

STOCK TRUCK EFFLUENT DISPOSAL

**A PRACTICAL GUIDE TO PROVIDING
FACILITIES FOR STOCK EFFLUENT DISPOSAL
FROM TRUCKS**

**Produced for the
NATIONAL STOCK EFFLUENT WORKING GROUP
under the auspices of the
NZ ROAD CONTROLLING AUTHORITIES FORUM**

November 2005

Stock Effluent from Trucks

Three companion documents have been produced by the National Stock Effluent Working Group to help minimise the spillage of stock effluent from trucks onto roads. These are:

- Volume 1 Industry Code of Practice for the Minimisation of Stock Effluent Spillage from Trucks on Roads. April 1999.
- Volume 2 Stock Truck Effluent Disposal: A Practical Guide to providing facilities for stock effluent disposal from trucks. Third edition, November 2005.
- Volume 3 Stock Effluent from Trucks: Resource Management Guidelines for Local Authorities. March 2003.

These documents are available free of charge at
http://www.roads.co.nz/Stock%20Effluent/stock_effluent_index.htm

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Disclaimer

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INDEX

	Page
1. INTRODUCTION	5
2. EXPERIENCE TO DATE	5
3. DEFINING THE PROBLEM	5
4. DESTINATION SITES	6
5. IN TRANSIT SITES	6
5.1 Approval of an In Transit Site	6
5.2 Land Transport New Zealand – Funding Criteria	7
5.3 Site Selection	7
6. APPROVALS REQUIRED FOR USE OF A CHOSEN SITE	8
7. LAND USE CONSENT	9
8. AFFECTED PARTIES' CONSENTS	9
9. ASSESSMENT OF ENVIRONMENTAL EFFECTS	10
10. REGIONAL RESOURCE CONSENTS	12
11. DESIGN OF TRUCK RECEPTION AREA	13
11.1 Highway Access and Egress	13
11.2 Signage	13
11.3 Parking Area	14
11.4 Manoeuvring	15
11.5 Receptor	15
11.6 Holding Tank	19
11.7 Telemetry and Monitoring	19
12. EFFLUENT TREATMENT AND DISPOSAL	20
12.1 Treatment Options	20
12.2 Effluent Volume	20
12.3 Effluent Characteristics	21
12.4 Disposal of Treated Effluent	22
13. SITE MANAGEMENT PLAN	22
13.1 Introduction	22
13.2 Treatment and Disposal Facility	22
13.3 Operation, Maintenance and Management	23
13.4 System Failures and Safeguards	23
13.5 Monitoring Programme	23
13.6 Health and Safety Issues	23
13.7 Maintenance, Capital and Depreciation Costs	24
14. COSTS	24
14.1 Examples	24
14.2 SH3 Waverley Stock Truck Effluent Disposal Facility	24
14.3 SH3 Ahititi Stock Truck Effluent Disposal Facility	27
14.4 Additional Examples	30
15. LINCOLN UNIVERSITY LITERATURE REVIEW	30
APPENDICES	31 – 40

List of Appendices

Appendix A	Typical Land Use Resource Consent application form	p31
Appendix B	Typical guidelines for making a Land Use resource consent	p32 - 33
Appendix C	Typical guidelines for affected parties consent	p34
Appendix D	Typical consent form	p35
Appendix E	Feedback form	p36- 37
Appendix F	Report on Waverley Site	p38 - 40

Contents of Enclosed CD

Appendix A	Typical Land Use Resource Consent application form
Appendix B	Typical guidelines for making a Land Use resource consent
Appendix C	Typical guidelines for affected parties consent
Appendix D	Typical consent form
Appendix E	Feedback form

Full plans of Ahititi S.E.D.F. (SH 3)

Full plans of Waverley S.E.D.F. (SH 3)

Map of state highway stock truck effluent disposal facilities locations

Operating and maintenance manual for Hokitika S.E.D.F. (SH 6)

Photographs

Allanton S.E.D.F. - approach

Mertons S.E.D.F. - approach

Pukeri S.E.D.F. - approach

Shag River S.E.D.F. - approach

Tinwald S.E.D.F. - approach

Waverley S.E.D.F. – approach, lay-out, detail of receptor, in use, spill interceptor sump and locator markings, driver facilities and signage

STOCK EFFLUENT DISPOSAL

A PRACTICAL GUIDE TO PROVIDING DISPOSAL FACILITIES FOR STOCK TRUCKS

1. INTRODUCTION

This paper has been prepared to assist investigators and designers in the process of establishing stock truck effluent disposal sites and, in particular, “in-transit” sites located adjacent to state highways or local arterial roads. It should be read as a supporting document to the “Industry Code of Practice for the Minimisation of Stock Effluent Spillage from Trucks on Roads” compiled by the National Stock Effluent Workgroup appointed by the New Zealand Road Controlling Authorities Forum.

2. EXPERIENCE TO DATE

Experience with installing in-transit stock truck effluent disposal facilities commenced in 1995 when the South Waikato District Council, with the support of Transit NZ and Environment Waikato, established two pilot sites, one at Putaruru saleyards and the other beside SH 5, Tapapa. Since that time, the study of preferred sites in the South Island by Dr Jean-Paul Thull and Dr Chris Kissling, Lincoln University and documented in “Pathway to the Elimination of Stock Effluent Spillage on NZ Roads” and, more latterly, a similar study for the North Island by OPUS International Consultants: “North Island Stock Truck Effluent Strategy Study” have been completed. These studies brought together the results of a number of independent studies carried out by Regional and District Councils in both islands.

These studies have established a desirable network of in-transit effluent dump sites across both islands based on a set of parameters relating to:

- the proportion of stock that are stood for at least 4 hours prior to transportation (75%),
- the size of effluent holding tanks on trucks (300 litres), and
- the premise that effluent dumping facilities are available at every stock destination site. (saleyards, freezing works etc.)
- the identification of stock destinations with an assessment of future rationalisation.

A number of sites have now been established in both the North and South Islands.

The procedure for establishing a stock truck effluent disposal facility has been established through consultation with the Road Controlling Authorities Forum and Land Transport NZ (LAND TRANSPORT NZ). The policy for funding assistance is set out in LAND TRANSPORT NZ’s “Programme and Funding Manual” and is referred to later in section 5.2.

3. DEFINING THE PROBLEM

The problem of spillage of stock effluent from transport trucks has been around for many years and most Councils with significant rural areas and those that are on main transport routes to saleyards and meat processing plants have particular sites that are well known for spillages, i.e. sharp bends, steep hill sections, street intersections, roundabouts, etc. There has also been the incidence of deliberate discharge where a stock truck driver has emptied the truck’s holding tanks in a layby area, along the verge of a road or onto the

road while travelling. The closure of small saleyards has and will continue to change the pattern of stock transport over time, too.

The investigator needs to identify what the problem is and where it occurs. Is it:

- a general problem of spillage throughout the district?
- one or two specific locations which need to be protected?
- a site where an improvement to the road geometry may remove or reduce the problem?
- a site that could provide strategic regional benefits?

The in-transit disposal site studies have largely determined the appropriate locations for these sites, but detailed information to clearly define the problem can be obtained by consulting the main road users, i.e. local stock transporters, Federated Farmers and other farming groups, industry groups, Police, Regional and District Council staff, etc.

Sites can be divided into “destination” sites and “in-transit” sites, as follows.

4. DESTINATION SITES

These sites would be located at truck destinations such as saleyards, abattoirs, freezing works, farms, ferry terminals, etc where trucks would discharge stock or stop in the normal course of their work. Provision of effluent receiving facilities at all destination sites would result in a significant reduction in effluent on roads and is a vital factor in minimising the number of “in-transit” sites required.

The establishment of destination disposal facilities is based on the principle that the recipient of the stock should also receive their waste and be responsible for its disposal, as promoted in the “Industry Code of Practice for the Minimisation of Stock Effluent Spillage from Trucks on Roads”.

5. IN-TRANSIT SITES

In-transit sites should be conveniently located on major transport routes, usually state highways, to target stock trucks on long hauls that have their effluent holding tanks filling to overflowing before the truck reaches its destination.

The sites selected in the North Is and South Is studies are only roughly located near highway junctions or other features, such as at the foot of steep hill sections. It will be necessary to follow a formal procedure in order to have an in-transit site established on or near a state highway.

5.1 Approval of an In-Transit Site

In the South Island study 10 priority in-transit sites were identified to provide the coverage and a number of sites were constructed prior to a formal funding policy being established.

Following the completion of the North Is study a submission was made to the Transit NZ Authority (CS/03/11/4781). The Authority approved the establishment of 14 priority sites in the North Is and also requested the Chief Executive to implement appropriate destination sites and seek contributions from the destination property owners/operators. The Authority approved the provision of

approx. \$3 million per year in the 3 Year Block Plan 2004-05 to 2006-07 to progress stock effluent discharge sites.

