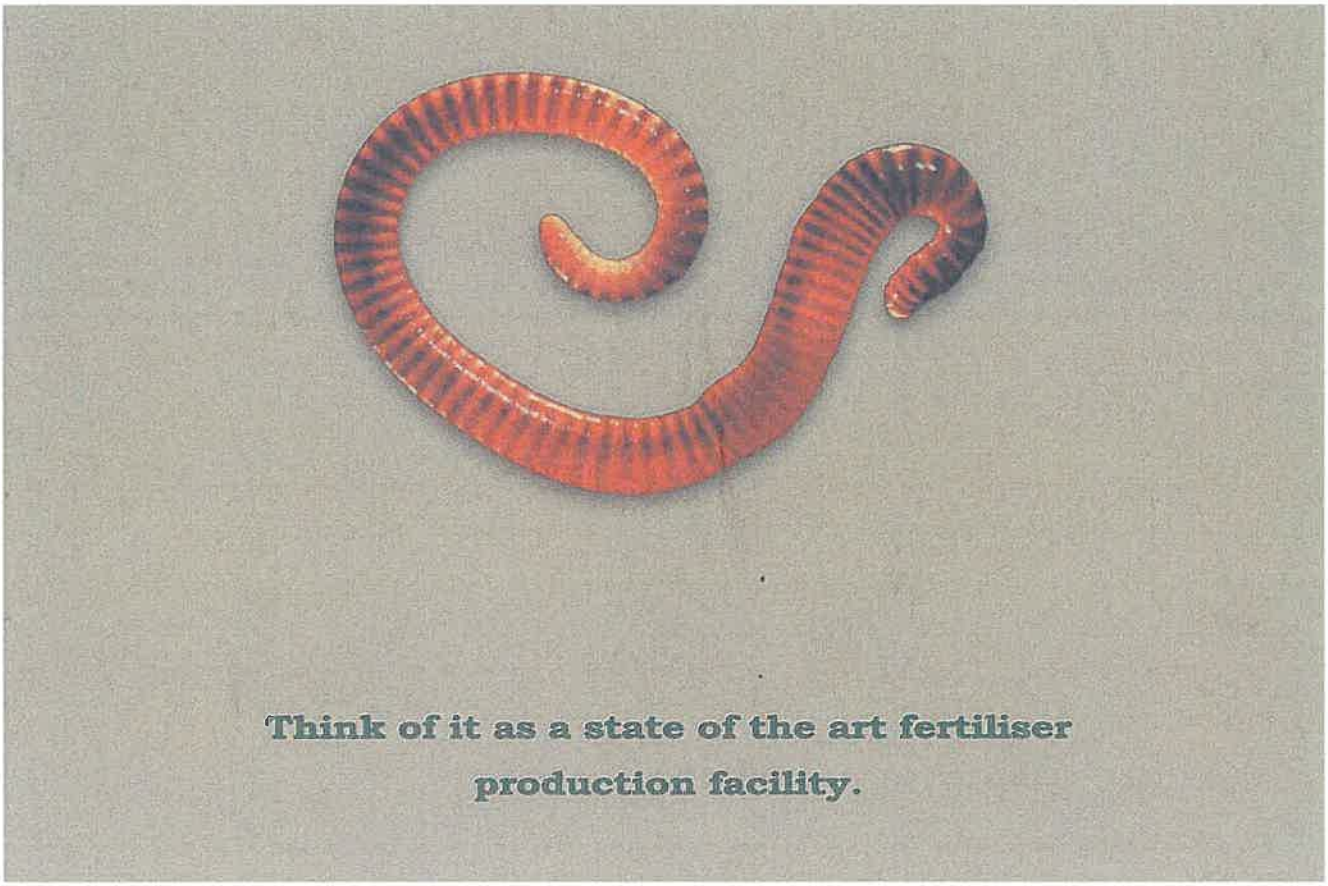
APPENDIX 'C'

