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## **Title**

Expert Peer Review – Santos Narrabri Gas Project

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## **1. INTRODUCTION**

Extent Heritage Pty Ltd (Extent) has been engaged, through UniQuest Pty Limited, by the NSW Department of Planning and Environment (DPE) to conduct an independent expert review of the Aboriginal cultural heritage component of the Environmental Impact Statement (EIS) for the proposed Santos Narrabri Gas Project. The Applicant for the project is Santos NSW (Eastern) Pty Ltd (hereafter 'Santos').

This report was prepared by Dr Andrew Sneddon, Associate-Director at Extent. Dr Sneddon's involvement in the project began when he was in previous employment at the University of Queensland. This report was completed by Extent as a sub-consultancy to UniQuest Pty Limited (a commercialisation unit within the University of Queensland) after Dr Sneddon commenced new employment at Extent. Dr Sneddon's curriculum vitae is included in Appendix A.

This report is based principally on a review of the following documents:

- The Santos Narrabri Gas Project - Environmental Impact Statement (2017), especially Chapter 20 ('Aboriginal Heritage'), Appendix N1 ('Aboriginal cultural heritage assessment') and Appendix N2 ('Cultural heritage management plan');
- A review of submissions made on the EIS;
- A letter from Mr Neale House of Santos to the NSW DPE dated 24 April 2018. In that letter Santos replied to queries provided by Dr Sneddon through the DPE in a letter dated 23 August 2017; and
- The 'Narrabri Gas Project Response to Submissions' (2018), including a revised Cultural Heritage Management Plan (Appendix J in the Response to Submissions).

Additional research was undertaken as required.

Dr Sneddon met with the following Aboriginal parties (in company with Stephen O'Donoghue of DPE) on 10, 11 and 12 May 2017 to gather additional data:

- Representatives of Narrabri Local Aboriginal Land Council;
- A representative of Wee Waa Local Aboriginal Land Council; and
- Members of the Dharriwaa Elders Group.

He also met with the following individuals on 7 November 2017 (in company with Stephen O'Donoghue of DPE):

- Dr Luke Godwin - co-author of the Santos EIS;
- Mr Josh Gilroy - Santos.

In undertaking his independent review, Dr Sneddon had particular regard to the Secretary's Environmental Assessment Requirements (SEARs) for the project which required (quoting the SEARs):

- an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to OEH's requirements (see Attachment 3B); and
- adequate consultation with Aboriginal stakeholders, having regard to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH, 2010).

Additionally, regard has been paid to 'Attachment B - Project Specific Environmental Assessment Requirements'. In relation to Aboriginal cultural heritage, this attachment to the SEARs required,:

*The EIS must include an Aboriginal cultural heritage assessment (including both cultural and archaeological significance) which:*

- *Demonstrates effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting mitigation options and measures. The proponent must comply with the OEH 2010 Consultation Requirements for Proponents and consult with all Registered Aboriginal Parties (RAPs) not just Gomeroi Native Title Applicant and relevant LALC in relation to the development and implementation of the CHMP, and include;*
  - *an assessment of the impacts of the project on Aboriginal Cultural heritage; and*
  - *outline any proposed impact mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures).*

- *Includes Aboriginal Cultural Heritage sensitivity mapping for the project area, comprising:*
  - *Descriptions of the cultural heritage values inclusive of relevant archive and oral history transcriptions documented in the ACH Brigalow Belt South Bioregion assessment (RCAD:2002 LALC report).*
  - *Significance statements about Aboriginal objects inclusive of the results of previous studies including the studies titled The Aboriginal cultural heritage Stage 1 Preliminary Assessment report (RACD 2000) including Appendix C titled, Aboriginal cultural heritage field survey of the Goonoo and Pilliga Forests.*
  - *Description of the sensitivity of landforms affected by the project inclusive of the geomorphic landforms described in the ACH Brigalow Belt South Bioregion assessment (RACD 2000: Appendix C (as titled above) and Appendix Ca titled, Geomorphology of the Goonoo and Pilliga Forests, Brigalow Belt South Bioregion as part of the Indigenous cultural heritage assessment and community consultation of the BBSB).*
  - *A review of Aboriginal Cultural Data held by OEH and the Narrabri LALC, and strategic validation of this data.*
- *A Cultural Heritage Management Plan (CHMP) providing the framework for the management of Aboriginal Cultural Heritage during the implementation of the project. The CHMP is proposed to:*
  - *Incorporate the ACH sensitivity mapping; provide for an update of the mapping every five years;*
  - *Incorporate avoidance strategies and mitigation measures in the placement of infrastructure;*
  - *Include the participation of the Aboriginal community (being representatives of the Gomeroi Native Title Applicant and relevant LALC) in pre-clearance surveys for the placement of infrastructure in accordance with the avoidance strategies in the CHMP;*
  - *The proponent must comply with the OEH 2010 Consultation Requirements for Proponents and consult with all Registered Aboriginal Parties (RAPs) not just Gomeroi Native Title Applicant and relevant LALC in relation to the development and implementation of the CHMP;*
  - *Assess the significance of any impacts and appropriate management response determined by the Aboriginal community (being representatives of*

*Gomeroi Native Title Applicant and the relevant LALC) in discussion with the proponent;*

- Provide a report on implementation of the CHMP to OEH every year; and*
- Identify an independent dispute resolution process for where the Aboriginal community and proponent cannot agree on matters under the CHMP.*

*D. The cumulative impacts from all clearing activities and operations, associated edge effects and other indirect impacts on cultural heritage, biodiversity and OEH Estate need to be comprehensively assessed in accordance with the Environmental Planning and Assessment Act 1979.*

*This should include the cumulative impact of the proponent's existing and proposed development and associated infrastructure (such as access tracks, etc.) as well as the cumulative impact of other developments located in the vicinity. This assessment should include consideration of both construction and operational impacts.*

## **2. PREDICTIVE MODELLING**

### **2.1 General Observations**

The SEAR's for the project required the Applicant to address Aboriginal cultural heritage management within the study area by using (among a range of tools) 'sensitivity mapping'. We take 'sensitivity mapping' to be a form of 'predictive model', although noting that the ACHA makes a distinction between 'statistically informed predictive modelling' and a 'sensitivity model' (page 85).

Both the ACHA and CHMP components of the Santos EIS express concern about the use of a predictive model for the purposes of anticipating and responding to the known and potential Aboriginal cultural heritage of the project area. The EIS is correct to note the flaws in the dataset that might be used to generate such a predictive model; these are as follows:

- The number of previously identified sites in the project area comprises a small sample (90 sites on the NSW Aboriginal Heritage Information Management System or 'AHIMS');
- The previously recorded sites in the project area were recorded using superseded and often inaccurate technologies. Ground-truthing undertaken by the Applicant demonstrated that a significant number of these records were inaccurate; and
- The small number of previously identified sites are located within a large geographical area characterised by a variety of landforms and hydrological features.

Therefore, the cautious approach adopted by the Santos ACHA and CHMP to the use of predictive models in the Pilliga is appropriate, at least until the baseline data are improved.

### **2.2 The Cultural Heritage Zoning Scheme**

Notwithstanding its general reluctance to use a predictive model to guide the management of the Aboriginal cultural heritage of the project area, the Santos EIS does adopt a number of 'sensitivity zones' as a guide for how proposed 'work programs' and 'pre-clearance surveys' would proceed. Most of the project area is characterised as 'Zone 3' which effectively captures land that has not been the subject of previous survey or significant previous ground disturbance. Section 3.4 of the CHMP states:

Zone 3 represents areas where an Aboriginal cultural heritage survey and assessment has identified the potential for Aboriginal Cultural heritage to exist, in a sufficient manner to prepare sensitivity mapping.

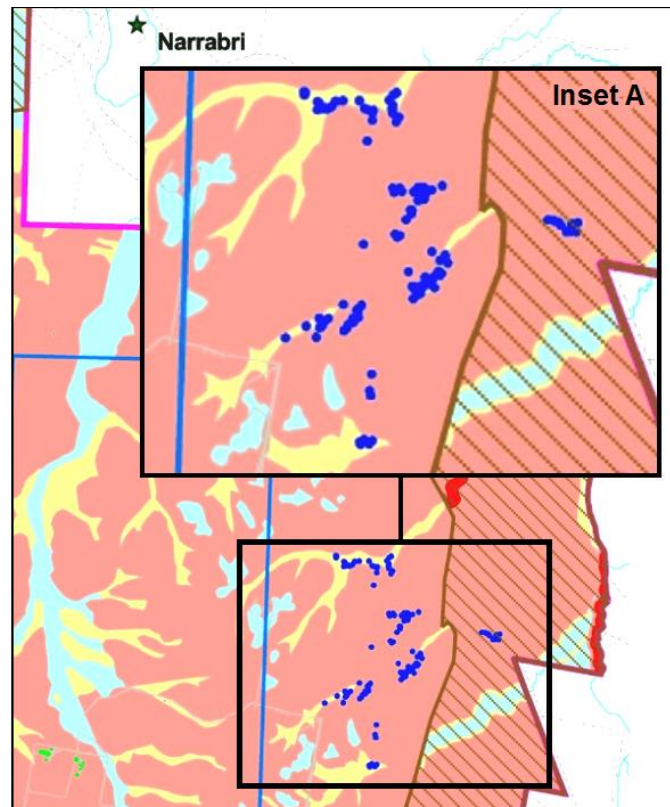


Zone 3 is divided into six sub-zones, five of which are ranked for sensitivity from 'Very Low Sensitivity' to 'Very High Sensitivity' (the sixth zone is for 'Indeterminate Sensitivity').

These sub-zones would all be managed according to the 'avoidance principle' (see Section 4.8 of the CHMP), regardless of where a particular location might fall on the CHMP's scale of 'Very Low Sensitivity' to 'Very High Sensitivity'. Therefore, the sensitivity mapping would have little impact on the methodology employed in pre-clearance work in the early stages of the Santos project.

