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Environmental Management Plan

Wellard Darwin Integrated Live Export Facility

Report Number 23919.79981



Prepared for



**Wellard Rural Exports Pty
Ltd**

1A Pakenham Street
FREMANTLE WA 6160
Telephone: (08) 9432 2800

ABN: 31 109 866 328

Prepared by



PO Box 411
TOOWOOMBA QLD 4350
Telephone: (07) 4638 2228

ABN: 56 135 005 999

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1. Background

This Environmental Management Plan (EMP) has been prepared to assist Wellard Rural Export Pty Ltd to minimise environmental impacts resulting from the operation of the Darwin Integrated Live Export Facility (ILEF), 2658 Stuart Highway, Livingstone Northern Territory (NT) 0822.

This EMP addresses operational issues and is not intended to address any construction related activities. A separate Construction EMP will be developed for the proposed construction phase.

1.1 Site Details

The proponent for this application is Wellard Rural Exports Pty Ltd (Wellard). Wellard currently leases the “Santavan” PEQ yards and has recently purchased the adjoining property “Livingstone Valley” (the proposed development site) from the previous owners Suncode Pty Ltd.

The development is located on the property known as “Livingstone Valley” (Lot 5544 Hundred of Strangways; Livingstone Valley) located on 2658 Stuart Highway at Livingstone, Northern Territory. It is situated 50 km south-south east (SSE) of Darwin; 40 km south east of the Darwin harbour, and about 8 km east of Berry Springs. The site is currently being used for pasture grounds and was selected as it is immediately adjacent to the “Santavan” PEQ holding yard, which is currently leased by Wellard.

The construction phase should begin in late 2015 and operations should commence in September-2016. The proposed ILEF involves the following infrastructure:

- Care takers house;
- Commodity and Fodder storage shed;
- Feedmill;
- Freshwater supply storage (ring tank and tanks); for capture and storage of roof runoff and storage of ground waters for stock water supply;
- Pre-Export Quarantine (PEQ) 3,000 SCU holding yard (Average 3;000SCU; 12,000 SCU “peak” short term holding capacity);
- Livestock truck washing facility;
- 1,000 SCU (Short term) feedlot; for holding stock for longer than 30 days;
- Irrigation area for treated waste water reuse and hay / fodder production;
- Access roads;
- Wastewater treatment and storage ponds; and,
- Freshwater supply turkey’s nest.

The expected land use areas of the infrastructure are detailed in Table 1. As shown in Figure 1, the PEQ holding yard is located in the centre of the property, the wastewater treatment system will be located on the western corner and the irrigation block on the eastern boundary is where the treated wastewater effluent will be applied to pasture.

1.1.1 Existing Site Details

The site is zoned as rural and there are rural residential properties nearby with the nearest sensitive receptor to odour/dust/noise being 800m away.

Neighbouring properties on the north, west and south are already being used for agriculture, with the Santavan PEQ yards to the north and the AA Co. abattoir to the west and south, separated by a railway line. The eastern border is alongside the Stuart Highway. On the other side of this highway is an approximately 200 m wide strip of vegetation, followed by an airstrip and then a few houses in Hughes.

The site slopes towards the western-most corner where the freshwater runoff dam (labelled “clean water storage” in Figure 1) is located. The nearest water bodies are on AA Co.’s site to the south-west, Berry Creek, and on Santavan to the north, Hardy Creek.

Table 1 Land Usage Within the Controlled and Uncontrolled Discharge Areas at the ILEF

Controlled Discharge Areas	
Land Use	Area (m²)
PEQ facilities; incl cattle lanes etc	43,321
Open holding pen areas	65,256
Manure stockpile	5,834
Roads and Hard stands	15,846
Controlled Drains	4,633
Undefined areas	32,371
Sediment basins	1,860
Wet weather storage pond	44,883
Primary wastewater pond	38,477
Total	252,481
Non Controlled Discharge Areas	
Land Use	Area (m²)
Pen rooves	45,360
Tailwater drains	36,332
Grazing / pasture	42,334
Managers house and garden	5,264
Irrigated cropping area	329,712
Irrigated tree line	21,305
Main access road and parking	30,819
Farm tracks / roads	10,425
Feed storage and prep shed	49,953
Freshwater supply turkey's nest	3,962
Tail water storage	12,484
Office and garden	22,393
Undefined area	43,391
Total	653,734
Combined Total	906,215

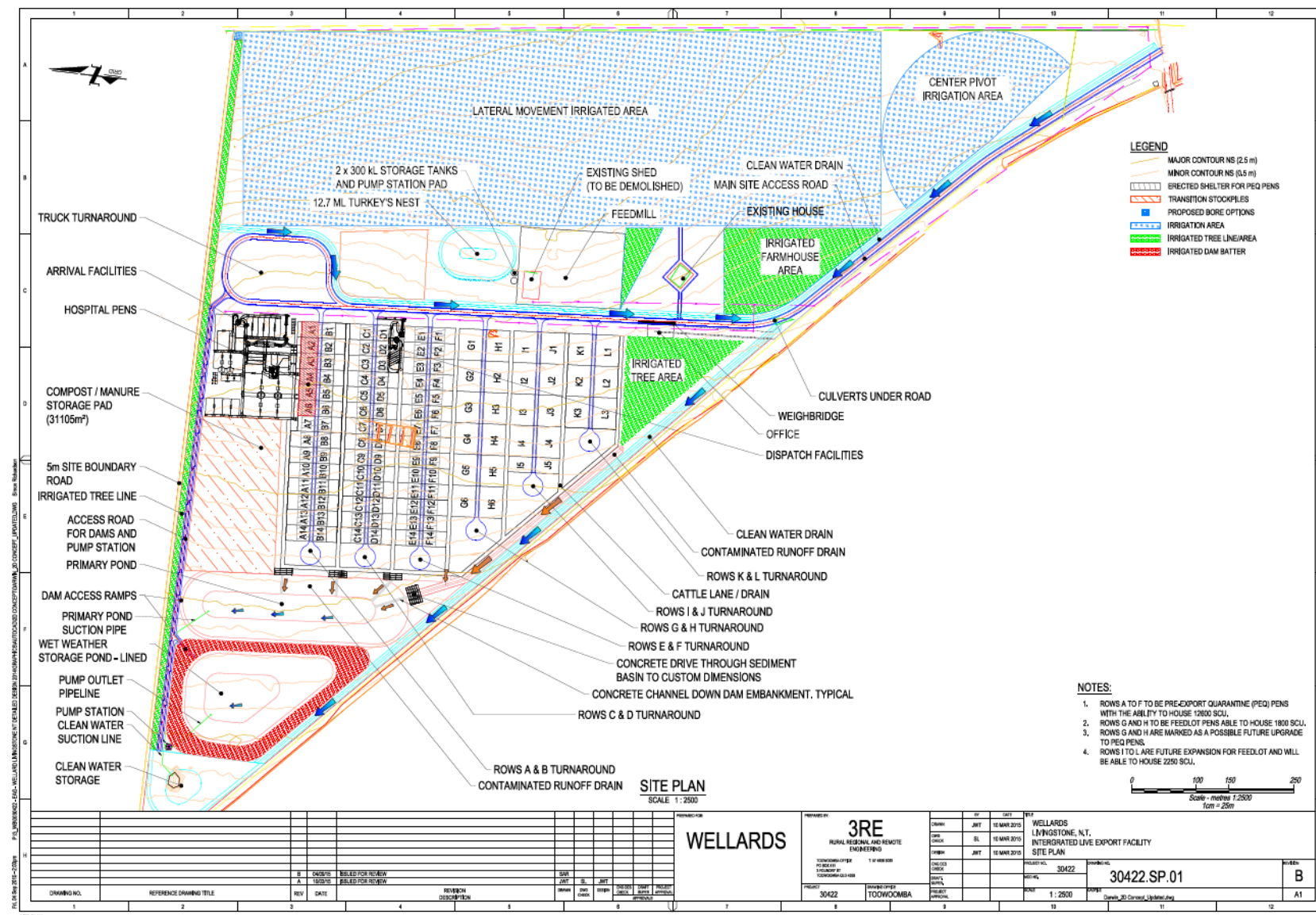


Figure 1 Site Plan (Full Development Stage 1+2)