5.2 Land Transport NZ – Funding Criteria

Land Transport New Zealand (LAND TRANSPORT NZ) (then Transfund NZ) adopted a policy for funding stock truck effluent disposal sites in November 2000 and published it as General Circular 00/09 and section 7.4.31 of its Programme and Funding Manual. The key points of the approved policy are:

- For effluent sites to be eligible for funding they must:
 - comply with a suitable regional or national strategy for stock effluent disposal
 - be supported by a commitment from the relevant local authority to maintain the stock effluent disposal infrastructure, including disposal of the effluent
 - be supported by a commitment from all appropriate parties to use the facility;
- that LAND TRANSPORT NZ pays financial assistance on the following basis:

Construction

- 50% of the approved cost of construction of the stock effluent disposal infrastructure
- 100% of any associated roading works

Maintenance

- Disposal site maintenance at the territorial authority's base financial assistance rate under the amenity/safety maintenance work category

Once a Local Authority has confirmed its chosen site meets the criteria it should notify the Regional Manager of Transit NZ that it wishes to proceed. Transit NZ would endeavour, if it hadn't already, to include the site in its works programme for the ensuing year and the local authority (LA) would have to ensure that its share of the funding was provided for in its programme. How the local share is found is up to the LA. It could, by agreement, be found from more than one LA where shared benefits are identified and recognised by shared funding. In some cases the relevant Regional Council has contributed to the local share.

Assuming that the site is on or adjacent to a state highway, Transit NZ will proceed with the total design of the site and, when funding is approved it becomes a committed capital project that proceeds to construction through to completion and activation.

5.3 Site Selection

The following criteria can be used in the detailed selection of an in-transit site:

- Location should be on or adjacent to (preferably within 100 metres) the main transport route to:
 - maximise availability
 - maximise accessibility
 - minimise delay for trucks using the facility

- The location should achieve the protection desired by intercepting stock trucks before they reach the spillage problem areas or sites and should be positioned for maximum effectiveness.
- The location should be remote from dwellings and demonstrate environmental sensitivity to avoid problems with:
 - noise
 - smell
 - visibility
 - 'NIMBY' syndrome
 - risk of waterway pollution
 - risk of infection
 - loss to value of adjoining properties
 - reduction in traffic safety
 - lack of space to construct the facility
- The location should preferably allow for the whole site to be located within the available road reserve if at all possible.
- Movements to and from the site should have minimal impact on the highway traffic by:
 - appropriate design of deceleration/acceleration lanes and right-turn bays
 - adequate signage and roadmarking
 - conformance with sight distances criteria
 - adequate spacing from other property accesses and side roads
 - adequate separation from the highway traffic lanes
- If there is an existing facility in the chosen vicinity, such as a truck stop refuelling outlet, service station, weigh station or truck park, could it be utilised to good effect?

6. APPROVALS REQUIRED FOR USE OF A CHOSEN SITE

Once a site has been chosen there is a process that should be followed to ensure all necessary consents to its establishment are obtained.

The consents required will be, to some extent, dependant on the particular location. If the site has an existing use that provides for a similar operation there may be no consents necessary; however this would be most unusual.

Enquires should be made in the first instance with the local Council's planning and building departments. The Council's District Plan will dictate the zoning of the site and whether the proposed use of the site is a permitted, controlled, discretionary or non-complying activity. The planners can then advise on what procedures need to be followed in order to establish the disposal site. See section 7 below.

The Council's building department will advise whether building consents are required for any structures to be constructed for the facility.

Section 10 below sets out the requirements of a Regional Council in the event that a facility requires a discharge consent or other use of natural resources.

Whether the installation requires consents or not, it would be advisable to consult the neighbouring property owners and occupiers at an early stage so that there are “no surprises” for them later. Their consent will be more forthcoming if they are kept fully informed from the outset.

7. LAND USE CONSENT

While District Plans differ from Council to Council it is most likely that a Land Use resource consent will be required.

Most Councils’ planning departments will provide a consent application form and a scale of their charges that would apply for processing the consent. The consent application form should be accompanied by all relevant information the Council will require in order to process the consent. The sort of information that may be required includes:

- A written statement of intent
- A statement of the scale of the proposal
- A site plan of the property
- Plans of buildings and structures to be constructed
- Elevations of buildings/structures relative to the surrounding area
- Parking and loading/discharging site plan
- Vehicle movements
- Assessment of noise and/or odours from the proposal
- Signage proposed
- Comment on any hazards or hazardous substances involved in the proposal
- Affected parties’ consents (see below)
- Assessment of environmental effects (see below)

Examples of a land use resource consent application form, guidelines to making an application, guidelines for affected parties’ consent, and a written consent form for potentially affected persons can be found in Appendices A, B, C and D respectively.

In some situations, particularly where a site is on a state highway and involves acquisition of additional land beyond the existing road reserve, Transit NZ is likely to request a notice of requirement for designation, rather than a land use consent, to ensure that the site is entirely within the state highway designation. Advice should be sought from Transit NZ on its requirements early in the planning process.

8. AFFECTED PARTIES’ CONSENTS

When a Land Use Consent is required it is likely that written consent will be required from any person who may be potentially affected by the granting of the consent. This could include the consent of neighbours (both owners and occupiers), Transit NZ (if the facility fronts a state highway), the Regional Council, Government departments, e.g. DOC if they have reserves nearby, or an iwi authority.

The Council planners and the Regional Council can assist in identifying potentially affected parties. If the consent can be processed through a non-notified process it will be important to obtain consents from all potentially affected parties. Otherwise a notified process will very likely be required with a hearing that adds time and cost to the process.

The following is a list of possible complaints that could be received from affected parties and possible remedies:

Complaint

- There will be too much noise, especially at night, and our stock will be disturbed also.
- The lights of the trucks will shine in our windows.
- We don't want to have to put up with the smell.

Remedy

- Locate the site at least 500 metres from the nearest dwelling.
- Locate the site at least 500 metres from the nearest dwelling.
Screen planting.
- Locate the site at least 500 metres from the nearest dwelling.
Correct design and maintenance will minimise smell. Contingency plans to deal with smells should be provided in the Site Management Plan.

Complaint

- We could have our stock infected by water fowl transferring disease from the ponds to our property.
- Our drains/watersupply will be polluted.
- The value of our property will decline.
- We don't want to look at a treatment plant from our window.
- The facility will add to accidents on the highway.
- The facility could affect a historic site or waahi tapu.

Remedy

- The probability of this is extremely low. Only an aerobic pond will have a free water surface and most disease-causing organisms will have died off in the treatment process.
- Careful design of the method of effluent disposal.
- Adequate separation, screen planting and beautification.
- Adequate separation, screen planting and beautification.
- Correct design of highway access and egress, signage and roadmarking.
- Consult Council planners and local iwi authority in the early stages of site location.

9. ASSESSMENT OF ENVIRONMENTAL EFFECTS

An assessment needs to be prepared in accordance with the 4th Schedule of the Resource Management Act 1991. (See below) The assessment must be sufficient to satisfy the requirements for both the Land Use consent and the Regional Council's Discharge consent, if required.

FOURTH SCHEDULE

1. **Matters that should be included in an assessment of effects on the environment** - Subject to the provisions of any policy statement or plan, an assessment of effects on the environment for the purposes of section 88 (6) (b) should include:
 - (a) A description of the proposal;
 - (b) Where it is likely that an activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity;
 - (c) Where an application is made for a discharge permit, a demonstration of how the proposed option is the best practicable option;
 - (d) An assessment of the actual or potential effect on the environment of the proposed activity;
 - (e) Where the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment which are likely to arise from such use;
 - (f) Where the activity includes the discharge of any contaminant, a description of-
 - (i) The nature of the discharge and the sensitivity of the proposed receiving environment to adverse effects; and
 - (ii) Any possible alternative methods of discharge, including discharge into any other receiving environment;
 - (g) A description of the mitigation measures (safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect;
 - (h) An identification of those persons interested in or affected by the proposal, the consultation undertaken, and any response to the views of those consulted;
 - (i) Where the scale or significance of the activity's effect is such that monitoring is required, a description of how effects will be monitored and by whom once the proposal is approved.

2. **Matters that should be considered when preparing an assessment of effects on the environment** - Subject to the provisions of any policy statement or plan, any person preparing an assessment of the effects on the environment should consider the following matters:
 - (a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects;
 - (b) Any physical effect on the locality, including any landscape and visual effects;
 - (c) Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity;
 - (d) Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, cultural, or other special value for present or future generations;

- (e) Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants;
- (f) Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

10. REGIONAL RESOURCE CONSENTS

Regional Councils are keen to see the implementation of the Code of Practice and will be only too happy to assist in the establishment of in-transit and destination sites in a responsible and effective manner. The requirements of the Regional Council will largely depend on whether the installation will include effluent treatment and disposal. If there will be no discharge of effluent into the environment a Discharge Consent may not be required. If the site is not well removed from habitation, noise and smell may also be a consideration for the Regional Council. If the site requires any waterway to be culverted, consent would be required from the Regional Council.

