



MASTERTON DISTRICT COUNCIL

NURSERY ROAD SOLID WASTE OPERATION

RESOURCE CONSENT APPLICATION

ASSESSMENT OF ENVIRONMENTAL
EFFECTS

18 February 2009



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EXECUTIVE SUMMARY

Masterton District Council (MDC) is seeking new resource consents from Greater Wellington Regional Council (GWRC) for the solid waste management activities performed at the Masterton Nursery Road site (Site).

The Masterton Landfill is located on Nursery Road, about 500 metres from the southern outskirts of Masterton Township. The landfill is located next to the Ruamahanga River, which flows along the eastern boundary of the site.

The existing resource consent for the Masterton Landfill (landfill) expired on 1st October 2006. Upon landfill closure, disposal of general refuse ceased at the site. The refuse is sent to Bonny Glen Landfill for disposal using the new transfer station. It is proposed to continue operating the landfill area as a cleanfill to provide service to the community and remediate the area in the process. The remediation process will consist of placing cleanfill along the side-slopes and top of the landfill to provide final closure and to minimise impacts on the environment.

This Consent Application was originally submitted to GWRC in March 2006, and then in September with revision to include all of the solid waste management activities performed at the site. It also includes the addition of the disposal of small amounts of special wastes.

A summary of the general scope of the revised project and the activities performed on the site is provided and include

- Landfill closure and remediation
- Transfer station
- Composting
- Cleanfill
- Special wastes

Landfill

The landfill stopped accepting refuse on 1st October 2006. However discharges from the landfill will continue and include leachate, landfill gas and stormwater. Additional soil fill is needed to complete the final grading of the site for closure. Cleanfill will be used as the source of the additional fill.

Cleanfill

Since October 2006 when the landfilling operation ceased, landfill area has been used for the disposal of cleanfill. This operation provides benefits that include a source of cleanfill to be used to remediating the site and provide a needed service to the community. The cleanfill will be placed on side-slopes and the top of the landfill to stabilise the area.

Special Wastes

Small quantities of specific types of waste are disposed of in the landfill concurrent with cleanfill operations. Special wastes are described as wastewater screenings, silt from stormwater and yard sumps, grease trap wastes, pig waste, asbestos, occasional animal carcasses and paint and spray cans. This waste will be placed for disposal on the upper



surface of the landfill using trenches. The disposal of special waste will continue while it provides the best practicable option for disposal for this material. Note special waste acceptance at the landfill will only happen when there is space for burying in trenches. When the landfill space is used up, alternatives will have to be developed for their acceptance and transfer.

Transfer Station

The transfer station has been built and running since 1st October 2006 on the site providing solid waste acceptance service to replace the closed landfill.

Composting

Composting at the Site had been happening since at least 1993. Composting material is predominantly grass clippings, prunings and other green waste. The green waste is deposited at a drop off area. It is stockpiled for one month. After one month it is shredded, and the resulting mulch is then laid out in windrows for composting. The windrows are turned every month and composting is completed in approximately 9 months. The compost product is then sold to the public and landscaping contractors.

Resource Consents Sought

Consent is being sought for the following Discharge Permits for the site as follows:

For the landfill closure and remediation & cleanfill operations

- Discharge permit (contaminants to water) to discharge leachate to groundwater and surface water.
- Discharge permit (contaminants to land) to discharge small quantities of special waste
- Discharge permit (stormwater to land) to discharge stormwater from the landfill to land.
- Discharge permits (contaminants to air) to discharge landfill gas, dust and odours to air.

For the composting operations:

- Discharge permit (contaminants to land) to discharge percolate produced by composting windrows to land, although this material is collected and discharged to the MDC sewer system
- Discharge Permit (contaminants to air) to discharge dust, gas and odours to air.

For the transfer station operations:

- Discharge permit (contaminants to air) to discharge odours and dust to air

This document is an Assessment of Environmental Effects (AEE) supporting the application for the resource consents sought as required under the Resource Management Act 1991 (“**RMA**”). It addresses all matters required by the Fourth Schedule of the RMA.



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1. INTRODUCTION

Masterton District Council (MDC) is seeking new resource consents from Greater Wellington Regional Council (GWRC) for all of the activities performed at the Masterton Nursery Road site (Site). These activities include

- cleanfilling operation including special waste disposal and closed landfill aftercare management
- composting operation
- transfer station

The existing resource consent for the Masterton Landfill (landfill) expired on 1st October 2006 (refer to **Appendix A** for a copy of the existing resource consent WAR 930100). Upon closure, disposal of general refuse ceased at the site. Refuse was sent to Awapuni until February 2007 and then to Bonny Glen Landfill for disposal using the new transfer station. It is proposed to continue operating the landfill area as a cleanfill together with special waste to provide service to the community and remediate the area in the process. The remediation process consists of placing cleanfill along the side-slopes and top of the landfill to provide final closure and to minimise impacts to the environment. The Site is also used for the recycling and compositing operations

An application for new resource consents was originally submitted to GWRC in March 2006. Further information is requested under Section 92(1) of the Resource Management Act 1991 by the Greater Wellington Regional Council in its letter dated 13 April 2006. A revised Assessment of Environmental Effects (AEE) report was then prepared to provide the information requested. However, due to the fact that at that time the MDC was considering to include the sewage sludge from the Homebush Wastewater Treatment Plant (WWTP) in the material to be accepted at the landfill, the revised AEE was not submitted. Now with the matter of Homebush WWTP sludge disposal resolved the revised AEE can finally be submitted. It also includes the addition of the disposal of small amounts of special wastes.

The Nursery Road site is considered an integral part of future waste disposal and minimisation in the Wairarapa. With the increased awareness for waste minimisation and responsible waste disposal, there is the need for a viable solid waste management (including recycling and waste diversion) facility available to the public. This facility should have the capability flexible enough to deal with future waste stream changes and minimisation legislation changes.

Opportunity exists to centralise all recycling in Wairarapa to maximize efficiency. The Nursery Road site is centrally located and has sufficient space to accommodate current and future recycling operations.

This AEE report is prepared according to the Fourth Schedule of Resource Management Act 1991 (“**RMA**”).

Section 2 of this report provides background information including site location and history. Section 3 described the proposed activities including cleanfill, composting and transfer station operations. Section 4 provides a statutory review. Section 5 outlines resource consents sought for each operation. Section 6 assesses the environmental effects from the proposed activities. Section 7 presents the alternatives and mitigation



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measures. Section 8 outlines consultation taken, and Section 9 presents summary and recommendations.



2. BACKGROUND

2.1 SITE LOCATION

The Site is located on Nursery Road, about 500 metres from the southern outskirts of Masterton township. The Ruamahanga River flows along the eastern boundary of the site. Refer to the *Locality Plan* below.

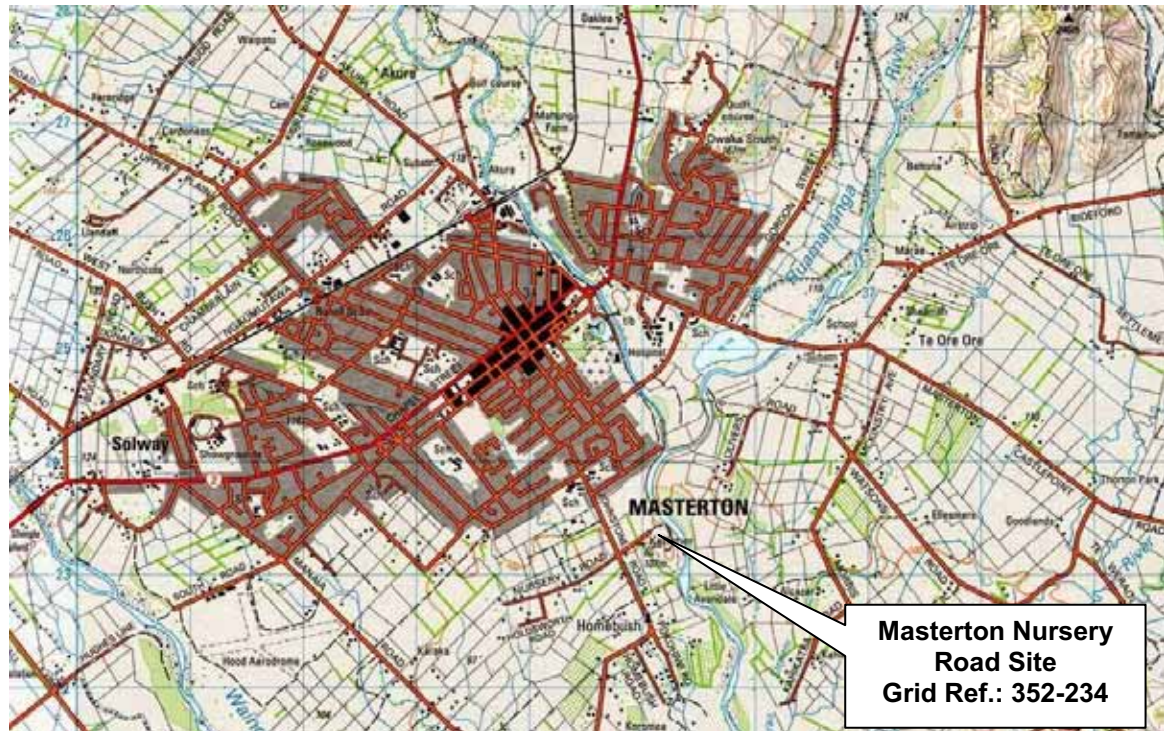


Figure 1: Locality Plan – Masterton Nursery Road Landfill (NZMS 260: Sheet T26)

The site encompasses a closed landfill, cleanfill, recycling drop-off and processing centre, transfer station and composting operation.

2.2 LEGAL DESCRIPTION

The Masterton District Council owns the Nursery Road property. The aerial photograph attached in **Appendix B** shows the legal boundaries of the property and adjacent land.

The legal description of the site owned by Council is:

Sections 1, 2 and 4, Block 1, Otahoua SD; Lot 1 DP 55337; Part Lot 1 DP 1876; Lots 8,9,10,11 and 12 DP1736 and Part Section 13 Masterton Small Farm Settlement (Valuation Reference Numbers 17980 00300A and 1798000300B).

Part Section 3 Block 1 Otahoua SD and Section 5 Block 1 Otahoua SD(Valuation Reference Number 1798001901)



2.3 SITE HISTORY

The landfill site was originally used for the extraction and stockpiling of river gravel. Since the 1930s it has been used for the disposal of refuse.

As shown in **Appendix B**, the landfill area is roughly trapezoidal in shape and has a footprint area of just over 8 ha. Side slopes have generally been filled at a grade slightly steeper than 1 vertical to 3 horizontal to a height of about 13m above the natural ground level. The top of the landfill has a slightly domed shape, rising to a total height of some 16m above the ground level.

A landfill resource consent was issued in 1996.

In 2001, MDC applied for a variation to the consent to increase the allowable refuse quantity to 16,500 tonnes/year. The application was not processed by GWRC, nor was it declined. In 2004 GWRC granted the variation as a non-notified resource consent {WAR930100 01 (2354)} for the purpose of changing the yearly quantity from 12,055 m³/year to 16,500 tonnes/year.

Composting of greenwaste in Masterton started in 1948. Masterton is believed to be the first town in the world to have its greenwaste fully composted. Composting ceased in 1962, and was reinstated in 1993.

2.4 EXISTING RESOURCE CONSENT

The existing resource consent expired on 1st October 2006. It includes the following Discharge Permits:

- 01 To discharge up to 16,500 tonnes per annum of solid municipal waste and non-hazardous liquid waste to land, 7 days per week, January to December inclusive.**
- 02 To discharge up to 120 cubic metres per day of landfill gas and odours from municipal waste, 24 hours a day, 7 days per week, January to December inclusive.**
- 03 To discharge up to 10,000 cubic metres per year (27 cubic metres per day) of leachate from municipal waste to ground water and surface water, up to 24 hours per day, 7 day per week, January to December inclusive.**
- 04 To discharge up to 9,500 cubic metres per year (26 cubic metres per day) of stormwater from the Masterton Landfill to land, up to 24 hours per day, 7 days per week, January to December inclusive.**



3. PROPOSED ACTIVITIES

Existing operations at the Site include

- Solid waste disposal (landfilling) and disposal of liquid waste ceased on 1st October 2006. Only special wastes are accepted and disposed of in trenches on top of the landfill. The access is restricted and out of public view. Access to the facilities is along Nursery Road and it is controlled at an entry kiosk where admitted vehicles are directed to the appropriate facility.
- Small amounts of hazardous wastes are also accepted at the site. The hazardous waste is intercepted at the kiosk, and the driver of the vehicle is required to fill out a form identifying where the waste is coming from and what it is. Council's health officer is notified and advice sought on how to handle the waste. A bunker is used to temporarily store the hazardous waste. The hazardous waste is disposed off-site by an approved contractor every six months.
- The construction of a transfer station has completed in September 2006. The transfer station has been accepting waste diverted from the closed landfill since 1st October 2006.
- About 2 ha of the land is involved in compost production, and it is one of the largest traditional composting operations in the country.
- A scrap metal yard is situated at the western base of the landfill. Stripped car bodies are deposited free of charge. Throughout the year more than 1,000 tonnes of steel is recovered through the scrap metal operation.
- Recycling and a second-hand yard have proven to be successful operations in reducing the volume of waste at the Nursery Road site.

MDC has a proactive stance on waste minimisation and has adopted the "zero waste" philosophy. It is proposed to continue the recycling operation at the Site.

The following sections describe proposed activities for the Nursery Road site in addition to the continued recycling centre operations.

3.1 CLEANFILL OPERATION AND CLOSED LANDFILL AFTERCARE MANAGEMENT

3.1.1 Background for the Proposed Cleanfill Operation

A landfill closure plan is required for the Masterton Landfill in terms of special condition 4.1 of the existing discharge permit *WAR 930100 01 - Discharges of Contaminants to Land*.

Special condition 4.1 states:

"Within 5 years of the granting of this consent, the grantee shall prepare and implement a plan for the closure of the landfill and future management of the landfill site to ensure effective long-term containment and decomposition of contaminants. The plan shall include, but is not limited to:



- *volume, composition and location of waste at the site;*
- *final landscaping and stormwater system design;*
- *ongoing monitoring programme(e.g. monitoring of leachate, surface and groundwater, discharges to air, landfill profile);*
- *ongoing management of the site (e.g. maintenance of restored areas);*
- *final use and ownership of the site.*

This plan shall be prepared in consultation with the Wellington Regional Council: Wairarapa Division”

A *Draft Closure and Aftercare Plan* was prepared in August 2001 (see Section 1.1 above) and a copy of this plan has been provided to the Regional Council.

When the existing resource consent expired on 1st October 2006 the consented airspace envelope of the landfill had not been filled up. This presents an opportunity to convert the landfill to a cleanfill operation and provide clean soil to remediate the landfill in an acceptable manner over a period of time.

It is also intended to bury minor quantities of special wastes that include animal carcasses, wastewater plant screenings pig wastes, domestic asbestos and grease trap wastes in trenches located on top of the landfill while the cleanfill is in operation.

3.1.2 Waste Quantities

3.1.2.1 Cleanfill

Cleanfill quantities have varied over the past few years. The following table shows cleanfill quantities and vehicle numbers for the past financial years.

Table 1: Cleanfill quantities and vehicle numbers

Financial year	Cleanfill quantity(t)	Vehicle count
2003-2004	19,355	2,727
2004-2005	11,748	2,360
2005-2006	16,570	2,828
2006-2007	7,145	2,886
2007-2008	5,845	2,652

3.1.2.2 Special Wastes

Typically there are between 3 to 5 dog carcasses per week and less than one large animal carcass per month.

The following table shows wastewater screenings, grease trap wastes, pig wastes and asbestos quantities for the past few years.



Table 2: Special wastes quantities and vehicle number

Financial year	WW Screening (t)	Grease Trap wastes (t)	Silt Trap Wastes (t)	Animal Wastes (t)	Asbestos (t)	Vehicle Count
2003-2004	24	181	12	-	7	153
2004-2005	38	78	502	93	19	452
2005-2006	43	77	508	357	67	631
2006-2007	25	108	127	359	115	603
2007-2008	48	239		461	4	830

It is estimated that up to 50 tonnes of wastewater screening may be brought to site for disposal from the Homebush WWTP, due to the proposed use of a 3mm screen in the new WWTP.

3.1.3 Site Design

Design Parameters for the closed landfill include maximum height, footprint area, side slopes, site shape and cleanfill compaction.

3.1.3.1 Maximum Height

The maximum height of the landfill will be no higher than 118.69 metres at its highest point.

3.1.3.2 Footprint Area

Special condition 4.2 of WAR 930100 01 – *Discharge of Contaminants to Land* states: “There shall be no expansion of the landfill beyond the fenced areas where waste has been deposited”

This area is shown on the *Staged Development Plans* attached in **Appendix C**.

3.1.3.3 Side Slopes

Special condition 7.3 of WAR 930100 04 – *Discharge of Stormwater to Land and Water* states: “The grantee shall take all practical steps to minimise infiltration of rainfall or stormwater into the landfill, including providing a final cover of low permeability, and contouring to facilitate stormwater runoff and prevent ponding”

A minimum gradient of approximately 1 vertical to 20 horizontal has been assumed for the top of the site to promote drainage.

A maximum gradient of approximately 1 vertical to 3 horizontal has been applied to the side slopes to provide stability and facilitate establishment and maintenance of vegetation cover.

3.1.3.4 Site Shape

The proposed final site shape is seen in the *Staged Development Plans*. The top of the site is to be rounded and the current concept includes two mounded areas to provide a “natural” appearance.



3.1.3.5 Cleanfill Compaction

Cleanfill is to be compacted to a density of approximately 1.5 tonnes/m³ to minimise settlement.

3.1.4 Staged Development

The *Staged Development Plans* attached in **Appendix C** show how the cleanfill and special wastes disposal operations will be carried out in nine stages.

In general, the following approach will be adopted:

- stormwater runoff from the top of the site is to be facilitated by remediating the side slope areas first and constructing drainage infrastructure;
- the top of the site has been divided into five catchments; and
- the road access should be maintained open as long as possible.

Four of the stages entail remediating the side slopes of the landfill with five remediating the top of the site. The stages have the following capacities:

Stage	Capacity (m ³)
1	2,000
2	20,000
3	5,000
4	12,000
5	30,000
6	2,000
7	15,000
8	24,000
9	10,000
Total	120,000

3.1.5 Staging and Progressive Remediation

The *Staged Development Plans* attached in **Appendix C** show how the cleanfill operations will be carried out in nine stages.

Stages 1 & 2 encompass the remediation of the eastern and south-eastern side slopes of the site. Although these slopes are well vegetated they are presently over-steep and are not covered with sufficient depth of inert material. Access to these areas will be from the top of the site and also by improving the access road that leads around the base of the site on the western side.

Stages 3 & 4 involve filling and shaping the eastern “quarter” of the top of the site.

Stage 5 entails flattening the north-western slope of the site.

Stage 6 will involve flattening the existing south-western side slope

Stages 7, 8 & 9 involve the progressive filling and shaping of the top of the site from the southern “quarter” around to the northern “quarter”.



Filling in this manner will allow the access road onto the top of the site to remain open. It is intended to keep it open in the future to provide access to the top of the site for maintenance purposes.

Trenches for the disposal of special wastes will be excavated on top of the site. These will be progressively moved as the top of the landfill site is remediated.

It is noted here that the actual filling operations of the individual stages may vary based on the type and quantity of cleanfill received. For example if a large quantity of material suitable for use on the side slopes is received, a portion of Stage 3 side slope area may be constructed prior to the completion of Stage 2. The overall staging plan will be used as a guide for filling operations and will be adhered to as much as possible. Alternate staging will be performed to construct environmental controls such as berms and stormwater catchments prior to general filling operations.

Grass vegetation will be established on the landfill top and side slopes following the final capping of the landfill top and side slopes.

3.1.6 Projected Life

It is estimated that the staged development will provide approximately 120,000m³ of airspace, including the space required for the final cover. This volume corresponds to 180,000 tonnes of cleanfill at an assumed density of 1.5 t/m³.

Cleanfill quantities have varied over the past few years but if an average of 12,000 tonnes per year is assumed, then the projected life of the cleanfill will be 15 years. Actual quantities of cleanfill accepted per year will vary based on local construction projects and conditions

The projected life of each stage will be:

Stage	Life (Months)
1	3
2	30
3	7.5
4	18
5	45
6	3
7	22.5
8	36
9	15

3.1.7 End Use

The site will be fenced to restrict access to the public and to prevent potential damage from vehicles, people and animals. At this moment it is intended the closed landfill will be kept as a reserve. In the future the site may be developed in to a planted reserve for carbon sequencing.



3.1.8 Waste Acceptance

3.1.8.1 Acceptable Cleanfill Wastes

From 1st October 2006 only cleanfill wastes having the following definition¹ shall be permitted to be disposed at the site:

Material that when buried will have no adverse effect on people or the environment; includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete and brick that are free from:

- *combustible, putrescible, degradable or leachable components*
- *hazardous substances*
- *product or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices*
- *materials that may present a risk to human health*
- *liquid waste*

The following table² provides a list of acceptable cleanfill materials.

Material	Discussion
Asphalt (cured)	Weathered (cured) asphalt is acceptable: After asphalt has been exposed to the elements for some time, the initial oily surface will have gone and the asphalt is considered inert.
Bricks	Inert – will undergo no degradation.
Ceramics	Inert.
Concrete – un-reinforced	Inert material. Ensure that other attached material is removed.
Concrete –reinforced	Steel reinforcing bars will degrade. However, bars fully encased in intact concrete will be protected from corrosion by the concrete. Reinforced concrete is thus acceptable provided protruding reinforcing steel is cut off at the concrete face.
Fibre cement building products	Inert material comprising cellulose fibre, Portland cement and sand. Care needs to be taken that the product does not contain asbestos, which is unacceptable.
Glass	Inert, and poses little threat to the environment. May pose a safety risk if placed near the surface in public areas, or if later excavated. The safety risk on excavation should become immediately apparent, so glass is considered acceptable provided it is not placed immediately adjacent to the finished surface.
Road sub-base	Inert.
Soils, rock, gravel, sand, clay, etc	Acceptable if free of contamination
Tiles (clay, concrete or ceramic)	Inert.

¹ A Guide to the Management of Cleanfills; Prepared for the Ministry for the Environment by Beca Carter Hollings and Ferner Ltd.; January 2002

² Sourced from A Guide to the Management of Cleanfills



3.1.8.2 Acceptable Special Wastes

From 1st October 2006 only the following special wastes are accepted at the site for disposal, and also only by prior arrangement:

- Animal carcasses such as those derived from time to time from the SPCA, Pound or Council dog control operations. This waste type may include occasional large animal carcasses derived from farming activities.
- Pig waste.
- Grit screenings removed from the Masterton wastewater treatment plant.
- Grease trap wastes from the community.
- Silt from stormwater sumps and yard drains
- Domestic quantities of asbestos
- Empty spray and paint containers
- Road sweepings

3.1.9 Waste Acceptance Criteria

Only materials that meet the definition of cleanfill will be accepted for disposal at the site. The Waste Acceptance Criteria described in Section 4 of the *MfE Cleanfill Guide*² shall be applied. All wastes other than cleanfill, or special wastes, as defined and described herein shall be prohibited from disposal at the site.

3.1.10 Cleanfill Testing Requirements

Despite the definition provided above for materials acceptable as cleanfill, there may be instances when it will not be clear if a particular material meets the requirements. Under such circumstances it will be necessary to prove by testing that the material is suitable for disposal in a cleanfill. The *MfE Cleanfill Guide*² provides a number of examples of such materials:

- dredging spoil
- soils or other materials suspected of contamination
- by-products from an industrial process
- soils or other materials originating from an industrial site or other land use which is typically associated with site contamination.

For a new cleanfill site, materials are considered acceptable for disposal when the concentration of heavy metal contaminants in the fill material does not exceed site background levels. Organic compounds (e.g. total petroleum hydrocarbons, semi-volatile and volatile organic compounds) should not be present on the cleanfill site and so tests for these compounds are not considered necessary.

However, site background levels at the Masterton Landfill will be considerably elevated because of the past refuse disposal activities.

Should anyone wish to dispose of a material at the site that does not meet the definition contained in Guidelines Section 4.4.1, nor is described in the above table, they shall carry out appropriate testing of the material at their own expense in line with that described in Section 4.4 of the *MfE Cleanfill Guide*. They shall then apply for permission to dispose of the materials by submitting such test results and other supporting



information to the Masterton District Council which will forward a recommendation to the Wellington Regional Council for approval.