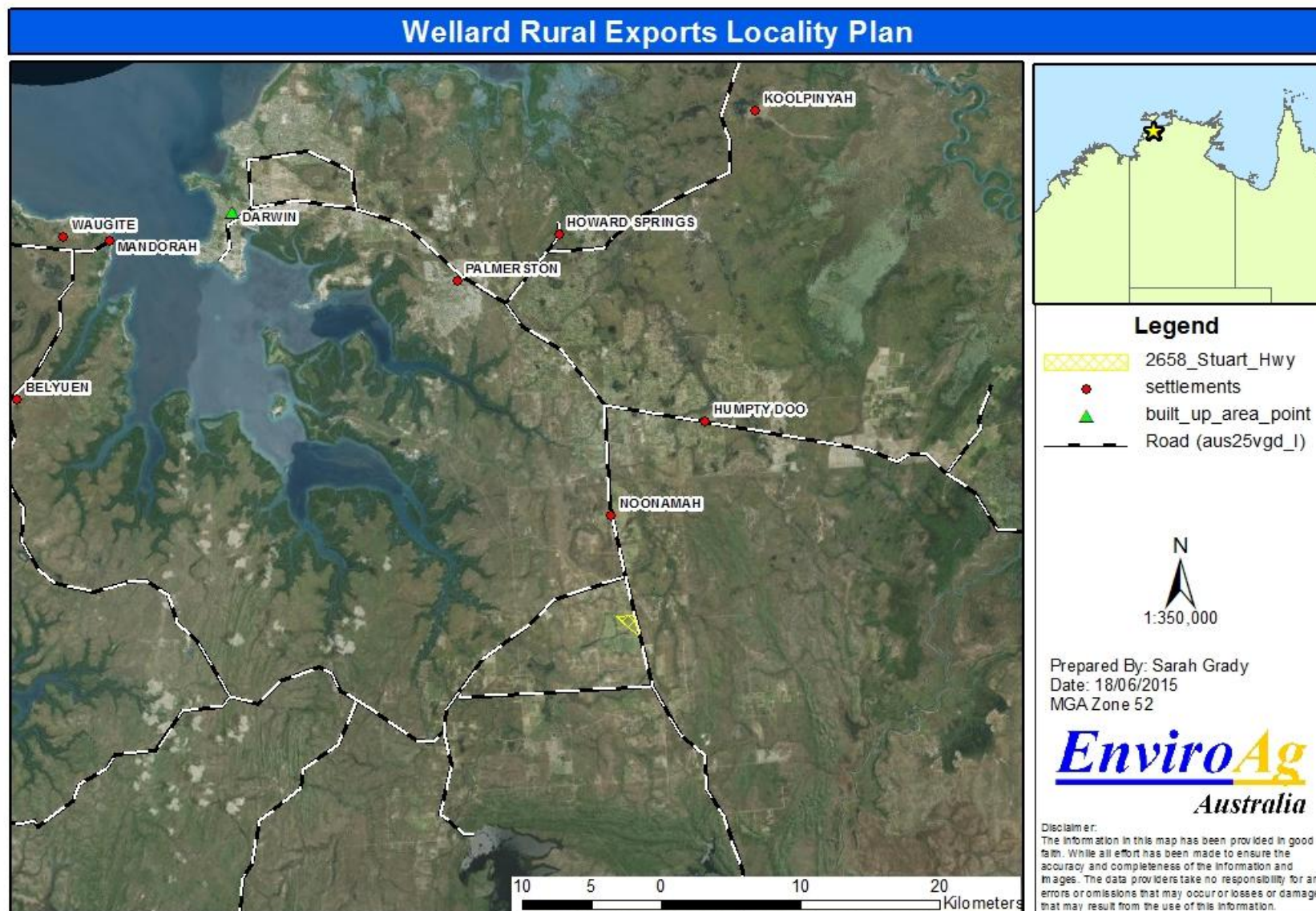


Figure 2 Location of Site

1.2 EMP Scope

Environmentally relevant activities covered by this EMP include:

- Transport of livestock, feedstuffs and other consumables onsite;
- Movements of staff and service providers onto and off the site;
- Supply of stockfeed and other water requirements;
- Preparation of the stockfeed;
- Activities within the feedlot complex related to the housing of the cattle and the management of their wastes;
- Any fugitive emissions from the property, such as odour, dust, and noise, which might cause a nuisance or environmental harm; and
- Use of water and wastewater storage ponds and irrigation of pasture areas using the effluent.

Figure 3 provides a flow chart depicting the environmentally relevant activities undertaken onsite, including transfers of goods, materials and stock onto and off the site. Also shown are some 'fugitive' emissions which occur as a consequence of these activities, but are not an intended output.

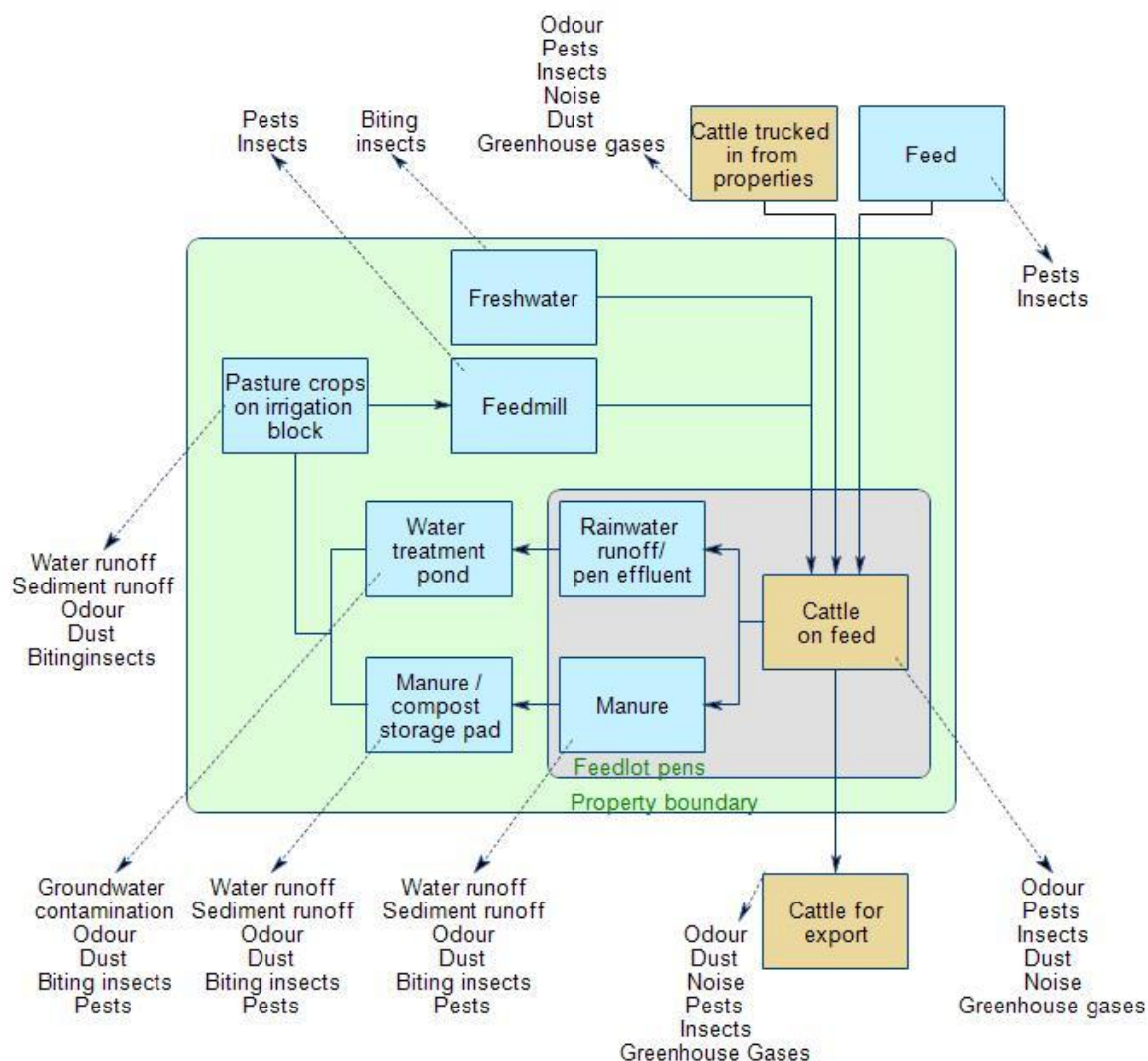


Figure 3 A Conceptual Diagram - showing the activities that may affect the environment

1.3 Legislative Requirements

The activities associated with the construction and operation of the ILEF such as Intensive Animal Husbandry, feed milling, water extraction and land clearing constitute prescribed, scheduled or designated developments, actions or activities in the following legislation, regulations, policies or plans:

- NT Planning Act;
- NT Planning Scheme;
- NT Weed Management Act;
- Territory Parks and Wildlife Conservation Act;
- NT Animal Welfare Act;
- NT Livestock Act;
- NT Heritage Act,
- NT Environmental Offences and Penalties Act;
- NT Waste Management and Pollution Control Act;
- NT Waste Management and Pollution Control (Administration) Regulations,
- NT Environmental Assessment Act;
- NT Pastoral Land Act;
- Australian Meat and Livestock Industry Act 1997 (Cwth);
- Export Control Act 1982 (Cwth);
- Australian Meat and Live-stock Standards Order 2005;
- Export Control (Animals) Order 2004;
- Commonwealth Navigation Act 1912 (Cwth); and
- Environmental Protection and Biodiversity Conservation Act 1999 (Cwth).

1.4 Industry Standards and Guidelines

- Australian Standards for the Export of Livestock 2011;
- Australian Animal Welfare Standards and Guidelines — Land Transport of Livestock; and
- National Guidelines for Ramps and Forcing Yards 2015.

1.5 Management Plans

Several management plans are available to mitigate risks highlighted onsite (see Section 4). However this EMP is the overarching document and should be referred to in conjunction with the individual management plans. This EMP includes the Emergency Management Plan and smaller sub plans for traffic, air quality, odour, noise, pest and vermin, water quality and heritage management, as well as summaries of the following major management plans:

- Solid and Liquid Waste Management Plan (construction and operational phase);
- Weed Management Plan (operational phase only); and
- Biting Insect Management Plan (operational phase only).
- Surface Water management Plan (construction and operational phase)
- Irrigation Management Plan (operational phase only)

2. Implementation of the EMP

2.1 Responsibilities

The decisive responsibility for the adoption of this plan will lie with the directors of Wellard Rural Export Pty Ltd. The ILEF Manager will need to ensure that all activities associated with the operation of the ILEF are undertaken in accordance with relevant legislation. All records and monitoring data pertaining to the plan will be kept by the ILEF Manager for a minimum of five (5) years. The responsibilities of personnel involved in the project are outlined in Table 2.