However, the sensitivity mapping would form the baseline against which future data would be collected. Further, it is the basis of some of the methodologies presented in Section 4.8 of the CHMP. Therefore, it is important to note (as the ACHA itself does) that the sensitivity mapping presented in the ACHA has serious limitations. For example, in addition to the limitations that the ACHA identifies, other inconsistencies are apparent:

- By reference to the ACHA's own data, when previously recorded Aboriginal sites are overlaid on the ACHA's sensitivity map, a large proportion of previously identified sites are located in areas identified by the ACHA as being of 'low sensitivity'. Conversely, areas identified by the ACHA as being of high sensitivity actually contain only a small number of previously recorded sites – see, for example, the following image which depicts known Aboriginal cultural heritage from the AHIMS database (blue dots), in the north-eastern corner of the project area, with yellow being areas of low sensitivity and orange being areas of high sensitivity.



- The rationale for the selection and non-selection of certain variables typically useful to the generation of a Cultural Heritage Zoning Scheme (CHZS) and sensitivity maps is not entirely clear in the ACHA. For example, given the level of detailed data available in relation to geology and ecology, it is not clear why no attempt was made to refine the sensitivity maps to test for, for example, potential for quarries (correlates with geology), potential for grinding areas (correlates with geology and water), and potential scarred trees (correlates with vegetation patterns).
- One variable utilised in the production of the sensitivity map is landform system. This is appropriate; however, the Applicant states that some landform units are overrepresented in terms of previous studies of cultural heritage, and some under-represented. For example, in Table 4-9 of the ACHA, Gilgai Landform Units are assessed as being of 'Low' sensitivity. However, the Applicant states that these landforms are 'known to be important sources of seasonal/ephemeral water'. The precautionary principle would require a more cautious assessment of Gilgai landform units (e.g. making them of high significance) until further survey has been undertaken, and additional data gathered, to test that assessment.
- The sensitivity mapping in the ACHA reaches conclusions about the proximity of Aboriginal sites to water, specifically by reference to stream order. These conclusions are somewhat

counter-intuitive and are not consistent with the conclusions of the following reports and studies:

- Purcell (2002) *Aboriginal Cultural Heritage Assessment Brigalow Belt South (Stage 2)*;
- Roberts (1991) *Investigation of the Aboriginal Archaeological Resources of the Pilliga Forests*; and
- AECOM (2011) *Archaeological Constraints – Eastern Start Gas*.

The above observations are not inconsistent with the conclusions of the ACHA itself, which is frank about the limitations of its own sensitivity model. It states (ACHA, page 90):

*The differential sensitivity attributes which constitute Zone 3 should not be viewed as being an accurate reflection of the probable or even possible cultural landscape of either the Data Audit or Project Areas.*

This report appreciates that the CHMP's application of the 'avoidance principle' means that these issues will be generally unlikely to have a significant impact on the management of Aboriginal cultural heritage. They have been highlighted here as indications of how the sensitivity mapping will clearly need to be refined. This is also the conclusion of the ACHA (page 90), and the CHMP makes some allowance for this.

In the interim the sensitivity zones should be used with caution, including with respect to the methodologies presented in Section 4.8 of the CHMP. They should be refined as additional data are generated.

## **2.3 Sensitivity Mapping and Archaeological Test Excavation**

Although the conclusion of the Santos EIS that a cautious approach should be adopted to the use of predictive models in the Pilliga is generally appropriate, studies over many decades outside the Pilliga (and some within it) have demonstrated a correlation between the location of certain Aboriginal heritage places and water features, landform units, geology, flora, etc.

Relevantly:

- In its submission on the EIS (Appendix B of its letter dated 22 May 2017) OEH has recommended that 'Test excavations are to be used to determine the presence or absence of subsurface objects in areas associated with water features, for example (but not limited

- to) creeks'. This is appropriate, and the recommendation arises, in part, out of predictive modelling based on these earlier studies; and
- In its amended CHMP (Appendix J, December 2017, Section 4.8[e]) the Applicant makes allowance for the carrying out of test excavations 'in areas associated with water features'.

The recommendation of OEH is appropriate, as is the Applicant's response in the December 2017 CHMP, subject to the following.

The CHMP would benefit from a definition of what constitutes 'water features' and what amounts to something being 'associated with' them. Presumably, the 'association' that the CHMP speaks of would be a spatial association measured using empirical data. The Applicant states that the highest density of sites within the data audit area is between 200-300m from existing watercourses. Its own data indicate that 99.5% of sites (n=268) occur within 300m of watercourses. The Applicant's data audit indicates that 38.5% of Aboriginal cultural heritage places occur between 200-300m from watercourses. These data provide a useful starting point for establishing an 'association' with 'water features' that the CHMP could expand on.

Whatever the criteria for establishing 'association', it is appropriate that:

- there would be a level of flexibility in the CHMP about where test excavations would be undertaken; and therefore
- that it is appropriate for these decisions to be made on a case-by-case basis 'as directed by the Technical Expert' and after the 'Survey Team' has had an opportunity to inspect the relevant area (per Section 4.8 [e] of the amended CHMP).

Nevertheless, an overarching decision-making framework would assist. Therefore, as stated by OEH, the following methodology is appropriate:

- 'The specific location of test excavations will be based on the proponent developing a rationale that adequately guides the subsurface test excavation program to determine subsurface potential for Aboriginal objects' (quoting page 16 of the OEH submission dated 22 May 2017); and
- 'The test excavation program will be referred to OEH and the DPE appointed ACH expert for review' (quoting page 16 of the OEH submission dated 22 May 2017).

In other words, the test excavation methodology presented by the CHMP is appropriate subject to the development of an overarching rationale agreed to by OEH and the DPE-appointed ACH

expert. This should take the form of an Archaeological Research Design that includes a series of research questions that future test excavation must address, proposed excavation methodologies and post-excavation reporting requirements. It should also clarify the nature of 'association' with 'water features' that warrants excavation or non-excavation.

OEH has indicated that the Applicant could, in the alternative, undertake test excavations 'in the style of the methods prescribed in the Code of Archaeological Practice' (quoting page 16 of the OEH submission dated 22 May 2017). However, a methodology tailored to reflect the particular circumstances of the study area and proposed works would be preferable.

Adopting the above approach would have the benefit of generating new scientific data about the Pilliga – a large area with relatively little previous sub-surface archaeological investigation – while also respecting the wishes of relevant Aboriginal parties.

Section 4 below expands on the need to balance the Avoidance Principle against scientific data collection where such data collection is in accordance with the wishes of relevant Aboriginal parties.

## **2.4 Sensitivity Mapping and Work Programs / Pre-Clearance Survey**

The Santos EIS uses its sensitivity zones to determine the number of Aboriginal persons that would be used in work programs. Section 4.8 (b) of the CHMP (December 2017) states (paraphrasing):

- A maximum of two persons in Zones of 'Low to very low sensitivity'; and
- A maximum of four persons and minimum of two persons in the 'Medium Sensitivity Zone ... or above' (presumably meaning for zones of 'High' and 'Very High' sensitivity).

Given the flaws in the sensitivity mapping noted above, a 'precautionary principle' might dictate that in the initial stages of surveys up to four persons (not two) be used for all zones, this number being revised down only when the data have been augmented and the sensitivity of different zones is better understood.

A kind of predictive modelling is also used in Section 4.8(d) of the CHMP (December 2017) where it states that (in paraphrase) 'Santos may undertake Project Activities without undertaking a Pre-Clearance Survey or Work Program' where there has been previous 'Significant Ground

Disturbance’ or ‘when there will be No Additional Surface Disturbance’ (that is, relative to previous ground disturbance works).

This is based on the assumption that previous significant ground disturbance will have impacted both archaeological and non-archaeological sites so significantly that they will have lost both their scientific and non-scientific heritage values. This approach is based on the OEH due diligence guidelines. However, it remains open to criticism for assuming that Aboriginal heritage places will mainly be archaeological sites and that social and spiritual values will not attach to disturbed places.

Nevertheless, this report concludes:

- In relation to archaeological sites, when such sites have experienced significant previous disturbance they will be unlikely to yield significant scientific data. Therefore, it is appropriate for the CHMP to make no allowance for a pre-clearance survey at such locations;
- In relation to the social/spiritual values that may be embodied by a disturbed site (archaeological and non-archaeological) the CHMP makes adequate allowance for Aboriginal views to be collected before works proceed through the proposed ‘Additional Research Program’ (Section 4.7 of the CHMP) which Santos states will target ‘places and values of particular traditional, anthropological, historical and contemporary significance to Aboriginal people’. Unanticipated finds at such locations would also be covered by the ‘New Find Measures’ in Section 4.9 of the CHMP.

## **2.5 Buffer Zones**

The ACHA (pages 80-84, Table 4-6) provides ‘buffers’ around certain identified site types. The precise formulae used to determine the size of these buffers is not clear but appears to be based on the practical experience of the authors. This is an area in which a future refined sensitivity model may be valuable. In the interim, if any such sites are identified and RAPs desire an expanded buffer, the CHMP provides mechanisms for this to occur.

Specifically, in relation to Yarrie Lake, which is of cultural significance to Aboriginal people, the ACHA proposes a buffer of 50m around the Yarrie Lake Reserve (which is defined as being Lots 51, 52 and 53 on DP43308)(e.g. Response to Submissions, page iv, Executive Summary). This is a modification of the buffer zone identified in the original ACHA (page 86). The lake is an unusual feature within the broader region, presenting challenges for the definition of an

appropriate buffer. Based on its analysis of stream order/watercourses (not lakes) the Applicant's own data audit indicates that 38.5% of Aboriginal cultural heritage places occur between 200-300m from watercourses (again, not lakes). This might suggest that a larger buffer around the lake is desirable. This is an area in which a future refined sensitivity model may be valuable. Further, Yarrie Lake has a widely variable 'edge' depending on the season and levels of rainfall, assuming that the lake's present form accurately reflects its pre-invasion form in any case. The lake also floods. Therefore, the rationale for the Yarrie Lake buffer requires clarification prior to any project approval impacting the lake and its surrounds.