Applications shall be made for each separate waste type and on every different occasion, unless it can be proven that there is no change in the materials that would yield different test results. As a minimum, at least one sample per 1,000m³ of fill material shall be taken and analysed.

3.1.11 Cleanfill Acceptance Control

The weighbridge operator shall carry out “visual spot-checks” of loads to ensure that the materials are as described. If the material is contaminated with any other waste it shall be rejected at the weighbridge. In addition, the weighbridge operator shall carry out a daily check on site of dumped loads to ensure that all of the loads are cleanfill material. Where this is not found to be the case the weighbridge operator will inform the Council and the cleanfill operator and will assist them to trace the perpetrator by checking through the disposal records of the previous day. The non-complying material will be removed from the landfill and disposed of in an approved landfill site, such as Bonny Glenn.

Council will institute a system of dealing with persons who attempt to hide other refuse with a load of cleanfill.

3.1.12 Special Waste Acceptance Control

All special wastes shall be disposed of by prior arrangement. The Council shall develop and implement a procedure to ensure that special waste will not be accepted for disposal at the landfill without specific authorisation.

The procedure shall incorporate the practice of requiring all special waste to be accompanied by a “*Waste Manifest Form*”. Applications for the disposal of special wastes shall be made to the Council, and not to the site contractor or weighbridge operator.

A copy of the Draft Cleanfill Operation Management Plan is attached in **Appendix D**.

3.2 COMPOSITING OPERATION

3.2.1 Background for the Composting Operation

The composting operation together with recycling services is carried out at the Nursery Road site to divert the green waste and recyclable & reusable material away from landfilling.

The composting operation is on flat land. It is an integral part of the solid waste management enabling the centralised waste reduction operations. The total area occupied by the composting operation including windrows, drop off area and product storage is approximately 2 ha.

3.2.2 Quantities of Green Waste

Green waste quantities being taken to the composting site as recorded by the weighbridge is shown in Table 3.



Table 3: Weighbridge quantities for the composting operation at the Nursery Road Site (in tonnes per annum)

Financial Year	Local Green Waste	Green Waste from Rural Transfer Stations
2000-2001	6,743	240
2001-2002	6,849	201
2002-2003	7,044	321
2003-2004	7,196	226
2004-2005	5,202	168
2005-2006	4,080	Not available
2006-2007	3,640	205
2007-2008	3,165	274

In general total quantity of green waste for composting at the Nursery Road site is estimated to be around 3,500 – 4,000 tonnes per year.

3.2.3 Compositing Operation Description

Composting material brought to site is predominantly grass clippings, tree prunings and other green waste from sources such as untreated shavings and sawdust. All commercial material is composted separately, being only a small portion of the operation. It is proposed, subject to a successful trial, to include a small amount of grease trap waste, which will be added under controlled conditions to the composting process.

The green waste is deposited at a drop off area. None compostable material such as big tree branches are pulled out and disposed off separately, and the resulting mulch is then laid out in windrows for composting.

The windrow area takes up half of the site consisting of parallel rows of composting material. A typical windrow is approximately 12-15 metres wide at the base and about 3 metres high. The windrows sit on a levelled, metalled and compacted pavement.

Surface drainage is managed through a perimeter drain and runoff is collected and discharged into a clay lined detention pond. The leachate is also collected into the detention pond. The contents of the pond are discharged to the Council sewer system.

The windrows are turned every month. The complete composting process takes approximately 9 months. The compost product is then screened and sold as bagged or bulk compost to the public and/or landscaping contractors.

A planned trial to compost dewatered sewage sludge, which was mentioned in the 1998 consent application, was never undertaken. It is not anticipated sewage sludge will be included in the composting material.

A copy of the Composting Operation Management Plan is attached in **Appendix D**.

3.3 SOLID WASTES TRANSFER STATION OPERATION

3.3.1 Background for the Transfer Station Operation

The transfer station has been built on the site to provide solid waste acceptance service to replace the closed landfill. The transfer station has been designed to prevent adverse



effects on the environment. The areas used for waste collection are generally of concrete. All potentially contaminated stormwater and leachate from wet waste is drained to a pump station and disposed of to the MDC sewer.

The final design of stormwater discharges complies with the Rule 2 of the Regional Freshwater Plan.

3.3.2 Operation for the Transfer Station Operation

The transfer station operation is carried out under a solid waste transfer contract.

The contractor performs the following duties and every other requirement of the contract in accordance with the law and all applicable consents:

- Control traffic and monitor waste entering and leaving the site
- Control traffic and monitor waste and vehicles at the tipping point
- Operate the MDC's landfill management software to collect, receipt and deposit gate fees
- Administer the Council's waste acceptance policies
- Manage the hazardous waste storage
- Record and report all the data required by the contract
- Undertake monitoring and surveys as required
- Maintain the kiosk and weighbridge as described
- Clean and tidy the transfer station
- Disseminate information on gate charges to customers
- Divert waste from the site as appropriate
- Provide a helpful, courteous service to the public
- Keep the surrounding areas free from windblown debris

A copy of the Transfer Station Operation Management Plan is attached in **Appendix D**.



4. STATUTORY REVIEW

4.1 RESOURCE MANAGEMENT ACT (1991)

The Resource Management Act 1991 (RMA) is the principal guiding statutory document governing the sustainable use of land, air and water resources.

An Assessment of Environmental Effects (AEE) report is required under the Resource Management Act 1991 and, in particular, Section 88 and the Fourth Schedule of the Act. The AEE needs to provide a description of activities concerned, an assessment of the identified actual and potential effects of the discharges from the activities and addresses likely alternatives and mitigation measures to be undertaken in order to ensure that any adverse effects on the environment is minimised.

4.2 WASTE MINIMIZATION ACT 2008

The Waste Minimisation Act 2008 encourages a reduction in the amount of waste we generate and dispose of in New Zealand and aims to lessen the environmental harm of waste.

This Act also aims to benefit our economy by encouraging better use of materials throughout the product life cycle, promoting domestic reprocessing of recovered materials and providing more employment.

In a nutshell, the Act:

- puts a levy on all waste disposed of in landfills to generate funding to help local government, communities and businesses reduce the amount of waste
- helps and, when necessary makes, producers, brand owners, importers, retailers, consumers and other parties take responsibility for the environmental effects from their products at end-of-life – from ‘cradle-to-grave’
- allows for regulations to be made making it mandatory for territorial authorities and others (for example, landfill operators) to report on waste to improve information on waste minimisation
- clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation
- introduces a new Board to give independent advice to the Minister for the Environment on waste minimisation issues.

4.3 REGIONAL PLANNING

4.3.1 Regional Policy Statement for the Wellington Region (RPS)

The management of solid waste and its disposal is identified as an issue in the Regional Policy Statement.

Chapter 13 of the RPS addresses specifically waste management and hazardous substances. Majority of the 12 issues identified in Chapter 13 have relevance to the solid



waste management activities happening in the Nursery road site. The RPS sets out 4 objectives to address the issues identified.

Objective 1 requires that the quantity of waste generated is reduced.

Objective 2 states the quantity of residue wastes for disposal is minimised through reuse, recycling and resource recovery.

Objective 3 requires adverse effects on the environment and human health from the inappropriate disposal of residual liquid and solid wastes are avoided or, where this is not possible, remedied or mitigated.

Objective 4 states the potential for any accidental or unanticipated effects to arise as a result of the use, storage, transportation and disposal of hazardous substances is minimised and any adverse effects that do occur are remedied or mitigated.

Among the policies in Chapter 13 of the RPS, Policy 2, 3 and 7 are particularly relevant.

Policy 2 requires to reduce the amount of waste generated, recover resources from waste, and dispose residue waste in an environmentally safe way.

Policy 6 requires to provide opportunities for the reuse of waste materials, recycling, and the recovery of resources from waste (including composting).

Policy 7 requires to ensure that all residue wastes are safely disposed of in an appropriate facility.

The proposed solid waste management activities at the Nursery Road site incorporate solid waste diversion through recycling and composting, solid waste transfer, cleanfilling and within capacity disposal of special wastes, and safe disposal of hazardous wastes through the recycling operation.

4.3.2 Regional Plan for Discharges to Land

Rule 10 requires a discharge permit for all landfills, rubbish dumps and tips that do not comply with the conditions in Rule 9, or are not farm or domestic dumps. Thus activities happening in Nursery Road site are considered a discretionary activity.

4.3.3 Regional Air Quality Management Plan

Landfilling and composting operations which involve the processing of waste or organic material accepted from sources other than the property on which the landfilling or composting takes place are discretionary activities covered by Rule 23. This includes municipal and private landfilling and composting operations, and related waste transfer stations.

Rule 23 also applies to cleanfill operations at Nursery Road.

4.3.4 Regional Freshwater Plan

Rule 3 of the Regional Freshwater Plan requires a discharge permit for discharges of stormwater from landfills to water because such stormwater contains hazardous



substances in the leachate. This is a controlled activity provided the discharge complies with the standards and terms stated in the rule.

4.4 DISTRICT PLANNING

4.4.1 Masterton District Plan

The *Masterton District Plan* states that MDC will:

- Monitor existing landfills for quality and type of waste and any adverse effects.
- Monitor landfills no longer in use for adverse effects and success of rehabilitation.
- Respond to, and address, matters arising from the management of waste.
- Regularly liaise with regional and national organisations to ensure waste management is co-ordinated and consistent.
- Regularly assess the effectiveness of selected methods in implementing policies relating to waste management, including and considering alternative methods.

The MDC will be taking a responsible and professional approach to the maintenance of landfills in its District.

The Nursery Road site has the designation number of D84, District Plan Map 10/31, and is designated as a landfill in the Masterton District Plan.

4.4.2 Proposed Wairarapa Combined District Plan

In 2004 the South Wairarapa, Carterton and Masterton District Councils prepared a *Proposed Wairarapa Combined District Plan* to address Wairarapa's significant resource management issues.

Policy 12.3.1 states

- a) *Ensure hazardous facilities are located, designed, constructed and managed to avoid, remedy or mitigate adverse effects from hazardous substances, including unacceptable risks, to the environment and/or human health.*

Obligation to remedy or mitigate adverse effects caused by contaminated sites is presented in Policy 12.4.1:

- a) *Require contaminant removal and appropriate disposal from contaminated sites, or treatment to contain the contaminant where the wider environment may be adversely affected.*
- b) *Control new activities on contaminated sites to ensure any potential adverse effects arising from the contamination are avoided, remedied or mitigated.*

Cleanfill operations are not mentioned specifically in the *Proposed Wairarapa Combined District Plan*.

4.4.3 Waste Management (and Minimisation) Plan

Masterton District Council has joined with Carterton and South Wairarapa District Councils to form Waste Management Wairarapa (WMW). WMW has prepared a single



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waste management plan titled “Solid Waste Management Plan for Wairarapa” under the Local Government Act 2000, for the three districts. This waste management plan was revised in 2005, largely to conform to the New Zealand Waste Strategy.

Under Waste Minimisation Act 2008 the above solid waste management plan will be reviewed by 2012, and possibly called Waste Management and Minimisation Plan.



5. RESOURCE CONSENTS REQUIRED

5.1 CLEANFILL OPERATION AND CLOSED LANDFILL AFTERCARE MANAGEMENT

According to the regional plan and rules, cleanfill is a Permitted Activity. Since this cleanfill activity combines with special wastes operation, it is considered a restricted activity. This classification requires the application of site specific controls imposed as part of a resource consent for a Discretionary Activity and requires the preparation of an Assessment of Environmental Effects (AEE). Resource consents sought for this activity are:

- Discharge permit (contaminants to water) to discharge leachate to groundwater and surface water.
- Discharge permit (contaminants to land) to discharge small quantities of special waste
- Discharge permit (stormwater to land) to discharge stormwater from the landfill to land.
- Discharge permits (contaminants to air) to discharge landfill gas, odour and dust to air

5.2 COMPOSTING OPERATION

According to the regional plans and rules discussed in Section 4, discharge permits are required for the composting operation. Discharge consents sought for this operation are:

- Discharge permit (contaminants to land) to discharge percolate produced by composting windrows to land, although this material is collected and discharged to the MDC sewer system
- Discharge Permit (contaminants to air) discharge of dust, gas and odours to air.

5.3 TRANSFER STATION OPERATION

Due to the fact that stormwater runoff and site washdown are all collected and disposed by pumping into the sewerage network, the only permit applied for this site is:

- Discharge permit (contaminants to air) to discharge odours and dust to air.

5.4 CONSENT TERMS

A minimum of 30-year post-closure care period is recommended for a municipal solid waste landfill by the Ministry for the Environment³.

Therefore, the aftercare period will be for 35 years from the cessation of refuse disposal operations on 1st October 2006 until 1st October 2041.

³ A Guide to the Management of Closing and Closed Landfills in New Zealand; MfE Landfill Management Programme, May 2001.



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It is proposed that consents for other operations at the Nursery Road have a 35 year term. However, it is anticipated the cleanfill operation will cease in a few years when the available landfill space is used up.



6. ASSESSMENT OF ENVIRONMENTAL EFFECT

Sections in this chapter describe the receiving environment and assess the effects of various discharges from activities at the Nursery Road site.

6.1 RECEIVING ENVIRONMENT

The site is located on Nursery Road, about 500 metres from the southern outskirts of Masterton Township.

The Land Resource Inventory Worksheet (N158) that covers the area of the site and surrounds describes the terrain as "...flat, stony terraces and fans, with very shallow, stony, low fertility soil".

Rural and life-style properties surround the landfill site. Several residential dwellings lie within 500 metres of the western side of the site

Rainfall records (Waingawa Station), for the period from 1971 to 2000, show that the site has an average rainfall of 979 mm. The mean annual temperature is 12.7°C and mean wind speed is 11 km/h (NIWA).

The prevailing wind direction is from the northwest.

The receiving environment for stormwater runoff and landfill leachate includes the Ruamahanga River to the east of the landfill site and the groundwater beneath the Site.

6.2 STORMWATER AND LEACHATE DISCHARGE FROM THE SITE

6.2.1 Stormwater and Leachate from the Closed Landfill

6.2.1.1 Leachate Quantities

There is no stormwater catchment above the Masterton Landfill because the landfill height is higher than the surrounding land. The only stormwater coming into contact with the site is rain which falls on the landfill surface.

In theory, after October 2006 when the whole landfill has been covered with at least 300mm of intermediate cover, any stormwater runoff will be "clean", i.e. it will not have come into contact with refuse and so will not be regarded as being contaminated.

Council's consultant MWH used the USEPA's HELP computer programme⁴ to assess the amount of leachate and stormwater that generated from the site. Meteorological information was derived from the Waingawa station, approximately 5km from the site. The landfill footprint was estimated to be 43,000m² on top and 39,000m² on the side slopes.

Calculations were run for three different scenarios: 1) Remediated site with an impermeable capping layer; 2) Remediated site with no impermeable capping layer; 3) Landfill as at present. The results are shown in **Table 4** below.

⁴ Hydrologic Evaluation of Landfill Performance developed by the United States Environmental Protection Agency.



Table 4: Annual Stormwater and Leachate Data Derived from the HELP Computer Programme

	Precipitation (m³)	Stormwater Runoff (m³)	Leachate (m³)
1) Landfill with impermeable cap	79,393	2,811	31,131
2) Landfill with no impermeable cap	79,393	16	35,942
3) Operating landfill	79,393	223	46,853

6.2.1.2 Stormwater Control

When remediated the top of the site will be shaped having five catchment areas of approximately similar area. These are shown in the *Staged Development Plans*.

Stormwater runoff from each catchment will be captured at the edge of the landfill by means of a low, grassed earth bund. The slope along the bunds will be approximately 2% and they will drain runoff to flumes/pipes that will direct the water to the toe of the landfill site.

Because the stormwater runoff is limited it is proposed to direct the runoff to a number of soakage holes, as opposed to sedimentation ponds, located around the perimeter of the site.

Each soakage hole will have approximate dimensions of 5 x 5 x 1 metres and shall be excavated into the insitu gravels to promote soakage into the ground.

6.2.1.3 Leachate Control

Leachate formation is due to rain percolating through the landfill. Leachate can contain large amounts of inorganic and organic contaminants. Due to its historical nature, the landfill has no leachate collection system so any liquid seeping through the landfill will ultimately seep into the groundwater.

Table 4 indicated that when the landfill was operational, there was almost 47,000m³ of leachate discharging to ground beneath the landfill footprint. This amounts to approximately 60% of the mean annual precipitation falling on the landfill.

The 1994 AEE that was submitted with the original resource consent application estimated that approximately 25% of precipitation would become leachate. Based on this *Discharge Permit WAR 930100 03* allows for the discharge of up to 10,000 cubic metres per year of leachate from municipal waste to groundwater and surface water.

Despite the HELP model indicating the annual quantity of leachate well exceeds that permitted, historical monitoring suggested that leachate discharge from the landfill shows no sign of impact on the Ruamahanga River while the impact of leachate on groundwater is not conclusive.

From Table 4 above it can also be calculated that the effect of capping the landfill with different materials will reduce the amount of leachate by different amounts. A relatively permeable capping (sandy gravel) will reduce leachate quantities by about 23% (from



46,853m³ to 35,942m³) and a relatively impermeable capping (clayey silt) will reduce leachate quantities by about 34% (from 46,853m³ to 31,131m³).

Most of the cleanfill material received on site is of a gravelly nature that is relatively permeable. It is most likely that if a cap is to be constructed having a low permeability of < 10⁻⁷m/s, then the materials would have to be specifically imported for the purpose.

An estimate was made of the cost of constructing a landfill cap. This was based on an area of 45,000m² and estimates ranged from \$900,000 to \$1,125,000.

The HELP model shows that an impermeable cap would cause a limited reduction in leachate quantities compared to a permeable cap. This, together with the large cost that is likely to be incurred if the cap is to be constructed of imported materials, implies that an impermeable cap has no significant advantage over a cap constructed of readily available (more permeable) materials.

It is proposed to set aside cleanfill materials that have a high clay/silt content for use in the construction of the final 600mm layer over the top of the site.

Thus, at this stage, there is no intention to provide any remedial or mitigation measures to reduce the impact of leachate on the receiving environment. However, if ongoing monitoring reveals that the discharge is likely to cause adverse effects on the receiving environment and/or on downstream users then options to mitigate adverse effects of the leachate discharge into groundwater and surface water would be investigated and implemented as appropriate.

The possible effects of leachate pollution on a receiving water quality include increased oxygen demand, changes in colour and visual clarity, and toxicity to aquatic life. The severity of effects is dependent on leachate volume, concentration, and dilutions provided by receiving water.

Closed landfills are usually landscaped and vegetated to improve interception of precipitation by the vegetation to reduce water percolation into the landfill.

Special Condition 6 of existing *Discharge Permit WAR 930100 03 – Discharge of Contaminants to Land and Water* requires the Council to carry out the following monitoring around the site:

- Measure bore levels (6 No.) monthly (Condition 6.1).
- Conduct quarterly monitoring of bores (6 No.) and surface water sites (upstream & downstream of site in the Ruamahanga River) for indicative parameters given in **Appendix E** (Condition 6.2).
- Conduct annual monitoring of bores (6 No.) and surface water sites (upstream & downstream of site in the Ruamahanga River) for comprehensive parameters given in **Appendix E** (Condition 6.3).
- Undertake an annual macroinvertebrate survey at surface water sites (upstream & downstream of site in the Ruamahanga River – Condition 6.4).

The levels of parameters measured, as above, shall not exceed the guidelines stated in Special Condition 6.5.



Special condition 4.10 of existing *Discharge Permit WAR 930100 01 – Discharge of Contaminants to Land* requires that the remedial works in the northern section of the landfill adjacent to the Ruamahanga River be checked after every high flow event.

It is proposed that the above monitoring regime continues whilst cleanfill and special waste is disposed of at the site.

The location of the 6 groundwater monitoring bores and upstream and downstream surface water sampling points are shown in **Appendix E**, along with bore construction details and a map showing groundwater contours.

In line with the current monitoring requirements and the MfE Guidelines⁵, the following groundwater and surface water monitoring programme is proposed following the closure of the landfill for municipal solid waste disposal, i.e. after October 2006.

Years From Closure	Monitoring Frequency	
	Indicator	Comprehensive
0 - 5	Quarterly	Yearly
5 - 15	Bi-annually	Yearly
15 - 30	Yearly	-

Samples are to be taken as close as possible to 31 January, 30 April, 31 July and 31 October of each year and the results of all analyses shall be reported to the Wellington Regional Council within one month of taking of the samples. The groundwater level shall be measured in each monitoring bore on each occasion that a sample is taken.

Should monitoring parameters exceed the lower level of the following ANZECC Guidelines (2000), Council will, in consultation with the Regional Council, determine whether further investigations and remedial or mitigation measures are required to ensure that adverse effects from the closed landfill are no more than minor:

- Guidelines for protection of aquatic ecosystems (for surface water monitoring)
- Guidelines for irrigation water quality
- Water quality guidelines for livestock watering
- Guidelines for raw waters for drinking purposes subjected to coarse screening

A macroinvertebrate survey will be carried out at the upstream and downstream surface water sites each year for a period of 5 years after October 2006. This survey shall be extended if results show that the landfill is having an adverse effect on the Ruamahanga River.

In consultation with the Greater Wellington Regional Council it may be possible to reduce the frequency of monitoring if the monitoring results remain essentially unchanged for at least three consecutive monitoring years. Monitoring may be discontinued if the results of groundwater and surface water analyses are essentially the same as at background levels for groundwater and surface water for three monitoring years.

⁵ A Guide to the Management of Closing and Closed Landfills in New Zealand; MfE Landfill Management Programme, May 2001.



6.2.2 Runoff and Leachate from Composting Operation

All operations are carried out on an engineered platform i.e. not directly on land. Surface drainage is managed through a perimeter drain and runoff is collected and discharged into a clay lined detention pond.

Leachate is the percolate produced by the composting windrows. It has a high organic content. Its chemical composition varies upon the season, rainfall, temperature and stage of composting. The composting site ground was compacted to minimise seepage to the ground.

Both stormwater runoff and leachate from the composting site are collected through the perimeter drain and detention pond and disposed off to the Council's sewerage reticulation.

6.2.3 Stormwater Runoff and Leachate from the Transfer Station

The Transfer Station was designed to prevent adverse effects on the environment. The areas used for waste collection are of concrete platform and pit. All potentially contaminated stormwater and leachate from wet waste is drained to a pump station and disposed of to the MDC sewer.

6.3 GAS AND AIR DISCHARGES

6.3.1 Gas and Air Discharges from the Closed Landfill

Given the porous nature of cover material and soils about the landfill, and the fact that the landfill sits above the surrounding land, landfill gas is likely to quickly escape to and disperse in the air surrounding the landfill. The dispersion provided by the air means that odours from the landfill gas are unlikely to be detected downwind from the landfill.

The cleanfill operation is likely to improve the existing conditions on site relating to the generation of noxious, offensive and objectionable odours since no municipal refuse will be disposed of on site. The generation of dust is also likely to reduce since the volume of traffic using the access roads will decrease substantially.

Because of their potential to generate odours, special wastes shall be tipped into the trenches. All special wastes shall immediately be covered with cleanfill by the operator.

6.3.2 Gas and Air Discharges from Composting Operation

The formation of gas is a result of the bacterial activity in the presence of moisture, heat and oxygen. The gas discharged to air from the composting activity is predominantly carbon dioxide. There is a minor possibility of discharge of methane from pockets of compost where anaerobic conditions exist; prevention of this is one of the operational objectives.

6.3.3 Gas and Air Discharges from the Transfer Station

Wastes received at the transfer station include household rubbish and construction and demolition waste. Construction and demolition wastes are stable thus do not normally discharge to air. Once received, the wastes are pushed into a pile and then loaded into



leak-proof trucks and transferred to Bonny Glen landfill. The short duration of waste staying in the transfer station means minimal potential for gas and air discharges.

6.4 DUST

6.4.1 Dust from the Closed Landfill

Exposed earthworks, tipping areas and metalled tracks are potential sources of dust nuisance at any site during dry periods. Dust can be picked up by wind alone, but dust nuisance will be exacerbated by moving vehicles or equipment.

Since refuse disposal operations ceased the closed landfill has been progressively remediated with cleanfill material. Cleanfill operations will be limited to restricted areas and the volume of traffic will be reduced considerably. The potential for dust generation will therefore be significantly reduced.

Based on Council records, dust has not been a concern by neighbours or users of the landfill. Should it be required, a water cart can be used to suppress dust.

6.4.2 Dust from Compositing Operation

The composting process requires the material's moisture content to be maintained at levels which prevent the generation of dust. Dust from the composting operation is not considered likely.

