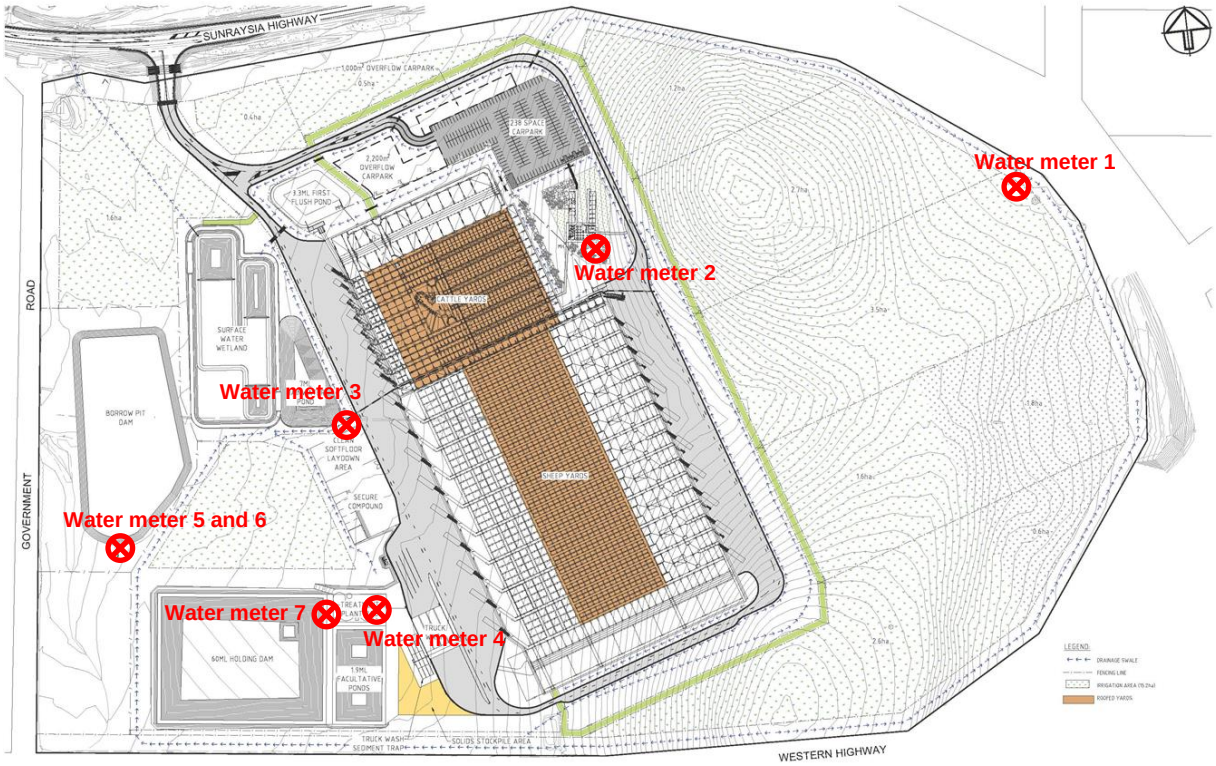

Figure 6: Water meters

6.3 EFFLUENT QUALITY MONITORING

*The following effluent quality monitoring program will commence after the effluent treatment system commissioning period. Monitoring through the commissioning period is defined in the effluent system commissioning plan (**Appendix B**).*

The plan outlined below may be modified following the commissioning period.

6.3.1 QUARTERLY SAMPLING

***Where*:** Effluent monitoring locations are shown on **Figure 7** and include:

E2 SBR intake pump well

E3 irrigation offtake point

When: Samples will be collected every three (3) months commencing at the end of the system commissioning phase.

What for: Samples will be analysed for the following parameters:

E2

- Biochemical oxygen demand (BOD), mg/L
- Chemical oxygen demand (COD), mg/L
- Total suspended solids (TSS), mg/L
- pH
- *E. coli*, cfu/100mL

E3

- Biochemical oxygen demand (BOD), mg/L
- Chemical oxygen demand (COD), mg/L
- Total suspended solids (TSS), mg/L
- pH
- *E. coli*, cfu/100mL
- Electrical conductivity, µS/cm
- Total Kjeldahl nitrogen (TKN), mg/L
- Ammonia, mg/L
- Nitrite/Nitrate, mg/L
- Orthophosphate, mg/L
- Total phosphorous (TP), mg/L
- Potassium, mg/L
- Sodium, mg/L
- Calcium, mg/L
- Magnesium, mg/L
- Sodium adsorption ratio (SAR)

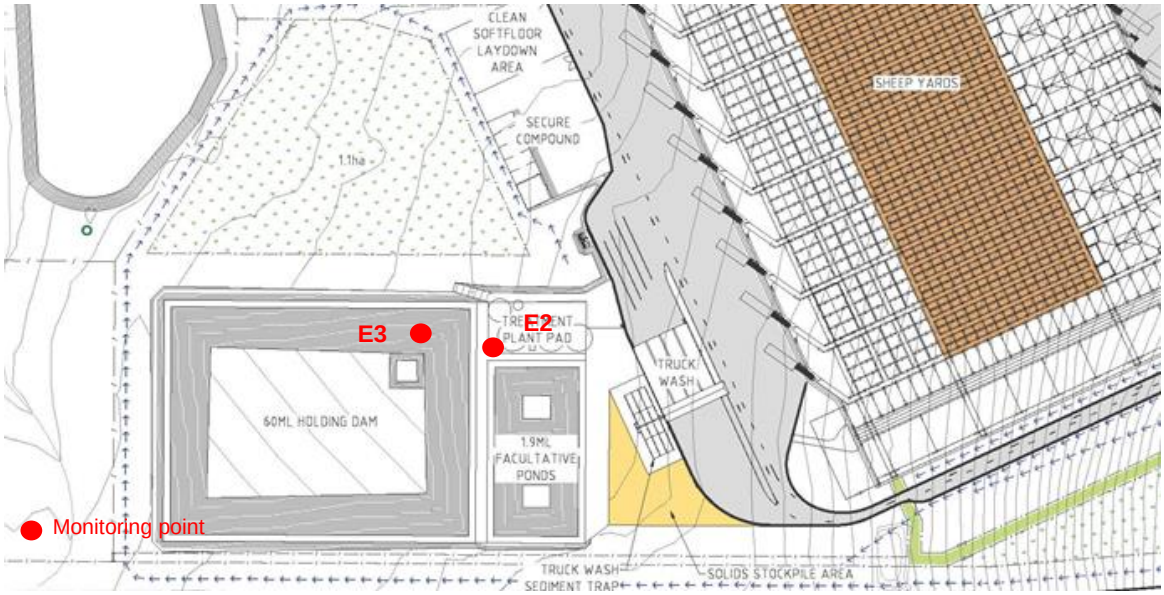

Figure 7: Effluent monitoring points

6.4 SOLID WASTE MONITORING

The quantity of solid waste leaving the facility will be recorded in accordance with **Section 5.3**.

6.5 SOIL MONITORING

***Where*:** Soil monitoring locations are shown on **Figure 8**.

When: Topsoil samples will be collected every year in September. Sub soil samples will be collected in Year 1 in September and then every three (3) years.

What for: Samples will be analysed for the following parameters:

Topsoil

- pH (1:5 water)
- electrical conductivity (1:5 water), dS/m
- exchangeable cations, cmol(+)/kg
- nitrate, mg/kg
- total Kjeldahl nitrogen (TKN), mg/kg
- available phosphorus (Bray/Colwell), mg/kg
- total phosphorus, mg/kg
- organic carbon, g/100g

Subsoil

- pH (1:5 water)
- electrical conductivity (1:5 water), dS/m
- exchangeable cations, cmol(+)/kg
- nitrate, mg/kg
- total Kjeldahl nitrogen (TKN), mg/kg
- available phosphorus (Bray/Colwell), mg/kg
- total phosphorus, mg/kg
- organic carbon, g/100g
- phosphorus sorption capacity, mg/kg

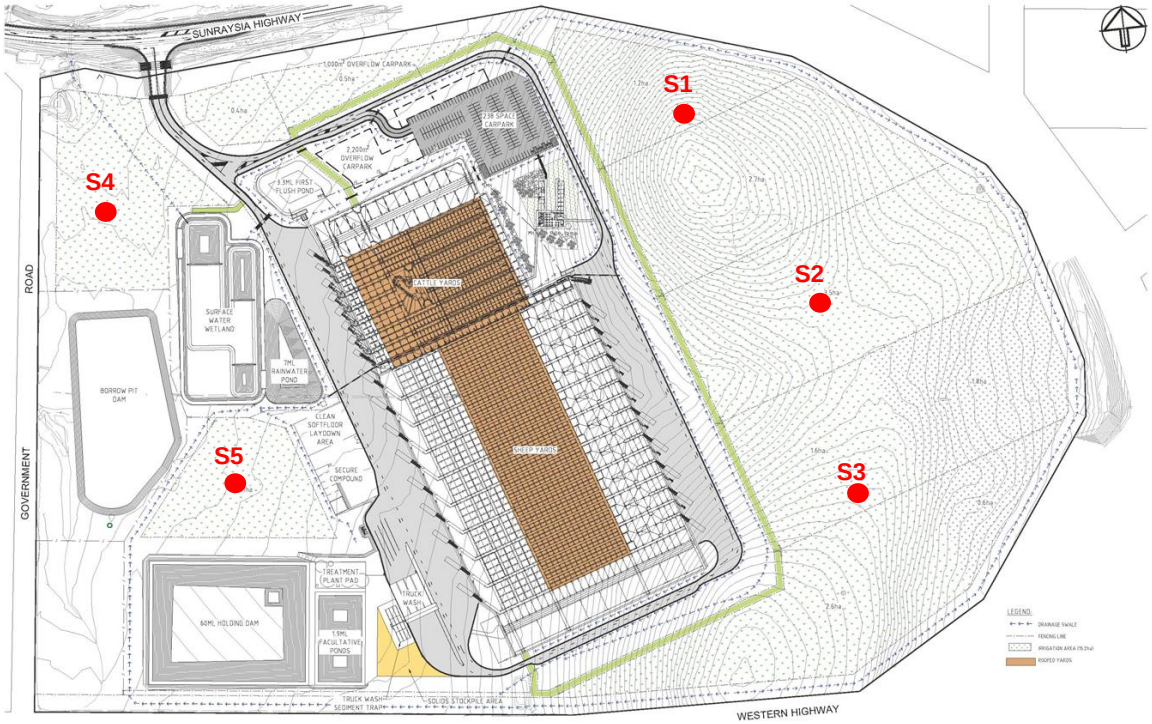

Figure 8: Soil reference points

6.6 SURFACE WATER MONITORING

*The following surface water quality monitoring program will commence after the surface water wetland commissioning period. Monitoring through the commissioning period is defined in the surface water wetland commissioning plan (**Appendix C**).*

The plan outlined below may be modified following the commissioning period.

