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Mode of delivery

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To Whom it May Concern,

Cleveland Agriculture on behalf of Ucha Pty Ltd - Application to Clear Pastoral Land (s3(1)(h)) on Ucharonidge Station

The Environment Centre NT (**ECNT**) is the peak community sector environment organisation in the Northern Territory of Australia, raising awareness amongst community, government, business and industry about environmental issues and assisting people to reduce their environmental impact and supporting community members to participate in decision-making processes and action.

Thank you for the opportunity to provide a comment on the referral under the *Environment Protection Act 2019* (NT) of Cleveland Agriculture on behalf of Ucha Pty Ltd's application for a permit to clear Pastoral Land under section 38(1)(h) of the *Pastoral Land Act 1992* (NT) in respect of Ucharonidge Station Pastoral Lease 1072 (**Proposal**).

ECNT submits that, for the reasons given below, the Proposal requires an environmental approval and should be assessed at the level of environmental impact statement (**EIS**). In sum, there is inadequate information in the referral documentation provided by the proponent for the NTEPA to be able to assess the environmental impacts of the Proposal. It is not appropriate, nor possible, to regulate the ongoing impacts of a development of this scale and complexity through a pastoral land clearing permit alone.

(a) Scale of the Proposal, and the conservation significance of the Mitchell Grass Downs bioregion

To the best of ECNT's knowledge, the proposal is the largest cotton development seen in the Northern Territory (10,000ha in total), in a region which has historically seen very little development beyond grazing cattle. It is of concern to ECNT that the proponent has already secured approval to clear approximately 5000ha of land on Ucharonidge, located within the Mitchell Grass Downs (MGD) bioregion. It is not clear to ECNT whether or to what extent the environmental impacts of this first pastoral land clearing permit were scrutinised by the Pastoral Land Board.

The MGD bioregion is recognised by the Australian Government as one of 23 Conservation Management Zones of Australia. Despite being recognised as a Conservation Management Zone, ECNT notes that the Northern Territory portion of the Mitchell Grass Downs (MGD) bioregion is very poorly represented in the national reserve system. According to ECNT's information, only 0.5% of the NT's portion of the MGD bioregion is reserved.

The MGD bioregion is unique and has distinctive flora and fauna. It has significant conservation values, and contains several threatened animals and vegetation communities. The World Wildlife Fund notes in relation to the biodiversity values of the Mitchell Grass Downs:¹

The distinctive grasslands of the downs harbor several endemic reptiles: the gecko *Gehyra minuta*, skinks (*Ctenotus schevilli*, *C. agrestis*, and *C. joanae*), an agamid lizard *Pogona henrylawsoni*, and a monitor *Varanus spenceri*. This ecoregion also forms the main distribution for numerous other reptiles, including many large venomous elapid snakes (*Pseudonaja guttata*, *P. ingrami*, and *Pseudechis colletti*) (Horner and Fisher 1998). Although the invertebrate fauna is generally poorly known, many ant species are known to occur only in this ecoregion (Fisher 2001). This ecoregion has also yielded the only recent record of the critically endangered night parrot (*Geopsittacus occidentalis*) (Hilton-Taylor 2000) (Boles et al. 1994). The endangered Julia Creek dunnart (*Sminthopsis douglasi*) is endemic to the downs, Desert Uplands, and restricted areas of the Gulf Plains immediately north of the downs (Strahan 1998). A recent survey of the Desert Uplands region resulted in the discovery of two new reptile species, *Ctenotus rosarius* sp. nov, and *Lerista* sp. nov, as well as the discovery of animals outside their previously known home ranges, indicating that further research may yield a fuller picture of the region's fauna (Kutt 2001). The vegetation is also distinctive, with Mitchell grasslands and associated communities supporting at least 10 endemic plant species (Fisher 2001).

... this region does contain a unique and distinctive fauna, adapted to the region's seasonality and variability in yearly rainfall. One of the most distinctive features of the Mitchell Grass Downs are the extraordinary irruptions of its two most characteristic and pivotal animal species, the flock bronzewing (*Phaps histrionica*) and the long-haired rat (*Rattus vilosissimus*). These two species encapsulate the apparent simplicity but striking dynamism of this system. No other Australian ecoregion possesses this trait so markedly.

