

ADDENDUM

Aboriginal cultural values impact assessment

Singleton Water Licence Drawdown Area

Singleton Pastoral Lease, Neutral Junction Pastoral Lease, Warrabri Aboriginal Land Trust and Iliyarne Aboriginal Land Trust, Northern Territory, Australia.

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WARNING: THIS REPORT CONTAINS REFERENCE TO ABORIGINAL PEOPLE WHO HAVE DIED

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Executive summary

The Singleton Horticultural Project proposal has been referred to the Northern Territory Environment Protection Authority (NT EPA) for consideration as a ‘proposed action’ under section 48 of the NT *Environment Protection Act 2019* (NT EP Act). The Singleton Horticultural Project relies on the Singleton Water Licence (SWL). The Central Land Council (CLC) requested Susan Donaldson prepare an addendum to the Aboriginal Cultural Values Assessment report (Donaldson 2021) to specifically address whether the Singleton Water Licence will have a *significant impact* on Aboriginal cultural values identified across the Singleton Water Licence Drawdown Area (SWLDA).

The Singleton Water Licence Drawdown Area (SWLDA) extends across Singleton Pastoral Lease (PL), Neutral Junction PL, Warrabri Aboriginal Land Trust (ALT) and Iliyarne ALT. These lands traditionally belong to four Kaytetye speaking landholding groups, Akwerlpe-Waake, Iliyarne, Anerre and Arlpwe, who have recognised native title rights to the SWLDA. These four Aboriginal groups have localised rights and responsibilities to the drawdown area in accordance with traditional laws and customs which give rise to their cultural values which are of high significance. Akwerlpe-Waake, Iliyarne, Anerre and Arlpwe people are structurally interrelated with the other Kaytetye landholding groups and their Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa speaking neighbours all of whom culturally connect to the SWLDA and share many of the identified cultural values.

Traditional Owners’ belief in the *Altyerre* Law is the cornerstone value arising from the cultural values assessment and the foundation of all other values including maintaining spiritual connections and protecting sacred sites; undertaking ritual activity; upholding ecological knowledge associated with natural resources; continuing customary roles and responsibilities; and being able to live and travel on country (Donaldson 2021).

These values primarily relate to social and spiritual themes linked to surface water, groundwater dependent ecosystems (GDEs) and other features across the SWLDA. The values relate to cultural places within the SWDLA, as well as cultural practises and traditions directly associated with the SWDLA. The cultural values across the SLWDA are maintained by the Traditional Owners today and are deeply rooted in their heritage and form the framework for their future.

Additional analysis has shown that the likely consequences (the 'impact') to each of the identified Aboriginal cultural values (the cultural aspects of 'environment' present on the selected site) caused by a reduction of groundwater (the 'action' and major 'impact source') will be significant.

A massive reduction in groundwater across the SWLDA will trigger major negative consequences to cultural places and values held by Akwerlpe-Waake, Iliyarne, Anerre and Arlpwe people and their neighbouring tribal groups impacting culture and heritage; human health; community and economy; aquatic ecosystems; hydrological processes; and terrestrial ecosystems.

The potential impacts will likely or almost certainly result in highly significant cultural values to be lost, degraded and damaged, as well as notably altered, modified, obscured or diminished. The planned action, in my view, is likely to alter the existing use of a number of cultural and ceremonial sites, causing their values to notably diminish over time. The action is also likely to permanently diminish the cultural value of places for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people to which its values relate and permanently damage ceremonial features with cultural value. It is my view that the likely impact that this proposal may have on the identified cultural places values as linked to Groundwater Dependant Ecosystems (GDEs) across the SWLDA is significant.

Whilst Aboriginal Areas Protection Authority (AAPA) approval has been granted and aims to avoid harm to a number of identified sacred sites, the substantive risk of damage to, or interference with sacred sites on or in the vicinity of the AAPA subject land is highly likely (even if they are covered by Restricted Work Areas). Another highly likely consequence of harming sacred site in this matter is the distress caused to the Traditional Owners. In my view both of these potential impacts are significant and not adequately addressed by approvals received under the Northern Territory Aboriginal Sacred Sites Act 1989.

I am not aware of impact management measures aimed at avoiding, mitigating or reducing the potential adverse impacts to the identified cultural values beyond the AAPA Authority Certificate process. Accordingly, the duration and extent of the significant impact to the cultural values is unknown at this stage. Significant cumulative impacts of the proposal are also uncertain but likely given the changes to the climate, the existing and historical use of the site for agricultural activity, and the proposal to remove a large quantity of groundwater. Similarly, the 'end of life' plan for the proposal is undefined, so the ongoing or residual impacts to the cultural values is also uncertain.

1.0 INTRODUCTION

The Singleton Horticultural Project proposal has been referred to the Northern Territory Environment Protection Authority (NT EPA) for consideration as a ‘proposed action’ under section 48 of the NT Environment Protection Act 2019 (NT EP Act). The Singleton Horticultural Project relies on the Singleton Water Licence (SWL).

The Central Land Council (CLC) requested Susan Donaldson prepare an addendum to the Aboriginal Cultural Values Assessment report (Donaldson 2021) to specifically address whether the Singleton Water Licence will have a significant impact on Aboriginal cultural values identified across the Singleton Water Licence Drawdown Area (SWLDA).

A deeper analysis of the existing consultation data was carried out and considered in relation to the project’s potential ‘significant impact’ as defined by the Northern Territory’s *Environment Protection Act 2019* (NT EP Act), with consideration of the *Environment Protection Biodiversity Conservation Act 1999* (Cth) (EPBC Act), the Burra Charter (Australia ICOMOS 2013) and the Burra Charter Practice Note on Intangible Cultural Heritage and Place (Australia ICOMOS 2017).

In preparing this addendum, further engagement with Traditional Owners did not occur.

1.1 Definitions

The SWL proposal has been referred to the NT EPA for consideration as a ‘proposed action’ under section 48 of the NT EP Act because the proposed action has the potential to have a ‘significant impact’ on the environment.

The meaning of ‘action’ under the NT EP Act includes a project; a development; an undertaking; an activity or series of activities; works, and a material alteration of any of these things.

The meaning of 'impact' (of an action) under the NT EP Act is an event or circumstance that is a direct consequence of the action; or an event or circumstance that is an indirect consequence of the action and the action is a substantial cause of that event or circumstance. An impact may be a cumulative impact and may occur over time.

The NT EP Act defines 'significant impact' as an impact of major consequence having regard to the context and intensity of the impact; the sensitivity, value and quality of the environment impacted on, and the duration, magnitude and geographic extent of the impact.

The meaning of 'environment' under the NT EP Act is all aspects of the surroundings of humans including physical, biological, economic, cultural and social aspects.

The meaning of 'environmental values' under the NT EP Act is aspects of the environment that are important or serve an important function, such as a river that provides beneficial uses to ecological and human communities, a site that is sacred to Aboriginal people, or an animal or plant species that is threatened.

Further to the criteria outlined in the NT EP Act, in determining whether a proposal is capable of having a 'significant impact' on the environment the NT EP Act may have regard to various matters including (NT 2021: 19):

1. objects of the NT EP Act or other NT environmental legislation
2. value (e.g., effects on environmental factors and objectives), sensitivity and quality of the environment which is likely to be impacted
3. extent (intensity, duration, magnitude, frequency and geographic footprint) of likely impacts
4. consequence of likely impacts (or change)
5. resilience of the environment to cope with the impacts or change
6. cumulative impact with other proposals
7. connections and interactions between parts of the environment to inform a holistic view of impacts to the environment

8. level of confidence in the prediction of impacts and the success of proposed mitigation.

