IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of the hearing of submissions on Proposed

Plan Change 5 (Nutrient Management and Waitaki Sub-region) to the Canterbury Land

and Water Regional Plan

BY

KEELING DAIRIES LIMITED

AND

WAITAKI IRRIGATORS

COLLECTIVE

LIMITED

Submitters

TO

CANTERBURY REGIONAL COUNCIL

Local authority

STATEMENT OF EVIDENCE OF GEOFFREY FRANCIS KEELING ON BEHALF OF KEELING DAIRIES LIMITED AND THE WAITAKI IRRIGATORS COLLECTIVE LIMITED

Dated: 22 July 2016

Prudence Steven QC Canterbury Chambers PO Box 9344 Christchurch 8149

Telephone: (03) 343 9834 Email: pru@prusteven.co.nz

INTRODUCTION

Qualifications and experience

- My name is Geoff Keeling. I am a dairy farmer living near Duntroon in the Waitaki Valley. I am Chairman of the Kurow-Duntroon Irrigation Company Limited ("KDIC") and a director of the Waitaki Irrigators Collective Limited ("WIC"). I am also a member of the Waitaki Independent Irrigators Incorporated Society ("WIII") and a former director of the Maerewhenua District Water Resource Company Limited ("MDWRC").
- 2. I hold a Bachelor of Commerce majoring in Farm Management from Lincoln University.
- 3. I was previously a representative of the Waitaki District Council on the Lower Waitaki-South Coastal Canterbury Water Management Zone Committee ("the Zone Committee") for four years, as I was an elected member of the Council representing the Corriedale Ward.
- 4. I have been associated with the issues relating to water allocation and use, nutrient management and Environment Canterbury planning and consenting processes in the Lower Waitaki for over a decade.

SCOPE OF EVIDENCE

- 5. My evidence will cover the following matters:
 - (a) Our farming operation and environmental compliance requirements.
 - (b) KDIC's environmental compliance requirements.
 - (c) Implications and effects of the proposed rule framework.

OUR FARMING OPERATIONS AND COMPLIANCE REQUIREMENTS

6. Together with my wife Jan, we operate two dairy units and a support block at Duntroon. These three units are adjacent to each other and are fully irrigated with over 675 hectares of irrigation. Water comes from the Lower Waitaki River via KDIC, the Maerewhenua District Water Resource Company (MDWRC), and our own independent water permits.

- 7. The home farm has been in Jan's family since 1906.
- 8. Both of the irrigation schemes we receive water from have a comprehensive suite of environmental conditions attached to their water permits, which require us to have a Farm Environment Plan (FEP) to implement Mandatory Good Agricultural Practices (MGAPs)¹, fenced-off waterways, riparian management processes, as well as modelling our nutrient losses and maintaining a nutrient budget through the use of the OVERSEER model.
- The FEPs cover both dairy units, including the areas that receive water from our own private consents.
- The resource consent related to our support block does not have those same conditions attached to it, however we have covenants registered on the land title for the protection of wetlands and encumbrances in favour of Environment Canterbury requiring us to farm according to 'best practice'.
- We work closely with the Duntroon community and have provided land and labour to aid in the establishment of the Duntroon Wetlands. The Alps to Ocean Cycle trail has over 5km of trail through our property. The renowned Takiroa Rock Art site is also located on the farm and we have a close relationship with Ngai Tahu ensuring the protection and enhancement of this area.
- 12. As is the case with all dairy farmers, I hold multiple consents in relation to the discharge of dairy effluent to land and the use of land to store dairy effluent - all with strict conditions upon them.
- Our properties have approximately 6 kilometres of Waitaki River frontage which means that we are subject to many strict policies and rules within the Land and Water Regional Plan relating to managing stock, land and vegetation within the bed and margins of a braided river, as well as sites considered sensitive for salmonspawning purposes.
- 14. According to the original provisions of the Land and Water Regional Plan, our farms are located within the Lower Waitaki nutrient allocation zone, which was classified as 'green'. Under proposed Plan Change 5, the farms are within the Valley and Tributaries Zone.