Uruti Site Compliance Management Plan

REMEDIATION (NZ) LTD
Uruti Organic Centre 2017

Uruti Consent Compliance Management Plan

November 2017



Prepared By Phil Houben
Engineering Consultant

Reviewed By David Gibson
General Manager-Operations
Remediation (NZ) Ltd

Remediation (NZ) Ltd
208 De Havilland Drive, New Plymouth
New Plymouth
PO Box 8045 New Plymouth
Telephone: +64 6 7550923

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Quality Control Record

Site Manager **(Name)** ______________________________ **has read & understood this document and how it fits into my job**

Signed ____ Date: ___________

Site Staff **(Name)** __________________________________ **have been *inducted by the Site Manager on how this document fits into my job***

Signed ____ Date: ___________

Site Staff **(Name)** __________________________________ **have been *inducted by the Site Manager on how this document fits into my job***

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Signed ____ Date: ___________

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1 PURPOSE OF A COMPLIANCE PLAN

This document represents current best compliance plan for the Uruti site, which is located on State Highway 3 (1450 Mokau Road) approximately 2 kilometres south of the Uruti Village. The legal Description is Pt Sec4 Blk 11 Upper Waitara SD. This site is currently owned by Remediation (NZ) Ltd and lies completely within its own water catchment.

The purpose of this plan is to ensure that operations and environmental risks are managed appropriately, and within the conditions of the resource consents issued by Taranaki Regional Council.

All reviews and changes MUST be approved by Council before implementation

1.1 Site process

The site operates as a commercial composting / vermiculture operation including

1. New development
   - Storage and Processing pads
   - Stormwater treatment systems (wetlands)

2. Operations
   - Waste acceptance and screening
   - Blending & composting
   - Vermicomposting
   - Screening
   - Dispatch
   - Processing of stormwater treatment pond waste

3. Monitoring
   - Control of dust, noise and odour
   - Stormwater treatment and monitoring

1.2 Emergency contact numbers

In an emergency event, which may include:

- Environmental compliance
- Civil defence

a list of key contacts is shown as Appendix B.

2 New development

The current consent requires that each new pad development is approved by TRC prior to construction. TRC require that Remediation (NZ) Ltd provide

1. Performance information related to the existing operational pads
    a. Leachate management
    b. Silt Management
    c. Settlement
2. Details of the new pad construction
3. Details of silt and sediment control
4. Quality control systems (for placing soil, compaction etc)

The Site Manager is not to build our extend any of the existing pads without the written approval of TRC as above

3 Operations

3.1 General

3.1.1 Public access

There is no public access to the site. All vehicles entering the site must have the **prior approval of the Site Manager**. A swipe card system is to be used for access to the composting area.

3.1.2 Site security & upkeep

The Site Manager is responsible for site security and upkeep / maintenance of the site in accordance with this Plan.

3.1.3 Site operating hours

The operating hours of the site are generally 7:00am to 5:00pm daily but may vary to cater for specific needs of clients[1].

1. *At times the site may accept material outside normal working hours, providing staff are available on site to audit incoming material*

3.1.4 Internal roads & tracks

Internal roads and tracks are to be maintained to ensure that silt or spilt waste does not enter the Haehanga Stream. The Site Manager to check the tracks **daily during rain events** otherwise **weekly**

3.1.5 Biting flies

The Site Manager shall monitor quarterly for biting flies

Should biting flies be recorded, a management plan to be sent to the TRC within 1 month of detection advising

- The likely cause
- The actions taken
- Monitoring

3.1.6 Quality systems

3.1.6.1 Waste acceptance

2. *Appendix C is approved by TRC therefore if it is not on the list it can't be accepted*

Products that will be accepted will be guided by resource consent[2] conditions and includes but not limited to:

- *Green waste*
- *solids recovered from poultry/dairy food manufacturers, and small volumes of animal manure from meat processing plant stock yards;*
- *green vegetative wastes;*
- *biosolids*
- *Hydrocarbon contaminated drill muds. These will blended with other green waste within 3 days of receipt of material in order to reduce total petroleum hydrocarbon content*

3. *Attached as appendix F*

The Site Manager to ensure that all material entering the site is recorded on the weekly diary[3] sheet and must comply with the approved inputs list and must meet the following criteria:

- The material has no objectionable odour beyond the site boundary in its raw state; and
- The product causes no objectionable odour beyond the site boundary when blended with green waste or compost
- The product does not cause adverse effects on the receiving environment

Wastes that are not acceptable include treated timber and treated sawdust.