### 3. PRECAUTIONARY PRINCIPLE

The Santos EIS adopts its own definition of the 'precautionary principle'. This definition departs from the definition contained within the NSW *Protection of the Environment Administration Act 1991* (section 6) which says of the precautionary principle:

that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and
- (ii) an assessment of the risk-weighted consequences of various options.

Notwithstanding this difference, the methodology provided in the EIS for identifying Aboriginal cultural heritage places and mitigating impacts through an 'avoidance principle' is consistent with the NSW statutory definition of the 'precautionary principle' as well as Santos' own definition of the phrase. In fact, it is the 'lack of full scientific certainty' that makes the Santos EIS so reluctant to rely heavily on a predictive model approach.



#### 4. AVOIDANCE PRINCIPLE

The Santos EIS states that its approach to Aboriginal cultural heritage within the study area will be based on an ‘avoidance principle’. In summary, this would see sites identified through pre-clearance surveys avoided through the flexible location of infrastructure. This is generally appropriate.

By adopting this approach, Aboriginal cultural heritage places would be largely avoided; this, Santos has indicated, accords with the wishes of Aboriginal consultees. However:

- This approach would largely preclude the possibility of sub-surface archaeological investigation within the Pilliga, limiting opportunities to investigate an area that has been the subject of relatively little sub-surface archaeological investigation in the past; and
- It is not clear how comprehensively the possibility of sub-surface archaeological test excavation was canvassed during Aboriginal community consultation. Although this review concludes that Santos has generally complied with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (see Section 5 below) the observation of OEH (in its letter of 22 May 2017, Attachment B, page 13) is also relevant: that we must recognise ‘the challenge for the RAPs in this particular project to absorb large amounts of technical information’ including the circumstances in which archaeological test excavation would be appropriate in scientific terms.

The Burra Charter and NSW government guidelines prefer avoidance. However, Aboriginal people can often be supportive of targeted archaeological test excavation as a means of mitigating adverse heritage impacts, and in order to expand scientific knowledge about their ancestors, while at the same time wishing to avoid Aboriginal sites as a general principle. Importantly, the CHMP (December 2017) includes circumstances in which archaeological test excavation may be undertaken at places associated with ‘water features’. This partly addresses that concern.

Acknowledging that it is not a proponent’s role to resource academic archaeological excavations, it might also be noted that to maximise the scientific data that the Pilliga might generate, it would also be desirable to expand the circumstances in which test excavation might occur to include:

- Some of those site types contained in Schedule 3 of the CHMP and identified for ‘Complete Avoidance’ e.g. mounds and hearths; and

- Some of those site types contained in Schedule 4 of the CHMP for 'Maximise Avoidance' e.g. shell middens.

The recommendations of OEH (paras 1.1-1.7, page 16 of Attachment B, in the letter dated 22 May 2017) that encourage test excavations in certain locations, guided by a developed rationale that is referred to OEH and the DPE-appointed ACH expert for review, are appropriate.

## 5. ABORIGINAL CONSULTATION

A number of submissions on the Project Application (some made by Aboriginal parties and others by non-Aboriginal experts engaged by Aboriginal parties) express dissatisfaction with the level of Aboriginal community consultation undertaken by the Applicant. This is sometimes expressed as a 'lack of transparency'. This appears to be, at least in part, an objection to the ACHA's paraphrasing of lengthy submissions.

As an example of a group expressing dissatisfaction with the consultation process, in May 2017 Dr Sneddon met with the Dharriwaa Elders Group. Those present at the meeting expressed the concern that their views were not given appropriate weight by the Applicant (compared to, for example, the Narrabri LALC), and that less effort was made to consult with them than would have been appropriate. They expressed their interest in the project based on the fact that their country is downstream of the project area and adjacent to it, and that they may therefore be impacted.

In reply, Santos states that on its assessment there will be no significant 'downstream' impacts, and says (Response to Submissions page 6-179):

The proponent held discussions with the Dharriwaa Elders Group at their invitation in Walgett. At this meeting a register was circulated inviting anyone interested to register as a Registered Aboriginal Party. The Dharriwaa Elders Group did not register as a Registered Aboriginal Party.

This is at odds with information provided to Dr Sneddon during his meeting with the Dharriwaa Elders Group on 12 May 2017. In that meeting, members of the Dharriwaa Elders Group stated that Santos had addressed the group once in 'a presentation' but that consultation with them was generally unsatisfactory. They indicated that it was difficult to understand the technical language that was used in the presentation. It is possible that there was a level of confusion about the process, which may explain why the Dharriwaa Elders Group did not register as a RAP.

Importantly, the Dharriwaa Elders Group, and others who may be in a similar position, will not be completely excluded from the project should it obtain project approval. For example, they could maintain an involvement as follows:

- By participating in the 'Additional Research Program' (Section 4.7 of the CHMP);

- By requesting participation as ‘Additional People’ at ACHWG meetings (Section 8, Schedule 6 of the CHMP); and
- Through the ‘work programs’ envisaged by Section 4.8 of the CHMP. The Cultural Heritage Coordinator would decide the identity of the persons required for pre-clearance survey work and this is not limited to people affiliated with the Narrabri or Wee Waa LALCs or the Gomeroi native title Applicants (although a person from the Dharriwaa Elders Group may face challenges in this regard).

It is also noteworthy that other Aboriginal groups were supportive of Santos’ consultation methodologies (e.g. Narrabri LALC indicated its support of the consultation process in Dr Sneddon’s meeting with LALC representatives in May 2017). OEH also concludes that (page 13, Letter to DPE dated 22 May 2017):

Accepting the unique challenges for the proponent and the RAPs, OEH is satisfied with the consultation undertaken including the comprehensiveness of responses to issues raised in RAP submissions. The documented accounts of consultation with Registered Aboriginal Parties (RAPs) indicates that the proponent has complied with the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010a).

In Dr Sneddon’s meeting with Santos representative Josh Gilroy and Dr Luke Godwin in November 2017, he had the opportunity to gather additional information about the manner in which Aboriginal community consultation was undertaken. Also, the Santos Response to Submissions deals with this matter in some detail. Based on that meeting and the Response to Submissions, the OEH conclusion above appears to be supported.

The above observations relate to Aboriginal consultation preliminary to Santos’ submission of the project application. The following section considers ongoing Aboriginal community engagement should the project be approved.

## 6. ABORIGINAL CULTURAL HERITAGE WORKING GROUP

Schedule 6 of the CHMP presents the role and composition of the Aboriginal Cultural Heritage Working Group (ACHWG).

The operation of the ACHWG will be pivotal to ongoing Aboriginal engagement during the project's 25-year life. If this body is inappropriately constituted or poorly managed it may create new, or exacerbate existing, tensions within the Aboriginal community.

As an example of how the ACHWG's composition may result in undesirable heritage management outcomes, the project area falls almost entirely within the boundaries of the Narrabri Local Aboriginal Land Council (LALC). However, in the ACHWG's proposed form, the Narrabri LALC would be accorded only three seats of a possible eight. Significantly, a quorum for the ACHWG would exist if there are five attendees (of the possible eight) plus the Chair. In other words, a quorum could exist without any representation from the Narrabri LALC. Similarly, the Narrabri LALC has expressed concern that its allocated memberships on the ACHWG constitute a minority of three out of eight, and that the NLALC could therefore routinely be outvoted in relation to cultural heritage matters within its own boundaries.

The above summary simplifies a complex and fluid situation e.g. some members of the Narrabri LALC will also be native title claimants. Also, the CHMP includes processes to manage such situations including:

- The Dispute Resolution procedures presented in Section 5.7; and
- The Review Process in Section 5.3 of the CHMP.

Nevertheless, the CHMP in its present form should be modified to include the following additional checks and balances in relation to the ACHWG:

- The Annual Report envisaged by Section 5.1 of the CHMP should be expanded beyond the description of fieldwork to include a summary of the operation of the ACHWG over the preceding 12 months, including a description of any issues that may have arisen (presumably two ACHWG meetings will have been held by the time of the first Annual Report and each year thereafter). This will give OEH an opportunity to maintain a level of oversight in relation to the ACHWG;
- The CHMP should make it clear that OEH may make submissions to the independent Auditor envisaged by Section 5.3 of the CHMP, based on (a) the Annual Report, and (b)

any other information that has come to OEH's attention in relation to the operation of the ACHWG; and

- Given that much of the Aboriginal cultural heritage fieldwork would be weighted towards the early stages of the project, the '5 Year Review Process' envisaged by Section 5.3 of the CHMP should be reduced to (a) an initial review after 12 months, and (b) reviews every two years thereafter.

There are a number of other practical issues that might be clarified in the CHMP:

- Clause 5 of Schedule 6 of the CHMP provides that decisions will be made by 'majority vote'. As the ACHWG will generally comprise nine members, a simple majority will usually be mathematically achievable. However, the CHMP does not provide guidance where one ACHWG Member is unable to attend in person or by phone. In such a case, and where the Membership is an even number, does the Independent Chair (who is actually appointed by Santos) have the casting vote?;
- Section 4 of Schedule 6 allows that 'ACHWG Members may attend by phone subject to the prior approval of the Independent Chair'. It is not clear why the Independent Chair should be the sole party empowered to make this decision instead of (for example) a majority vote of the ACHWG members generally. Also, it is not clear why attendance by other technologies (e.g. skype) is not countenanced; and
- Given the difficulties often experienced by Aboriginal people in regional locations in attending meetings in person, the CHMP would benefit from provisions that allow for voting in absentia and voting by proxy.

Additionally, the 'Independent Chair' of the ACHWG would actually be 'appointed by Santos'. Therefore, 'Independent' should be taken to mean 'independent of the Aboriginal Members of the ACHWG'. Further, the Independent Chair would have effective power of veto in relation to the attendance or otherwise of additional people at meetings (CHMP, Schedule 6, Clause 8). They would also determine the location and venue for meetings (these matters being 'as agreed by the independent Chair') (CHMP, Schedule 6, Clause 6). In making such decisions, the Chair's independence might easily be brought into question by disgruntled parties.

The dispute resolution process in Section 5.7 of the CHMP generally provides an adequate mechanism for resolving challenges to the independence of the Chair should any arise. However, this issue reinforces the need for additional checks and balances.