The flock bronzewing, a large ground-foraging pigeon, formerly occurred in flocks of hundreds of thousands, dispersing widely across the Mitchell Grass Downs in response to rainfall variation. They declined rapidly in response to pastoral settlement in the period 1850-1900 and were feared extinct by about 1950. They have since recovered somewhat, and can still be seen in flocks of tens of thousands (Higgins and Davies 1996). The long-haired rat has a similar "boom-bust" cycle, irrupting in vast plagues following favorable rainfall (Carstairs 1974). Early descriptions catch some of the immensity of these irruptions: "The numbers of the rats were incredible ... fifty thousand square miles were occupied by these animals and one rat to every ten square yards would not represent anything like their number ... they devoured everything edible that came in their way, and destroyed what they did not devour ... they swarmed to such an extent that it was almost impossible

¹ <https://www.worldwildlife.org/ecoregions/aa0707>.

to sleep, for the rats invaded the blankets of the sleeper in order to find a meal. Cases in which a man's fingers, toes or ears were nibbled were common" (Wood Jones 1923-25).

Irruptions continue to occur at irregular intervals, with the rats then extending from their core refuge areas of the Mitchell Grass Downs to spread across much of inland semi-arid Australia. In their wake, many birds of prey, most notably the largely nocturnal letter-winged kite (*Elanus scriptus*) also reach unusually high population densities and extend their geographic range well beyond their normal centre in the Mitchell Grass Downs.

Another distinctive feature of this region is the response of much of the fauna to regular seasonality. The clay soils of the Mitchell grasslands dry and crack widely during the long dry season. Above ground the environments are simple, lacking trees and offering little shelter, so much of the fauna utilizes the deep fissures and cracks. Small carnivorous marsupials, typically including the long-tailed planigale (*Planigale ingrami*) and the stripe-faced dunnart (*Sminthopsis macroura*), are among the most abundant mammals using this subterranean shelter. The shrew-like long-tailed planigale is one of the world's smallest mammals with an adult weight of less than 6g, and has a remarkably compressed head, ideal for probing among the crack network. Very high densities of specialized skinks and large snakes also find refuge in this fissured environment. With the coming of the annual rains, the fissures close and much of the landscape becomes waterlogged, encouraging the emergence of vast numbers of burrowing frogs (Palmer and Pidcock 2001).

Given the distinctiveness of the MGD bioregion, its relative intactness in the Northern Territory, and the lack of protection of this unique bioregion through the reserve system, a cotton/sorghum operation of a total of 10,000ha is significant and must be carefully scrutinised via an environmental impact statement.

(b) Cumulative impacts of the Proposal (including other reasonably foreseeable impacts in the region)

There are a number of other proposed developments in the region (and specifically, in the Beetaloo Sub-Basin as that area is defined by Scientific Inquiry into Hydraulic Fracturing in the Northern Territory, or Fracking Inquiry) which will also require significant land clearing, including from the proposed onshore shale gas industry (which may require land clearing of approximately 2,500ha in the Beetaloo Basin, as well as associated habitat fragmentation) and Sun Cable's solar farm (clearing of approximately 12,000ha for the farm, in addition to clearing for connecting infrastructure and associated habitat fragmentation).

The NTEPA is required by law to consider the cumulative impacts of the Proposal (including in deciding which assessment pathway to adopt). Section 10 of the *Environment Protection Act 2019* (NT) defines impact to include impacts that are cumulative and may occur over time. The NTEPA's guidance materials also take a broad view of cumulative impacts, requiring proponents "to examine all potential impact sources that relate to the action, and the potential impact pathways between the source of an impact and sensitive receptors and environmental values that may be impacted. These need to be considered for the life of the proposed action, both in isolation and

cumulatively with other reasonably foreseeable proposals and approved actions.”² This guidance also states that cumulative impacts include “activities conducted over a wider area than the proposed action, such as the activities of multiple projects operating in a region.”