If the Site Manager is approached about taking a waste material that is not on the "Consented Approved Inputs list" then he should apply to the Taranaki Regional Council to add this material to the approved list **before acceptance on site**

The request will include

- Waste source
- Possible contaminants (i.e. heavy metals or hydrocarbons)

How the risks will be managed to ensure no ground or ground water contamination

3.1.6.2 Waste reception

The site operations staff are to audit the incoming loads and direct the customers (were applicable[4]) to the tip-off pad.

- If a material is deemed unsuitable, the operator is to advise the customer that the waste is not acceptable and to dispose of the material off site in the appropriate manner.
- If a material has already been dumped[5] then the site operator will load back onto the truck and advise the operator as above

Any queries as to materials acceptance are to be referred to the Site Manager.

3.1.6.3 Quality of Composting Process

The quality of the composting process is covered by the following:

a) Temperature

The Site Manager to ensure windrow temperatures are kept between 50 and 75 degrees C **weekly for rows less than 4 weeks** and **fortnightly for rows older than 4 weeks** and recorded on the temperature sheet attached as appendix H.

Should a windrow fall below 55 degrees C it is to be turned **as soon as practical**[6]

b) Windrow Turning

The windrows are turned on a regular basis to ensure the rows do not turn anaerobic. Turning of windrows to be recorded on windrow-monitoring sheet (attached as appendix H).

c) Moisture

The moisture content is critical to the greenwaste/organic waste breakdown.

The Site Manager to ensure the rows are measured by a **squeeze test**[7] **weekly.**

The moisture content of a windrow to be adjusted by

- Too much water - turning the windrow
- Not enough water – adding water from settlement ponds

4. *Some material will be dumped at the receival area and blended, others will be dumped on the designated composting pad*

5. *Some materials may be dumped on the ground prior to inspection*

6. *This is done as weather permits*

7. *If a handful of raw compost can be squeezed and a small amount of water drips out, the row has enough moisture. If no water comes out the row needs watering. Add as note*

3.1.6.4 Waste Storage, Warehousing and/or Disposal

All compostable material is to be moved to the designated pad (dependent on the waste type[8]) and formed into windrows.

8. *Some wastes may need to be blended with a bulking agents, such as bark or sawdust to prevent the material going anaerobic*

3.1.6.5 Vectors

The number of birds on site is to be kept to a minimum. The Site Manager is to monitor this regularly, and should he deem there to be too many, the site operations staff are to (**complying with all the laws and safety rules)** exterminate excess numbers.

Specific inspection for vermin will be **carried out monthly**. Staff will eliminate any vermin problem at the site.

The Site Manager will employ additional measures (for example employment of contract pest exterminators), should specific problems arise, to ensure the pest problem is well controlled.

3.1.6.6 Fire

Fire fighting equipment is to be maintained and staff trained in the use of the equipment.

Fire fighting equipment required on site will include:

- An adequate permanent water supply
- Water cart fitted with high pressure hose system
- Fire extinguishers
- Protective clothing

Any fires arising will be immediately extinguished by smothering the area with coverings (e.g. soil) and applying water as appropriate.

3.2 Air Discharge

3.2.1 General

9. *The boundary is defined as the land shown on the site plan attached as Appendix G*

The site is to be managed to ensure no odours are released outside the Site boundary[9] that are deemed offensive or objectionable[10]

10. *The term Offensive or objectionable determined by the events frequency, duration and, intensity as by the TRC Regional Plan*

All work on site will be **done between the hours of 8am and 5.00pm** during times when climatic conditions are favourable to prevent the transport of objectionable odours beyond the boundary.

3.2.2 Incoming material

This is covered under Section 3.1.6.1 and 3.1.6.2 waste reception and approved inputs

3.2.3 Composting process

This is covered under section 3.1.6.3 Quality control process

3.2.4 Dust

Dust is created from a number of areas on the site:

- Site access roads
  - This is dealt with in dry weather by using a water cart. **The Site Manager to determine when extra water is required.**
- Windrow turning
  - This is minimised by keeping the rows moist to reduce dust.