The decision about whether a potential impact is considered 'significant', for the purpose of the NT EP Act, is one for the Northern Territory Environmental Protection Authority.

The term 'significant impact' has been adopted in other jurisdictions, and most notably in relation to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), which requires Ministerial approval if an action will have a significant impact on matters of national environmental significance (MNES). Although the EPBC Act Significant Impact Guideline (2013) (EPBC Guideline) is not directly relevant to Singleton Station as it deals with MNES, there is useful information in relation to how proposals with potential impacts on Indigenous heritage values are considered against the significant impact test.

Under the EPBC Act a 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. Most of the national criteria are incorporated into the NT EP Act criteria listed above.

The EPBC Guideline contains useful information in relation to how proposals with the actions likely to cause impacts on Indigenous heritage values associated with World Heritage properties and National Heritage places are considered against significant impact criteria.

Significant impact criteria for World Heritage properties and National Heritage places with Indigenous heritage values

An action is likely to have a significant impact on the Indigenous heritage values of a place if there is a real chance or possibility that it will cause (EPBC Guideline 2013:16, 19):

- one or more of the values to be lost
- one or more of the values to be degraded or damaged, or
- one or more of the values to be notably altered, modified, obscured or diminished.

Examples of actions likely to have significant impact on World Heritage properties and National Heritage places associated with Indigenous heritage values

Examples of how an action is likely to have significant impact on Indigenous heritage values of a place include if there is a real chance or possibility that the action will (EPBC Guideline 2013: 18, 22):

- restrict or inhibit the existing use of a place as a cultural or ceremonial site causing its values to notably diminish over time;
- permanently diminish the cultural value of a place for a community or group to which its values relate;
- alter the setting of a place in a manner which is inconsistent with relevant values;
- remove, damage, or substantially disturb cultural artefacts, or ceremonial objects, in a place, and
- permanently damage or obscure rock art or other cultural or ceremonial features with heritage value.

The EPBC Guideline notes that the above are general examples and their application will depend on the individual values of each place, and that an alteration or disturbance which is small in scale may have a significant impact if a feature or component of a place embodies values that are particularly sensitive or important (2013:18).

Moreover, the EPBC Guideline also notes that to have a significant impact on Indigenous heritage values, it is not necessary for an action to impact upon the whole of the place, all of the values of a place, or a whole value of a place (2013: 18). It is sufficient if an action is likely to have a significant impact on a part, element, or feature of a place which embodies, manifests, shows, or contributes to the values of that place.

Identifying places with 'Indigenous heritage values' and levels of cultural significance is required in order to determine the level of any impacts. The concept of cultural significance is used in Australian heritage practice and legislation to encompass all of the cultural values and meanings that might be recognised in a place. Cultural significance is the sum of the qualities or values that a place has, including the five values—*aesthetic, historic, scientific, social and spiritual*, for past, present and future generations (Article

1.2 of the Burra Charter 2013). Of particular relevance to this matter are the social and spiritual values which form cultural significance for Traditional Owners.

Social value refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them (Burra Charter 2013). Examples include places that are:

- important as a local marker or symbol
- important as part of community identity or the identity of a particular cultural group
- important to a community or cultural group because of associations and meanings developed from long use and association

Spiritual value refers to the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group (Burra Charter 2013). Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places. The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm. Spiritual values can include:

- places that contribute to the spiritual identity or belief system of a cultural group
- places that are a repository of knowledge, traditional art or lore related to spiritual practice of a cultural group
- places that are important in maintaining the spiritual health and wellbeing of a culture or group
- the physical attributes of a place which play a role in recalling or awakening an understanding of an individual or a group's relationship with the spiritual realm
- spiritual values of the place that find expression in cultural practices or human-made structures, or inspire creative works

1.2 Summary of the Aboriginal cultural values

Donaldson (2021) identified six Aboriginal cultural values associated with surface expressions of groundwater as well as groundwater dependent ecosystems (GDEs) across the SWDLA¹. These Aboriginal cultural values are:

- Following the Altyerre Law and cultural obligations
- Maintaining spiritual connections and protecting sacred sites
- Undertaking rituals
- Upholding ecological knowledge associated with natural resources
- Continuing customary roles and responsibilities
- Being able to live and travel on country

These tangible and intangible cultural values are held by the members of four Kaytetye speaking landholding groups; the Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe. Whilst these values are found in various forms across Aboriginal Australia, it is the Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people who observe these values in the specific, localised context of the SWLDA. Accordingly, these six cultural values are highly significant to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. Aspects of these cultural values are also shared by members of other Kaytetye speaking landholding groups as well as the members of the neighbouring Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa language groups.

For further details about these cultural values and the groups to which they relate refer to Donaldson (2021).

¹ A groundwater dependant ecosystem (GDE) is the natural ecosystems that require access to groundwater to meet all or some of their water requirements on a permanent or intermittent basis so as to maintain their communities of plants and animals, ecological processes and ecosystem services. More specifically, aquatic GDE (Type 2) are ecosystems dependent on the surface expression of groundwater (wetlands, springs, soaks) and terrestrial GDE (Type 3) are ecosystems dependent on subsurface presence of groundwater (groundwater is not visible from the earth surface and the water table is within the root zone of the plants, either permanently or episodically) (Richardson et al., 2011).

2.0 ANALYSIS OF CULTURAL VALUES

This section provides a deeper analysis of the data presented by Donaldson (2021) in order to present a more detailed description of the identified cultural values and to determine the level of impact the proposed action may have to those values and associated places (as presented in section 3).

As noted above the Kaytetye speaking Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people observe each of the six identified values (listed in section 1.4) in the specific, localised context of the SWLDA. The critical point here is that the connection to the SWLDA held by these people are unique. Accordingly, these cultural values are highly significant to the members of the Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe groups. Additionally, aspects of these six cultural values are also shared by members of other Kaytetye groups as well as the members of the neighbouring Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa language groups.

2.1 Types of sacred sites and their inherent cultural value

Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours maintain these six key cultural values across the SWLDA in relation to 40 sacred sites (Ihangkele) associated with surface expressions of groundwater, aquatic GDEs and terrestrial GDEs. Whilst there are additional sacred sites across the SWLDA that do not depend on groundwater (e.g., a few rocky outcrops and other rock formations), approximately 95% of sacred sites present across the SWLDA are groundwater dependant. Accordingly, the majority of sacred sites across the SWLDA are vulnerable or sensitive to changes to groundwater levels.

Sacred sites featuring surface expressions of groundwater (soakages, springs, wetlands including swamps) are highly valued by Aboriginal people in the desert region where it is common for Ancestral activity to indicate water sources and the pathways between them (Berndt 1976:141).

Soakages dominate the cultural environment across the SWDLA; over half of the sacred sites identified across SWLDA are soakages which continue to be highly significant to the Traditional Owners as critical

source of water and a guide for travelling through country. Across the SWLDA 28 sacred soakages (ngentye) have been identified².

According to Peterson, soakage waters are the most important water sources under all but the worst conditions and are relied upon by Aboriginal people when other surface water sources diminish (Peterson 1976: 26). Across the SWLDA, soakages are the spiritual embodiment of Ancestral activity and direct subsistence patterns relative to environmental conditions across the region (Peterson 1976:25). Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people are culturally obliged to protect soakages, as well as undertake rituals and maintain spiritual connection to them. In doing so the Altyerre Law is followed. It is also critical that they uphold ecological knowledge associated with soakages in order to live and travel on country (Bell 2002:92).