There is also a question over the adequacy of representation afforded by the CHMP to those Aboriginal people who are neither a Gomeroi Applicant nor affiliated with a Local Aboriginal Land Council. Santos has indicated that the composition of the ACHWG (which involves LALC representatives and representatives of the native title Applicants only) was chosen because 'both Local Aboriginal Land Councils and the Native Title group represent many people and their operations are underpinned by established governance with a legislative basis' (Response to Submissions page 6-197).

There would be relatively few Aboriginal people that are neither affiliated with a LALC nor a part of the Gomeroi native title application (although it would assist if this number were clarified). Those that do fall outside this net would be afforded opportunities for engagement with the project and a level of representation by the following provisions of the CHMP:

- The 'Additional Research Program' (Section 4.7 of the CHMP);
- The 'work programs' envisaged by Section 4.8 of the CHMP (the Cultural Heritage Coordinator decides the identity of the persons required for pre-clearance survey work and this is not limited to people affiliated with LALCs or a Gomeroi Applicant); and
- By requesting participation as 'Additional People' at ACHWG meetings (Section 8, Schedule 6 of the CHMP).

Given the issues identified above, and the potential for the ACHWG to create new, or exacerbate existing, tensions within the Aboriginal community it is imperative that the functions of the ACHWG are carried out in a transparent manner. Therefore, the CHMP should be modified to improve the mechanisms for the dissemination of information, especially using social media and/or an online presence. In particular:

- The 'Register of Decisions' (Section 9 of Schedule 6 of the CHMP) should be made publicly accessible online. This should occur after it has been formally ratified by those ACHWG Members who participated in the decision-making; and
- A dedicated online 'notice board' should be established for the project on which up-to-date information about the project and Aboriginal heritage matters is posted.

In conclusion, the difficulties that are associated with constituting a body such as the ACHWG must be acknowledged. Santos states in its Response to Submissions (page 6-200) that the proposed ACHWG represents 'a balance'. That appears to be the case. It is also generally appropriate that Santos has proceeded on the principle implicit in the CHMP that while Santos

can facilitate meetings, including their resourcing, there are some matters that are best dealt with by the Aboriginal community in the first instance.

Therefore, the ACHWG provisions of the CHMP are generally appropriate, subject to the additional checks and balances recommended above and reproduced in Section 9.



## **7. THE CULTURAL HERITAGE COORDINATOR**

Schedule 8 of the CHMP states that the Cultural Heritage Coordinator will be employed by a 'third party, yet to be identified'. Given the crucial role that this person would play, it is desirable that the means of their appointment is more transparent and subject to ongoing review (not just annual review, as provided by the CHMP). Further, the Cultural Heritage Coordinator (and the 'third party yet to be identified') should not only meet the essential criteria spelled out in the CHMP, but also have the support of the ACHWG.

## 8. BIODIVERSITY AND WATER AS HERITAGE

A number of submissions were received from Aboriginal parties that emphasise the cultural dimensions of water, flora and fauna as well as other aspects of the environment most broadly defined (such as the sky). Those submissions state that the Santos project would adversely impact those dimensions of the environment.

Santos' reply is that there will be, on the assessment of Santos' experts, minimal:

- Adverse impacts to flora, fauna, and waterways [Santos Appendix J1 – Ecological Impact Assessment Section 6].
- Alterations to hydrology, geomorphology and stream velocity [Santos Appendix H – Hydrology and Geomorphology Section 5.3].

Santos provides a similar response in relation to potential impacts on the sky, 'places and passages' and 'connection to country' (see Response to Submissions page 6-184 to 6-186).

The importance of non-archaeological Aboriginal heritage within the project area has been demonstrated in past studies of the region including the 2002 report entitled *Aboriginal Cultural Heritage Assessment: New South Wales Western Regional Assessments Brigalow Belt South Bioregion (Stage 2)*.

If the EIS conclusions in relation to impacts on the project area's hydrology, ecology, etc. are correct then there will be low levels of impact to these dimensions of Aboriginal cultural heritage in a small proportion of the project area. However, this matter is always difficult to quantify because as a number of submissions assert:

- The impacts can be cumulative over a long duration;
- Many Aboriginal people experience such impacts as a spiritual (intangible) rather than physical (tangible) intrusion; and
- Projects such as the Santos application can impact on the sense of obligation that many Aboriginal people feel to 'care for country'.

It is significant that:

- During the consultation process, Santos provided Aboriginal consultees with opportunities to provide information about non-archaeological heritage places and values, and that the data obtained 'were of limited quality' (Response to Submissions, page 6-186); and

- The CHMP provides for the 'Additional Research Program' (Section 4.7 of the CHMP) as a mechanism for obtaining information about places and values of 'traditional, anthropological, historical and contemporary significance to Aboriginal people'. The CHMP provides that this would be completed within 12 months of project approval.

The Santos commitment to involve Aboriginal people in the selection and management of proposed biodiversity offset sites (e.g. Response to Submissions, page 6-192) is particularly important. This would provide members of the Aboriginal community with a tangible means of connecting with country and fulfilling their obligations in relation to caring for country.

The above matters would be important steps in partial mitigation of adverse impacts on Aboriginal cultural heritage embodied by the environment most broadly defined.

## 9. CONCLUSIONS AND RECOMMENDATIONS

Subject to the recommendations below:

- It is appropriate that the ACHA and CHMP take a cautious approach to predictive modelling/sensitivity mapping for the project area given the flaws in the baseline data;
- The ACHA is correct to conclude that the sensitivity mapping that it generated presently has limited application. However, that sensitivity mapping should be refined in the future as additional data are generated by fieldwork (and any project approval should be conditioned to ensure that that occurs). In the interim, the use of the 'avoidance principle' means that the ACHA's 'sensitivity mapping' will have little impact on the fieldwork methodologies employed if the project is approved, at least in its initial stages;
- The inclusion of test excavation mechanisms in the December 2017 CHMP is appropriate;
- The use of the 'sensitivity mapping' to determine the number of people that should be engaged in pre-clearance surveys is inappropriate and a higher number of people should be engaged in such surveys until additional data are generated to justify a lower number;
- The rationale for the buffer zones proposed by the ACHA is not clear. They might be treated as appropriate as an interim measure until further data are generated by pre-clearance surveys to refine the buffer zones;
- The methodologies proposed in the ACHA and CHMP meet the definitions of the 'precautionary principle' as defined by NSW law and by Santos;
- The 'avoidance principle' as expressed in the ACHA and CHMP is generally an appropriate means of managing Aboriginal cultural heritage, but it should be balanced against the desirability of obtaining archaeological data in an under-studied region in Australia. This should be subject to the demonstrated views of RAPs;
- The consultation undertaken by Santos prior to the project application appears to have been generally appropriate having regard to the SEARs;
- The ACHWG represents an appropriate 'balance' but would benefit from the addition of a number of checks and balances;
- The circumstances of the appointment and performance-review of the Cultural Heritage Coordinator (Schedule 8 of the CHMP) require clarification prior to any project approval; and
- Insofar as biodiversity, water and the 'environment' embody Aboriginal heritage values, the CHMP provides an appropriate mechanism for their identification and management. This is strengthened by Santos' commitment to involve Aboriginal people in the selection and management of proposed biodiversity offset areas.

It is recommended that:

- Section 4.8 of the CHMP should be modified to include a definition of what constitutes 'water features' and what criteria should be used to establish whether something is 'associated with' them;
- Section 4.8 of the CHMP should be modified to reflect that archaeological test excavation may also be appropriate in locations that are not 'associated with water features'. This may require modification to Schedules 3 and 4 of the CHMP;
- The proponent should develop a rationale, agreed to by OEH and the DPE-appointed Aboriginal Cultural Heritage expert, that will guide the subsurface test excavation program envisaged by the CHMP (and as modified by these recommendations). This should take the form of an Archaeological Research Design (ARD) that includes a series of research questions that future test excavation must address, proposed excavation methodologies and post-excavation reporting requirements. It should be consistent with the NSW *Code of Archaeological Practice 2010*;
- Section 4.8 of the CHMP should be amended to reflect that a minimum of two and a maximum of four persons should be engaged in work programs in all of Zone 3 until sufficient data have been generated to justify (to the satisfaction of a Technical Expert) lowering this number to a maximum of two in certain sub-zones;
- The CHMP should be modified such that the Annual Report envisaged by Section 5.1 is expanded beyond a description of fieldwork to include a summary of the operation of the ACHWG over the preceding 12 months, including a description of any issues that may have arisen;
- The CHMP should be modified such that the Annual Report envisaged by Section 5.1 is expanded beyond a description of fieldwork to include ongoing refinement of (a) the sensitivity mapping, and (b) the buffer zones described in the ACHA;
- With respect to Yarrie Lake, the rationale for the Yarrie Lake buffer requires clarification prior to any project approval impacting the lake and its surrounds;
- The CHMP should make it clear that OEH may make submissions to the independent third party Auditor envisaged by Section 5.3 of the CHMP, based on (a) the Annual Report, and (b) any other information that has come to OEH's attention in relation to the operation of the ACHWG;
- Given that much of the Aboriginal cultural heritage work would be weighted towards the early stages of the project, the '5 Year Review Process' envisaged by Section 5.3 of the CHMP should be reduced to (a) an initial review after 12 months, and (b) reviews every two years thereafter;

- Clause 5 of Schedule 6 of the CHMP should be modified to clarify what will happen if there is an even number of ACHWG Members in attendance and a deadlocked vote;
- Section 4 of Schedule 6 of the CHMP should be modified to allow that a Member of the ACHWG may attend by phone *or other technology* (e.g. skype), and that this may occur where that Member is able to demonstrate to the satisfaction of a majority of the Members that their physical attendance is not reasonably possible;
- Schedule 4 of the CHMP should be modified to include provision for voting in the ACHWG in absentia and by proxy;
- The CHMP should be modified to improve the mechanisms for the dissemination of information, especially using social media and/or an online presence. A dedicated online 'notice board' should be established for the project on which up-to-date information about the project and Aboriginal heritage matters is posted;
- The CHMP should be modified to provide that the 'Register of Decisions' (Section 9 of Schedule 6 of the CHMP) should be made publicly accessible online after it has been formally ratified by those ACHWG Members who participated in the decision-making;
- Section 4.7 of the CHMP should be modified to clarify the scope of the proposed 'Additional Research program', and the CHMP should allow that the 'Additional Research Program' should be completed within 12 months of project approval, but that this period may be extended where it is demonstrated to the satisfaction of OEH and the DPE-appointed ACH expert that an extension of time is warranted to achieve the best outcome. Provision should also be made for a similar report to be prepared at the end of the project so that an Aboriginal cultural heritage report tracing continuity and change in heritage values over a c25 year period can be prepared;
- Schedule 8 of the CHMP should be modified so that the appointment of the Cultural Heritage Coordinator, and the identity of the 'third party' employer, require the approval of the ACHWG; and
- OEH and DPE should encourage Santos in its commitment to involve Aboriginal people in the identification and management of future biodiversity offset areas as an avenue for Aboriginal people to meet their obligations to 'care for country'. When the biodiversity offset areas have been identified, the CHMP should be modified to express the specific ways in which Aboriginal involvement will be maximised. This may also require an expansion of the role of the ACHWG.