¹ MGAPs are defined in the Statement of Evidence of Keri Johnston.

KUROW-DUNTROON IRRIGATION COMPANY REQUIREMENTS

- 15. KDIC abstracts water from Lake Waitaki under resource consent number CRC163429 at a rate not exceeding 3,000 litres per second to irrigate land between Kurow and Duntroon on the South Bank of the Waitaki River.
- 16. KDIC applied to renew its original water right in 2000, and was only granted consent following the Upper Waitaki hearings in 2011 as it was caught-up in the "call in" of consent applications that occurred prior to the development of the Waitaki Catchment Water Allocation Regional Plan.. The decision was appealed. Appeals were resolved by mediation in 2012. Therefore, it took KDIC 12 years to renew its water right.
- 17. Attached as Appendix A is a copy of the water permit finally issued to the KDIC,² I would like to draw to the attention of the Panel the following conditions which apply to farms receiving water from the scheme:
 - (a) Condition 7 fertiliser: all fertiliser shall be applied in accordance with a nationally-recognised quality assurance programme.
 - (b) Condition 8 field capacity: the scheme must take all practicable steps to ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity, avoid leakage from pipes and structures, and avoid the application of water onto non-productive land.
 - (c) Condition 11 modelling nitrate-nitrogen for properties larger than 20 hectares: records shall be kept in order that an approved method (such as OVERSEER) shall be used to model nitrogen-nitrate leaching below the root zone for each prior 12 month period; predictive modelling of the same is to be undertaken for the following 12-month period, taking regard of the need to reduce leaching where possible. The records of the calculations must be provided to Environment Canterbury.
 - (d) Condition 12 all new irrigation infrastructure must be designed by an accredited professional.
 - (e) Condition 14 farm environmental management plans (FEMPs): all properties irrigating greater than 20 hectares must have a FEMP prepared and submitted to Environment Canterbury. The FEMPs must detail how the environmental effects arising from the use of irrigation water are to be

² It should be noted that although the consent is classified as having a status of "inactive" by Environment Canterbury, this is incorrect.

- managed and minimised. There are also surface-water-body fencing and riparian planting requirements.
- (f) Condition 16 water supply agreement: these agreements are required to provide the scheme with the authority to enforce the farm-level conditions of the consent, such as FEMPs and fencing.
- 18. As stated in my submission on Proposed Plan Change 5 ("PC5"), there was a clear expectation from the community consultation undertaken that in areas where water quality outcomes were being met, those farmers operating under good management practices and with Farm Environment Plans in place would be able to continue farming "business as usual." In other words, further resource consents would not be required.
- 19. According to the rules under PC5, our shareholders irrigating greater than 50 hectares are now required to obtain their own resource consent to use land for farming purposes. This is in spite of the fact that they are already required to farm under the strict conditions imposed by the scheme's consent.
- 20. The only way that this situation can be avoided is for the scheme to apply for a nutrient discharge consent, which would impose a scheme nitrogen loss cap. This would mean that:
 - The scheme would have to voluntarily make an application for an <u>additional</u> consent for the scheme;
 - · Each water supply agreement with shareholders would have to be amended;
 - The scheme would have to employ a suitably-qualified person to develop and implement scheme policies around the allocation of the scheme load (including how to allocate load across different land-use types, soils, irrigation systems);
 - The scheme would have to devise a basis for determining how load is to be distributed upon land use or irrigation system change;
 - The scheme would have to determine how to manage possible expansions in the future;
 - -and so on.
- 21. It is the position of the scheme's directors that this should not be required in an area where water quality outcomes are being met, and there is a generous "development headroom" available in the zone (in terms of the catchment nitrogen allocation limit).

The implementation of such a requirement for our small scheme would be extremely expensive, complex, and time-consuming and would be unlikely to result in any overall environmental gain.

22. The scheme has absolutely no desire or ability to be not only the provider of water, but also the policeman, the judge and the jury in regards to its shareholders farming operations and nutrient losses.

