Hearing on **Far North District Council Proposed Plan Change # 18 & Whangarei District Council Proposed Plan Change # 131– Genetically Modified Organisms (PPC18/PPC131)**

Submitter **CLAIRE BLEAKLEY,** President GE Free NZ,
On behalf of –
GE FREE NEW ZEALAND IN FOOD AND ENVIRONMENT.
AUCKLAND GE FREE COALITION
Jon Carapiet
Charles Drace
Peta Kirkwood
Michael Trott.

DATED: 31 May 2016

GE Free New Zealand
In Food and Environment Inc.

PO Box 13402, Wellington, NZ Ph +64- 4 - 477 4744
www.gefree.org.nz

31 May 2016

Dear Chair and Council Members,

GE Free NZ in Food and Environment is a voluntary Organisation. We have many members in the Whangarei region. We support our members by writing submissions, providing information to the members and the public concerning Genetic Engineering on a local, national and international level.

GE Free NZ in presenting a comprehensive submission on behalf of the Auckland GE Free Coalition, Jon Carapiet, Charles Drace, Peta Kirkwood and Michael Trott. We also have an expert witness Dr. Ngaire Hart who will outline her research on native bees.

We applaud the Councils integrated approach with it's neighbouring councils and at this time believe they have proposed through their plan a win - win solution for protection of tangata whenua, community wellbeing, social cohesion and quality farming. We confirm our support for the Councils plan change PPC18 / PPC131 that is a result of the detailed evidence that the Northland Auckland Inter Council Working Party on GMO Risk Evaluation and Management Options gathered over 10 years. The Councils have shown a wonderful duty of care and kaitiakitanga. The precautionary approach to the land use is welcomed.

We specifically support plan change GMO 1.2 point 6 Eligibility Rules where food related or non-food related GMO Releases are prohibited activities.

We support the public notification of GM laboratory applications but would like see Council strengthen rules around all EPA approved GE developments outdoors and field tests by making them a Prohibited Activity. Every field test and outdoor experiment has breached its consent conditions, for example: the GE tamarillo site, the GE onion, the GE animal, the GE brassica and GE pine tree trial sites. The breaches were serious enough to close a majority of the trial sites down and raised a high level of community concern over the broken trust around compliance conditions. So until all adverse effects can be identified and addressed in enclosed laboratory structures, the outdoor GM testing in any kind of facility must be prohibited.

The precautionary approach to the use of GMO's in the region regarding the land use controls is comprehensive and compliments the EPA decisions under HSNO. The EPA decisions are too generic for the specific land use issues related to councils and their communities.

GMO 2.4 -We suggest that in GMO.2.4 "General Development & Performance Standards
Site design, Construction and Management", the Biosecurity Containment guidelines are specified - for outdoor containment facilities -MAF Biosecurity Authority /EPA Standard 154.03.06 and

laboratory containment facilities -Australia New Zealand Standard AS/NZS 2243.3:2010. (https://law.resource.org/pub/nz/ibr/as-nzs.2243.3.2010.pdf) all standards follow quality management system and procedures based on the principles of AS/NZS ISO 9001

We also ask that the Council consider that they receive a comprehensive annual report on all GM activities, including breaches related, to the trial as required by the EPA.

MONITORING: We do not agree that a member of the trial should be a test site monitor, however there needs to be an independent inspector to avoid conflicts of interest. We note that the MPI inspectors are delegated to monitor Field Tests (proposed Discretionary Activity) on a regular basis and EPA controls require the consent holder to be fully cogniscent of all their GMO activities.

Our members are highly concerned as to the effects on their business and farming should GMOs be introduced into their community at this time. Evidence from overseas, where GM crops have been grown, has found an increasing level of pesticide use on crops, deleterious health effects from those working with and living near GM crops and an ever growing weed and insect resistance problem that is forcing other pesticide measures to be used with an increased battle for market dominance of their particular patented proprietary chemical. This is causing farmers and the environment to suffer as well as consumers of these GM crops. There is also potential for unexpected and unknown medium-term and long-term impacts on soil biota, waterways and the natural environment generally arising from GMOs outside containment.

As is specified in the Hazardous Substances and New Organisms Act (HSNO) the Chief Executive is charged with ensuring that the provisions of a new organism are enforced (HSNO 97(h)). Whangarei District Councils excellent Chapter 4 on GMO's will ensure that enforcement officers can be appointed as district hazardous substances officers (HSNO sec: 100(4)). These Policy, Rules and objectives mean that people can be fully trained and warranted in advance of any GM application that might be lodged, and having a trained expert would save ratepayers the expense of HSNO Authority exercising and performing any function needed (HSNO 101).

Recently there has been more evidence of harm, we will outline below.

RMA 5 & 6 - Matters of National Importance The Council principle objectives are to protect the health of the Community, the Environment by

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

These principles have been upheld in the Environment Court in relation to precautionary land use.

RMA 7& 8 – Treaty of Waitangi / other matters - Native fauna especially bees, Dr. Ngaire Hart our expert witness will speak to.