One sacred swamp (artnwep) was also identified within SWLDA³. The presence of swamps in a desert environment supports an abundance of life forms. Swamps are often the focus for Aboriginal ritual activity because they can sustain large gatherings of people over an extended period of time. The swamp supports the growth of multiple aquatic GDEs including water lilies. The swamp is the foci of an important Iliyarne increase ritual aimed at generating an abundance of lilies to feed the people and appease the Ancestors dwelling at the site. Lilies are highly culturally significant and are specifically associated with this locality and in this region specifically associated with Iliyarne country. Water lilies growing at this swamp are the cornerstone identification feature for Iliyarne people and country. Lilies are the Iliyarne 'trade mark' celebrated by Iliyarne people through traditional songs, dance and painting.

For these reasons, the sacred soakages and the sacred swamp within the SWLDA are highly significant to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours.

Additionally, the interrelationship between these sites and places in the surrounding landscape is very important. For instance, WILYANINYE is a permanent spring on Wakurlpu country, 5km to the north of the SWLDA on Singleton Station. WILYANINYE is sacred due to its association with bush plum and baby dreaming⁴. The place is also highly valued as a place to live in the hot dry months when other water sources are depleted. According to Nungarrayi, 'in the olden days we lived off the spring water. When all

² A soakage is a location where shallow groundwater can be accessed by digging (Box et al 2008:1399).

³ A swamp is a shallow waterbody with emergent vegetation or a vegetated area with saturated soil (Box et al 2008:1399).

⁴ Koch, K., G. Koch, P. Wafer and J. Wafer (1981: 35).

the soakages dried up that was where we lived, at Wilyaninye, because of the permanent spring water...’ (Bell 2022:121).

Sacred sites with root systems dependant on groundwater are also highly significant to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. Six sacred sites classified as terrestrial GDEs have been identified across the SWLDA; three bloodwood trees (arrkarakw), one coolibah tree (atnkerre), one supplejack tree and one ghost gum tree. Each of these groundwater dependant trees is highly significant to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people because, like soakages, they are the spiritual embodiment of Ancestral activity and the basis for specific ritual activity. These trees dominate the cultural landscape due to their longevity and offer a seemingly everlasting array of reliable natural assets; medicine, good shade, food, habitat for fauna. Whilst the sacred tree species within the SWLDA individually offer specific natural resources (sap, bark, food etc), the high significance of these trees is primarily due to their intangible religious associations.

The three sacred creeks (elpaye) and two sacred floodouts (ilinjera) identified across the SWLDA are also highly significant to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people⁵. These features represent spiritual Ancestral activity and also attract an abundance of natural resources associated with important cultural practices undertaken by Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. The sacred creeks are highly significant because they are a source of water and are a place to gather for cultural teachings. The sacred floodout is highly significant because it is an important hunting ground at certain times of the year.

Each of the 40 sacred sites within the SWLDA, regardless of their natural features, are the foci for Kaytetye people following the Altyerre Law and undertaking cultural obligations including activities associated with protecting them. These places enable Kaytetye people to maintain spiritual connections and undertake rituals associated with groundwater and GDEs. Each of the 40 sacred sites within the SWLDA, regardless of their natural or physical form, are deeply valued by Kaytetye people because they are the source of spiritual essence and ongoing religious sustenance. The cultural significance of each of these 40 sacred sites is high; these places are highly valued. The majority of sacred sites across the SWLDA serve important functions for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe and their tribal neighbours.

⁵ Whilst their dependence on groundwater can vary both between sites and for an individual site throughout the year or longer periods, creeks and floodouts are a mixture of Type 2 and Type 3 GDEs, depending on how the water table interacts with them (pers. comm. Ryan Vogwill 25.01.2023).

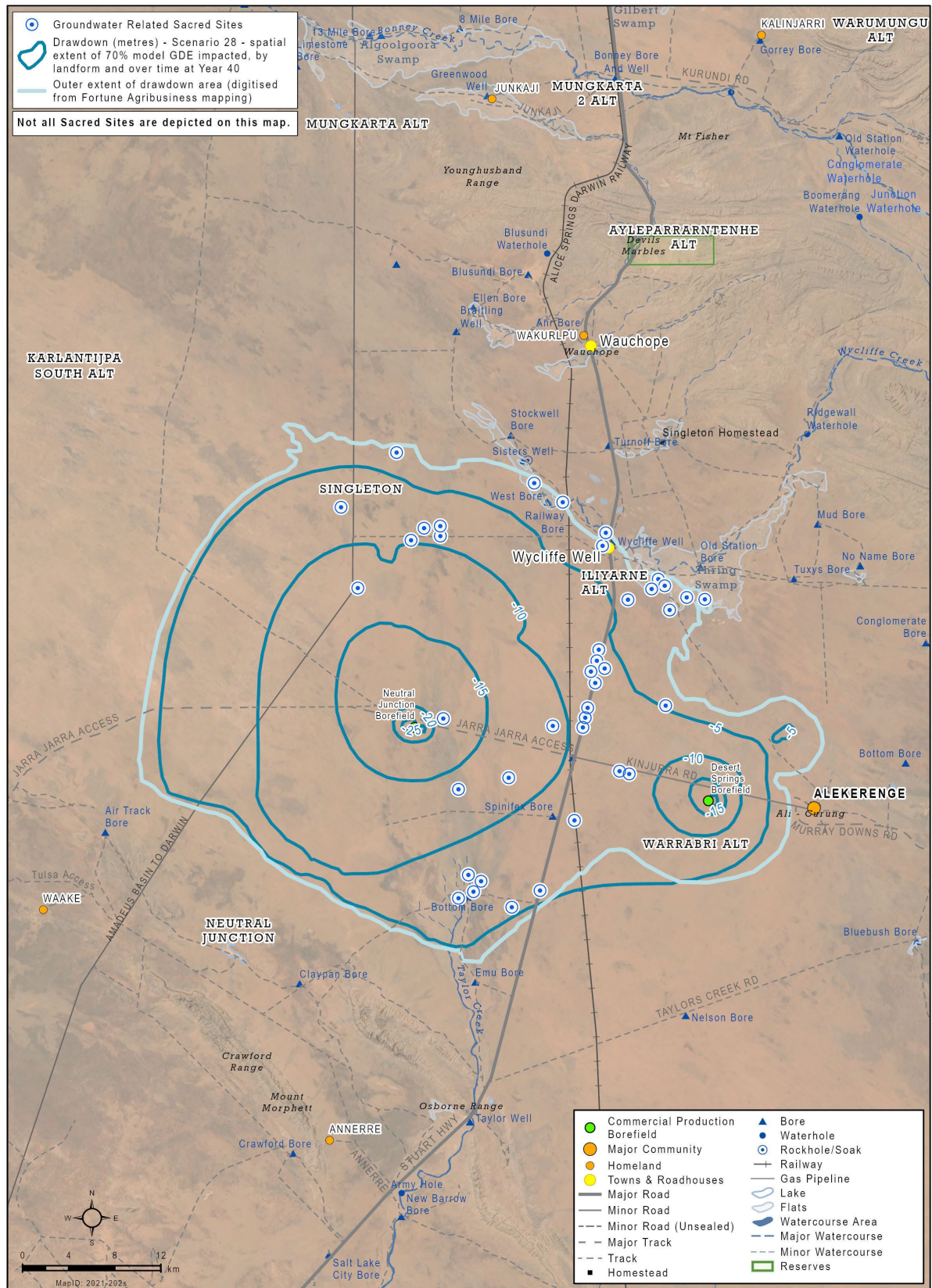


Figure 1 Groundwater related sacred sites SWLDA (CLC 2022)

2.2 The present condition of the sacred sites and their relative value

Traditional Owners are part of a dynamic and complex system designed to sustain their physical, biological, economic, cultural and social environment. Whilst the overarching Dreamtime Law is a constant, the system enables changes within it. For instance, lost cultural knowledge can be regained through dreams and replaced back into the country, for future generations (Bell 2022: 92 – 93); a sacred tree may be re-established by a sapling of the same species at the same location; a person inadvertently entering a sacred place can be punished by internal systems of controlling order (Berndt 1996: 348); and a group may have to temporarily rely on a neighbour's permanent water source in times of severe drought.