***Where*:** Surface water monitoring locations are shown on **Figure 9** and include:

SW3 rising stage sampler on the outlet to the surface water wetland

When: Samples will be collected at least two (2) times per year, subject to discharge occurring, commencing at the end of the wetland system commissioning phase.

What for: Samples will be analysed for the following parameters:

SW3

- Electrical conductivity, µS/cm
- pH
- Total suspended solids, mg/L
- Total nitrogen, mg/L
- Nitrate, mg/L
- Ammonia, mg/L
- Total phosphorus, mg/L

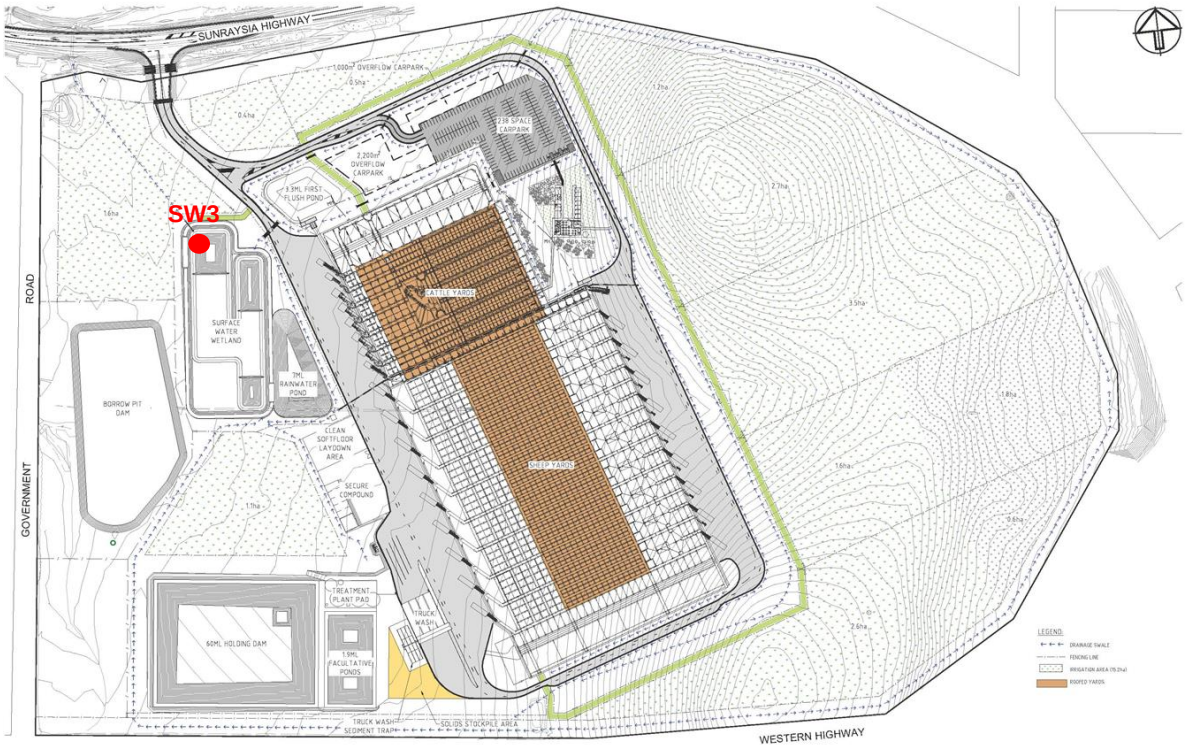

Figure 9: Surface water monitoring points

6.7 GROUNDWATER MONITORING

***Where*:** Groundwater monitoring locations are shown on **Figure 10** and include:

MW101	southern boundary
MW102	west of effluent ponds
MW102A	west of effluent ponds
MW103	north-east corner

When: Every three (3) months for the first two (2) years of operation, after which it would reduce to every six (6) months.

What for: Groundwater will be monitored for the following:

GW1, GW2

- Standing water level, mbgl
- Electrical conductivity, µS/cm
- pH
- Total dissolved solids, mg/L
- Nitrate, mg/L
- Total phosphorus, mg/L
- Phosphate, mg/L

Note: if monitoring indicates some change in groundwater quality, a more comprehensive suite would be undertaken. This would add cations and a full nitrogen suite.

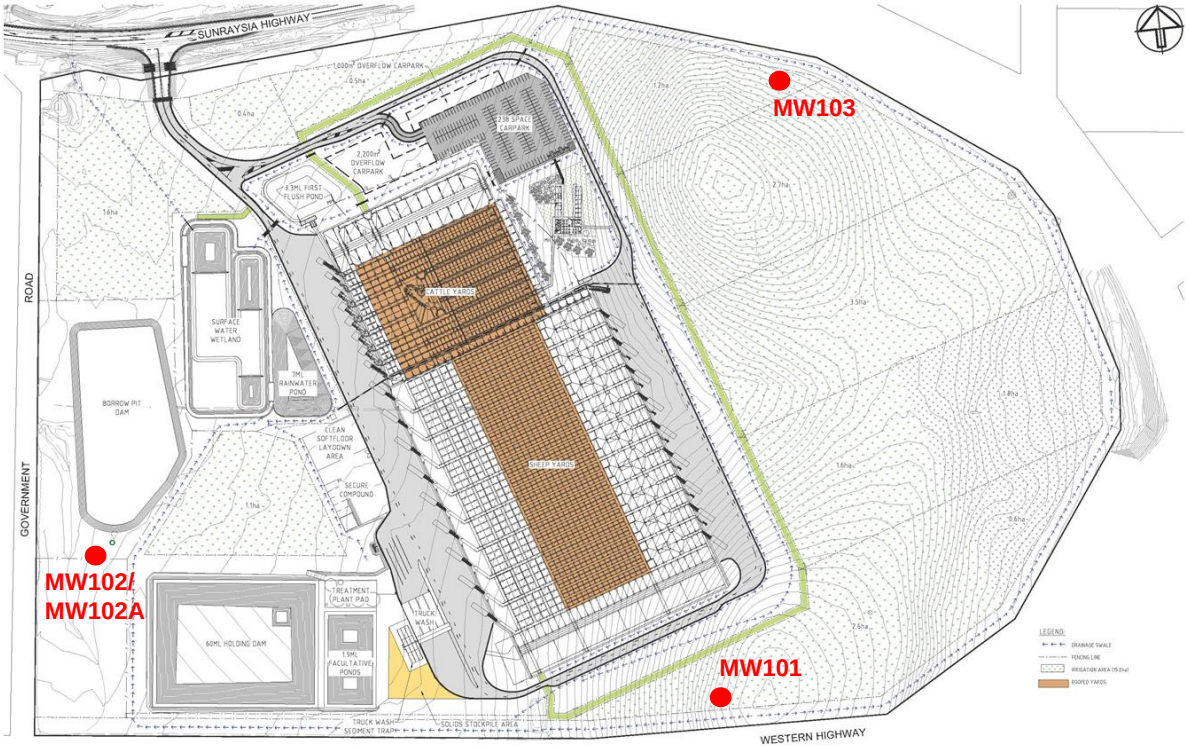

Figure 10: Groundwater monitoring points

6.8 CROP MONITORING

Crop yield will be measured and recorded at each harvest (no. of bales and average weight).

Representative crop samples (minimum two (2) samples) will be analysed annually for moisture content, nitrogen, phosphorus and potassium.

6.9 AIR QUALITY MONITORING

6.9.1 DUST

Dust monitoring shall be undertaken in accordance with the Noise and Air Commissioning Plan attached as **Appendix H** for the first 6-12 months of operations.

The EIP shall be updated with revised monitoring protocols at the completion of the commissioning period.

Dust shall also be monitored through complaints in accordance with **Section 5.9** throughout the commissioning period.

6.9.2 ODOUR

Odour shall be monitored in accordance with the Noise and Air Commissioning Plan attached as **Appendix H**.

The EIP shall be updated with revised monitoring protocols at the completion of the commissioning period.

Odour shall also be monitored through complaints in accordance with **Section 5.10** throughout the commissioning period.

6.10 NOISE MONITORING

Noise shall be monitored in accordance with the Noise and Air Commissioning Plan attached as **Appendix H**.

The EIP shall be updated with revised monitoring protocols at the completion of the commissioning period.

Noise shall also be monitored through complaints in accordance with **Section 5.11** throughout the commissioning period.

Reporting and Review

7.1 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

7.1.1 REPORTING YEAR

The reporting year will be 1 July to 30 June.