CONCLUSION

- 23. I would strongly urge the hearing panel to follow the intent of the Zone Committee in that consents for operating in a 'green zone' are not required. As I have illustrated there are a raft of consent requirements in place that should deliver the same result. Many of us that farm beside the river are also affected by a number of existing plans and rules that limit our on-farm actions and activities.
- 24. The current proposed rules require either individual farm-level consents, or KDIC obtaining a nitrogen allocation cap. This is not a choice our Scheme wants to make, when we see that it would have little environmental benefit. How are existing schemes expected to have the ability to allocate nutrients fairly and in a manner to not cause conflict in the community when the regional authority hasn't yet found a way?

Geoffrey Keeling

22 July 2016

Appendix "A"

Printed: Wednesday, July 20, 2016

Record Number: CRC163429
Record Type: New Consent
Permit Type: Water Permit

Record Holder: Kurow-Duntroon Irrigation Company

Record Status: Limited

File Number: Issued - Inactive Previous Record(s): CRC163429

Next Record(s): Location:

Description: Lake Waitaki

to take and use surface water from Lake Waitaki for irrigation water supply purposes at or about map reference

NZMS 260:I40:0592-0981



Customer Services

P. 03 353 9007 or 0600 324 636

PO 80x 345 Christchurch 8140 P. 03 365 3828 F. 03 365 3194 E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Key Dates:

Event Date

Commencement Date 10 Dec 2015

Lapses 31 Dec 2018

Expires 23 Apr 2048

Workflow (Only shows if workflow has open tasks):

Task Name	Task Status	Task Status Date
Record Lodgement	Completed - Ready for s88	06 Nov 2015
Complete s88 Check	Completed - Accept Application	09 Nov 2015
Audit Application	Completed	04 Dec 2015
Complete Recommendation	Completed - Review Required	04 Dec 2015
Peer Review Recommendation	Completed - No Rework	04 Dec 2015
Complete Applicants Review	Completed - No Rework	07 Dec 2015
Make Notification Decision	Completed - Non Notified	10 Dec 2015
Make Non Notified Final Decision	Completed	10 Dec 2015
Notify and Issue Final Decision	Completed - NonNtfd Grant	10 Dec 2015
Finalise Application	Completed	10 Dec 2015
Compliance Audit Check	Completed	16 Dec 2015

Conditions:

No	Text	
	Take	
1	a.	Water shall only be from Lake Waitaki, at or about map reference, NZMS 260:I40:0592-0981, at a rate not exceeding 3,000 litres per second. The annual volume taken between 15th August and the following 30th May shall not exceed 26.3 million cubic metres.
	D.	The annual volume taken between 15th August and the following 30th May shall not exceed 26.3 million cubic metres.
	Lake I	_evels
2	a.	The taking of water in terms of this permit shall cease whenever the level in

	Lake Waitaki falls below 227 meters above mean sea level, as assessed by Meridian Energy Limited and published on www.meridianenergy.co.nz/AboutUs/LakeLevels.
_	Use
3	Water shall be used only for spray and border-dyke irrigation on the area of land identified as the Scheme Area and shown in attached plan CRC163429, which form part of this consent.
	 The irrigation system used to distribute water in terms of this consent shall not be used to distribute effluent, fertiliser or any other contaminant.
	Measuring devices
4	 a. The consent holder shall before the first exercise of this consent: Install a water flow measuring device in a location that will enable the determination of the continuous rate of flow and volume of water being diverted within an accuracy of 10%; and The measuring device shall, as far as practicable, be installed at a site likely to retain a stable relationship between flow and water level. The measuring device shall be installed in accordance with the manufacturer's instructions; and Install a tamper-proof electronic recording device such as a data logger(s) that shall time stamp a recording from the water level measuring device at least once every 15 minutes, and have the capacity to hold at least one season's data of water taken as specified in clauses 4(b)(i) and 4(b)(ii), or which is telemetered, as specified in clause (b)(iii).
	 b. The recording device(s) shall: i. be set to wrap the data from the measuring device(s) such that the oldest data will be automatically overwritten by the newest data (i.e. cyclic recording); and ii. store the entire season's data in each 12 month period from 1 July to 30 June in the following year, which the consent holder shall then download and store and provide to the Canterbury Regional Council in a format and standard specified in the Canterbury Regional Councils form for Water Metering Data Collection; and be readily accessible to be downloaded by the Canterbury Regional Council or by a person authorized by the Canterbury Regional Council: RMA Monitoring and Compliance Manager; and iii. be connected to a telemetry system which collects and stores all of the data continuously with an independent network provider who will make that data available in a commonly used format at all times to the Canterbury Regional Council and the consent holder. No data in the recording device(s) shall be deliberately changed or deleted. iv. flow at the measuring site shall be gauged at least every three months whilst this consent is being exercised, and at any other time when required as determined by a site inspection, to be carried out at least