It is probable, however, that if the installation is to consist of a receptor and holding tank only, with the effluent being tankered or piped away for treatment elsewhere, the Regional Council would not be involved. (Obviously any separate new treatment facility would require consents.)

Many methods of on-site effluent treatment are possible, but given the need to minimise capital and ongoing operational costs, the sort of facilities that could be considered are land irrigation with grazing or cropping, 2-pond anaerobic/aerobic ponds or the more expensive option of some type of package plant.

The Regional Council will be most interested in the effluent that discharges after the treatment process and the disposal site for the treated solids.

For processing of a Discharge consent for land irrigation a Regional Council would require the following information:

- A detailed description of the site and map
- Land area available for irrigation
- Irrigation equipment design and management
- Estimated daily volumes to be irrigated
- The typical composition of the effluent, e.g. total Kjeldahl nitrogen, total phosphorus. This will depend on the type of livestock being carried, dry/wet weather etc and therefore this information could only be indicative based on the best information available
- Evidence of consultation with neighbours
- Wind direction data

To process an application for soakage to ground a Regional Council would require information on the following issues:

- Map of the site
- Design of the pond system (sizes, depths, lined/unlined, retention times, etc)
- Design of the soakage area/trench
- The average daily volumes to be discharged to the pond system

- The typical composition of effluent after treatment, e.g. pH, five day Biochemical Oxygen Demand, Total Kjeldahl Nitrogen, Total Phosphorus, Nitrate-Nitrogen, Ammoniacal Nitrogen, Suspended solids, faecal coliforms
- Soil type and soil infiltration rates
- Depth to groundwater (both summer and winter)
- Location of any neighbouring bores
- Location of any surface waters
- Methods to minimise pond odours
- An assessment of the potential effect on groundwater (and surface water if applicable) from the exercise including monitoring programme
- Evidence of consultation with potentially affected parties

Regional Councils will generally provide resource consent application forms, a scale of applicable charges and advice on the process and timing.

It would be highly desirable for the local authority and the Regional Council to run a combined hearing (if both are required) in order to minimise costs, time, submissions, etc, and allow a mutual understanding of the positions of the parties involved.

11. DESIGN OF TRUCK RECEPTION AREA

Once a site has been identified for stock truck effluent disposal the more detailed planning for its construction can proceed. Where an in-transit site is to be located on a state highway Transit NZ will usually engage their consultants to design the facility in consultation with the local authority; however other arrangements for design are possible. Where a destination site is to be part-funded as an in-transit site the owner of the site is likely to be responsible for the design and would work with the local authority and Transit NZ on the detail that would be necessary for funding assistance.

The designer should keep in mind several criteria that must be provided for if the truck reception area is to be user friendly and easily maintained.

11.1 Highway Access and Egress

If the receptor facility is to be provided on one side of the highway for both directions of traffic, provision of a right turn bay on the highway will likely be required. Receptors on both sides of the highway would be desirable in this respect. In some instances the provision of receptor and holding tank both sides may be more economical than constructing a right turn bay. (Or perhaps receptors both sides piped to one holding tank might be possible with sufficient fall.)

Deceleration tapers should be provided into the reception area from the highway (Refer Manual of Traffic Signs and Markings and Austroads Manual).

11.2 Signage

The facility will require adequate signage on both approaches on the highway to warn drivers that the facility is ahead. At least 400 metres advanced warning is desirable. (Note: a standard sign has been developed for these facilities.)

Signage needs to be provided near the receptor advising the purpose of the facility and banning the dumping of other wastes, e.g. campervans, waste oil etc.

11.3 Parking Area

The trucks using the facility will usually be towing trailers with an overall length between 15 and 20 metres. This requires adequate parking space clear of a highway for one truck discharging and at least one other waiting. An analysis of the possible frequency of use will indicate if additional parking space should be provided.



11.4 Manoeuvring

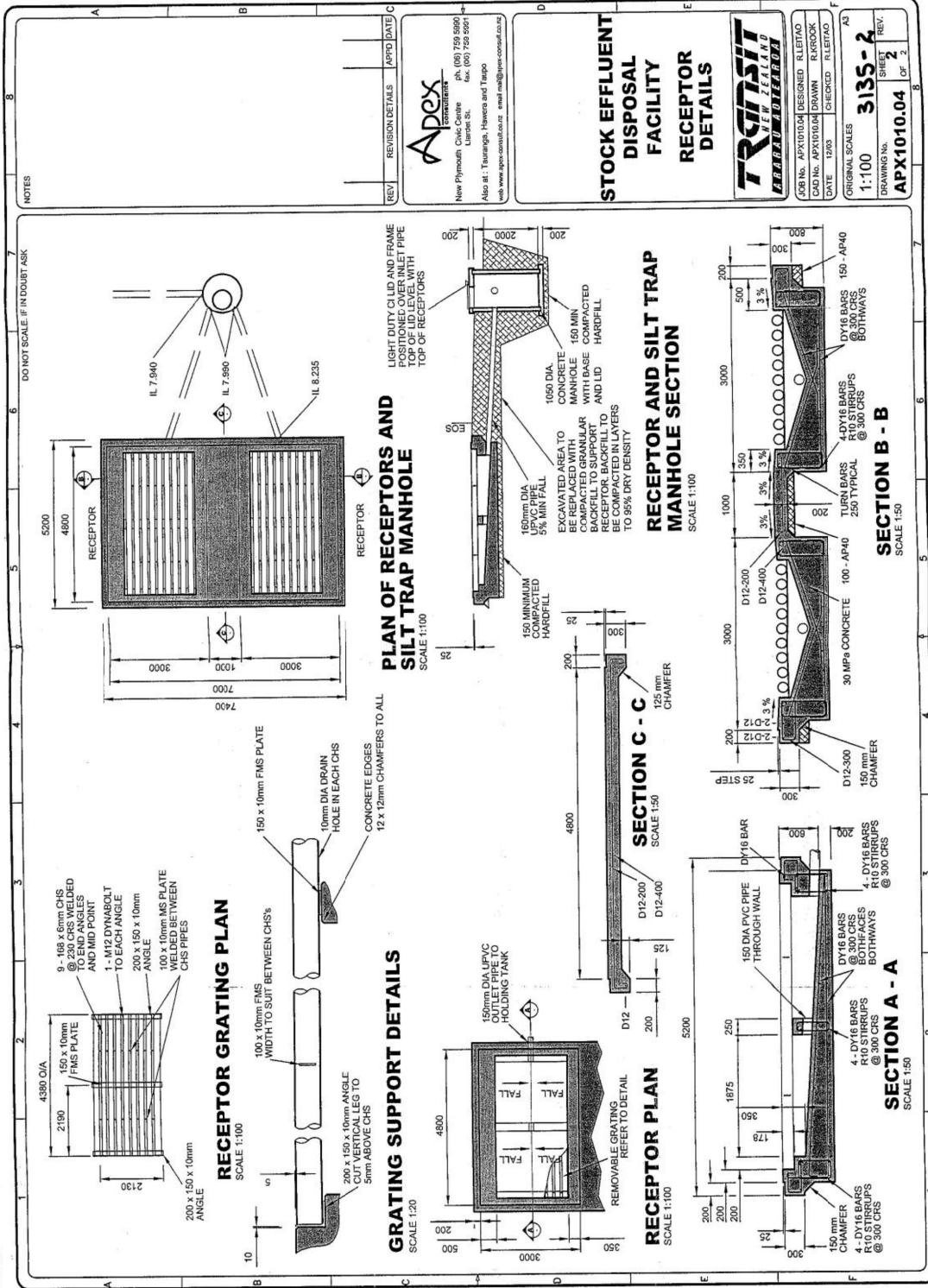
Turning circles for these units should be not less than 30 metres diameter to avoid sealed surfaces being scuffed, to reduce undue wear and tear and for ease of manoeuvring.

The approach to the disposal receptor should be reasonably flat to provide best visibility for the driver. Painted marks at metre intervals past the receptor assist the driver locate the truck discharge hoses over the receptor/s accurately. The marks are numbered and the familiar driver learns to position his front wheel at the appropriate mark. Anything that can be done to assist the driver in this respect will make the facility more attractive to use. Any unnecessary delay in the driver's journey will detract from its use.

