

Mangakotukutuku Stream – Rukuhia Tributary

Environmental Programme Agreement 13241

(“The Agreement”)

between

Pengxin New Zealand Farm Group Ltd (“the Landowners”)

and the

Waikato Regional Council

in collaboration with the

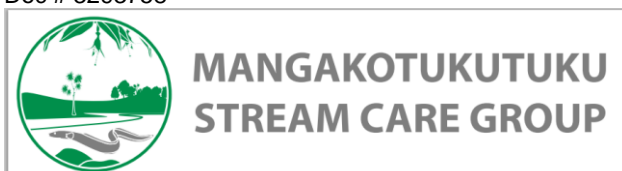
Mangakotukutuku Stream Care Group Inc.

**Prepared
by:**

Grant Blackie
Chairperson
Mangakotukutuku Stream Care
Group Incorporated

Joanna Nash
Catchment Management Officer
Waikato Regional Council

Doc # 3293758



1 Applicant Details and Property Description

Date of Application:	20 February 2015		
Registered Owner (s):	Pengxin New Zealand Farm Group Limited		
Postal Address:	C/- Milk New Zealand, PO Box 911286 Victoria Street West, Auckland CBD 1142		
Physical Address:	183 Collins Road, Hamilton		
Shareholders	MILK NEW ZEALAND HOLDING LIMITED		
Company Director of Land Owning Company and Shareholding Company	Zhaobai JIANG, No. 57, Lane 2188, Hongqiao Road, Shanghai , China		
Contact Details:	<u>Owners Representative:</u> Chris Berry Milk New Zealand Ltd chris.berry@milknz.co.nz Ph: 021 777316	<u>Farm Manager:</u> Jason Colebourn Landcorp colebournj@landcorp.co.nz Ph:027 8385090	
Legal description:	CT 48B/773 LOT 1 DPS 57902, LOT 2 DPS 57902, LOT 3 DPS 57902		
Area (ha):	324.9905 ha	Valuation Numbers :	04570/044/00

Zone / Area / Scheme:	Central Zone
Stream:	Mangakotukutuku Stream – Rukuhia Tributary
Zone Budget:	DM#2342158
Works Cost Table:	DM#3301523
File Number:	Z13 P241
Waikato Regional Council contact:	Joanna Nash – Catchment Management Officer Private Bag 3038, Waikato Mail Centre, Hamilton 3240 Ph 07 859 0727 or 021 418 059 Email: joanna.nash@waikatoregion.govt.nz
Mangakotukutuku Stream Care Group Inc	Grant Blackie – Chairperson Mangakotukutuku Stream Care Group Inc. Ph 021 2772798 Email: grant.blackie@gmail.com, mangacare@gmail.com www.streamcare.org.nz

2 Objectives

This project seeks to establish appropriate indigenous riparian vegetation on the main stem of the upper Mangakotukutuku Stream for the primary objectives of;

- Improving local and downstream water quality and biodiversity values by shading the stream to reduce summer water temperatures and reducing localised areas of stream bank erosion,
- Establishing appropriate indigenous riparian vegetation being of low maintenance and compatible with existing dairy farm management activities and potential future landuses.
- Extending riparian plantings upstream from those established and proposed on the adjacent Golden Valley Farms under Environmental Protection Agreement 13549.

To achieve these objectives the following physical works will be required;

- a) Minor woody weed/blackberry/gorse/pampas control
- b) Upgrading and re-alignment of riparian fencing
- c) Pre-plant weed/grass spraying
- d) Planting and aftercare of riparian vegetation
- e) Replacement of any failed plantings and ongoing surveillance, control of weeds and maintenance of plantings

This EPA ('Agreement') is a collaborative effort between the landowners, the Mangakotukutuku Stream Care Group (MSCG) and the Waikato Regional Council (WRC).

3 Background to the Mangakotukutuku Stream and the MSCG activities

The Mangakotukutuku Stream contains a number of significant and threatened indigenous fish species (e. longfin eel and giant kokopu) and the associated gullies provide important habitat for a number of other indigenous species (eg long tailed bats and tui).