Table 2 Responsibilities Associated with the Environmental Management Plan

Position	Responsibilities
Wellard Rural Export Pty Ltd	Overall responsibility for the site
ILEF Manager	Overall responsibility for implementation of EMP Assesses the efficacy of the EMP and where improvements are needed Ensures EMP is maintained and reviewed Provides induction and training on the EMP to all employees and contractors Ensures that resources and equipment are available to carry out tasks as required by EMP Undertakes internal site audits Ensures all records and monitoring data pertaining to the plan are kept and maintained (including training records) Carries out annual review of EMP
OHS Representative	Ensures all records of complaints and incidents regarding OHS are kept and maintained
Other managers	Ensure that all employees and contractors are aware of and adhere to EMP procedures Liaise with ILEF Manager with regards to EMP as required
All employees and contractors	Comply with EMP Report any new environmental impacts that may arise to the ILEF Manager

2.2 Training and Inductions

All employees and contractors will be provided with the training necessary to safely and competently carry out any tasks allocated to them in relation to this management plan. Confirmation of the required competencies should be undertaken as part of the site induction process for new employees and contractors. Any deficiencies with respect to required competencies will need to be addressed before entry can be made to the site. Records are to be kept of all training provided or undertaken to comply with this management plan.

2.3 Inspections and Compliance

During operation of the ILEF the ILEF Manager will undertake weekly reviews of the completed daily monitoring sheets. The ILEF Manager will be responsible for undertaking regular inspections of the site to ensure that it is compliant with the EMP.

A System Improvement Request (SIR) will be raised for any non-conformances, which will be recorded in the Non-conformance Register and corrective action undertaken as soon as practicably possible. Any site investigations and audit reports should be incorporated in the annual EMP review to ensure that improvements in environmental management are reflected for the upcoming year.

2.4 Complaints

Any formal complaints received regarding the management and operation of the ILEF are to be recorded. The recorded details should include:

- The time and date of the incident,
- The means by which the complaint was made (e.g. phone, mail, etc.),
- Any details identifying the complainant that are freely provided (e.g. name, contact details, etc.),
- For dust, odour and noise complaints record relevant weather conditions (e.g. wind direction, wind speed, rainfall, temperature, etc.),
- Details of the complaint investigation undertaken and the outcomes of that investigation,
- Measures applied to remedy any verified complaint,
- The name of person(s) responsible for dealing with the complaint and remediation, and
- Details of any regulatory authorities contacted regarding the complaint or associated matters (e.g. agency, date & time of contact, contacted person(s), advice or directions given by those persons, and any other relevant details necessary to substantiate appropriate actions have been take).

The complaints register will be kept by the ILEF Manager for five years.

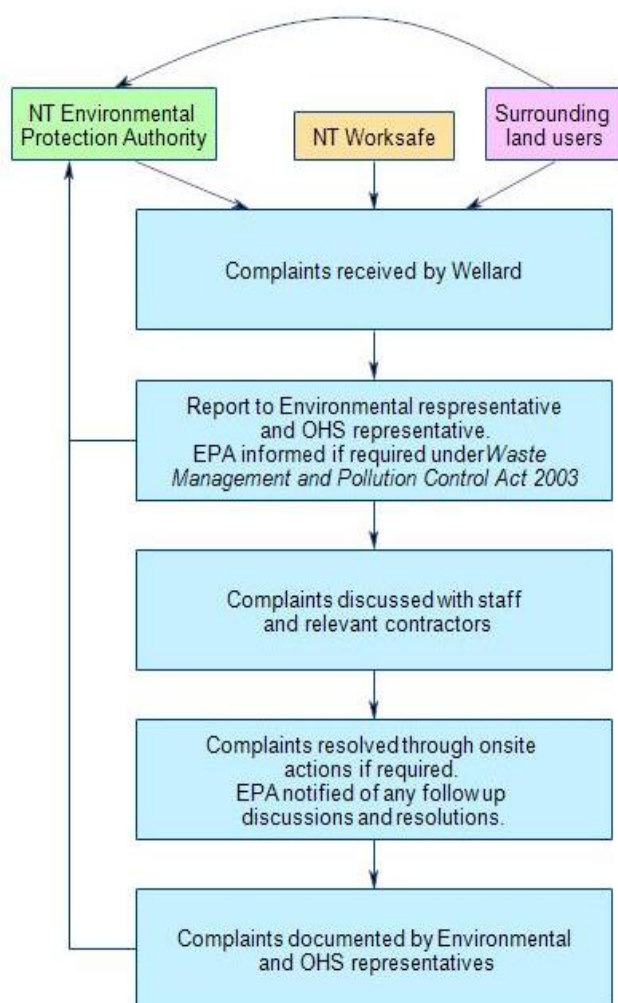


Figure 4 Complaints and Incidents Flowchart

2.5 Incidents

All incidents will be reported within 24 hours of the occurrence to the ILEF Manager to review and store.

The incident report form will contain the following information:

- Incident date;
- Incident type;
- Area/location;
- Incident description;
- Action taken;
- Date action was taken;
- Form completed by;
- Date reviewed by ILEF Manager; and
- ILEF Manager's signature.

Under the *Waste Management and Pollution Control Act*, when an incident causes, or is threatening to cause environmental harm, the NT EPA must be informed within the first 24 hours of Wellard first becoming aware of the incident on 1800 064 567.

2.6 Review of Management Plans

This environmental management plan is to be reviewed annually, or after any significant environmental incident, to ensure that the plan meets the requirements of the facility. Information to be considered when reviewing the management plan should include complaints, incidents, monitoring data and the results of any audit and inspection. The frequency of reviews may be revised where it can be demonstrated that the alternative frequency does not increase either the likelihood of environmental harm or the risk to human health and safety.

There is to be ongoing review and assessment of the equipment and resources required and environmental training and skills necessary to competently carry out any tasks required in this management plan. All staff members and other employees will ensure that at all times all reasonable and practical measures are applied to prevent environmental harm.

3. Risk Assessments

3.1 Risk Assessment Methodology

Based on the initial literature review, site visit and design of the new site, a risk assessment for the site has been undertaken. The model used assumes the risk of an impact to be a function of two factors – the likelihood of occurrence and severity of the consequence. These are assessed on a rating scale of 1 – 5. Table 3 gives an explanation of each of these ratings and Table 4 shows the Risk Matrix.

Table 3 Explanation of Risk Assessment Ratings

Likelihood		Consequence	
Very likely (almost certain)	Event is expected to occur in most circumstances	Negligible	- Minor injury. No medical treatment required. E.g. cuts and bruises. - Low pollution. No observable effects on plants, animals or waterbodies. No requirements to inform authorities.
Likely	Event will probably occur in most circumstances	Minor	- Significant injury. Medical treatment required, but recovery is likely. E.g. burns, broken bones, severe bruises, cuts. - Minor pollution. Minor effects on plants and animals. Visible discharge observed offsite. Required to inform authorities. May involve a clean-up.
Possible	Event should occur at some time	Moderate	- Serious injury. Moderate permanent effects from injury or exposure. E.g.: serious burns, serious internal and/or head injuries. - Moderate pollution. Moderate effects on plants and animals. Measurable change in condition of environment. Physical impact on the public. Required to report to authorities. Extensive clean-up may be required
Unlikely	Event could occur at some stage	Significant	- Single fatality. Severe permanent injury, paralysis, brain damage, life threatening exposure to a health risk. - Major release. Major effects on plants and animals. Substantial clean-up costs. Personal and business prosecution possible.
Very unlikely	Event may only occur in exceptional circumstances	Severe	- A multiple fatality. Significant irreversible exposure to a health risk that affects greater than 10 people. - Extreme event. Permanent effects on the environment. Significant ongoing community complaint. Potential loss of licence to operate. Prosecution of company and directors possible

The risk rating is then calculated by multiplying the likelihood against the consequences. High risk equals 16 to 25. High Risks activities should cease immediately until further control measures to mitigate the risk are introduced.

Medium risk equals 9 to 15. Medium Risks should only be tolerated for the short-term and then only whilst further control measures to mitigate the risk are being planned and introduced, within a defined time period. Note: Medium risks can be an organisations greatest risk, due to the fact that they can be tolerated in the short-term.

Low risk equals 1 to 8. Low Risks are largely acceptable, subject to reviews periodically, or after significant change.

Table 4 Risk Matrix

		Consequence				
		1	2	3	4	5
Likelihood		Negligible	Minor	Moderate	Significant	Severe
5	Very likely	Low	Medium	Medium	High	High
4	Likely	Low	Low	Medium	High	High
3	Possible	Low	Low	Medium	Medium	Medium
2	Unlikely	Low	Low	Low	Medium	Medium
1	Very likely	Low	Low	Low	Medium	Medium

3.2 Hazard Identification and Risks

Hazards were identified on the basis of:

- Consideration of the nature of processes and activities described in Section 1.2;
- Practical experience; and
- Reference to the consent conditions applicable to the development.

Appendix A provides a risk assessment of the individual impacts associated with activities of the ILEF. Table 5 is a summarised risk assessment, whereby the risk for the ILEF's activity is determined by its highest impact risk found in Appendix A. Activities with risks classed as high will need to be specifically addressed in this management plan. Those for which the assessed risk is medium may not necessarily require corrective measures in this plan.