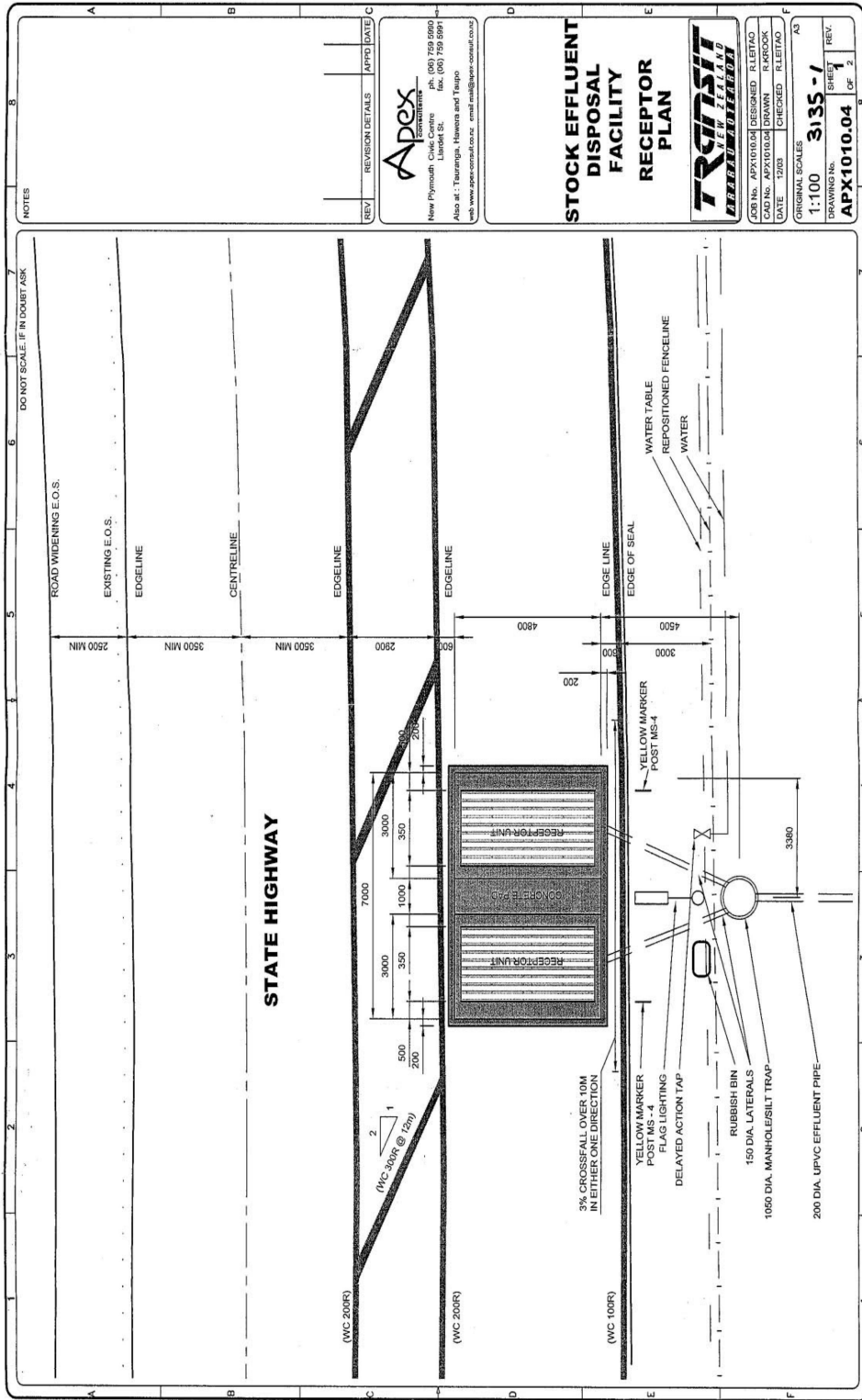
11.5 Receptor

The design and layout of the receptor area has been improved over the years and the standard layout that has been adopted now provides two receptor units spaced 3.85 metres apart. This allows for both holding tanks on a truck or trailer to be emptied at once. (See photo of Springfield site and design of the Waverley site following.)





17
Stock Truck Effluent Disposal



NOTES

DO NOT SCALE. IF IN DOUBT ASK

REV.	REVISION DETAILS	APPD.	DATE

Apex
CONSULTANTS
New Plymouth Civic Centre
Lambert St.
ph. (09) 759 6990
fax. (09) 759 6991
Also at: Tauranga, Hawera and Tupo
web www.apex-consultants.co.nz email mail@apex-consultants.co.nz

**STOCK EFFLUENT
DISPOSAL
FACILITY
RECEPTOR
PLAN**



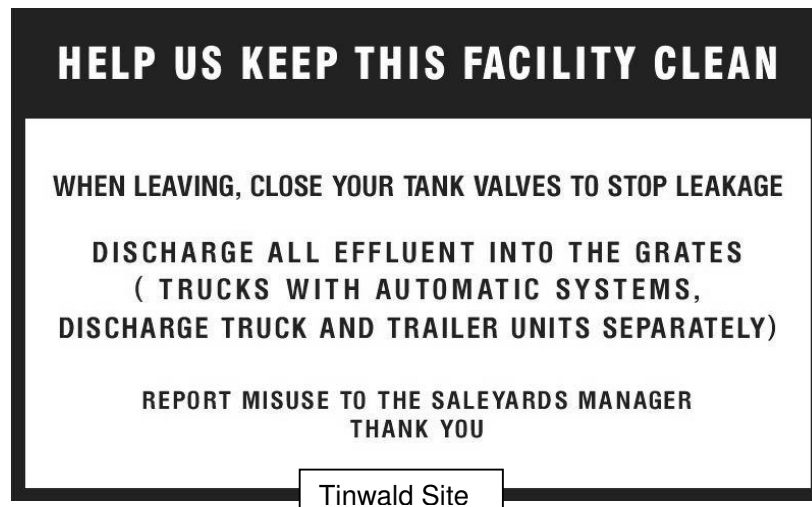
ADD No. APX1010.04	DESIGNED	R. LEITAO
CAD No. APX1010.04	DRAWN	R. BROOK
DATE 12/03	CHECKED	R. LEITAO
ORIGINAL SCALES		
1:100	3135-1	A3
DRAWING No.	SHEET	REV.
APX1010.04	1	1
OF 2		

Features of a receptor should include:

- Dimensions and layout conforming to the standard above so that, in future, transport operators will be able to adapt and design truck and trailer discharge hoses to suit this standard and be assured of effective and efficient operation.
- Plan dimensions adequate to minimise spillages onto surrounding surface.
- Surface finishes smooth and sloping to ease cleaning and minimise blockages.
- Strength of structure able to carry HN heavy vehicle loading (refer Bridge Design Manual).
- Good drainage out of the receptor to the holding tank or sewer. Effluent is reasonably fluid and a slope of 1 in 15 using a uPVC 150mm diameter half pipe has proved effective for most installations.
- Provision for washing down the receptor surrounds with a hose - the higher the pressure the better. Unless there is provision made for truck washdown at the facility as well, the washdown hose needs to be made inaccessible to the truck driver, e.g. enclosed in a lockable manhole. In a remote area a water source could be obtained from an adjacent property owner.
- Provision of a low-pressure self-closing tap for hand washing purposes.



- An area of 1 - 2 metres surrounding the receptor draining into it to minimise the area that needs regular cleaning. To assist cleaning, this area should have a smooth surface, e.g. hotmix or concrete. Outside this area positive drainage away from the receptor should be provided to avoid collecting an unnecessary volume of stormwater.
- A cover over the receptor to minimise collection of stormwater and give protection for the truck driver. The structure would have to be high enough for clearance of stock crates, say 4.5 m, and therefore perhaps 10 m wide by 12 m long to provide the protection sought. This would be a significant expense in the context of the overall project cost and may be difficult to justify.
- Signage to advise how the facility should be used and who to contact for information and assistance.



11.6 Holding Tank

If a holding tank is required to store effluent, the receptor should have sufficient elevation above the tank to allow direct gravity drainage of effluent to it. If the tank is to be buried below ground it needs to be appropriately designed for that purpose. Some transportable reinforced concrete tanks are made for that purpose with capacities up to 23 m³. These tanks are not designed to take wheel loads however and must be protected from being driven over.

The holding tank should be provided with a lockable top hatch for secure access and provision to mount a depth probe as referred to later.

Assuming the holding tank has to be emptied by a tanker the hatch has to be easily accessible to insert the suction hose.

11.7 Telemetry and Monitoring

A system is required to warn the manager that the holding tank is close to full and will soon require emptying.

A telemetry outstation can provide this warning. The system would include some sort of depth sensing device, e.g. an ultrasonic probe, through a transducer and

radio providing a signal to a Council's existing telemetry monitoring system. A telemetry supplier will provide a quote to supply and install an outstation set up in a remote site, complete with solar cell power and recharging battery backup if required.

Alternatively manual daily monitoring could be employed if it was convenient and lower cost.