RMA 3 – GMO effects

(a) any positive or adverse effect; and

(b) any temporary or permanent effect; and
(c) any past, present, or future effect; and
(d) any cumulative effect which arises over time or in combination with other effects— regardless of the scale, intensity, duration, or frequency of the effect, and also includes—
(e) any potential effect of high probability; and
(f) any potential effect of low probability, which has a high potential impact.

In regard to effects; GMO crops were first commercialised 19 years ago,. When GMO's were originally assessed for regulation they were deemed to be "substantially equivalent" to their conventional counterparts, so regulators did not require long-term studies on any effects when eaten. Today they still are overlooking the level of pesticides the plants produced or absorbed and the effects on animal and human health. Over the last 7 years, unexpected damage has been documented from water and soil ecosystems contamination to increasing weed and insect resistance to pesticides. Published studies have shown significant harmful effects to both laboratory and farm animals that have eaten genetically modified feed. (Attachment 1,2A, 2B, 2C, 3)

The same effects are also being seen in Argentine villages that are living close to the GE crops. A human health disaster is unfolding in these villages, leading to chronic illnesses and birth deformities. (3A)

Effects from Hazardous Substances. - In 2015, International Agency for Research on Cancer (IARC) a division of the World Health Organisation declared that glyphosate, was a 2A carcinogen (probably carcinogenic) (Attachment 4). Roundup a glyphosate-based herbicide is a major herbicide used on 85% of GE crops.

The National Academies of Sciences, Engineering, and Medicine (2016) released a report (Attachment 5). GM Watch has assessed the GE Report highlights: -

- It's not the US EPA, EFSA, FSANZ that carries out the tests. They are done by the company, so for an adverse effect to be found in a pre-commercialisation test, the very same company that intends to market the product has control of the information sent to relevant public body

- Raw data from these studies are not published or available to the scientific community and general public. In fact the committee did not have access to these data, which are protected under commercial confidentiality agreements.

- If the effect was subtle and was not detected by the methods used (or chosen), the product would have passed the evaluation and entered the food supply.

- Internationally accepted protocols use small samples with a limited statistical power, which may not detect differences between treatments, or they might find statistically significant differences that then would not be considered biologically relevant.

- Regarding the a priori evaluation of changes in the levels of "known" toxic substances: The toxic properties of some plant compounds are understood, but most have not been studied.

- Detection of allergies to new proteins (those produced by the introduced gene or by a different gene which has been altered as a result of the GM transformation and/or tissue culture process) cannot be guaranteed with the currently used methods; post-commercialisation studies would be needed.

- The studies which have been carried out have found differences between animals given GMO and non-GMO feed; these differences were statistically significant (i.e. they were not caused by chance but by the treatment), but they weren't considered biologically relevant.

- What would be considered "biologically relevant" was not defined beforehand, and the statistical power of the studies had not been calculated.

- The report highlighted that even when no adverse effects have been found, this doesn't mean that they don't exist.

- In one of the cases described, a feeding study was carried out with a type of rice in which a gene had been introduced to produce a known toxin (as a positive control), and no adverse effects were found.

- Data and studies currently available cannot be used to draw conclusions on possible long-term effects on human health.

After 18 years of commercialisation evidence of herbicide tolerance in weed, soil degradation and insect resistance is causing economic harm to farmers. There is a potential threat to public health but as are still no diagnostic tests available to health professionals if they suspect that there is a link to the illnesses stemming from GE ingestion, it cannot be confirmed.

Genetically modified crops and their related pesticides both internally produced and externally absorbed, show harm to ecosystems (Attachment 6). This is for all sprays as their undeclared adjuvants have been found to increase their toxicity up to 10,000 fold. (Attachment 6a, 6B)

Effects on communities In Australia communities are being torn apart as GE crops are causing contamination and economic loss. (Attachment 7)
A 2014 survey of organic farmers in the US by Food and Water watch has shown that co-existence is unachievable (Attachment 8)
The results found

1. 1:3 organic farmers were GM contaminated
   - 17% highest level of contamination
2. 52% farmers consignments rejected
3. $20,000NZD average cost of rejected crop
4. 67% delaying planting at optimal time.
5. $25,000 (av.) loss from delayed corn planting
6. $4000 mean cost of accounting and testing
7. $ 50,000 (av.) total loss from GM contamination.

The dire economic situation that farmers are facing today is being faced by large organisations like

Fonterra recognising that the market is in high end products like organics. The organic dairy price for milk powder is fetching $14,000 MS/T versus $3000 MS/T for non organic. The price has been stable all year for organic farmers however; non-organic farmers are on a rollercoaster unable to meet their overheads. If GE rye grass contaminated the pastures for example the health effects for the animals and ecosystems of air, water and soil are unknown. What is possible is we would lose our clean green brand and also our valuable high-end export markets.