Table 5 **Activities/aspects and the Risks of their Potential Impacts**

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Traffic management				
Transporting livestock to site	Odour, increased traffic on local roads, dust, noise, spreading pests, weeds and vermin, greenhouse gas emissions	MED	Traffic will access the site via the road already used by AA Co. Meat Processing Facility. For safety, a stop sign will be placed at the exit gate of the ILEF, giving AA Co. vehicles right of way on the main access road. The only unsealed road to be used is the internal property road. Watering unsealed internal property roads as required during dry spells. 100m of the main access road will be sealed per year. All loads hauled on the public road network will be made to comply with road regulations. Pest and Weed Management Plans will be implemented to reduce spread of these organisms. All compost loads will be covered to reduce dust. Trucks will not be left idling when not in use. All vehicles will be maintained to reduce secondary issues such as noise, smoke and vibration.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Pre-export quarantine pens and feedlot management				
Keeping livestock onsite	Community amenity, odour, noise, soil compaction, increase in pests, weeds and vermin, greenhouse gas emissions	LOW	Ensuring cattle numbers do not exceed licence conditions and proper management and regular maintenance of pens will reduce most impacts. Management of pen stocking densities so that pens are not too wet, nor dry. Dust suppression sprays in the pens can be turned on in the event of a fire or dry, dusty pens. Maintenance rations and low dietary starch rations for livestock will reduce nutrient 'bypass' and reduce GHG emissions. A tree line will be planted along borders and the buffer zone will protect the nearest sensitive receptor. Enact Pest, Biting Insect and Weed Management Plans. Weather, including wind speed and direction, will be monitored. All equipment will be maintained to reduce noise emissions Trucks will not be left idling when not in use. Monitoring program is carried out to identify whether dust is an issue and where it comes from.	LOW
Extraction of bore water	Lower water table	MED	Bore water usage will be monitored via a meter, and recorded weekly. Groundwater quality monitoring program will be enacted.	LOW
Improper/irregular pen cleaning	Increase in pest population, poor health of livestock, poor health of local flora and fauna, odour	MED	Staff trained on proper cleaning practices. Pen maintenance routines and registers kept. Pens are maintained at a (dry) manure depth of 50mm or less and at minimum every 13 weeks. Vehicles entering and leaving the property will be checked for potential hitchhiking pest species. Enact Odour Management Plan. Livestock isolation and hospital pens for disease.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Increase in pest population	Poor health of local flora and fauna, poor health of livestock, loss of feed	LOW	Proper management and regular maintenance of pens. All cattle transported to the site are back-lined with an insecticide to make area unfavourable for insects. Bait stations will be placed out, checked on a weekly basis and replaced as required. Monitoring programs are carried out to identify any pests onsite and any control programs are undertaken as necessary; The pest register is maintained and acted upon; Vehicles entering and leaving the property will be checked for potential hitchhiking pest species (can be undertaken as part of the wash-down procedure). Compost piles will be monitored for presence of vermin, temperature and moisture daily.	LOW
Mass death	Odour, increase in pest and vermin population, spread of disease	MED	All carcasses taken to the carcass composting site as soon as possible Carcasses to be covered with composting bedding materials. Burial pile to be monitored for pests and vermin daily. Buffer zone will protect nearest sensitive receptor.	LOW
Surface runoff/spills of effluent to surface water	Contamination of surface water	MED	Bunding of chemical, compost manure pad and pens will prevent nutrient runoff. Earthen mound and drainage channels along boundaries will catch any extra runoff. Hardy creek will be monitored monthly for the first year, then revised based on results.	LOW
Leaching of effluent to groundwater	Contamination of ground water	MED	Pens, compost manure pad, wastewater ponds and drainage areas are lined with compacted clay to reduce leaching into the groundwater system. The irrigation block will be closely monitored to ensure it is not irrigated while saturated. Irrigation block will be planted with species that have high nutrient uptake rates. A shallow aquifer bore and deep aquifer bore will be monitored for the first year, and then revised based on results. Piezometers will be installed, above, within and below the irrigable area	LOW
Solid waste management				
Collecting and stockpiling manure for compost	Odour, dust, noise, increase in pest and vermin population, fire	MED	Compost pile must be turned regularly. All compost will be removed (sold) off site prior to the wet season to reduce odour and pests. Daily monitoring of compost moisture and temperature levels to reduce odour and dust. Compost manure pad will be monitored for fires, pests and vermin on a daily basis.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Turning compost	Odour, dust, noise	LOW	Compost moisture and temperature levels are monitored and kept at optimal levels to reduce dust and odour. Buffer zone and tree line will protect nearest sensitive receptor from noise	LOW
Application of compost to irrigation area	Dust, noise, contamination of soil	LOW	Compost moisture and temperature levels are monitored and kept at optimal levels to reduce dust and odour. Buffer zone and tree line will protect nearest sensitive receptor from noise	LOW
Transportation of compost offsite	Odour, increased traffic on local roads, dust, noise, spreading pests, weeds and vermin, greenhouse gas emissions,	LOW	Traffic will access the site via the road already used by AA Co. meat processing; For safety, a stop sign will be placed at the exit gate of the ILEF, giving AA Co. vehicles right of way on the main access road. The only unsealed road to be used is the internal property road. Unsealed internal property roads will be watered as required during dry spells. 100m of the main access road will be sealed per year. All loads hauled on the public road network will be made to comply with road regulations. Pest and Weed Management Plans will be implemented to reduce spread of these organisms. All compost loads will be covered to reduce dust. Trucks will not be left idling when not in use. All vehicles will be maintained to reduce secondary issues such as noise, smoke and vibration.	LOW
Wastewater management				LOW
Collecting wastewater in the wastewater pond	Odour, increase in biting insects	LOW	Vegetation around pond will be slashed regularly to reduce mosquito food source. Lime can be added to wastewater to make it inappropriate for mosquito breeding and reduce odours. Wastewater pond has powerful pump that is able to transfer water to wet weather pond or irrigation block if odours are produced and the pond needs to be cleaned. Ponds will be monitored weekly for biting insects. Larvacide can be applied in a biting insect emergency.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Surface runoff/spills of effluent to surface water	Contamination of surface water	MED	Wastewater holding ponds are adequate in size and are able to be dewatered quickly to irrigation area should they become too full. Facilities are located above the 1 in 100 year flooding levels. Earthen mound and drainage channels along boundaries will catch any extra runoff. Hardy creek will be monitored monthly for the first year, then revised based on results.	LOW
Leaching of effluent to groundwater	Contamination of ground water	MED	Dams are lined with compacted clay or HDPE and then covered with sand The irrigation block will be closely monitored to ensure it is not irrigated while saturated. Irrigation block will be planted with species that have high nutrient uptake rates. A shallow aquifer bore and deep aquifer bore will be monitored for the first year, and then revised based on results	LOW
Biting insect breeding	Insect bites (may carry disease)	MED	Vegetation around pond will be slashed regularly to reduce food source. Ponds will be lined so that vegetation cannot grow within the pond. Lime can be added to wastewater to make it inappropriate for breeding. Cattle will be back-lined with an insecticide to kill insects and staff should wear insect repellent to reduce blood source available to biting insects and stop the spread of disease.	LOW
Diesel spill (water pump)	Contamination of surface water, contamination of groundwater, soil contamination	MED	The container will be double-bunded. Loading of container will be undertaken by experienced individuals. Spill kits will be available within easy access of all diesel storage areas.	LOW
Lime spill	Contamination of surface water, contamination of groundwater, soil contamination	LOW	The container will be double bunded Loading of container will be undertaken by experienced individuals. Spill kits available onsite.	LOW
Cleaning of ponds with front end loader	Noise	LOW	Machinery and vehicles will be maintained to reduce noise and inefficiency. Buffer zone and tree line will protect nearest sensitive receptor from noise.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Applying effluent to pasture areas	Nutrient accumulation in soils, soil waterlogging, odour, groundwater contamination, salinity	MED	Suitable crop selection and crop rotation. Effluent application at sustainable nutrient loading rates. Effluent application on hydraulic loading rates. Irrigation rates and timing will need to be managed to ensure that runoff during irrigation does not occur. Effluent will be applied using a low pressure spray method (lateral moving irrigator), so that no runoff or waterlogging should occur. Minimum biannual monitoring of nutrients status of effluent and solids reuse areas. Monitor irrigation application especially periodically check direction of irrigator. Monthly monitoring of two groundwater bores for the first year, then annually. Stubble retention and suitable tillage practices for erosion	LOW
Pasture and feedmill management				
Harvesting pasture by bailing	Dust, noise, fire	MED	The hay sheds have a separation distance to prevent spread and additional damage from fires Buffer zone will protect nearest sensitive receptor.	LOW
Processing feed	Dust, noise	LOW	Buffer zone will protect nearest sensitive receptors.	LOW
Feed wastage/spoilage	Increase in pests and vermin, odour	LOW	Good hygiene practices Ensure that conveyors, silos and bins are sealed.	LOW
Vehicle movements (feed truck running feed up and down lanes)	Dust, noise, greenhouse gas emissions	LOW	Watering unsealed on-farm roads as required during dry spells 100m of main access road will be sealed per year All vehicles will be maintained to reduce secondary issues such as noise, smoke and vibration. Buffer zone will protect nearest sensitive receptors.	LOW
Weed and pest management				LOW
Preparing herbicide (e.g. mixing herbicide and water/surfactants)	Contamination of surface water, soil contamination	LOW	Herbicide preparation will take place in a concreted area with bunding to ensure that spills do not contaminate porous and sensitive areas. Only staff trained on chemical handling or accredited contractors will carry this out. Chemicals stored away in a bunded lockable storage area Spill kits will be available onsite.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Applying herbicide to weeds	Contamination of surface water, off target spray	LOW	Use of a buffer zone alongside crops Use of herbicide application nozzles with larger droplet sizes should reduce off target damage/contamination. Weather conditions also need to be taken into account when spraying – herbicide will not be applied on windy or rainy days. Restricted to staff trained in herbicide application or accredited contractors. Herbicide will be applied as described on the label. Spill kits will be available onsite.	LOW
Emergencies				
Bore failure	Loss of livestock	LOW	A 3ML (3 day supply) tank will be established next to the bore to provide emergency store of water. The freshwater supply turkey's nest (10 ML capacity) will be maintained at 4ML (4 day emergency supply) Find water trucking services that can bring water in for emergencies.	LOW
Livestock disease	Loss of livestock	LOW	Regular pen cleaning. All cattle transported to the site are back-lined with an insecticide for flies and mosquitoes. Ill livestock are kept in isolation pens to reduce spread. Follow Disease/Quarantine Guidelines under emergency Management Plan.	LOW