7.1.2 SCOPE AND PURPOSE

The Annual Environmental Management Report (AEMR) will be a summary of the environmental performance of the CVLX for the reporting year. The AEMR will:

a) Describe the activities that were carried out in the previous year, and the activities that are proposed to be carried out over the next year

b) Include a summary of the monitoring results and complaints records including a comparison of these results against the:

   i. conditions, approvals/licenses, limits and performance objectives;

   ii. requirements of this EIP;

   iii. monitoring results of previous years; and

   iv. relevant predictions made in assessment documentation.

c) Identify any non-conformance over the previous year and describe what actions were (or are being) taken to ensure compliance;

d) Identify any trends in the monitoring data from the commencement of this EIP;

e) Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies;

f) Identify measures that could be implemented to improve the environmental performance of the CVLX if required; and

g) Identify changes to the EIP.

7.1.3 TIMING

The AEMR will be prepared by 1 October (or nearest working day) each year and shall report on the previous operating year.

7.2 ENVIRONMENTAL AUDITING AND COMPLIANCE

7.2.1 FUNCTION

Auditing of the EIP will be undertaken to ensure its implementation and effectiveness. Compliance audits will determine whether or not the EIP is being properly implemented and maintained.

7.2.2 INTERNAL AUDIT

In the first twelve (12) months of operation, one (1) internal compliance audit will be completed. This audit will be undertaken by the Site Manager.

The audit will be documented and a record maintained.

The frequency of internal audits will reduce to one every two years after the first year of operation.

7.2.3 EXTERNAL AUDIT

Within the first two (2) years of the date of commencement of operations at the facility and every three (3) years thereafter, RIPL shall commission an external audit of the operations against the requirements of the EIP and any approvals.

This audit shall:

a) Be conducted by an external auditor;

b) Include consultation with relevant agencies;

c) Assess the environmental performance of the facility to assess whether it is complying with the requirements of any approvals and the EIP;

d) Review the adequacy of any approved strategy, plan or program against monitoring results and predicted impacts; and

e) Recommend measures or actions to improve the environmental performance of the facility and/or changes to the EIP.

7.3 EIP REVISION

7.3.1 REVISIONS TO OPERATING PROCEDURES

RIPL shall review and if necessary revise the EIP within three (3) months of:

a) The AEMR (**Section 7.1 – Annual Environmental Management Report**);

b) Any incident report (**Section 5.14 – Environmental Incident Management**);

c) An audit report (**Section 7.2 – Environmental Auditing and Compliance**); or

d) Any modifications to conditions of approval.

This is to ensure that the EIP is updated on a regular basis, and incorporates any recommended measures to improve environmental performance.

7.3.2 DOCUMENT CONTROL

The following will be classed as 'major' revisions:

- Changes to processes;
- Additional procedures or improvement actions;
- Changes made in response to an incident; and
- Changes requested by the EPA.

Major revisions shall be identified by the whole number in the version number (i.e. 1.0, 2.0, 3.0….) and shall be approved by the EPA before re-issue.

The following will be classed as 'minor' revisions:

- Minor typing and grammar corrections;
- Changes to position titles;
- Updates to recording forms to suit operations; and
- Changes/additions to Appendices/Attachments.

Minor revisions shall be identified by the decimal point in the version number (i.e. 1.1, 2.2, 3.3….) and will not require EPA approval prior to re-issue.

References

EPA Victoria (1991) *Guidelines for wastewater irrigation*. Publication 168.

EPA Victoria (2003) *Guidelines for environmental management, Use of reclaimed water.* Publication 464.2.

ERM Australia (2016) *Central Victoria Livestock Exchange Odour Impact Assessment, Works Approval Application Technical Assessment*

SLR Consulting Australia (2016) *Ballarat Saleyards EPA Works Approval – Acoustical Assessment Report*

TraffixGroup (2016) *Car Parking and Traffic Management Plan Central Victoria Livestock Exchange (CVLX), Sunraysia Highway, Miners Rest*

Appendix A

RISK MANAGEMENT

CVLX ENVIRONMENTAL RISK REGISTER

Verison 6.0: 20 September 2018

Number	Risk Management Area	Cause	Impact	Controls	Current Risk Rating						Responsible Person
					Consequence		Likelihood		Rating		
1	Air Quality (dust)	Lack of dust suppression watering, inadequate groundcover, undertaking dust generating activities in unsuitable conditions	Off-site dust impacts on sensitive receptors	Section 5.5 - Soil Management Section 5.8 - Stock Holding Management Section 5.9 - Dust Management Section 5.1 - Fortnightly Checklist	2	Minor	U	Unlikley	2U	Low	Site Manager
2	Air Quality (odour)	Soiled soft floor material, excessive solids stockpiled on-site, inadequate aeration on treatment ponds	Off-site odour impacts on sensitve receptors	Section 5.10 - Odour Management Section 5.3 - Solid Waste Management Section 5.2 - Effluent System Management Section 5.4 - Irrigation Management Section 5.1 - Fortnightly Checklist	2	Minor	U	Unlikley	2U	Low	Site Manager
3	Noise	Excessive vehicle movements, reversing alarms, truck wash activities, farming practices	Exceed predicted noise levels at off-site receptors	Section 5.11 - Noise Management	2	Minor	U	Unlikley	2U	Low	Site Manager
4	Surface water	Runoff during irrigation, discharge from the effluent treatment system, spills, inappropriate storage of chemicals, inadequate controls, increase in site peak discharge, excessive extraction, lack of monitoring	Impact on existing surface water systems	Section 5.6 - Surface Water Management Section 5.4 - Irrigation Management Section 5.8 - Stock Holding Management Section 5.1 - Fortnightly Checklist	3	Moderate	R	Rare	3R	Low	Site Manager
5	Groundwater	Leak from effluent ponds, excessive irrigation, inadequate nutrient management in the irrigation area, lack of monitoring	Impact on groundwater resources	Section 5.7 - Groundwater Management Section 5.4 - Irrigation Management	2	Minor	R	Rare	2R	Low	Site Manager
6	Soils	Inadequate grass cover, soil disturbance through site works, inadequate irrigation management, chemcial spills, lack of monitoring	Erosion, soil structural decline, salinisation, contamination	Section 5.5 - Soil Management Section 5.4 - Irrigation Management Section 5.8 - Stock Holding Management Section 5.1 - Fortnightly Checklist	2	Minor	R	Rare	2R	Low	Site Manager
7	Traffic	Excess traffic, not following designated movement pathways, inappropriate parking	Road network impacts, impact on grass cover, soil imapcts, pedestrian safety	Section 5.12 - Traffic Management Section 5.1 - Fortnightly Checklist	2	Minor	U	Unlikley	2U	Low	Site Manager
8	Solid waste management	Excess solid waste onsite, not storing solids in appropriate areas	Potential odour impacts, surface water and groundwater impacts	Section 5.3 - Solid Waste Management Section 5.1 - Fortnightly Checklist	1	Insignificant	R	Rare	1R	Low	Site Manager
9	Complaints handling	Not following complaint management procedure, no follow-up and/or complaint closure	External stakeholder dissatisfaction, no continuous improvement	Section 5.13 - Complaints Management	1	Insignificant	U	Unlikley	1U	Low	Site Manager
10	Enivronmental Incident Management	Not following incident management procedure, no follow-up and/or corrective action	Potential for breach of approval condition, no continuous improvement	Section 5.14 - Environmental Incident Management	1	Insignificant	U	Unlikley	1U	Low	Site Manager
11	Compliance with EIP	Lack of personnel training and supervision, no review/auditing	Non compliance with OEMP and possible environmental impact and/or breach of approval condition	Section 5.15 - Training Section 7 - Review and Reporting	2	Minor	U	Unlikley	2U	Low	Site Manager
12	Community Engagement	Ineffective communication with stakeholders.	Misinformation in the community. Disgruntled community.	Section 5.16 - Community Engagement Section 7 - Review and Reporting	2	Minor	U	Unlikley	2U	Low	Site Manager

Appendix B

EFFLUENT TREATMENT SYSTEM COMMISSIONING PLAN

CENTRAL VICTORIA LIVESTOCK EXCHANGE

EFFLUENT SYSTEM COMMISSIONING PLAN

PREPARED FOR:

REGIONAL INFRASTRUCTURE PTY LTD

SEPTEMBER 2018

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Report Title:	*Central Victoria Livestock Exchange*
Project:	*Effluent System Commissioning Plan*
Client:	*Regional Infrastructure Pty Ltd*
Report Ref.:	*208120_Eff Comm_001E.docx*
Status:	*Final*
Issued:	*20 September 2018*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All data and information contained within this report is prepared for the exclusive use of Regional Infrastructure Pty Ltd to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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ABBREVIATIONS

BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
CVLX	Central Victoria Livestock Exchange
EIP	Environment Improvement Plan
EPA	Environment Protection Authority (Victoria)
ha	Hectare
kL	Kilolitres (1,000 litres)
L	Litre
mL	Millilitre
ML	Megalitre (1,000,000 litres)
RIPL	Regional Infrastructure Pty Ltd
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorous
TSS	Total Suspended Solids

1.0 INTRODUCTION

Regional Infrastructure Pty Ltd (RIPL) operate the Central Victoria Livestock Exchange (CVLX) which is a regional cattle and sheep selling centre located approximately 10 kilometres north-west of Ballarat in Victoria. The CVLX is a state-of-the-art facility that provides livestock marketing and saleyard services for the Ballarat district and extending further into central Victoria.

Water for the facility is provided through a combination of roof water harvesting, surface water harvesting, groundwater, recycling and connection to reticulated water supply. Liquid wastes are generated from the truck wash, first flush surface water catchment, and wash down of the scales and troughs within the selling centre. Liquid wastes are treated through a biological treatment system and reused on site for irrigation.

The effluent treatment system uses facultative ponds and a sequencing batch reactor (SBR) to treat the liquid wastes to a standard suitable for on-site effluent reuse through irrigation. The treatment of liquid wastes through the CVLX effluent treatment system is designed to achieve a Class C effluent as defined by the *EPA Publication 464.2: Guidelines for Environmental Management, Use of Reclaimed Water*.

