

15 November 2023

Attention: Alister Hartstone  
Whangarei District Council/Northland Regional Council

Email: [alister@setconsulting.co.nz](mailto:alister@setconsulting.co.nz)

ref. 16782.blh

Dear Alister

**RE: MERIDIAN ENERGY LIMITED – APP.045356.01.01 – LU2300093 – RFI RESPONSE No #4**

The following is a final response to items 2 (NRC), 5 (WDC), 7 (WDC), and 9 (WDC), together with a summary of all responses to the WDC components of the RFI dated 3 October 2023.

**Items 2 (NRC) and 5 (WDC)**

The applicant's engineers (Beca) have had discussions with Council's reviewing engineers Water Technology Limited (WTL) and Metis Consultants Limited (MCL). A response to the WTL and MCL RFIs was provided with RFI Response No# 2 dated 31 October 2023.

Further comments from both MCL and Beca are contained in the email **attached**. Please note that the applicant agrees with the inclusion of the following conditions:

Flooding

The consent holder shall achieve a flood level increase of not more than 5mm on any land outside the project site in the 100 year, 5 year and 2 year ARI rainfall events. This shall be demonstrated using a hydraulic model and submitted to Council and approved 40 days prior to construction commencement. The flood model shall take earthworks, culverts, ground roughness and soil infiltration changes into account. Soil infiltration changes shall be calculated using the PV-SMaRT Solar Farm Runoff Calculator Version 3.0 tool from the University of Minnesota.

Stormwater attenuation

Peak flows discharged from the site shall be attenuated on site such that the 100 year, 5year and 2 year ARI rainfall event post-development peak flows (with climate change) do not exceed 80% of the pre-development peak flowrate (with climate change). The on-site detention systems and comparison of peak flows shall be submitted to Council and approved 40 days prior to construction commencement.

**Item 7 (WDC)**

The applicant has engaged further with First Gas and Channel Infrastructure. Letters of support are **attached**.

**Item 9 (WDC)**

A response to Item 9 was provided in RFI response No#3 dated 3.11.23. The applicant's landscape architect Littoralis Landscape Architecture (LLA) has continued to liaise with the Council reviewing landscape architect from Evolve Planning and Landscape Architecture Limited (EPLAL). It is understood that there are no outstanding matters except for the suggestion by EPLAL that the plan suite appended to the resource consent includes a photograph of an indicative synthetic fence. This is now **attached** for inclusion.

## Summary

The following table details the various RFI matters and the relevant RFI responses.

WDC RFI items	RFI response
4.	RFI response No# 3 dated 3.11.23
5.	RFI response No# 2 dated 31.10.23 RFI response No# 4 dated 15.11.23
6.	RFI response No# 2 dated 31.10.23
7.	RFI response No# 4 dated 15.11.23
8.	RFI response No# 3 dated 3.11.23
9.	RFI response No# 2 dated 31.10.23 RFI response No# 3 dated 3.11.23 RFI response No# 4 dated 15.11.23

As all of the WDC matters now appear to be satisfied, can you please complete processing of the WDC consent in advance of the NRC consent. MEL accepts the (albeit unlikely) risk that the WDC consent may need to be subsequently varied as a result of final deliberations in respect to the NRC consent.

Yours faithfully



Brett Hood  
*Director*

Encl. First Gas letter/Channel Infrastructure letter/Metis email (10.11.23)/Synthetic fence photograph

## Brett Hood

**To:** Andrew Guerin  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Sent:** Friday, November 3, 2023 3:09 PM  
**To:** Micah Sherman <[Michah.Sherman@MeridianEnergy.co.nz](mailto:Michah.Sherman@MeridianEnergy.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Micah,

Further to recent discussions, see comments in red below.

Happy to take any questions if required.

Kind Regards

**Brad Moore**  
Stakeholder Engagement Advisor  
Firstgas  
1396 Arthur Porter Drive, Burbush, Hamilton, Waikato, 3200  
+64 27 299 0912 [firstgas.co.nz](http://firstgas.co.nz)



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Hi Brad

We have progressed things with regards to the RAP designation and visual screening required for our planned solar farm and would like to get your views. Please see attached plans. In particular, it would be good to get your thoughts on:

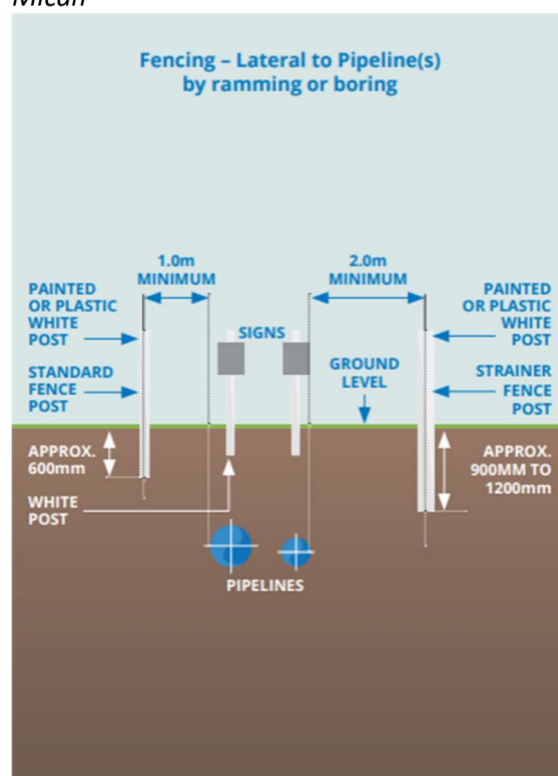
1. the concept planting plan for our western border (where the RAP exits the site – pg2 of the attached). We have taken Firstgas's planting guidelines and applied it to this border. – *Subject to further assessment at detailed design stage, FGL is satisfied that what is suggested in your email of 25 October, meets our requirements with respect to planting in the NW corner of Site 3.*
2. On the Northern border of site 3 (where the RAP enters the site – pg 1) we are now planning to use a synthetic screen rather than screen plantings. This synthetic screen will need to traverse the RAP designation.
3. Aside from this synthetic screen across the Northern border. We plan on putting a security fence around the whole of the site.