These are examples of how Aboriginal society perpetuates and adapts when faced with isolated incidents of change and disorder. Berndt argues that deviations (as distinct from minor variations) by Aboriginal people from their own social norms attract sanctions implemented by senior members of the group which can lead to the death of perpetrators (Berndt 1996: 338 – 344).

What happens today when a sacred site is lost or degraded as a result of major external influences?

Changes to the Aboriginal social system caused by more severe activities have been documented across the region over the past century and a half and include the depletion of critical waterholes by explorers and their stock, massacres of people whose detailed knowledge of country was lost forever, and the raping of women (Bell 2022:62-63). According to Bell the impact caused by these types of actions were 'dramatic' and led to 'carefully managed resources destroyed by persons with whom they couldn't communicate and to whom the Law did not apply... their ability to care for their country and their dependants was immediately jeopardised, no longer was knowledge of country enough for survival' (2022:62).

As alluded to by Bell, punishment can be difficult if the perpetrator or perpetrators are not part of Aboriginal society, that is, they are beyond the control or influence of the senior members of the group who make decisions about the punishment.

Whilst some sacred sites across the SWLDA have already suffered partial damage as a result of agricultural activity (use of bore water, construction of fences) and environmental factors (drought, fires), the

majority of sacred sites surveyed for this assessment were intact and ranged from moderately healthy to very healthy. Some of the soakages visited were dug out by hand and water was collected.

The few sacred sites observed in poor condition were considered by the Traditional Owners to have the ability to regain good health by way of human or spiritual action (regrowth or replanting). One bloodwood tree which had been burnt to the ground, seemingly in poor condition, was survived by fresh shoots rising from its base. One Bean Tree (*Bauhinia cunninghamii*) marking a soakage appeared very dry and possibly dead. Traditional Owners maintained that the bean tree was planted by their human Ancestors as a land mark to assist people to locate the soakage and that it is now the customary role of the present generation to replant another bean tree to serve the same function.

Traditional Owners have maintained these cultural practices and beliefs for generations but now fear that a reduction in the groundwater, for the duration and magnitude proposed, will undermine these cultural and environmental management techniques.

Does the cultural value of a sacred site alter if a site is harmed (by any action) or the quality (environmental condition) of the site is poor?

Yes and no. The value of the place remains significant to Aboriginal people because the spiritual essence endures in the country, waiting to remerge at some point in the future in the same location. The songs, designs and dances are also retained in Aboriginal people's repertoire of cultural practices. The loss occurs at the point of cultural connection between Traditional Owners and the place; given the place may no longer be evident or visible, the intangible cultural values of cultural connection are broken. The loss is felt in the sphere of cultural obligation between Traditional Owners, the place and their Laws; the intangible cultural values invoked when fulfilling customary roles and responsibilities are absent. The consequences of the loss also impact ritual activity, being able to live and travel on country and being able to protect sacred sites; the intangible and tangible cultural values associated with these activities are severely undermined.

Does a reduction in the number of sacred sites in one's country mean that the remaining sites become more precious?

Each sacred site is important for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours. A scarcity in water resources would trigger a reliance on the remaining water resources, consequently increasing the significance of the remaining resource. In this context the remaining sacred sites have an increased cultural value.

A reduction in the quantity of sacred sites over time over the geographical extent of one's country will result in severe sanctions within Aboriginal society aimed at the senior members of the group responsible for maintaining a healthy country. So, whilst the remaining sites increase in value, the Traditional Owners will likely undertake death and mourning rituals in response to seeing country dry out and sacred sites suffering permanent harm. Whilst the remaining sites might become the focus for cultural and ritual activity, the places that are lost will never be forgotten and the trauma associated with the loss will endure.

2.3 Geographical extent and the Kaytetye land tenure system

In the present matter, to understand how the geographical extent of the proposed works might impact the identified cultural values, it is essential to understand the localised way in which Kaytetye people connect to the land according to their traditional laws and customs.

The SWLDA lies in the mid north western extent of land owned by Kaytetye speaking people (Figure 2). Kaytetye country comprises at least 15 landholding or estate groups, each group being responsible for all aspects of their respective traditional lands. Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe country is within the SWLDA, with Jarra Jarra to the west, Arrawatyen to the north east, Lyentyawel Ileparranem to the east, Warlekerlange to the south west, and Alapanpe, Akalperre, Arlekwarr, Ertwerrpe, Thangkenharengge, Kwerrkepentye and Entengele to the south⁶. A large portion of Kaytetye country is affected by this proposal.

⁶ Turpin and Ross 2004: 20



Figure 2 Kaytetye country (Tindale 1940).

Each group holds the traditional responsibility to appease and maintain connections with the spiritual Ancestors residing in their respective lands; Anerre people, for instance, hold the traditional responsibility to appease and maintain connections with the spiritual Ancestors residing in Anerre land and to protect the sacred sites on their country. Similarly, the Waake-Akwerlpe, Iliyarne and Arlpwe people are charged with upholding the same laws and customs on their respective lands. Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people have recognised native title rights under Australia law across the SWLDA, specifically:

- Iliyarne people have associations to the north east extent of the SWLDA in relation to 19 sacred sites (nine of which they share responsibility for with other groups);
- Arlpwe people have associations to the central and eastern extent of the SWLDA in relation to six sacred sites (three of which they share responsibility for with other groups);
- Anerre people have associations to the north central and southern extent of the SWLDA in relation to 23 sacred sites (12 of which they share responsibility for with other groups); and the
- Waake-Akwerlpe people have associations to the western and northern extent of the SWLDA in relation to five sacred sites (two of which they share responsibility for with other groups).

Viewing each group's connection to the SWLDA at a localised level allows us to understand the potential impact, from a Kaytetye perspective, in relation to the cultural value associated with following the Altyerre Law by undertaking certain rituals, fulfilling cultural obligations including the protection of sacred sites, and maintaining spiritual connections. Each sacred site is important to each of these groups, in particular, and serve an important function for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours. A large and important extent of Iliyarne country and Anerre country will be affected by the proposal (and in turn the identified cultural values), and important parts of Waake-Akwerlpe country and Arlpwe country (and their cultural values) will also be affected.

2.4 Context in relation to focal sacred sites

In relation to context of the proposal and the value of places (sacred sites), it is critical to understand how most desert groups relate to a focal sacred site or cluster of sites, being the loci of religious powers for their particular group and the basis for the group's name. Whilst all sacred sites are important, focal sites hold another layer of import by virtue of their high religious significance and point of group identification. Focal sacred sites are particularly sensitive and culturally important for the associated Traditional Owning group.