6.4.3 Dust from Transfer Station

Dust may be generated when the waste pile is pushed up or being loaded into the transfer truck and trailer unit. However, this will be limited to within the pushpit area, and limited to certain waste materials (i.e. demolition waste). The waste transfer activities are not likely to generate dust at or beyond the boundary of the site.

The washdown hose with a sprinkler nozzle is used to control dust where dust is found to be a nuisance at the transfer station.

6.5 ODOUR

6.5.1 Odour from the Closed Landfill

Once the refuse disposal operations have ceased and cover soil placed over the refuse the only significant source of odour is likely to be from the excavation of refuse in benching cleanfill into the side slopes and the occasional excavation of special waste trenches. This operation will be of short duration and measures will be implemented during the remediation works to ensure that refuse is covered as soon as practicable.

Landfill gas can also be a source of odour. Since it is not collected on site it is unlikely to concentrate on the surface and so the possibility of odours stemming from gas is unlikely.

Only one complaint was made in the reporting to date. It was related to an uncovered offal hole causing odour nuisance. The contents of the hole were recovered and buried in the tip face. For a copy of the complaint record see **Appendix F**.



6.5.2 Odour from Compositing Operation

Some odour may arise due to decaying green waste and windrow turning. A record of complaints is kept at the MDC offices and included in the annual report to the GWRC.

6.5.3 Odour from Transfer Station

Some odour may arise due to the decay of wet waste. The contractor is responsible to reduce the waste stockpile time to eliminate the odour potential. A record of complaints is kept at the MDC offices and included in the annual report to the GWRC.

Under normal situations there is minimal potential for odour generation from the transfer station operation, as wastes are transferred away promptly. However, during the Christmas-New Year period, due to increased refuse coming to site, the closure of Bonny Glen Landfill (on Sundays, Christmas and New Year), and high temperatures at this time of year, small quantities of household rubbish may stay on site for longer period increasing the potential for odour generation. Another potential odour generation source is refuse transferred to site from the rural transfer stations. Extra transport capacity is arranged during the Christmas-New Year period to take away refuse promptly and reduce duration of rural transfer station refuse stay at the Nursery Road site.

6.6 LITTER

6.6.1 Litter from the Closed Landfill

Once the refuse disposal operations ceased the proposed operations will be monitored for the potential of wind blown material. Suitable fencing has been erected to limit the impact.

The Council's environmental health officer will be monitoring litter over and around the closed landfill area and remedial action will be taken if litter is present. Records of litter will be included in annual report to the Regional Council.

6.6.2 Litter from Compositing Operation

Compositing materials normally are not wind blown materials. Litter is not considered a problem in the composting area as site operator will be monitoring the site and any potential litter will be removed from site.

6.6.3 Litter from the Transfer Station

Litter from the transfer station operation is potential due mainly to wind blown material (such as individual plastic bags) from the transfer station pushpit and during waste loading operations. .

When the transfer station was first opened in October 2006, litter was found to be a problem, especially to the neighbouring property to the south of the Site. The Council has since instigated litter monitoring and physical works to address the wind-blown litter problem.



A mesh-link fence of 6 m height is installed around the east-south and western side of the pushpit. A netting fence was installed along the transfer station access road. Weekly and daily litter picking by the contractor has been undertaken to prevent wind-blown litter migrating beyond the site boundaries.

The Council is in the process of installing further litter fences and tree planting around the transfer station in a bid to eliminate wind-blown litter problem.

A record of complaints is kept at the MDC offices and will be included in the annual report to the Regional Council.

6.7 NOISE

6.7.1 Noise from the Closed Landfill Operation

The cleanfill operations will be carried out by machinery that has the potential to create noise that may affect neighbours. Since machinery operation for cleanfill operation is needed for very limited periods in a day and it is far away from any residence, noise is not considered a problem from the closed landfill site.

6.7.2 Noise from Compositing Operation

Compositing operation does not involve lot of heavy noise machinery. The only noise could be generated by the shredding and windrow turning operation. There are no complaints so far. A record of complaints will be kept at the MDC offices and included in the annual report to the GWRC.

6.7.3 Noise from the Transfer Station Operation

The transfer station operation involved heavy truck and loader that has the potential to create noise that may affect neighbours.

During early stages of transfer station operation, noise complaints were received from a number of neighbouring properties. These were mainly about the beeping noise from the loader backing. Because the beeping sound is a health and safety feature for the loader, it can not be turned off. The contractor managed to mask the beeper so that noise level from it is reduced. Since then no further complaint was received by Council. A record of complaints will be kept at the MDC offices and included in the annual report to the Regional Council.

6.8 VISUAL EFFECTS

The whole site is surrounded by tall hedge trees and tucked away from any highway, and residential area, it should have no major visual impact than any other agricultural area.

The landfill pile is visually obtrusive. The proposal to remediate the landfill with cleanfill will not significantly change this aspect. However, the proposed final landform will present a more natural appearance than the landfill does now. Once established, vegetation over the top and side slopes of the closed landfill will help improve the visual effects of the landfill site.



6.9 TRAFFIC

Due to the nature of the site operation, it has been and would remain a heavy traffic area. With the closed landfill receiving cleanfill, special waste, transfer station receiving and transfer waste, plus recycling and compositing operation, traffic expected to be heavier, but because the site is away from the residential area, only a few lifestyle properties around, and the road has been clearly marked, traffic has not been considered a problem.

The council hasn't received any traffic complaint to date.

6.10 RODENTS, BIRDS AND CATS

Rodents and birds are attracted to landfills and transfer station primarily because of the source of food scraps. The food scraps, presumably, also attract rodents and cats.

Good compaction of refuse and thorough effective covering of the refuse, frequent removal of the transfer station stockpile are the best means to limit the source of food for these animals.

After refuse disposal operations ceased, primary cover has applied there is no food source to attract these animals to the landfill. Poisoned baits are used as necessary to prevent rat population migrating offsite in search of food.

The Masterton District Council has an arrangement with Greater Wellington Regional Council pest control officer, regarding the control of birds and cats and to actively manage the populations to reduce the impact.

6.11 NOXIOUS WEEDS

In places the side slopes on the landfill are covered with various weeds. These will be cleared to allow earthworks to be constructed to buttress the side slopes to reduce the overall slope to 1 vertical to 3 horizontal.

It is intended to establish grass on the whole of the landfill. Control of noxious weeds will become part of the overall maintenance to be dealt with as part of the closed landfill maintenance programme.

A regular mowing programme is in place to control weed around the transfer station and a weed spray programme is undertaken for weed control over rest of the site. .

6.12 VERMIN

All waste excavated from trenches to be used for the disposal of special wastes will be covered immediately with soil cover.

All special waste will be covered daily after dumping in trenches.

The Council will arrange for measures to be adopted to control infestations of insects or vermin, should they occur. This may include implementing a poison programme to eradicate rodents should there be significant evidence of rodents on the site.



If birdlife attracted solely by the disposal operations causes significant adverse effect then measures shall be taken to repel it. This may include shooting and displaying of gulls or the use of a bird-scarer.



7. ALTERNATIVES AND MITIGATION MEASURES

7.1 CLEANFILL AND CLOSED LANDFILL AFTERCARE MANAGEMENT

There is no practicable alternative to the closed landfill aftercare and cleanfill management. So mitigation of any potential adverse effects is the only option for the closed landfill site.

7.1.1 Mitigation of the Adverse Effects from the Landfill

Physical and administrative measures have been adopted to mitigate adverse effects of the site after the cessation of landfilling and during the cleanfill operation.

- Stormwater runoff from the top of the site is to be facilitated by remediating the side slope areas and constructing drainage infrastructure.
- Collection of stormwater in stormwater soakage holes to capture silt runoff.
- The top of the site is to be rounded and include two mounded areas to provide a natural appearance.
- Flattening the north-western slope of the landfill.
- Flattening the existing south-western side.
- Covering of the landfill site with a soil covering layer to minimise refuse exposure and odour.
- Planting and landscaping on and around the site to increase rainwater removal by evapo-transpiration.
- Monitoring of groundwater to detect the effect of any leachate that may percolate through the base of the site to groundwater and then to surface water.
- Monitoring for damage to landfill cap, damage to perimeter fence, unseasonal die-off of grass, sediment build-up in soakage holes, damage to groyne remediation works, and presence of either loose or uncovered litter.
- Annual monitoring report will be submitted by the consent holder to the regional Council.
- A record of complaints is kept at the MDC offices and included in the annual report to Regional Council.

7.1.2 Mitigation of Discharges

7.1.2.1 Discharge of Leachate to Ground and Groundwater

The Masterton Landfill is unlined and therefore leachate will continue to discharge to ground and groundwater through the base of the landfill as the refuse degrades. There is no realistic option but to the continuation of these discharges.

It is proposed that groundwater and surface water monitoring as discussed in Section 6 be continued to assess the effects of leachate discharge on the environment.

7.1.2.2 Discharge of Contaminants (Landfill Gas, Odours, Dust) to Air

Landfill gas will continue to be discharged to air as the refuse degrades. The quantity of refuse deposited in the landfill site is insufficient to allow an economical collection of the landfill gas for reuse. There is no practical option to eliminate these discharges.



However, it is anticipated that discharge to air from the closed landfill is not going to cause any nuisance to air quality and neighboring properties.

7.1.2.3 Discharge of Stormwater to Land

The landfill will be shaped with cleanfill to shed stormwater to a peripheral earth bund that will be constructed around the top of the landfill. Collected stormwater will be discharged into soakage pits to reduce the effects of silt being transported off site. This is the best practical alternative to manage stormwater runoff.

7.1.2.4 Discharge of Contaminants to Land

Disposal of special waste will be into trenches located on the top of the landfill. This will continue until a better alternative is available. Currently there is no practical alternative to this activity. However, investigations are underway into a possible alternate regional solution. When a facility is established the waste disposal at the landfill will be terminated. A consent condition requiring such closure is proposed.

There may be a number of potential alternatives for the disposal of occasional animal carcasses. One option is to obtain consent for a new facility in the Wairarapa where they will be buried in trenches located on in-situ ground. This option would result in disposal closer to the groundwater table, when compared to disposal in a trench at the top of the landfill. Another option is to send the carcasses to Bonny Glen Landfill (or another landfill). However, this will entail transporting the carcasses in a refrigerated container, with a similarly refrigerated holding facility being constructed specially in the Wairarapa for the storage of animal carcasses. The cost of providing such facilities will be too high in comparison to the other options. Currently there is no practical alternative to this activity and the Council is concerned that there is a potential for illegal disposal of these waste into the public domain if a sustainable and cost effective option is not provided in the Wairarapa.

7.2 MITIGATION OF COMPOSITING EFFECTS AND ALTERNATIVES

Composting at the Nursery Road site was aimed at diverting green waste from the landfill stream thus reducing the waste to be landfilled. Composting is considered the best alternative for green waste management.

7.2.1 Mitigation of the Adverse Effects from Composting Operation

Leachate is the percolate produced by the composting windrows. The leachate discharges at the interface between the ground and the windrow. It drains to a collection system from which it is discharged to a clay lined detention pond. The contents of the pond are discharged to the MDC sewer. There are no significant adverse effects from stormwater and leachate discharge, because the site development isolates the natural environment from possible contamination.

To ensure that collection, storage and discharge of stormwater and leachate is satisfactory, site and equipment such as submersible pump, drains and collection pond



have to be regularly maintained. The contractor has the responsibility to maintain the site and the equipment.

The fact that leachate and stormwater runoff from the composting site is disposed off to the Council's sewerage network means that there will be minimal discharge into the receiving environment, thus minimizing the adverse effects of their discharge.

Should there be any adverse effects due to composting process, the Council will consider implementing further measures to prevent the discharge of contaminants to the environment. The measures may be as follows:

- more frequent or a different type of site compaction
- laying of an impermeable hard standing surface upon which to locate the windrows.

Composting operations will generate small amounts of gas, odour and dust. These are natural by-products of composting. There is no practical option to eliminate these discharges

To avoid or mitigate the odour that could arise from composting process the following measures are undertaken:

- Selection and blending of correct input materials
- Inclusion of bark to absorb odours if required
- Maintain correct moisture
- Maintain correct temperature
- Having reliable plant which is effective in turning and mixing windrows
- Distance from the residential area
- Positioned downwards from the prevailing wind

7.2.2 Alternative Site for Composting Operation

Composting operation is a part of the Nursery Road solid waste management. Locating the composting operation as a part of the solid waste management site is most convenient for the public. It allows green waste to be diverted from the solid waste stream and is the most economical for Masterton district and Wairarapa region residents and businesses.

7.3 ALTERNATIVES AND MITIGATION OF TRANSFER STATION EFFECTS

Solid waste transfer station is considered the best alternative to landfill operation for the Nursery Road situation. It allows the transfer and disposal of solid waste into a purposely build sanitary landfill – the Bonny Glen Landfill, thus minimise the adverse effects on the environment from landfilling.

The Nursery Road waste management site is considered the best alternative location for the central solid waste transfer station for Masterton District and the Wairarapa region.

Operation of the transfer station will generate small amounts of odour and dust. These will be minimised by the removal of waste each day and by routine washing down of the area. There is no practical option to eliminate these discharges.



To avoid and mitigate any adverse effects from the transfer station operation the following measures are put in place:

- Covering of transport vehicles to prevent wind blown litter
- Litter fences to control litter on the site
- To prevent odour, waste is removed two times a day, Monday to Friday and one load on Saturday. Note no waste transfer is possible due to the fact that the receiving landfill - Bonny Glen is closed on Sundays. If the volumes increase then additional loads will be removed from site.
- Waste is accepted and managed entirely on a concreted area from which all liquid is contained
- Washdown of tipping platform, floor and loadout area
- Washdown water, leachate and contaminated stormwater are collected and pumped to the Council sewer

These measures have been successful for the majority of the times; however, during periods with strong wind the potential for wind-blown litter can be a problem. This problem was first encountered when the transfer station was opened in October 2006, i.e during the spring equinoxial period. The Council has since been investigating causes and measures to reduce wind blow litter. Measures put in place to date included the installation of the 6 m high mesh-link litter fence around three side of the pushpit, extension of the pushpit area to provide extra space for steel bins to minimise rubbish pile height, installation of deer fence to the south and north of the transfer station, weekly and daily litter pick up around transfer station area, and additional pick up during/following windy periods.

The Council is in the process of installing further litter fences and tree planting around the transfer station in a bid to eliminate wind-blown litter problem.

7.4 OPERATIONAL CONTRACTS AND RESOURCE CONSENT MONITORING

It is proposed that any resource consent conditions regarding all site operation, monitoring and reporting be incorporated in future site development and operational contracts, so that both the contractor and the Council will be clear about its responsibilities to ensure success of the site operation, and minimise any adverse effects to the environment and human health.

Management plans are prepared for each of the operations including cleanfill, composting, and transfer station to assist the successful operations and minimization of environmental effects. Refer to **Appendix D** for copies of these management plans. Note these management plans may be amended during the consenting process and/or following a review of any consent conditions in the future.



8. CONSULTATION

Consultation was performed with affected parties as part of the original consent application. This consultation did not include the acceptance of special wastes as part of cleanfill operations as presented in this revised AEE.

The written approvals obtained as part of the original consent application are provided in **Appendix G**. The parties given their approvals included:

- The Department of Conservation
- Fish and Game New Zealand
- Wairarapa Public Health, Health Protection Services
- Rangitane o Wairarapa
- Local property owners: J. Nikolaison, R. Priday, A. Jack, C. Ryan, R. & S. Garlick, S. Temple, E. Oliver, H. Barr, L. Reed, W. Wyeth

No response from Ngati Kahungunu ki Wairarapa was available when this application was initially lodged.

Due to the fact that this application involves cleanfill with minor streams of special waste, as well as composting and solid waste transfer station, it is proposed that consultation will be undertaken following notification of the application.



9. SUMMARY & RECOMMENDATIONS

A resource consent (WAR 930100) was issued by the wellington regional Council in April 1996 to the Masterton District Council to undertake activities associated with the operation of the Masterton Landfill. The resource consents authorise the discharge of solid/liquid waste to land, discharge of contaminants to air, discharge of contaminants and stormwater to water, and discharge of contaminants and stormwater to land. Following the expiry of the existing landfill resource consent, the landfill is closed and it is intended to use it as a cleanfill, thus remediating the site in the process. Specified quantities of special wastes are proposed to be disposed at the site where this is the "best practicable option".

The transfer station has been built on the site to provide solid waste acceptance and transfer service to replace the closed landfill. The discharge permit to discharge odours and dust to air is sought for the transfer station operation.

Composting has been in operation since 1993. The resource consent applications for discharge of contaminants to land and air were lodged in 1998, but never processed. Therefore, new consents are sought for the operation.

Groundwater and surface water have been monitored since 1996. This monitoring has shown that the landfill may be causing minor adverse effects on the environment. Refuse landfilling operations ceased in October 2006 and the landfill has been progressively remediated with cleanfill and vegetated. However, the refuse that has been disposed in the landfill will continue to degrade producing leachate and landfill gas. In addition, stormwater will continue to be collected and shed from the site and will be drained to soakpits located on the landfill perimeter.

It is considered that there is no practical alternative for the discharge of contaminants to land and air from the closed landfill. They will continue for the next thirty years or so.

The landfill requires additional material to shape it so that in the long-term, taking account of differential settlement of the waste pile, stormwater will be shed from the site and will not pond on the landfill surface. Shaping of side slopes is also required to improve the long-term stability. It is considered that the best way to achieve this is to keep the landfill open for the disposal of cleanfill. It is anticipated that the landfill site needs to be open for cleanfill for the next 15 years or so to enable it to be shaped sufficiently to promote stability and accommodate settlement.

It is proposed to continue with the disposal of occasional animal carcasses including pig wastes in trenches excavated on the top of the landfill whilst cleanfill operations are in progress. Also, until there is an alternative solution, the disposal of special waste will be continued. It is considered that the effects of disposing of small quantities of special wastes are minor in comparison to the past refuse disposal operations.

Discharge permits are sought to replace the existing discharge permits that expired in October 2006. In addition other activities performed at the site need to be included in the resource consent including composting, the transfer station and the other solid waste activities described herein. Terms of 35 years are sought.

The discharge of leachate to ground and groundwater through the base of the landfill is considered to be a Discretionary Activity.



Likewise, the discharge of contaminants in the form of landfill gas, odour and dust to air is considered to be a Discretionary Activity.

It is considered that cleanfilling is a Discretionary Activity since it is not on natural ground.

The disposal of small quantities of special waste is considered to be a Discretionary Activity.

In view of the potential and actual effects and proposed and potential mitigation, it is considered that consents should be granted as sought for a period of 35 years.

In light of the assessment of effects on the environment and proposed and potential mitigation, it is recommended that consents applied for be granted.



APPENDIX A:

COPY OF EXISTING RESOURCE CONSENT AND VARIATION


RESOURCE MANAGEMENT ACT 1991
Variation to Consent No. WAR 930100

 WAR 930100 01 (21744)
 WAR 930100 02 (1408)
 WAR 930100 03 (2355)
 WAR 930100 04 (2356)

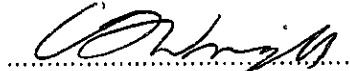
Category: Discharge Permit

 Discharge solid and liquid waste to land
 Discharge to air
 Discharge leachate to water
 Discharge stormwater to land

Pursuant to Sections 105 and 108, and subject to all the relevant provisions of the Resource Management Act 1991 and any regulations made thereunder, a consent in respect of a natural resource is hereby granted to:

Name	Masterton District Council	
Address	P O Box 444, Masterton	
Term of consent	Effective: 12 May 2004	Expires: 1 October 2006
Purpose for which right is granted	WAR 930100 01	To discharge up to 16,500 tonnes per annum of solid municipal waste and non-hazardous liquid waste to land, 7 days per week, January to December inclusive
	02	To discharge up to 120 cubic metres per day of landfill gas and odours from municipal waste, 24 hours per day, 7 days per week, January to December inclusive
	03	To discharge up to 10,000 cubic metres per year (27 cubic metres per day) of leachate from municipal waste to groundwater and surface water, up to 24 hours per day, 7 days per week, January to December inclusive
	04	To discharge up to 9,500 cubic metres per year (26 cubic metres per day) of stormwater from the Masterton landfill to land, up to 24 hours per day, 7 days per week, January to December inclusive
Location	Masterton Nursery Road Landfill, Johnson Street, Masterton	
Legal description of land	Valuation Reference Nos. 17980 003 OB and 17980 019 01	
Map reference	NZMS260 T26: 3520-2330	
Conditions	as attached	

 For and on behalf of
 WELLINGTON REGIONAL COUNCIL



 Divisional Manager

Date: 13/5/04

Conditions to Resource Consent WAR 930100

1. General Conditions

2. Landfill Consent Standard Conditions - All Masterton District Council Landfill Consents

- 2.1 The location, design, construction and operation of the landfill shall be as generally described in the document entitled "Assessment of Effects on the Environment: Masterton Landfills", prepared for Masterton District Council by Beca Steven, September 1994, and other supporting information which forms part of the consent application.
- 2.2 An annual charge, set in accordance with section 36(2) of the Resource Management Act 1991, shall be paid to the Wellington Regional Council for carrying out its functions under section 35 (duty to gather information, monitor and keep records) of the Act.
- 2.3 The grantee's interest in this consent may not be transferred to any owner or occupier of the site or any other person pursuant to section 137 of the Resource Management Act 1991.
- 2.4 The Wellington Regional Council may review any or all conditions of this consent by giving notice of its intention to do so pursuant to section 128 of the Resource Management Act 1991, at any of the following specified times:
- within six months of the fifth, tenth and fifteenth anniversaries of the date of grant of this resource consent;
 - within six months of the submission of any revised operational plan, contingency plan, or closure plan;
 - within six months of the submission of an annual monitoring report which shows potential environmental contamination arising as a result of the operation of the landfill, or which shows consistently good results indicating that a reduced level of monitoring may be appropriate.
- 2.5 The grantee may apply for a review of any condition (except the term of the consent) as provided for in section 127 of the Resource Management Act 1991, at any of the times set out in condition 2.4.
- 2.6 The review of conditions referred to in conditions 2.4 and 2.5 shall be for the purposes of:
- dealing with the adverse effects on the environment which arise from the exercise of this consent, and which it is appropriate to deal with at a later stage;
 - reviewing the adequacy of any plan prepared for this consent and incorporating any requirements into relevant consent conditions; or
 - requiring additional monitoring (including future requirements for landfill gas monitoring) to assess impacts, or specific action to be taken to mitigate demonstrated environmental impacts;
 - allowing a reduction in the level of monitoring.
- 2.7 All monitoring methods and procedures shall be to the specific approval of Wellington Regional Council: Wairarapa Division.



- 2.8 The grantee shall provide an annual report on each anniversary of the grant date of the consent to the Wellington Regional Council: Wairarapa Division, providing:
- the results of the monitoring undertaken for these conditions in the last 12 months, an interpretation of the results, and an assessment of the impact of the landfill on the environment;
 - the results of any waste surveys;
 - copies of any records required by these conditions;
 - the need for additional measures to avoid, remedy or mitigate any adverse effects;
 - a description of any significant changes to the landfill management plan.
- 2.9 The grantee shall, at least six months prior to surrender or expiry of this consent, make an application for consents as required for the future management of the landfill site.

Special Conditions - Masterton Landfill

3. Duration of Consent: WAR 930100 01, 02, 03 and 04

- 3.1 The duration of this consent shall be for a period of 10 years from 1 October 1996.

4. Consent Special Conditions: WAR 930100 01 - Discharge of Contaminants to Land

- 4.1 Within 5 years of the granting of this consent, the grantee shall prepare and implement a plan for the closure of the landfill and future management of the landfill site to ensure effective long-term containment and decomposition of contaminants. The plan shall include, but is not limited to:
- volume, composition and location of waste at the site;
 - final landscaping and stormwater system design;
 - ongoing monitoring programme (e.g. monitoring of leachate, surface and groundwater, discharges to air, landfill profile);
 - ongoing management of the site (e.g. maintenance of restored areas);
 - final use and ownership of the site.

This plan shall be prepared in consultation with the Wellington Regional Council: Wairarapa Division.

- 4.2 There shall be no expansion of the landfill beyond the fenced areas where waste has been deposited.
- 4.3 The landfill height shall not exceed 4 metres above the actual maximum height of the landfill at the date when the consent was granted. This means that the layer currently being filled can be completed and one further layer can be filled, then the maximum average depth of each of these two layers shall not exceed 4 metres.
- 4.4 The grantee shall keep and maintain records of all hazardous waste delivered to the landfill and the fate of the waste, and make these records available to the Wellington Regional Council if requested. For the purposes of these conditions, "hazardous waste" is defined as per the Wellington Regional Council Proposed Discharges to Land Plan or the equivalent operational plan.