Given items 2 and 3 above, does Firstgas have guidelines on fencing within the RAP designation that you can share? – *Below is some direction taken from our 'Easement Working Practices Guideline' with regards to fencing within the easement corridor. This gives an indication of our expectations, the separation and the signage required. As you would expect for any work of this nature within the easement corridor, a permit and a stand-over would be necessary.*

Ultimately, as previous agreed, we are happy to engage with Firstgas during our detailed design phase to ensure the solar farm, screen plantings, and fencing meets Firstgas requirements. At this stage we are just hoping that Firstgas can provide approval (in principle) for our planting and screening plans as attached or indicate if there are any concerns that would be unworkable. The goal being to provide council with a response that indicates that Firstgas is aware of Meridian's screening concept and is happy in principle but further engagement will be required during detailed design. *Based on the level of information provided to date, Firstgas is happy to provide support in principle, subject to further assessment at detailed design stage.*

Let me know if you'd like to discuss and we can take you through our thinking.

Cheers  
Micah



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**From:** Micah Sherman <[micah.sherman@meridianenergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Sent:** Wednesday, October 25, 2023 10:11 AM  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

**Warning: External email**

Hi Brad

We have progressed things with regards to the RAP designation and visual screening required for our planned solar farm and would like to get your views. Please see attached plans. In particular, it would be good to get your thoughts on:

1. the concept planting plan for our western border (where the RAP exits the site – pg2 of the attached). We have taken Firstgas’s planting guidelines and applied it to this border.
2. On the Northern border of site 3 (where the RAP enters the site – pg 1) we are now planning to use a synthetic screen rather than screen plantings. This synthetic screen will need to traverse the RAP designation.
3. Aside from this synthetic screen across the Northern border. We plan on putting a security fence around the whole of the site.

Given items 2 and 3 above, does Firstgas have guidelines on fencing within the RAP designation that you can share?

Ultimately, as previous agreed, we are happy to engage with Firstgas during our detailed design phase to ensure the solar farm, screen plantings, and fencing meets Firstgas requirements. At this stage we are just hoping that Firstgas can provide approval (in principle ) for our planting and screening plans as attached or indicate if there are any concerns that would be unworkable. The goal being to provide council with a response that indicates that Firstgas is aware of Meridian’s screening concept and is happy in principle but further engagement will be required during detailed design.

Let me know if you’d like to discuss and we can take you through our thinking.

Cheers  
Micah

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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Sent:** Friday, October 6, 2023 4:50 PM  
**To:** Micah Sherman <[micah.sherman@meridianenergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design






Hi Micah,

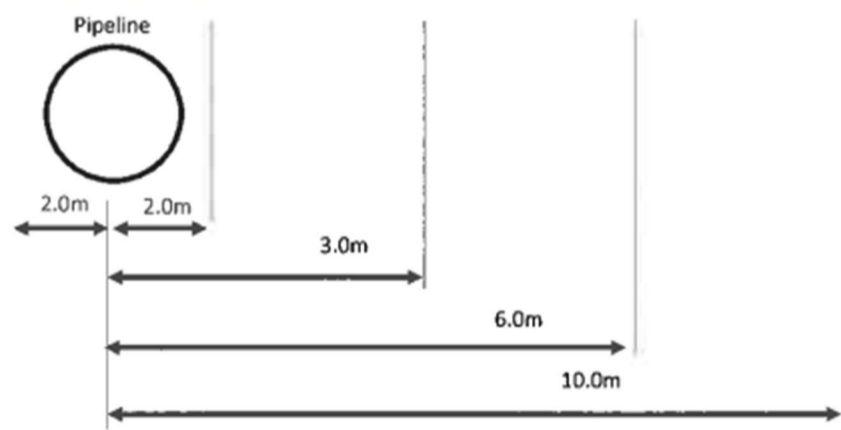
We can discuss next week but, as a guide, in your search, did you come across the information below?

Regards

## Before planting, consider pipeline safety!

First Gas promotes the planting of trees and vegetation, but around high pressure pipelines, safety and pipe integrity needs to be considered. Before any tree planting is carried out near the pipeline easement, you should seek advice from First Gas.

A	B	C	D	E
Grasses only where necessary	Raspberries Goesberries Blackcurrants Grapes Kiwi Fruit Passionfruit <sup>1</sup>	Shallow Rooted Shrubs and Small Native Trees	Most Deciduous Trees and Conifers	Poplars and Willows
				



A permit from First Gas is required for any planting within the easement. Any approval granted by First Gas within the easement shall be subject to retain or remove, at any time in the future, all trees which are of First Gas, might become a danger to a pipe

### Where to plant different vegetation types:

**A:** Plants acceptable directly over the pipeline easement, such as lucerne, crops such as wheat, oats, maize and rice. These are species with small and shallow root systems.

**B:** Mainly fibrous shallow rooted plants, e.g. raspberries and many berry plants. A minimum of 2 metres from the pipeline.

**C:** This group is the first one where the species may do some damage. Many fruit and small native trees are included. A minimum distance of 3 metres from the pipeline is required.