The referral information is inadequate in its treatment of cumulative impacts as it does not refer to the impacts of the proposed fracking industry, or the Sun Cable solar farm. These are “reasonably foreseeable” cumulative impacts in the region within the definition of the legislation and the NTEPA guidance. It is imperative that the Proposal and its impacts are assessed cumulatively not just in terms of the proponent’s earlier development at Ucharonidge, but also in terms of these other reasonably foreseeable developments in the region.

(c) Potential non-compliance with the Pastoral Land Act

ECNT is of the view that the necessary regulatory approvals have not been sought for the Proposal.

ECNT draws the NTEPA’s attention to a key internal inconsistency in the original clearing application and the referral documentation. On the one hand, the proponent claims that cotton will be grown to feed cattle on Ucharonidge Station (ie, for a pastoral purpose within the meaning of the Pastoral Land Act). On the other, the proponent states their intention to establish “a viable commercial operation”, which presumably refers to selling cotton grown at Ucharonidge. ECNT notes that Ucharonidge Station is listed in NT Farmers “Business Case for the Construction of a Cotton Gin in the Northern Territory”³ as a potential supplier of cotton for the proposed cotton gin to be established in the Northern Territory (thus indicating the intention to move the cotton produced there off the pastoral lease and sell it). Further, ECNT has been advised that cotton has been transported off-site this calendar year for processing interstate (and presumably, for sale interstate).

In ECNT’s view, any sale of cotton produced at Ucharonidge is not a pastoral purpose within the meaning of the Pastoral Land Act. At page 4 of the Northern Territory Non Pastoral Use Guidelines,⁴ it states that “the production of agricultural products that are not going to be utilised on the pastoral lease but used for off-lease consumption” requires a non-pastoral use permit approved by the Pastoral Land Board. This has been raised directly with the Department, but no action appears to have been taken.

This matter requires close scrutiny of the NTEPA. If the Proposal involves the production of cotton or sorghum that will not be utilised on the pastoral lease, then appropriate regulatory approvals must be sought. Further, an investigation must be undertaken regarding any potential breaches of the proponent’s pastoral land clearing permit 20/01. It will seriously undermine the credibility of the NTEPA as an environmental regulator if this matter is not investigated. There is also a possibility that the proponent will seek a water extraction licence in the future (see further below), which requires further examination by the NTEPA.

² https://ntepa.nt.gov.au/_data/assets/pdf_file/0009/805167/referring-proposed-action-to-ntepa-guideline.pdf.

³ <https://az659834.vo.msecnd.net/eventsairaeuprod/production-aapevents-public/60321b63d7bd4778a95579680cac25f2>.

⁴ https://nt.gov.au/_data/assets/pdf_file/0005/261950/npu-guidelines.pdf.

(d) Stakeholder and public engagement about the proposal

The cotton industry is new in the Northern Territory, and Territorians have significant concerns about its environmental impacts. This is evident by the number of submissions the NTEPA has received with respect to this Proposal, requesting that it be assessed at the level of environmental impact statement.

The proponent has not engaged sufficiently with the public and key stakeholders (including ECNT and land councils) about its proposal in accordance with the NTEPA's own stakeholder engagement and consultation guide.⁵ There is no evidence of a stakeholder engagement plan having been designed and implemented. It is unclear what stakeholder engagement the proponent has undertaken, if any. ECNT notes that Ucharonidge Station is subject to native title rights and interests, and thus close engagement with the Northern Land Council or Top End Default PBC is required as an absolute minimum. It is unclear that this has occurred. It is crucial for trust in the NTEPA as a regulator that there is a transparent and rigorous environmental impact assessment given the lack of knowledge held by the public at large about this proposal, and its likely impacts.

(e) Inadequate information about impacts on terrestrial ecosystems

Land clearing is a fundamental pressure on the environment. Land clearing causes the loss, fragmentation and degradation of native vegetation, and a variety of impacts on soils (eg erosion, salinity, loss of nutrients and acidification) and disrupts essential ecosystem processes.⁶ Threats to biodiversity from land clearing and habitat loss are one of the greatest threats to threatened species in Australia, and to the environment more generally.⁷ Northern Australia is in the midst of an unprecedented mammalian extinction, which has not been addressed adequately by the Northern Territory or Commonwealth Governments.⁸ As habitats become increasingly fragmented, populations become more vulnerable to other threats, such as predation by feral species and destructive fires, and lose the ability to recolonise suitable habitat. Land clearing applications are nevertheless on the rise in the Northern Territory, aided by an inadequate and piecemeal regulatory regime.