Continued Conditions to Resource Consent WAR 930100

- 4.5 Any hazardous wastes accepted for disposal at the landfill shall be disposed of in accordance with the methods outlined in the Assessment of Effects and Outline Management Plan, in a manner which ensures they are:
- neutralised or rendered inert where possible;
 - contained such that there is no leaching or movement of materials.
- 4.6 The grantee shall keep and maintain records of the volumes and nature of any special waste deposited at the landfill, and make the records available to the Wellington Regional Council: Wairarapa Division at 6 monthly intervals. Special waste is waste which is not considered to be hazardous but is unusual in nature, and there may be a need to know about the presence of this waste in the future for landfill or environmental management purposes.
- 4.7 The grantee shall take all reasonable measures to control vermin, birds and flies at the landfill site.
- 4.8 No burning is to be undertaken at the landfill site.
- 4.9 The grantee shall ensure that paper or other debris is not deposited or carried off-site by wind action. Where possible, exposed waste should be confined to the loading and active landfilling areas. Any litter, paper and any other deposits outside the active landfill area, particularly the area adjacent to the Ruamahanga River, shall be checked weekly and cleaned up as required.
- 4.10 All completed areas should be covered with suitable inert material, and where appropriate topsoiled and revegetated as soon as possible.
- 4.11 The grantee shall monitor the remedial works in the northern section of the landfill adjacent to the Ruamahanga River (marked on the attached Site Plan 1) weekly and after every high flow event to ensure that the stabilisation work is intact and to ensure that the works continue to prevent encroachment of the river into the landfill and erosion of exposed waste. The grantee shall undertake any further remedial work required to ensure the integrity of the landfill or repair any damage to protection or remedial works within 1 week or such longer time period which may be required for extensive damage, of damage being detected.

Note: Separate resource consents may be required for any work in the beds of rivers.

5. Consent Special Conditions: WAR 930100 02 - Discharge of Gases and Odours to Air

- 5.1 There shall be no noxious, offensive or objectionable odour resulting from the landfilling operation at or beyond the boundary of the landfill as designated by the District Plan. Noxious, offensive or objectionable odour shall be determined by two enforcement officers of the Wellington Regional Council.
- 5.2 The grantee shall take all reasonable precautions to minimise the generation of dust from the landfill operation and access routes, and shall ensure that no dust arising from the operation shall create a nuisance beyond the boundary of the landfill site.
- 5.3 Any complaints about odour or dust shall be reported immediately to the Wellington Regional Council: Wairarapa Division. Complete records of all odour complaints received on the landfill shall be kept by the grantee, and shall be forwarded to the Wellington Regional Council: Wairarapa Division annually.



6. Consent Special Conditions: WAR 930100 03 - Discharge of Contaminants to Land and Water


6.1 The grantee shall monitor bore levels monthly at the sites shown on Site Plan 1 attached to these conditions.

6.2 The grantee shall conduct quarterly monitoring of bores and surface water sites as shown on Site Plan 1 attached to these conditions, for bore levels and the following parameters.

pH	-log [H ⁺]
Temperature	°C
Conductivity	mS/cm
Reduction coefficient	eH (groundwater only)
Alkalinity	gm ⁻³
Hardness	gm ⁻³
NH ₄ -N	gm ⁻³
Nitrate	gm ⁻³
BOD ₅	gm ⁻³
COD	gm ⁻³
Iron (soluble)	gm ⁻³
Chloride	gm ⁻³
Zinc	gm ⁻³
Sodium	gm ⁻³
Potassium	gm ⁻³

6.3 The grantee shall conduct annual monitoring of the bores and surface water sites as shown on Site Plan 1 attached to these conditions, for the following parameters annually:

pH	-log [H ⁺]
Temperature	°C
Conductivity	µS/cm
Reduction coefficient	eH (groundwater only)
Alkalinity	gm ⁻³
Hardness	gm ⁻³
NH ₄ -N	gm ⁻³
BOD ₅	gm ⁻³
COD	gm ⁻³
Iron (soluble & total)	gm ⁻³
Manganese	gm ⁻³
Chloride	gm ⁻³
Aluminium	gm ⁻³
Boron	gm ⁻³
Arsenic	gm ⁻³
Copper	gm ⁻³
Lead	gm ⁻³
Zinc	gm ⁻³
Nickel	gm ⁻³
Chromium	gm ⁻³
Cadmium	gm ⁻³
Dissolved reactive phosphorus	gm ⁻³
Total Phosphorous	gm ⁻³
Nitrate	gm ⁻³
Sulphate	gm ⁻³
Calcium	gm ⁻³
Sodium	gm ⁻³
Potassium	gm ⁻³
Enterococci	



Continued Conditions to Resource Consent WAR 930100

- 6.4 The grantee shall undertake a macroinvertebrate survey at representative sites upstream and downstream of the landfill quarterly for the first year of operation of this resource consent and annually thereafter.
- 6.5 The levels of the parameters listed above shall not, as a result of discharge of contaminants from the landfill, exceed the following guidelines in groundwater or surface water downstream of the landfill site. The numerical guidelines are listed in the Australian Water Quality Guidelines for Fresh and Marine Waters, published November 1992, by the Australian and New Zealand Environment and Conservation Council.
- Guidelines for protection of aquatic ecosystems (surface water);
 - Guidelines for irrigation water quality;
 - Water quality guidelines for livestock watering;
 - Guidelines for raw waters for drinking purposes subjected to coarse screening.
- 6.6 If monitoring results show contamination of surface or groundwater is occurring as a result of the landfill, the grantee shall provide and maintain an effective leachate collection and disposal system to intercept the leachate resulting from the exercise of this resource consent.
- 6.7 Any liquid wastes, contaminated soil or sludges to be disposed of at the site shall be disposed of strictly in accordance with the Assessment of Environmental Effects (September 1994) and the Outline Management Plan for the Masterton Landfill such that they are:
- rendered inert if possible;
 - absorbed or contained so that there is no leaching or movement of contaminated material.

7. Consent Special Conditions: WAR 930100 04 - Discharge of Stormwater to Land and Water

- 7.1 The grantee shall take all practical steps to ensure that all stormwater from the site is directed away from active landfill areas, and that any stormwater from the active fill areas or stormwater which may be contaminated (e.g. by leachate) is directed to ground soakage.
- 7.2 No stormwater contaminated with leachate shall be discharged directly to surface water.
- 7.3 The grantee shall take all practical steps to minimise infiltration of rainfall or stormwater into the landfill, including providing a final cover of low permeability, and contouring to facilitate stormwater runoff and prevent ponding.





**APPENDIX B:
AERIAL PHOTOGRAPH AND SITE LAYOUT**

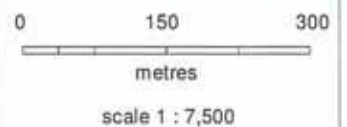


APPENDIX B

MASTERTON NURSERY ROAD SOLID WASTE MANAGEMENT SITE



Photos taken in/on: 2002.
 Cadastral information derived from LINZ's DCDB; Crown copyright reserved.
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 The level of accuracy of the information may vary; contact the Masterton District Council for details.
 This map is subject to the Masterton District Council standard disclaimer. Please see overleaf.





APPENDIX C:

STAGED DEVELOPMENT PLAN



BOME HOLE LEVELS		
DATE #	TOP OF CURBS IN	FINISH LEVEL IN
B1	04.01	04.00
B2	04.02	04.00
B3	04.03	04.00
B4	04.04	04.00
B5	04.05	04.00
B6	04.06	04.00
B7	04.07	04.00
B8	04.08	04.00
B9	04.09	04.00
B10	04.10	04.00



ORIGINAL SIZE A1
DO NOT SCALE - IN BUREAU, NSW

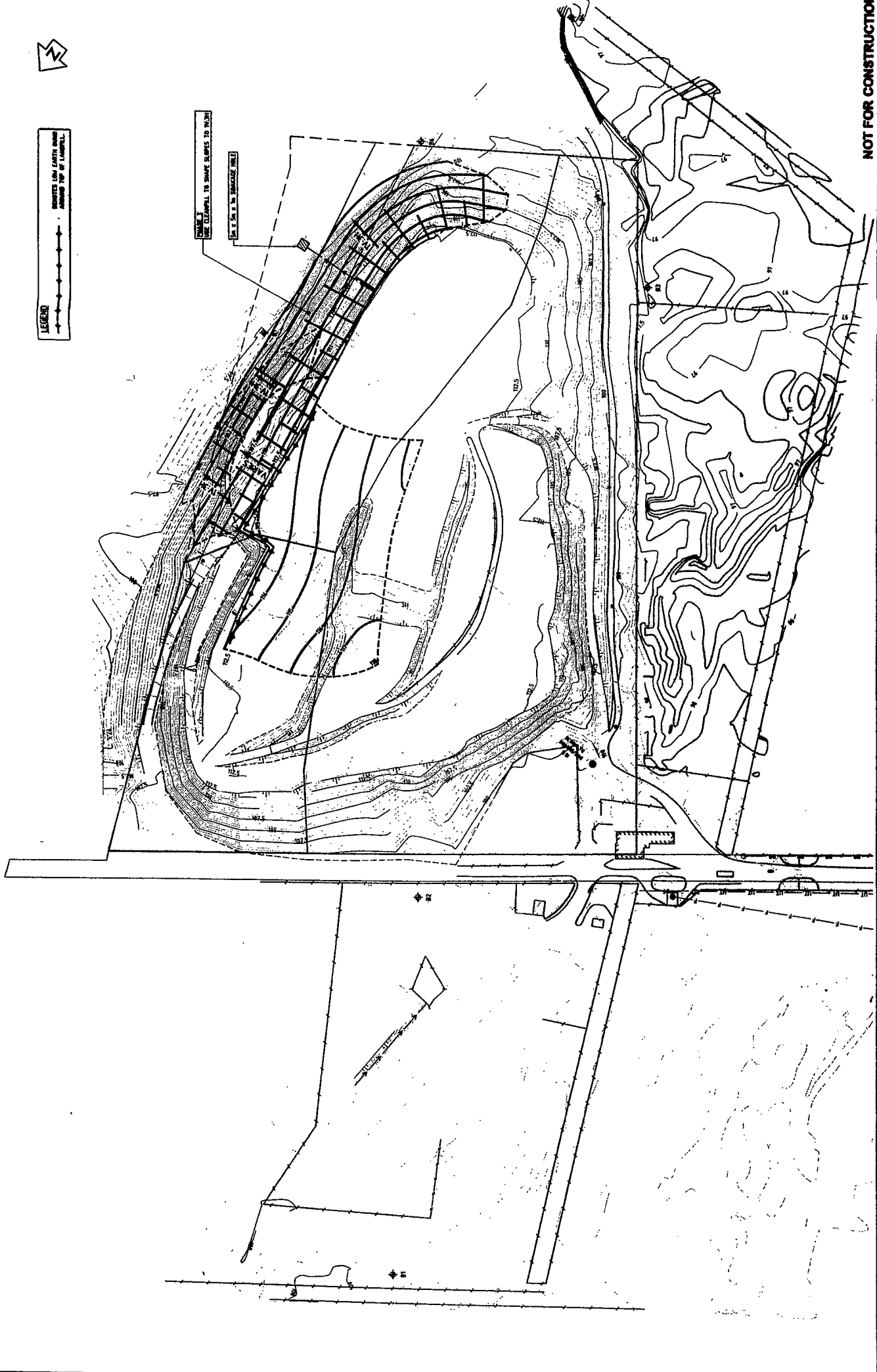
NOT FOR CONSTRUCTION

PRELIMINARY	
WALSTON DISTRICT COUNCIL WALSTON LAMPHILL CLEANUP PROJECT STAGED DEVELOPMENT PLANS PHASE 1	DRAWING NO. 0401/2006 DATE 01/01/06 SCALE 1:1000 SHEET NO. 01 OF 01 PROJECT NO. 007311 03
MWH	
PREPARED BY: [Name] CHECKED BY: [Name] APPROVED BY: [Name]	DESIGNER: [Name] DATE: [Date]
TALKING : [Name] / [Name] DRAWING : [Name] SHEET : [Name]	
COPYRIGHT © [Year] This drawing shall not be used for any purpose other than that for which it was prepared without the written consent of MWH.	

LEGEND
 INDICATES LOW EARTH BAND
 AROUND TOP OF LAMPFILL

NOTE: THE CLEANFILL IS SHOWN BELIEVED TO BE 10' THICK

SEE PLAN SHEET 03-02 FOR REMEDIATION PLAN



NOT FOR CONSTRUCTION

PRELIMINARY
 2/24/2008
 SCALES (AS SHOWN)
 007311 03 03 B

HASTERTON DISTRICT COUNCIL
 HASTERTON LAMPFILL
 CLEANFILL PROJECT
 STAGED DEVELOPMENT PLANS
 PHASE 3



REFERENCE	DATE	BY
DESIGNED	2/24/08	AS
ENGINNERED	2/24/08	AS
CHECKED	2/24/08	AS
APPROVED	2/24/08	AS

NO.	DATE	BY	REVISION

TITLE BLOCK
 PROJECT: HASTERTON LAMPFILL CLEANFILL PROJECT
 SHEET: 03-03
 DATE: 2/24/08
 DRAWN BY: AS
 CHECKED BY: AS
 APPROVED BY: AS



LEGEND

DENOTES LOW EARTH BAND
AROUND TOP OF LANDFILL



NOT FOR CONSTRUCTION

Project Name	PRELIMINARY	
Project No.	240712006	
Scale	AS BUILT	AS BUILT
Date	07/31/03	04
Sheet No.	B	

MASTERTON DISTRICT COUNCIL
MASTERTON LANDFILL
CLEANFILL PROJECT

STAGED DEVELOPMENT PLANS
PHASE 4



FIELDWORK	REVISIONS	DATE
SURVEYED	Admission Land Surveyors	1/25
DESIGNED	PS Consultant	1/25
DRAWN	BC, JAMES	1/25
CHECKED		
APPROVED		

TAB/DWG : Layout / WEST 13-14-15
 SERIES : PLAN, SITE REVISIONS
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LEGEND
 DENOTES LOW EARTH BAND
 AROUND TOP OF DRAINAGE



NOT FOR CONSTRUCTION

MASTERION DISTRICT COUNCIL MASTERION LANDFILL CLEANUP PROJECT		PRELIMINARY 24/0/22006	
STAGED DEVELOPMENT PLANS PHASE 6		SCALES (A1) 1:8000 (A3) 1:3200 (A4) 1:1600 007311 03 06 B	

REVISIONS	NO.	DATE	BY	DATE	BY

FIELDWORK	NAME	DATE
SURVEYED	AMERICAN LAND SURVEYORS	4/75
DESIGNED	P. S. LINDSEY	4/75
DRAWN	R. C. JONES	4/75
CHECKED		
APPROVED		

TAD/ONS - Layout / 07/21/03-04/04/04
 SCALES - 1/8" = 100' HORIZONTAL
 XREFS - XREF 13 Revamp, XREF 13

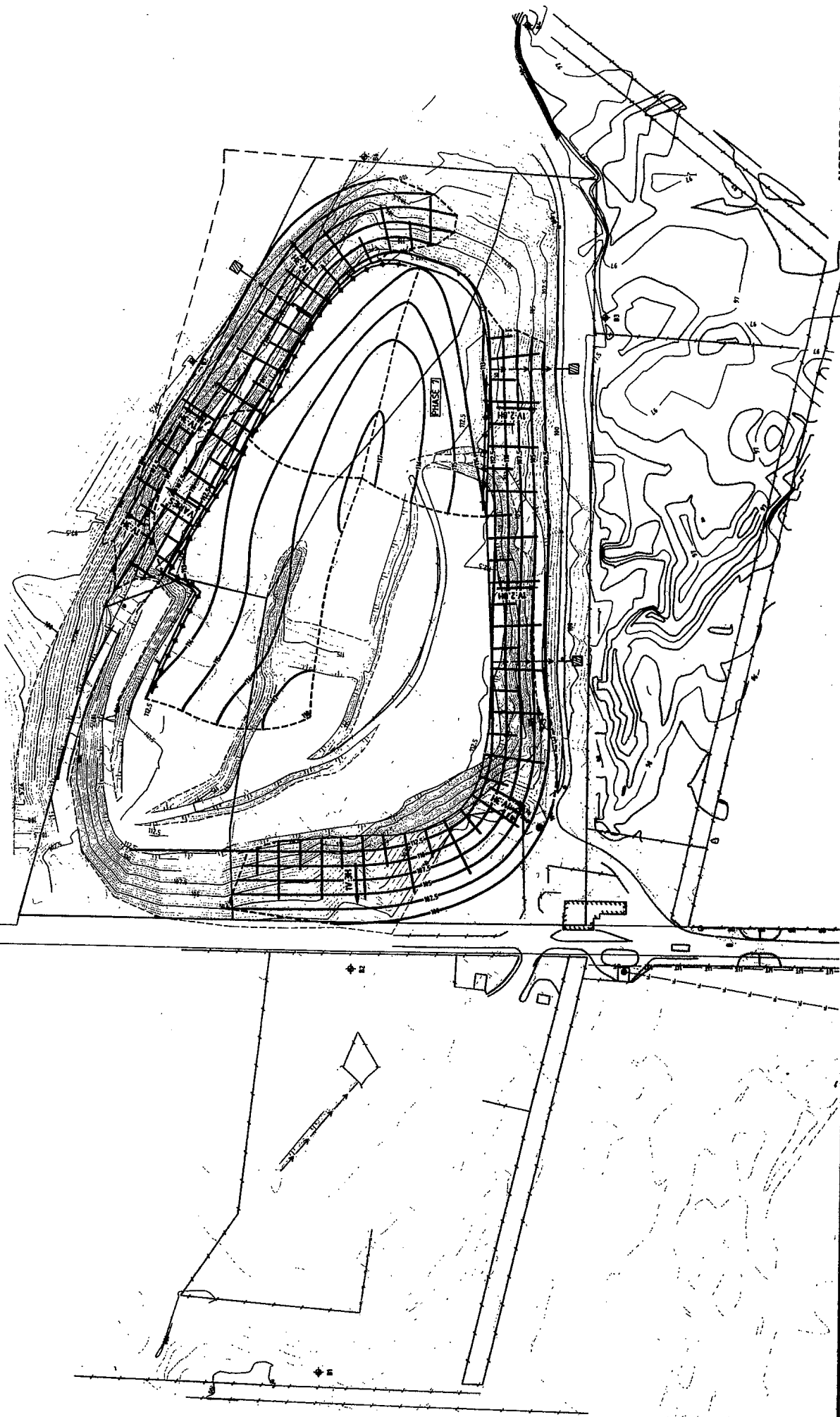
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LEGEND

	PROPOSED LINE LENGTH BAND
	PROPOSED TOP OF LAMELL



NOT FOR CONSTRUCTION

MASTERION DISTRICT COUNCIL	
MASTERION LANDFILL CLEANUP PROJECT	
STAGED DEVELOPMENT PLANS	
PHASE 7	
PRELIMINARY	07 B
SCALE 1/8" = 1'-0"	DATE 24/07/2006
PROJECT NO. 007311 03	SHEET NO. 07

FILED/REVISED	DATE	BY
DESIGNED		
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CHECKED		
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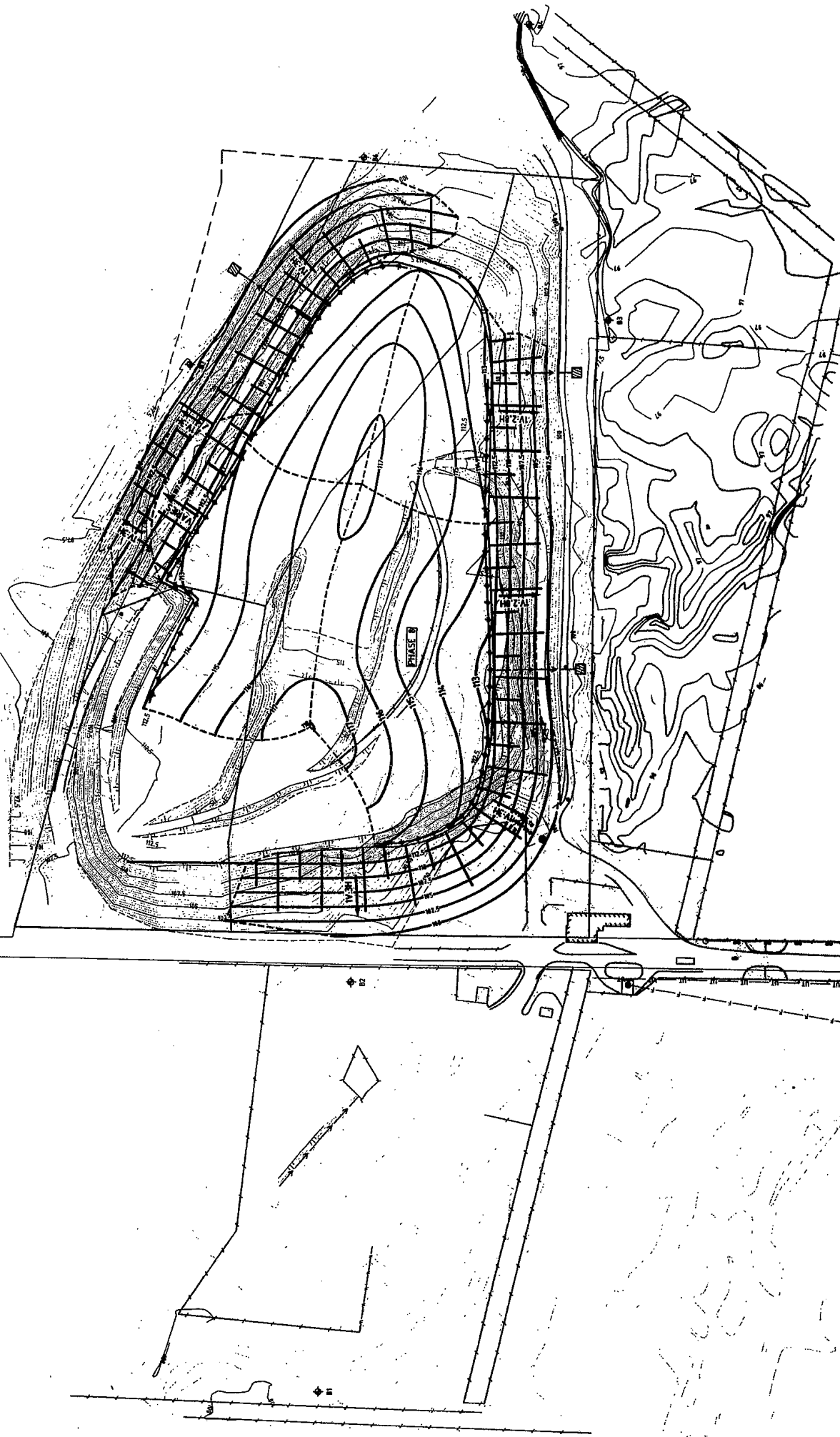
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APPROVED



LEGEND
 DOTTED LINE BOUNDARY
 DOTTED LINE BOUNDARY
 DOTTED LINE BOUNDARY



NOT FOR CONSTRUCTION

PRELIMINARY

DATE: 08/12/2008
 DRAWN BY: JLB
 CHECKED BY: JLB
 PROJECT NO: 007311 03 08 B

HASTERTON DISTRICT COUNCIL
 HASTERTON LANDFILL
 CLEANUP PROJECT
 STAGED DEVELOPMENT PLANS
 PHASE 8

MWH

REVISION	DATE	BY
1		JLB
2		JLB

PROJECT NO: 007311 03 08 B
 SHEET NO: 08 B
 DATE: 08/12/2008

PHASE 8: 1200, 1150, 1100, 1050, 1000, 950, 900, 850, 800, 750, 700, 650, 600, 550, 500, 450, 400, 350, 300, 250, 200, 150, 100, 50, 0