**D:** This allows trees that are slightly less vigorous and could be used as shelterbelts. A minimum setback from the pipeline is required to ensure access is not compromised.

**E:** These are all the large very vigorous species such as Eucalyptus, Willows, Poplar and Pine. These species require a minimum of 10 metres from the pipeline.

For further guidance contact the Land Manager at First Gas Limited on 0800 FIRSTGAS (0800 374747).



Brad Moore  
Stakeholder Engagement Advisor  
Firstgas  
1396 Arthur Porter Drive, Burbush, Hamilton, Waikato, 3200  
+64 27 299 0912 firstgas.co.nz



**From:** Micah Sherman <micah.sherman@meridianenergy.co.nz>  
**Sent:** Friday, October 6, 2023 1:39 PM  
**To:** Brad Moore <Brad.Moore@firstgas.co.nz>  
**Cc:** Andrew Guerin <Andrew.Guerin@MeridianEnergy.co.nz>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Warning: External email

Hi Brad

One item we failed to bring to your attention when seeking Firstgas's support for our proposed solar development was related to our proposed screening plan. An 11<sup>th</sup> hour assessment of the potential "glint and glare" effects from the solar on Marsden point road saw a requirement for us to plant the Northern border of the site. See attached planting plan/jpg below.



With regards to the Northern border of the site where the Firstgas pipeline enter the site – we have planned to plant this area with a screening mix. I have referred to Firstgas’s website (Planting on the Easement) and see that approval from Firstgas would be required for this screen planting. On this basis, are you able to confirm that you are ok with the planting or can you advise what would be acceptable?

Likewise, In term of the western border of the site, the wetland proposed will be able to accommodate any planting requirements from Firstgas. While should the screen planting be required within the designation than the above query applies. And/or we may need to erect a temporary screen, can you also provide your views on this.

Happy to discuss this.

Regards  
Micah

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**From:** Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Sent:** Friday, August 18, 2023 11:30 AM  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:brad.moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:andrew.guerin@meridianenergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Thanks for this Brad. Much appreciated and note your suggestion to reach out to channel. We have been in discussions with them about related matters so they are very aware of the development but your suggestion about seeking their feedback a good one.

Cheers  
Micah

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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:brad.moore@firstgas.co.nz)>  
**Sent:** Friday, August 18, 2023 9:45 AM  
**To:** Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:andrew.guerin@meridianenergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Micah,  
  
Apologies this took a little longer than first anticipated, please find attached our response in relation to progressing the resource consent process for the proposal above.  
  
Don’t hesitate to come back to me with any questions.

Kind Regards

**Brad Moore**  
Stakeholder Engagement Advisor  
Firstgas  
1396 Arthur Porter Drive, Burbush, Hamilton, Waikato, 3200  
☎ +64 27 299 0912 🏠 [firstgas.co.nz](http://firstgas.co.nz)  
**Firstgas**

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**From:** Micah Sherman <[Michah.Sherman@MeridianEnergy.co.nz](mailto:Michah.Sherman@MeridianEnergy.co.nz)>  
**Sent:** Thursday, August 3, 2023 2:12 PM  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

**Warning: External email**

Hi Brad

Thanks for your time on the call today. I've picked out the key bits of info related to the RAP pipeline and summarised them below and provided references to the docs (which were sent through via the folder link on the 12<sup>th</sup> July). I think this is what you were requesting? Let me know if not.

1. AEE
  - a. The AEE makes note of the First Gas district plan designations (p 16/105 and p29/105)
  - b. Section 5.6.3: Effects on Surrounding infrastructure: Gas and Petroleum pipeline (p63/105)

No solar panels or related infrastructure will be installed within the designated area. However, it will be necessary to drive across the designated areas to access the solar farm either side of the designation. As noted in the Beca Civil Report, driving over the pipelines in a longitudinal direction can result in disjoining forces on the pipelines. Accordingly, only two perpendicular crossings are proposed over the pipelines. The final locations will be determined at the detailed design phase once the consent is issued. The avoidance and mitigation measures outlined above will avoid adverse effects on these pipelines

2. Civil drawings:
  - a. Pages 23 to 29 (of 35) focus on what we call 'Site 3' which has the pipeline running through it. You will see on these pages the allowance for the 24m keep out area.
  - b. Page 29 shows an indicative internal roading layout. While this is likely to change the drawings do show a limit of two crossing points.
3. Civil design report
  - a. Page 24/31. Notes the constraints related to the RAP pipeline.

Cheers  
Micah

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**From:** Micah Sherman  
**Sent:** Wednesday, 12 July 2023 4:38 pm  
**To:** 'Brad Moore' <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Brad

Here is a link to a folder which includes some documentation related to our planned solar farm in Ruakaka:  [Firstgas](#)

I have included our draft AEE, Civil design report and Civil drawings in the folder. Please let me know if you require any additional information and/or want a meeting to talk through the documents or anything else that would enable Firstgas to send us an email or letter of support for our Ruakaka Solar consent.

Regards  
Micah

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**From:** Micah Sherman  
**Sent:** Wednesday, 5 July 2023 7:32 am  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Brad,

That's correct – Meridian is happy to provide the relevant consent documentation which I believe will show we are following all the relevant requirements with regards to your asset.

I will make the drawings and reports available when they come through. I'm expecting a set of revised consent drawings and reports this week so they should be too far away.

Cheers  
Micah

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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Sent:** Monday, 3 July 2023 3:24 pm  
**To:** Micah Sherman <[Michah.Sherman@MeridianEnergy.co.nz](mailto:Michah.Sherman@MeridianEnergy.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Micah,

If I've understood you correctly, you are asking FGL for support in principle provided that all the requirements previously outlined are met, once we've had an opportunity to review the consent drawings and relevant reports yes? Provided we are satisfied, we can provide a 'letter of support in principle' once this assessment has been done.