## **APPENDIX A – CURRICULUM VITAE OF DR ANDREW SNEDDON**



## Dr Andrew Sneddon

### Associate Director

asneddon@extent.com.au  
T: +61 7 3667 8881

## QUALIFICATIONS

BA (Hons), University of  
Queensland – 1991

LLB (Hons), University of  
Queensland – 1993

PhD, Archaeology, La Trobe  
University, Melbourne – 1998-2001

Certificate IV in Training and  
Assessment, UQ Gatton Vocational  
Training Centre – 2015

## Background

- Director, University of Queensland Culture & Heritage Unit 2009-2017
- Senior Consultant and Associate, Godden Mackay Logan, Heritage Consultants, 2003-2009
- Freelance Consulting Archaeologist 2000-2002
- Articled Clerk and Solicitor, Barker Gosling, Solicitors, Brisbane, 1993-1995

## Professional Activities

- Former Member, Executive Committee, Australia ICOMOS, 2012-13
- Member International Scientific Committee for Archaeological Heritage Management (ICAHM)
- Member International Scientific Committee for Legal, Administrative and Financial Issues (ICLAFI)
- Member, International Scientific Committee for Theory and Philosophy of Heritage (ISC TheoPhil)
- Member of the International Board of the Experts of the Foundation, Fondazione Romualdo del Bianco, Florence, Italy
- Member, Burra Charter Working Group tasked with the preparation of Practice Notes to support the Burra Charter of Australia ICOMOS
- Member, Working Group for Reconciliation Action Plan, Australia ICOMOS
- Contributor, World ICOMOS Evaluation Unit (for the assessment of nominations to the World Heritage List)
- Committee Member, Victoria Barracks Historical Society

## Key Professional Skills

I have worked in the field of cultural heritage management for over 20 years. I have prepared assessments and management plans for heritage places of local, State, National, Commonwealth and World heritage significance. My projects have included the Sydney Opera House, the Sydney Cricket Ground, Old Parliament House (Canberra), Cockatoo Island (Sydney), Garden Island (Sydney), Brisbane City Hall and Angkor in Cambodia. I have extensive practical archaeological experience, both in Australia and abroad. I consult regularly with Indigenous Australians on cultural heritage values and management. I have specialist knowledge in the field of heritage law.

## Key Examples

### Aboriginal Archaeology and Anthropology

- Expert advisor to Aboriginal Victoria (Victorian Department of Premier and Cabinet) in relation to a highly contested Aboriginal site at Anakie, Victoria.
- Court expert in relation to the Boonthamurra native title claim (Federal Court of Australia).
- Assistant to the court expert (Professor David Trigger) in four native title claims before the Australian Federal Court – Boonthamurra, Mithaka, Mardigan and Budjiti native title claims.
- Co-author of Application Report for the Gaangalu Nation native title claim.
- Author, 'Yirendali Core Country Native Title Claim Connection Report'.
- Co-author, 'The Northern Kamilaroi - Preliminary Report', concerning a potential native title claim (for QSNTS).
- Project Manager and reviewer of several other native title connection reports in both Queensland and Western Australia.



- Workshop facilitator and report contributor, Australian Alps Aboriginal Cultural Values Assessment.
- Co-author of 14 case studies (with traditional owner groups) illustrating 'best practice' heritage management in relation to places and issues across Australia, for the former Australian Department of Sustainability, Environment, Water, Population and Community.
- Co-author, 'Bunya Mountains, Queensland - Identification, Assessment and Management of Indigenous Cultural Heritage Values'.
- Co-author, 'Collecting Aboriginal Archaeological Material – A Model for Assessing Significance', report prepared for the Australian Museum.
- Author, 'Doomadgee Cultural Heritage Survey – Gangalidda and Waanyi Peoples', identifying places of cultural significance that might be impacted by proposed development, and preparing recommended actions in mitigation in consultation with traditional owners.
- Principal author of report entitled 'Registering Sites of Significance According to Aboriginal Tradition – Guidelines for Cultural Heritage Assessors and Managers', for the South Australian Department of Premier and Cabinet.

- Co-author of a GIS-based predictive model for Aboriginal cultural heritage sites in the Pilbara, Western Australia, for Rio Tinto.
- Co-author, 'Practice Note – The Burra Charter and Indigenous Heritage Management' (for Australia ICOMOS).
- Webinar training series and two-day workshop facilitator (Dubai) for Shell Australia on cultural heritage awareness and management.
- Aboriginal Archaeological Surveys and Assessments (various, over the last ten years) – Numerous clients including: Rio Tinto; Santos; Stockland; Energex; Whitehaven Coal; Powerlink; Ivanhoe Australia Ltd; Arrow Energy; Murray Catchment Management Authority.
- Trench Supervisor – surface survey and test excavation of Aboriginal sites on the Barwon River, near Walgett, NSW – for Department of Main Roads.
- Excavation Director, Riverstone Meatworks, Western Sydney, a multi-hectare site with evidence of extensive Aboriginal occupation (stone artefact scatters and sub-surface archaeology).
- Director, Ivanhoe Australia (Mt Selwyn, Western Queensland) surface survey, with representatives of the Yulluna People and the Kalkadoon People.
- Director, Ripley Valley, near Ipswich, archaeological surface survey, with representatives of Jagera Daran Pty Ltd.
- Director, Maules Creek (Whitehaven), near Boggabri, NSW archaeological surface surveys with representatives of the Kamilaroi/Gomeri People; Project director, archaeological excavation and surveys.

## **Heritage Assessments, Advice and Management Plans — Built Heritage**

- Tablelands Regional Council Local Heritage Register—Client: Tablelands Regional Council.
- Garden Island, Sydney Heritage Management Plan—Client: Department of Defence.
- Castle Hill Conservation Management Plan (with AHMS)—Client: Baulkham Hills Shire Council.
- Sydney Cricket Ground New Grandstand, Heritage Impact Statement—Client: Sydney Cricket and Sports Ground Trust.
- Old Parliament House, Canberra, Heritage Management Plan—Client: Old Parliament House.
- Australia Square, Sydney, Heritage Advice—Client: Jones Lang LaSalle.
- Royal North Shore Hospital Heritage Impact Statement—Client: Burns Bridge Pty Ltd for RNSH.
- Heritage Assessment and Advice for a number of CSIRO sites in Southeast Queensland and Far North Queensland—Client: CSIRO.
- Duntroon House Gardens Heritage Management Plan—Client: Commonwealth Department of Defence.
- Victoria Barracks, Brisbane, Heritage Management Plan—Client: Commonwealth Department of Defence.
- RAAF Base Richmond Heritage Management Plan—Client: Commonwealth Department of Defence.

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## Non-Indigenous Heritage Inputs — Miscellaneous

- Luna Park, Sydney.
- Taronga Zoo, Sydney.
- Royal Exhibition Building, Melbourne.
- The Rocks, Sydney (Cumberland and Gloucester Street YHA Re-development).
- National Pass Walking Track, Blue Mountains, NSW.
- Sydney Harbour Heritage and Conservation Register for NSW Maritime.
- The Sydney Mint, Macquarie Street, Sydney.
- National Heritage Places Toolkit for the former Department of Environment and Heritage.
- Defence Heritage Toolkit for the Department of Defence.

## Non-Indigenous Assessments, Management Plans and Research Designs — Archaeology

- RNA Showgrounds (Industrial Pavilion), Brisbane, Archaeological Assessment and Advice—Client: Tanner Architects.
- Hyde Park, Sydney Archaeological Study—Client: Environmental Partnerships (for Sydney City Council).
- Sydney Opera House, Archaeological Assessment and Advice—Client: Sydney Opera House Trust.
- Prince Henry Site, Little Bay, Research Designs and Heritage Impact Statements and Assessments (various) and provision of Heritage Advice—Client: Landcom.
- Cockatoo Island, Sydney, Conservation Management Plan and Archaeological Assessment—Client: Sydney Harbour Federation Trust.
- Casselden Place Urban Workshop, Lonsdale Street, Melbourne (construction of a 39 level A-Grade office tower in Melbourne's CBD), preparation of Archaeological Excavation Research Archive Report—Client: ISPT Pty Ltd.
- Glebe Harbour Development (a major inner-city residential development on Glebe Harbour, Sydney), provision of heritage advice and preparation of Excavation Report and management plans for Walter Burley Griffin Incinerator Building, Glebe—Client: Australand.
- Lee Wharf Park, Newcastle, Heritage Impact Statement and Excavation Report—Client: Lee Wharf Developments Pty Ltd.
- Fusion Development, Mountain Street, Ultimo (a major inner-city residential development in Sydney), preparation of an Excavation Report and supply of heritage advice—Client: Multiplex.