3.2.5 Contingency for air discharge

Should a material enter the site that is found to be odorous by the operators and is deemed **offensive or objectionable**, it should be referred to the Site Manager (or "acting") and the following actions should be followed

1. The Site Manager to determine if the material can be stabilised by adding compost fines[11] and should proceed to do so[12] OR
2. Turn the material away
3. If this material is likely to have already caused an odour off the site then the Site Manager will notify the TRC Environmental Hotline as soon as the material has been stabilised and note
   a. Time of the event
   b. Type of odour
   c. Wind speed and direction
   d. Expected duration
   e. Actions taken
   f. Do not accept material from this source until confirmed non-odorous.

Note in the weekly site diary[13]

11. *Compost fines are defined as screened compost*
12. *This should generally be immediately or no later than 60 minutes*
13. *Site diary sheet refer Appendix F*

3.3 Stormwater and Leachate Management

3.3.1 General

The Composting site is a non-hazardous site, but will generate leachate from rainwater falling on uncovered windrows and the composting pad.

Therefore consideration needs to be given to how the site deals with contaminated[14] and non-contaminated stormwater[15]

3.3.2 Non-Contaminated Stormwater

All the stormwater from the

- Parking area
- Entrance roads
- Farmland
- Stormwater diversion channels

Is diverted away from the compost pad(s) and is disposed of through the "clean" stormwater system (refer stormwater management plan Appendix D).

The Site Manager will **check these areas weekly** to ensure that there is no contamination present such as:

- Silt
- Compost
- Litter

Should contamination be found this to be removed "as soon as practical" and recorded on the weekly diary

3.3.3 Contaminated Stormwater

The active compost pad(s) have stormwater runoff drains on either side which drain towards the pad treatment ponds.

This runoff may be high in suspended solids due to the fine particles of compost.

There are a number of potential contamination sources:

1. Incoming greenwaste
2. Compost and Vermiculture windrows (in general)
3. Storage and handling of chicken litter
4. Hydrocarbons (from drill cuttings, drill fulids)

14. *Contaminated means anything that has been in contact with the active composting process and composting pad*

15. *Non-Contaminated means anything that has not been in contact with the composting process, which includes parking roads and surrounding farmland*

3.3.3.1 Incoming Greenwaste

This material is checked by the Site Manager (or acting) to ensure it meets the acceptance criteria. Any contaminants are to be removed from the greenwaste **daily** and disposed of at an approved waste facility as soon as practical ensuring the waste does not create any further nuisance such as odour or litter.

3.3.3.2 Compost and Vermiculture windrows

The stormwater and leachate that runs off the processing pad(s) on which compost and its raw products are placed, is collected and channelled to the leachate collection system. The Site Manager will:

- Ensure that materials that can be covered with compost covers are in place daily[16]
- Check the perimeter drains **weekly** and arrange cleaning if required. Priority will be given based on current weather conditions and risk of contamination i.e. pending rain.
- Ensure pond levels are maintained at a low level to allow the capture of the first flush rain event, **weekly**

[16] *Worm beds have covers on all the time except feeding, turning and harvesting so risk are minor. Finished compost should be covered at all time to reduce silt run-off*

3.3.3.3 Stormwater Reuse

Pumps will be used to pump water from the storage ponds back to the compost pad for moisture control during normal operations. The aim of reuse is to minimise any discharge off site.

3.3.3.4 Pad 1 and 3 pond management

All contaminated stormwater (leachate) collected off Pad 1 and 3 is to be collected and passed through a pond system with a combined capacity of 5,000m3 (refer Appendix D).

The Site Manager to ensure that the leachate flows through the complete pond system and doesn't bypass the process at any time

The Site Manager to check

- The final pond is **maintained at 80% capacity** to allow for peak storm flows.
- Check the **weed blanket on the ponds 6 monthly** and if there is an excessive weed blanket, this to be removed as soon as weather allows
- **Clean the ponds out annually** (in summer), this will include
  - Water (to windrows)
  - Weeds (to composting)
  - Silt (to composting)

Once the final pond quality meets the criteria it set out under 3.3.3.8 it can be irrigated to land.