Cheers

**Brad Moore**

Stakeholder Engagement Advisor

Firstgas

1396 Arthur Porter Drive, Burbush, Hamilton, Waikato, 3200

+64 27 299 0912 firstgas.co.nz



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**From:** Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Sent:** Friday, June 30, 2023 10:52 AM  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

**Warning: External email**

Hi Brad,

Thanks for providing the details of Firstgas requirements around development near your assets. Would you be able to provide an email or a letter of support for our solar development provided all the requirements you outlined are met? We can provide you with the consent drawings and relevant reports for your review. Note that some of the requirements won't be addressed until detailed design but we will ensure that those relevant for consent design are addressed.

Also just CCing in Andrew Guerin from our Env. Planning team – as he is helping to get all the t's crossed as we head into the home stretch and look to lodge consent.

Regards

Micah

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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Sent:** Friday, 23 June 2023 5:07 pm  
**To:** Micah Sherman <[micah.sherman@meridianenergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

You don't often get email from [brad.moore@firstgas.co.nz](mailto:brad.moore@firstgas.co.nz). [Learn why this is important](#)

Hi Micah,

Thanks for reaching out. We're happy to work with you to achieve a good outcome for your proposal while also protecting our gas assets. The following is advice I've given out previously on this issue. Let's pick up the conversation next week to enable you to proceed with confidence.

Kind Regards

Brad – 027 299 0912

- a. *Planting*
  - i. *Mature trees, and plants with extensive root growth pose a risk to the underground gas pipeline. Because of this, we have drafted a planting guideline to help advise on acceptable planting within the pipeline easement corridor and adjacent. Please have a look at this link: <https://firstgas.co.nz/safety-work-home/living-and-working-with-a-pipeline-and-easement-old/planting-guidelines/>*
  - ii. *We can provide further advice once a planting plan is available.*
- b. *New vehicle access (temporary or permanent)*
  - i. *vehicles travelling over the pipeline have the potential to cause load stress to the pipeline. To manage this, we assess new vehicles crossings to ensure the construction and use does not pose a risk to the pipeline.*
  - ii. *Generally speaking, we ask that vehicle crossing cross the pipeline easement corridor perpendicular to the pipeline and a minimum of 300mm compacted material is laid. However, this does depend on the depth of the pipeline and vehicles loads. We can speak more on this as details become available.*
    1. *Consider also crossing the pipeline during establishment/construction of the solar farm.*
- c. *Electrical installations*
  - i. *Underground services (power cables, UFB, water pipes etc (excluding HV) may be laid within the pipeline easement corridor, however we have some minimum requirements. For example, we prefer services to be laid perpendicular, and with a minimum of 500mm vertical separation.*
  - ii. *High voltage may be problematic for our cathodic protection system. High voltage installations, earth beds, transformer installations 6.6V and above can pose a threat to this corrosion management system. I have asked our corrosion engineer to provide me with what information he will need to see, and I will forward that to you once I have received his preliminary advice.*
  - iii. *Based on previous similar applications to this, we are likely to require an assessment of electrical threats which looks at DC electrical threats such as EPR, stray current etc so that we can understand any electrical threats. We have traditionally worked with WoodBeca on such assessments, as they are familiar with Firstgas requirements in line with our operating standards. A 2021 estimate from WoodBeca for a similar assessment cost \$10,200 plus GST, the cost of which is to be borne by the applicant. Your client may wish to use another consultant, and that is acceptable provided the correct standard of assessment is used.*
- d. *Solar panels*
  - i. *We do not permit structures to be constructed within the pipeline easement corridor, and therefore it is good to see that the solar panels have been located outside of the pipeline easement corridor.*

**Brad Moore**

Stakeholder Engagement Advisor

Firstgas

1396 Arthur Porter Drive, Burbush, Hamilton, Waikato, 3200

+64 27 299 0912 firstgas.co.nz



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**From:** Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>  
**Sent:** Friday, June 23, 2023 2:58 PM  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Subject:** RE: [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

**Warning: External email**

Hi Brad

It's been a while since we spoke. As you are probably aware, Beca started to liaise with Firstgas directly with regards to Meridian's planned Ruakaka solar project. We have ensured that the consent level design meets the District Plan requirements by being set back at least the minimum requirements. We are looking to lodge consent for this project at the end of July. As Firstgas has an asset on one of the properties, the Council may ask us whether we have engaged with Firstgas. We are hoping that Firstgas can support our consent application. Can you please let me know what documentation would be required from Meridian in order for Firstgas to get assurance that your assets will not be compromised? Happy to send through the drawings that will be included in our consent application and supporting civil report which briefly details are plans to avoid the pipeline. Note we are hoping to retain the ability to have 2 perpendicular crossings of the pipelines.

Regards  
Micah

**Micah Sherman – Renewable Development Programme Manager**  
Meridian Energy Limited  
PO Box 10840  
Wellington 6143, New Zealand  
M. +64 21 674 423



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**From:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Sent:** Monday, 13 February 2023 12:47 pm  
**To:** [Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[micah.sherman@meridianenergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)>; Brett Halkett <[Brett.Halkett@MeridianEnergy.co.nz](mailto:Brett.Halkett@MeridianEnergy.co.nz)>  
**Subject:** [EXTERNAL] RE: Refinery to Auckland Pipeline (RAP) - Solar Farm Design

Hi Justin,

Apologies for the slight delay in response. Yes, long time no see, scary that a few years have rolled past since those early days of the Hamilton project!! Assuming you are up in Akld, I hope you're steering clear of the weather!!