## Representative Archaeological Fieldwork (Australia)

- Brisbane Town Hall, Brisbane (Stage 2)—Excavation Director—Client: Tanner-GHD.
- Old Government House, Parramatta (Governor Phillip's House)—Co-Excavation Director—Client: National Trust (NSW).
- Former Carlton & United Brewery, Melbourne—Excavation Director—Client: Grocon Pty Ltd.
- Sydney Opera House—Excavation Director—Client: Sydney Opera House Trust.
- Prince Henry Site, Little Bay—Excavation Director and Planner—Client: Landcom.
- Fitzroy Iron Works, Mittagong—Site Planner—Client: Woolworths.
- Lee Wharf Precinct, Newcastle—Excavation Director—Client: Lee Wharf Developments Pty Ltd/Caverstock Group.
- Former Glebe Incinerator Site, Glebe—Excavation Director and Planner—Client: Australand Holdings Ltd.
- Mountain Street Excavations, Ultimo—Trench Supervisor and Excavation Director—Client: Multiplex (Mountain Street) Pty Ltd.
- Casselden Place, Melbourne—Archaeological Records Officer, Site Planner and Surveyor—Client: Industry Superannuation Property Trust Pty Ltd.

## International Experience

- Myanmar
- Cambodia
- Cyprus
- Uzbekistan
- Turkey
- Syria
- Italy
- Greece

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## Representative Teaching Experience

- Course coordinator and lecturer, School of Social Science, University of Queensland – Managing Heritage Places, Master of Cultural Heritage Management (2017).
- Course coordinator and lecturer, School of Geography, Planning and Environmental Management, University of Queensland – Cultural Heritage Management (2016).
- Course coordinator and lecturer, School of Social Science, University of Queensland – International Field Schools in Cyprus and Myanmar (2015, 2016 and 2017).

## Research Interests

- Intangible heritage
- Heritage law
- Ancient ceramics
- The archaeology of Prehistoric Bronze Age Cyprus
- The archaeology of poverty
- The archaeology of colonial Myanmar

## Publications

- Lowe, K., A. Fogel and A. Sneddon 2017, "Archaeological Geophysical Survey of a Prehistoric Bronze Age site in Cyprus (Alambra Mouttes) – Applications and Limitations", Archaeological and Anthropological Sciences.
- Martin, R., A. Sneddon and D. Trigger 2016, "Conservation, Commodification and Aboriginal Cultural Heritage in Queensland", In P. McGrath (Ed), The Right to Protect Sites: Indigenous Cultural Heritage Management in the Era of Native Title, The Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.
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- Sneddon, A., 2012, "Cultural Heritage Management and Poverty," Encyclopedia of World Archaeology, www.springerreference.com
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- Sneddon, A., 2008, "The Interpretation and Application of Heritage Principles by the New South Wales and Queensland Courts", Australian Construction Law Newsletter, No. 122, pp 34-45.
- Sneddon, A., 2007, "The Interpretation and Application of Heritage Principles by the New South Wales and Queensland Courts: Appeals Relating to the Development of Heritage Places", Local Government Law Journal, Vol 13 (Part 2), October 2007, pp 98-109.

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- Sneddon, A., 2006, "Seeing Slums Through Rose-Coloured Glasses: The Mountain Street Site, Sydney and its Limitations in the Search for Vanished Slum Communities", Australian Archaeology, Number 63, December 2006, pp 1-8.
- Sneddon, A., 2004, "Development or Sale of Identified Cultural Heritage Sites", NSW Law Society Journal, Vol 42, No. 17, December 2004, pp 50-54.
- Sneddon, A., 2002, The Cemeteries at Marki: Using a Looted Landscape to Investigate Prehistoric Bronze Age Cyprus, British Archaeological Reports (International Series 1028), Archaeopress, UK.

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24 April 2018

Mr Mike Young  
Director Resource Assessments  
NSW Department of Planning and Environment  
GPO Box 39  
Sydney NSW 2001

Dear Mr Young

Thank you for the opportunity to provide a response to UniQuest Pty Ltd and Extent Heritage Advisors' questions in relation to the Narrabri Gas Project. Attached is the responses that have been prepared in consultation with the relevant technical consultants for the project.

Santos would be happy to meet with UniQuest Pty Ltd and Extent Heritage Advisors to discuss the responses or provide further information as considered necessary.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Neale House".

Neale House  
**Manager, Environment and Water**  
**Santos Limited**

Att. 1

# **Attachment 1: Response to UniQuest Pty Ltd and Extent Heritage Advisors' questions on the Narrabri Gas Project**

## **Introduction and Background**

The Associate Director of Extent Heritage Advisors, Dr Andrew Sneddon, was engaged to undertake a review of the two Aboriginal cultural heritage appendices within the Narrabri Gas Project Environmental Impact Statement (EIS). These were:

- Appendix N1: Appendix N1 Aboriginal cultural heritage assessment (CQCHM 2016); and
- Appendix N2: Cultural heritage management plan (2016).

The Aboriginal cultural heritage assessment was required to be prepared in accordance with the relevant provisions in the Secretary's Environmental Assessment Requirements (SEARs) for the project. The SEARs included specific requirements for the Aboriginal cultural heritage assessment report (ACHAR) including consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents (NSW Government 2010)*. The ACHAR and related consultation were undertaken in accordance with the SEARs. The ACHAR documented the stages of consultation undertaken in accordance with the OEHS *Aboriginal cultural heritage consultation requirements for proponent*. The OEHS submission on the EIS stated that "The proponent has complied with the ACH consultation requirements".

In no instance does the precautionary principle rely on application of a 'predictive model'. All locations, of whatever current category, will be subject of pre-clearance survey in accordance with the CHMP. Other aspects of the precautionary principle will likewise be applied with no reference to the 'predictive model'. So, the 'predictive model' will not influence in any way the application of the precautionary principle. The ACHAR makes clear that it is anticipated that the results of all elements of the precautionary approach will see the sensitivity model regularly revised over the life of the project.



## Issues raised

Dr Sneddon Comment

Response

### Aboriginal Community Consultation

A number of submissions on the Project Application (some made by Aboriginal parties and others by non-Aboriginal experts engaged by Aboriginal parties) express dissatisfaction with the level of Aboriginal community consultation undertaken by the Applicant. This is sometimes expressed as a 'lack of transparency'. This appears to be, at least in part, an objection to the ACHA's paraphrasing of submissions and brief summaries of what were likely to have been complex consultation processes and feedback. In order to assess the adequacy of the consultation it would be helpful if the Applicant could provide more detailed logs/databases of the consultation that was undertaken.

For example, some of the submissions received from Aboriginal parties contain the criticism that the Aboriginal community consultation facilitated by the Applicant was not meaningful. The Gomeroi Traditional Owners have submitted that they raised concerns about aspects of the draft CHMP and it is currently unclear how these concerns were addressed in the final version of that document. It would be of assistance if the Applicant were able to give examples of how specific and substantive cultural heritage concerns that were raised by Aboriginal consultees were responded to in the formulation of the ACHA and CHMP from draft through to final versions. For example, on page 180 of the ACHA mention is made of objections raised by the Gomeroi Traditional Owners to the draft CHMP. However, it is not clear what those objections were and how they were responded to.

Some Aboriginal communities (e.g. the Dharriwaa Elders Group) have noted in consultation conducted by Extent Heritage for UniQuest (in May 2017) that although their traditional country may not be directly affected by the proposed development, their traditional country is located downstream of, and adjacent to, the project area and may therefore still experience adverse impacts (they appear to allude to this concern in their submission dated 22 May 2017 also). The Dharriwaa Elders Group has expressed the concern (to Extent Heritage for UniQuest) that their views were not given appropriate weight by the Applicant (compared to, for example, the Narrabri LALC), and that less

The ACHAR and related consultation were undertaken in accordance with the SEARs. The ACHAR documented the four stages of consultation undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents (NSW Government 2010)*.

Stage 1 – Notification of project proposal and registration of interest

Stage 2 – Presentation of information about the proposed project

Stage 3 – Gathering information about cultural significance including the proposed methodology for the cultural heritage assessment and seeking cultural information from RAPs

Stage 4 – Review of draft cultural heritage assessment report

The OEH submission on the EIS stated that "The proponent has complied with the ACH consultation requirements".

In parallel to the EIS the proponent has been undertaking confidential Native Title negotiations. The Right to Negotiate process is transacted through negotiations between the proponent, the State and the authorised representatives of the Gomeroi People, known as the Applicants. The Gomeroi Applicant (Gomeroi Traditional Owners) view in their submission was that they 'oppose non-Gomeroi People partaking in the cultural heritage assessment' including field surveys. Since the completion of the RAP consultation, there have been regular meetings with the Gomeroi Applicant as well as field inspections. The CHMP and its operation, including the selection of Cultural Heritage Officers to undertake pre-clearing surveys have been discussed. The proponent's consistent position has been, in accordance with the CHMP, Aboriginal people (the ACHWG) should select the Cultural Heritage Officers.

effort was made to consult with them than would have been appropriate. It appears from the Environmental Impact Statement that the Applicant has given greatest weight to feedback received from those Aboriginal people whose traditional country falls within the project area (this is not inconsistent with government policy and cultural heritage 'best practice'). However, is the Applicant able to expand on its rationale for giving lesser weight (if this has in fact occurred) to traditional owners whose country lies further afield, especially those that are downstream of the project area, such as the Dharriwaa Elders Group? Are those Aboriginal communities who are located outside of the project area, and who claim to have been somewhat marginalised in the consultation process, justified in their claims?

In this regard, we note that consultation focussed, understandably, on Registered Aboriginal Parties. It is not clear from the list of RAPs provided in Appendix 2 of Appendix N1, whether or not the Dharriwaa Elders Group actually registered as RAPs. One RAP is noted from Walgett where the Dharriwaa Elders Group is based, but was this the Dharriwaa Elders Group?

Engagement and consultation with the Aboriginal community was not confined to the specific requirements of the SEARs. Discussions were held with members of the Aboriginal community at approximately 10 towns/localities across the Gomerai nation, generally at the invitation of the local Aboriginal community including Toomelah in the north, Coonabarabran and Gunnedah in the south, and Walgett in the west. At some of these locations discussions were held with members of the Aboriginal community on 3 or 4 occasions. Members of the Gomerai Applicant chose to attend some of these discussions. The attendance of Applicants was not facilitated by the proponent, and the proponent made no payments of any kind.