once every month. v. gaugings and site inspections shall be carried out in accordance with the following manuals: Hydrologists Field Manual (NIWA 1991) and Procedure for Rating a Flow Station (NIWA 1993) or any equivalent publication. c. The measuring and recording device(s) described in clauses 4(a) and (c) shall be available for inspection at all times by the Canterbury Regional Council including access to the data recorded in accordance with clause (b). d. All data from the recording devices described in clauses 4(a) and (b), and the corresponding relationship between the water level and flow, shall be provided to the Canterbury Regional Council annually in the month of June, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
 Certificate of compliance - rate of water taken/operating as specified
Within one month of the commencement of this consent, at two-yearly intervals or at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, attention: RMA Monitoring and Compliance Manager, signed by a suitably qualified person certifying that: a. The water measuring device is measuring the rate of water taken as specified in condition 4(a)(i) to (iii) inclusive; and b. The tamper-proof electronic recording device is operating as specified in condition 4(b)(i) to (iv) inclusive.
Certificate of Compliance - installation of device(s) and retrieval of data:
Within one month of the installation of the measuring or recording device(s), or any subsequent replacement measuring or recording device(s), and at five-yearly intervals thereafter, and at any time when requested by the Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying, and demonstrating by means including a clear diagram, that: a. The measuring and recording device(s) has been installed in accordance with the manufacturer's specifications; and b. Data from the recording device(s) can be readily accessed and/or retrieved in accordance with condition 4.

Fertiliser:

7	 a. Fertiliser shall be applied in accordance with a nationally recognized quality assurance program for fertilizer application. b. For the purposes of this condition a quality assurance program is: i. The New Zealand Fertiliser Manufacturers' Research Association Code of Practise for Fertiliser Use; or ii. The Code of Practise for Nutrient Management (With Emphasis on Fertiliser Use) NZFMRA 07; iii. Any other method approved by the Canterbury Regional Council.
	Field Capacity:
8	 a. The consent holder shall take all practicable steps to: i. Ensure that the volume of water used for irrigation does not exceed that required for the soil to reach field capacity. In this condition field capacity means the soil moisture content in the crop root zone after drainage (1-3 days) after thorough wetting (such as a large rainfall event that exceeds the root zone water holding capacity when the macro pores contain air and micro pores water); and ii. Avoid leakage from pipes and structures; and iii. Avoid the application of water onto non-productive land such as impermeable surfaces and river or stream riparian strips.
	Notice
	·
9	The Canterbury Regional Council, Attention: RMA Monitoring and Compliance Manager, shall be informed immediately before the first exercise of this consent by the consent holder.
	Fish recovery:
10	a. The consent holder shall notify Central South Island Fish & game Council at least five clear working days prior to the taking of water under Condition (1) ceasing completely to enable fish recovery within the races, canals and distribution network of the irrigation scheme to take place.