As acknowledged by the Fracking Inquiry, there is very little known about the impacts of land clearing (and associated habitat fragmentation) on biodiversity in the Northern Territory generally, or in the Beetaloo Sub-Basin specifically. Previous work on fragmentation in eucalypt woodlands has been undertaken around Darwin on a limited spatial scale as a Masters Research project at Charles Darwin University.⁹ Next to nothing is known about "edge effects" of clearing in the Northern Territory. A proliferation of habitat edges can impact the abiotic environment (including microclimate, light and wind) for up to 500m or more from cleared areas, significantly increasing

⁵ https://ntepa.nt.gov.au/_data/assets/pdf_file/0005/884696/guidance-proponents-stakeholder-engagement-and-consultation.pdf.

⁶ <https://soe.environment.gov.au/theme/overview/topic/land-use-change-and-habitat-fragmentation-and-degradation-threaten-ecosystems>.

⁷ https://environment.des.qld.gov.au/_data/assets/pdf_file/0020/90272/land-clearing-impacts-threatened-species.pdf.

⁸ <https://www.natureaustralia.org.au/content/dam/tnc/nature/en/documents/australia/Into-Oblivion.pdf>.

⁹ Rankmore, B. R. (2006). Impacts of habitat fragmentation on the vertebrate fauna of the tropical savannas of Northern Australia. Masters Thesis. Charles Darwin University, Darwin.

the area impacted. The Fracking Inquiry acknowledged this significant knowledge gap and recommended studies be undertaken regarding the impacts of habitat fragmentation on biodiversity.¹⁰

Baseline studies are thus currently underway as part of the Fracking Inquiry to understand the biodiversity baselines and projected impacts of proposed development in the region. A GISERA study is currently underway to understand and manage impacts to biodiversity from land clearing and edge effects associated with roads and pipelines in the Beetaloo Basin.¹¹ Proceeding with the development without baseline biodiversity surveys may shift these baselines and therefore the undermine the integrity of these studies.

The proponent has only undertaken a desktop search of likely threatened species in the area, and has not undertaken baseline biodiversity studies for its Proposal. In addition, the proponent has not identified other forms of impact on threatened species apart from land clearing (such as those caused by dust, noise, deposition, sedimentation, erosion, wildfire or weeds). The proponent has therefore not complied with the NTEPA's guidance for assessment of impacts on terrestrial biodiversity.¹² ECNT notes that a range of matters of national environmental significance may be impacted by the Proposal. Further, a number of species listed under Northern Territory legislation may also be impacted. The threatened species that may occur on Ucharonidge include the curlew sandpiper, the red goshawk, the Gouldian finch, the night parrot, the Australian painted snipe, the masked owl, the greater bilby, the ghost bat, and the plains death adder.

ECNT notes that terrestrial biodiversity is not limited to threatened species. There are a number of important native animals which are characteristic of the MGD of the Northern Territory including the long-haired rat *rattus villosissimus*, the strip-faced dunnart, and the long-tailed plannigale, and the iconic flock bronzewing. ECNT notes that there are already a number of animals extinct (or extirpated) in the bioregion, including the lesser stick-nest rat, the Carpetnarian antechinus, the Golden Bandicoot, the Northern Quoll and the Western Quoll. Impacts on the biodiversity of the local area and region as a whole (not just threatened species) must be assessed.

Assessment at the level of environmental impact statement is required to understand, assess and manage the impacts of land clearing on local and regional biodiversity (including threatened species), including "edge effects", of the Proposal. The proponent must undertake detailed baseline terrestrial fauna surveys in the Proposal area and surrounding areas that may be directly or indirectly impacted by the proposal. The proponent must apply the mitigation hierarchy and explain how the Proposal has been designed to avoid and minimise impacts to fauna and habitats, and explain monitoring, management and mitigation measures to reduce residual impacts. Further, a referral under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) is required for any matters of national environmental significance that may be impacted.