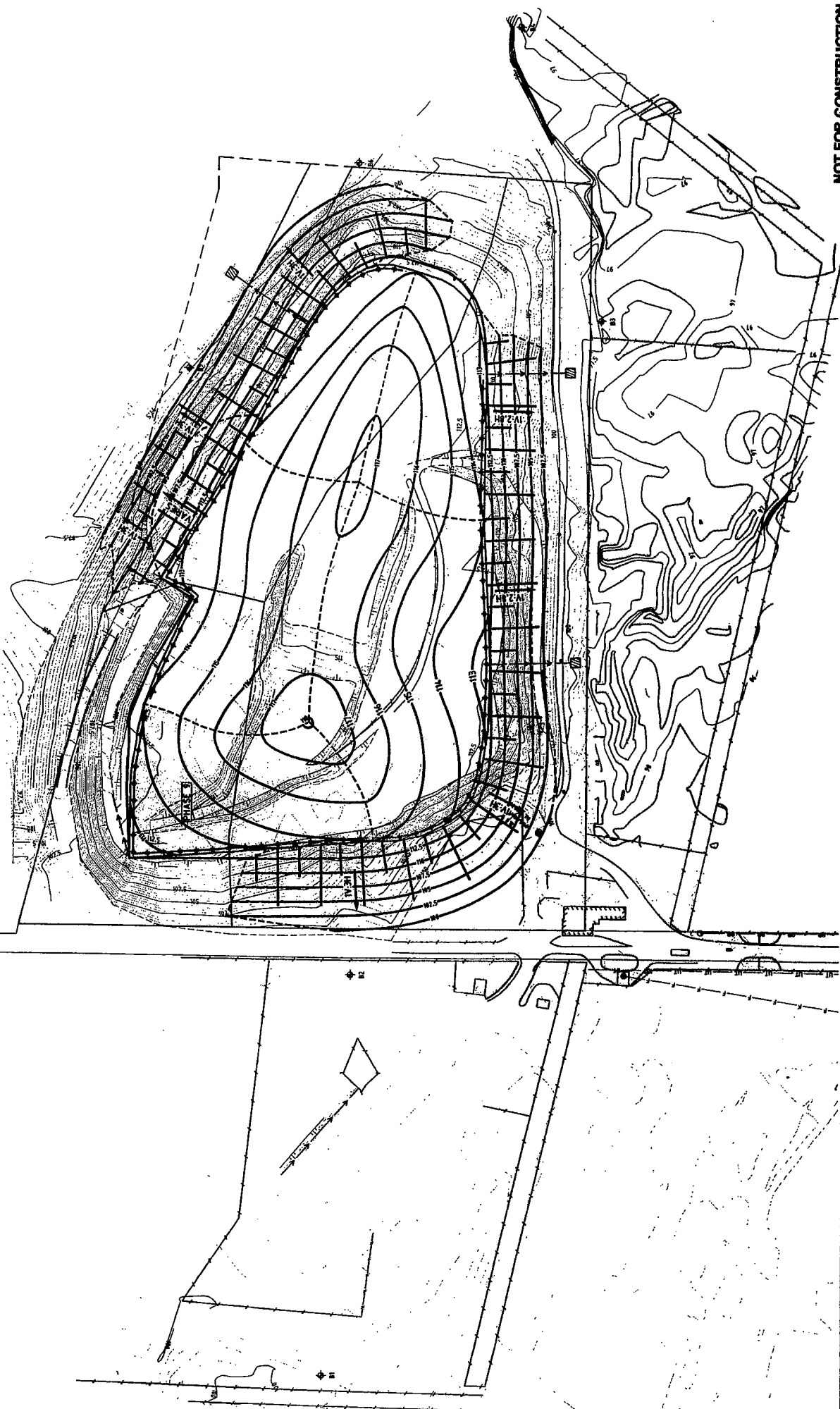
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LEGEND
 → INDICATES LOW EARTH BAND
 → AROUND TOP OF LANDFILL



NOT FOR CONSTRUCTION

**HASTERTON DISTRICT COUNCIL
 HASTERTON LANDFILL
 CLEANFILL PROJECT
 STAGED DEVELOPMENT PLANS
 PHASE 9**

MWH

	PRELIMINARY	DATE: 24/01/2006	SCALE: 1:1000	SHEET NO: 09	OF: 10
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APPENDIX D:

CLEANFILL OPERATION MANAGEMENT PLAN

COMPOSTING OPERATION MANAGEMENT PLAN

TRANSFER STATION OPERATION MANAGEMENT PLAN



Masterton District Council

Nursery Road Solid Waste Management Site

Draft Cleanfill Operation Management Plan

16 February 2009



Quality Assurance Schedule			
Report Status:	Final		
Initial Author:	MWH NZ Ltd		
Revised by:	WG	Date: 05/02/2009	Signature:
Reviewed by:	JL	Date: 13/02/2009	Signature:
Approved for Issue by:	DH	Date: 16/02/2009	Signature:

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APPENDIX A - STAGED DEVELOPMENT PLANS



1. INTRODUCTION

1.1 PURPOSE

The resource consent for the Masterton Landfill (landfill) expired on 1st October 2006. When the landfill is closed it was proposed to continue operating it as a cleanfill from 1st October 2006 providing soil fill to remediate the site in the process.

It was also proposed to continue disposing of minor quantities of certain types of special wastes on top of the landfill area while the cleanfill operations are continued.

This *Draft Cleanfill Operation Management Plan* sets out how the site is to be developed, operated and managed.

1.2 SUPPORTING INFORMATION

This *Draft Cleanfill Operation Management Plan* should be read in conjunction with previously lodged applications and supporting information for landfill resource consents and the new submitted information including:

- *Masterton Nursery Road Operation – Assessment of Environmental Effects; February 2009*

1.3 RESOURCE CONSENTS

Cleanfill operations are classed as a *Permitted Activity* in Rule 1 of the *Regional Plan for Discharges to Land for the Wellington Region*, provided the operations comply with the relevant provisions of the district plan. This means that the activity does not require resource consent.

The *Proposed Wairarapa Combined District Plan* contains no specific reference to “cleanfill” but does refer to rules governing “odour”, “noise” and “dust”, all of which are applicable to the site operations.

After the existing resource consent expired on 1st October 2006, a new resource consent is required for ongoing discharges of landfill gas to air, leachate to groundwater and surface water, and stormwater to land.

In addition a new discharge permit (discharge of waste to land) will be required for the disposal of certain special wastes at the top of the site.

1.4 REASON FOR THIS DRAFT CLEANFILL OPERATION MANAGEMENT PLAN

When the resource consent expired on 1st October 2006 the consented airspace envelope of the landfill had not been filled up. This presented an opportunity to convert the landfill to a cleanfill operation and provide clean soil to remediate the landfill in an acceptable manner over a period of time.

It was also intended to bury minor quantities of special wastes that include animal carcasses, wastewater plant screenings, grease trap wastes, pig wastes and domestic asbestos in trenches located on top of the landfill while the cleanfill is in operation.



This *Draft Cleanfill Operation Management Plan* sets out how such a cleanfill operation will be developed, operated and managed.

Note this *Draft Cleanfill Operation Management Plan* may be amended according to new resource consent conditions following the granting of the new resource consent or review of existing resource consent.

1.5 DEFINITIONS

This *Draft Cleanfill Operation Management Plan* is referred to as the “*Plan*”.

The term “Council” used in this *Plan* means the Masterton District Council.

The term “Regional Council” used in this *Plan* means the Greater Wellington Regional Council.

The term “Site” refers to that land where refuse disposal operations had taken place and cleanfilling is currently taking place.

The term “Act” refers to the Resource Management Act.

The terms “landfill” and “cleanfill” may be used interchangeably. From October 2006 the landfill will essentially be used as a cleanfill site.



2. CLEANFILL MANAGEMENT PLAN OBJECTIVES

This management plan is aimed at achieving the following objectives:

- Maximise existing resource use efficiency.
- Sustainable re-use of cleanfill material.
- Minimise, remedy and mitigate adverse effects on the environment and human health from the inappropriate disposal of residual liquid and solid wastes.
- The potential for any accidental or unanticipated effects to arise as a result of the use, storage, transportation and disposal of hazardous substances is minimised.
- Cost effective & convenient solution for the public.
- Environmental acceptable operation.
- Demonstrate environmental acceptable operation to public.
- Control & contain stormwater, leachate, odour, dust, litter, noise and vermin.
- Safe to the public and operator.
- Collect proportion of operating cost in line with Council policy.



3. MANAGEMENT

3.1 MANAGEMENT STRUCTURE

The Masterton District Council has responsibility for the site. Management will continue after disposal operations have finished when the main tasks will be monitoring and maintenance of the site.

3.2 OPERATIONS CONTRACT

Following the closure of the landfill in October 2006, the cleanfill operation has been undertaken by a contractor on a dayworks basis. It is intended that the future cleanfill and special waste disposal operations be part of a global contract for the whole Nursery Road solid wastes management operations.

3.3 RIGHT OF ACCESS

General public access to the cleanfill operations shall not be permitted.

Access may be permitted for:

- all heavy commercial vehicles carrying acceptable material approved by the Council,
- all utes and trailers carrying acceptable material that have been inspected and admitted by the weighbridge operator,
- vehicles under the operational control of the Council (or its authorised contractors) carrying acceptable material and vehicles involved in site operations,
- vehicles carrying special wastes accepted by prior arrangement for disposal by Council,
- inspection by interested parties, by prior arrangement.

3.4 OPERATING HOURS

Access to the facilities at Nursery Road is controlled at the entry kiosk and admitted vehicles are directed to the appropriate facility.

Presently the site is open from 08:00 to 17:00 every day of the year except Christmas Day, New Years Day and Good Friday.

In some cases special arrangements may be made to receive acceptable materials outside of the normal operating hours. An example of this may be the acceptance of cleanfill from construction projects to expedite work and to reduce truck traffic on local roads during periods of peak use. When operations outside of normal working hours occur, provisions will be established for material acceptance, record keeping and tipping.

The operating hours may be changed by the Council.

3.5 CLEANFILL OPERATIONS

The weighbridge operator(s), appointed under the *MDC Transfer Station Operations Contract*, shall be responsible for controlling admission to the cleanfill disposal area.



The Council will solicit contracts of the operation of the cleanfill. This contractor will be responsible for implementing the Draft Cleanfill Operation Management Plan.

The cleanfill operator will have the following general duties:

- Shaping and compacting the stockpiled cleanfill to the required standards.
- Setting aside suitable materials for the construction of the final 600mm of soil cover and the topsoil layer.
- Maintaining all signs and barricades in good working order.
- Covering of all special wastes.

3.6 TRAINING

The requirements for training of staff shall be specified in new contracts. In general this should involve on-going training of at least one day per year, on or off site. Initial training requirements will depend on the operation.

Training of all staff shall include basic first aid, liaison with Emergency Services and emergency procedures.

Special attention shall be given to compliance with the Occupational Health and Safety Act and to training staff in the screening procedures for incoming wastes to ensure that they are acceptable for disposal.

Training specific to the handling of special wastes will be performed.

3.7 GENERAL DUTIES

The weighbridge and cleanfill operator will have the following general duties:

- Controlling access to the cleanfill at the entry kiosk.
- Inspecting all loads of waste intended for cleanfill disposal and admitting only those that meet the waste acceptance criteria (see Section 5) and have the correct documentation.
- Inspecting the cleanfill disposal area daily and ensuring that no waste other than cleanfill is being disposed of at the site.
- Reporting cases of incorrect disposal to Council and assisting it to trace the offending disposer by searching through records of the previous day's disposal transactions.

3.8 OCCUPATIONAL SAFETY AND HEALTH

The contractor has responsibility for the OSH requirements. The cleanfill contractor shall draw up a *Health & Safety Plan* to address risks and issues that could arise on site as a result of the past landfill and ongoing cleanfill operations. The *Health and Safety Plan* shall meet the approval of Council and shall cover, inter alia, the following aspects:

- Site Safety Equipment
 - Training
 - Protective clothing
 - First aid equipment
 - Washing facilities
- Precautionary Procedures



- Hygiene
- Decontamination
- Landfill gas and leachate
- Special wastes
- Accident Reporting
- First Aid
- Emergency contacts
- Hazard identification

3.9 MONITORING AND REPORTING

It is proposed that from October 2006 when the site is operating as a cleanfill, that monitoring of the following is continued and records included in annual reports to the Greater Wellington Regional Council:

- Six groundwater bores about the landfill for a range of indicator parameters quarterly, and a comprehensive range of parameters annually.
- The Ruamahanga River upstream and downstream of the landfill for a range of indicator parameters quarterly, and a comprehensive range of parameters annually.
- The Ruamahanga River annually for macroinvertebrate numbers at four locations upstream and four locations downstream of the landfill.
- Records of the volumes and nature of any special waste (animal carcasses, wastewater treatment plant screenings, or grease trap wastes) buried at the landfill.
- Weekly checks of litter and any other deposits outside the active disposal area.
- Checks of the remedial works in the northern section of the landfill adjacent to the Ruamahanga River after every high flow event.
- Records of all odour complaints.
- The total volume of cleanfill disposed at the site and vehicle numbers.

Note the current and proposed arrangement for the above monitoring is that Council's environmental health officer is responsible for the routine monitoring.



4. LANDFILL DEVELOPMENT

4.1 STAGING AND PROGRESSIVE REMEDIATION

The *Staged Development Plans* attached in **Appendix A** show how the cleanfill operations will be carried out in nine stages.

Stages 1 & 2 encompass the remediation of the eastern and south-eastern side slopes of the site. Although these slopes are well vegetated they are presently over-steep and are not covered with sufficient depth of inert material. Access to these areas will be from the top of the site and also by improving the access road that leads around the base of the site on the western side.

Stages 3 & 4 involve filling and shaping the eastern “quarter” of the top of the site.

Stage 5 entails flattening the north-western slope of the site.

Stage 6 will involve flattening the existing south-western side slope.

Stages 7, 8 & 9 involve the progressive filling and shaping of the top of the site from the southern “quarter” around to the northern “quarter”.

Filling in this manner will allow the access road onto the top of the site to remain open. It is intended to keep it open in the future to provide access to the top of the site for maintenance purposes.

Trenches for the disposal of special wastes will be excavated on top of the site. These will be progressively moved as the top of the site is remediated.

It is noted here that the actual filling operations of the individual stages may vary based on the type and quantity of cleanfill received. For example if a large quantity of material suitable for use on the side slopes is received, a portion of Stage 3 side slope area may be constructed prior to the completion of Stage 2. The overall staging plan will be used as a guide for filling operations and will be adhered to as much as possible. Alternate staging will be performed to construct environmental controls such as berms and stormwater catchments prior to general filling operations.

Grass vegetation will be established on the landfill top and side slopes following the final capping of the landfill top and side slopes.

4.2 STORMWATER AND LEACHATE

4.2.1 Stormwater Control

When remediated the top of the site will be shaped having five catchment areas of approximately similar area. These are seen in the *Staged Development Plans*.

Stormwater runoff from each catchment will be captured at the edge of the landfill by means of a low, grassed earth bund. The slope along the bunds will be approximately 2% and they will drain runoff to flumes/pipes that will direct the water to the toe of the site.



Because the stormwater runoff is limited it is proposed to direct the runoff to a number of soakage holes, as opposed to sedimentation ponds, located around the perimeter of the landfill site.

Each soakage hole will have approximate dimensions of 5 x 5 x 1 metres and shall be excavated into the in-situ gravels to promote soakage into the ground.

4.2.2 Leachate Control

It is proposed to set aside cleanfill materials that have a high clay/silt content for use in the construction of the final 600mm layer over the top of the site.

Thus, at this stage, there is no intention to provide any remedial or mitigation measures to reduce the impact of leachate on the receiving environment. However, if ongoing monitoring reveals that the discharge is likely to cause adverse effects on the receiving environment and/or on downstream users then options to mitigate adverse effects of the leachate discharge into groundwater and surface water would be investigated and implemented as appropriate.

4.3 LANDFILL GAS, DUST AND ODOUR CONTROL

The cleanfill operation is likely to improve the existing conditions on site relating to the generation of noxious, offensive and objectionable odours since no municipal refuse will be disposed of on site. The generation of dust is also likely to reduce since the volume of traffic using the access roads will decrease substantially.

Because of their potential to generate odours, special wastes shall be tipped into the trenches. All special wastes shall immediately be pushed into the trench and covered with cleanfill by the operator.



5. SITE OPERATIONS

5.1 COVERING OF DISPOSED REFUSE

From 1st October 2006 municipal refuse is no longer be accepted for disposal at the site. After this time all refuse shall have been covered with a layer of intermediate cover, approximately 300mm thick.

The surface of the old landfill (new cleanfill) shall be shaped to prevent stormwater runoff from concentrating in areas so as to either cause erosion of the intermediate cover, and so expose the underlying refuse, or cause ponding on the surface.

5.2 SIGNS AND BARRICADES

5.2.1 General

The contractor shall provide suitable signs to clearly direct vehicles to the disposal areas for cleanfill and special wastes. Barricades will also be required to prevent vehicles from entering specific areas.

5.2.2 Signs for Cleanfill

Cleanfill shall be stockpiled in the following three separate categories:

- Topsoil
- Clay/silt
- Gravel and other cleanfill

Signs and barricades shall be provided to direct people to the correct stockpile.

Only the amount of special wastes that can be processed in a single workday will be accepted on site. As such these materials will not be stockpiled.

5.2.3 Signs for Special Wastes

Special waste shall be disposed of in separate trenches:

- Animal carcasses and WWTP screenings.
- Grease trap wastes.
- Pig wastes
- Asbestos

Signs and barricades shall be provided to direct people to the correct trench.

Signs and barricades shall also be placed around old trenches to warn people of their location.

5.3 EXCAVATION OF TRENCHES FOR SPECIAL WASTES

All special wastes shall be buried in trenches excavated on the top of the old landfill specifically for that purpose. The *Staged Development Plans* attached in **Appendix A**



show where the trenches are to be excavated on top of the old landfill during each stage of the cleanfill operations.

Trenches shall be prepared at locations remote from the cleanfill tipping area and at least 10 metres from any old landfill batter slope. The new trench shall be excavated in a previously retired section of old landfill to a depth of approximately 3m.

All refuse material excavated for a new trench shall be spread out and covered immediately. Stockpiles of cleanfill for cover purposes shall be placed alongside the trench.

All special waste shall be covered daily by the contractor with the depth of intermediate cover being a minimum of 100mm. Notwithstanding this, all animals disposed of as diseased animals under the Animals Act 1967 shall be immediately covered to a depth of 1 metre in the presence of the delivery driver.

Trenches shall be filled to within 1 metre of the surface and then reinstated with compacted cleanfill. Protective measures shall be put in place to ensure no customer or staff could be in danger when walking over the closed facility.

5.4 WASTE ACCEPTANCE

5.4.1 Acceptable Cleanfill Wastes

From 1st October 2006 only cleanfill wastes having the following definition¹ shall be permitted to be disposed at the site:

Material that when buried will have no adverse effect on people or the environment; includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete and brick that are free from:

- *combustible, putrescible, degradable or leachable components*
- *hazardous substances*
- *product or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices*
- *materials that may present a risk to human health*
- *liquid waste*

The following table² provides a list of acceptable cleanfill materials.

Material	Discussion
Asphalt (cured)	Weathered (cured) asphalt is acceptable: After asphalt has been exposed to the elements for some time, the initial oily surface will have gone and the asphalt is considered inert.
Bricks	Inert – will undergo no degradation.
Ceramics	Inert.
Concrete – un-reinforced	Inert material. Ensure that other attached material is removed.

¹ A Guide to the Management of Cleanfills; Prepared for the Ministry for the Environment by Beca Carter Hollings and Ferner Ltd.; January 2002

²Sourced from A Guide to the Management of Cleanfills



Concrete –reinforced	Steel reinforcing bars will degrade. However, bars fully encased in intact concrete will be protected from corrosion by the concrete. Reinforced concrete is thus acceptable provided protruding reinforcing steel is cut off at the concrete face.
Fibre cement building products	Inert material comprising cellulose fibre, Portland cement and sand. Care needs to be taken that the product does not contain asbestos, which is unacceptable.
Glass	Inert, and poses little threat to the environment. May pose a safety risk if placed near the surface in public areas, or if later excavated. The safety risk on excavation should become immediately apparent, so glass is considered acceptable provided it is not placed immediately adjacent to the finished surface.
Road sub-base	Inert.
Soils, rock, gravel, sand, clay, etc	Acceptable if free of contamination
Tiles (clay, concrete or ceramic)	Inert.

5.4.2 Acceptable Special Wastes

From 1st October 2006 only the following special wastes shall be accepted at the site for disposal, and also only by prior arrangement:

- Animal carcasses such as those derived from time to time from the SPCA, Pound or Council dog control operations. This waste type may include occasional large animal carcasses derived from farming activities.
- Pig waste
- Grit screenings removed from the Masterton Wastewater Treatment Plant.
- Grease trap wastes from the community.
- Silt from stormwater sumps and yard drains
- Domestic quantities of asbestos
- Empty spray and paint containers
- Road sweepings

For any special wastes that are not in the above list the Council's environmental health department will investigate and advise on disposal alternatives upon request.

5.4.3 Waste Acceptance Criteria

Only materials that meet the definition of cleanfill will be accepted for disposal at the landfill site. The Waste Acceptance Criteria described in Section 4 of the *MfE Cleanfill Guide* shall be applied. All wastes other than cleanfill or special wastes, as defined and described herein shall be prohibited from disposal at the site. Due to the limited space available, it is proposed that commercial quantities of asbestos will no longer be accepted at the Nursery Road landfill site, but diverted to Bonny Glen landfill.

5.4.4 Cleanfill Testing Requirements

Despite the definition provided above for materials acceptable as cleanfill, there may be instances when it will not be clear if a particular material meets the requirements. Under such circumstances it will be necessary to prove by testing that the material is suitable



for disposal as cleanfill. The *MfE Cleanfill Guide* provides a number of examples of such materials:

- dredging spoil
- soils or other materials suspected of contamination
- by-products from an industrial process
- soils or other materials originating from an industrial site or other land use which is typically associated with site contamination.

For a new cleanfill site, materials are considered acceptable for disposal when the concentration of heavy metal contaminants in the fill material does not exceed site background levels. Organic compounds (e.g. total petroleum hydrocarbons, semi-volatile and volatile organic compounds) should not be present on the cleanfill site and so tests for these compounds are not considered necessary.

However, site background levels at the Masterton Landfill will be considerably elevated because of the past refuse disposal activities.

Should anyone wish to dispose of a material at the site that does not meet the definition contained in Section 5.4.1, nor is described in the above table, they shall carry out appropriate testing of the material at their own expense in line with that described in Section 4.4 of the *MfE Cleanfill Guide*. They shall then apply for permission to dispose of the materials by submitting such test results and other supporting information to the Council which will forward a recommendation to the Regional Council for approval.

Applications shall be made for each separate waste type and on every different occasion, unless it can be proven that there is no change in the materials that would yield different test results. As a minimum, at least one sample per 1,000m³ of fill material shall be taken and analysed.

5.4.5 Cleanfill Acceptance Control

The weighbridge operator shall carry out “visual spot-checks” of loads to ensure that the materials are as described. If the material is contaminated with any other waste it shall be rejected at the weighbridge. In addition, the weighbridge operator shall carry out a daily check on site of dumped loads to ensure that all of the loads are cleanfill material

Where this is not found to be the case the weighbridge operator will inform the Council and the cleanfill operator and will assist them to trace the perpetrator by checking through the disposal records of the previous day. The non-complying material will be removed from the landfill and disposed of in an approved landfill site, such as Bonny Glen.

Council will institute a system of dealing with persons who attempt to hide other refuse with a load of cleanfill.

5.4.6 Special Waste Acceptance Control

All special wastes shall be disposed of by prior arrangement. The Council will develop and implement a procedure to ensure that special waste will not be accepted for disposal at the landfill without specific authorisation.



The procedure will incorporate the practice of requiring all special waste to be accompanied by a “*Waste Manifest Form*”. Applications for the disposal of special wastes shall be made to the Council, and not to the site contractor or weighbridge operator.

5.5 TIPPING

5.5.1 Access Roads

Access roads to the special waste trenches and current cleanfill disposal area shall be gravelled and maintained to provide all-weather access for two-wheel drive vehicles. Any crushed rock or excavated road metal arriving on site shall be used for maintaining the access road to the disposal areas.

5.5.2 Cleanfill Disposal Areas

The cleanfill disposal area will be relocated as remediation of different areas of the site is completed. The *Staged Development Plans* show four stages of remediation on the side slopes and five stages on top of the landfill. These stages require different amounts of cleanfill – some will take weeks to be completed, others may take months or even years.

When the side slopes are being remediated access to the place where the cleanfill is required may be restricted. Under such circumstances it may be appropriate from a safety point of view for the contractor to have the cleanfill dumped remote from the location where it is required. The contractor will then need to move the cleanfill to the desired location using earthmoving plant.

5.5.3 Special Waste Disposal Areas

Special waste shall be disposed of in trenches specially excavated for the purpose. These will be on top of the landfill and the location will change as the site becomes capped off with cleanfill. The *Staged Development Plans* attached in **Appendix A** shows where the trenches are to be located for each stage of the cleanfill development.

5.5.4 Tipping of Special Waste

Because of their potential to generate odours, special wastes shall be tipped into the trenches. However, a low barrier (e.g. old concrete electricity pole) shall be placed along the edge of the operative trench to prevent vehicles from backing into the trench. Any special wastes spilled at the top of the trench shall immediately be pushed into the trench and covered by the contractor.