The MSCG is a voluntary, not for profit, incorporated society established for the following purposes:

- '(a) To enhance the indigenous biodiversity and ecological health of the Mangakotukutuku Stream by working with the community to promote the following goals;*
 - i. Diverse and abundant stream, bat and bird life*
 - ii. Low weed and pest numbers*
 - iii. Improved habitat diversity*
 - iv. More trees alongside streams, particularly indigenous vegetation*
 - v. Stable streambanks*
 - vi. Less sediment and contaminants in streams and clearer water*
 - vii. No rubbish in streams*
 - viii. Sensitive upstream management*
 - ix. Good access for migrating fish*
 - x. Care around vulnerable habitats*
- '(b) To promote and engage a high level of community ownership, awareness and involvement to achieve the above purpose.'*

The MSCG has a membership of over 50 individuals who have been active for the past 7 years and have undertaken and/or are involved with a number of projects relating to the Mangakotukutuku Stream catchment, including;

- a) Planting over 20,000 native plants along the Mangakotukutuku Stream to restore indigenous riparian vegetation.
- b) Significant work to provide improved fish passage on the stream through the large culvert on Peacocke's Road, below Sandford Park.
- c) The development of a wetland and in-stream fish habitat structures within the lower Mangakotukutuku Stream /Sandford Park area.
- d) Restoration of riparian areas at three sites nearby and downstream of this EPA site.

4 Background to the Site

The upper headwaters of the Mangakotukutuku Stream (Rukuhia tributary) above and including the site extends to the south and south west of Hamilton City, draining an area of approximately 1500 ha being bounded loosely by Collins Road, O'Regan Road and Rukuhia Road.

This project seeks to establish appropriate indigenous riparian vegetation on the main stem stream for the primary objectives of;

- a) Improving local and downstream water quality and biodiversity values by shading the stream to reduce summer water temperatures and reducing localised areas of stream bank erosion,
- b) Establishing appropriate indigenous riparian vegetation being of low maintenance and compatible with existing dairy farm management activities and potential future landuses.

To achieve these objectives the following physical works will be required;

- a) Minor woody weed/blackberry/gorse/pampas control
- b) Upgrading and re-alignment of riparian fencing
- c) Pre-plant weed/grass spraying
- d) Planting and aftercare of riparian vegetation
- e) Replacement of any failed plantings and ongoing surveillance, control of weeds and maintenance of plantings

The land within the project area is owned by Pengxin New Zealand Farm Group Ltd and the reach of the Mangakotukutuku Stream proposed for riparian planting is shown below and on Figures 1 and 2 referred to hereafter as the 'site'. The farm is managed by Landcorp.

The main stem section of the Mangakotukutuku Stream (900m) cuts through the northern section of the property, runs down through Golden Valley Farms (EPA 13549) and the suburbs of Melville and Fitzroy before joining the Waikato River some 3.5km's downstream of the site.

Landuse within the project area is intensive dairy farming. Soils are predominantly peat, being part of the area of the former extensive Rukuhia Swamp.