A commissioning period is required to effectively establish the ponds and treatment system. At a minimum this will include:

- A 12 to 15 week period to fill the facultative ponds with effluent;
- An additional 10 to 15 week period for the ponds to establish the required microbiological populations to achieve the design pollutant removals; and
- A further 8 to 12 week period for the SBR to generate a stable biomass.

This indicates a minimum of 8 months for the treatment system to establish the required microbiological systems to function effectively. This process may be slowed through the winter period (cooler temperatures slowing microbiological action). As such it is prudent to allow some extra time to fully commission the system. This would be provided through the establishment period.

Therefore a commissioning period of 12 months is proposed from the commencement of operations to fully commission the effluent treatment system to ensure it can consistently deliver irrigation water which meets the design targets.

This document outlines the commissioning process, controls, monitoring and reporting requirements.

2.0 TREATMENT SYSTEM

2.1 LAYOUT

The treatment system is:

- Solids trap;
- Facultative treatment;
- Packaged Sequencing Batch Reactor (SBR) for Class C effluent including filtration for Helminth removal;
- Holding pond; and
- Effluent reuse through irrigation.

The layout of the pond system is shown in **Figure 1**.

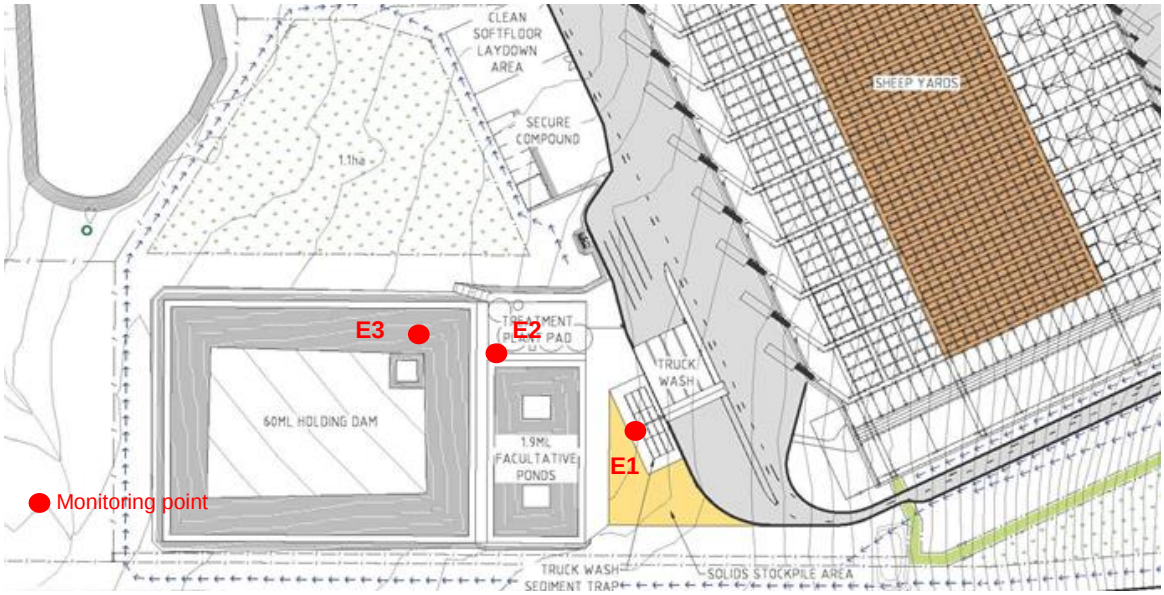

Figure 1: CVLX effluent treatment system

2.2 DESIGN FLOW

The initial design flow is approximately 375 kL/day. This is based on the modelled peak week flow. The average design flow is 115 kL/day.

3.0 COMMISSIONING PLAN

The preliminary commissioning plan and actions are outlined in **Table 3.1**. Details are provided in the following section. System designers would be involved throughout the commissioning period and would:

- Conduct training of site staff;
- Prepared commissioning and monitoring schedules;
- Review data and operational information;
- Respond to questions or operational issues;
- Oversee any changes to operational protocols;
- Regularly inspect the system commissioning progress; and
- Prepare a commissioning report.

Operations during the commissioning period would be undertaken by appropriately trained on-site staff.

Table 3.1 – Summary of commissioning plan and actions

Component	Expected period	Actions
Pre-commencement of operations	1 week	• Fill facultative ponds with fresh water
System filling	12 to 15 weeks	• Fill facultative ponds with effluent • Commissioning equipment • Effluent quantity recording • Fortnightly system inspection
Establishment	10 to 15 weeks	• Effluent quantity recording • Effluent quality monitoring • Fortnightly system inspection • Adjust dosing • Irrigation (if required)
Stabilising	8 to 12 weeks	• Effluent quantity recording • Effluent quality monitoring • Adjust dosing • Online monitoring • Fortnightly system inspection • Irrigation (if required)
Reporting	4 weeks	• Prepare commissioning report

3.1 SYSTEM FILLING

3.1.1 Facultative Ponds – Initial filling

Prior to commencement of operations, the facultative ponds will be filled with fresh water sourced from the surface water wetland. This will:

- Keep moisture in the internal clay liner;
- Dilute the initial effluent load thereby allowing gradual build-up in effluent strength through the system; and
- Protect the internal batter from erosion.

It is expected that this will take up to 1 week.

Commencement of truck washing will add effluent to the system. This will discharge to the facultative ponds, mix with the fresh water and then transfer to the SBR.

It is expected that replacement of the fresh water in the facultative ponds and filling of the aerobic/anoxic pond will take 12 to 15 weeks.

3.2 MONITORING

3.2.1 Timing

Monitoring of the system would start at the commencement of system filling. The following monitoring would be undertaken during the operational phases.

System filling:

1. Effluent quantity recording
2. Fortnightly system inspection

System establishment and stabilising:

1. Effluent quantity recording

2. Effluent quality monitoring
3. Fortnightly system inspection
4. Online monitoring

3.2.2 Effluent Quantity Recording

Daily effluent quantity would be recorded through truck wash use.

AVDATA records of truck wash use would be downloaded and analysed on a monthly basis to determine the average daily effluent flow entering the system.

This data would be stored in digital records.

Daily rainfall records would be maintained.

3.2.3 Effluent Quality Monitoring

***Where*:** Effluent monitoring locations will include:

E1 raw effluent from truck wash solids separation basin discharge point (pump)

E2 SBR intake pump well

E3 irrigation offtake point

When: Samples will be collected every month commencing at the end of the system filling phase (if effluent is present).

What for: Samples will be analysed for the following parameters:

E1
- Biochemical oxygen demand (BOD) (total), mg/L
- Chemical oxygen demand (COD), mg/L
- Total suspended solids (TSS), mg/L
- pH
- *E. coli*, cfu/100mL
- Nitrogen suite (TN, TKN, NH_3, NOx)
- Total phosphorus (TP), mg/L

E2
- Biochemical oxygen demand (BOD) – filtered and total, mg/L
- Chemical oxygen demand (COD), mg/L
- Total suspended solids (TSS), mg/L
- pH
- *E. coli*, cfu/100mL
- Nitrogen suite (TN, TKN, NH_3, NOx)
- Total phosphorus (TP), mg/L
- Helminths (2 sample rounds only)

E3
- Biochemical oxygen demand (BOD) – filtered and total, mg/L
- Chemical oxygen demand (COD), mg/L
- Total suspended solids (TSS), mg/L
- pH
- *E. coli*, cfu/100mL
- Electrical conductivity, µS/cm
- Nitrogen suite (TN, TKN, NH_3, NOx) mg/L
- Total phosphorus (TP), mg/L
- Helminths (2 sample rounds only)

3.3 FORTNIGHTLY SYSTEM INSPECTION

The effluent treatment system would be inspected fortnightly during the commissioning period. The inspection would note and record the following:

1. SBR system monitoring panel and controls;
2. Chemical volumes;
3. Pond colour or change from previous inspections (facultative ponds and holding pond);
4. Pond odour rated as negligible, noticeable, moderate or strong;
5. Any solids build up or floating scum layers;
6. The state of exposed embankments; and
7. Any relevant operational comments – e.g. significant rain, higher than usual truck wash activity.

3.4 ONLINE MONITORING

The SBR will include online monitoring that will be reviewed initially daily by the system designers and then weekly. Remote adjustments will be made as required.

Key on line monitoring parameters will be:

- All tank levels (Continuous monitored with trending);
- Process pH level within the reactor tank (Continuous monitored with trending);
- Process DO level within the reactor tank (Continuous monitored with trending);
- Process TSS level within the reactor tank (Continuous monitored with trending); and
- Discharge flow to the Irrigation dam (Continuous monitored with Instantaneous trending and totaliser flows).

Once the system is commissioned, these parameters will be monitored as critical indicators of system performance.

3.5 IRRIGATION CONTROLS

Irrigation will commence once sufficient treated effluent is available. Irrigation operations will be in accordance with the principals outlined in Section 5.4 of the Environment Improvement Plan (EIP).

During the commissioning period, Class C effluent may not be achieved. Irrigation of effluent during the commissioning period will be managed on site by:

- Applying minimum buffer distance of 50 m to the site boundary, and up to 100 m to public roads, to minimise the possibility of spray drift into adjoining properties;
- Using a low pressure travelling irrigator to minimise spray drift;
- Irrigating under suitable wind conditions (i.e. away from nearest neighbours);
- Adopting deficit irrigation scheduling to ensure the irrigation area does not become saturated due to irrigation; and
- Withholding stock from the reuse area until such time that the scheme monitoring demonstrates that grazing would be possible (i.e. when Class C achieved).

3.6 REPORTING

Quarterly commissioning reports shall be prepared, with the first report prepared 3 months after the first sale day. The quarterly reports shall provide:

- A brief summary of treatment plant operations;
- A summary of available monitoring data; and
- A summary of remedial actions or system modifications undertaken during commissioning.