5.5.5 Size of Cleanfill Face

The width of the working cleanfill face shall be limited to approximately 20 metres to minimise the exposed cleanfill surfaces. There shall be sufficient room for vehicles to unload and manoeuvre safely.

On the side slopes, cleanfill material shall be benched into the underlying waste to promote stability of the side slopes. The extent of area opened up shall be limited to ensure that the operations do not cause excessive objectionable odours.



5.6 COMPACTION

5.6.1 Method of Compaction

Cleanfill material shall be placed and compacted in an engineered manner to ensure integrity of the remediated side slopes and landfill cap.

Cleanfill shall be compacted in layers not exceeding 300mm in depth. Oversize materials greater than 200mm (e.g. large rocks or pieces of concrete) should either be broken up or should be mixed with fine materials to ensure that there are no voids within the completed fill layer.

Cleanfill materials that are too wet will not compact well. The contractor shall ensure that saturated materials are either set aside for compaction later, or are mixed up with drier, more porous materials, to allow compaction.

The method of compaction is up to the contractor but generally it will be expected that compaction of the fill can only be achieved if conventional earthmoving plant is used.

5.6.2 Degree of Compaction

Due to the non-homogeneous nature of cleanfill material compaction testing will be carried out by two methods:

- 1) For non-granular materials the contractor may prove that the compaction is adequate by carrying out Scala Penetrometer tests within the cleanfill material. The cleanfill shall be considered to be adequately compacted if it achieves a blow count of 3 or more per 100mm of penetration by the probe into the soil. A minimum of one Scala Penetrometer test shall be carried out for every 200m³ of compacted cleanfill.
- 2) Compaction of the cleanfill may also be checked by driving over the cleanfill with a loaded truck to observe the extent of rut formation and movement of the compacted fill. Such tests results shall be considered only if done in the presence of a Council officer and acceptance of such testing shall be at that officer's discretion. Such tests shall also be carried out for every 200m³ of compacted cleanfill.

5.7 COVER MATERIAL

5.7.1 Daily Cover Requirements

Daily cover shall be required for the following circumstances:

- Covering of grease trap and wastewater treatment plant screenings to a depth of 100mm as soon as is practicable after disposal of the wastes.
- Covering of animal carcasses to a depth of 1 metre immediately after disposal of the carcasses.
- Covering of all exposed refuse (e.g. from benching into the side slopes) to a depth of 100mm.



5.7.2 Final Cover Requirements

Given also the relative abundance of gravel material within the cleanfill currently being received on site and, conversely, the paucity of suitable clayey material, it is proposed that the capping be constructed of available clayey/silty cleanfill that has been set aside for the purpose. Where there is insufficient of this material, use shall be made of sandy, and then gravelly materials. Use shall not be made of concrete, bricks, glass etc. to construct the final capping layer.

However, the maximum size of materials used for the 600mm capping layer on top of the landfill should not exceed 100mm, and overall, the cleanfill should be well graded (i.e. it should not be single size material).

The 600mm layer shall be covered with a 100mm thick layer of topsoil suitable for establishing a good cover of grass vegetation.

5.7.3 Stockpiling of Cover Material

Where possible, low permeability material (clay, silts, and fine sands) shall be set aside for use in the capping layer.

In addition, any topsoil material shall also be set aside for placement over the capping layer.

5.7.4 Vegetation

Grass vegetation shall be established on the landfill top and side slopes by sowing grass seeds following the capping of landfill top and finished slopes.

5.8 CONTROL OF NUISANCES

5.8.1 Noise

All plant and equipment used on the site shall be appropriately muffled to ensure the noise standards determined by the district plan are met and that they comply with the manufacturer's requirements.

5.8.2 Odour

The contractor shall cover all exposed wastes to control objectionable odours. Special wastes and biosolids shall be covered immediately.

The excavation of existing refuse will be minimised. Excavated refuse will be covered by the end of the work day.

5.8.3 Dust

Cleanfill and special waste disposal activities shall not generate dust at or beyond the boundary of the landfill site.

A water cart shall be used to control dust where dust is found to be a nuisance.



5.8.4 Vermin

All waste excavated from trenches to be used for the disposal of special wastes shall be covered immediately with soil cover.

All special waste shall be covered daily after dumping in trenches.

The Council shall arrange for measures to be adopted to control infestations of insects or vermin, should they occur. This may include implementing a poison programme to eradicate rodents should there be significant evidence of rodents on the site.

If birdlife attracted solely by the disposal operations causes significant adverse effect then measures shall be taken to repel it. This may include shooting and displaying of gulls or the use of a bird-scarer.

5.9 MONITORING

5.9.1 Groundwater and Surface Water

It is proposed that the existing monitoring regime under the existing landfill consent be continued whilst cleanfill and special waste is disposed of at the site.

Once disposal operations cease, monitoring of groundwater and surface water shall comply with new resource consent conditions.

5.9.2 Landfill Gas

As the landfill is progressively remediated with cleanfill the site should be visually monitored at quarterly intervals for elevated landfill gas emissions. These can be identified by:

- areas of distressed vegetation
- evidence of cracked capping
- discernible odours.

5.9.3 Records of Refuse Quantities

The following records shall be kept and shall be reported on annually:

- Records of the volumes and nature of any special waste (animal carcasses, wastewater treatment plant screenings, or grease trap wastes, asbestos, pig wastes) buried at the landfill.
- The total volume of cleanfill disposed at the site and vehicle numbers.

5.9.4 Complaints

A record shall be made of all complaints received on the site and a copy of these shall be forwarded to the Regional Council each year.

5.9.5 Reporting

While the cleanfill is in operation annual reporting shall cover the items listed in Section 3.9 of this *Plan*.



5.10 EMERGENCY PROCEDURES

5.10.1 Fire

No fires are permitted at the site. All reasonable precautions shall be undertaken to prevent the outbreak of fires. In the event of a fire developing within the landfill, it shall be immediately extinguished by appropriate methods, including the use of earthmoving equipment. In addition the Fire Service shall be notified immediately.

Following any such fire the contractor shall make a report on the cause of the fire and review procedures to reduce the possibility of a recurrence. Any incidents shall be included in the annual report.

5.10.2 Landfill Gas

Personnel shall not use naked flames on the site, nor shall smoking be permitted. Standard procedures shall include precautions prior to entering any hole or other facility to which landfill gas could migrate readily. Any structure which may concentrate landfill gas will be capped and sealed.

The contractor shall liaise with Emergency Services to ensure that the dangers of landfill gas are understood and that suitable equipment and procedures are available.

5.10.3 First Aid

During site operations, maintenance, inspections and monitoring, all plant and vehicles on site shall have a well-stocked first aid kit. All site operators shall have a current first aid certificate.

5.10.4 Leachate Breakout

In the unlikely event that leachate break out occurs it should be contained by constructing an earth dam wall downgrade of the break out. The break out should then be repaired by resealing the capping layer and reinstating the vegetation layer.

The collected leachate should be pumped into a tanker and transferred to the top of the landfill where it may be disposed of into the special waste trenches. After dealing with the leachate break out the earth dam wall should be removed and the landfill surface reinstated.

5.10.5 Emergency Contacts

In the event of an emergency first aid will be administered on site and the following emergency services should be contacted as appropriate:

Fire Service/Ambulance/Police	111
Masterton Hospital	370 1268
OSH (Labour Department)	0800 20 90 20 04 566 8962
Local Authority (MDC)	370 6300



6. REINSTATEMENT

6.1 FINAL LANDFORM

The *Staged Development Plans* attached in **Appendix A** show the intended final landform.

6.2 CLOSURE AND AFTERCARE

Following the final capping of the landfill the site will be closed. It is intended at the moment this plan is written that the closed landfill site will be used as a reserve. However, part or all of the landfill site may be developed into a tree plantation for carbon sequencing in the future.

Aftercare of the closed landfill site will include monitoring of stormwater and leachate activities as well as surface and groundwater sampling. Site inspections and maintenance will be focusing on capping integrity and site stability.



APPENDIX A - STAGED DEVELOPMENT PLANS



BOME HOLE LEVELS		
DATE #	TOP OF CURBS IN	GROUND LEVEL IN
B1	94.81	94.8
B2	94.8	94.8
B3	94.8	94.8
B4	94.81	94.81
B5	94.8	94.8
B6	94.8	94.8

HEIGHTS DERIVED FROM WASTERTON DISTRICT COUNCIL 101 LEVELS



NOT FOR CONSTRUCTION

CLIENT	WASTERTON DISTRICT COUNCIL
PROJECT	WASTERTON LANDFILL CLEANUP PROJECT
DATE	24/01/2006
SCALE	SCALE BAR 5000
NO.	007311 03
REV.	01
STATUS	PRELIMINARY

PROJECT	DESIGNER	DATE
WASTERTON DISTRICT COUNCIL	MWH	24/01/2006
APPROVED	DESIGNED	CHECKED
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TITLE	DATE	BY
PROPOSED WATER STATION AND RECYCLING AREA	24/01/2006	...

TABLES : TABLES 1 TO 10
REVISED : NONE
DATE : 27/01/03
NO. : 27/01/03

APPENDICES

LEGEND
 DIMENSIONS AND LEVELS SHOWN
 UNLESS NOTED OTHERWISE



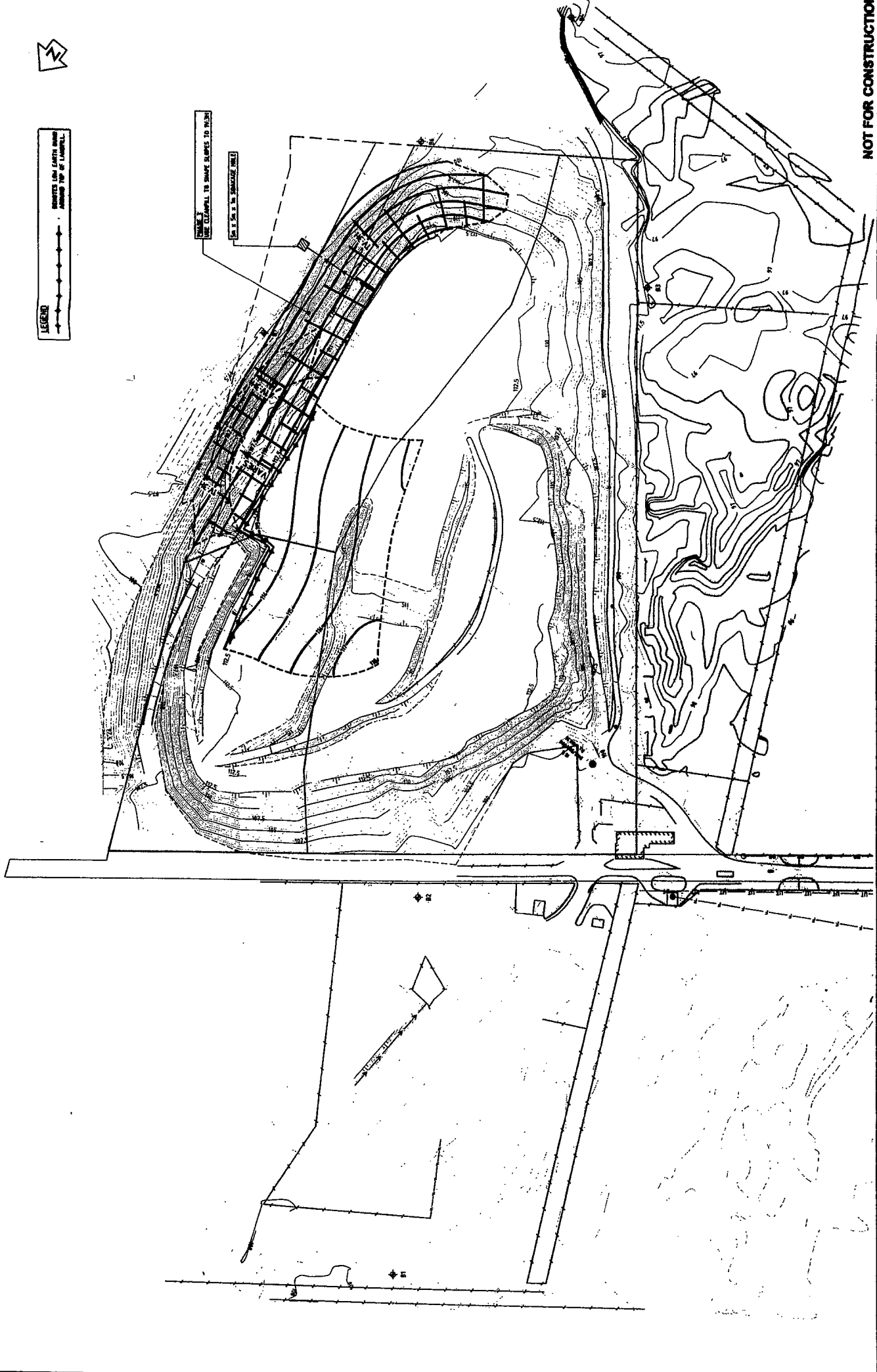
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MASTERTON DISTRICT COUNCIL		PRELIMINARY													
MASTERTON LANDFILL		24/01/2008													
STAGED DEVELOPMENT PLANS		DATE: 02/02/08													
PHASE 2		SCALE: 1:500													
MWH		PROJECT NO: 007311 03													
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<p>NOTES</p> <p>1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.</p> <p>2. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSENTS AND APPROVALS.</p> <p>3. THIS PLAN IS A PRELIMINARY DESIGN AND IS NOT TO BE USED FOR CONSTRUCTION.</p>															

LEGEND
 INDICATES LOW EARTH BAND
 AROUND TOP OF LAMPFILL

NOTE: THE CLEANFILL IS SHOWN BELIEVED TO BE 10.5'

SEE PLAN 10.5' TO BE REMOVED FROM



NOT FOR CONSTRUCTION
 PRELIMINARY
 2/24/12/2008
 SCALES (AS SHOWN)
 007311 03 03 B

HASTERTON DISTRICT COUNCIL
 HASTERTON LAMPFILL
 CLEANFILL PROJECT
 STAGED DEVELOPMENT PLANS
 PHASE 3



REFERENCE	DATE	BY
DESIGNED	12/10/07	PC
ENGINNERED	12/10/07	PC
DRAWN	12/10/07	PC
CHECKED		
APPROVED		

NO.	DATE	BY	REVISION

TITLEBLOCK : 007311 / 007311_03-04.dwg
 DESIGNED : PAUL RYAN
 ENGINNERED : PAUL RYAN
 DRAWN : PAUL RYAN
 CHECKED : PAUL RYAN
 APPROVED : PAUL RYAN

LEGEND
 ▬ DEOTES LOW EARTH BAND
 ○ AROUND TOP OF LANDFILL



NOT FOR CONSTRUCTION

PRELIMINARY			
Project No.	240712006		
Scale	ASB	EMWL	ASB 1:2500
File No.	007311_03	04	B

MASTERTON DISTRICT COUNCIL
 MASTERTON LANDFILL
 CLEANFILL PROJECT



STAGED DEVELOPMENT PLANS
 PHASE 4

FIELD/BOOK	REVISED	DATE	DESCRIPTION

TAB/DATE: Layout / MWT14_03-14-04
 SURVEYED: PAUL RYAN
 DESIGNED: KZTL JB
 DRAWN: KZTL JB
 CHECKED: KZTL JB
 APPROVED: KZTL JB

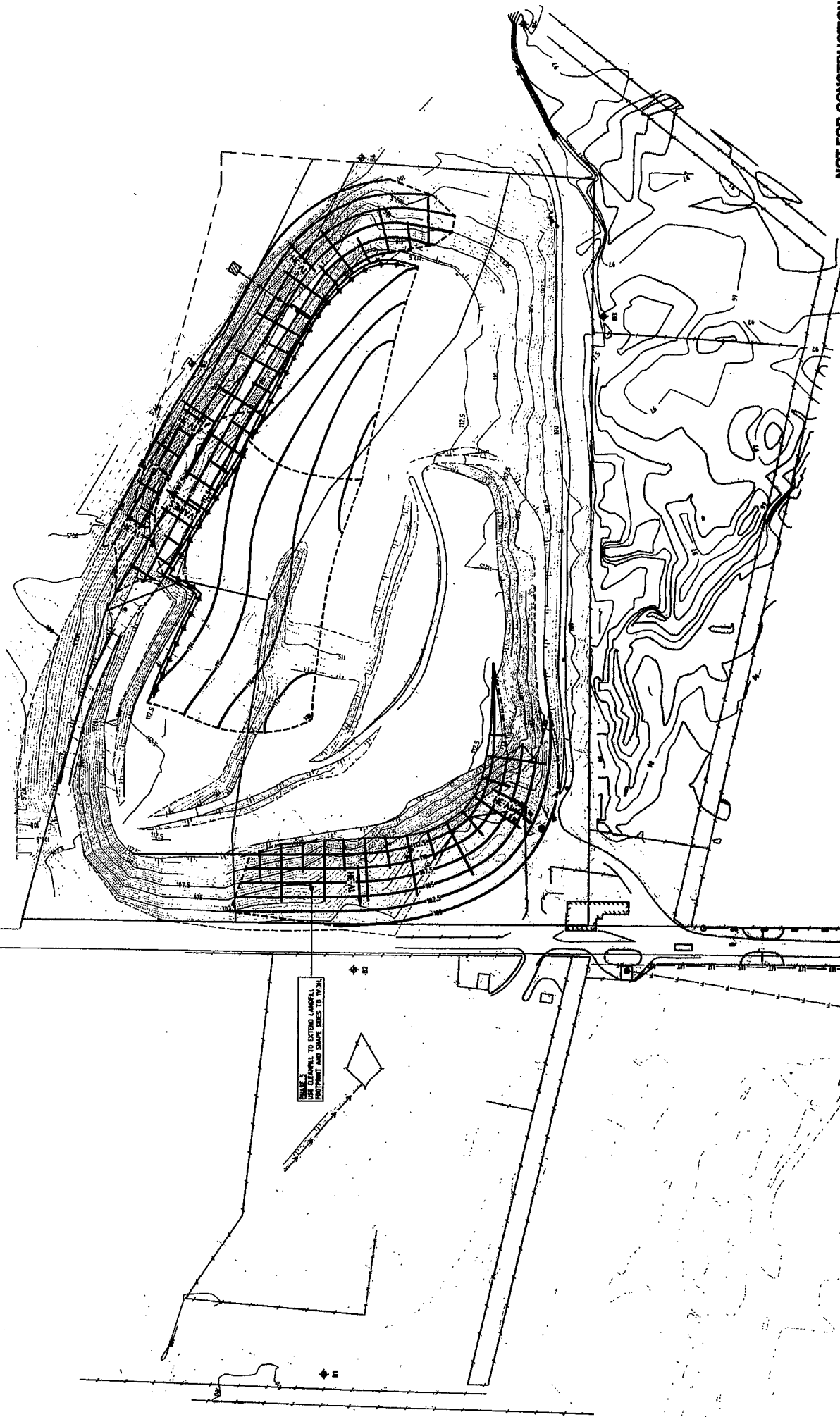
These drawings shall not be used for the purposes for which they were prepared and no liability shall be accepted for any errors or omissions, in whole or in part, in any drawings or plans prepared by MWH NZ Ltd.

REVISIONS	DATE	INITIALS	DATE	APPROVED



LEGEND

— (solid line)	PROPERTY AND SURVEY BOUNDARIES
- - - (dashed line)	ROAD CENTERLINE
— (thick solid line)	STAGE 5 DEVELOPMENT PLAN
— (thin solid line)	STAGE 5 DEVELOPMENT PLAN
— (dotted line)	STAGE 5 DEVELOPMENT PLAN
— (cross-hatched)	STAGE 5 DEVELOPMENT PLAN



PHASE 5 DEVELOPMENT PLAN TO EXTEND LANSHELL
 (MATTING AND DAMP BODIES TO BURN)

ORIGINAL SIZE A1 1:1
 NOT SCALE - 1" = 600 FT. (AS SHOWN)

NOT FOR CONSTRUCTION

MATTERS DISTRICT COUNCIL MATTERS LANDFILL CLEARFILL PROJECT		PRELIMINARY	
DATE: 24/01/2006		DATE: 24/01/2006	
SCALE: (AS SHOWN)		SCALE: (AS SHOWN)	
PROJECT NO: 007311 03		PROJECT NO: 05	
REVISION: 01		REVISION: B	

MWH

STAGED DEVELOPMENT PLANS
PHASE 5

DATE	REVISION	APPROVED

PREPARED BY: ENGINEER / 007311_03-05-06
DESIGNED BY: PAUL WYB...
CHECKED BY: JEFF...
APPROVED BY: ...

LEGEND: LANSHELL / 007311_03-05-06
 DATE: 24/01/2006
 SCALE: (AS SHOWN)

REVISIONS:
 REVISION NO. DESCRIPTION DATE
 01 ... 05/01/06

NOTICE: THESE PLANS ARE FOR INFORMATION ONLY AND NOT FOR CONSTRUCTION. ANY CHANGES TO THE PLAN SHALL BE THE RESPONSIBILITY OF THE CLIENT.

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LEGEND
--- DENOTES LOW EARTH BAND
--- AROUND TOP OF DRAINAGE



NOT FOR CONSTRUCTION

MASTERION DISTRICT COUNCIL
MASTERION LANDFILL
CLEANUP PROJECT
STAGED DEVELOPMENT PLANS
PHASE 6



REVISION	DATE	BY	CHKD	APP'D

TABLING - Layout / 07/21/03
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NO.	DATE	BY	CHKD	APP'D

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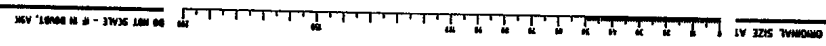
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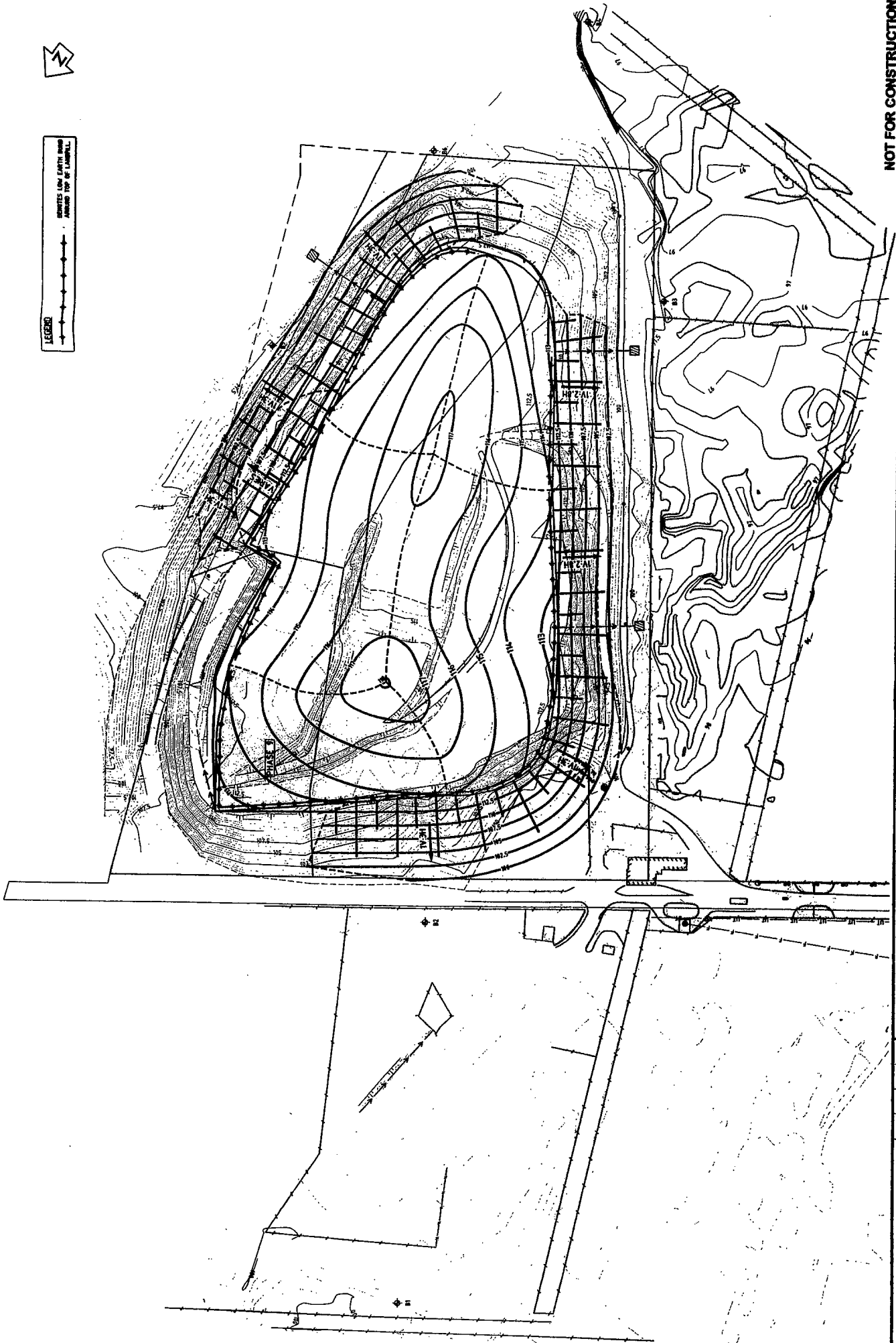
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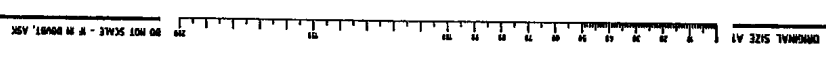
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LEGEND
 → INDICATES LOW EARTH BAND
 → AROUND TOP OF LANDFILL



<p>NOT FOR CONSTRUCTION</p>		
<p>PRELIMINARY</p>		
<p>2400120006</p>		
<p>SCALE 1/4" = 1'-0"</p>	<p>DATE 09/09/09</p>	<p>BY B</p>
<p>MWH</p>		
<p>HASTERTON DISTRICT COUNCIL HASTERTON LANDFILL CLEANFILL PROJECT STAGED DEVELOPMENT PLANS PHASE 9</p>		
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<p>LANDFILL: SURVEY OF AREA, 03-04-05 SURVEY: PUBLIC UTILITIES SHEETS: STPWL 01 through STPWL 03</p>		
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Masterton District Council

Nursery Road Solid Waste Management Site

Composting Operation Management Plan

16 February 2009



Quality Assurance Schedule			
Report Status:	Final		
Author:	JL	Date: 12/02/2009	Signature:
Reviewed by:	WG	Date: 13/02/2009	Signature:
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1. INTRODUCTION

1.1 BACKGROUND

The Masterton District Council is committed to waste minimization. Composting of suitable green waste material is part of the waste diversion measure to reduce amount of solid wastes to be landfilled.