Figure 1: General Location Map

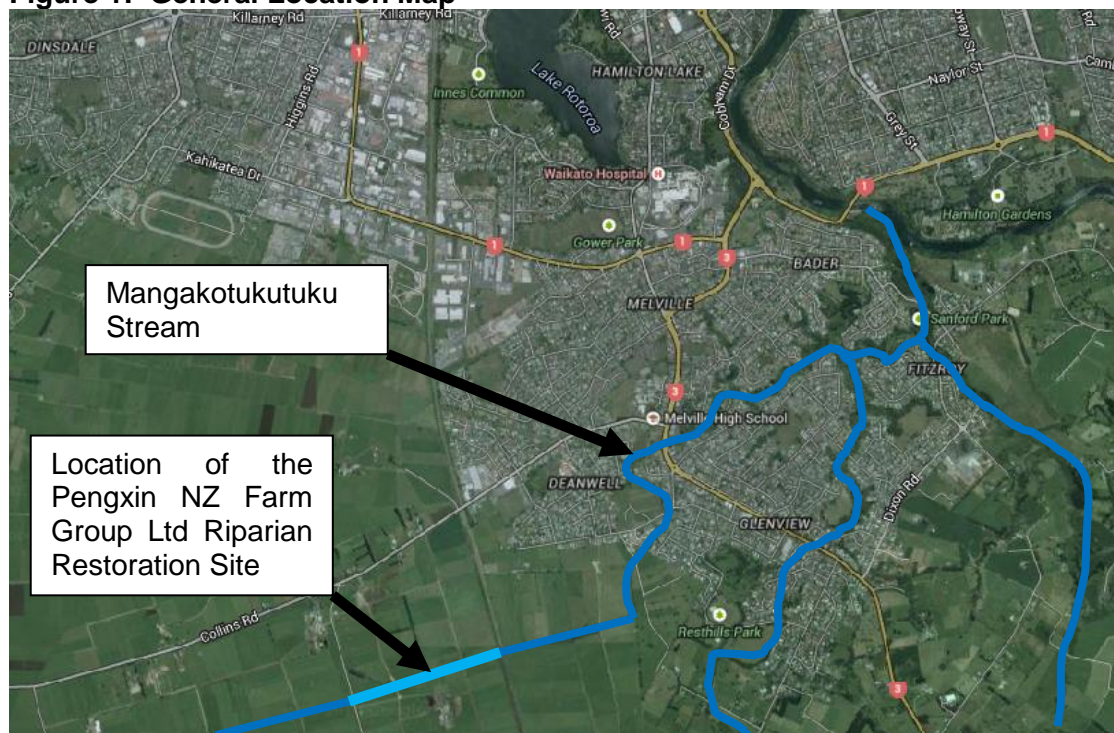
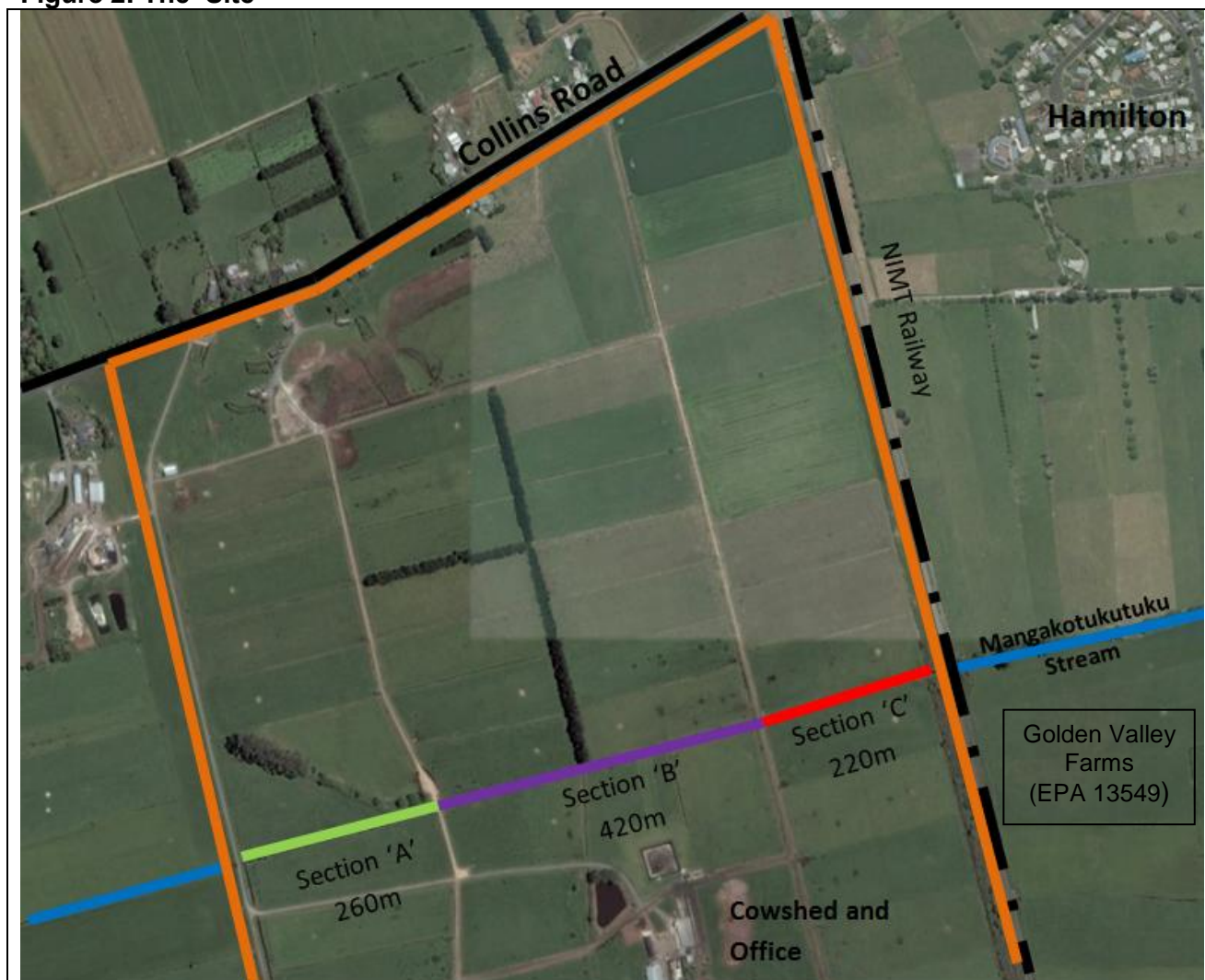