A final commissioning report shall be prepared after the initial 12 months of operation and will collate the quarterly reports. The final commissioning report will:

- Present an overview of the commissioning process;
- Present and discuss monitoring data;
- Describe any remedial actions or system modifications undertaken during commissioning;
- Outline any management actions required to ensure the system meets Class C effluent quality; and
- Defines performance objectives and sets critical trigger levels for key operational parameters.

3.7 RISK MANAGEMENT

The following risk management measures shall be considered in the event the treatment system is not meeting Class C:

- Implementing the irrigation controls outlines in **Section 3.5**;
- Use of the holding pond to recycle and re-treat effluent – the effluent would be pumped back from the holding pond and re-treated in the SBR;
- Limiting truck wash use, or temporary truck wash closure; and/or
- Removing effluent off-site using a tanker to an appropriately licensed facility.

Appendix C

SURFACE WATER WETLAND COMMISSIONING PLAN

CENTRAL VICTORIA LIVESTOCK EXCHANGE

SURFACE WATER WETLAND COMMISSIONING PLAN

PREPARED FOR:

REGIONAL INFRASTRUCTURE PTY LTD

SEPTEMBER 2018

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Report Title:	*Central Victoria Livestock Exchange*
Project:	*Surface Water Wetland Commissioning Plan*
Client:	*Regional Infrastructure Pty Ltd*
Report Ref.:	*208120_SWW Comm_001E.docx*
Status:	*Final for commissioning*
Issued:	*20 September 2018*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

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RIPL	Regional Infrastructure Pty Ltd
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorous
TSS	Total Suspended Solids

1.0 INTRODUCTION

Regional Infrastructure Pty Ltd (RIPL) has developed the Central Victoria Livestock Exchange (CVLX) which is a regional cattle and sheep selling centre located approximately 10 kilometres north-west of Ballarat in Victoria. The CVLX is a state-of-the-art facility that provides livestock marketing and saleyard services for the Ballarat district and extending further into central Victoria. The facility can accommodate an annual throughput of 70,000 head of cattle and 1,600,000 sheep and hosts around 112 sales per year.

The CVLX is operated by Regional Infrastructure Pty Ltd.

An integrated surface water management system incorporating grass swales and a constructed surface water wetland system is used to manage surface water. All surface water runoff from the western catchment is directed to the surface water wetland and is either reused on site or discharged off-site following treatment through the wetland.

The surface water wetland provides surface water quantity (peak flow and volume) and quality control and provides a source of top-up water for the facility.

A commissioning period is required to effectively establish the wetland system. Depending on climatic conditions, this is likely to include:

- A 4 to 6 week period to fill the wetland; and
- At least two growing seasons to establish the wetland macrophytes.

Therefore a commissioning period of up to 24 months is proposed from the commencement of operations to fully commission the wetland system to ensure it can manage surface water flows from the site.

The initial 8 to 12 months or so of this commissioning period is also likely to correspond to the period where the site is re-stabilising following disturbance through the construction process. Therefore water will need to be managed through this period.

This document outlines the commissioning process, controls, monitoring and reporting requirements.

2.0 WETLAND SYSTEM

2.1 LAYOUT

A constructed surface water wetland system will provide stormwater quantity and quality control for the site. The wetland system will include a permanent pool area that provides sedimentation zones, macrophyte zones and open water zones for water quality control.

The constructed wetland forms part of a treatment train approach that will improve the water quality of runoff leaving the site. Other components would include grass swales to filter site runoff before it reaches the wetland system. The hydraulic residence time provided by the wetland system will significantly improve water quality through sedimentation and nutrient uptake, as well as providing oxidation and ponding to treat pathogens.

The constructed wetland has the following key design parameters:

- Inlet pond volume (north) 1,084 m^3;
- Inlet pond volume (south) 590 m^3;
- Macrophyte area 3,330 m^2;
- Macrophyte area depth av. 0.5 m;
- Extended detention depth 0.5 m; and

- Outlet pond volume 1,600 m^3.

Water for reuse in the facility will be drawn from the outlet pond. The wetland macrophyte zone will have 200 mm high internal bunds that will trap water within the macrophyte area in the event that greater than 300 mm of water is drawn from the wetland system. This will maintain water in the macrophyte area.

The layout of the pond system is shown in **Figure 1**.

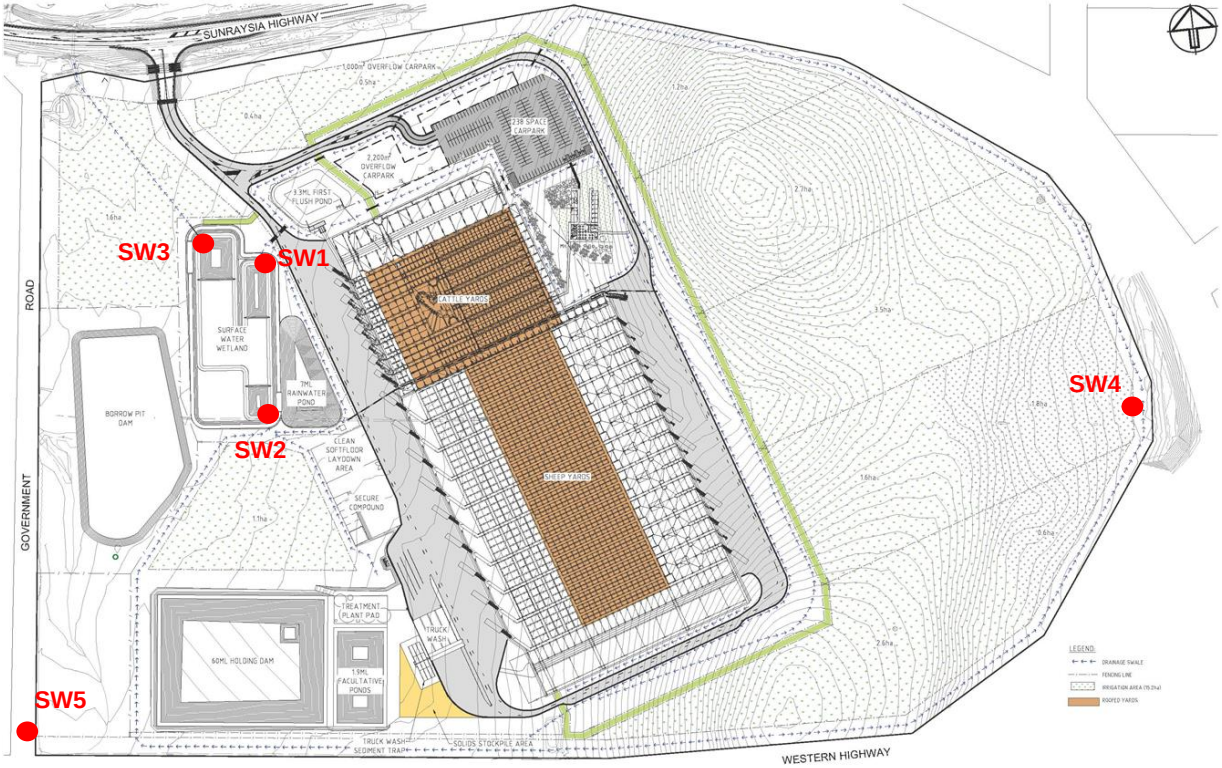

Figure 1: CVLX surface water wetland system

2.2 DESIGN FLOWS

Long term modelling (> 100 years of daily data) indicates the average annual inflow to the wetland is approximately 61 ML/year.

3.0 COMMISSIONING PLAN

The preliminary commissioning plan and actions are outlined in **Table 3.1**. Details are provided in the following section. System designers would be involved throughout the commissioning period and would:

- Conduct training of site staff;
- Prepared commissioning and monitoring schedules;
- Review data and operational information;
- Respond to questions or operational issues;
- Oversee any changes to operational protocols;
- Regularly inspect the system commissioning progress; and
- Prepare a commissioning report.

Operations during the commissioning period would be undertaken by appropriately trained on-site staff.

Table 3.1 – Summary of commissioning plan and actions

Component	Expected period	Actions
Initial filling following completion of earthworks	4 to 6 weeks (depending on climate)	• Fill wetland with water (runoff) • Use water for construction purposes
Establishment of macrophytes – to be panted in the first spring following completion of pond earthworks and filling	Up to 24 months (2 seasons)	• Surface water monitoring • Weekly system inspection • Treatment and reuse • Irrigation (if required) • Treatment and discharge (if required)
Reporting	4 weeks	• Prepare commissioning report

3.1 INITIAL FILLING AND WATER REUSE

Following completion of earthworks and establishment of planting beds within the wetland, it can fill with site runoff.

It is likely that site works will still be progressing during this period and the wetland will be used as a sediment basin to manage runoff during construction. During this period, runoff is likely to be turbid and water collected in the wetland shall be used as a source of construction water.

If the wetland water cannot be extracted and used for construction it shall be treated before being discharged offsite.

3.1.1 Treatment for Discharge

If water needs to be discharged off-site, it will be treated to ensure it is has a turbidity of that is less than the receiving water.

TSS shall be measured onsite using a turbidity tube.

The following method shall be used to treat the water prior to discharge:

- A flocculent (alum, gypsum or similar) shall be applied across the surface of the outlet pond. Methods of application include mixing in a drum with water and pumping through a hose or using a sprinkler;
- After the stored water is treated it will be left to settle for 24 to 48 hours.
- A sample of the background water quality at SW5 shall be obtained and turbidity measured using a turbidity tube.

- A sample of the treated water shall be obtained and turbidity measured using a turbidity tube.
- If the treated water has a lower turbidity than the background sample, the treated water may be discharged. If not, retain the treated water and re-sample after 4 hours.
- During discharge – water will be pumped or drained from the surface of the wetland, with the discharge monitored to ensure dirty water is not being released.