3.3.3.5 Pad 2 and Wetland's management

All contaminated stormwater (leachate) collected off Pad 2 is to be collected and pumped through a wetland system, consisting of 7 separate terraces (refer Appendix D).

The Site Manager to ensure that the leachate flows through the complete wetlands system and doesn't bypass the process at any time

The Site Manager to check

- The final pond is **maintained at 80% capacity** to allow for peak storm flows.
- The pond is **dosed twice per year with a sudemoniouis bacteria**
- Check the **weed blanket on the ponds 6 monthly** and if there is an excessive weed blanket, this to be removed as soon as weather allows
- **Clean the ponds out annually** (in summer), this will include
    - Water (to windrows)
    - Weeds (to composting)
    - Silt (to composting)

To manage the final pond volumes the Site Manager must either re-circulate the leachate through the system again or discharge to the stream once it meets the consented discharge requirements under 3.3.3.8

3.3.3.6 Silt Management

The stormwater diversion drains around the pads include silt traps. The Site Manager is to check these **weekly** and arrange to have them cleaned as required

3.3.3.7 Flood

In the event of major flooding the following procedures will be put in place to minimise the risk of leachate reaching the Haehanga Stream and subsequently the Mimi River.

- The Site Manager will take immediate action to prevent contamination occurring
- The Site Manager will take immediate remedial action if required.
- The Taranaki Regional Council (TRC) environmental hotline to be notified.

- Event recorded on weekly diary including
    - Date and time
    - Rainfall volume (from weather station)
    - What happened
    - What caused it
    - What was done to rectify the problem
    - What has been done to stop it happening again
    - Who at TRC was notified

The Taranaki Regional Council will be requested to include Remediation (NZ) Ltd on their "heavy rainfall alert" list.

Further information on actions to take in the event of a spill are included in the Environmental/Safety Management PlanInterface document.

3.3.3.8 Stormwater Monitoring

The Resource Consent requires monitoring of the discharges to the Haehanga Stream and tributaries for various contaminants, including limits as listed below (refer consent condition 5838 - 1)

After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the confluence of the unnamed tributary with the Haehanga stream the consent shall not give rise to any of the following effects in the receiving waters of the Haehanga Stream:

- an **increase in temperature of more than 2 degrees Celsius**
- an **increase in biochemical oxygen demand of more than 2.00 gm^{-3}**; and/or
- A concentration of **more than 0.025gm^{-3} unionised ammonia**.
- the production of **any conspicuous oil or grease films, scums or foams, or floatable** or suspended materials;
- any conspicuous **change in the colour or visual clarity**;
- any emission of objectionable odour;
- the **rendering of fresh water unsuitable for consumption by farm animals;**
- Any significant **adverse effects on aquatic life**.

3.3.3.9 Contingency Plan for monitoring results

Should any of the results as sampled by the Site Manager or TRC exceed the consented limits the following procedures will be put in place:

1. The Site Manager to try and identify the source[17]
2. If a source is found it is to be eliminated and systems put in place to ensure it does not happen again[18]
3. Tier one, two or three management plan to be implemented, depending on the severity of the monitoring results[19]
4. Discharge to be retested monthly until levels are within consent

17. *The Site Manager will try and identify the source of the contaminant, checking individual pond quality, and possibly upstream*

18. *Any changes to the standard operating systems described in this plan must have approval from TRC before implementation*

19. *See section 3 of the BTW Facility Management Plan- Appendix 6.*

conditions

5. Preliminary report to be sent to TRC within 1 month of receiving results and the final report within 1 month of completing the remedial works
6. If the source of contamination cannot be found the Site Manager will consult with TRC and external consultants to agree a path forward.[20]

20. *It may not always be easy to identify the source of the contaminants, therefore consultation may be a solution*

4 Monitoring

4.1 Site Complaints

A register for complaints will be maintained at both the site office and the Corporate office.