Monitoring will also be required of the general condition of the site. Regular maintenance visits of twice a week minimum are suggested to washdown any spillages and ensure the receptor and pipelines are clear of blockages. Monitoring staff should be required to report any damage, misuse, etc.

12. EFFLUENT TREATMENT AND DISPOSAL

12.1 Treatment Options

The options available for disposal of effluent include:

- Discharge to an existing municipal sewage treatment plant.
- Discharge to a purpose-built package plant.
- Discharge to a purpose-built oxidation pond system (e.g. 2-pond anaerobic/aerobic system).
- Discharge to an existing farm oxidation pond system.

Discharges direct to land or waterway without any prior treatment should be regarded as unacceptable.

The capability of each option to treat satisfactorily stock effluent to a condition suitable for discharge will require detailed biological and process design.

12.2 Effluent Volume

An estimate of the volume of effluent likely to be collected will be required in order to size and design the collection and treatment facilities. Factors that will affect the volume collected would include:

- Location in relation to main stock transport routes.
- Accessibility of site for stock transporters.
- Encouragement and acceptance within the industry to use the disposal sites;
- Size of effluent holding tanks on trucks.
- The time stock have been stood prior to transport.

The results from the computer modelling of stock movements completed as part of the North and South Island stock effluent studies are probably the best assessment available of effluent volumes that should be designed for at each identified site and are available to interested parties.

The results of the studies have been calculated assuming an idealised situation with respect to the percentage of stock that have been stood off feed prior to transportation, the size of truck holding tanks, the establishment of the full network of in-transit sites and availability of discharge facilities at all destinations. Experience has found that volumes fluctuate throughout the year due to seasonal operations and commercial demands, with peak movements in the May - June period when farms are changing hands. All these aspects and any other

local knowledge must be taken into account when deciding on the design of the facility.

12.3 Effluent Characteristics

The characteristics of effluent collected from stock trucks will vary depending on the stock being carried. In dry weather effluent from sheep, deer and goats is likely to be less fluid than cattle effluent. In wet weather the effluent will always be fluid due to dilution by rainwater.

The chemical composition of effluent will also be variable but can be generally characterised as “very strong” in regard to BOD and suspended solids. For this reason in many smaller conventional municipal sewage treatment plants the impact of a tanker load (say 16 m³) of stock effluent in a sudden slug would upset the biology. Raw stock effluent contains many different pathogenic bacteria, viruses, protozoa etc. The literature available on the subject would indicate that the detention time necessary in a 2-pond anaerobic/ aerobic treatment plant to provide an acceptable effluent quality would also be sufficient for most of these organisms to die off and render the effluent safe against transmission of disease.

Tests carried out by the South Waikato District Council on the liquid fraction of raw effluent collected at the Putaruru holding tank gave the following parameters:

5 Day Carbonaceous Biochemical Oxygen Demand (C BOD ₅)	- 1.6 to 7.8 x 10 ³ g/m ³
Suspended Solids	- 0.7 to 5.3 x 10 ⁴ g/m ³
Faecal Coliforms	- 1.0 to 20.0 x 10 ⁶ per 100 ml
Ammonia Nitrogen as N(NH ₄ N)	- 2.0 to 10.0 x 10 ² g/m ³
Total Oxidised Nitrogen (Nitrate + Nitrite) as N	- 0.3 to 2.0 g/m ³
Total Phosphorus	- 5.0 to 34.0 x 10 ¹ g/m ³
pH	- 7.0 to 8.3
Total Kjeldah Nitrogen as N	- 8.5 to 16.0 x 10 ² g/m ³

The figures would apply to a typical cattle effluent and could be used in the design of a new treatment system or for the assessment of effects on an existing treatment plant. Because of the high initial capital cost and for efficiency in ongoing maintenance it would be desirable to utilise existing treatment systems if at all possible. Issues to be dealt with in this case would include:

- Means of access.
- Imposition of treatment charges by the owner of the facility.
- Any pre-treatment requirements that may be imposed. (e.g. influent holding tank to allow controlled dosing into the treatment plant process to avoid overloading)
- Effects on existing resource consents for the facility.

12.4 Disposal of Treated Effluent

The quality of the treated effluent will dictate, to a large extent, the method of disposal that is acceptable for resource consent. Options available for disposal could include discharge to:

- An existing municipal treatment plant. This would generally require continuing compliance with any existing resource consent conditions.
- Irrigation of arable land, forestry, etc.
- Ground infiltration.
- A receiving water.
- An organic composting system.

The South Waikato District Council's treatment facility at Tapapa is designed for discharge by infiltration. The two-pond system is designed to produce a final effluent with indicative chemical characteristics of:

BOD	=	50 g/m ³	(0.7 kg/day)
Total nitrogen	=	95 g/m ³	(1.35 kg/day)

Soakage drains were designed and constructed utilising data from in-situ ground soakage tests and provision was made for alternating the service drain to allow drying and avoid sealing.

With the number of sites now operative in New Zealand there is a wealth of experience available for the designer to draw on. Included in Section 14 of this Guide are feedback forms for two sites built in Taranaki. The Local Authorities, Regional Councils and the regional offices of Transit NZ that have been involved in these sites would be useful sources of information.

13. SITE MANAGEMENT PLAN

To ensure the orderly operation of a stock truck effluent disposal site a Site Management Plan is essential. The Plan should provide details of the system and processes that need to be followed for good housekeeping practices and compliance with Resource Consent conditions such as monitoring and testing.

The following sections would form the basis of such a Plan, subject to issues specific to a particular site:

13.1 Introduction

Explain the reason for establishing the site and the key objectives that it will assist in attaining.

E.g. Mitigate adverse effects to the environment resulting from non-point source discharges of waste.

13.2 Treatment and Disposal Facility

Describe the facility in terms of:

- Location
- Source of waste

- Treatment plant physical attributes
- Treatment processes
- Provisions for effluent discharge

13.3 Operation, Maintenance and Management

Describe the operation of the facility in terms of:

- The truck driver's movements and requirements (i.e. use of receptor, care with cleanliness, safety aspects).
- The weekly/monthly/annual operational cycles for checking, cleaning, monitoring, testing and reporting.
- A schedule of the criteria that should be observed to measure performance.
- A preventative maintenance log/check list for plant operator's convenience.
- A trouble-shooting checklist in the event that the facility is not performing to design expectations.
- A schedule of the persons and their contact numbers that are responsible for management, operation and maintenance of the facility.

13.4 System Failures and Safeguards

Identify reactive measures to be taken in the event of system failures and safeguards to minimise the potential for adverse environmental effects. Malfunctions could include:

- Overfilling and overflows;
- Blockages;
- Seepage;
- Organic overloading;
- Toxicity from inappropriate discharges, such as oils, fuels, etc, into the receptor.

Contingency planning could include names and addresses of people to contact, methods of dealing with particular problems and risk assessment.

13.5 Monitoring Programme

Prepare a monitoring programme that will:

- Monitor compliance with the Resource Consent.
- Assess the performance efficiency of the plant.

The programme should be converted into pro-forma checksheets for reporting purposes, in hard copy or electronic format as appropriate.

13.6 Health and Safety Issues

Itemise any health and safety issues associated with the site and occupational hazards to people working on or visiting the site. Identify any appropriate signage.

13.7 Maintenance, Capital and Depreciation Costs

The cost of maintenance and monitoring will vary from site to site depending on location, method of treatment, use of electrical/mechanical equipment, monitoring and testing costs, etc.

An annual budget should be prepared which assesses all such expenses and allows for any capital improvements that may be necessary. Capital improvements may be identified in the authority's Long-Term Council Community Plan and planned and budgeted for accordingly.

A stock effluent treatment facility should be fully accounted for in an authority's asset register and depreciated over appropriate lifespans. Concrete structures, pipework, earth fill, mechanical and electrical equipment should be considered as separate components of the asset and depreciated according to the authority's accounting policies. Reference could be made to the "International Infrastructure Asset Management Manual" in this respect.

14. COSTS

14.1 Examples

Information has been collated (in the form of a standard questionnaire) about the two most recently constructed in-transit sites, at the time this document was reviewed (November 2005). The sites are in the Taranaki Region, at Waverley and Ahititi on SH3. As stated earlier, every site will have its own characteristics that will require detailed consideration and cost estimating. The following examples may be assessed for application to any proposed facility. A report on the development of the Waverley site is appended as Appendix F.

14.2 SH3 Waverley Stock Truck Effluent Disposal Facility

Location:

State Highway 3, 2km south of Waverley
SH3 RP352/5.07 RHS

Description of site:

Topography of Country - Rolling.
Alignment – Straight.
Speed Environment – 100 km/hr

Designed by: Apex Consultants Ltd

Constructed by: Works Infrastructure Ltd

Construction Supervisor: Apex Consultants Ltd

Operated by: South Taranaki District Council

Operations Manager: Vincent Lim

What investigation was undertaken prior to choosing this site?