Whilst this will likely come my way once plans have been developed up, in relation to your query, if you direct your request for a 'locate' to the email address [locations@firstgas.co.nz](mailto:locations@firstgas.co.nz), they can advise on availability of a Technician and that process can get underway. A Technician will attend the site to identify the depth and precise location and mark out. When it comes to cost, the first 4 hrs are generally free with a charge that applies after that.

Let me know if you encounter any issues

Regards

**Brad Moore**  
Stakeholder Engagement Officer  
Firstgas  
17a Maui Street, Pukete, Hamilton, Waikato, 3200  
☎ +64 27 299 0912 🌐 [firstgas.co.nz](http://firstgas.co.nz)



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**From:** Justin Kirkman <[Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)>  
**Sent:** Wednesday, 8 February 2023 10:34 am  
**To:** Brad Moore <[Brad.Moore@firstgas.co.nz](mailto:Brad.Moore@firstgas.co.nz)>  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>; Brett Halkett <[Brett.Halkett@MeridianEnergy.co.nz](mailto:Brett.Halkett@MeridianEnergy.co.nz)>  
**Subject:** Refinery to Auckland Pipeline (RAP) - Solar Farm Design

**Warning: External email**

Hi Brad,

Long time no see, I am working with Meridian on the Ruakaka energy park and upon advice from your colleague Nicola Hine, I am directed to you for all enquiries. We would like to begin investigations of the Refinery to Auckland pipeline (RAP) as it runs directly through the middle of Meridian's land parcel earmarked for development. Nicola suggested First gas should pothole pipeline to confirm it's depth and location so we can more accurately understand where the offset is and therefore develop out plans with a high degree of confidence in where the exclusion areas are.

Nicola also suggested that Firstgas typically undertake these investigations at no cost to the developer, can you please confirm this is the case and when the soonest availability have this investigation would be?

Regards,  
Justin.

**Justin Kirkman**

Senior Associate – Civil Engineering  
BEnvEng, CPEng, CMEngNZ, APEC Engineer, IntPE(NZ), RPEV  
Phone: +64 9 300 9050  
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Sensitivity: General

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13 November 2023

Meridian Energy  
PO Box 10840,  
Wellington, 6143.

**Attention: Micah Sherman – Renewable Development Programme Manager**

**By Email:** [micah.sherman@meridianenergy.co.nz](mailto:micah.sherman@meridianenergy.co.nz)

**cc. Email:** [Andrew.guerin@meridianenergy.co.nz](mailto:Andrew.guerin@meridianenergy.co.nz)

**PROPOSED SOLAR ENERGY DEVELOPMENT – SH15, MCCATHIE ROAD AND MARSDEN POINT ROAD, RUAKAKA – SEC 176 RESOURCE MANAGEMENT ACT 1991**

Dear Micah,

Thank you for providing documentation and plans on the above proposal along with details of the current approval process timeline including the proposed approach going forward as listed below.

I understand from our recent discussions that you are seeking the in principal support from Channel Infrastructure NZ (CHI), with a view to progressing the resource consent process. As discussed, we do to a large extent rely on our contract arrangement with FirstGas (FGL) to administer the day-to-day aspects of the MPAP easement management, particularly in regard to most easement practices such planting guidelines and vehicle crossings along with subsequent works approvals, permitting and standover where required. They would normally liaise with CHI on any specific or out of the ordinary aspects of activities around the (shared) easement.

From your correspondence my understanding of the current Meridian progress is as follows:-

- Meridian has already lodged consent with NRC and WDC;
- There is no infrastructure planned within the MPAP designation aside from two potential pipeline crossings. Meridian have sought advice from FGL (who have liaised with CHI) on these;
- Meridian has already sought a 'letter of support' from FGL which they provided (but noted that their final support will depend on detailed design);
- An issue that has arisen since lodging the consent is that Meridian have had to add screen planting along the Northern border of our Site 3 (where the MPAP is located) to minimise glint and glare along Marsden Point Road; and
- Meridian has recently received in principal support from FGL on the acceptability of planned screen plantings and proposed temporary screen and permanent fencing.

We understand that in previous correspondence FGL has drawn your attention to several issues/requirements which will need to be addressed in your detailed development plans and construction procedures/work methodologies, including but not limited to the following:-

- the requirement to avoid any physical structures within the easement corridor;
- the implications of electrical installations in proximity to the pipelines;
- vehicular movements across the pipelines, (both temporary and permanent); and
- guidelines for plantings within the easement corridor.



Additionally, it is worth noting that with the benefit of detailed design plans yet to be provided by Meridian, it would be the expectation that CHI in conjunction with FGL will need to undertake an SMS, (Safety Management Study) process to identify any additional controls and/or associated studies that may be necessary to ensure that the pipelines are suitably protected. It is expected that any specific cost associated with this assessment would be borne by Meridian Energy.

Bearing this in mind and having reviewed the preliminary information provided whilst acknowledging that there is significant detailed design documentation yet to be confirmed, for the benefit of progressing the resource consent process, CHI is willing to support the proposal in principle.

It should be noted that this represents CHI's current view of the proposal considering the information received to date.

Thank you for taking the time to communicate with Channel Infrastructure NZ the preliminary design material which will assist us in ensuring that we maintain adequate protections for the pipeline. We look forward to working with you further as you develop the proposal. If you have any further questions, do not hesitate to get in touch.