Field tours or field inspections of the project area and exploration infrastructure were also undertaken, including providing transport to Narrabri from various locations. Certain field inspections were arranged specifically to accommodate elders. All RAPs were given opportunity to attend field inspections. Field tours included RAPs, and other members of the Aboriginal community that were not RAPs. Individuals and groups were provided with the opportunity to register as a RAP throughout, and forms were provided for them to complete. The proponent respects the individuals and groups that participated in discussions or field inspections and decided not to register as RAPs.

Discussions were held in Walgett on a number of occasions, including with the Walgett LALC and a dialogue coordinated with the Dharriwaa Elders Group. The Dharriwaa Elders Group is not a RAP, and they did not provide a submission on the draft Aboriginal Cultural Heritage Assessment Report or draft Cultural Heritage Management Plan. Therefore, there was not lesser weight given to issues raised by the Aboriginal community downstream of the project area. It is important to note that there will be negligible downstream impacts.

There are, however, over 550 RAPs from a wide geographic area, all of whom were provided with hard copies of the draft ACHAR and draft CHMP, and the opportunity to attend RAP meetings, field tours and make a submission. All RAPs were provided with these opportunities in exactly the same way.

There were few if any areas of consensus among RAPs.



### Aboriginal Cultural Heritage Working Group (ACHWG)

Given the importance of the role and composition of the ACHWG is the Applicant able to provide additional detail concerning its operation? For example:

The 'independent Chair' of the ACHWG would be 'appointed by Santos'. What process does the Applicant intend to implement to avoid a perceived conflict of interest arising in relation to the Chair? For example, under the CHMP the Chair would have effective power of veto in relation to the attendance or otherwise of additional people at meetings (CHMP, Schedule 6, Clause 8). They would also determine the location and venue for meetings (these matters being 'as agreed by the independent Chair')(CHMP, Schedule 6, Clause 6). In making such decisions the Chair's independence might easily be brought into question by disgruntled parties. Has the Applicant considered alternative methods of appointing the independent Chair, especially mechanisms for removing the decision for his or her appointment from Santos itself?

Is the Applicant able to expand on its rationale for the allocation of memberships to the ACHWG? For example, the project area falls almost entirely within the boundaries of the Narrabri LALC. However, in the ACHWG's proposed form, the Narrabri LALC would be accorded only three seats. Significantly, a quorum for the ACHWG would exist if there are five attendees (of a possible eight) plus the Chair. In other words, a quorum could exist without any representation from the Narrabri LALC. Based on its community consultation and broader research, is the Applicant of the view that at least one member of the Narrabri LALC should be in attendance for a quorum to be constituted?

Similarly, the Narrabri LALC has expressed concern that its allocated memberships on the ACHWG constitute a minority of three out of eight, and that the NLALC could therefore routinely be outvoted in relation to cultural heritage matters within its own boundaries. Can the Applicant provide a clearer rationale for the number of seats allocated to each land council and RAP on the proposed ACHWG

As previously noted, Aboriginal communities whose traditional country lies outside the project area but who are downstream of the project, and adjacent to it, have expressed concern that their views have not been heard during community consultation (e.g. the Dharriwaa Elders Group, see above). The same people have raised concerns in relation to their under-representation on the proposed ACHWG. Is the Applicant able to expand

Santos has extensive experience with the implementation of CHMPs in other jurisdictions. While implementation of CHMPs with the participation of the Aboriginal community is routine and successful, it has been Santos' experience that provisions are necessary to highlight issues of concern through a framework articulated by the CHMP. The CHMP provisions include a dispute notification and dispute resolution process. The Chair's role, including convening meetings, meeting records including a decision register, process regarding additional people attending meetings etc, is critical to the successful operation of the CHMP. The proponent is responsible for overall CHMP implementation and the project depends on timely execution of the CHMP. The Aboriginal community select the ACHWG members, and the proponent selects the Chair. The Chair is then independent from the eight other members of the ACHWG nominated by the Aboriginal community.

The project is within the Gomerioi Native Title claim area, and intersects with Narrabri LALC and Wee Waa LALC. The proponent respects that the Gomerioi and the two LALCs assert that they have a legitimate expectation, with reference to state and Commonwealth legislation, to be involved in the management of culture and heritage including participation in pre-clearance surveys. The possible membership of the ACHWG has many permutations, including a multitude of groups and individuals that are neither affiliated with a LALC nor the Gomerioi Applicant. The proponent sought to find a balance, where both LALCs and the Native Title group represent many Aboriginal people. It is important to note that many members of the community are affiliated with the relevant LALCs as well as being Gomerioi. The Gomerioi have also been clear that they represent the broader Gomerioi Nation's interest in the project, which extends well beyond the boundary of the LALCs. It is the Gomerioi therefore that provide the link between a broader geographical area and Aboriginal interest in the project.

Adding contingencies for ACHWG membership, where for example a LALC no longer exists/operates or the Gomerioi claim is no longer current, were suggested by the Aboriginal community during consultation. Contingencies

on the ways in which such Aboriginal communities could contribute to the decision making role of the ACHWG?

As previously noted, Aboriginal communities whose traditional country lies outside the project area but who are downstream of the project, and adjacent to it, have expressed concern that their views have not been heard during community consultation (e.g. the Dharriwaa Elders Group, see above). The same people have raised concerns in relation to their under-representation on the proposed ACHWG. Is the Applicant able to expand on the ways in which such Aboriginal communities could contribute to the decision making role of the ACHWG?

According to the CHMP, if there are no extant native title claims and no local Aboriginal land councils, then it would be the role of Santos to select the members of the ACHWG (CHMP, Schedule 6, page 30, para 3A.iv). Is this intended to apply to the situation where the existing native title claim has been struck out and existing relevant land councils have been put into administration? If so, is the Applicant able to provide the rationale for making Santos the decision-maker regarding the ongoing composition of the ACHWG?

What role would unsuccessful native title Applicants/claimants, and members of land councils under administration, have in this process? Similarly, is the Applicant able to provide its rationale for permitting the exclusion of unsuccessful native title claimants from the ACHWG by land councils?

Is it possible for emergency meetings of the ACHWG to be convened? What would be the mechanism?

Is the ACHWG intended to operate according to the principle that a simple majority prevails? Would the Chair exercise a casting vote where the ACHWG is divided on a matter in dispute? If disputes arise what mediation processes would be applied? • Given the multi-generational life of the proposed project, what mechanisms exist for altering the composition of the ACHWG? For example, how would the ACHWG's membership be increased from eight (plus Chair) to, say, eleven (plus Chair)?

Relatedly, what mechanism exists for the regular and timely review of the efficiency and effectiveness of the ACHWG? Where inefficiencies are identified, what process would be applied to modify the composition and/or role of the ACHWG?

include where neither LALCs nor the Gomeri claim are extant, but the Aboriginal community is still required to participate in the ACHWG. However, the CHMP includes a Legislative Change Review Process in the event of legislative change (where for example a LALC is dissolved), triggering the appointment of a third party CHMP Auditor to review the CHMP and therefore explicitly consider updated membership of the ACHWG.

If a LALC is under administration the proponent would expect the Administrator to nominate ACHWG members as required.

Ultimately, during consultation no compelling arguments for an alternative ACHWG membership were proposed, where the proponent's preferred model is as previously stated to balance the participation of both LALCs and the Gomeri Applicant. In relation to cultural surveys, the proponents experience has been that the collaboration of LALCs and the Gomeri has been successful.

As stated above, there are 550 RAPs from a wide geographic area, all of whom were provided with hard copies of the draft ACHAR and draft CHMP, and the opportunity to attend RAP meetings and make a submission. To the greatest extent possible RAPs distant from the project area were accommodated, including those that were unable to attend consultation sessions.

During project implementation the two LALCs that intersect the project area will be most involved, and the Gomeri provide the link between a broader geographical area and Aboriginal interest in project implementation.

### Biodiversity and Water

A number of submissions were received from Aboriginal parties that emphasise the cultural dimensions of water, flora and fauna. This is a matter that has been extensively documented in past studies of the region including the 2002 report entitled *Aboriginal Cultural Heritage Assessment: New South Wales Western Regional Assessments Brigalow Belt South Bioregion (Stage 2)*. Is the Applicant able to expand on the potential adverse cultural heritage impacts of the proposed project by reference to the potential adverse impacts on water and ecology identified within the following reports, also forming part of the EIS?:

Adverse impacts to flora, fauna, and waterways [Santos Appendix J1 – Ecological Impact Assessment Section 6]

Alterations to hydrology, geomorphology and stream velocity [Santos Appendix H – Hydrology and Geomorphology Section 5.3]

Is the Applicant able to expand on the role that Aboriginal parties might play in relation to the proposed biodiversity offset areas, including determining their location, their rehabilitation, and maintenance? Does the Applicant consider that an ongoing role for Aboriginal people in relation to the proposed biodiversity offset areas would be warranted having regard to previous research, and feedback received during community consultation, concerning the cultural significance of water, flora and fauna (and ecosystems generally)?

The ecological assessment undertaken for the EIS included extensive surveys and this has provided high quality baseline data, including vegetation mapping, which was not previously available. Additionally, the project will occupy around 1% of the project area, and none of the ecological impacts have been assessed as significant. In summary, the information compiled for the EIS provides new high quality ecological data that can be utilised by the Aboriginal community, and because the project occupies a small proportion of the project area, impacts on ecology including ecology with ethnobotanical values, will not occur across approximately 99% of the project area. Aboriginal community access to land in the project area will be unaffected by the project over approximately 99% of the 95,000ha project area.

The risks to water resources have been assessed as low, the project targeting deep coal seams with relatively poor-quality water. The induced flows from overlying high-quality groundwater sources are a small fraction of the licensed sustainable diversion limit.