A Taranaki Stock Truck Effluent Working Party was established to maximize the "knowledge pool" and consensual progress. Members included representatives of the three Taranaki Local Authorities, the Central Area Road Transport

Association (CARTA), Federated Farmers, Transit NZ, Apex Consultants Ltd and the Taranaki Regional Council.

A key to establishing a suitable site was one that would provide the maximum utilisation by being **situated along the State Highway** and approximately **1 hour from key pick up points**. With Stratford being the start point, a facility for South Taranaki around Waverley met these criteria. Physical evidence also indicated that it should be sited before Waitotara.

What consultation was undertaken prior to choosing this site?

Consultations had input and guidance from the Taranaki Regional Council and the South Taranaki District Council (STDC), who enabled the discussion and involvement of Councillors, Community Board Members and the community.

What were the features that lead to the choice of this site?

- It was likely to provided maximum utilisation by stock trucks
- Excellent geometric alignment, which was conducive to good traffic safety.
- No dwellings in the proximity.
- Low Capital cost versus benefits.
- Controlled ongoing maintenance cost.
- Minimal Consent issues required.
- Mitigation measures related to the discharge of stormwater from the proposed site were easily applied.

Land area of site (m²): 1,600m²

If the land was purchased, what was the price and advise any other relevant details:

Transit purchased 1426.5 m² to be set aside should utilisation prove to be high enough to warrant an on-site treatment system.

Please explain how collected effluent is disposed of/treated:

Collected effluent is discharge into the Waverley Oxidation Treatment Plant.

If a Resource Consent was required from the Regional Council please explain and advise conditions:

- Discharge of stormwater from the disposal facility.
- No other Resource Consents were required. We note that a discharge permit will be required for any on-site treatment facility.

If a Resource Consent was required from the Local Authority please explain and advise conditions:

- Variation in designation under Section 181(3) of the Resource Management Act 1991.

Please list any other consents or permits that were required:

Building permit for holding tank.

How many truck units are expected to use the facility?

The use of the site by truck operators has increased 50% from the first year to the second. We estimate that volumes should peak at 1,000,000 litres per year i.e. 1,300 truck & trailer units. We note that truck holding units are about the same size as the trailer units.

What has been the use to date?

No actual data is collected. We estimate that 1,100 truck & trailer units use the facility per year.

What volume of effluent is being received?

880,000 litres per year (based on last 12 month period).

Has the reduction of effluent on roads been noticeable?

Yes.

If there has been any testing of the effluent received, what were the results?

No test was done.

Do you have a site management plan? Yes No

Please describe the management and operation of the site:

The site has an alarm system that triggers when the holding tank is 70% full. The contractor has 24 hours to empty the tank. He usually cleans the site at the same time. There is another trigger at 90% full that requires a 2 hour response.

Have you received any comment/complaint from users or neighbours?

No

What was the cost of the facility, total and component parts?

\$140,000 total split \$35,000 cost to Council and \$105,000 cost to Transit NZ

What, if any, Transfund subsidy was received for the facility?

Council's share of the capital cost was fully funded by Council. However, the operating cost is Transfund subsidised at the appropriate LA subsidy rate.

What was the source of funding for the balance of the construction cost?

Transit NZ

What are the annual operating costs for the facility and who meets these costs? The annual operating cost is about \$26,000 per year using the collection system. STDC is reviewing this and is looking at installing an on-site oxidation treatment facility.

Could you please comment on how effective the site has been in addressing the problem of stock truck effluent spillages in the region:

The Resource Management Act promotes the sustainable management of natural and physical resources, including the concept that natural resources should be managed in a way that avoids, remedies or mitigates any adverse effects of activities on the environment.

The facility was constructed with the object of reducing the amount of effluent being spilt from stock trucks onto roads and thereby reducing the potential hazard to other road users and the environment.

These initiatives not only further the philosophy of the Resource Management Act 1991 that conserve and enhance the region to the benefit the community, but promote and strengthen the regulatory functions of the Taranaki Regional Council.

This project has made a practical contribution to the sustainable management of resources both in the Taranaki Region from its physical construction, and nationally by promoting and setting a benchmark standard.

Subsequent performance and design modification

The installed operating system, relying on a monitored holding tank, was found to provide insufficient security against overflows of untreated effluent during periods of heavy rain. The site has been converted to a three pond system.

The new pond system was designed by Taranaki Regional Council and Apex Consultants Ltd. It uses an anaerobic pond 3 metres deep by 15 metres wide by 23 metres long and two oxidation ponds 16 metres wide by 20 metres long, the first 1.7 metres deep and the second 1.2 metres deep. This system has significantly lower annual operating costs, but far greater land requirements, than the previously installed system.

14.3 SH3 Ahititi Stock Truck Effluent Disposal Facility

Location: SH3 RP171/4.63LHS, 1.2 km north of the SH3/Okau Road Intersection

Description of site:

Topography of Country - Flat.

Alignment – At the apex of two straights with good visibility.

Speed Environment – 100 km/hr

Designed by: Apex Consultants Ltd

Constructed by: Transfield Services (NZ) Ltd

Construction Supervisor: Apex Construction Ltd

Operated by: New Plymouth District Council

Operations Manager: Max Aves

What investigation was undertaken prior to choosing this site?

A Taranaki Stock Truck Effluent Working Party was established to maximize the "knowledge pool" and consensual progress. Members included representatives of the three Taranaki Local Authorities, the Central Area Road Transport Association (CARTA), Federated Farmers, Transit NZ, Apex Consultants Ltd and the Taranaki Regional Council.

On October 2002 the Taranaki Regional Council organized a trip to investigate potential locations for siting of in-transit stock effluent disposal facilities in North Taranaki. Twelve parties undertook this trip, consisting of representative from Transit NZ, New Plymouth District Council Officers, Councillors & Community Board, Federated Farmers, Central Area Road Transport Association (CARTA), Apex Consultants Ltd and Taranaki Regional Council. An apology was received from Environment Waikato.

Two sites were short-listed (north of Mt Messenger). The Ahititi site was adopted as the land was already owned by the Crown and was preferred by CARTA.

What consultation was undertaken prior to choosing this site?

Water/Land Use Consents were attained from adjacent landowners.

What were the features that lead to the choice of this site?

- It was likely to provide maximum utilisation by stock trucks
- Geometric alignment, that was conducive to good traffic safety.
- Nearest dwellings 200m away i.e. no dwellings in the immediate proximity.
- Low Capital cost versus benefits.
- Low ongoing maintenance cost.
- Minimal Consent issues required.
- Mitigation measures related to the discharge of stormwater from the proposed site were easily applied.

Land area of site (m²): 2,400 m²

If the land was purchased, what was the price and advise any other relevant details: Nil. All on Crown Land administered by Transit NZ.

Please explain how collected effluent is disposed of/treated:

Directly into an on-site three oxidation pond treatment system and final discharge, overland, into the Tongaporutu River at or about GR:Q18:496-602.

If a Resource Consent was required from the Regional Council please explain and advise conditions:

Discharge Permit/Consent 6221-1

General Conditions: Standard

Special Conditions:

- The discharger shall at all times adopt the best practical option to prevent or minimise any adverse effects of the discharge on the receiving water.
- The minimum dilution rate of 1 part effluent to 100 parts receiving water shall be maintained at all times.
- After allowing for reasonable mixing, within a mixing zone extending 150 metres of the discharge point, the discharge shall not give rise to:
 - Conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - Conspicuous change in the colour or visual clarity;
 - Emissions of objectionable odour;
 - Rendering of fresh water unsuitable for consumption by farm animals;
 - Significant adverse effects on aquatic life.
- After allowing for mixing, the discharge shall not cause the concentration of the following constituents to be exceeded in the receiving water:
 - Unionised ammonia 0.025 gm⁻³
 - Filtered carbonaceous BOD₅ 2.0 gm⁻³
- The treatment and discharge system shall be designed, managed, operated and regularly maintained to ensure that the conditions of the consent are met.

If a Resource Consent was required from the Local Authority please explain and advise conditions: Not required

Please list any other consents or permits that were required: Nil

How many truck units are expected to use the facility?

Estimated at 200 south bound truck & trailer units per year should a second facility be built south of Mt Messenger, otherwise 400 truck & trailer units per year.

What has been the use to date?

Estimated at 450 litres/day. This is based on a second facility being built south of Mt Messenger to capture north bound stock truck movement.

What volume of effluent is being received?

Not monitored and too early to tell.

Has the reduction of effluent on roads been noticeable?

Yes

If there has been any testing of the effluent received, what were the results?

No

Do you have a site management plan? Yes No

Please describe the management and operation of the site:

On-site oxidation pond treatment system.

Have you received any comment/complaint from users or neighbours?

No

What was the cost of the facility, total and component parts?