Figure 2: The 'Site'



For planning purposes the 'site' (a total of 900m in length) has been broken into;

- Section 'A' (260m) —
- Section 'B' (420m) —
- Section 'C' (220m) —

All watercourses/drains within the project area appear to have been re-aligned and/or straightened in association with historic farm drainage development.





There are several areas of minor localised stream bank erosion within the main stem stream.

Soils on the site are predominantly Rukuhia soils over peat, which generally has a wetness and soil limitation to use and is classified as being land use capability 2s.

The whole site is flat to gently undulating (0-3 degree slopes) and although historically poorly drained, are capable of arable use. Currently the site is managed as one large dairy farm

The project area is mainly fed from peat lands within a low gradient drainage network and there is a flood detention dam managed by the Waipa District Council on the main stem of the Mangakotukutuku Stream.

Figure 3 – Photographs of Typical Stream Reaches

1. Main Stem 'A', from tanker track looking downstream (east)	2. Main Stem 'A' – upstream of detention dam culvert, looking upstream (west)
	
3. Main Stem 'B' – downstream of detention dam culvert, looking downstream (east)	4. Main Stem, from tanker track looking upstream (east) into neighbours.
	
5. Drain next to tanker track looking south	6. Drain next to tanker track looking north
	

5 Description of Issues and Proposed Solutions

5.1 Stream Bank Erosion

There are a few isolated areas of stream bank erosion within the main stream which appear to be due largely to a lack of stabilising riparian vegetation. This erosion contributes sediment and phosphorus to the waterway and is expected to continue if left in its current state.

Stream bank erosion within the site will be contributing some sediment to downstream areas, which currently suffer from excessive sedimentation.

5.2 Absence of Appropriate Riparian Vegetation

The Mangakotukutuku Stream contains significant ecological values (ie threatened and rare indigenous fish) and their habitat is under increasing pressure from existing urban impacts within Hamilton, current and future urbanisation within the catchment.

Headwater streams without appropriate riparian vegetation, particularly as they get smaller, are vulnerable to increasing water temperatures which can be detrimental to instream ecology. It is increasingly important, where possible, to improve the quality of water in the headwater catchment to offset some of these impacts.

The site contains no significant riparian vegetation currently.

Being an intensively dairy farmed area it is anticipated that there will be significant nitrogen and phosphorus loading from within the site and the headwater catchment generally. The establishment of extensive vegetated riparian areas have the potential to reduce contaminant loads to the adjacent waterways and is being encouraged currently throughout the dairy industry.

5.3 Proposed Solutions

Re-fencing, weed control and initial planting is planned to occur over year one with replacement planting (blanking) in year two and reducing weed control expected in years three and four, discussed further as follows;

5.3.1 Weed Control

It is critical to the success of future native plantings and to ensure that future maintenance is reduced to a minimum by the control of existing exotic woody weeds, including blackberry and minor areas of gorse/pampas on this site. The few immature exotic trees present also require removal. The cost of weed control to ensure a high level of control prior to planting has been included in this project.

5.3.2 Fencing

In several areas existing fences will need to be moved further out from the waterways to provide sufficient room for riparian plantings and where isolated areas of erosion have occurred. All electric fences need to be a minimum of four wires (with at least two hot) and including sufficient posts.

5.3.3 Planting

The Mangakotukutuku Stream is proposed to be planted in a range of appropriate eco-sourced indigenous grass, shrub and tree species. Major drains would also benefit from riparian planting (using for example Carex grasses), however those waterways are typically ephemeral (ie dry in mid-summer) and not included within this proposal.