Site complaints are to be recorded in the on-site complaints register. The register should note:

1) Complaint received by
2) Name of complainant
3) Date
4) Time
5) Nature of the complaint
6) Wind direction and strength
7) What site operations were happening
8) Was the site at fault and if so what remedial action is planned to stop this happening again.
9) What remedial action was taken
10) Who at TRC was notified
11) Did staff contact the complainant to advise remedial work (if required)?

All complaints will be actioned with a reply as to explanation of cause, and remedial action proposed, etc. **within 48 hours**.

4.2 Stormwater

Covered under section 3.3.3.6

4.3 Air Discharge

Covered under section 3.2

Appendix A – Resource Consent No's

5838-2 To discharge treated stormwater and leachate, including organic material, from composting operations onto and into land and into an unnamed tributary of the Haehanga Stream in the Mimi catchment ….also 2642838E-6246759N

5839-2 To discharge emissions into the air (odour and dust) from composting operations.

5938-1 To erect, place,use and maintain a twin culvert in, on and over the bed of the Haehanga Stream in the Mimi catchment for vehicle access purposes.

6211-1 To realign and divert the Haehanga Stream in the Mimi catchment for land improvement purposes.

6212-1 To erect, place, use and maintain a culvert and associated structure(s) in the bed of The Haehanga Stream in the Mimi catchment for access purposes.

Appendix B-BTW 'Uruti Composting Facility Management Plan

Appendix C – Uruti Compost Centre Emergency Contacts

NOTIFICATION NUMBERS

EXTERNAL

Taranaki Regional Council	06 7657127
New Plymouth District Council	06 759 6060

INTERNAL

Herbert Van Veen (Site Manager)	06 7526904
David Gibson (GM-Operations)	0274 712 012
Kerry O'Neil (Managing Director)	021 2836300