\$157,000 total split \$49,000 cost to Council and \$108,000 cost to Transit NZ

What, if any, Transfund subsidy was received for the facility?

The Council's share of the capital cost was fully funded by Council as per Transfund's TPFM – Sec 7.4.31

What was the source of funding for the balance of the construction cost?

Transit NZ

What are the annual operating costs for the facility and who meets these costs? Still within the Construction's 3 month Defects Liability Period. The expected maintenance costs are in the order of \$5,000 per annum.

Could you please comment on how effective the site has been in addressing the problem of stock truck effluent spillages in the region:

The Resource Management Act promotes the sustainable management of natural and physical resources, including the concept that natural resources should be managed in a way that avoids remedies or mitigates any adverse effects of activities on the environment.

The facility was constructed with the object of reducing the amount of effluent being spilt from stock trucks onto roads and thereby reducing the potential hazard to other road users and the environment.

These initiatives not only further the philosophy of the Resource Management Act 1991 that conserve and enhance the region to the benefit the community, but promote and strengthen the regulatory functions of the Taranaki Regional Council.

This project has made a practical contribution to the sustainable management of resources both in the Taranaki Region from its physical construction, and nationally by promoting the benchmark standards.

14.4 ADDITIONAL EXAMPLES

The NSEWG would like to add additional examples of constructed disposal sites to this document and would encourage any project manager to supply information using the questionnaire in Appendix E. An electronic copy is available on the enclosed CD and the NSEWG website at http://www.roads.co.nz/Stock%20Effluent/stock_effluent_index.htm.

15. LINCOLN UNIVERSITY LITERATURE REVIEW

Any person embarking on an investigation of stock effluent disposal sites should be aware, and make use, of the research undertaken by Lincoln University for the National Stock Effluent Working Group set up by the NZ Road Controlling Authorities Forum.

The University has compiled a Review of both local and international literature and experience on stock effluent treatment and control. The research has extended to identifying the major stakeholders, a methodology for optimising the number and location of dump sites in a region and the prioritisation that should be attributed to “destination” sites as opposed to “in-transit” sites.

Reference “Stock Effluent Spillage From Trucks In New Zealand – A Survey of Institutional Actions 1987-1998”, Jean- Paul Thull, Transport Studies Group, Division of Environmental Management and Design, Lincoln University.

Appendices

Appendix A	Typical Land Use Resource Consent application form	p31
Appendix B	Typical guidelines for making a Land Use resource consent	p32 - 33
Appendix C	Typical guidelines for affected parties consent	p34
Appendix D	Typical consent form	p35
Appendix E	Feedback form	p36- 37
Appendix F	Report on Waverley Site	p38 - 40

APPENDIX A

PURSUANT TO SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

RESOURCE CONSENT APPLICATION – LAND USE

I/WE (Full Name/s): _____

APPLY FOR A RESOURCE CONSENT TO: _____

THE LOCATION TO WHICH THIS APPLICATION RELATES IS:

Street Address: _____

Legal Description (Lot & DPS No): _____

(WHERE DIFFERENT) THE PROPERTY OWNER AND OCCUPIER DETAILS ARE:

Owner (Current): _____ Occupier (Current): _____

(Postal Address): _____ (Postal Address): _____

The following **additional** resource consents are are not being applied for:
 Subdivision Consent Water Permit Discharge Permit

ATTACHED INFORMATION:

I attach an assessment of environmental effects in accordance with Section 88 and the 4th Schedule of the Resource Management Act 1991.

I attach other information required by Council to be included in the application.

I understand Council's fee structure (attached), and enclose a **DEPOSIT** amount \$..... Knowing this is a non-refundable minimum charge and that I will incur actual costs for the processing of this application in due course.

Signature (Applicant/or person authorised to sign on behalf): _____

Date: _____/_____/_____

CONTACT DETAILS FOR SERVICE OF APPLICANT:

(Name): _____ (Postal Address): _____

(Phone &/or Fax No): _____

APPENDIX B

GUIDELINES TO MAKING A RESOURCE CONSENT APPLICATION (LAND USE)

You must apply for resource consent before you start to build or begin an activity, if what you want to do is listed as a "controlled", "discretionary" or "non-complying" activity in the District Plan. Upon receipt of your completed application it will be considered in terms of whether the effects of your proposal are likely to be minor or not. If the adverse effects are not considered to be minor then the application will be publicly notified. The following information is required in order to properly assess your proposal:

- 1. WRITTEN STATEMENT OF INTENT**
What is the background and purpose of the application?
Detailing type, size and locality. What is the principal use/activity?
What other activities (or associated) are to be undertaken on-site?
What type of clientele do you intend to cater for?
Why should the application be granted?
- 2. STATEMENT OF THE SCALE OF THE PROPOSAL**
What days and times do you intend to operate?
How many staff is to be employed?
How many people are to be accommodated on this site at any one time?
- 3. SITE PLAN OF THE PROPERTY**
Show the location of the site and its boundaries drawn in a metric scale.
Show all existing and proposed buildings, as well as their relationship to site boundaries. Indicate the current and/or proposed uses of the buildings.
- 4. FLOOR PLANS OF BUILDING(S)**
Show the existing and/or proposed floor plans of the building(s) and indicate uses of each area.
- 5. ELEVATIONS OF BUILDING(S)**
Show clearly the external appearance of any existing (and proposed) buildings and heights relative to ground level.
- 6. PARKING AND LOADING SITE PLAN**
Show any existing (and/or proposed) entrances, public and staff parking, loading and manoeuvring areas.
- 7. VEHICLE MOVEMENTS**
Provide a statement outlining the estimated or anticipated number of visits to the site, and the types of vehicles (i.e. courier van, minibus), likely to be generated due to the proposed activity.
- 8. NOISE AND/OR ODOURS**
Detail any specific activities that are likely to create noise and/or odours.
- 9. SIGNS**
Detail of the location, wording, size and construction of any proposed signs.
- 10. HAZARDOUS SUBSTANCES**

Provide a detailed list of any existing (or proposed) hazardous substances to be stored and/or used on-site.

11. AFFECTED PARTIES CONSENT

Written approval is required from every person who may be affected by the granting of your consent. Their written approval shall be on Council's standard form and shall include the signature of that person on the plans of the proposed application. This may include the consent of your neighbours, both owners and occupiers, Transit New Zealand (if property fronts a highway), Environment Waikato, or an Iwi Authority. If not all written consents can be obtained, Council is still able to assess your proposal.

12. ASSESSMENT OF ENVIRONMENT EFFECTS

This needs to be prepared in accordance with the 4th Schedule of the Resource Management Act 1991. Before responding to the questions, you will need to consider the following:

- (a) *Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:*
- (b) *Any physical effect on the locality, including any landscape and visual effects:*
- (c) *Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:*
- (d) *Any effect on natural or any physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural, or other special value for present or future generations:*
- (e) *Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants:*
- (f) *Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.*

- Will your proposal have a significant adverse effect in the environment?
If so, you will need to describe possible alternative locations, or alternative methods for undertaking the activity.
- Will there be actual or potential effects on the environment?
If so, what are they? For example: increased traffic; increased noise; commercial business or industrial activity in residential neighbourhood.
- Will you be using hazardous substances, and installations?
If so, you will need to provide an assessment of any risks to the environment, which are likely to arise from such use.
- Does the activity include the discharge of any contaminant?
If so, you will need to describe the nature of the discharge, and sensitivity of the proposed receiving environment to adverse effects, and any possible alternative methods of discharge, including discharge into any other receiving environment.
- How do you intend to avoid, remedy, or mitigate any actual or potential effects?
Describe any proposed safeguards and contingency plans to be undertaken to help prevent or reduce effects.
- What consultation have you undertaken with those persons interested in or affected by your proposal?
Detail your methods of consultation, what were the views of those consulted and what is your response to those views.

APPENDIX C

GUIDELINES FOR AFFECTED PARTIES CONSENT

WHY IS YOUR CONSENT REQUIRED?

If you have been asked to sign this form (attached), it will be because a neighbour within the vicinity of your property is proposing an activity that requires resource consent approval.

For the application to be processed as a non-notified application, the applicant will need to: (a). Show that the proposed activity has no more than minor effects on the environment; and (b). Obtain the written consent of any person Council considers may be potentially affected.

Because your consent is being sought does not mean you definitely are affected, you may have been deemed a potentially affected party simply because you are a neighbour. Either way the process is designed to give you an opportunity to consider the proposal and decide for yourself whether you are affected or not, and to what extent.

WHAT SHOULD YOU DO?

1. Study the application and plans of the proposed activity, these will help you understand any potential effects. If there are no plans available, you are entitled to wait until they are.
2. Decide whether the proposal will have any affect on you - and if so, to what extent.
3. If you are happy with the proposal and wish to give your approval, you may do so by signing the affected parties consent form, and a copy of any building /or site plans.