Activity/Aspect	Potential impacts	Risk	Management measures	Residual Risk
Cyclone, Fire Flooding	Loss of livestock, loss of infrastructure, loss of life	MED	For cyclones: All infrastructure onsite is cyclone rated. A check of weather warnings from the Bureau of Meteorology will be carried out every morning. In the event of a cyclone, loose and sharp items will be secured, safety of the livestock will be ensured and, there will need to be enough supplies (e.g. Food, water, bedding) if flooding or isolation occur. Enact Biting Insects Management Plan. For flooding: All storage and drainage facilities are built to withstand a 1 in 100 year flood event. Drainage lines will be cleaned regularly. A check of weather warnings from the Bureau of Meteorology should be carried out every morning. There should be enough food supplies for the duration of the flood. Enact Biting Insects Management Plan. For fire: The hay sheds have a separation distance to prevent spread and additional damage from fires. Mains water supply is connected to the existing house for firefighting purposes. Machinery available to create a fire break, to slow/stop the spread of fire is available onsite. Dust suppression sprays in the pens can be turned on in the event of a fire. In addition, if there are nearby bushfires or planned burn offs fuel load on the property can be reduced.	LOW

4. Management Plan Summaries

4.1 Emergency Management Plan

In the event of an emergency, personnel are to follow the following emergency procedures:

- Check for danger. Do not enter an unsafe area;
- Alert other people in the vicinity;
- Raise the alarm with your Supervisor;
- Dial 000
- Carefully describe:
 - Your name or call sign;
 - The type of emergency – illness, accident, fire, chemical spill suspicious object; and
 - The location of the emergency (address or landmarks).
- Await instructions assisting ill person or accident victim and follow Evacuation Procedures; and
- All employees have a responsibility to familiarise themselves with their work area and be aware of the most direct means of exit from the site or building.

Table 6 Other Emergency Contact Numbers:

Emergency service	Phone number
Police	131 444
Fire	(08) 8946 4107 (After hours: (08) 8922 1555)
Emergency services	(08) 8922 3630
Exotic Animal Disease/ Quarantine Hotline	1800 675 888
NT EPA Pollution Hotline	1800 064 567

Table 7 outlines specific mitigation and emergency procedures for emergency situations related to the operation of the ILEF.

Table 7 Emergency Management Mitigation and Procedures

Event	Mitigation
Bore Failure	The ILEF has a freshwater supply turkey's nest and water tank to pump bore water into and this storage can sustain operations for a period of time. In the unlikely occurrence that a catastrophic bore failure occurs, in which the bore supply is inaccessible, water shall be trucked in until sustainable water supply can be established. In the event of a fire the water tanks and trucks can be filled using the mains supply should the bore be inaccessible.

Event	Mitigation
Disease/Quarantine (AUSVETPLAN)	In the event of an Emergency Animal Disease (EMD) outbreak the ILEF will be required to; - Quarantine the premises and/or movement controls; - Destroy and dispose of infected and exposed susceptible animals; - Decontaminate infected premises; - Conduct surveillance of susceptible animals; and - Restrict activities of certain enterprises. If the EMD is deemed to be low risk, it may be mitigated through: - Vaccination; - Vector or wild animal control; and - Treatment of affected animals. Personnel at the ILEF are required to contact the Darwin Regional Livestock Biosecurity Officer in the event of a disease or quarantine incident: Phone: (08) 8999 2034 Mobile: 0401 115 802
Dead Animals	Dead animals are a source of nutrients and potential disease. They therefore pose a direct risk, e.g. anthrax, or an indirect risk, e.g. contamination of drinking water supply. Other risks are similar to those caused by effluent and manure. Dead animals should be disposed of in a manner that is economical, but also limits the risk to the environment. Individual carcasses of any stock dying while resident will be sent to a pet food supplier or sent to be rendered at AA Co. Meat Processing Facility, via a negotiated commercial arrangement. If this is not possible, dead animals will be placed in special larger windrows for decomposition and vector management. This removes the need for a “dead pit” which presents (unnecessarily) disease, vector management and environmental risks. Effective carcass composting requirements as described in the MLA National Guidelines for Beef Cattle Feedlots include: - Carcasses should be placed in purpose built compost bays; - They should be placed on at least 300mm of the material being used as a carbon source and be covered with the same material to a similar depth on all sides; - The composting area should be protected from scavenging animals; and - A front end loader should be used to turn the compost pile every 2-3 months. In preparation for mass burial in the case of a catastrophic disease or climatic event, an emergency management plan is required. A site should be selected that is capable of burying all cattle that may be in the feedlot at one time. The dimensions and requirements are specified in the current version of the AUSVET Plan.
Cyclone	All infrastructures at the Livingstone ILEF will adhere to the Building Standards of the Northern Territory (Department of Lands Planning and the Environment). In addition, a check of weather warnings from the Bureau of Meteorology should be carried out every morning during the cyclone season. In the event of a cyclone: - Loose and sharp items will be secured; - Safety of the livestock will be ensured; and - There will need to be enough supplies (e.g. Food, water, bedding) if flooding or isolation occur. After a cyclone event, complete livestock check and area check is needed before recommencing production.

Event	Mitigation
Fire	Quick movement of livestock may need to occur, however this is not to occur if at the risk of staff members. The ILEF has some features that will assist in the event of a fire. • Segregation of hay sheds, which aids to prevent spread and additional damage from fires. • Mains water supply connected to the existing house, used only for firefighting purposes; • Machinery available to create a fire break, to slow/stop the spread of fire; • Dust suppression sprays fitted in the pens to assist with dust suppression can be turned on in the event of a fire. • In addition, if there are nearby bushfires or planned burn offs, fuel load on the property should be reduced. In the event of a fire staff should contact 000. Firefighting by personnel is not encouraged due to the dangers posed. However, fire extinguishers will be available in several areas specified during site inductions and training.
Flooding	The Livingstone ILEF is located in a high rainfall area in the Northern Territory where flooding is an annual occurrence during the wet season. These flooding risks may be reduced through the implementation of preventative measures: Structural Flood Mitigation • Maintenance of Infrastructure – drainage lines; and • Individual flood proofing – sandbagging or fencing may be required during significant flooding. Non Structural • Land use planning controls; • Catchment flood modelling; and • Early warning systems. Flooding presents a high risk of environmental impacts, not only in damage to infrastructure but also overflow of contaminants into the surrounding environment. Processes have been enacted to mitigate potential impacts, all storage and drainage facilities are built above the 1 in 100 year flood level. A check of weather warnings from the Bureau of Meteorology should be carried out every morning. Ensure that there is high ground nearby and organise feed supplies for the duration of the flood.
Environmental emergency (e.g. water/soil contamination)	The ILEF will have several spill kits available to reduce the spread of contamination. In the case of environmental pollution, the ILEF Manager will decide whether the NT EPA needs to be notified based on the extent of the environmental harm (see <i>Waste Management and Pollution Control Act</i> for the types of emergencies that are notifiable). • Ensure that site and personnel are safe • Notify supervisor and ILEF Manager • Dial 000, if required • IF SAFE TO DO SO, prevent any further pollution from occurring • ILEF Manager must inform the NT EPA within 24 hours of becoming aware of the incident by calling their Pollution Hotline 1800 064 567. • An incident report form must then be completed to ensure that the incident can be reviewed, followed by a corrective action report.

4.2 Traffic Management Plan

Standard	Management Action
Policy	Minimise the impact of trucks transporting livestock to the ILEF on other users of Stuart Highway
Performance objective	There are no issues regarding safety of road and intersections; and Operation will not cause any noticeable increase in traffic on the surrounding road network.
Implementation/Mitigation	The ILEF Manager will ensure that: • All loads hauled on the public road network comply with regulations; • 100 m of main access road will be sealed per year; • All compost loads are covered to reduce dust; and • All roads onsite are watered or sealed to reduce dust. All employees and contractors arriving onsite with vehicles will ensure that: • Vehicles are maintained to reduce secondary issues such as noise, smoke and vibration
Monitoring	Traffic will be monitored through complaints received and traffic management will be reviewed when required.
Incidents/Compliance failures	Any non-compliance, complaints or accidents at the intersection on Stuart Highway will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints.
Relevant legislation, standards and guidelines	Traffic Act 2012 and associated regulations

4.3 Air Quality Management Plan

Standard	Management Action
Policy	To minimise the impact of the ILEF on air quality parameters (including dust and greenhouse gas (GHG) emissions) that may affect neighbours and Stuart Highway.
Performance objective	Activities on site will minimise GHG emissions and dust produced; Operation of the facility will not unduly impact community amenity or cause detrimental health effects on residents or the environment; Complaints will be dealt with promptly to ensure that the likelihood of further emissions and complaints are minimised; Set and achieve management and monitoring goals; and Report progress to local and state governments if required.
Implementation/Mitigation	The ILEF Manager will ensure that: • The ILEF does not create preventable air pollution; • Monitoring programs are carried out to identify whether dust is an issue and where it comes from; • Regular maintenance of vehicles, machinery and pumps is carried out; and • Fuel use of the diesel pump is monitored. The Livestock Officer will ensure that: • Roads and parking areas are wet or sealed for livestock trucks to reduce vehicle related dust; • Cattle pens are watered using the sprinkler system during dry, dusty periods; • Ensure that manure is cleaned at least every 13 weeks, and maintained below 50mm dry manure; and • Weather, including wind speed and direction are monitored. The Feedmill Officer will ensure that: • Compost moisture levels are monitored daily and will ensure that these levels are optimal to reduce dust and increase composting efficiency (45-65% moisture content); • Compost windrows are turned only in low wind conditions and when moisture levels are optimal; • Compost will only be loaded for transport offsite when wind conditions are favourable; • Vehicles moving the material off-site are covered; • Harvesting of pasture and hay bailing are only undertaken in low wind conditions; and • Conveyors, silos and bins are sealed. • Monitor irrigation schedule closely to ensure that the irrigation block is not saturated with water; All employees and contractors will ensure that: • They report any vehicle or machine that needs maintenance and/or is not running efficiently and/or is producing smoke