¹⁰ <https://frackinginquiry.nt.gov.au/inquiry-reports?a=494294>

¹¹ <https://gisera.csiro.au/wp-content/uploads/2021/03/Bio-07-Project-Order.pdf>.

¹²

https://ntepa.nt.gov.au/_data/assets/pdf_file/0004/287428/guideline_assessment_terrestrial_biodiversity.pdf.

(f) Inadequate information about terrestrial environmental quality

ECNT is concerned that there is inadequate explanation of the likely impacts on erosion, dust and soil quality in the referral documentation. Ucharonidge Station is known to be vulnerable to extended periods of drought, which has been reported publicly. The tillage of Mitchell Grass Downs grassland will significantly increase the risk of soil degradation, erosion and dust, particularly in years when it is not possible to plant crops due to low rainfall. There is the potential for contamination of soils from chemicals and fertilisers applied on the area, as well as changes to soil structure. This is given cursory attention in the referral report.

ECNT has been informed that viable rotation crops for dryland cotton have not been established in the Northern Territory. In addition, the publicly available evidence suggests that it will not be possible to grow dryland cotton viably in successive years in areas with annual rainfall as low and daily temperatures as high as in the project area. ECNT understands the annual rainfall in the project area to be in the vicinity of 500-600mm per year, with very high daily temperatures of over 35 degrees Celsius for 7 months of the year. The Cooperative Research Centre on Northern Australia states in a recent analysis in relation to broadacre “dryland” cropping of cotton in areas of comparable rainfall and high daily temperatures:¹³

- “Average rainfall in the Kimberley and Pilbara ranges from 300 to 600mm and is highly variable with cyclonic activity providing intense but infrequent rainfall events. Combined with daytime wet season temperatures averaging over 35 degrees Celsius for most locations and the attendant high evaporation rates, sustained dryland cropping is not commercially realistic. Accordingly, irrigation is fundamental to any cropping development. Irrigation in coastal Western Kimberley and the Pilbara has a short history and is almost exclusively reliant on groundwater.” (p22)
- “Average yields in Katherine on irrigated crops produced between 5-10 bales to the hectare against one or less bales on rain-fed trials – which also had lower fibre quality” (p 40);
- In relation to the Flinders catchment in Queensland, “The catchment receives an annual mean rainfall of 492mm with significant variability from 800mm on the west coast to 350mm in the south of the catchment... Rainfall patterns allow for reasonably accurate predictions of available water that can assist cropping decisions but there are limited options available for dryland production when rainfall is predicted to be below average. It is most likely that dryland cropping, while a potentially important part of a production system, will be opportunistic... CSIRO predicts that break-even yields in a dryland production system might be achieved ... one year in ten for cotton” (p 58);

In ECNT’s view the environmental constraints at Ucharonidge suggest two possible alternatives:

- (a) The Proposal will require irrigation at some point in the future (and thus requires a water licence), which would fundamentally alter the environmental impacts of the Proposal; or

¹³ <https://crcna.com.au/resources/publications/northern-australian-broadacre-cropping-situational-analysis>.

(b) In “bad years” with low rainfall (where crops cannot be sown), the Proposal will have significant impacts on soil quality, with a very high risk of dust and erosion given the large surface area of the Proposal.

The NTEPA should require the proponent to address the impacts of both these alternatives through an environmental impact statement, which is subjected to appropriate scrutiny. It is not possible to ascertain or assess these impacts from the referral documentation alone.

(g) Inadequate information regarding impacts on aquatic environmental quality

The original land clearing application listed 13 chemicals that might be applied on the property. These include:

- Glyphosate
- Metolachlor
- Thiamethoxam
- Dimethoate
- Sulfoxaflor
- Cyantraniliprole
- Rynaxypyr
- Diafenthiuron
- Thidiazuron
- Ethphon
- Mepiquat
- Adjuvants
- Parraffinic Oil