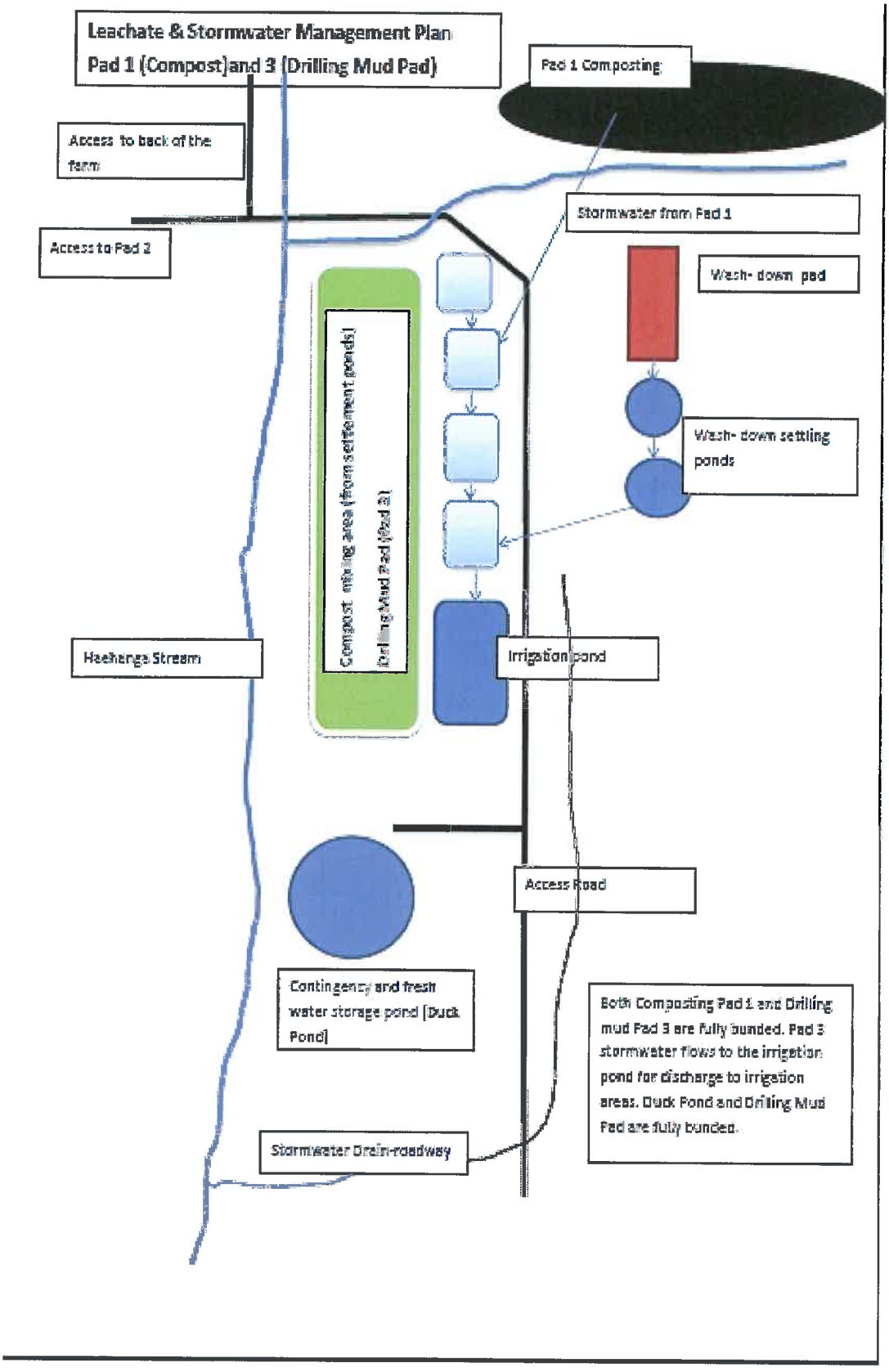
Appendix D – Approved inputs

Uruti Composting Centre List of Approved Inputs

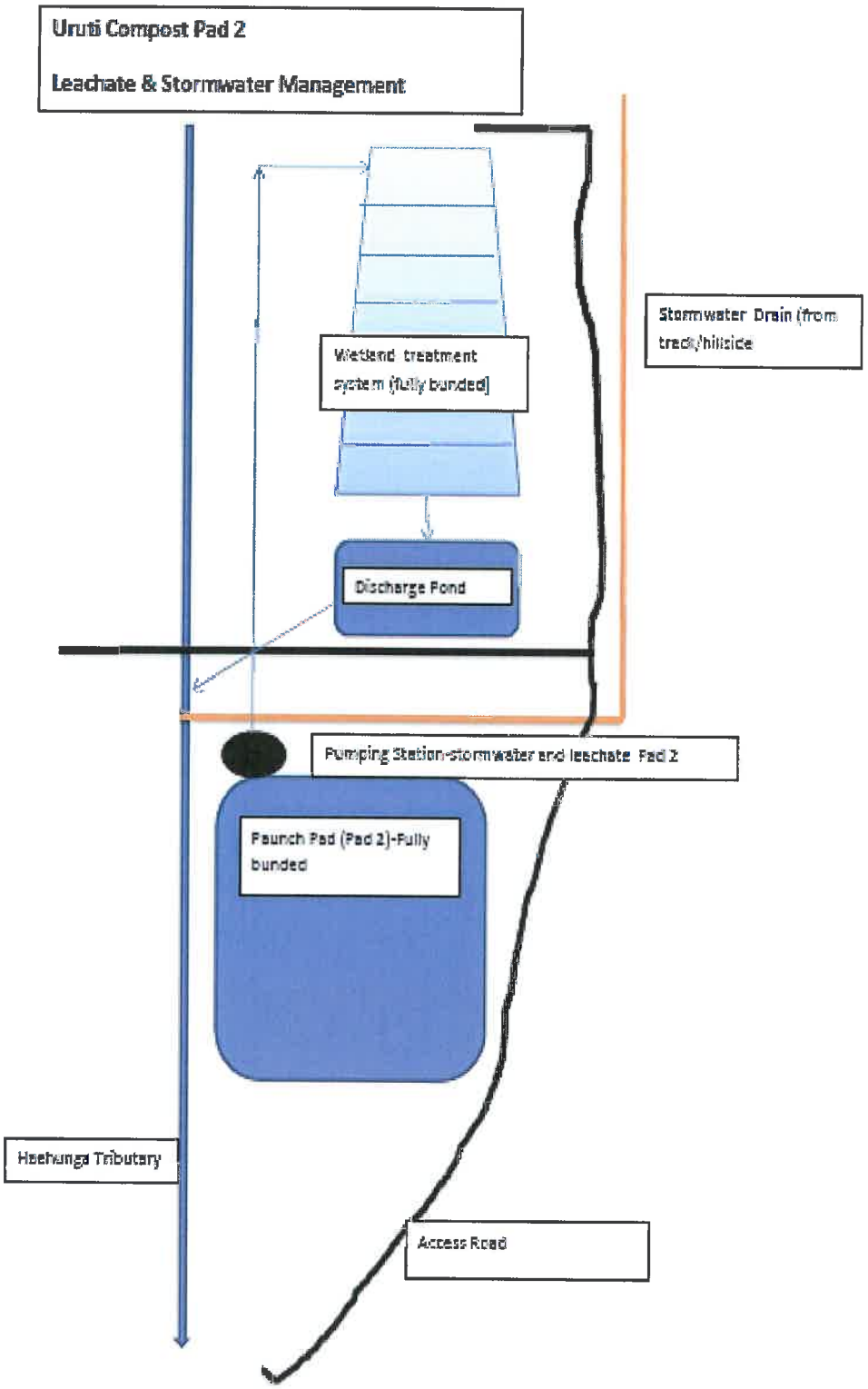
Input	Signed off by TRC	Date
Greenwaste		
paunch grass		
solids recovered from dissolved air flotation units and small volumes of animal manure from meat processing plant stock yards;		
green vegetative wastes		
bio solid wastes, including but not limited to pellets from wastewater treatment plants		
mechanical pulping pulp and paper residue [excluding any pulping wastes that have been subject to chemical pulping or treated or mixed with any substance or material containing chlorine or chlorinated compounds];		
hydrocarbon contaminated solid drill cuttings, water based and synthetic fluids from exploration		
vegetable waste solids		
fish skeletal and muscle residue post filleting [free from offal];		
poultry industry waste [eggshells, yolks, and macerated chicks		
farm dairy oxidation pond solids		

Appendix E - Stormwater Management Diagrams

Uruti Compost Pad 1 and 3 Stormwater System



Uruti Compost Pad 2



Appendix E – Weekly site diary

(This form should record as a minimum the information required by this plan, but may also include Remediation (NZ) Ltd management records, therefore will not be a "controlled form" which will requires TRC approval to update)