Standard	Management Action
Monitoring	Dust monitoring will be carried out monthly in the first year of operation, and will then be reviewed to determine whether regular monitoring is necessary. Maximum acceptable increases of dust will be 1 or 2 g/m²/month over pre-existing levels. Wind will be monitored and speed and direction recorded to ensure that activities are not producing dust clouds that will affect visibility on Stuart Highway. Moisture levels in compost will be measured daily to ensure that the composting process is efficient and reduce the chance of dust. Fuel use of the diesel pump will be monitored to determine fuel efficiency.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints. Where an incident causes, or is threatening to or may threaten to cause, environmental nuisance or pollution resulting in material or serious environmental harm, EPA must be informed within 24 hours of first becoming aware of the incident as per the requirements of the Waste Management and Pollution Control Act.
Relevant legislation, standards and guidelines	Waste Management and Pollution Control Act (NT) Waste Management and Pollution Control (Administration) Regulations (NT) Workplace Health and Safety Act (NT) Work Health (Occupational Health and Safety) Regulations (NT) Public Health Act and Regulations (NT) AS 2724.3 Ambient air Particulate matter – Determination of total suspended particulates (TSP) – High volume sampler gravimetric method AS 3580 Methods of sampling and analysis of ambient air

4.4 Odour Management Plan

Standard	Management Action
Policy	To minimise the odours produced by the ILEF
Performance objective	Operation of the facility will not unduly impact community amenity or cause detrimental effects to the health of residents or the environment; Control of point of source odour such that minimal complaints are received from nearby residents; Set and achieve management and monitoring goals; and Report progress to local and state governments if required.
Implementation/Mitigation	The ILEF manager will ensure that: • The ILEF does not produce odour levels that will impact sensitive receptors; • Weather monitoring program is carried out to ensure odour does not carry to sensitive receptors; and • Records of any emergency use of gypsum or lime to treat sources of odour are maintained. The Livestock Officer will ensure that: • Ensure that manure is cleaned at least every 13 weeks, and maintained below 50mm dry manure; • Pen stocking densities are managed so that they are not too wet, nor dry; • Livestock are fed low starch rations to reduce nutrient ‘bypass’; • Daily cattle numbers and feed fed are recorded; • Wind speed and direction are recorded; • Certification of ration compositions (to demonstrate reduced protein and ME); and • Dust suppression system use and any emergency use of gypsum or lime to treat sources of odour are recorded. The Feedmill Officer will ensure that: • Compost moisture and temperature levels are monitored and kept at optimal levels; • All compost will be removed (sold) off site prior to the wet season; and • Holding water is recirculated with an input of lime to adjust the pH and remove odorants. All employees and contractors will ensure that: • They report any odours or sources of odours.
Monitoring	Whilst specific odour monitoring will not be carried out, the following aspects will be monitored and recorded to help with the management of odour: • Recording of daily cattle numbers; • Recording of wind speed and direction; • Recording of feed fed; • Record of dust suppression systems use; • Records of any emergency use of gypsum or lime to treat sources of odour; and • Monitoring of compost moisture and temperature levels.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.

Standard	Management Action
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints. Where an incident causes, or is threatening to or may threaten to cause, environmental nuisance or pollution resulting in material or serious environmental harm, EPA must be informed within 24 hours of first becoming aware of the incident as per the requirements of the Waste Management and Pollution Control Act.
Relevant legislation, standards and guidelines	Waste Management and Pollution Control Act (NT) Waste Management and Pollution Control (Administration) Regulations (NT) Workplace Health and Safety Act (NT) Work Health (Occupational Health and Safety) Regulations (NT) Public Health Act and Regulations (NT)

4.5 Noise Management Plan

Standard	Management Action
Policy	To minimise noise produced by the ILEF
Performance objective	Operation of the facility will not unduly impact community amenity or cause detrimental effects to the health of residents or the environment; Control of point of source noise such that minimal complaints are received from nearby residents; Set and achieve management and monitoring goals; and Report progress to local and state governments if required.
Implementation/Mitigation	The ILEF Manager will ensure that: • All equipment will be fitted with efficient silencers, in accordance to the Motor Vehicles Act 1949; • All equipment will be maintained to reduce noise emissions; • Noisier activities will be undertaken in the late morning and early afternoon when most people are at work; The Livestock Officer will ensure that: • Trucks are not left idling when not in use; and • When employees and contractors are involved in tasks that exceed occupational health and safety limits for noise (above LAeq, 8h of 85 dB(A)) they will be required to wear hearing protection that meet Australian Safety Standards. The Feedmill Officer will ensure that: • When employees and contractors are involved in tasks that exceed occupational health and safety limits for noise (above LAeq, 8h of 85 dB(A)) they will be required to wear hearing protection that meet Australian Safety Standards. All employees and contractors will ensure that: • They report any vehicle or machine that is producing excessive noise.
Monitoring	Noise will be monitored through complaints received and noise reduction management will be reviewed when required.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints. Where an incident causes, or is threatening to or may threaten to cause, environmental nuisance or pollution resulting in material or serious environmental harm, EPA must be informed within 24 hours of first becoming aware of the incident as per the requirements of the Waste Management and Pollution Control Act.

Standard	Management Action
Relevant legislation, standards and guidelines	Waste Management and Pollution Control Act (NT) Waste Management and Pollution Control (Administration) Regulations (NT) Workplace Health and Safety Act (NT) Work Health (Occupational Health and Safety) Regulations (NT) Public Health Act and Regulations (NT) Motor Vehicles Act 1949 AS 1055 Description and measurement of environmental noise AS 2012 Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors AS 2221 Methods for measurement of airborne sound emitted by compressor units including prime movers and by pneumatic tools and machines AS 2436 Guide to noise control on construction, maintenance and demolition sites AS 2659 Guide to the use of sound-measuring equipment

4.6 Water Quality Management Plan

Standard	Management Action
Policy	To minimise the impacts of the ILEF on surface and groundwater systems and prevent harm to their ecosystems and those that use the water.
Performance objective	No contaminated water leaving the site via surface or groundwater; and No contaminants attributable to the ILEF found in surface or groundwater.
Implementation/Mitigation	The ILEF manager will ensure that: • The waste supply bore is monitored for water usage and quality; and • The piezometers, as well as Hardy Creek are monitored and tested monthly for the first year. The Feedmill Officer will ensure that: • Wastewater irrigation is not carried out while the irrigation block is saturated. All employees and contractors will ensure that: • Any cracks or leaks in bunding, earthen mounds or dam walls are reported

Standard	Management Action
Monitoring	Bore water usage will be monitored via a meter, and recorded weekly. Water quality tests will be undertaken each quarter. Water from Hardy Creek, which is on Santavan's property, will be monitored monthly for the first year to ensure that all of the design and surface water management procedures are effective in both the dry and wet seasons. After this, the monitoring frequency will be reviewed, and is likely to continue on an annual and event-only basis (e.g. where surface flows to the creek were observed, or after cyclones). This monitoring will include for the following analytes: • Temperature • Electrical conductivity; • Turbidity; • pH; • Dissolved oxygen; • Total suspended solids; • Chlorophyll; • Sodium; • Nitrates; • Ammonia; • Total nitrogen; • Total phosphorus; and • Filterable reactive phosphorus These water quality parameters will also be monitored during any discharge event from the clean water storage dam. Six (6) piezometers will be installed around the site for the monitoring of groundwater. The monitoring will be undertaken on a quarterly and as needed basis for the first year. After this, the monitoring frequency will be reviewed, and is likely to continue on an annual and event-only basis. This monitoring will include the following conditions: • Temperature; • Standing water levels; • pH; • Electrical conductivity; • Total nitrogen; • Nitrate; • Ammonia; and • Total phosphorus.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.

Standard	Management Action
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints. Where an incident causes, or is threatening to or may threaten to cause, environmental nuisance or pollution resulting in material or serious environmental harm, EPA must be informed within 24 hours of first becoming aware of the incident as per the requirements of the Waste Management and Pollution Control Act.
Relevant legislation, standards and guidelines	Water Act (NT) Waste Management and Pollution Control Act (NT)

4.7 Pest and Vermin Management Plan

Standard	Management Action
Policy	Minimise the adverse impacts and spread of pest species on humans and the environment
Performance objective	Ensure that pest control practices are implemented to prevent the occurrence of breeding sites and deter pests from inhabiting the ILEF; Monitor the effectiveness of implemented control measures; Set and achieve management and monitoring goals; and Report progress to local and state governments if required
Implementation/Mitigation	The ILEF manager will ensure that: • Pest species are controlled and their breeding grounds removed/made unsuitable required by regulations. The Livestock Officer will ensure that: • Insecticide back-lining procedures are implemented for incoming livestock; • Staff are trained and inducted on pests and vermin, and that they are aware of their obligations under the EMP; • Vehicles leaving the property will be checked for potential hitchhiking pest species (can be undertaken as part of the wash-down procedure); • Monitoring programs are carried out to identify any pests and vermin onsite and any control programs are undertaken as necessary; • Staff trained on proper cleaning practices; • Ensure that pen manure is cleaned at least every 13 weeks, and maintained below 50mm dry manure; • Maintenance routines and registers kept; and • The pest register (Appendix C) is maintained and acted upon. The Feedmill Officer will ensure that: • Compost manure pad is monitored daily for pests and vermin; • Bait stations are placed out and checked weekly and replaced where necessary; • Silos and bins are all closed; • Monthly inspection of ponds for cane toads; • Maintain and act upon pest register. All employees and contractors will ensure that: • They report any occurrence of pests and any new potential breeding sites to the ILEF Manager.