However, these chemicals are not listed in the referral report, nor are details given about their quantities or methods of application. No contamination risk from chemicals is mentioned in the referral report, including from spray draft, which is a known impact of cotton farming in the Murray Darling Basin. There is no information given about possible impacts on groundwater quality from these chemicals. ECNT notes that one of the herbicides proposed to be used, metalachlor, has been recognised by the US Government as a possible carcinogen, and is known to persist in groundwater and surface water:¹⁴

Contamination of groundwater and surface water has become a problem due to metolachlor’s mobility and persistence in soil (CDPR, 2003), and because significant amounts of the herbicide present for several months after application can run off in surface water (EPA, 1995a). A study conducted in 1988 of both surface and groundwater in the US detected the herbicide in 50% of surface water (2,091 of 4,161 samples) and 13 of 596 samples of groundwater. Another survey found metolachlor residues in groundwater at varying levels from 0.1 to 0.4 µg/L (WHO, 2003b). Another study conducted in 1997 that examined surface water found the herbicide in 1,644 samples (312 locations in 14 states) at a concentration of up to 138 ppb, due to runoff (CDPR, 2003). Metolachlor residues have been found in wells in 20 states. Although the lifetime Health Advisory Level (HAL) for metolachlor is 100 ppb, levels exceeding this were found in three wells located in

¹⁴ <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/metolachlor>.

Wisconsin, New York, and Montana (EPA, 1995a).

In the Midwestern Corn Belt, metolachlor is among the top five most frequently detected pesticides in raw and finished surface water. A high percentage of surface water samples from numerous locations for several months post-application contain metolachlor. Detection percentages pre-application (early spring) and post-application (late fall and winter) are lower than during application months, but are still high due to its persistence (EPA, 1995a).

The proponent must be required to describe all chemicals proposed to be used and how and where they will be used and stored. Likely volumes and application rates, as well as potential for loss to surface water and groundwater must be specified as part of an environmental impact statement. Baseline studies must be taken for groundwater and surface water quality, and a description of monitoring, management and mitigation measures to reduce residual impacts. Human and environmental health impacts of chemicals (if they contaminate groundwater, surface water or soil) must be described.

ECNT notes that baseline studies are currently underway as part of the Fracking Inquiry to understand the biodiversity baselines and projected impacts of proposed development in the region, including studies on regional water quality. Proceeding with the development without baseline aquatic environmental quality surveys may shift these baselines and therefore the undermine the integrity of these studies.

(h) Unsubstantiated claims regarding greenhouse gas emissions

The proponent claims that the project will be a “carbon sink”, rather than a source of greenhouse gas emissions. These claims are untested, and require close scrutiny. The proponent intends to till the soil using a disc plough before planting, which is known to generate considerable greenhouse gas emissions by stimulating microbial activity. Further, cotton farming is known to generate large amounts of nitrous oxide from fertilisers, which has over 300 times the global warming potential of carbon dioxide. The Northern Territory’s soils are generally lacking in nitrogen and significant nitrogen input is needed to generate good yields. The fertilisers proposed to be used on the area (including nitrogen) must be disclosed, including the rate of application the proponent intends to use. The proponent’s claims regarding the greenhouse gas emissions from the project require close scrutiny by way of environmental impact statement and cannot be left untested.

(i) Cultural and heritage issues - change in land use requiring free prior and informed consent from native title holders

The Proposal entails a significant change in land use that effectively converts a significant portion of a non-exclusive pastoral lease to exclusive possession. Ucharondige Station is subject to co-existing native title rights and interests, which will not be able to be exercised in the project area if the cropping project is established. In ECNT’s view, the proponent should obtain the free, prior and informed consent of native title holders to the project as a whole, preferably by negotiating an indigenous land use agreement under the *Native Title Act*.

There are likely to be sacred sites in the vicinity of the project area. A registry extract is manifestly inadequate to protect these, and any other sites that may exist in the area. An authority certificate

granted under the *Northern Territory Sacred Sites Act* should be a mandatory requirement and must be obtained as part of an environmental impact statement.

In sum, it is clear that the Proposal requires an environmental approval, and assessment at the level of environmental impact statement under the *Environment Protection Act 2019* (NT).

If you have any questions, please contact Kirsty Howey on kirsty.howey@ecnt.org.

Yours faithfully,



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Co-Director



Shar Molloy

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