Within the SLWDA a focal complex of sacred sites exists for the Iliyarne group; ILIYARNE ILPAIYE, a creek and associated ghost gum trees interlinked with the highly significant MPWEREMPWER-ANGE, a swamp and large coolibah tree. This highly significant site complex, within the SWLDA, is the foundation of Iliyarne people's cultural identity as the basis of the group's name, as the focal mythological place for this group and as the primary food source for the group. It is irreplaceable. This focal site complex is the basis for Iliyarne Law, physical wellness, ritual and spiritual wellbeing. Thus, in the context of the local cultural landscape, compared with the other groups whose focal sacred sites lay beyond the SWLDA, the SWLDA has additional layers of cultural meaning to Iliyarne people and commensurately greater sensitivity to impact. The Iliyarne focal sacred sites across the SWLDA serve an important function for Iliyarne people and how they relate to their tribal neighbours.

2.5 Context and sacred sites as boundary markers

In accordance with the traditional Kaytetye land tenure system, there are multiple sacred sites within the SWLDA where two or more of the traditional Aboriginal landholding groups converge, that is, their respective countries share boundary zones. Traditional boundaries in this region are usually marked by sacred sites, which are often shared by the neighbouring groups. Whilst all sacred sites are important due to their spiritual value, sacred sites that are also boundary markers hold an additional value to the respective groups because of their function to organise how people are located within the cultural landscape. These boundary sites act as navigational markers and are integral to cultural educational practices and intergroup relations. It is understood that these boundaries were established in the Altyerre and Kaytetye people today are obliged to abide by them.

The anthropological research for this investigation identified 12 sacred sites within the SWLDA that are important boundary markers and of high cultural value to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. Two of these boundary markers indicate locations where three landholding groups come together (both large ghost gum trees). The other 10 sacred sites indicate boundaries for two neighbouring groups (nine soakages and one large ghost gum tree). The sacred sites on Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe country which indicate tribal boundaries between each of the groups are deeply important and particularly sensitive to change. Negative impacts to these culturally prominent sites could lead to long-term problems in terms of how Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people relate to themselves and each other, and may affect their ability to undertake cultural obligations according to traditional laws and customs. Sacred sites that indicate tribal boundaries serve an important function for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours.

2.6 Connections and interactions across the landscape

Consideration of the connections and interactions between parts of the environment needs to be considered in the context of the Kaytetye land tenure system. According to traditional laws and customs this system of land tenure is fundamentally localised whilst concurrently deeply interconnected with the broader cultural landscape associated with the neighbouring Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa speaking people.

Another way to inform a holistic view of the environmental and cultural landscape is to consider connections and interactions between the land and people directly associated with the SWLDA in relation to the surrounding land and people. So, whilst the Kaytetye groups Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe are the Traditional Owners of the area covered by the SWLDA, other Kaytetye landholding groups as well as Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa speaking people, maintain a different type of association to the SWLDA involving kinship, trade, historical experiences, social obligation, resource collection and ritual co-operation.

In particular, those parts of the SWLDA where there are no identified sacred sites are highly valued by Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa people as hunting grounds and as sources of natural resources of cultural value. In these areas multiple groups maintain ecological knowledge associated with collecting natural resources, continuing customary roles and responsibilities and undertaking rituals, and are able to live and travel on country. The natural environment, including the seasons, dictates Aboriginal land use practises. Many Aboriginal residents of nearby communities and outstations, including Alicurung, regularly visit the SWLDA on a seasonal basis, to 'go hunting' in their 'back yard'. These activities are valued and are an integral part of what it means to be an Aboriginal person in Central Australia.

Understanding these regional connections and seasonal interactions allows a greater appreciation of how the SWLDA contains important cultural values for Aboriginal people well beyond the immediate SWLDA. Lands rich in natural resources in a desert environment serve an important function for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours. Changes to the cultural landscape directly within the SWLDA will potentially impact people and country across the region.

2.7 Geographical extent of each value

The geographical extent of each cultural value needs to be considered from an Aboriginal ontological perspective where all living things are interconnected and interact with the spiritual world.

Whilst the deep and powerful spiritual essence is found at 'sacred sites' which are treated with respect and reverence, spiritual Ancestors are also located across the broader landscape and are part of everyday activities such as hunting and swimming and preparing a camping place.

The 40 sacred sites across the SWLDA do not exist in isolation from each other, but rather they are interconnected to form the core of the Aboriginal cultural landscape held together by the identified cultural values. There are no unimportant spaces or places not associated with Aboriginal laws and customs or the recognised native title rights and interests⁷. All aspects of Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe country are important to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people and their tribal neighbours.

⁷ The recognised native title rights across the SWLDA include the right to access and travel over any part of the land and waters; the right to live on the land, and for that purpose, to camp, erect shelters and other structures; the right to hunt, gather, take and use the natural resources of the land and waters, including the right to access, take and use natural water resources on or in the land; the right to access, maintain and protect places and areas of importance on or in the land and waters; and the right to engage in cultural activities.

3.0 ANALYSIS OF DATA CONSIDERING LEVEL OF IMPACT

This section aims to determine the likely consequences (the ‘impact’) to the identified Aboriginal cultural values (the cultural aspects of ‘environment’ present on the selected site) caused by a reduction of groundwater (the ‘action’ and major impact source). Consideration is then given to the level of impact (major/ minor) in terms of the context and intensity of the impact, the sensitivity, value and quality of the environment impacted on and the duration, magnitude and geographic extent of the impact.

3.1 The action – available data and existing opinions

It is acknowledged that whilst there is a current lack of region-specific groundwater drawdown impact criteria (and data) and an absence in the assessment of the risks to aquatic GDEs (Hydro Geo Enviro 2021:7), it is understood that ‘water drawdown presents a potential risk to sacred sites that include features dependent on groundwater (i.e., soaks and culturally significant trees)’ (GHD 2022:92). It has been argued that a reduction in groundwater can have ‘severe negative impacts on GDEs’ (Nano et al. 2021:1).

GHD also highlighted that groundwater pumping will lower the water table beneath and surrounding the bore field and because some sacred sites including trees are dependent on access to the groundwater, lowering the water table may reduce the trees’ access to water which in turn could impact their health (2022: 126). GHD recognise that ‘some soaks are part of sacred sites’ and that depending on the connection between the soaks and the groundwater being pumped for irrigation, it is possible that pumping could reduce the water available to soaks (2022: 126). GHD also acknowledge the relationship between the health and wellbeing of Aboriginal people and the health of country (GHD 2022: 126).

Despite recognising these key factors, GHD found that there was only a *medium* residual risk associated with the proposal in relation potential impacts to sacred sites or Aboriginal cultural values from water drawdown and a *low* residual risk associated with direct impacts to sacred sites (GHD 2022:129).

Impacts to Aboriginal cultural values caused by actions undertaken during the course of a development project are usually considered as either direct or indirect. The NT Environmental Impact Guidance for proponents (NT Guide 2021) defines 'impact of an action' as an event or circumstance that is:

- a direct consequence of the action; or
- an indirect consequence of the action and the action is a substantial cause of that event or circumstance.

According to this definition an action is quite broad in that it can include a project, a development, an undertaking, an activity or series of activities or works (NT 2021). According to GHD, direct impacts to Aboriginal cultural values are not anticipated as part of the proposal (2022: 126).

Utilising the available albeit limited data concerning standard consequences relating to a reduction in groundwater, Donaldson (2021) identified a number of likely impacts to Aboriginal cultural values associated surface water, groundwater dependent ecosystems (GDEs) and other features within the SWLDA:

- Aboriginal people's sacred sites will be harmed
- Aboriginal people will suffer from emotional and physical stress
- Flora and fauna species required by Aboriginal people for ritual activity will be eradicated or diminished
- Natural resources required by Aboriginal people for hunting and gathering will be eradicated or diminished
- Aboriginal people's ability to live on and travel across their traditional lands will be hindered
- Future generations of Aboriginal people will suffer from a loss of cultural practices and cultural identity

The next sections outline the severity of these consequences against NT guidelines and other relevant criteria, to assess whether or not the impacts should be considered 'significant'.