Once weed control has been undertaken, where required, and fencing upgraded/moved out from waterways (if required), these areas will be planted with specific native plants as follows;

- a) stream areas- plant mixed species at 1m average, Carex at 0.8m, others at 1.2m average (eg 3 rows per side, average 1m spacing = 6 plants/m)

The paddock closest to the railway line has fencing to a good standard, although the riparian margin is too narrow for 3 rows of planting either side of the stream. In this area, 2 rows either side are proposed (ie 4 plants/m).

Consideration for planting low growing species (eg Carex, flax etc) on the southern side of the stream is required to provide for machine access, if required.

It is proposed to plant a range of colonising grass, shrub and tree species with emphasis on those that are easy to establish, cost effective to obtain and low maintenance. Plants will be selected to provide a primary function of shading to improve water quality and habitat onsite and downstream, but also to provide subsidiary biodiversity benefits and potential a food source for native birds.



Stream areas proposed for planting will require that existing fences are moved out to provide adequate space for plantings and be a minimum of four wires (with at least two hot).

A list of the typical native species to be planted on the Mangakotukutuku Stream riparian margins is attached as Appendix 1.

5.3.3.1 Tributary Drains

Planting of the drains with indigenous Carex grasses, although not included within this proposal, could be undertaken to provide a dense, low maintenance and long lived margin that occupies a minimum of space and allows access for occasional mechanical drain clearance, if required. Drain areas proposed for this type of planting may require that existing electric fences be moved out slightly to provide adequate space for plantings.

A typical drain in peat land shown in photo 7 below with an example of a drain planted with Carex shown within photo 8.

	
7. Drain prior riparian planting	8. Example of drain margins planted using native Carex grass.

5.3.4 Maintenance

Maintenance of fencing and planted areas will be essential to ensure the success of this project, including weed control and blanking any failed plantings. Provision has been made in the costings attached to undertake maintenance of native plantings for 3 years post-planting. Maintenance of fences and weed control (blackberry etc) will be needed on an ongoing 'as required' basis.

6 Sustainable Dairying: Water Accord

The dairy industry has set a goal that riparian areas of the type targeted for work on this site be planted in appropriate vegetation throughout all areas of New Zealand by the year 2030 and for

that to occur, the type of riparian planting proposed on this site will need to become standard practice on all dairy farms.

The document 'Sustainable Dairying: Water Accord' (refer to Appendix 2) sets out specifics targets regarding the management of riparian areas, summarised as follows;

'Introduce measures to achieve progressive planting of the length of waterways within or bounding dairy farms from which there is stock exclusion where planting will contribute to water quality enhancement according to the following phase-in schedule:

- 50% of dairy farms with waterways will have a riparian management plan by 31 May 2016 and all of these farms will have completed;
 - half of their riparian management plan commitments by 31 May 2020
 - full implementation of their riparian management plan by 31 May 2030
- 100% of all dairy farms with waterways will have a riparian management plan by 31 May 2020.
- Promote and facilitate (including through partnerships with other organisations) riparian planting to enhance ecosystem health (on-going).'

The programme of work set out in this agreement provides a clear pathway for the landowners at this site to achieve these targets, to set an example for other dairy farmers and importantly, provides a partnership mechanism for the community (via the MSCG and the WRC) to assist in this process.

7 Estimated Costs and Timetable

Based on the identified sections of stream in Figure 2 the costs are summarised as follows;