If you are not happy with the proposal, you do not have to sign the consent form, however it is important that you explain why you are not happy with the proposal. If after assessing your reasons you are still considered a potentially affected party, the application will be notified (publicly advertised). However, do ask questions of Council and the applicant who may be able to assist in resolving any issues that may have an effect on you.

FOR FURTHER ASSISTANCE - Planner's are available via:



Phone:



Request: or Appointment - at Council's offices



Writing to:



Fax:

APPENDIX D

PURSUANT TO SECTION 94 OF THE RESOURCE MANAGEMENT ACT 1991

**WRITTEN CONSENT FORM
POTENTIALLY AFFECTED PERSON(S)**

I / WE (Full Name/s):

AM / ARE THE ():

OWNER

OCCUPIER

NOTE FOR THE APPLICANT: WHERE DIFFERENT, BOTH THE PROPERTY OWNER/S AND OCCUPIER/S WRITTEN CONSENT MUST BE OBTAINED.

OF THE PROPERTY (Address &/or Legal Description - Lot & DPS No.): _____

GIVE CONSENT TO (Name of Applicant): _____

TO (Briefly outline Proposal/Activity): _____

ON THE PROPERTY (Address of Site): _____

AS OUTLINED IN THE APPLICATION AND ON THE PLANS I/WE HAVE SIGNED.

NOTE: Signing this written consent means, Council will not have to regard any actual or potential effects of the proposal on you, or your property.

Not signing means, Council may need to deal with the proposal as a notified (publicly advertised) application.

Signature: _____

Date: ____/____/____

APPENDIX E

Stock Truck Effluent Disposal Site Feedback Form

The National Stock Effluent Workgroup wish to compile a database of the design and construction of existing stock truck effluent disposals sites and make this available to those that will be designing, constructing and managing new sites.

This form can be obtained in electronic format so that the contributor can click in the shaded space and input data directly into the text field space provided (it will expand to your needs). It can be obtained from and emailed back to me when completed at roger.fisher@swktodc.govt.nz. If you have any queries please call me on 07-8850730 at South Waikato District Council.

If possible please provide contact details for people involved in the project and attach a plan/s of the site.

Your efforts in providing this information will be very much appreciated.

Regards
Roger Fisher
Director Environmental Development

Name of Site:

Location:

Description of site:

Designed by:

Constructed by:

Construction Supervisor:

Operated by:

Operations Manager:

What investigation was undertaken prior to choosing this site?

What consultation was undertaken prior to choosing this site?

What were the features that lead to the choice of this site?

Land area of site (m²):

If the land was purchased, what was the price and advise any other relevant details:

Please explain how collected effluent is disposed of/treated:

If a Resource Consent was required from the Regional Council please explain and advise conditions:

If a Resource Consent was required from the Local Authority please explain and advise conditions:

Please list any other consents or permits that were required:

How many truck units are expected to use the facility?

What has been the use to date?

What volume of effluent is being received?

Has the reduction of effluent on roads been noticeable?

If there has been any testing of the effluent received, what were the results?

Do you have a site management plan? Yes No

Please describe the management and operation of the site:

Have you received any comment/complaint from users or neighbours?

What was the cost of the facility, total and component parts?

What, if any, Transfund subsidy was received for the facility?

What was the source of funding for the balance of the construction cost?

What are the annual operating costs for the facility and who meets these costs?

Could you please comment on how effective the site has been in addressing the problem of stock truck effluent spillages in the region:

SH3 WAVERLEY STOCK EFFLUENT DISPOSAL FACILITY

Project Report

TABLE OF CONTENTS

1.0	INTRODUCTION	388
2.0	CONSIDERATIONS	399
3.0	DESIGN	399
4.0	CONSULTATION	40
5.0	CONCLUSION	40

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INTRODUCTION

Transit New Zealand (TNZ) awarded Apex Consultants Ltd (Apex), of New Plymouth, a Professional Services Contract for the design and implementation of Stock Effluent Disposal Facilities in Taranaki in November 2001.

Information on the existing South Island and Waikato layouts were provided as background to develop Taranaki's proposed facilities.

The project's construction phase was completed in September 2003 and reached its first year of use in January 2004.

The facility was constructed with the object of reducing the amount of effluent being spilt from stock trucks onto roads and thereby reducing the potential hazard to other road users and the environment.

CONSIDERATIONS

In recent years the disposal of stock effluent from trucks onto land, particularly spillage onto roads, has become a significant issue. The Resource Management Act (RMA) promotes the sustainable management of natural and physical resources, including the concept that natural resources should be managed in a way that avoids, remedies or mitigates any adverse effects of activities on the environment. Minimising stock effluent spillage is clearly an issue that should be dealt with through the RMA.

With the construction of Stock Effluent Disposal Facilities the Regional Councils can now develop Policies and regulatory methods for controlling spillages.

The following key attributes were identified to establish a site location:

- Maximising utilisation of the site by stock trucks
- Traffic safety
- Proximity of dwellings
- Capital cost
- Ongoing maintenance cost of storage / disposal system
- Consent issues
- Mitigation measures related to the discharge of stormwater from the proposed site.

DESIGN

3.1 Collection System

The stock effluent disposal facility consists of “cattle-stop” like receptors, which are driven over by stock trucks, and the effluent is discharged directly from the truck/trailer holding tanks into the receptors. From the receptors the effluent runs into an in-ground 10m³ concrete tank. This tank is monitored by remote telemetry between the site and the Council. When it reaches 70% full the Council’s system alerts a contractor to pump out the effluent tank. There is a second sensor at 90%, which enact the contractor to a speedy response. The pumped out effluent is tankered to Waverley’s Treatment Plant.

3.2 Innovative Design

A key to establishing a suitable site was one that would provide the maximum utilisation by being **situated along the State Highway** and approximately **1 hour from key pick up points**. With Stratford being the start point, a facility for South Taranaki around Waverley met these criteria. Physical evidence also indicated that it should be sited before Waitotara.

Another issue ensuring maximum utilisation was provided by the design of receptor facilities that allowed the efficient disposal for both truck and trailer units. For this a design of a **two-receptor layout** was instigated, which was a major departure on previously built facilities. Not only is it quicker to unload stock effluent, but suits all truck types including the modern air actuated dump valves that are not suited to the single receptors.

This practical and innovative approach proved to be principal reason to the success of this site utilisation and has not only enhanced the region’s high quality environment but has set the standard for improved efficiency for future facilities nationwide.

Design considerations were also given to the geometry of the road visibility and providing a safe environment. We were fortunate in securing a two-way facility meeting these requirements.

3.3 Assessment of Utilisation

The SH3 Waverley facility's first year of operation collected over 500,000 ℓ of stock effluent. This volume represents over 2,000 trucks stopping to empty their tanks. On average 8,000 ℓ are collected weekly for ten months and approximately 8,000 ℓ every 2 – 3 days for the two-month period of May – June.

As an illustration of the reduced amount of effluent being spilt from stock trucks onto roads this equates to around 25 rugby fields covered with 5 mm thick of stock effluent or 15 km of State Highways covered with 5 mm of stock effluent from edgeline to edgeline.

CONSULTATION

A high amount of consultation was required to undertake the implementation this facility.

Our target was to choose a site that caused the least amount of land purchase in order to minimize consent proceedings.

A Taranaki Stock Truck Effluent Working Party was established to maximize the "knowledge pool" and consensual progress. Members included representatives of the three Taranaki Local Authorities, the Central Area Road Transport Association (CARTA), Federated Farmers, TNZ, Apex and the Taranaki Regional Council.

Key input into the design was provided by CARTA, which enabled the development of practical minor improvements through out the Physical Works phase.

So successful has this project been that it has become a national standard model for the rest of the country. The two-receptor model has been adopted by Transit New Zealand and Transfund New Zealand and promoted by the Road Transport Association as the best practice model.

Consent issues were well planned with input and guidance from the Taranaki Regional Council and the South Taranaki District Council (STDC), who enabled the discussion and involvement of Councillors, Community Board Members and the community.

In terms of Transfund New Zealand's *Programme and Funding Manual* (PFM1), Amendment 7 of August 2001, this project was cost shared between TNZ and the STDC.

CONCLUSION

The SH3 Waverley facility has proved to be an excellent facility in terms the issues considered. It was important for the project leaders, TNZ, STDC and the Taranaki Regional Council to accept that stock effluent on the road was an environmental hazard that required addressing, and by funding the facility improved the roading environment.

Their stewardship, initiatives and activities not only further the philosophy of the Resource Management Act 1991 that conserve and enhance the region to the benefit the community, but promote and strengthen the regulatory functions of the Taranaki Regional Council.

This project has made a practical contribution to the sustainable management of resources both in the Taranaki region from its physical construction, and nationally by promoting and setting a benchmark standard.