3.2 NT EPA environmental factors

It is clear that a range of important tangible and intangible Aboriginal values relating to cultural aspects of the environment are present across the proposed development area (Donaldson 2021; GHD 2022; Bell 2002; CLC 2008; Koch & Koch 1993; Turpin 2003).

The NT EPA’s pre-referral screening tool outlines the NTG’s environmental factors and objectives and the indicative values associated with them. The framework is useful for the present assessment in that it provides a thematized structure within which to consider areas where the proposal may have the potential to have a significant impact on the environment (limited here to factors relating to cultural aspects of the environment).

The relevant factors that relate to the identified cultural values across the SWLDA are culture and heritage, human health, community and economy, aquatic ecosystems, hydrological processes, and terrestrial ecosystems, as detailed below.

Potential effects on NT EPA’s environmental factors, objectives and indicative values (NT 2021: 25 – 30)		
NT EPA Factor	Objective	Indicative environmental value
Culture and heritage	Protect sacred sites, culture and heritage.	Sacred sites
Human health	Protect the health of the Northern Territory population.	Drinking water Recreational water Bush tucker
Community and economy	Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians	Dwellings, homelands, communities, towns and suburbs where people live Livable environment (access to natural resources including bush food, recreational use of the natural or built environment e.g. fishing, cycling, sports, picnics)

		<p>Healthy lifestyles (sense of wellbeing and good mental health)</p> <p>Vulnerable sectors of the community</p> <p>Connections to culture and community (Aboriginal rights and interests, including right of access; cultural practices; sense of belonging, inclusion, connectedness and cohesion; healthy social relationships).</p>
Aquatic ecosystems	Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	<p>Groundwater dependent ecosystems</p> <p>Species of social, cultural, livelihood and/or economic significance</p> <p>Biological and functional diversity</p>
Hydrological processes	Protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	<p>Culturally important water features or other features affected by water level</p> <p>Present and future uses, and users of water</p>
Terrestrial ecosystems	Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	<p>Species of social, cultural, livelihood and/or economic significance</p>

These factors and associated objectives and indicative (environmental / cultural) values have been incorporated into this impact assessment (3.3).

3.3 Impact assessment

3.3.1 AAPA

As outlined by GHD the Authority Certificate C2019/083 covers portions of property parcel NT Por 653 (Singleton Station) and most of, but not all of, the groundwater extraction drawdown area (2022:126). GHD note that harm to sacred sites is not permitted under C2019/083, including due to water extraction, and the proposal is being planned to avoid harm. Similarly, harm to sacred sites outside of the C2019/083 subject land must also be avoided, according to GHD (2022:126).

The project AAPA Authority Certificate (AC) (2019/083) stipulates work restrictions aimed at protecting three sacred sites within the drawdown area (RWA 5, RWA 9 and RWA 10 associated with a creek, ghost gums, a waterhole, soakages and bean trees) and eight sacred sites beyond the drawdown area (RWA 1, RWA 2, RWA 3, RWA 4, RWA 6, RWA7 and RWA associated with ghost gums, bloodwoods, soakages, a 'depression hollow', two sand ridges, creeks, waterholes and swamps).

Unfortunately, not all of the 40 sacred sites identified by Donaldson (2021) were identified by AAPA as being present in the AC subject land and are thus not covered by any of the 10 RWAs in the AAPA Authority Certificate (AC 2019/083) outlined above. Additionally, a large number of sacred sites were identified by Donaldson within the drawdown area beyond the AC subject land, as described below:

'...Critically, the current assessment identified five sacred sites within the AC subject land not identified in the AC or overlapped by any of the RWAs. These sites are all within the drawdown area and are all associated with GDE features; all are soakages. An additional 32 sacred sites were identified outside the AC subject land and within the drawdown zone...' (Donaldson 2021:70).

A direct impact to a sacred site is often thought of as occurring as a result of a physical and highly visible disturbance, such as when a grader knocks down a sacred tree or backfills a sacred soakage. These forms of direct impact causing harm to sacred sites are usually avoided by ensuring the AAPA Restricted Works Area (RWA) process is applied.

Drilling multiple bores to extract groundwater is proposed as a key activity in the current development. In my view activities that are critical to the proposed development with likely negative consequences to the identified cultural values should be considered within the 'direct impact' framework. Having said that, it is my view that even if the extraction of groundwater is classified as causing an 'indirect impact', the removal of groundwater will still be the substantial cause of events that follow, that is, harm to sacred sites and distress for the Traditional Owners.

In my view whilst a RWA may protect a sacred site from the direct impact of a drilling rig, for example, but it will not protect a sacred sites from the impact of a reduction in groundwater on which the existence of the sacred site depends. Accordingly, all of the identified GDE sacred sites, be they covered by a RWA or not, have the potential to be harmed by a reduction in groundwater which in my opinion equates to significant impact. The consequences of significant impact to sacred sites are outlined in the table below.

3.3.2 IMPACT SUMMARY TABLE

SWL ABORIGINAL CULTURAL VALUES IMPACT ASSESSMENT (NT EP Act 2019 criteria)					
ABORIGINAL CULTURAL VALUES PRESENT ON SWLDA	CULTURAL SIGNIFICANCE	IMPACT CAUSED BY REMOVAL OF GROUNDWATER	POTENTIAL FOR IMPACT	LEVEL OF IMPACT	
Maintaining spiritual connections and protecting sacred sites, specifically in relation to the 40 identified GDE sacred sites (Ihangkele) within the SWLDA. ⁸	High	<p>Within the SWLDA Iliyarne people have the localised responsibility in accordance with their traditional laws and customs to protect 19 sacred sites (nine of which they share responsibility for with other groups); Arlpwe people have the same local responsibility to protect six sacred sites (three of which they share responsibility for with other groups); Anerre people have the same local responsibility to protect 23 sacred sites (12 of which they share responsibility for with other groups); and the Waake-Akwerlpe people have the same local responsibility to protect five sacred sites (two of which they share responsibility for with other groups).</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect sacred sites, culture and heritage</i> in the following ways:</p> <ul style="list-style-type: none"> Harm to sacred sites (Ihangkele) will lead to the punishment of the senior Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people, by 	Likely	Significant	

⁸ See pages 29 - 36 of Donaldson (2021) for identification of these cultural values and pages 69 -74 of Donaldson (2021) for the impact of disruption to them.