Yours faithfully

**Channel Infrastructure NZ Limited**

*David A. King*

**Pipeline Manager**

**Channel Terminal Services**

[Email: david.king@channelnz.com](mailto:david.king@channelnz.com)

Mobile: +64 27 493 2395.

Copy: **FirstGas**

Attention: Brad Moore, Stakeholder Engagement Advisor

[brad.moore@firstgas.co.nz](mailto:brad.moore@firstgas.co.nz)

## Reyburn and Bryant

---

**From:** Michael Arthur <michael@metisconsultants.co.nz>  
**Sent:** Friday, 10 November 2023 2:04 PM  
**To:** Justin Kirkman; Bertrand F. Salmi  
**Cc:** Mark Modrich; Micah Sherman; Brett Hood; Alex Aramakutu; 2318415 - Ruakaka Solar TA; Isaac Kenny; Cameron Oliver; Andrew Guerin  
**Subject:** RE: Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Hi Justin,

My responses added below in **green**.

Note these remain subject to submission of your final S92 responses & formal review by the WDC planner (and others) before they are accepted by WDC.

Ngā Mihi | Kind Regards,

### Michael Arthur

BEng (Hons) CPEng CMEngNZ CEng(UK) C.WEM MCIWEM

Principal Engineer & Managing Director

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**From:** Justin Kirkman <Justin.Kirkman@beca.com>

**Sent:** Tuesday, November 7, 2023 8:31 AM

**To:** Michael Arthur <michael@metisconsultants.co.nz>; Bertrand F. Salmi <Bertrand.Salmi@watertechnology.co.nz>

**Cc:** Mark Modrich <Mark.Modrich@beca.com>; Micah Sherman <micah.sherman@meridianenergy.co.nz>; Brett Hood <brett@reyburnandbryant.co.nz>; Alex Aramakutu <Alex.Aramakutu@beca.com>; 2318415 - Ruakaka Solar TA <project-70996@workspace.beca.com>; Isaac Kenny <Isaac.Kenny@beca.com>; Cameron Oliver <Cameron.Oliver@beca.com>; Andrew Guerin <Andrew.Guerin@MeridianEnergy.co.nz>

**Subject:** FW: Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Hi Michael,

Thank you for your comments, please refer to the following replies. Your endorsement or advice on how we might move forward is welcome:

*“Comment 8: We disagree that Site 3 should be excluded from assessment using the solar farm runoff tool in the context of onsite stormwater management (we agree that it can be disregarded for scenarios when the site is inundated, but it is not inundated for all scenarios). Note that onsite stormwater management should consider a range of rainfall events – not just the 100yr ARI event. Recommend that you review the WDC Engineering Standards (WDC ES) and your proposals accommodate the range of rainfall events specified there (refer Section 4).”*

**Response:** We can keep Site 3 in the condition set. Given a large wetland is planned on site 3 there will be ample opportunity to manage the peak flow discharges in this area. We can also incorporate a range of rainfall magnitudes in the conditions. Table 4-1 of the WDC Engineering standards notes Flood control only relates to the 100 year. The flow control component states it is only required in the upper half of a catchment and not required subject to assessment demonstrating no negative effects. Given the demonstration of no negative effects is a large undertaking and cost/time prohibitive, there is little alternative but to accept the requirement for 5 year and 2 year attenuation to 80% of the pre-development runoff. The proposed amendment to this flood condition is included below (note that peak flow condition is addressed in comment 9): [MA] Agreed in principle – note the WDC ES requirements around accommodating climate change (2yr & 5yr with CC / 100yr no CC). Your condition wording will need to be updated to accommodate this (noted you picked this up for peak flow condition below) The magnitudes mentioned in 4.3.6.1 (f) relate to scour at outlets to watercourses and should not apply here. [MA] Note this applies to outlets, watercourses and overland flow paths (not just outlets to watercourses) – so likely to apply to any stormwater discharge location proposed. This [Auckland Council standard](#) is generally accepted in WDC for outlet erosion control design.

**Flood Condition**

*“The consent holder shall achieve a flood level increase of not more than 5mm on any land outside the project site in the 100 year, 5year and 2 year ARI rainfall events. This shall be demonstrated using a hydraulic model and submitted to Council and approved 40 days prior to construction commencement. The flood model shall take earthworks, culverts, ground roughness and soil infiltration changes into account. Soil infiltration changes shall be calculated using the PV-SMaRT Solar Farm Runoff Calculator Version 3.0 tool from the University of Minnesota”*

Whangārei District Council Engineering Standards Table 4-1 (for reference)

Criteria	Design Parameter	When Required
Flood Control (1% AEP event)	Detention required, limiting the post-development 1% AEP event flow rates to 80% of the pre-development 1% AEP event flow rates.	Where downstream flooding hazard has been identified. Where there is no CMP or site-specific SMP Refer to Flood Hazard Areas in the <a href="#">District Plan</a> and any known downstream restrictions causing flooding.
Flow attenuation (Attenuation of the 50% and 20% AEP events)	Pre- and post-development flows shall be calculated with climate change allowance. Limit the post-development 50% and 20% AEP event flow rates to 80% of the pre-development flows through controlled attenuation and release.	Where there is no CMP or site-specific SMP Catchment location dependent. Typically required in the upper catchment. This may not be required where a development site is located in proximity to the catchment outlet, discharging to a watercourse with sufficient network capacity, and where flow attenuation may worsen flooding hazards due to relative timing of peak flows. This is subject to assessment demonstrating no negative impacts would occur. If the proposed stormwater discharge is into a tidal zone, then no attenuation is required.