	Modelling nitrate-nitrogen for properties irrigating equal to or greater than 20 hectares:
11	 a. With the exception of the first period ending 30 June during which this consent is first exercised, for each preceding 12 month period ending 30 June: i. An "approved method" shall be used to model the nitrate-nitrogen concentration in the soil drainage water below the plant root zone and to prepare a nutrient budget for the "subject land" for that prior 12 month period; and ii. Records shall be maintained throughout the year of the farm management practices and associated data that will be used as input to the "approved method"; and iii. Predictions shall be made of the farm management practices that will be used for the following 12 month period to provide input data to the "approved method" taking regard of the need to reduce nitrate leaching below the plant root zone where possible.
	 b. A record of the predicted and measured input data, the calculations undertaken and the calculated nitrate-nitrogen concentration in the soil drainage water below the plant root zone in accordance with clause (a) shall be: i. prepared by 31 August each year; and ii. certified as an accurate record by a suitably qualified person; and iii. maintained for the property for the duration of the consent; and iv. provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 30 September each year, or upon request.
	 c. For the purposes of Condition (11)(a) an "approved method" is: i. 'Overseer' (AgResearch); or ii. The Soil Plant Atmosphere Model (SPASMO- HortResearch); or iii. Any other method approved by the Canterbury Regional Council. d. For the purposes of this condition, the "subject land" means the area that is irrigated between 1 July and 30 June of the following year.
	Irrigation infrastructure
	Alll new irrigation infrastructures shall be designed and accredited by a qualified professional, and installed in accordance with the accredited design. The design shall take into account the specific requirements of the properties soil types.
	Scheme management plan:
13	 Prior to the first exercise of this consent, the consent holder shall prepare and submit to the Canterbury Regional Council, a Scheme Management Plan. The Scheme Management Plan shall provide details of the practices and procedures

- to be put into place to operate the water take and delivery of water to the Scheme area and to monitor and manage the environmental effects arising from the use of the water within the Scheme, in order to ensure compliance with the conditions of this consent and to minimise the potential for adverse effects on the environment arising from the exercise of this consent.
- b. The Scheme Management Plan shall be reviewed and update annually. If revised, the updated Scheme Management Plan shall be submitted to CRC within one month of completion.
- c. The Scheme Management Plan shall, as a minimum, address the following matters:
 - i. Operation requirements for the take of water for the Scheme from Lake Waitaki.
 - ii. Operational rules for the Scheme including responsibilities and arrangements for water management and distribution, including:
 - i. Allocation during water shortages, and
 - ii. calculation for every shareholder for an annual volume of water that is considered to be reasonable and efficient;
- d. For the purposes of this consent, reasonable and efficient use for spray irrigation is 600mm/ha. For border dyke is 1000mm/ha.
- e. A template to be used as the basis for individual Farm Environmental Management Plans (FEMPs). That template shall have the following objectives for which the FEMP will develop methods to:
 - i. Achieve technically efficient use of water, minimising runoff and drainage;
 - ii. Minimise contamination of groundwater and surface water, particularly in terms of faecal contamination, nitrogen and phosphorus;
 - iii. Minimise nutrient losses to water while managing soil fertility to optimise pasture and crop productivity;
 - iv. Minimise adverse effects on groundwater and surface water levels;
 - v. Maintain the soil in good physical condition;
 - vi. Minimise adverse effects on water bodies and riparian areas through healthy riparian margins and fenced buffer strips;
 - vii. Safeguard significant indigenous biodiversity and ecosystem values within the Scheme area, including taonga species valued by Te Runanga o Moeraki;
 - viii. Provide information to the consent holder including land use, area irrigated, stock numbers, and fertiliser use.
 - ix. Provide procedures to ensure the preparation, implementation, regular review, updating and obtaining of consent holder approval for individual FEMPs for all properties receiving water in terms of this consent.
 - x. Minimise adverse effects on mahinga kai, wahi tapu and wahi taonga values.
- f. The consent holder shall audit compliance with the Scheme Management Plan and the Scheme performance. An annual report on Scheme compliance and performance shall be submitted to the Consent Authority and Te Runanga o Moeraki by 31 March of the year following.