		<p>Ancestral Spirit beings, for not protecting the sacred sites within their respective countries.</p> <ul style="list-style-type: none"> • Harm to sacred sites (lhangkele) will cause major negative consequences to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people’s spiritual connection to country because they maintain that their etnwenge (a person’s spirit) is deeply connected to one’s country (apmere), sacred sites (lhangkele) especially to water (arntwe). • Harm to sacred sites will subsequently cause distress to the Aboriginal custodians of the sacred sites that have been damaged or destroyed. • Given the identified sacred sites are the source of spirituality and ongoing religious sustenance, harm to the sacred sites will have enduring and sever consequences to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people’s spiritual health and well-being. • Harm to a sacred site could interrupt the spiritual connection Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people have to that place and inhibit the spiritual connections if the place no longer exists or is permanently damaged. 		
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		<ul style="list-style-type: none"> • Harm to sacred sites is an offence under the <i>Northern Territory Aboriginal Sacred Sites Act 1989</i> <p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p> <ul style="list-style-type: none"> • restrict or inhibit the existing use of cultural or ceremonial sites causing the values to notably diminish over time • permanently diminish the cultural value of places for Traditional Owners 		
<p><u>Following the Altyerre Law and cultural obligations</u> across the SWLDA</p>	High	<p>For Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people, abiding by the Altyerre Law and undertaking important cultural obligations for kin and country appeases the creator spirits and is a deeply important societal foundation. The system is balanced to ensure the environment sustains future generations who in turn will maintain the Altyerre Law and undertake cultural obligations to perpetuate society.</p> <p>On a regional scale, a large portion of Kaytetye country is affected by this proposal. Locally (within the SWLDA), large portions of Iliyarne country and Anerre country, will be affected by the proposal. Important parts of Waake-Akwerlpe country and Arlpwe country will also be affected.</p>	Likely	Significant

		<p>12 sacred sites within the SWLDA are important tribal boundary markers and of high cultural value to Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. Two of these boundary markers indicate locations where three land holding groups come together (both large ghost gum trees), the other 10 indicate boundaries for two neighbouring groups (nine soakages and one large ghost gum tree).</p> <p>These tribal boundary sites act as navigational markers and are integral to cultural educational practices and intergroup relations. It is understood that these boundaries were established in the Altyerre and Kaytetye people today are obliged to abide by them. Sacred sites that represent tribal boundaries are deeply important and particularly sensitive to change.</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA's objective <i>to enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians</i> in the following ways:</p> <ul style="list-style-type: none">• The desertification of country and in particular homelands and communities where people live, will have major negative consequence for senior Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people who are responsible for sustaining country for the future. They will suffer shame and blame which will affect their		
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		<p>emotional and physical state, potentially including, the Kaytetye believe, severe illness resulting in death.</p> <ul style="list-style-type: none"> • The liveability of the environment including access to natural resources, access to bush food, the recreational use of the natural environment will be diminished. • The ability to maintain a healthy lifestyle for an already vulnerable sector of the community, including attaining a sense of wellbeing and good mental health will be diminished. • Connections to culture and community including exercising Aboriginal rights and interests associated with access, cultural practices, sense of belonging, connectedness and healthy social relationships will be negatively altered if not permanently damaged. <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning</i> in the following ways:</p> <ul style="list-style-type: none"> • Damage to Groundwater dependent ecosystems (GDEs) 		
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		<ul style="list-style-type: none"> Species of social, cultural, livelihood and/or economic significance will be disturbed including culturally important localised species (lilies). <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA's objective to <i>protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained</i> in the following ways:</p> <ul style="list-style-type: none"> Culturally important water features or other features will likely be affected by a reduction in water level including culturally prominent boundary marking sites. Permanent damage to these landmarks could lead to major consequences including long-term problems for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people in terms of how they relate to themselves and each other, and their ability to undertake cultural obligations according to traditional laws and customs. Species of social, cultural, livelihood and/or economic significance will be diminished. 		
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		<p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p> <ul style="list-style-type: none"> • permanently diminish the cultural value of places for Traditional Owners • inhibit the existing use of cultural sites causing the values to notably diminish over time 		
<p><u>Undertaking rituals requiring GDE species sourced from within the SWLDA across the SWLDA⁹</u></p>	High	<p>The spiritual connection Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe have with their apmere (country) is strengthened by ritual activity which is also linked to the powerful forces of the Altyerre. Many of these ritual activities require specific flora and fauna species obtained across the drawdown area, some of which directly or indirectly relate to GDE.</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA's objective to <i>protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning</i> in the following ways:</p>	Likely	Significant

⁹ See pages 37 - 42 of Donaldson (2021) for identification of these cultural values and pages 75 of Donaldson (2021) for the impact of disruption to them.

		<ul style="list-style-type: none"> • A reduction in species of social, cultural, and economic significance required by Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people for ritual activity. This will lead to the need for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people to seek permission from neighbouring tribal groups to obtain the required ritual items from them. Having to seek permission from neighbours for resources that used to be obtained on their own country may cause Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe to feel shamed about their degraded country and cultural loss. • A reduction in shade trees and water sources, which in turn may hinder Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people's ability to the gather in large groups to undertake ritual activities that require shade and water on their land across the SWLDA. <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA's objective to <i>protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained</i> in the following ways:</p> <ul style="list-style-type: none"> • Culturally important water features or other features affected by water level 		
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		<ul style="list-style-type: none"> • Present and future uses, and users of water for ritual activity • the cultural practices associated with ritual activity are diminished if site visitation is not possible, that is, if the site is permanently destroyed and over time locationally lost or forgotten. This is another major consequence indirectly related to the act of removing groundwater. <p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p> <ul style="list-style-type: none"> • permanently diminish the cultural value of places for Traditional Owners • inhibit the existing use of ceremonial sites causing the values to notably diminish over time 		
<u>Upholding ecological knowledge associated with collecting natural</u>	High	The geographical extent of impacts to this value is to be understood with a consideration of the seasonal way in which Kaytetye, Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa people exploit the SWLDA.	Likely	Significant

<p><u>resources</u> across the SWLDA.¹⁰</p>		<p>Upholding cultural knowledge and practices associated with ecological processes linked to the collection of natural resources for sustenance and trade is an important cultural value associated with the entire SWLDA. The SWLDA is prime hunting ground used by Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people, as well as other Kaytetye people and their Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa neighbours, at different times of the year. Many Aboriginal residents of the nearby Alicurung community regularly visit the SWLDA on a seasonal basis, as their ‘backyard’.</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect the health of the Northern Territory population</i> in the following ways:</p> <ul style="list-style-type: none"> • A reduction in drinking water • Damage to recreational water • A reduction in bush tucker and medicines <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning</i> in the following ways:</p>		
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¹⁰ See pages 42-49 of Donaldson (2021) for identification of these cultural values and pages 76-80 of Donaldson (2021) for the impact of disruption to them.

		<ul style="list-style-type: none"> • Species of social, cultural, livelihood and/or economic significance including the altering of cyclical ecological process which may indirectly diminish important natural resources utilised for hunting, gathering and other activities across the SWLDA for Aboriginal people across the region who value and utilise the area. • loss of associated cultural knowledge and practice associated with soakage water. • The wellbeing of the local community who regularly access the drawdown area will also be negatively impacted, given hunting and associated activities promote a healthy lifestyle both physically and mentally. • Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people fear that the bigger animals will leave Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe country to find a better, well-watered home, and that the smaller species unable to travel far will die out. Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe will feel a sense of concern, loss, sadness and shame if they allow some species to die out and others to find a 'new home'. <p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p>		
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		<ul style="list-style-type: none"> • permanently diminish the cultural value of places for Traditional Owners • restrict the existing use of cultural sites causing the values to notably diminish over time 		
<p><u>Continuing customary roles and responsibilities</u> across the SWLDA¹¹</p>	High	<p>According to traditional laws and customs, Traditional Owners see themselves as custodians of their land and waters (on behalf of all others) and they have customary roles and responsibilities to maintain and protect their country and the things that live there. Looking after country in a broad sense relates to sustaining the biodiversity through regular burns, cleaning out/covering up soakages and other activities. These cultural activities relate to preserving all aspects of the cultural landscape, including water sources, for future generations so that culturally valued natural resources can be sustained and sacred sites protected.</p> <p>The geographical extent of impacts to this value is to be understood with a consideration of the Kaytetye land tenure system which, according to traditional laws and customs, is fundamentally localised whilst concurrently deeply interconnected with the broader cultural landscape associated with Warumungu, Alyawarr, Warlpiri, Anmatyerre and Warlmanpa people</p>	Likely	Significant

¹¹ See pages 50 - 53 of Donaldson (2021) for identification of these cultural values and pages 80 -82 of Donaldson (2021) for the impact of disruption to them.