Mangakotukutuku Stream Restoration Project - Pengxin NZ Farm Group Ltd						
Indicative Annual Work Programme		2015 - 2018			Approximate cost share	
Work Area & Task (all years)		Specifications (excl GST)		WRC	PNZFG Ltd	
Woody weed control		as required		35%	65%	
Fencing upgrade		3w electric, \$3/m		35%	65%	
Native plants & planting (contractor)		\$4.50/plant (pb3)		35%	65%	
Native plant maintenance (2 x releases/yr)		\$0.50 / plant /release		35%	65%	
Work Area & Task		Total Costs		WRC	PNZFG Ltd	
	Areas	length (m)	plant no's	(excl GST)		
Year 1 - 1 July 2014 to 30 June 2015						
Weed control/exotic tree removal	A,B,C			200	70	130
Pre-plant weed control	A,B,C			500	175	325
Fencing upgrade	A,B	1360		4080	1428	2652
Native Plants & Planting	A,B,C		4100	18450	6458	11993
Plant Maintenance	n/a					
Year 2 - 1 July 2015 to 30 June 2016						
Replacement Native Plants & Planting	A,B,C		500	2250	788	1463
Plant Maintenance	A,B,C			4000	1400	2600
Year 3 - 1 July 2016 to 30 June 2017						
Plant Maintenance	A,B,C			2000	700	1300
Year 4 - 1 July 2017 to 30 June 2018						
Plant Maintenance	A,B,C			1000	350	650
Project Total		1360	4600	\$32,480	\$11,368	\$21,112
Adjustment for WRC \$10K maximum				excl GST	\$10,000	\$22,480
Actual Percentage Share					31%	69%
Partners				Overall Cost Share		
Waikato Regional Council				WRC	31%	\$11,500
Pengxin NZ Farm Group Ltd				Pengxin	69%	\$25,852
				Total Project Costs		\$37,352

8 Responsibilities

The Landowner will be responsible for the maintenance of the works, which includes but is not limited to:

8.1 Fencing

Fencing shall be carried out as outlined below:

- a) All fences along waterways proposed to be planted will be upgraded to four wires (with at least two hot) will be constructed to exclude stock from the areas indicated on Figure '2'.
- b) Maintenance of the fence will be the responsibility of the Landowner and will be carried as and when necessary to ensure the fencing standards are adhered to and stock are excluded at all times. Assistance of up to 35% of cost may be available from Waikato Regional Council, subject to application and approval.

8.2 Vegetation

The following maintenance will be carried out within areas indicated on Figure '2'.

- a) all Total and Boundary Control plant pests be removed; and
- b) all efforts will be made to ensure the survival of native plants, which may include release spraying and blanking plant deaths.

8.3 Grazing Management

There will be no grazing permitted within areas indicated on Figure '2'.

9 General Property Recommendations

9.1 Soil Management

Tracks, fence lines, gates and troughs should generally be sited to avoid stock-induced erosion and to avoid runoff directly into waterways.

Where cultivation is required it is recommended that this be carried out in a manner to reduce soil wash into riparian areas and waterways.

Winter stock management should aim to avoid soil compaction (pugging) on all land. Such management will help prevent soil erosion, nutrient loss and loss of soil structure. These soil issues often result in increased runoff rates and loss of production from the land. The Landowners are encouraged to use suitable monitoring tools and management advice is available from the following sources:

- Waikato Regional Council Land Management Officer at the local Waikato Regional Council Office.
- *Managing Treading Damage on Dairy and Beef Farms in New Zealand*. AgResearch Ltd, 2003.
- *Visual Soil Assessment: Vol. 1, Cropping and Pastoral Grazing on Flat to Rolling Country; and Vol. 3, Hill Country Land Uses*. horizons.mw Report No. 20/EXT/425. horizons.mw and Landcare Research NZ Ltd, 2000.

9.2 Water Quality

Controlling erosion and the resulting sediment discharge helps to control phosphorous (P) discharge to waterways.

In addition, the construction and maintenance of runoff diversions from tracks and water crossings to manage stormwater into sumps or onto pasture is recommended to reduce the potential for direct discharges to waterways. Riparian strips with strong vegetation cover filter sediment to minimise sediment discharge to ephemeral waterways during storm events. Wetland or marsh areas managed as riparian/filter zones are useful for controlling nitrogen (N) discharge, which can occur through overland and groundwater flows. Other options for controlling N discharge include split fertiliser applications when applying urea, utilisation of dairy shed effluent, use of feed/standing pads and reduced stocking rates during winter.

Direct application of fertiliser to waterways should be avoided, while fertiliser application rates and timing should be optimised for maximum pasture uptake and minimum leaching/runoff. A property nutrient budget is recommended to calculate the rates of nitrate leaching and phosphorus runoff, and regular soil testing should be undertaken to monitor changes in soil nutrient levels over time.

In general it is recommended that fertiliser use and application is undertaken in accordance with industry best practice and management advice is available from the following source:

- Waikato Regional Council Land Management Officer at the local Waikato Regional Council Office
- *Code of Practice for Fertiliser Use – Pastoral Farming Guide*. NZ Fertiliser Manufacturer's Research Association, P O Box 9577, Newmarket, Auckland. Phone 09 415 1359.