*“Comment 9: Condition proposed under comment 2a is not appropriate for onsite stormwater management as it only addresses the 100yr ARI event. As per response for comment 8 above – stormwater management needs to address a wider range of events. We recommend any proposed conditions for onsite stormwater management are separated from those relating to flood risk management to avoid confusion.”*

**Response:** The conditions related to flooding has been separated from stormwater management. The condition in comment 9 (revised below) is the stormwater management condition and the one in 2a (revised above) is the proposed flood condition. The wider range of events proposed for on site stormwater management are as follows: [MA] Agreed in principle – note the differing treatment of CC in the WDC ES Table 4-1 for the 2yr / 5yr and 100yr events. Your proposal is more conservative than this – so acceptable.

**Peak Flow Condition**

*“Peak flows discharged from the site shall be attenuated on site such that the 100 year, 5year and 2 year ARI rainfall event post-development peak flows (with climate change) do not exceed 80% of the pre-development peak flowrate (with climate change). The on-site detention systems and comparison*

of peak flows shall be submitted to Council and approved 40 days prior to construction commencement.”

“Comment 9: Stormwater management ponds – noted that these will not be relied upon for attenuation. Agreed the proposed onsite management approaches (check dams within swales etc) should be adequate (pending final layout & detailed design)”

**Response:** Agreed, these will be needed to meet the condition outcomes above. [MA] Noted - OK

“Comment 9: Proposed condition – refer responses above, this should address a wider range of events than just 100yr ARI. It also needs to be clear if climate change will be considered (refer the WDC ES for guidance on this if needed)”

**Response:** This has been made more clear in the conditions, this should only apply to peak flow discharge only and not flood effects. [MA] Noted – refer above comments

“Comment 9: Panel vertical clearance – agreed that 3.2m is reasonably consistent with 3.048m.”

**Response:** Agreement reached, thank you. [MA] Noted - OK

“General: Use of PV-SMaRT Solar Farm Runoff Calculator Version 3.0 – agreed this is an appropriate method to compare pre & post development runoff. Recommend that you include proposed runoff parameters for review & agreement at this stage (reduces risk for disagreement at a later point when applying the tool for the finalised panel layout). As per the comments above, note that the tool will need to show the impacts of development from a range of rainfall events (not just the 100yr ARI).”

**Response:** The following parameters proposed below are based on our understanding of the sites and their present and future states: [MA] Suggestions below:

- Please indicate the proposed Curve Numbers (note that WDC ES Table 4-3 shows these for local conditions)
- Will the ground cover change from pre- to post- development? (if so, this will need to be accommodated in the Curve No.)
- As per your conditions above – the modelling will need to consider 2yr, 5yr and 100yr events with the stated climate change allowances (not just 100yr + CC)

Parameter	Site 1	Site 2	Site 3
Soil texture	Sandy Loam	Sandy Loam	Silty Clay Loam
Soil depth	36”		
Bulk density	TBC at detailed design		
Vegetation present	Turf Grass		
Panel width	TBC at detailed design		
Panel spacing	TBC at detailed design		
Array orientation	TBC at detailed design		
Percent slope	TBC at detailed design (1% average expected)		
24-hr precipitation event*	11.5” (292mm)		

\*100-year 24hr depth based on Hirds V4 RCP 8.5 to 2100

Regards,  
Justin.

**Justin Kirkman**

Senior Associate – Civil Engineering  
BEnvEng, CPEng, CMEngNZ, APEC Engineer, IntPE(NZ), RPEV  
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Sensitivity: General

**From:** Michael Arthur <[michael@metisconsultants.co.nz](mailto:michael@metisconsultants.co.nz)>  
**Sent:** Wednesday, 1 November 2023 2:16 p.m.  
**To:** Justin Kirkman <[Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)>  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>; Brett Hood <[brett@reyburnandbryant.co.nz](mailto:brett@reyburnandbryant.co.nz)>; Alex Aramakutu <[Alex.Aramakutu@beca.com](mailto:Alex.Aramakutu@beca.com)>; 2318415 - Ruakaka Solar TA <[project-70996@workspace.beca.com](mailto:project-70996@workspace.beca.com)>; Isaac Kenny <[Isaac.Kenny@beca.com](mailto:Isaac.Kenny@beca.com)>; Cameron Oliver <[Cameron.Oliver@beca.com](mailto:Cameron.Oliver@beca.com)>; Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>; 'Bertrand F. Salmi' <[Bertrand.Salmi@watertechnology.co.nz](mailto:Bertrand.Salmi@watertechnology.co.nz)>  
**Subject:** RE: Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Thanks Justin,

Initial comments from me below – note I have only responded to the onsite stormwater management issues. Bertrand will respond to the flood risk related issues.

- Comment 8: We disagree that Site 3 should be excluded from assessment using the solar farm runoff tool in the context of onsite stormwater management (we agree that it can be disregarded for scenarios when the site is inundated, but it is not inundated for all scenarios). Note that onsite stormwater management should consider a range of rainfall events – not just the 100yr ARI event. Recommend that you review the WDC Engineering Standards (WDC ES) and your proposals accommodate the range of rainfall events specified there (refer Section 4).
- Comment 9:
  - o Condition proposed under comment 2a is not appropriate for onsite stormwater management as it only addresses the 100yr ARI event. As per response for comment 8 above – stormwater management needs to address a wider range of events. We recommend any proposed conditions for onsite stormwater management are separated from those relating to flood risk management to avoid confusion.
  - o Stormwater management ponds – noted that these will not be relied upon for attenuation. Agreed the proposed onsite management approaches (check dams within swales etc) should be adequate (pending final layout & detailed design)
  - o Proposed condition – refer responses above, this should address a wider range of events than just 100yr ARI. It also needs to be clear if climate change will be considered (refer the WDC ES for guidance on this if needed)
  - o Panel vertical clearance – agreed that 3.2m is reasonably consistent with 3.048m.
- General: Use of *PV-SMaRT Solar Farm Runoff Calculator Version 3.0* – agreed this is an appropriate method to compare pre & post development runoff. Recommend that you include proposed runoff parameters for review & agreement at this stage (reduces risk for disagreement at a later point when applying the tool for the finalised panel layout). As per the comments above, note that the tool will need to show the impacts of development from a range of rainfall events (not just the 100yr ARI).