Standard	Management Action
Monitoring	Vehicles entering and leaving the property will be checked for potential hitchhiking pest species (can be undertaken as part of the wash-down procedure). Any ponds, dams, drains, sediment traps, bunded areas and on-site excavations filled with water will be inspected for the presence of cane toad eggs at least monthly (but can be done as part of the weekly biting insect monitoring schedule). Compost piles will be monitored for presence of vermin, temperature and moisture daily, so that there are no areas where wet manure can accumulate without being disturbed and aerated. Pests include, but are not limited to, cane toads, Asian house geckoes, rock doves, houseflies, house mice, black rats, dingoes, cats, pigs, and swamp buffalo. Biting insects including mosquitoes, ticks, buffalo flies and biting midges are covered in the Biting Insects Management Plan.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The Livestock and Feedmill Officers will document details of visual inspections undertaken for ponding areas, non-conformances, incidents, corrective actions and complaints. They will report all non-conformances, incidents, corrective actions and complaints to the ILEF Manager.
Relevant legislation, standards and guidelines	Public Health Act and Regulations (NT) Workplace Health and Safety Act (NT)

4.8 Heritage Management

This project is located on land that has already been used for grazing and cultivation and will not disturb any Indigenous or non-Indigenous heritage site, object or place. However, if Indigenous or non-Indigenous relics are found during the construction and operation of the ILEF, work must cease and the Department of Natural Resources, Environment, the Arts and Sports (NRETAS) must be contacted to inspect the finds.

Otherwise, no management plan is required.

4.9 Solid and Liquid Waste Management Plan

Standard	Management Action
Policy	The ILEF will ensure that all waste material generated on site is handled in a responsible manner, and in accordance with legislative requirements whilst promoting sustainable resource use.
Performance objective	Protect employees and minimise the potential impact on humans and the environment

Standard	Management Action
Implementation/Mitigation	The ILEF Manager will ensure that: • Ensure that all personnel are aware of and adhere to the Solid and Liquid Waste Management Plan (SLWMP); • Carry out staff training and induction to make staff aware of their obligations under the SLWMP; • Review SLWMP annually and additionally when changes occur (including any legislative changes); • Each type of waste is disposed of appropriately (see the Solid and Liquid Waste Management Plan for individual disposal methods); • Records of any emergency use of gypsum or lime to treat sources of odour are maintained; • Fuel use of the diesel pump is monitored; • Ensure that testing of the wastewater in the primary wastewater treatment pond, irrigation block soil and piezometers at primary wastewater treatment pond is carried out twice a year; • Ensure that asbestos is disposed of at certified landfills and retain invoices; • Monitoring of the levels in the wastewater treatment pond and wet weather storage pond on a weekly basis; and • Sample the waste water treatment pond and wet weather pond in the event of an overtop event. The Livestock Officer will ensure that: • Ensure that manure is cleaned at least every 13 weeks, and maintained below 50mm dry manure; • Weather monitoring program is carried out to ensure odour does not carry to sensitive receptors; and • Dead carcasses are sent to pet food supplier, rendering facility or disposed on site via composting. The Feedmill Officer will ensure that: • Holding water is recirculated with an input of lime to adjust the pH and remove odorants; • Irrigation schedule is closely monitored to ensure that the irrigation block is not saturated with water; • Compost moisture and temperature levels are monitored daily and ensure that these levels are optimal to reduce dust and increase composting efficiency (45-65% moisture content, 40-65°C); • Compost windrows are turned, but only in low wind conditions and when moisture levels are optimal; • Compost piles are monitored for the presence of vermin, temperature and moisture daily, so that there are no areas where wet manure can accumulate without being disturbed and aerated; • All compost is removed (sold) off site prior to the wet season; • Compost will only be loaded for transport offsite when wind conditions are favourable; and • Manure Compost Tracking Sheet is filled out for manure transported off site. All other employees and contractors will ensure that: • Any cracks or leaks in bunding or dam walls are reported; and • Any odours coming from wastewater, compost manure pad and irrigation block are reported.

Standard	Management Action
Monitoring	All waste removed from site requires a receipt from the licenced facility it is disposed at. Manure compost sold or removed from site will be recorded.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.
Reporting	The ILEF Manager will document details of all non-conformances, incidents, corrective actions and complaints. Where an incident causes, or is threatening to or may threaten to cause, environmental nuisance or pollution resulting in material or serious environmental harm, EPA must be informed within 24 hours of first becoming aware of the incident as per the requirements of the Waste Management and Pollution Control Act. Pollution incident hotline should be alerted for major environmental spills on 1800 064 567.
Relevant legislation, standards and guidelines	Public Health Act (NT) Waste Management and Pollution Control Act 2014 Waste Management Pollution Control (Administration) Regulation Litter Act Agricultural and Veterinary Chemical (Northern Territory) Act Dangerous Goods Act Fines and Penalties (Recovery) Act Environmental Assessment Act Environmental Offences and Penalties Act Environmental Protection (National Pollution Inventory) Objective Water Act Water Regulation Draft Waste Management Strategy 2014

4.10 Biting Insects Management Plan

Standard	Management Action
Policy	Minimise the adverse impacts on humans from biting insects
Performance objective	Ensure that biting insect control practices are implemented to prevent the occurrence of breeding sites and deter adult biting insects onsite; Inform all personnel onsite about health and safety guidelines with regards to biting insects and the diseases they carry; Monitor the effectiveness of implemented control measures; Set and achieve insect management and monitoring goals; and Report progress to local and state governments if required.
Implementation/Mitigation	The ILEF Manager will: • Ensure that biting insects are controlled and their breeding grounds removed/made unsuitable as required by regulations; • Ensure that this BIMP is implemented; • Ensure that all personnel are aware of and adhere to BIMP procedures; • Carry out staff training and induction for biting insects and make staff aware of their obligations under the BIMP; and • Review BIMP annually and additionally when changes occur (including any legislative changes). The Livestock Officer will: • Implement insecticide back-lining procedures for all incoming livestock; • Carry out monitoring program to identify biting insects onsite and undertake any control programs as necessary; • Maintain and act upon biting insect register and maintain mosquito monitoring forms; • Ensure that manure is cleaned at least every 13 weeks, and maintained below 50mm dry manure; and • Ensure that sedimentation basins are cleaned after rainfall. All employees and contractors will ensure that: • They report any occurrence of biting insects, their larvae or any new potential breeding sites to the ILEF Manager; and • They wear PPE to reduce insect bites.
Monitoring	Any ponds, dams, drains, sediment traps, bunded areas and on-site excavations filled with water will be inspected for the presence of mosquito larvae on a daily basis and fill out a biting insect monitoring form. In addition, staff will need monitor their health and be aware of the mosquito borne disease symptoms.
Incidents/Compliance failures	Any incidents, illnesses or infestations in avoidable areas will be reported to the ILEF Manager. Any illnesses due to biting insects are to be reported to the Northern Territory Medical Entomology Branch
Corrective action	Any non-compliance will be carried out as described in the EMP section 2.3.

Standard	Management Action
Reporting	The Livestock Officer will document details of visual inspections undertaken for ponding areas, non-conformances, incidents, corrective actions and complaints. The Livestock Officer will report all non-conformances, incidents, corrective actions and complaints to the ILEF Manager.
Relevant legislation, standards and guidelines	Public Health Act and Regulations (NT) Workplace Health and Safety Act (NT) Department of Health and Families Guidelines for preventing mosquito breeding associated with construction practice near tidal areas in the NT 2005 Mosquito breeding and sewage pond treatment in the Northern Territory Constructed wetlands in the Northern Territory – Guidelines to prevent mosquito breeding

4.11 Weed Management Plan

Standard	Management Action
Policy	Minimise the spread of weeds
Performance objective	Develop the weed management section of a whole property plan for the ILEF; Improve profitability and sustainability of the ILEF by ensuring weed management activities and deployment of resources are scheduled at the optimal time; Monitor the effectiveness of implemented control measures; Set and achieve weed management and monitoring goals; and Report progress to local and state governments if required.
Implementation/Mitigation	The ILEF manager shall: • Ensure that all declared noxious weeds are identified and eradicated as required by regulations; • Ensure that this weed management plan is implemented and reviewed; • Ensure that all personnel are aware of and adhere to WMP procedures; and • Undertake continued training of all staff in weed identification. The Feedmill Officer shall: • Inspect individual components of waste treatment facility before directing treated material to other component; • Maintain and act upon Weed Control Register; • Ensure that weed treatment records are completed for all treatments; and • Perform regular surveys to identify noxious weeds and undertake any control programs as necessary. The Livestock Officer will: • Inspect vehicles for seed and soil when entering site; • Implement wash-down procedures; • Maintain a wash-down log for vehicular weed hygiene; and • Ensure that wash-down area is clean and maintained. All employees and contractors will ensure that they: • Report any occurrence of noxious weeds; and • Wash all vehicles and equipment before entering or leaving site.
Monitoring	Two comprehensive weed searches of the site will be undertaken in February and November each year, so that treatment may occur in March and December. Monitoring will take place monthly to assess the effectiveness of treatment methods and to remove any regenerating plants. The monthly site inspections will be conducted by the field manager (or a skilled delegate), who will report on any non-conformances with this plan and the date and persons involved in the monitoring process.
Incidents/Compliance failures	Any non-compliance, complaints or incidents will be dealt with as described in the EMP section 2.3, 2.4 and 2.5, respectively.
Corrective action	The ILEF manager will ensure that corrective actions are taken within an appropriate time frame to ensure that this management plan is adhered to in future.