9.3 Biosecurity

Weeds and pest animal pose a threat to existing vegetation and proposed plantings. It is recommended that these threats be controlled, and management advice is available from the following sources:

- Land Management Officer at the local Waikato Regional Council Office
- *Controlling weeds in riparian margins. A guide to restoration projects and other plantings* Booklet, published by Waikato Regional Council
- Waikato Regional Council plant pest and animal pest advisors, phone **0800 BIOSECURITY (0800 246 732)**
- Waikato Regional Council web site: www.waikatoregion.govt.nz/enviroinfo/pests
- Weed Busters web site: www.weedbusters.org.nz

It is critical that care be undertaken during all weed spraying to avoid damage to indigenous riparian plantings and that appropriate training be provided to contractors/staff in this regard.

9.4 Biodiversity

Stock exclusion in combination with the establishment of appropriate indigenous riparian vegetation creates opportunities to enhance local biodiversity by encouraging indigenous fauna and flora. Increasing biodiversity potential is an integral objective to this proposal and is encouraged where practical with management advice available from the following sources:

- Mangakotukutuku Stream Care Group: <http://www.streamcare.org.nz/>
- Waikato Regional Council Catchment Management Officer at the local Waikato Regional Council Office
- Waikato Regional Council web site : www.waikatoregion.govt.nz/publications
- Biodiversity Advice Waikato web site: www.waikatobiodiversity.org.nz
- NZ Ecological Restoration Network web site: www.bush.org.nz

The Mangakotukutuku Stream Care Group will endeavour, as far as practicable, to assist with the implementation of the works outlined within this agreement, particularly with regard to the organisation of riparian planting.

10 Agreement

1. Waikato Regional Council and the Landowners agree to undertake the works in partnership as outlined in this Agreement, in accordance with the Objectives, Proposed Solutions and timeframes. If works are not carried out within the time frames indicated in the proposal, annual grant funding may be re-allocated to other programmes unless specific arrangements have been made with Waikato Regional Council.
2. For River and Catchment and/or Clean Streams works where Waikato Regional Council's grant contribution exceeds \$10,000, Waikato Regional Council and the Landowners will enter into a Memorandum of Encumbrance or other covenant in respect of this Environmental Programme Agreement.
3. Works will generally be in accordance with those set out in this Agreement, but may be varied or extended subject to consultation with Waikato Regional Council. A review will be undertaken every five years.
4. Funding for works outlined in this agreement are subject to availability. Funding is to be reviewed on an annual basis. Grant rates will be in accordance with those specified in the Funding Summary table. Grant claims will be accepted on the basis of actual and reasonable costs, subject to proof of cost or other supporting documentation.
5. Where the Landowners are registered for GST the Landowners must provide Waikato Regional Council with a valid tax invoice at the time a Grant claim is submitted.
6. The Landowners are responsible for maintenance of works carried out under this agreement. Grant assistance up to 35% of cost may be available from Waikato Regional Council, subject to application and approval.
7. The Landowners will at reasonable times allow Waikato Regional Council or its agents, upon prior notification, to inspect the condition of the works and to review related management issues.
8. The Landowners will notify Waikato Regional Council of any pending change of ownership, including subdivision, to facilitate an up-to-date record of Landowners details. This agreement shall be binding on the landowners and the landowner's successors in title. The landowners will remain liable for any financial costs until Waikato Regional Council receives a completed Deed of Accession.

9. If the Landowners fail to implement or maintain works as agreed in this Environmental Programme Agreement, Waikato Regional Council will notify the Landowners in writing specifying the action or repairs required and a suitable timeframe to complete the actions or repairs. If the Landowners fails to comply with the notice Waikato Regional Council by its servants, agents or contractors may (but without obligation to do so) enter upon the land and carry out works deemed necessary and recover costs of doing so from the Landowners.
10. Dispute resolution. In respect of any dispute between the parties arising out of or in connection with this agreement, the parties shall first attempt to negotiate a resolution.
 - 10.1 If negotiations fail, either party may elect to have the dispute resolved by a sole mediator jointly appointed by the parties or if the parties cannot agree on the mediator, then a mediator appointed by the President for the time being of the New Zealand Law Society of his or her nominee. The election to mediate is to be made within ten (10) working days of notice of the dispute or at any other time as agreed between the parties.
 - 10.2 If mediation is not elected or if mediation is unsuccessful then the matter can be referred to arbitration if both parties agree in writing to this occurring. Such agreement must be reached within ten (10) working days after the parties' right to elect mediation has elapsed or the conclusion of the mediation process.
 - 10.3 If arbitration is not elected pursuant to clause 10.2 then the dispute shall be resolved by the Courts.