Composting of green waste in Masterton started in 1948. Masterton is believed to be the first town in the world to have its green waste fully composted. Composting ceased in 1962, and was reinstated in 1993.

A resource consent application has been made to the Greater Wellington Regional Council for the composting operation as part of the overall resource consent of the solid waste operations at the Nursery Road site.

This *Composting Operation Management Plan* ("Plan") sets out requirements and detailed information to ensure successful operation and minimal effects on the environment.

1.2 SUPPORTING INFORMATION

This *Composting Operation Management Plan* should be read in conjunction with previously lodged applications and supporting information for composting resource consent and the newly submitted information including:

- *Masterton Nursery Road Operation – Assessment of Environmental Effects; February 2009*

1.3 RESOURCE CONSENTS

Composting operations are classed as a *Permitted Activity* in Rule 20 of the *Regional Plan for Discharges to Land for the Wellington Region*, provided the conditions specified under Rule 20 is satisfied. However, give the Nursery Road site composting operation accepts composting material from outside the property it is considered consent is required for its operation.

Resource consent has been applied for included the following:

- **Discharge permit (contaminants to land) to discharge percolate produced by composting windrows to land, although this material is collected and discharged to the MDC sewer system**
- **Discharge Permit (contaminants to air) discharge of dust, gas and odours to air.**

This *Composting Operation Management Plan* sets out how such a Composting operation will be operated and managed.



Note this *Composting Operation Management Plan* may be amended according to new resource consent conditions following the granting of the new resource consent or review of resource consent conditions.

1.4 DEFINITIONS

This *Composting Operation Management Plan* is referred to as the “*Plan*”.

The term “Council” used in this *Plan* means the Masterton District Council.

The term “Regional Council” used in this *Plan* means the Greater Wellington Regional Council.

The term “Site” refers to that land where composting operations had taken place and is currently taking place.

The term “Contractor” used in this *Plan* means the composting contractor.

The term “Act” refers to the Resource Management Act.



2. COMPOSTING MANAGEMENT PLAN OBJECTIVES

This management plan is aimed at achieving the following objectives:

- Maximise diversion from landfill.
- Sustainable re-use of green waste.
- Maximise compost quality/quantity produced.
- Cost effective & convenient solution for the public.
- Environmental acceptable operation.
- Demonstrate environmental acceptable operation to public.
- Control & contain stormwater, leachate, odour, dust, and vermin.
- Safe to the public and operator.
- Availability of compost for public, parks etc.
- Collect proportion of operating cost in line with Council policy.



3. MANAGEMENT

3.1 MANAGEMENT STRUCTURE

The Masterton District Council has responsibility for the site.

3.2 OPERATIONS CONTRACT

Currently the composting operation is undertaken by a contractor on a contract. It is intended that the future composting operations will be part of a global contract for the whole Nursery Road solid wastes management operations.

3.3 RIGHT OF ACCESS

General public access to the Composting operations shall not be permitted.

Access may be permitted for:

- all heavy commercial vehicles carrying acceptable material approved by the Council.
- all cars, utes and trailers carrying acceptable material that have been inspected and admitted by the weighbridge operator.
- vehicles under the operational control of the Council (or its authorised contractors) carrying acceptable material and vehicles involved in site operations.
- vehicles carrying visitor(s) by prior arrangement with Council and/or contractor.
- Vehicles coming to purchase composting products.
- inspection by interested parties, by prior arrangement.

3.4 OPERATING HOURS

Access to the facilities at Nursery Road is controlled at the entry kiosk and admitted vehicles are directed to the appropriate facility.

Presently the site is open from 08:00 to 17:00 every day of the year except Christmas Day, New Years Day and Good Friday.

In some cases special arrangements may be made to receive acceptable materials outside of the normal operating hours.

The operating hours may be changed by the Council.

3.5 COMPOSTING OPERATIONS

The weighbridge operator(s), appointed under the *MDC Transfer Station Operations Contract*, shall be responsible for controlling admission to the Composting disposal area.

The Council will solicit contracts of the operation of the Composting. This contractor will be responsible for implementing the *Composting Operation Management Plan*.



The Composting operator will have the following general duties:

- Receiving and inspection of green waste and other suitable composting material.
- Interception of non-suitable materials and their disposal.
- Stockpiling of suitable composting material.
- Shaping and turning of windrows.
- Screening and storage of products.
- Marketing and selling of compost products and other associated by-products (such as firewood).
- Maintaining all signs and barricades in good working order.
- Maintenance of on site drainage facilities.
- Other housekeeping duties to maintain the tidiness of the site.

3.6 TRAINING

The requirements for training of staff shall be specified in new contracts. In general this should involve on-going training of at least one day per year, on or off site. Initial training requirements will depend on the operation.

Training of all staff shall include basic first aid, liaison with Emergency Services and emergency procedures.

Special attention shall be given to compliance with the Occupational Health and Safety Act and to training staff in the screening procedures for incoming wastes to ensure that they are acceptable for composting.

3.7 GENERAL DUTIES

The weighbridge and composting operator will have the following general duties:

- Controlling access to the composting at the entry kiosk.
- Inspecting all loads of waste intended for composting and admitting only those that meet the waste acceptance criteria (see Section 5).
- Inspecting the composting area daily and ensuring that no waste other than composting material is being deposited at the site.
- Reporting cases of incorrect disposal to Council and assisting it to trace the offending disposer by searching through records and transactions.

3.8 OCCUPATIONAL SAFETY AND HEALTH

The contractor has responsibility for the OSH requirements. The composting contractor shall draw up a *Health & Safety Plan* to address risks and issues that could arise on site as a result of the past and ongoing composting operations. The *Health and Safety Plan* shall meet the approval of Council and shall cover, inter alia, the following aspects:

- Site Safety Equipment



- Training
- Protective clothing
- First aid equipment
- Washing facilities
- Precautionary Procedures
 - Hygiene
 - Decontamination
- Accident Reporting
- First Aid
- Emergency contacts
- Hazard identification

3.9 MONITORING AND REPORTING

The contractor shall monitor gas, dust and odour emission from the composting yard, especially following windrow turning operations. The contractor shall monitor water level in the leachate pond and ensure leachate drainage into the Council's sewerage is not hampered. Should the contractor notice anything abnormal, such as high water levels in the leachate detention pond, or pump failed to operate, the Council must be notified immediately. The Council will then work with the contractor to identify cause(s) to the problem and undertake corrective actions.

Note the current and proposed arrangement for the compliance monitoring to resource consent conditions is that Council's environmental health officer is responsible for the scheduled monitoring.



4. COMPOSTING SITE DEVELOPMENT

4.1 COMPOSTING PRODUCTION

Green waste acceptance, composting windrows, compost screening, product storage and retailing areas are well established at the composting yard.

Facilities within the composting yard area had been maintained by the Council and the contractor to date. The boundary fence sets out the current and intended composting operational area and shall not be altered without approval by the Council.

Should future demand to expand the composting area happen, the Council will work with the contractor to develop any required facilities.

4.2 STORMWATER AND LEACHATE DISPOSAL

The composting yard is compacted and shaped to facilitate stormwater runoff to be collected by the perimeter drain and disposed off to the Council's sewerage network via the leachate detention pond.

The existing set up is considered adequate for the composting operations to date.



5. COMPOSTING SITE OPERATIONS

5.1 RECEPTION OF COMPOSTING MATERIALS

Materials acceptable for composting include green wastes such as grass clipping, tree pruning and non-sprayed weeds, as well as untreated wood shavings and sawdust.

The contractor shall work with the kiosk operator to ensure loads intended for composting are inspected and non-confirming loads and material is diverted to the transfer station or the landfill.

The contractor shall manage the compost reception area to prevent non-complying material from offloaded in the composting yard.

5.2 SIGNS

The Council will provide suitable signs to clearly direct vehicles to the drop off areas for composting, cleanfill, recycling and refuses.

The composting contractor shall help to maintain the signs in its operational area.

5.3 STOCKPILING OF COMPOSTABLE MATERIALS

Non-suitable materials shall not be accepted in the compost yard. The composting contractor shall supervise customers to prevent non-suitable material from being deposited in the green waste acceptance area.

Should certain materials deposited in the green waste acceptance area be considered not suitable for composting, e.g. big tree branches, they shall be removed from the green waste stockpile and disposed accordingly, i.e. wood to firewood, and rubbish to transfer station.

5.4 WINDROW, SCREENING, STORAGE AND SELLING OF COMPOST

Requirements as set out in the current and future composting contract on these processes shall be followed. In particular

- The windrows shall be turned at least once a month.
- Correct moisture and nutrient balance shall be maintained to sustain composting process and prevent odour.
- Dust, odour, and other discharge to air shall be minimised so that resource consent conditions is complied with.
- Wind-blown litter shall be prevented.
- Site maintenance and operation shall be to a standard that customer/visitor access is not hampered.
- Product is stored and marketed properly so that excessive stockpiling is avoided.



5.4.1 Compost Testing Requirements

The contractor is responsible to ensure proper testing is undertaken to ensure marketable product is produced.

5.5 FLY DUMPING

The composting contractor shall put measures in place to prevent fly dumping of non-compostable material in the composting yard area. The contractor is responsible for the disposal of any non-complying material at its own cost.

5.6 CONTROL OF NUISANCES

5.6.1 Noise

All plant and equipment used on the site shall be appropriately muffled to ensure the noise standards determined by the district plan are met and that they comply with the manufacturer's requirements.

5.6.2 Odour

The contractor shall prevent odour emission during all composting operations so that no objectionable odour is detectable beyond the property boundary.

5.6.3 Dust

Composting activities shall not generate dust at or beyond the boundary of the Nursery road site.

A water cart and hose shall be used to control dust where dust is found to be a nuisance.

5.6.4 Vermin

The contractor in consultation with Council shall arrange for measures to be adopted to control infestations of insects or vermin, should they occur. This may include implementing a poison programme to eradicate rodents should there be significant evidence of rodents on the site.

If birdlife attracted solely by the composting operations causes significant adverse effect then measures shall be taken to repel it. This may include shooting and displaying of gulls or the use of a bird-scarer.



5.7 MONITORING AND REPORTING

5.7.1 Air, Groundwater and Surface Water Monitoring

It is proposed that the existing monitoring regime under the existing landfill consent be continued whilst composting and cleanfill operations are continued at the site.

Once disposal operations cease, monitoring of groundwater and surface water shall comply with new resource consent conditions.

Note the current arrangement for resource consent monitoring is that Council's environmental health officers monitor the whole Nursery Road site, and annual report is submitted to the Regional Council.

5.7.2 Records of Compost Quantities

Records shall be kept by the contractor and reported monthly to the Council according to current and future contract specifications. In particular the following shall be included in the monthly compost report:

- compost sold
- other value added product sold
- special waste composted
- windrow turning frequency
- volume of woody material achieved
- volume of green waste accepted
- tonnage of discarded waste before and after screening

5.7.3 Complaints

A record shall be made of all complaints received on the site and a copy of these shall be forwarded to the Regional Council each year by the Council.

5.7.4 Reporting

The contractor shall undertake monitoring and reporting as required under the composting contract, as well as general monitoring of the composting site as outlined in Section 3.9. While composting is in operation annual reporting by Council shall cover the items listed in resource consent conditions.

5.8 EMERGENCY PROCEDURES

5.8.1 Fire

No fires are permitted at the site. All reasonable precautions shall be undertaken to prevent the outbreak of fires. In the event of a fire developing within the compost yard, it shall be



immediately extinguished by appropriate methods, including the use of earthmoving equipment. In addition the Fire Service shall be notified immediately.

Following any such fire the contractor shall make a report on the cause of the fire and review procedures to reduce the possibility of a recurrence. Any incidents shall be included in the monthly report to Council.

5.8.2 First Aid

During site operations, maintenance, inspections and monitoring, all plant and vehicles on site shall have a well-stocked first aid kit. All site operators shall have a current first aid certificate.

5.8.3 Emergency Contacts

In the event of an emergency first aid will be administered on site and the following emergency services should be contacted as appropriate:

Fire Service/Ambulance/Police	111
Masterton Hospital	370 1268
OSH (Labour Department)	0800 20 90 20 04 566 8962
Local Authority (MDC)	370 6300



Masterton District Council

**Nursery Road Solid Waste Management Site
Transfer Station Operation Management Plan**

16 February 2009



Quality Assurance Schedule			
Report Status:	Final		
Author:	JL	Date: 12/02/2009	Signature:
Reviewed by:	WG	Date: 13/02/2009	Signature:
Approved for Issue by:	DH	Date: 16/02/2009	Signature:

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1. INTRODUCTION

1.1 BACKGROUND

The Masterton District Council is committed to waste minimization. Transfer of municipal solid wastes is part of the solid waste management measures to provide a service to the public and businesses and keep the environmental effects of solid waste to minimal.

Following the expiry of the existing landfill consent, a resource consent application has been made to the Greater Wellington Regional Council for the Transfer Station operation as part of the overall resource consent of the solid waste operations at the Nursery Road site.

This *Transfer Station Operation Management Plan* (“Plan”) sets out requirements and detailed information to ensure successful operation and minimal effects on the environment.

1.2 SUPPORTING INFORMATION

This *Transfer Station Operation Management Plan* should be read in conjunction with previously lodged applications and supporting information for resource consent and the newly submitted information including:

- *Masterton Nursery Road Operation – Assessment of Environmental Effects; February 2009*

1.3 RESOURCE CONSENTS

Transfer Station operations are classed as a *Discretionary Activity* in Rule 23 of the *Regional Air Quality Management Plan*, because it involves the acceptance and transfer of solid wastes from outside the properties.

Resource consent has been applied for included the following:

- **Discharge Permit (contaminants to air) to discharge of dust and odours to air.**

This *Transfer Station Operation Management Plan* sets out how such a transfer station operation will be operated and managed to ensure resource consent conditions are complied with.

Note this *Transfer Station Operation Management Plan* may be amended according to new resource consent conditions following the granting of the new resource consent or future review of resource consent conditions.

1.4 DEFINITIONS

This *Transfer Station Operation Management Plan* is referred to as the “Plan”.

The term “Council” used in this *Plan* means the Masterton District Council.



The term “Regional Council” used in this *Plan* means the Greater Wellington Regional Council.

The term “Site” refers to that land where transfer station operations had taken place and is currently taking place.

The term “Contractor” used in this *Plan* means the transfer station operator or contractor.

The term “Act” refers to the Resource Management Act.



2. TRANSFER STATION MANAGEMENT PLAN OBJECTIVES

This management plan is aimed at achieving the following objectives:

- Ensure all residue wastes are safely disposed of in an appropriate facility.
- Maximise existing resource use efficiency.
- Minimise, remedy and mitigate adverse effects on the environment and human health from the inappropriate disposal of residual liquid and solid wastes.
- The potential for any accidental or unanticipated effects to arise as a result of the use, storage, transportation and disposal of hazardous substances is minimised.
- Cost effective & convenient solution for the public.
- Environmental acceptable operation.
- Demonstrate environmentally acceptable operation to public.
- Control & contain stormwater, leachate, odour, dust, litter, noise and vermin.
- Safe to the public and operator.
- Collect proportion of operating cost in line with Council policy.



3. MANAGEMENT

3.1 MANAGEMENT STRUCTURE

The Masterton District Council has responsibility for the site.

3.2 OPERATIONS CONTRACT

Currently the transfer station operation is undertaken by a contractor under a contract. It is intended that the future transfer station operations will be part of a global contract for the whole Nursery Road solid wastes management operations.

3.3 RIGHT OF ACCESS

General public access to the transfer station operations shall not be permitted.

Access may be permitted for:

- all heavy commercial vehicles carrying acceptable material approved by the Council.
- all cars, utes and trailers carrying acceptable material that have been inspected and admitted by the weighbridge operator.
- vehicles under the operational control of the Council (or its authorised contractors) carrying acceptable material and vehicles involved in site operations.
- vehicles carrying visitor(s) by prior arrangement with Council and/or contractor.
- inspection by interested parties, by prior arrangement.

3.4 OPERATING HOURS

Access to the facilities at Nursery Road is controlled at the entry kiosk and admitted vehicles are directed to the appropriate facility.

Presently the site is open from 08:00 to 17:00 every day of the year except Christmas Day, New Years Day and Good Friday.

In some cases special arrangements may be made to receive acceptable materials outside of the normal operating hours.

The operating hours may be changed by the Council.

3.5 TRANSFER STATION OPERATIONS

The weighbridge operator(s), appointed under the MDC *Transfer Station Operations Contract*, shall be responsible for controlling admission to the transfer station disposal area.

The Council will solicit contracts of the operation of the transfer station. This contractor will be responsible for implementing the *Transfer Station Operation Management Plan*.

The transfer station operator will have the following general duties:

- Receiving and inspection of waste at the transfer station.



- Interception of non-suitable materials and their disposal.
- Pushing the waste pile to ensure sufficient space on the transfer station pushpit for commercial vehicle to offload.
- Loading waste to the transfer trucks.
- Identifying and intercepting non-complying materials such as dangerous materials.
- Maintaining all signs and barricades in good working order.
- Maintenance of on site drainage facilities.
- Monitoring and picking of litters blown by wind out of transfer station.
- Other housekeeping duties to maintain the tidiness of the site.

3.6 TRAINING

The requirements for training of staff shall be specified in new contracts. In general this should involve on-going training of at least one day per year, on or off site. Initial training requirements will depend on the operation.

Training of all staff shall include basic first aid, liaison with Emergency Services and emergency procedures.

Special attention shall be given to compliance with the Occupational Health and Safety Act and to training staff in the screening procedures for incoming wastes to ensure that they are acceptable for transfer station.

3.7 GENERAL DUTIES

The weighbridge and transfer station operator will have the following general duties:

- Controlling access to the transfer station at the entry kiosk.
- Inspecting all loads of waste intended for transfer station and admitting only those that meet the waste acceptance criteria (see Section 5). Recyclable material shall be directed to the recycling centre, while compostable material shall be directed to the composting yard.
- Inspecting the transfer station area daily and ensuring that no non-complying waste is being deposited at the site.
- Reporting cases of incorrect disposal to Council and assisting it to trace the offending disposer by searching through records and transactions.

3.8 OCCUPATIONAL SAFETY AND HEALTH

The contractor has responsibility for the OSH requirements. The transfer station contractor shall draw up a *Health & Safety Plan* to address risks and issues that could arise on site as a result of the past and ongoing transfer station operations. The *Health and Safety Plan* shall meet the approval of Council and shall cover, inter alia, the following aspects:

- Site Safety Equipment
 - Training
 - Protective clothing
 - First aid equipment
 - Washing facilities
- Precautionary Procedures



- Hygiene
- Decontamination
- Accident Reporting
- First Aid
- Emergency contacts
- Hazard identification

3.9 MONITORING AND REPORTING

The contractor shall monitor dust and odour emission from the transfer station, especially during and following offloading and loading operations. The contractor shall monitor wind blown litter from the transfer station and undertake picking as necessary. The contractor shall monitor the stormwater and leachate pump operation and report to council should there be a problems with the pump operation.

Note the current and proposed arrangement for the compliance monitoring to resource consent conditions is that Council's environmental health officer is responsible for the scheduled monitoring.



4. TRANSFER STATION SITE DEVELOPMENT

4.1 TRANSFER STATION FENCING

Further fencing around the transfer station is intended by Council. The transfer station contractor shall cooperate with Council in setting up efficient fencing for litter control.

4.2 PLANTING AROUND THE TRANSFER STATION

The transfer station operator may be assigned the task of watering the planted trees in the future.



5. TRANSFER STATION SITE OPERATIONS

5.1 RECEPTION OF SOLID WASTE MATERIALS

Materials acceptable for transfer station include domestic rubbish and building and demolition materials.

The transfer station operator shall work with the kiosk operator to ensure loads intended for transfer station are inspected and non-confirming loads and material is diverted to other parts of the solid waste operations, i.e. green waste and compostable material to the composting yard, all recyclable materials to the recycling centre, cleanfills to the landfill top, and hazardous material to be deposited in the designated location(s).

The contractor shall monitor the drop off area to prevent non-complying material (such as hot ashes) from offloading into the transfer station.

5.2 SIGNS

The Council will provide suitable signs to clearly direct vehicles to the drop off areas for composting, cleanfill, recycling and refuses.

The transfer station contractor shall help to maintain the signs within its operational area.

5.3 STOCKPILING OF WASTES IN THE PUSH PIT

The transfer station operator shall supervise customers to prevent non-complying material from being deposited in the waste acceptance area.

Should certain materials deposited in the transfer station be considered not complying, e.g. gas cylinders, they shall be removed from the stockpile and disposed accordingly, i.e. gas cylinder to hazardous good storage shed.

The transfer station contractor shall maintain the size of the waste pile to ensure sufficient space for commercial vehicles to offload their waste. The waste pile shall be kept as low as practicable to minimise potential for wind-blown litter.

When loading the waste into the transfer trucks, the contractor shall operate in such a way that older wastes is loaded first, to minimise waste stay on the transfer station pushpit, to minimise odour potential.

Care shall be taken to ensure wind-blown litter is minimised.

5.4 FLY DUMPING

The transfer station contractor shall put measures in place to prevent fly dumping of non-complying material in the transfer station. The contractor is responsible for the disposal of any non-complying material at its own cost.



5.5 CONTROL OF NUISANCES

5.5.1 Noise

All plant and equipment used on the site shall be appropriately muffled to ensure the noise standards determined by the district plan are met and that they comply with the manufacturer's requirements.

5.5.2 Odour

The contractor shall minimise odour emission during all transfer station operations so that no objectionable odour is detectable beyond the property boundary. Refer to stockpile management in Section 5.3.

5.5.3 Dust

Transfer station activities shall not generate dust at or beyond the boundary of the Nursery Road site.

The washdown hose shall be used to control dust where dust is found to be a nuisance.

5.5.4 Vermin

The contractor in consultation with Council shall arrange for measures to be adopted to control infestations of insects or vermin, should they occur. This may include implementing a poison programme to eradicate rodents should there be significant evidence of rodents on the site.

If birdlife attracted solely by the transfer station operations causes significant adverse effect then measures shall be taken to repel it. This may include shooting or the use of a bird-scarer.

5.5.5 Litter

Wind-blown litter may become a problem during and after windy conditions, especially during the spring equinoxial windy season. The transfer station contractor shall take all measures to minimise the potential for wind-blown litter. During the windy season, litter shall be picked around the transfer station on a daily basis, and during calmer seasons, litter shall be picked at least every week.

5.6 MONITORING AND REPORTING

5.6.1 Operational and Resource Consent Monitoring

The contractor shall undertake all monitoring required under the solid waste transfer contract.