If required, a silt curtain may be used to isolate a smaller area of the outlet pond to improve treatment.

The above method may also be used if wetland water needs to be used as top-up water to the rainwater pond once the facility commences operations.

3.1.2 Reuse for Construction

No water treatment will be required if stored water from the wetland is used for construction purposes.

3.2 MACROPHYTE ESTABLISHMENT

It will take at least two seasons for the planted macrophytes to establish, and longer to achieve full design coverage.

Ideally, the macrophytes will be planted in the first spring following the completion of earthworks. Water levels will be drawn down to allow access to the macrophyte planting zone. Water levels across the macrophyte area shall be maintained at around 100 mm for the first few months following planting.

During this period, stored water can be:

- Treated (if required) and discharged off site (as per above method);
- Treated (if required) and reused in the facility (as per above method); or
- Pumped to the effluent holding pond to be used for irrigation.

3.3 MONITORING

The aim of monitoring during the wetland commissioning phase will be to establish a dataset for typical background catchment runoff. This will provide a background surface water quality dataset that can then be compared to the wetland discharge once it is fully established.

The surface water wetland will discharge to an existing drainage depression that runs along the western boundary of the site. This drain receives runoff from catchments to the south that do not include any activities associated with the CVLX. Runoff from the development will not reach this drainage depression due to perimeter swales.

Samples will be collected from this drainage line to establish a background dataset.

Samples will also be obtained from the outlet of the surface water wetland system.

3.3.1 Timing

Monitoring of the background surface water quality will commence with facility operations.

3.3.2 Surface Water Quality Monitoring

***Where*:** Surface water monitoring locations are shown on **Figure 1** and will include:

SW1 inlet to the surface water wetland (north)

SW2 inlet to the surface water wetland (south)

SW3 rising stage sampler on the outlet to the surface water wetland

SW4 surface water discharge point at eastern site boundary

SW5 existing surface water drainage line at southern site boundary

When: Samples will be collected at least four (4) times per year, subject to runoff and discharge occurring

What for: Samples will be analysed for the following parameters:

SW1, SW2, SW3, SW4 and SW5

- Electrical conductivity, µS/cm
- pH
- Total suspended solids, mg/L
- Total nitrogen, mg/L
- Nitrate, mg/L
- Ammonia, mg/L
- Total phosphorus, mg/L
- E. Coli

3.3.3 Surface Water Quantity Monitoring

Discharge from the surface water wetland will be monitored by:

1. Logging the water level in the wetland; and
2. Using the stage/discharge relationship for the wetland outlet structure to estimate wetland discharge.

Rainfall data will be collected by the onsite weather station.

Flow in the western drainage line will be recorded by observation only (no flow estimate).

3.4 WETLAND MAINTENANCE

The routine wetland maintenance actions outlined in **Appendix D** of the EIP shall be implemented throughout the commissioning period.

3.5 WEEKLY INSPECTION

The wetland system shall be included in the weekly inspection undertaken in accordance with **Section 5.1** of the EIP during the 24 month commissioning period.

3.6 REPORTING

A commissioning report shall be prepared after the initial 24 months of operation. This report will:

- Present an overview of the commissioning process;
- Present and discuss monitoring data;
- Describe any remedial actions or system modifications undertaken during commissioning;
- Define a surface water monitoring program; and
- Define surface water wetland discharge targets and trigger values for actions.

The wetland commissioning report shall be forwarded to the EPA for review and approval.

Recommendations from the wetland commissioning report shall be incorporated into the EIP following EPA endorsement.

Appendix D

WETLAND MAINTENANCE PLAN

The inspection and maintenance program for the wetland and stormwater management system is contained in **Table D1**.

Table D1 – Stormwater Management System – Inspection and Maintenance Program

Objective	Zone	Activity	Frequency
Water Quality	Inlet Zone	*Maintain integrity of structure* - inspect headwall, banks and scour protection works. *Bank maintenance* - correct erosion and slumping as soon as possible. *Litter removal* - remove excess litter and debris.	Every 3 months and following major storms
	Deep Water Zone	*Maintain integrity of structure* - inspect fence and bank areas around the open water zone. *Sediment removal* - inspect sediment level ad remove when volume has been reduced by 30%. Remove sediment and ensure disposal in accordance with the Waste Minimisation Act, 1995. *Bank maintenance* – check bank areas for slumps and hollows that can trap water and provide mosquito breeding habitat and repair as required.	Every 3 months and following major storms Inspect sediment level annually and remove as required. Inspect every 3 months and following major storms
	Macrophyte Zone	*Water level manipulation* – lower water levels for about 1-2 weeks in summer by about 0.3m-0.4m (if it has not occurred through evaporation) for plant establishment and to mimic natural water level variations. *Plant replacement* - replace plants as required. *Weed control* - remove undesirable species from the wetland. *Plant maintenance* - plants should be checked for signs of disease or insect damage. *Maintenance of open water area* - remove emergent vegetation colonising open water areas. *Bank maintenance* – check bank areas for slumps and hollows that can trap water and provide mosquito breeding habitat and repair as required.	Annually in summer if required Inspect every 3 months and following major storms
Habitat	Macrophyte Zone	*Encourage wildlife opportunities* – control feral animals, ensure habitat integrity *Protect deep open water habitat* – do not completely drain open water areas. *Weed control* - remove undesirable species from the wetland. *Bank maintenance* – check bank areas for slumps and hollows that can trap water and provide mosquito breeding habitat and repair as required.	As required When manipulating water level Inspect every 3 months Inspect every 3 months and following major storms
	Outlet Structure	*Maintain integrity of structure* – inspect and clean as required	Inspect every 3 months and following major storms

Table D1 – Stormwater Management System – Inspection and Maintenance Program

Objective	Zone	Activity	Frequency
	Surrounds	*Shading* – do not shade out the wetland with surrounding vegetation.	Ongoing
		Weed control - remove undesirable species from the wetland.	Inspect every 3 months
		Bank maintenance – check bank areas for slumps and hollows that can trap water and provide mosquito breeding habitat and repair as required.	Inspect every 3 months and following major storms
Recreation and Visual Amenity	All	*Maintain vegetative cover* – ensure edging and water macrophyte plantings remain vigorous and healthy.	Inspect every 3 months and following major storms
		Weed control - remove undesirable species from the wetland.	Inspect every 3 months
		Public Health and Safety - inspect for safety (ie bank stability, slumping).	Inspect every 3 months
		Maintain signs – inspect and replace as required	Inspect every 3 months

Appendix E

ENVIRONMENTAL MONITORING CALENDAR

CVLX EIP: Annual Management Calendar

ACTION	YEAR: J	A	S	O	N	D	J	F	M	A	M	J	NOTES/EIP REFERENCE	Responsibiity
OPERATIONS														
Fortnightly environmental checklist every Thursday													EIP Section 5.1	SM
MONITORING														
Water cycle														
Flow meters recorded fortnightly in accordance with Section 5.1													EIP Section 5.1	SM
Effluent Quality														
Quarterly sampling													EIP Section 6.3	SM
Soil														
Topsoil													EIP Section 6.5	SM
Subsoil (*in Year 1 and then every three (3) years*)													EIP Section 6.5	SM
Surface Water														
At least two samples per year as runoff permits													EIP Section 6.6	SM
Groundwater														
Groundwater level monitoring													EIP Section 6.7	SM
Groundwater quality													EIP Section 6.7	SM
Dust														
To be implmented following Noise and Air Commissioning Plan													EIP Section 5.9; EIP Section 6.9.1	SM
Odour														
To be implmented following Noise and Air Commissioning Plan													EIP Section 5.10; EIP Section 6.9.2	SM
Noise														
To be implmented following Noise and Air Commissioning Plan													EIP Section 5.11; EIP Section 6.10	SM
Crops														
Representative crop samples (*minimum two (2) samples*) during harvest													EIP Section 6.8	SM
REPORTING														
AEMR - *complete by 1 October each year*													EIP Section 7.1	SM

SM = Site Manager

Appendix F

COMMUNITY ENGAGEMENT PLAN

Community Engagement Plan

RLX is committed to ensuring transparent, timely and constructive community consultation occurs during the planning, development and operation of CVLX.

A key initiative for ongoing engagement and delivery of factual information to operators, users and community interest groups will be the CVLX Community Liaison Committee (CLC).

This committee will be the primary channel for practical discussions between nominated representatives of the community, local interest groups and senior representatives of the CVLX. Members will also be regularly updated about key project milestones (during planning) and operations (when completed). Key operator, user and community groups will be invited to attend as members or observers.

The CVLX CLC will be facilitated to ensure discussions remain focused, constructive and responsive to member interests.

The CVLX CLC will commence immediately following Development Plan Approval by Ballarat Council.

Terms of reference and a CLC Charter will be drafted and presented at the first meeting of the group to ensure the aims and objectives of the CLC can be mutually agreed. Wherever possible, feedback from the CLC will be used to improve planning and operations of the CVLX.

Initially, meetings are to run every quarter. Meetings will revert to a biannual basis after operations commence at the new facility.

In addition to the CLC, RLX will use the following engagement means to provide information to stakeholders and residents:

- Regular Project Updates
- Website content
- Interviews and media coverage
- Periodical advertising
- Local site signage

Complaint Management

RIPL has a formal Complaints Management procedure (EIP Section 5.13) to ensure proper response to concerns raised by external stakeholders. This procedure ensures we uphold statutory reporting requirements as well as demonstrate best practice for community engagement.

This procedure defines the process for receiving and responding to community enquiries and complaints relating to CVLX, specifically:

- complaint reporting requirements;
- means and method of investigating;
- process for undertaking remedial action; and
- providing acknowledgement and feedback to community members.