Farm environmental management plans (FEMPs)

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- a. Prior to first exercise of this consent, properties irrigating equal to or greater than 20 hectares receiving water from the Scheme, the consent holder shall have prepared and submitted to the Canterbury Regional Council a Farm Environmental Management Plan (FEMP) for each of those properties.
 - b. Within 2 years of first exercise of this consent, properties irrigating less than 20 hectares receiving water from the Scheme, the consent holder shall have

prepared a	and su	bmitted	to (CRC	а	FEMP.
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- c. The FEMPs shall provide details of the practices and procedures to be put into place to manage the environmental effects arising from the use of the water within the irrigated area, in order to ensure compliance with the conditions of consent and to minimise the potential for adverse effects on the environment arising from the exercise of this consent.
- d. The FEMPs shall include methods to achieve and meet all of the conditions of this resource consent, including a property specific annual volume calculated in accordance with condition 13(c)(ii).
- e. Fencing and riparian planting requirements within the irrigated area on each property:
 - permanent fencing shall be erected at a minimum setback distance of 5
 meters from the edge of any natural, permanently flowing, surface water
 body.
 - ii. where practicable, the FEMP shall identify riparian planting areas within the fenced areas.

Fencing and riparian planting:

- Within six months of the first exercise of this consent, within the irrigated area on each property, the consent holder shall ensure that the shareholder or property owner shall undertake the following:
 - a. Fencing and Riparian planting as identified in the FEMP's prepared in accordance with condition (14) of this consent.
 - b. Temporary fencing will be erected when stock are grazing areas of the property where there is access to any other waterways or water feature of any kind not included within Condition 15(a) above.
 - c. All fencing will be maintained in a good state of repair.

Water supply agreement:

- Within three months of the commencement date of this consent, a water supply agreement between the consent holder and owners of properties where water is to be used ('water user') shall be entered into and shall include terms which will achieve the following outcomes:
 - a. That no water from the Kurow Duntroon Irrigation Scheme shall be provided by the consent holder to any property unless a FEMP has been prepared for the water user in accordance with the template prepared under Condition 13 and Condition 14;
 - b. A requirement for an audit to be undertaken by an appropriately qualified independent person to determine compliance by each water user with the provisions of their FEMP, and the annual volume allocation per property as specified in the Scheme Management Plan. The audit shall take place yearly for the first three years, then at least once every three years after that. A copy of the audit shall be provided to the Canterbury Regional Council: attention: the

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		RMA Compliance and Enforcement Manager.
	c.	Provision for access on to the property of the water user by the consent holder's
		Scheme Manager or their nominated representative, in order to undertake such
		an audit and/or to undertake spot checks of compliance with the implementation
	-	requirements of the FEMP and/or to undertake environmental monitoring in accordance with the requirements of this resource consent;
	۱ ۸	A provision that all new irrigation infrastructures shall be designed and
	ŭ.	accredited by a qualified professional, and installed in accordance with the
		accredited design. The design shall take into account the specific requirements
		of the property's soil types.
	e.	A provision that if the water user is taking water using existing irrigation
		infrastructure they shall obtain an evaluation report prepared by a certified
		irrigation evaluator. The evaluation shall determine the system's current
		performance in accordance with the Code of Practice for Irrigation Evaluation 2010 or equivalent. This report shall be obtained within 3 months after water is
		first delivered to the property. Any recommendations identified in the report shall
		be implemented within 12 months from the date of receipt of the report. A copy
		of the report shall be given to the Canterbury Regional Council: attention the
		Monitoring and Compliance Manager.
	f.	A provision enabling the consent holder to either not initially supply or once
		supply has commenced, to restrict or cease the supply of water to a property in
		the circumstances where there is a non-compliance with conditions 11, 12, 13,
		14 and 15.
	g.	The annual volume of water provided to each property by the consent holder shall not exceed the volume identified in the FEMP for that
		property.
	h.	Any change of party to a Water Supply Agreement under these conditions shall
		be notified to the Canterbury Regional Council within one month of that change.
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		onsent holder shall surrender consent CRC001128 before first exercise of this
	conse	it.
18	a.	The Canterbury Regional Council may, once per year, on any of the five last
		working days of May or November, serve notice of its intention to review the
		conditions of this consent for the purpose of dealing with any adverse effect on
		the environment that may arise from the exercise of the consent and which is
	b	appropriate to deal with at a later stage. In undertaking any review, the Canterbury Regional Council may have regard to
	D.	all FEMPs prepared under Conditions 13 and 14 and may consequently require
		amendment to the conditions.
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19	The lapsing date for the purposes of section 125 shall be 31 December 2018.
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