Note the current arrangement for resource consent monitoring is that Council's environmental health officers monitor the whole Nursery Road site, and annual report is submitted to the Regional Council.



5.6.2 Complaints

A record shall be made of all complaints received on the site and a copy of these shall be forwarded to the Masterton District Council as soon as practicable. A complaints record will be kept by the Masterton District Council and included in an annual report to the Regional Council.

5.6.3 Reporting

The contractor shall undertake reporting as required under the solid waste transfer contract, as well as general monitoring of the transfer station site as outlined in Section 3.9. While transfer station is in operation annual reporting by Council shall cover the items listed in resource consent conditions.

5.7 EMERGENCY PROCEDURES

5.7.1 Fire

No fires are permitted at the site. All reasonable precautions shall be undertaken to prevent the outbreak of fires. In the event of a fire developing within the transfer station, it shall be immediately extinguished by appropriate methods, including the use of earthmoving equipment and the washdown hose. In addition the Fire Service shall be notified immediately.

Following any such fire the contractor shall make a report on the cause of the fire and review procedures to reduce the possibility of a recurrence. Any incidents shall be included in the monthly report to Council.

5.7.2 First Aid

During site operations, maintenance, inspections and monitoring, all plant and vehicles on site shall have a well-stocked first aid kit. All site operators shall have a current first aid certificate.

5.7.3 Emergency Contacts

In the event of an emergency first aid will be administered on site and the following emergency services should be contacted as appropriate:

Fire Service/Ambulance/Police	111
Masterton Hospital	370 1268
OSH (Labour Department)	0800 20 90 20 04 566 8962
Local Authority (MDC)	370 6300



APPENDIX E:

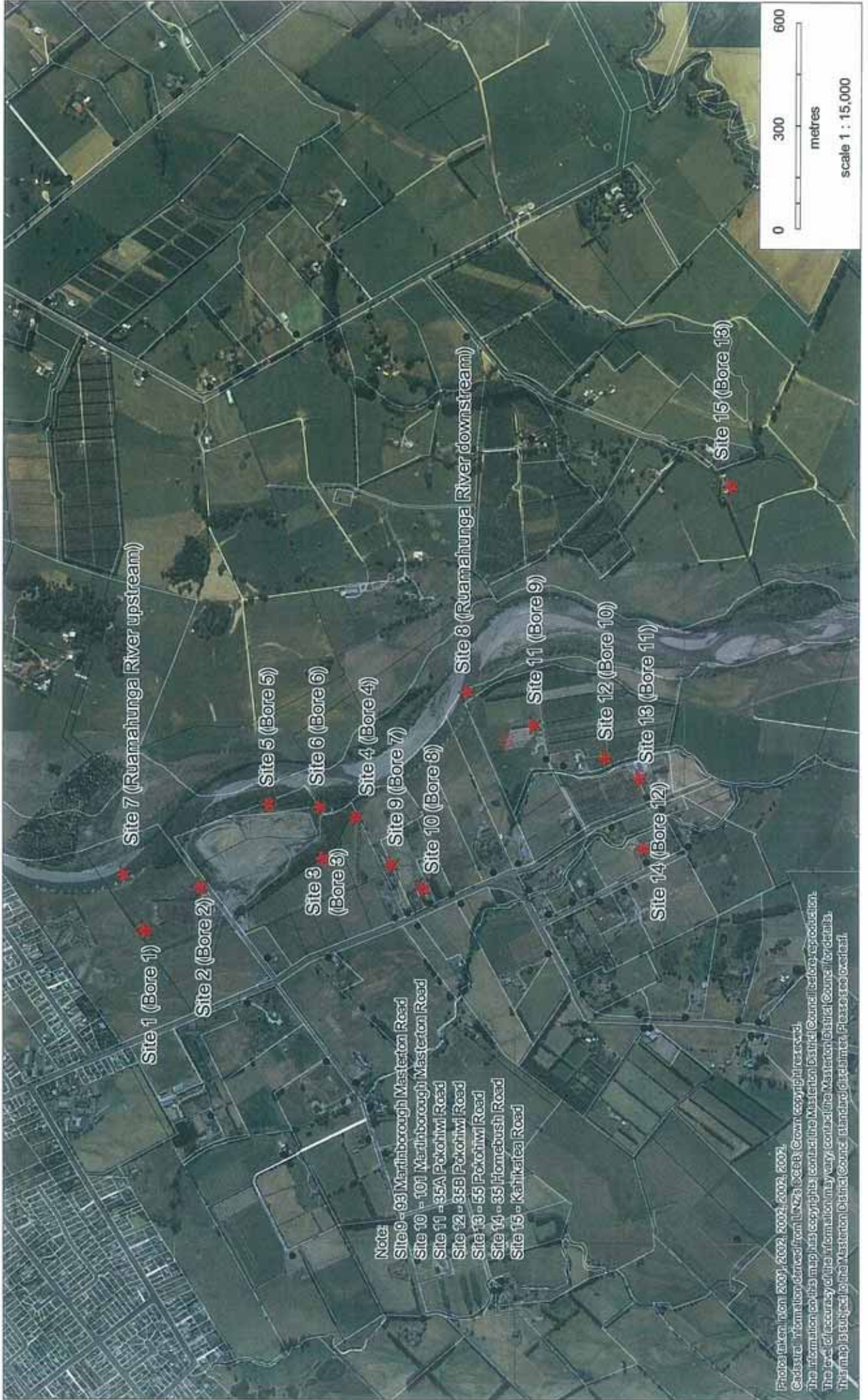
LOCATION MAP OF GROUNDWATER BORES AND SURFACE WATER MONITORING SITES



Masterton
District
Council

2/10/08
Printed by: pitak

MASTERTON LANDFILL MONITORING SITES



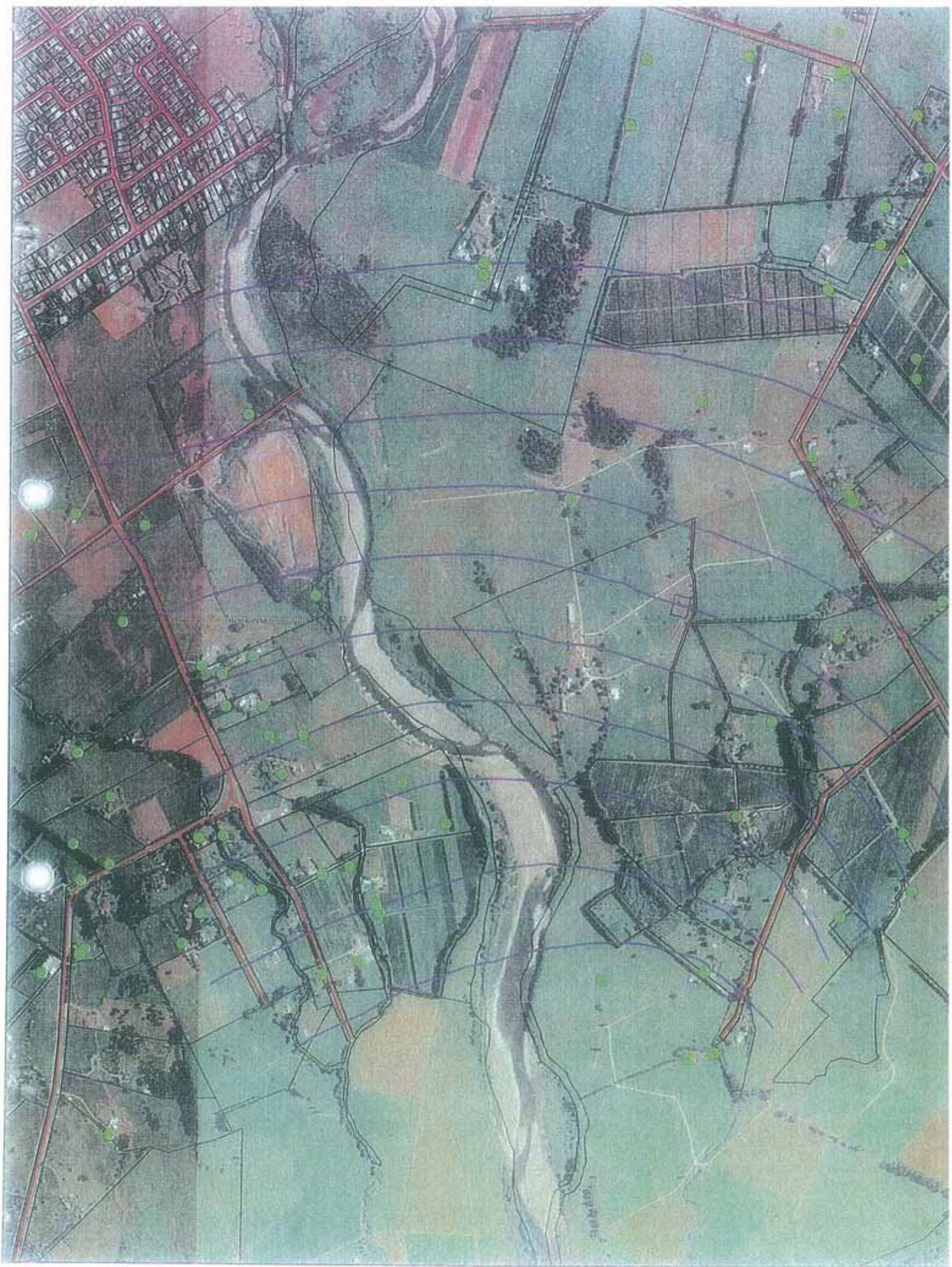
Photos taken from 2000, 2002, 2004, 2006, 2007, 2008.
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The level of accuracy of the information may vary between the Masterton District Council Geobase / Geobase 3.
This map is subject to the Masterton District Council - Land and District Information Release Policy.

Memo

To: James Li
From: Kaine Jaquierey
CC:
Date: 11-Feb-09
Re: Masterton Landfill Bore depth and material information.

Hi James as requested bore depth and material information for Masterton landfill.

Bore Number	Top of pipe to bottom of Bore (m)	Material
1	5.74	PVC
2	5.80	PVC
3	4.34	PVC
4	4.83	PVC
5	5.04	PVC
6	4.66	PVC



Masterton District Council Landfill - Piezometric contours and registered bores

DISCLAIMER

Although this map has been prepared using the best information available at the time of publishing, the Greater Wellington Regional Council is not responsible for actions taken by any individual or agency based up on the information presented within this map.



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Legend

- Piezometric Bore
- Registered Bore



**APPENDIX F:
COPY OF THE COMPLAINT RECORD**

MASTERTON DISTRICT COUNCIL
SERVING THE COMMUNITY

64 Chapel Street
PO Box 444
MASTERTON
DX PA 89022
Tel: (06) 378-9666
Fax: (06) 378-8400

Masterton Landfill Complaint Form

Date: 7/10/04

Complainant: Colin Gowan
Address: 21 Masterton Martinborough Road.

Ph:

Nature of complaint

Uncovered offal hole causing odour
nuisance

Reported to the Regional Council

YES / NO

Remedial Action taken

Offal hole contents relocated and
buried in tip face.



APPENDIX G:

COPY OF WRITTEN APPROVALS OF AFFECTED PARTIES

Kangitane o Wairarapa

10 MAR 2006



greater WELLINGTON REGIONAL COUNCIL

Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASSTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASSTERTON LANDFILL

Location: NURSERY RD, MASSTERTON

Resource consents required: Discharge permits: contaminants to water, land and air, and stormwater to land.

To be completed by the person giving their approval

Name: HORIPU (DAVE) RIMENE

Organisation: KANGITANE O WAIRARAPA

Address: 12 CORNWALL PLACE MSTN

Telephone: 06 3700600

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: *Horipo Rimene* Date: 7/3/06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.

RECEIVED
24 MAR 2006
BY: _____



greater WELLINGTON
REGIONAL COUNCIL

Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASTERTON LANDFILL

Location: NURSERY RD, MASTERTON

Resource consents required: discharge permits: contaminants to water land and air, and stormwater to land.

To be completed by the person giving their approval

Name: Kris Critze

Organisation: Department of Conservation

Address: PO BOX 5086, WELLINGTON

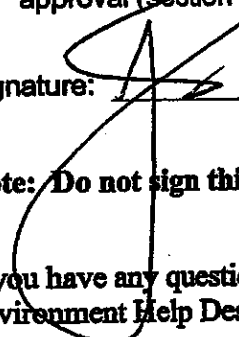
Telephone: 04 4725821

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature:  **JEFF FLAVELL**
 Community Relations Manager
 Department of Conservation
 Wellington Conservancy
 pursuant to a delegated authority

Date: 21/3/06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.

26 January 2006

Greater Wellington Regional Council
P O Box 41
MASTERTON

**RESOURCE MANAGEMENT ACT 1991
RESOURCE CONSENT APPLICATION: CLOSURE OF MASTERTON LANDFILL**

Dear Sir

Wairarapa Public Health Service (Choice Health) has been asked by the applicant (Masterton District Council) to give approval to their applications for resource consent in respect of Masterton Landfill.

Choice Health provides Public Health Services to the Wairarapa on behalf of Regional Public Health. This submission is made pursuant to this role.

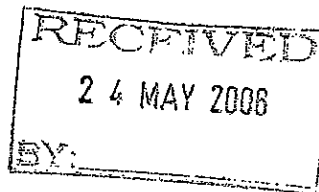
Choice Health has no objection to the granting of consent, for the periods and purposes proposed by the applicant, provided suitable conditions are attached to protect the public health. Principal amongst these will be odour control, vermin control, the need to reduce potential leachate effects on ground and surface waters and the continued monitoring of these potential impacts.

In addition there needs to be clear guidelines around the acceptance of dead animals and the burial sites for these in the closed landfill. Choice Health encourages Masterton District Council to work with other local authorities to establish a regional de-watering facility for liquid wastes and sludges. These and other controls, including reporting criteria, should be documented in a site management plan to the satisfaction of the Regional Council.

Should you have any queries please do not hesitate to contact this office.

Yours faithfully

REBECCA M L FOX
Senior Health Protection Officer



Ref: 6-5-2

23 May 2006

MWH New Zealand Limited
PO Box 2033
PALMERSTON NORTH

Attention: Natasha Tepsic

Dear Natasha

Resource Consent Application –Discharge permits - Masterton Landfill Closure

The Wellington Fish & Game Council is willing to give section 94 approval under the Resource Management Act (1991) for a consent to be granted for the discharge of landfill leachate to the Ruamahanga River conditional on the following:

- That adoption of the conditions requiring monitoring of the discharge to the Ruamahanga River as outlined in the AEE document (January 2006).
- That the consent authority shall initiate a notified review if the monitoring shows adverse environmental effects as a result of the discharge monitoring.

Should you require any further information please feel free to contact me at the address below.

Yours faithfully

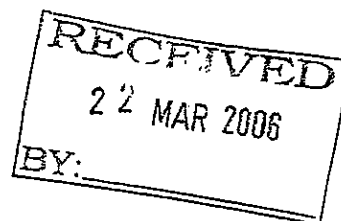
Kate McArthur
Fish & Game Resource Officer

Statutory managers of freshwater sports fish, game birds and their habitats

Wellington Region

PO Box 1325, Palmerston North, New Zealand. Telephone (06) 359 0409 Facsimile (06) 356 2780 e-mail admin@wellingtonfishgame.org.nz
www.fishandgame.org.nz

Our Ref 6.5.2



20 March 2006

Natasha Tepsic,
MWH New Zealand Ltd,
P O Box 2033,
Palmerston North

Dear Natasha,

Closure of Masterton Landfill

Thank you for your letter of 22 February 2006 with the Assessment of Environmental Effects for the above project. I note that you have asked us to return our written approval for the Resource Consent to be processed without public notification. I note also that the form which you have asked us to sign states as follows; "I understand that by signing this form Greater Wellington Regional Council will not take into account any effects that the proposed application may have on me when deciding whether to grant or decline this application."

Fish & Game is pleased that Masterton District Council is planning to close its rubbish dump. It is not acceptable to operate a rubbish dump on the bank of a river, and the establishment of alternative arrangements for this will be welcomed. The relocation of the site for dumping wastes at least removes the future and accumulating problems of river pollution from this source. I note that this present application is to deal with the ongoing management of the problems of the existing stockpile of nearly a million tons of decaying garbage.

I note from your document that little is planned that will make any practical difference to the situation at the dump now, apart from diverting most of the future flow of garbage away to some other location, and capping the existing stockpile with clean fill. I appreciate that, on the strength of what is currently known, there is not much else that could be done, at a price that the community would accept, that would make much difference to the environmental outcome.

Fish & Game's interest in this operation is limited to its impact on the Ruamahanga River, beside which the former Borough Council decided in its wisdom to locate the dump. Our two areas of particular interest are the risk of the river actively eroding stockpiled garbage into the watercourse, and the risk of contaminated material leaching from the stockpile into the river, whether directly or via groundwater.

Statutory managers of freshwater sports fish, game birds and their habitats

Wellington Region

3 Broadway Ave, PO Box 1325, Palmerston North, New Zealand. Telephone (06) 359 0409 Facsimile (06) 356 2780 e-mail admin@wellingtonfishgame.org.nz

I note in your document that weekly monitoring of the integrity of groynes intended to reduce the likelihood of river erosion of the stockpile is currently occurring. This is a good start, and conditions on the new resource consent requiring this to continue should be included. However, treatment of this issue should also include contingency planning for the failure of those groynes, including their repair and maintenance, and replacement if destroyed. There should also be further contingency planning, for the clean up of the river bed in the event that a large flood does erode into the stockpile.

With respect to contamination, I see that you have referred to macroinvertebrate monitoring surveys at 8.5.5, noting that they "confirm that the landfill is not having a significant effect on the river." I see that these surveys are done, but not in April 2005. However, no other information on the results or the methodology of these surveys is given; there are several pages of appendices on the chemical contamination of the river, but none on the biomonitoring. Before Fish & Game could consider agreeing with your report that leaching of contaminants from the stockpile into the river is "not having a significant effect", we would wish to see details of that monitoring, and its results.

I expect that the regional council will grant a resource consent for the Masterton Landfill, and Fish & Game agrees that this is necessary. However, we would want to see conditions on that consent that protect our significant interest in the Ruamahanga River. Appropriate monitoring should be provided for, along with contingency planning for predictable failures, as well as the opportunity for remediation works to be required, should monitoring and/or technological advances show that cost-effective improvements are necessary or possible, in future. The previous Borough Council has imposed a long term environmental problem on its community with its short-sighted decision to site the landfill beside the river in the first place. We would not want to see an inadequately conditioned resource consent, issued now for the next 35 years, authorizing the continuation of something that may yet prove to be unacceptable, or better able to be remediated.

If Greater Wellington Regional Council insists that our non-notified approval means that they will not take into account any effects that the proposal may have on us, then we will not be giving our non-notified approval. If, however, they are prepared to allow a set of conditions to be negotiated before we sign our interest away, and are prepared to include such conditions as may be agreed, then I see no need for the issue to be taken to a formal hearing.

I will look forward to hearing from you further on this project.

Yours faithfully,



P H Hill,
Manager



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF LANDFILL

Location: NURSERY ROAD

Resource consents required: DISCHARGE PERMITS: CONTAMINANTS TO LAND, AIR & WATER, STORMWATER TO LAND

To be completed by the person giving their approval

Name: R.K.S.M & S.J. GARLICK

Organisation: Hobby Farmers

Address: FNS Nursery Road Masterton

Telephone: 063770398

* /I/we have sighted all relevant plans and supporting information for the above application.

/I/we give approval for the activity as described by this application.

/I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into ^{*}account any effects that the proposed application may have on ~~me~~/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: R K Garlick

Date: 9-3-06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASTERTON LANDFILL

Location: NURSERY ROAD

Resource consents required: DISCHARGE PERMITS, CONTAMINANTS TO LAND
AIR AND WATER, STORMWATER TO LAND

To be completed by the person giving their approval

Name: MR S TEMPLE

Organisation: _____

Address: 1 NURSERY ROAD

Telephone: _____

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)

will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: S A Temple Date: 10.3.06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: Masterton District Council

Proposal(s): Closure of Masterton Landfill

Location: Nursery Rd

Resource consents required: discharge permit: contaminants to land, water, air, and sediment to land.

To be completed by the person giving their approval

Name: C.R. PAN.

Organisation: _____

Address: CNR JOHNSTONE ST & NURSERY RD.

Telephone: 06 3777098.

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: C.R. PAN. Date: 3/3/06.

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

to be completed by the applicant

Name: Masterston District Council

Proposal(s): Closure of Masterston Landfill

Location: Nursey Rd.

Resource consents required: discharge permits: contaminants to land, air & water, stormwater to land.

to be completed by the person giving their approval

Name: Judy Nikolaisen

Organisation: #

Address: FN 29 MASTERSTON - MARTINBOURGH Rd.

Phone: 06 3786630 H. 06 3773920 W.

I have sighted all relevant plans and supporting information for the above application.

I give approval for the activity as described by this application.

I understand that by signing this form Greater Wellington Regional Council:

will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)

will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: Judy Nikolaisen Date: 3.3.06

: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Community Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: Masteron District Council

Proposal(s): Closure of Masteron Landfill

Location: Nutseru Rd

Resource consents required: discharge permits for contaminants to water, land & air, stormwater to land

To be completed by the person giving their approval

Name: ROBERT EMLYN PRIDAY

Organisation: _____

Address: 25 MASTERTON - MARTERBOROUGH ROAD, MASTERTON

Telephone: (06) 3774760 OR (06) 3782583

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature:  Date: 3/3/06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: Masterston District Council
Proposal(s): Closure of Masterston landfill
Location: _____
Resource consents required: _____

To be completed by the person giving their approval

Name: Alan Jack
Organisation: _____
Address: 17 MASTERTON - MARTINBO ROAD
Telephone: _____

I have sighted all relevant plans and supporting information for the above application.

I give approval for the activity as described by this application.

I understand that by signing this form Greater Wellington Regional Council:

will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)

will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: A. T. [Signature] Date: 03.03.06

Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASTERTON LANDFILL

Location: NURSERY ROAD

Resource consents required: DISCHARGE PERMITS: CONTAMINANTS TO LAND AIR AND WATER, STORMWATER TO LAND

To be completed by the person giving their approval

Name: E. S. OLIVER

Organisation: FARM

Address: OLIVERS RD. RD. 6 MASTERTON

Telephone: (06) 3282865

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: 

Date: 8-3-06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASTERTON LANDFILL

Location: NURSERY ROAD

Resource consents required: DISCHARGE PERMITS: CONTAMINANTS TO LAND AIR & WATER, STORMWATER TO LAND.

To be completed by the person giving their approval

Name: Harold Barr

Organisation: _____

Address: 31A Rimatapu Rd St Upper Hutt

Telephone: 04 5278551

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: A H Barr Date: 8-3-6

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

Approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

To be completed by the applicant

Name: MASTERTON DISTRICT COUNCIL

Proposal(s): CLOSURE OF MASTERTON LANDFILL

Location: NURSERY ROAD

Resource consents required: DISCHARGE PERMITS, CONTAMINENTS TO LAND, WATER, AIR, AND STORMWATER TO LAND

To be completed by the person giving their approval

Name: LYNETTE LORIS REED

Organisation: PIKE FAMILY PARTNERSHIP

Address: 1 NURSERY ROAD MASTERTON


Telephone: 021 72 84 87

I/we have sighted all relevant plans and supporting information for the above application.

I/we give approval for the activity as described by this application.

I/we understand that by signing this form Greater Wellington Regional Council:

- will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)
- will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature:  Date: 9/3/06

Note: Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Environment Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.



Written approval of an affected party

approval from a party who is potentially affected by a resource consent application or by an application to change resource consent conditions.

to be completed by the applicant

Name: Masterton District Council
Address: Closure of Masterton Road
Location: Nursex Rd
Resource consents required: discharge permits: outflows to water, land and air, stormwater to land.

to be completed by the person giving their approval

Name: Warran Wye
Occupation: Farmer
Address: 11 Nursex Rd
Phone: Masterton

I have sighted all relevant plans and supporting information for the above application.

I give approval for the activity as described by this application.

I understand that by signing this form Greater Wellington Regional Council:

will not take into account any effects that the proposed application may have on me/us when deciding whether to grant or decline this application (section 104(3) of the Resource Management Act 1991)

will consider the application on a non-notified basis if all affected persons provide their written approval (section 94(2) of the Resource Management Act 1991)

Signature: [Signature] Date: 10-3-06

Do not sign this form if you do not understand this form or the application.

If you have any questions about the resource consent process please contact Greater Wellington, Customer Help Desk on 04 384 5708 or 06 378 2484 for activities in the Wairarapa.