Signed for and on behalf of the Landowners (**Pengxin New Zealand Farm Group Ltd**)

By: _____ (Full Legal Name)	Signature: _____
Position: _____	Date: _____

Signed for and on behalf of **Waikato Regional Council**:

By: _____ (Full Legal Name)	Signature: _____
Position: _____	Date: _____

11 Project/Funding Approval

Proposed: (Land Management Officer)	
Date:	
Approved: (Zone Manager)	
Date:	

Appendix 1: Typical Plants Selection for Mangakotukutuku Stream Riparian Planting

Species	Common Name
Aristotelia serrata	Wineberry
Carex secta	Purei
Carpodetus serratus	Putaputaweta
Coprosma rigida	Rigid mikimiki
Coprosma robusta	Karamu
Cordyline australis	Cabbage tree
Cortaderia fulvida	Toetoe
Hoheria sextylosa	Lacebark
Kunzea ericoides	Kanuka
Leptospermum scoparium	Manuka
Myrsine australis	Mapou
Phormium cookianum	Mountain flax
Phormium tenax	Swamp flax
Plagianthus regius	Ribbonwood
Podocarpus totara	Totara
Sophora microphylla	Kowhai

Planting assumptions / basis for costings:

- a) Stream areas- plant mixed species at 1m average, Carex at 0.8m, others at 1.2m average (eg 2 or 3 rows per side, subject to space available, average 1m spacing = 6 plants/m)

Riparian Management

Expectations

- Dairy farms will exclude dairy cattle from significant waterways and significant wetlands.
- Riparian planting will occur where it would provide a water quality benefit.
- The crossing of waterways by dairy cows will not result in degradation of those waterways.

Dairy companies will:

Implement measures to exclude dairy cattle from waterways* and drains* greater than one metre in width and deeper than 30 cm and significant wetlands* on dairy farms* according to the following phase-in timetable.

For waterways and drains

- 90% exclusion of the length present on dairy farms by 31 May 2014; and
- 100% of the length present on dairy farms¹ by 31 May 2017.

For significant wetlands

- 100% exclusion of all wetlands identified by a regional council as at 31 May 2012 by 31 May 2014; and
- 100% exclusion of any additional regionally significant wetlands present on dairy farms within three years of them being identified by the regional council.

Encourage dairy farmers to

- exclude dairy cattle from all wetlands; and
- apply the stock exclusion commitment to third party grazing land as if it were their own land.

Implement measures to ensure 100% of regular stock crossing points* are either bridged or culverted by 31 May 2018.

Introduce measures to achieve progressive planting of the length of waterways* within or bounding dairy farms from which there is stock exclusion* where planting will contribute to water quality enhancement according to the following phase-in schedule:

- 50% of dairy farms with waterways will have a riparian management plan* by 31 May 2016 and all of these farms will have completed
 - half of their riparian management plan commitments by 31 May 2020
 - full implementation of their riparian management plan by 31 May 2030
- 100% of all dairy farms with waterways will have a riparian management plan* by 31 May 2020.

Promote and facilitate (including through partnerships with other organisations) riparian planting to enhance ecosystem health (on-going).

DairyNZ will:

Systematically prepare (in partnership with regional councils) regionally tailored riparian management guidelines² to promote stream health and water quality according to the following timetable.

Guidelines completed for³:

- Three regions completed by 31 May 2014
- Nine regions by 31 May 2015
- All regions by 31 May 2016.

¹Stock exclusion from streams smaller than one metre in width and 30cm in depth may be negotiated as part of regional programmes of action where necessary to maintain or enhance particular freshwater values and interests in specific localities.

²The preparation of guidelines will be prioritised according to the presence of priority catchments determined by the state of/risk to water quality and by the introduction of limits on contaminant loads from diffuse discharges.

³Such guidelines will include recommended setback/planting width, planting density and plant species and well as the recommended means by which the extent of planting should be monitored.

*See Glossary for definitions on page 14.