Standard	Management Action
Reporting	The Feedmill Officer will document details of weed occurrences on the weed control register and document all treatments on weed treatment record sheets. The Feedmill Officer will report non-conformances, incidents, corrective actions and complaints to the ILEF manager. If any Class A weed is found onsite, the ILEF Manager will report it to the NT Department of Land Resource Management (Weed management branch) to inform them of the weed's location (weedinfo@nt.gov.au or (08) 8999 2380).
Relevant legislation, standards and guidelines	Weed Management Act

5. Appendices

Appendix A.	In the Event of an Emergency	A-1
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Appendix A. In the Event of an Emergency

In the Event of an Emergency:

1. Check for danger. Do not enter an unsafe area;
2. Alert other people in the vicinity;
3. Raise the alarm with your Supervisor;
4. Dial 000
5. Carefully describe:
 - Your name or call sign;
 - The type of emergency – illness, accident, fire, chemical spill suspicious object; and
 - The location of the emergency (address and key features).
6. Await instructions on assisting ill person or accident victim and follow evacuation procedures; and
7. All employees have a responsibility to familiarise themselves with their work area and be aware of the most direct means of exit from the site or building.

Other Emergency Contact Numbers:

Emergency service	Phone number
Police	131 444
Fire	(08) 8946 4107 (After hours: (08) 8922 1555)
Emergency services	(08) 8922 3630
Exotic Animal Disease/ Quarantine Hotline	1800 675 888
NT EPA Pollution Hotline	1800 064 567

Appendix B. Activities/aspects and the Risks of their Potential Impacts

		Before Management Measures			After Management Measures (Table 5)		
Activity/Aspect	Potential impacts	Likelihood	Consequence	Risk	Residual likelihood	Residual consequence	Residual risk
Traffic management							
Transporting livestock to site	Odour	4	1	LOW	4	1	LOW
	Increased traffic on local roads	5	2	MED	5	1	LOW
	Dust	5	2	MED	4	1	LOW
	Noise	5	1	LOW	5	1	LOW
	Spreading pests, weeds and vermin	4	2	LOW	3	2	LOW
	Greenhouse gas emissions	5	1	LOW	5	1	LOW
Pre-export quarantine and feedlot management							
Keeping livestock onsite	Community amenity	5	1	LOW	4	1	LOW
	Odour	5	2	MED	4	2	LOW
	Noise	4	1	LOW	4	1	LOW
	Dust	5	2	MED	4	2	MED
	Soil compaction	5	1	LOW	5	1	LOW
	Increase in pests, weeds and vermin	4	2	LOW	3	2	LOW
	Greenhouse gas emissions	5	1	LOW	4	1	LOW
	Lower water table	2	5	MED	1	5	LOW
	Biohazardous waste	5	4	HIGH	4	2	LOW
Improper/irregular pen cleaning	Increase in pest population	5	2	MED	2	2	LOW
	Increase in disease	5	3	MED	2	3	LOW
	Poor health of local flora and fauna	4	3	MED	2	3	LOW
	Odour	5	2	MED	3	2	LOW

Activity/Aspect	Potential impacts	Before Management Measures			After Management Measures (Table 5)		
		Likelihood	Consequence	Risk	Residual likelihood	Residual consequence	Residual risk
Increase in pest population	Poor health of local flora and fauna	3	2	LOW	2	2	LOW
	Poor health of livestock	2	2	LOW	1	2	LOW
	Loss of feed	2	2	LOW	1	2	LOW
Mass death	Odour	5	2	MED	4	2	LOW
	Increase in pest and vermin population	5	2	MED	4	2	LOW
	Spread of disease	2	4	LOW	2	4	LOW
Surface runoff/spills of effluent to surface water	Contamination of surface water	2	5	MED	1	5	LOW
Leaching of effluent to groundwater	Contamination of ground water	2	5	MED	1	5	LOW
Solid waste management							
Collecting and stockpiling manure for compost	Odour	5	1	MED	3	1	LOW
	Dust	5	2	MED	4	2	LOW
	Noise	4	1	LOW	4	1	LOW
	Increase in pest and vermin population	5	2	MED	3	2	LOW
	Fire	2	4	LOW	1	4	LOW
Turning compost	Odour	4	2	LOW	4	2	LOW
	Dust	5	2	LOW	4	2	LOW
	Noise	5	2	LOW	4	2	LOW
Application of compost to irrigation area	Dust	5	2	LOW	4	2	LOW
	Noise	4	2	LOW	3	2	LOW
	Soil contamination	2	3	LOW	1	3	LOW

Activity/Aspect	Potential impacts	Before Management Measures			After Management Measures (Table 5)		
		Likelihood	Consequence	Risk	Residual likelihood	Residual consequence	Residual risk
Transportation of compost offsite	Odour	4	1	LOW	3	1	LOW
	Increased traffic on local roads	4	2	LOW	4	2	LOW
	Dust	4	2	LOW	4	1	LOW
	Noise	5	1	LOW	5	1	LOW
	Spreading pests, weeds and vermin	4	2	LOW	2	2	LOW
	Greenhouse gas emissions	5	1	LOW	5	1	LOW
Wastewater management							
Collecting wastewater in the wastewater pond	Odour	3	2	LOW	3	1	LOW
	Increase in biting insects	3	2	LOW	2	2	LOW
Surface runoff/spills of effluent to surface water	Contamination of surface water	2	5	MED	1	5	LOW
Leaching of effluent to groundwater	Contamination of ground water	2	5	MED	1	5	LOW
Biting insect breeding	Insect bites (may carry disease)	4	3	MED	2	3	LOW
Transportation of diesel to site for water pump	Odour	3	1	LOW	3	1	LOW
	Increased traffic on local roads	4	2	LOW	4	2	LOW
	Dust	4	2	LOW	4	1	LOW
	Noise	5	1	LOW	5	1	LOW
	Spreading pests, weeds and vermin	4	2	LOW	2	2	LOW
	Greenhouse gas emissions	5	1	LOW	5	1	LOW
Diesel spill	Contamination of surface water	2	5	MED	1	5	LOW
	Contamination of groundwater	1	5	MED	1	5	LOW

Activity/Aspect	Potential impacts	Before Management Measures			After Management Measures (Table 5)		
		Likelihood	Consequence	Risk	Residual likelihood	Residual consequence	Residual risk
Lime spill	Soil contamination	2	5	MED	1	5	LOW
	Contamination of surface water	2	3	LOW	1	3	LOW
	Contamination of groundwater	2	3	LOW	1	3	LOW
Cleaning of ponds with front end loader	Soil contamination	2	3	LOW	1	3	LOW
	Noise	4	1	LOW	3	1	LOW
	Applying effluent to pasture areas	3	2	LOW	2	2	LOW
Applying effluent to pasture areas	Soil waterlogging	4	2	LOW	3	2	LOW
	Odour	3	2	LOW	2	2	LOW
	Surface runoff (effluent over-application)	3	2	LOW	2	2	LOW
	Groundwater contamination	2	5	MED	1	5	LOW
	Salinity	2	3	LOW	1	3	LOW
	Soil erosion	3	2	LOW	2	2	LOW
Pasture and feedmill management							
Harvesting pasture by bailing	Dust	5	2	MED	5	2	MED
	Noise	5	1	LOW	5	1	LOW
	Fire	2	4	LOW	2	3	LOW
Processing feed	Dust	5	1	LOW	5	1	LOW
	Noise	4	1	LOW	4	1	LOW
Feed wastage/spoilage	Increase in pests and vermin	3	2	LOW	2	2	LOW
	Odour	2	1	LOW	1	1	LOW
Vehicle movements (feed truck running feed up and down lanes)	Dust	4	2	LOW	4	1	LOW

Activity/Aspect	Potential impacts	Before Management Measures			After Management Measures (Table 5)		
		Likelihood	Consequence	Risk	Residual likelihood	Residual consequence	Residual risk
	Noise	4	2	LOW	4	1	LOW
	Greenhouse gas emissions	5	1	LOW	5	1	LOW
Weed and pest management							
Preparing herbicide (e.g. mixing herbicide and water/surfactants)	Contamination of surface water	3	3	MED	1	3	LOW
	Soil contamination	3	3	MED	1	3	LOW
Applying herbicide to weeds	Contamination of surface water	2	2	LOW	1	2	LOW
	Off target spray	2	3	LOW	1	3	LOW
Emergency management							
Bore failure	Loss of livestock	2	3	LOW	1	3	LOW
Livestock disease	Loss of livestock	2	3	LOW	1	3	LOW
Cyclone, Fire Flooding	Loss of livestock	3	3	MED	2	3	LOW
	Loss of infrastructure	3	3	MED	2	3	LOW
	Loss of life	2	5	MED	1	5	LOW

Appendix C. Pest Register

Pest register								
Pests found					Corrective action			
Date	Name	Type of pest	Location of infestation	Size of infestation	Date	Name	Actions taken	Success?
<i>E.g.: 1/1/2015</i>	<i>Joe Smith</i>	<i>Cane toads</i>	<i>Freshwater runoff dam</i>	<i>50 toads</i>	<i>2/1/2015</i>	<i>Joe Smith</i>	<i>Pest management company called in for removal and disposal.</i>	<i>Y</i>