Adherence to this procedure will ensure we maintain good relationships with stakeholders and neighbours and are capable of gathering information that may assist us improve what we do.

Appendix G

FORMS

Form 1: CVLX Environmental Checklist

DATE:_____

The Environmental Checklist is to be completed by the Site Manager every second Thursday.

		YES	NO
1	All CCTV operational?		
2	All gates and fences are secure?		
3	All directional and advisory signage in place?		
4	Weather station operating and recording?		
5	All drains generally free of solids and operating efficiently?		
6	Do first flush sediment traps have adequate capacity?		
7	First flush transfer pump working correctly?		
8	External sheep yards (receival/delivery) clear of solids?		
9	Truck wash pad free of solids?		
10	Avdata system operating correctly?		
11	Solids basin has adequate capacity?		
12	Solids basin transfer pump working correctly?		
13	All solids stored within designated area?		
14	Facultative pond aerators working?		
15	SBR transfer pump working?		
16	SBR operating parameters within range?		
17	Adequate water in main truck wash tanks?		
18	All effluent pond transfer pipes operating/not blocked?		
19	Adequate grass cover in holding paddocks that are/will be used?		
20	Irrigation area OK? (e.g. grass cover, no grazing, no wet patches)		
21	Irrigator operational (e.g. no leaks, free from obstacles)		
22	Surface water wetland water relatively clear, free from litter?		
23	All grass swales unblocked and stable?		
24	Are dust monitoring stations working correctly?		
25	Soft floor system dry and odour free?		

Flow Meter Readings

No. 1 (kL): (main potable meter)	No. 2 (kL): (CFB building)
No. 3 (kL): (rainwater pond)	No. 4 (kL): (truck wash and wash down pump)
No. 5 (kL): (borrow pit dam)	No. 6 (kL): (bore)
No. 7 (kL): (irrigation meter)	

Form 1: CVLX Environmental Checklist (page 2)

Water Pond Readings

Rainwater Pond (kL):	Holding Pond (kL):
Borrow Pit Dam (level): (measured as mm above/below outlet)	Surface Water Wetland (level): (measured as mm above/below pipe)

Solids stockpile

Separated solids (m^3):	Soft floor material (m^3):

Reasons for Non-Compliance with Checklist:

Item No. *Comment*

_____ _____

_____ _____

_____ _____

Incident Report Prepared (circle): Yes / No **If answered "No", state why below**

_____

_____

_____

Action(s) to be taken for Non-Compliance to be rectified:

Item No. *Action*

_____ _____

_____ _____

_____ _____

Follow-up actions complete?

Item No. *Date Complete* *Signed*

_____ _____ _____

_____ _____ _____

_____ _____ _____

Certified Correct

_____ Date:_____

CVLX Site Manager

Form 2: Dead Stock Register

Date	No. Head	Location	Tail Tag	Owner/Agent	Staff Member

Copy form as required

Form 3: Solid Waste Removal Record

Date	Type (tick)		Estimated Quantity m^3	Where to?
	Soft Floor	Effluent system		

Copy form as required

Form 4: Irrigation Water Balance

Water Budget: Area 2.25 ha **Irrigation Area ID:** **Month/year:**

Day	A	B	C	D	E	F
	Evaporation (mm)	Crop Factor (K_c)	ET Crop (mm) A x B	Effective Rainfall or Irrigation (mm)	Change in water balance (mm) D - C	Remaining Available Water (mm) F + E
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

(A) Melbourne Airport (BOM station 086282), access: http://www.bom.gov.au/climate/dwo/IDCJDW3049.latest.shtml

(B) Table 5.1

(D) Rainfall as read in rain gauge minus 5 mm
Irrigation in mm = volume applied (kL) x 0.044 (for 2.25 ha)

(F) Carry over soil moisture from previous month.

CAN IRRIGATE WHEN REMAINING AVAILABLE WATER IS LESS THAN 40 mm. DO NOT FILL ABOVE 50 mm. REMAINING WATER ABOVE 50 mm IS LOST AS RUNOFF.

Copy form as required

Form 5: Irrigation Record

Date	Irrigation		Volume Irrigated kL	Area ID	Weather (wind speed, direction) and comments
	Start time	Stop time			

Copy form as required

Form 6: Complaint Form

DATE: _____ **COMPLAINT NO:** _____

TIME: _____

COMPLAINANT DETAILS (IF PROVIDED):

_____

_____

HOW COMPLAINT WAS LODGED:

_____

_____

NATURE AND DETAILS OF COMPLAINT:

_____

_____

_____

_____

CAUSE:

_____

_____

_____

_____

CORRECTIVE ACTION (IF NONE, STATE WHY):

_____

_____

_____

_____

FOLLOW-UP CONTACT REQUIRED?

_____

_____

WEATHER CONDITIONS:

Wind Speed (circle): light medium strong

Wind Direction: N NE E SE S SW W NW

Rainfall (mm): _____

SIGNATURE: _____ **NAME:** _____

Copy form as required

Form 7: Complaints Register

Number	Complaint Type Summary (tick)								Date
	Dust	Odour	Noise	Traffic	Waste	Irrigation	Water	Other	

Copy form as required

Form 8: Environmental Incident Report

INCIDENT LOCATION: _____

DATE/TIME/DURATION OF INCIDENT: _____

NATURE OF INCIDENT:

- **Excessive Noise/Vibration** ☐
- **Spill** ☐
- **Dust/Odour** ☐
- **Leak** ☐
- **Accumulation of Waste** ☐
- **Other** ☐
- **Fire/Flood/Natural Disaster** ☐

CONDITIONS PRESENT
(at the time of the incident):

- **Temperature:** _____
- **Wind Speed:** _____
- **Wind Direction:** _____
- **Rainfall:** _____

DESCRIPTION OF INCIDENT:

_____

_____

_____

RESULTING IMPACT (what was harmful to the environment?)

_____

_____

_____

EXTENT OF IMPACT (area affected):

_____

_____

_____

PROBABLE CAUSE (what caused the incident?):

_____

_____

_____

CORRECTIVE ACTION TAKEN (immediate actions, date/time etc):

_____

_____

_____

PREVENTATIVE ACTION TO BE TAKEN (to prevent occurrence/eliminate cause):

_____

_____

_____

IS THE INCIDENT A BREACH OF AN EPA APPROVAL CONDITION?

YES ☐ (if YES, provide details) **NO** ☐

_____

_____

_____

HAS THE INCIDENT BEEN REPORTED TO VIC EPA?

YES ☐ **(DD/MM/YYYY)** ☐ **NO**

WERE ANY OF THE FOLLOWING NOTIFIED ABOUT THE INCIDENT?

	YES	NO	If YES, provide date notified
WorkSafe Victoria			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Victoria Police			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Ambulance Victoria			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Country Fire Authority (CFA)			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Neighbours			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Other (specify):			Phone call: DD/MM/YYYY Written: DD/MM/YYYY
Other (specify):			Phone call: DD/MM/YYYY Written: DD/MM/YYYY

OTHER COMMENTS/ATTACHMENTS:

_____

_____

_____

REPORT COMPLETED BY: _____ **SIGNED:** _____ **DATE:** _____

INCIDENT REPORT NUMBER: _____

Copy form as required

Form 9: Staff Training Register

Completion and signing of the **Training Form** confirms that:

- The trainees have received the appropriate training and have a full understanding of this EIP.
- The trainees will commit to incorporating all of these procedures into daily work practices.
- The trainer has fully trained the trainees in this EIP (or appropriate sections of the EIP), and is confident that suitable competency has been demonstrated by the trainees.

Date of Training	Trainee Name	Trainer Name	Entire EIP or List Sections	Trainee Signature	Trainer Signature

Copy form as required

Appendix H

NOISE AND AIR COMMISSIONING PLAN

CENTRAL VICTORIA LIVESTOCK EXCHANGE

NOISE AND AIR COMMISSIONING PLAN

PREPARED FOR:

REGIONAL INFRASTRUCTURE PTY LTD

OCTOBER 2018

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Report Title:	*Central Victoria Livestock Exchange*
Project:	*Noise and Air Commissioning Plan*
Client:	*Regional Infrastructure Pty Ltd*
Report Ref.:	*208120_N&A Comm_001E.docx*
Status:	*Final*
Issued:	*10 October 2018*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All data and information contained within this report is prepared for the exclusive use of Regional Infrastructure Pty Ltd to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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ABBREVIATIONS

BOD	Biochemical oxygen demand
COD	Chemical oxygen demand
CVLX	Central Victoria Livestock Exchange
EIP	Environment Improvement Plan
EPA	Environment Protection Authority (Victoria)
ha	Hectare
kL	Kilolitres (1,000 litres)
L	Litre
mL	Millilitre
ML	Megalitre (1,000,000 litres)
NMP	Noise Management Plan
PM	Particulate Matter
PM10	Particulate Matter 10 micrometers or less in diameter
RIPL	Regional Infrastructure Pty Ltd
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorous
TSS	Total Suspended Solids
WA	Works Approval

1.0 INTRODUCTION

Regional Infrastructure Pty Ltd (RIPL) has developed the Central Victoria Livestock Exchange (CVLX) which is a regional cattle and sheep selling centre located approximately 10 kilometres north-west of Ballarat in Victoria.

The CVLX is operated by Regional Infrastructure Pty Ltd.

1.1 SCOPE

Condition WA_R1.1 of Works Approval 128950 requires (in part):

> *WA_R1.1 2) Commissioning plan which must include the monitoring program for:*
>
> *a) noise*
>
> *b) odour emission rates for cattle and sheep stock yards to confirm the assumptions used in the odour assessment report*
>
> *c) ambient dust (PM10 and particles) around the boundary*

This document outlines the commissioning plan for noise and air (odour and dust). It will be implemented during the first six (6) months of operation after which it will be removed from the Environment Improvement Plan (EIP).