		<p>Within the SLWDA a focal complex of sacred sites exists for the Iliyarne group; ILIYARNE ILPAIYE, a creek and associated ghost gum trees interlinked with MPWEREMPWER-ANGE, a swamp and large coolibah tree. This highly significant site complex is the foundation of Iliyarne people’s cultural identity (as the basis of the group’s name, contains the primary food source for the group, and is the focal mythological place for this group) and is irreplaceable. This focal site complex is the basis for Iliyarne customary practices guiding their roles and responsibilities. Thus, in the context of the local cultural landscape, compared with the other groups whose focal sacred sites lay beyond the SWLDA, the SWLDA has additional layers of cultural meaning to Iliyarne people and commensurately greater sensitivity to impact.</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained</i> in the following ways:</p> <ul style="list-style-type: none"> • Culturally important water features or other features affected by water level may cause Iliyarne to feel shamed, leading to social isolation and physiological ill health. 		
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		<ul style="list-style-type: none"> • Members of the group may suffer long term, intergenerational emotional and spiritual loss and even death. For Iliyarne people, these consequences are catastrophic. • the unleashing of power (punishment) held by the Ancestral spirits residing at these places can have long lasting negative emotional and physical effects, mainly for the senior Iliyarne people. • If Iliyarne people are seen by other Kaytetye groups as allowing their 'main country' to get sick, Iliyarne people will also suffer the consequences of societal shame which can lead to psychological ill health. Kaytetye people have terms for these particular consequences including arlatnarrerane (crying), ampwarrenke (dying), amperrnge (sad/unhappy), nyerre (shame), arntetye (sick), athamarrerange (worried), and atere (scared). • A reduction in groundwater will make it very difficult for Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people to fulfil their customary obligations in relation to looking after water and the life that the water sustains. If GDE species diminish, the impact may be experienced by future generations of Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people. 		
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		<p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p> <ul style="list-style-type: none"> • permanently diminish the cultural value of places for Traditional Owners 		
<p><u>Being able to live and travel on country</u> across the SWLDA.¹²</p>	High	<p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians</i> in the following ways:</p> <ul style="list-style-type: none"> • Dwellings, homelands, communities, towns and suburbs where people live • Liveable environment (access to natural resources including bush food, recreational use of the natural or built environment e.g. fishing, picnics) • Healthy lifestyles (sense of wellbeing and good mental health) • Vulnerable sectors of the community 	Likely	Significant

¹² See pages 53-64 of Donaldson (2021) for identification of these cultural values and pages 82 - 83 of Donaldson (2021) for the impact of disruption to them.

		<p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA’s objective to <i>protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained</i> in the following ways:</p> <ul style="list-style-type: none"> • Damage to the 28 soakages (ngentye) which are critical sources of water and are relied upon when travelling through country. • Culturally important water features or other features affected by water level will be reduced thus hindering Anerre, Waake-Akwerlpe, Iliyarne and Arlpwe people’s ability to live and travel across their lands. • Present and future uses, and users of water will also be diminished if not permanently destroyed. A decline in available water in soakages will hinder Aboriginal people’s ability to live on and travel across their traditional lands. Without the availability of water, travel is more difficult and even dangerous for people’s lives. There is a concern that people will not attempt to travel lengthy distances in fear of getting thirsty and dying. • Traditional Owners feel responsible for looking after their Kaytetye kin and Warumungu, Alyawarr, Warlpiri, Anmatyerre and 		
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		<p>Warlmanpa neighbours and the residents of nearby communities and outstations who utilise the area and rely on the natural resources across the SLWDA.</p> <p>The removal of groundwater during the operation of the project has the potential to transgress the NT EPA's objective to <i>protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning</i> in the following ways:</p> <ul style="list-style-type: none"> • Species of social, cultural, livelihood and/or economic significance <p>According to the significant impact criteria for places with Indigenous heritage values (EPBC Act), there is a real possibility that the removal of groundwater under the SWL will:</p> <ul style="list-style-type: none"> • permanently diminish the cultural value of places for Traditional Owners • restrict the existing use of cultural sites causing the values to notably diminish over time 		
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3.4 Managing significant impacts

3.4.1 AAPA

Whilst Aboriginal Areas Protection Authority (AAPA) approval has been granted and aims to avoid harm to a number of identified sacred sites, the substantive risk of damage to, or interference with other sacred sites on or in the vicinity of the AAPA subject land is highly likely or almost certain. Another highly likely consequence of harming sacred site in this matter is the distress caused to the Traditional Owners of the sacred sites.

In my view both of these impacts are significant and not adequately addressed by approvals received under the *Northern Territory Aboriginal Sacred Sites Act 1989*.

3.4.2 Other measures and uncertainties

There has been extensive community engagement with Traditional Owners and other affected Aboriginal community members in relation to the proposal. The overwhelming community response is one of concern for future generations given the unknowns in relation to how the significant impacts will be managed in order to avoid catastrophic consequences (for people and country).

Impact management measures beyond the AAPA Authority Certificate process (3.3.1) aimed at avoiding, mitigating or reducing the potential adverse impacts to the identified cultural values have not been identified by the proponent. Accordingly, the duration and extent of the significant impact to the identified cultural values is unknown at this stage and the level of community confidence in predicting potential significant impacts of the proposal is low due to the absence of relevant (local and current) information, which fosters uncertainty.

Cumulative impacts of the proposal are also uncertain but likely given the changes to the climate, the existing and historical use of the site for agricultural activity, and the proposal to remove a large quantity of groundwater. The culmination of historical impacts and project driven impacts lead to significant

impact to the identified cultural values. Similarly, the 'end of life' plan for the proposal is undefined, so the ongoing or residual impacts to the cultural values is uncertain.

The capacity of affected community members to access and understand information about the proposal and the management of potential significant impacts is hindered by a lack of information required to enable informed decision making. As such, the level of community confidence in predicting and managing potential significant impacts to sacred sites and other important cultural values is low.

4.0 CONCLUSION

The proposed reduction in groundwater relating to the Singleton Water Licence for the Singleton Horticultural Project has the potential to cause significant impact to Aboriginal cultural values across the Singleton Water Licence Drawdown Area (SWLDA) which extends across Singleton Pastoral Lease (PL), Neutral Junction PL, Warrabri Aboriginal Lands Trust (ALT) and Iliyarne ALT.

This analysis has shown that the proposed reduction in groundwater across the SWLDA will trigger major negative consequences to cultural places and values held by Akwerlpe-Waake, Iliyarne, Anerre and Arlpwe people and their neighbouring tribal groups including factors associated with culture and heritage; human health; community and economy; aquatic ecosystems; hydrological processes; and terrestrial ecosystems. The potential impacts will likely or almost certainly result in highly significant cultural values to be lost, degraded and damaged, as well as notably altered, modified, obscured or diminished.

Whilst Aboriginal Areas Protection Authority (AAPA) approval has been granted and aims to avoid harm to a number of identified sacred sites, the substantive risk of damage to, or interference with sacred sites on or in the vicinity of the AAPA subject land is highly likely (even if the sacred sites are covered by Restricted Work Areas). Another highly likely consequence of harming sacred site in this matter is the distress caused to the Traditional Owners. In my view both of these potential impacts are significant and not adequately addressed by approvals received under the Northern Territory Aboriginal Sacred Sites Act 1989.

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