Threats and effects on existing Farming methods and Climate Change –
The Organic Aotearoa New Zealand (OANZ) 2016 Organic Market Report (Attachment 9) shows that Organic market is growing more than 11% and supermarket demand has grown by over 126%. Horticultural production has increased by 128%. 91% increase to mixed /other certified land, since 2012.

The Rodale report (Attachment 9A) not only found that sustainably managed organic farms had yields comparable to non organic, it also found in drought years organic farms out performed in yield, resilience, water conservation and ecosystem health over all other methods of farming. The price for organic produce is stable and in demand. The PPC131 /PPC18 for genetically modified organisms allows existing farmers to carry on farming and protecting their markets for quality, non-chemical sustainable consumer sought produce.

In Summary
- **Financial risks to local bodies are unacceptable.**
- **Financial Risks to Landowners unacceptable.**
- **Environmental Effects are unacceptable**

We are in support of this plan change PPC131 /PPC18.

Sincerely,
Claire Bleakley, president GE Free NZ
Jon Carapiet, spokesperson Auckland GE Free coalition
Charles Drace,
Michael Trott.
Peta Kirkwood

Expert Witness statement – Dr. Ngaire Hart.

Attachments:
1. Séralini et al. (2014) Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize *Environmental Sciences Europe*, 26:14
2A Monika Krüger et al. (2013) Detection of Glyphosate in Malformed Piglets
2B Kruger et al (2013) Field Investigations of Glyphosate in Urine of Danish Dairy Cows
2C Glöckner G., & Séralini G-E. (2016) Pathology reports on the first cows fed with Bt176 maize (1997–2002) *Scholarly J. Agricultural Science* Vol. 6(1), pp. 1-8
3. Bleakley C. (2015) Genetically Engineered Animals: The First 15 Years
3A Hart N. (2007) Industrious Native Bees: A case study Whangarei.
3B Vazquez M.A & Nota C (2014) Report From The 1st National Meeting Of Physicians In The Crop

Sprayed Towns.
4. IARC Monographs WHO Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate *Lancet Oncol* 2015 March 20, 2015
5. Genetically Engineered Crops: Past Experience and Future Prospects (2016) National Academies of Sciences, Engineering, and Medicine
6. Nicolas, V., Oestreicher N. & Vélot C. (2016). Multiple effects of a commercial Roundup® formulation on the soil filamentous fungus *Aspergillus nidulans* at low doses: evidence of an unexpected impact on energetic metabolism.

6A Mullin *et al* (2016) Toxicological Risks Of Agrochemical Spray Adjuvants: Organosilicone Surfactants May Not Be Safe. *Frontiers In Public Health.*

6B Mesnage, R. *et al* (2014) Major Pesticides Are More Toxic to Human Cells Than Their Declared Active Principles. *BioMed Research International*, *2014*, 179691

7. Neales S. (2013) Sowing seeds of discord. *The Australian*.
8. Organic Farmers Pay The Price For GMO Contamination. (2014) *Food and Water Watch*
9. New Zealand Organic Market Report (2016) *Organics Aotearoa New Zealand*

9A Rodale Institute (2011) The Farming Systems Trial: Thirty years. Antoniou et al. (2012) Teratogenic effects of glyphosate-based herbicides: Divergence of regulatory decisions from scientific evidence. *J Env Anal Toxicol.*

Further references.

Bohn T., Cuhra M., Traavik T., Sanden M., Fagan J and Primicero (2014) Compositional differences in soybeans on the market: Glyphosate accumulates in Roundup Ready GM soybeans *Food Chemistry* Vol: 153, 207–215.

Federated Farmers of New Zealand v Northland Regional Council - (ENV 2013 AKL 0001610) 12/5/2015 http://www.gefree.org.nz/ge-free-court-actions/

Kurenbach B, Marjoshi D, Amábile-Cuevas CF, Ferguson GC, Godsoe W, Gibson P, Heinemann JA. (2015). Sublethal exposure to commercial formulations of the herbicides dicamba, 2,4-dichlorophenoxyacetic acid, and glyphosate cause changes in antibiotic susceptibility in *Escherichia coli* and *Salmonella enterica* serovar Typhimurium. *mBio* 6(2):e00009-15.

Mesnage R., Bernay B. and Seralini G-E. (2013) Ethoxylated adjuvants of glyphosate-based herbicides are active principles of human cell toxicity *Toxicology* 313 122–128

Romano et al 2010. Prepubertal exposure to commercial formulation of the herbicide Glyphosate alters testosterone levels and testicular morphology.

TESTBIOTECH (2013) High levels of residues from spraying with glyphosate found in soybeans in Argentina.

Thongprakaisang S, *et al* (2013) Glyphosate induces human breast cancer cells growth via estrogen receptors*.* *Food Chem Toxicol*. 2013 Sep;59:129-36.

Young F., *et al* (2015) Endocrine disruption and cytotoxicity of glyphosate and roundup in human JAr cells *in vitro. Integr Pharm Toxicol Gentocicol,* 1(1): 12-14