2.0 NOISE COMPLIANCE VERIFICATION

2.1 SCOPE

The scope of work for the noise compliance verification shall include:

1. Testing and assessment of noise from the facility in accordance with SEPP N-1 / NIRV.
2. Comprehensive testing during a main sale event at surrounding properties and reference locations. As there are two types of events at the saleyards (sheep and cattle sale events), noise testing will be undertaken for both events, on consecutive days (this occurs as part of normal scheduling). Records shall be kept of the number of livestock on site during the noise logging periods (both cattle and sheep), as this will assist in comparing with other sale days to ensure a representative sale day has been monitored. Any subsequent routine noise monitoring would only be undertaken for what is established to be the worst type of event, which is expected to be cattle sales.
3. The testing will include a combination of site attended measurements and logging over the entire event period (with built in audio recording or spectral logging capability) such that it is possible to identify and analyse the sources of noise (e.g. distinguish between cattle noise and operations noise). Noise monitoring shall be conducted by appropriately trained personnel. Noise monitoring equipment with audio recording capabilities shall be used.
4. Testing shall be undertaken at 6 locations; at nearest western, northern and eastern receivers (OR an appropriate reference location if the residential locations are deemed inappropriate) and at the western, northern and eastern site boundaries. This will then enable verification of the noise modelling and determination of derived levels at the reference points that are consistent with the resultant noise levels at the residential premises. It may be very difficult to obtain useful measurement data at the actual residential receivers because noise limits are very close to the ambient noise in the area.

5. Weather conditions shall be sourced and considered from the nearest BOM weather station and the onsite weather station. The findings of the assessment will consider the prevailing wind conditions during the testing.
6. Comparison of measured results with predicted results and associated reporting. Commissioning noise monitoring reporting will include the outcome of the analysis discussed above, as well as the 'raw' noise monitoring results.
7. Preparation of a Noise Management Plan (NMP) which would be incorporated into the EIP.

With regards to monitoring at residences (Action 4), it is acknowledged that the noise limits are very close to the higher levels of the ambient noise in the area, and it may be difficult in such circumstances to measure noise emanating from the subject site in the presence of extraneous ambient noise.

As noted in Action 4, an attempt shall still be made to conduct monitoring at residential premises. If it is not possible to reliably measure noise emanating from the subject site due to the presence of ambient noise, then that is a good indicator that the intent of the noise limits and the noise modelling has been achieved and noise emission from the site is not adversely impacting on the amenity of the residents. The reference locations can be then be adopted if it is confirmed that it is not possible to obtain valid results at the residential premises.

2.2 TIMING

Noise monitoring shall be scheduled to occur during the busiest sale period over summer and completed within 6 months of the first sale.

The NMP shall be completed within eight (8) months of the first sale.

2.3 OUTPUT

Output shall include:

- Details of the noise testing program
- A noise monitoring/commissioning report
- A Noise Management Plan that shall:
    - Detail any changes to operational procedures to manage noise generation (if required).
    - Detail ongoing noise control and monitoring procedures including a review monitoring locations and procedures based on results from the monitoring events.
    - Defines performance objectives.
    - Define appropriate noise limits and trigger values for actions.

2.4 APPROVAL AND EIP UPDATE

The noise monitoring/commissioning report and NMP shall be forwarded to the EPA for review and approval.

Recommendations from the NMP shall be incorporated into the EIP following EPA endorsement.

3.0 ODOUR COMPLIANCE VERIFICATION

3.1 SCOPE

The scope of work for the odour compliance verification shall include:

1. Preparation of a detailed procedure for the sampling of odour generation from the sheep and cattle yards.
2. Comparison of measured results with the assumptions used in the odour assessment report (ERM Australia, 2016).
3. Preparation of an Odour Management Plan (OMP).

3.2 TIMING

Odour measurements shall be scheduled to occur during the busiest sale period over summer and completed within 6 months of the first sale.

The OMP shall be completed within eight (8) months of the first sale.

3.3 OUTPUT

Output shall include:

- Details of the odour measurement program.
- A report detailing the measured odour with comparison to assumptions used in the odour assessment report (ERM Australia, 2016).
- A Odour Management Plan that shall:
    - Detail any changes to operational procedures to manage odour generation (if required).
    - Defines performance objectives.
    - Detail ongoing odour control and monitoring procedures.

3.4 APPROVAL AND EIP UPDATE

The odour measurement report and OMP shall be forwarded to the EPA for review and approval.

Recommendations from the OMP shall be incorporated into the EIP following EPA endorsement.

4.0 DUST

4.1 MEETING THE WORKS APPROVAL REQUIREMENT

Works Approval 128950 requires measurement of PM10 which will require the setup of dust monitoring stations (DustTrak, Dust Master Pro or similar) that would monitor continuously.

RIPL shall adopt a staged approach to dust monitoring during the commissioning phase as follows:

1. Installation of dust monitoring stations (DustTrak, Dust Master Pro or similar) at two locations.
2. Monitoring of real time dust for four (4) months from the first sale which is scheduled for 19 October 2018. Monitoring would therefore be undertaken during October, November, December, January and part of February.
3. Review of dust monitoring data to determine if continued dust monitoring is warranted and development of a Dust Management Plan (DMP).

4.2 SCOPE OF DUST MONITORING DURING COMMISSIONING

***Where*:** Dust monitoring stations are shown on **Figure 1** and include:

D1 western boundary

D2 north-eastern boundary

When: The dust monitoring stations will monitor continuously.

What for: PM_{10}

Wind: Wind direction and speed shall be recorded and logged at the site weather station.

Triggers: Alert triggers shall be set 75% of the 24 hour standard (which is 60 micrograms per cubic metre as a 24 hour average).

If either monitor breaches 75% of the standard the Site Manager will compare the concentrations of the upwind and downwind to determine whether the site is contributing to ambient concentrations. Refer to **EIP Section 5.9**.

4.3 VISUAL OBSERVATIONS

If a dust plume is generated then visual observation should confirm that the data from the monitoring location (particularly the north-east point) represents the effect of the dust plume.

That is, if a dust plume is observed passing a dust monitoring station, the data shall be checked and downloaded to confirm that the dust plume has been recorded.

Actions listed in Section 5.9 of the EIP shall be implemented if a dust plume is observed.

4.4 TIMING

Dust deposition measurements shall be undertaken monthly for four (4) months commencing from the first sale.

The dust monitoring report shall be completed with five (5) months of the first sale.

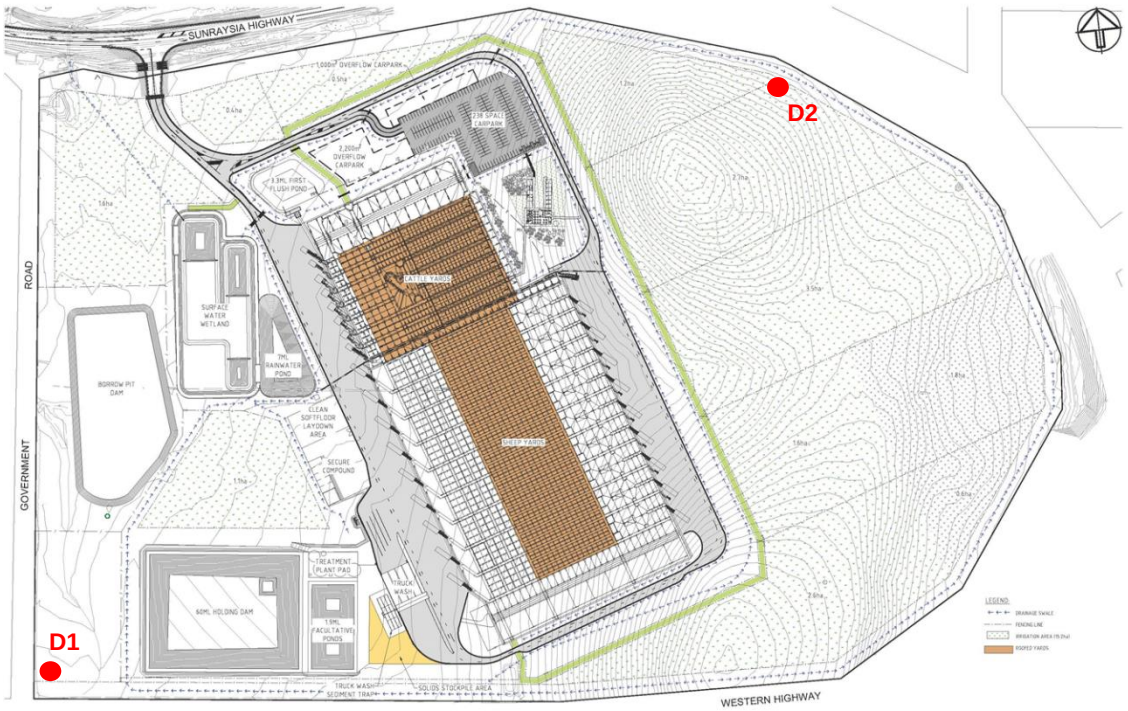

Figure 1: Dust deposition gauges

4.5 OUTPUT

Output from the dust monitoring during commissioning shall be a report that:

- Summarises the dust monitoring results and identifies any trends/issues;
- Provides recommendations and justification for ongoing monitoring; and
- If continued monitoring (e.g. PM_{10}) is not justified, provide a Dust Management Plan that shall:
  - Detail any changes to operational procedures to manage dust generation (if required).
  - Detail ongoing dust control and monitoring procedures.
  - Defines performance objectives.
  - Define appropriate dust targets and trigger values for actions.

4.6 APPROVAL AND EIP UPDATE

The dust monitoring report and DMP shall be forwarded to the EPA for review and approval.

Recommendations from the DMP shall be incorporated into the EIP following EPA endorsement.

5.0 REFERENCES

ERM Australia (2016) *Odour Impact Assessment Works Approval Application Technical Assessment*