Uruti Composting Operation	Week ending ___/___/___
Completed by:	
For:	**Remediation (NZ) Ltd**

Weather Conditions	Fine	Overcast	Raining	Wind Dir	Strength	**Comments**
Tick or comment						
Is there any unusual odours on site						

Operational Projects Occurring (circle one)

Incoming material checked M T W T F	Site checked for security M T W T F	Worm beds fed	Windrow turning
Chicken litter arriving on site	Drill cuttings	Bio solids	Greenwaste inputs
Screening	Loading out finished vermicast	Loading out finished compost	Leachate management systems checked M T W T F
Discharge samples taken M T W T F	Ponds checked for weeds	Ponds checked for level	Ponds checked for oil and scums
Stormwater drains checked for contamination	Pond water recirculated	Clean Ponds	Internal roadways checked for contamination
Shredding			

Incidents e.g. Waste turned away, waste with an odour treated, how, etc

Notes to TRC e.g. Waste odour, spillage,

Uruti Complaints Register Remediation (NZ) Ltd

Filled in by						
Complaint Received by	Time & date of complaint	Complaint	Cause	Action	Council(s) Notified (Tick)	Signed off by

Appendix G – Composting quality control sheets Remediation (NZ) Ltd

Date	Component	Delivery Dkt No	Weight	C/N Ratio	CM3	Moisture %	Batch No	Comp Maker	Turn Date	Temp	Ambient	Row No