Happy to discuss if you have any further queries.

Ngā Mihi | Kind Regards,

**Michael Arthur**

BEng (Hons) CPEng CMEngNZ CEng(UK) C.WEM MCIWEM  
Principal Engineer & Managing Director

**Metis Consultants Limited**

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**From:** Justin Kirkman <[Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)>  
**Sent:** Wednesday, November 1, 2023 8:28 AM  
**To:** Michael Arthur <[michael@metisconsultants.co.nz](mailto:michael@metisconsultants.co.nz)>  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>; Brett Hood <[brett@reyburnandbryant.co.nz](mailto:brett@reyburnandbryant.co.nz)>; Alex Aramakutu <[Alex.Aramakutu@beca.com](mailto:Alex.Aramakutu@beca.com)>; 2318415 - Ruakaka Solar TA <[project-70996@workspace.beca.com](mailto:project-70996@workspace.beca.com)>; Isaac Kenny <[Isaac.Kenny@beca.com](mailto:Isaac.Kenny@beca.com)>; Cameron Oliver <[Cameron.Oliver@beca.com](mailto:Cameron.Oliver@beca.com)>; Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Hi Michael, the link included only flood maps, not relevant to the comments raised by Metis.

Sensitivity: General

---

**From:** Michael Arthur <[michael@metisconsultants.co.nz](mailto:michael@metisconsultants.co.nz)>  
**Sent:** Tuesday, 31 October 2023 11:04 a.m.  
**To:** Justin Kirkman <[Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)>  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>; Brett Hood <[brett@reyburnandbryant.co.nz](mailto:brett@reyburnandbryant.co.nz)>; Alex Aramakutu <[Alex.Aramakutu@beca.com](mailto:Alex.Aramakutu@beca.com)>; 2318415 - Ruakaka Solar TA <[project-70996@workspace.beca.com](mailto:project-70996@workspace.beca.com)>; Isaac Kenny <[Isaac.Kenny@beca.com](mailto:Isaac.Kenny@beca.com)>; Cameron Oliver <[Cameron.Oliver@beca.com](mailto:Cameron.Oliver@beca.com)>; Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** RE: Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Hi Justin,

Yes – happy to take a look. Note that I am only reviewing stormwater management aspects of the development for WDC. Your documentation covers flood risk as well – this will need to go to Bertrand Salmi ([Bertrand.Salmi@watertechnology.co.nz](mailto:Bertrand.Salmi@watertechnology.co.nz))/

Was there anything relating to onsite stormwater management in your link below? (I cannot access it, but that is not necessarily an issue if it's only flood maps for Bertrand!).

Ngā Mihi | Kind Regards,

## Michael Arthur

BEng (Hons) CPEng CMEngNZ CEng(UK) C.WEM MCIWEM

Principal Engineer & Managing Director

**Metis Consultants Limited**



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**From:** Justin Kirkman <[Justin.Kirkman@beca.com](mailto:Justin.Kirkman@beca.com)>  
**Sent:** Monday, October 30, 2023 2:05 PM  
**To:** Michael Arthur <[michael@metisconsultants.co.nz](mailto:michael@metisconsultants.co.nz)>  
**Cc:** Mark Modrich <[Mark.Modrich@beca.com](mailto:Mark.Modrich@beca.com)>; Micah Sherman <[Micah.Sherman@MeridianEnergy.co.nz](mailto:Micah.Sherman@MeridianEnergy.co.nz)>; Brett Hood <[brett@reyburnandbryant.co.nz](mailto:brett@reyburnandbryant.co.nz)>; Alex Aramakutu <[Alex.Aramakutu@beca.com](mailto:Alex.Aramakutu@beca.com)>; 2318415 - Ruakaka Solar TA <[project-70996@workspace.beca.com](mailto:project-70996@workspace.beca.com)>; Isaac Kenny <[Isaac.Kenny@beca.com](mailto:Isaac.Kenny@beca.com)>; Cameron Oliver <[Cameron.Oliver@beca.com](mailto:Cameron.Oliver@beca.com)>; Andrew Guerin <[Andrew.Guerin@MeridianEnergy.co.nz](mailto:Andrew.Guerin@MeridianEnergy.co.nz)>  
**Subject:** Ruakaka Solar S92 DRAFT responses - Civil and Flooding

Hi Michael,

We have drafted the attached responses with regard to stormwater and flooding comments we received for consent application **LU2300093**. I recall you offering to review our draft replies in our meeting held on Friday 13/10/2023, before we submit to Council in a formal reply. If that offer still stands, can you please take a look and offer your thoughts on our approach to address the comments raised? We look forward to your reply and any helpful advice you may have.

The higher resolution flood maps are large in file size and can be downloaded from the link below:

 [S92 Request #2 \(Water Technology - Flood Levels and Modelling Effects\)](#)

Regards,  
Justin.

**Justin Kirkman**

Senior Associate – Civil Engineering  
BEnvEng, CPEng, CMEngNZ, APEC Engineer, IntPE(NZ), RPEV  
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Mobile: +64 22 406 5621  
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Sensitivity: General

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