Residual impacts on threatened and migratory species and endangered ecological communities would be offset as part of a biodiversity offset strategy in accordance with the relevant *NSW policies*.

Ethnobotanical issues can be addressed in further detail by the Additional Research Program.

Aboriginal cultural heritage values, such as important sites and places of traditional or recent significance, will be considered in the selection of offset sites. A number of properties have been nominated by the Aboriginal community and these are being actively considered by the proponent. The locations and cultural values of these prospective offset sites are currently confidential, and most of the candidate properties are privately owned. The proponent has also committed to prioritising Aboriginal-owned land in this program.



In accordance with relevant policies offset land will be protected by a covenant on title. Management arrangements will be negotiated with the Aboriginal community. Ongoing funding for management of the offset sites will be paid from a trust or similar that the proponent will establish. In summary it is proposed that some offset sites will be selected with the Aboriginal community, management arrangements will be negotiated with the Aboriginal community (including conserving cultural values and facilitating cultural activities) and this land managed in perpetuity by the Aboriginal community.

### The Potential Archaeological Resource

The ACHA and CHMP develop, and are based on, a predictive model. The CHMP proposes that the database underpinning the predictive model would be augmented through the course of the project, almost entirely by reference to identified surface artefacts. Is the Applicant able to expand on its rationale for limiting the amount of subsurface investigation through archaeological excavation? In scientific terms, would it be desirable to conduct some level of sub-surface investigation, and in what circumstances (beyond those very limited circumstances already described in the CHMP)? Further to this point, should test excavation be incorporated into the pre-clearance survey methodology given that the Applicant, and several others (AECOM 2011, Hughes 2002) have identified the high probability of sub-surface cultural material throughout the Project Area?

Does the methodology for managing the potential archaeological resource in the CHMP (the 'avoidance principle' as expressed in the CHMP) reflect views expressed during Aboriginal community consultation? During Aboriginal community consultation, or in other venues, was the view ever expressed that archaeological excavation would sometimes be desirable (e.g. to investigate occupation of the region by Aboriginal persons prior to their displacement by white settlers)?

The predictive model developed for the CHMP would be used in making assessments of the suitability of locations for the placement of gas wells (e.g. p12 of Appendix N1 states that the GIS data will be used in future suitability analyses). Is this presently appropriate, having regard to the precautionary principle?

In accordance with the SEARs the proponent was required to review a wide range of existing studies and develop what others have chosen to call a predictive model. The ACHAR uses the term sensitivity model. This has been done for two separate reasons. Firstly, and as others note, the data available are of limited quantity and quality. They do not constitute a data set that can be used for predictions as that term is commonly understood. Secondly, there are a range of cultural heritage data that are not predictable in their distribution but which must be appropriately managed. A sensitivity model can address this issue. The approach to management of Aboriginal cultural heritage is discussed further below.

In no instance does the precautionary principle rely on application of a 'predictive model'. All locations, of whatever current category, will be subject of pre-clearance survey in accordance with the CHMP. Other aspects of the precautionary principle will likewise be applied with no reference to the 'predictive model'. So, the 'predictive model' will not influence in any way the application of the precautionary principle. The ACHAR makes clear that it is anticipated that the results of all elements of the precautionary approach will see the sensitivity model regularly revised over the life of the project.

Many submissions from both Aboriginal and non-Aboriginal people emphasise the vulnerability and significance of water and watercourses that may be impacted by the project. However, the predictive model identifies many areas that are close to water as being of low sensitivity for cultural heritage places. Is the Applicant able to reconcile these seemingly inconsistent data? The predictive model contained in the CHMP is the basis for determining the number of Aboriginal persons that would be engaged in certain kinds of cultural heritage work (surveys etc) (2 persons in areas of low to very low sensitivity, and 4 persons in areas of medium sensitivity). Given the acknowledged weaknesses contained within the predictive model, and the Applicant's use of the precautionary principle in other contexts, would it not be desirable to prefer the higher number of Aboriginal persons (six) for survey work in all cases, unless and until the predictive model has been refined and this is demonstrated to be unnecessary?

40.1% of the project area has been assessed as being of high sensitivity by the ACHA. The CHMP contains very little management guidance in relation to these areas, presumably on the grounds that there will be 100% avoidance. Can the Applicant confirm that this is the case? Does the Applicant consider that the CHMP would benefit from the inclusion of some management guidance for high sensitivity areas, notwithstanding the aspiration to achieve 100% avoidance, in case of unforeseen circumstances in these high sensitivity areas? Further, is it really 'avoidance' if works are intended to proceed within areas assessed as being of high sensitivity?

The predictive model in the ACHA reaches conclusions about the proximity of Aboriginal sites to water, specifically by reference to stream order. These conclusions are somewhat counterintuitive and are not consistent with the conclusions of the following reports and studies:

Purcell (2002) *Aboriginal Cultural Heritage Assessment Brigalow Belt South (Stage 2)*  
 Roberts (1991) *Investigation of the Aboriginal Archaeological Resources of the Pilliga Forests*

AECOM (2011) *Archaeological Constraints – Eastern Start Gas*. By reference to the ACHA's own data, when previously recorded Aboriginal sites are overlaid on the predictive model, a large proportion of previously identified sites are located in areas identified by the ACHA and CHMP as being of 'low sensitivity'. Conversely, areas identified by the ACHA and CHMP as being of high sensitivity actually contain only a

The gas infrastructure is to be sited in accordance with the Field Development Protocol (FDP). The FDP provides a framework for the siting of gas wells and associated infrastructure to be installed within the project area. The aim of the FDP is to systematically avoid, minimise and manage the environmental impacts of the project in accordance with legislation, environmental, social and management plans.

The FDP prevents the majority of infrastructure from being constructed within particular distances from water courses (depending on the Strahler order of the water course). In other words, water courses are buffered and only linear infrastructure (e.g. gathering system, tracks) can intersect them. No well pads can be situated in these riparian corridors.

In relation to linear infrastructure within the riparian corridor areas and all infrastructure outside of the riparian corridors, the FDP requires the proponent to implement the CHMP. The ACHAR sets out the detail in relation to the involvement of the Aboriginal community in carrying out the pre-clearance surveys which will be used to site the gas infrastructure to avoid areas of Aboriginal cultural significance.

Any infrastructure will, in accordance with the management predicates of precaution and avoidance, be situated only in those areas where important cultural values will not be affected as a result of implementing the commitments to avoidance in accordance with the CHMP. This includes avoidance of all currently known Aboriginal sites.

The ACHAR notes that because existing data are of limited value at this time, it would be inappropriate to use them for management purposes, notwithstanding the SEARs requirement to analyse them in some detail. Accordingly, the proponent has decided that it will adopt an approach to management in which it will apply the precautionary and avoidance principles. The precautionary approach will see it implement a range of activities (such as verification of existing AHIMS sites, the Additional Research Program, pre-clearance survey of all proposed infrastructure and drilling locations, buffering of sites, development of a GIS) using enhanced recording techniques to ensure good quality information is incorporated in the GIS. The avoidance principle will then see the

small number of previously recorded sites – see, for example, the following image (which depicts known ACH from the AHIMS database (blue dots), in the north-eastern corner of the project area, with yellow being low sensitivity and orange being areas of high sensitivity) circumstances already described in the CHMP)? Further to this point, should test excavation be incorporated into the pre-clearance survey methodology given that the Applicant, and several others (AECOM 2011, Hughes 2002) have identified the high probability of sub-surface cultural material throughout the Project Area?

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data collated during mandatory pre-clearance surveys, the precautionary element of the management exercise, applied. Seventy five percent of all site types are guaranteed to be avoided. A very small number of sites of certain types specified in the ACHAR and CHMP might be affected where it does not prove possible to avoid them. But this would only be countenanced after taking all reasonable and practicable measures to avoid them. The proponent considers that avoidance of actual sites is the appropriate target, rather than areas of potentially high sensitivity whose location and identity are based on what the ACHAR notes are data of limited quality.

The approach adopted by the proponent best reflects the views of the Aboriginal community to avoid impacts on Aboriginal cultural heritage. The proponent will only countenance excavation as part of the precautionary principle or in very limited cases of mitigation specified in the ACHAR and CHMP (e.g. hearths encountered during authorised ground-disturbing activities).



40.1% of the project area has been assessed as being of high sensitivity by the ACHA. The CHMP contains very little management guidance in relation to these areas, presumably on the grounds that there will be 100% avoidance. Can the Applicant confirm that this is the case? Does the Applicant consider that the CHMP would benefit from the inclusion of some management guidance for high sensitivity areas, notwithstanding the aspiration to achieve 100% avoidance, in case of unforeseen circumstances in these high sensitivity areas? Further, is it really 'avoidance' if works are intended to proceed within areas assessed as being of high sensitivity?

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By reference to the ACHA's own data, when previously recorded Aboriginal sites are overlaid on the predictive model, a large proportion of previously identified sites are located in areas identified by the ACHA and CHMP as being of 'low sensitivity'. Conversely, areas identified by the ACHA and CHMP as being of high sensitivity actually contain only a small number of previously recorded sites – see, for example, the following image (which depicts known ACH from the AHIMS database (blue dots), in the north-eastern corner of the project area, with yellow being low sensitivity and orange being areas of high sensitivity) Given these contradictory data, and the importance of water to both Aboriginal people and non-Aboriginal submitters, can the Applicant expand on its previous explanations for such apparent inconsistencies?

Further, can the Applicant advise on how it envisages the precautionary principle being applied in this context (i.e. where the predictive model has acknowledged gaps due to incomplete data)? For example, we note that Clause 4.1(b) of the CHMP includes a definition of 'the precautionary principle'. Is the Applicant able to advise where this definition comes from? Can it advise why this definition has been used rather than, for

The definitions of avoidance and precaution are defined in the ACHAR.

#### Avoidance

*Project Activities will be designed such that, to the greatest extent possible, there is no impact on Aboriginal cultural heritage. Where impact cannot be avoided then the Project Activity will be designed to minimise impact on*

example, the definition contained within the NSW Protection of the Environment Administration Act 1991 (section 6) which says of the precautionary principle:

*that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- (ii) an assessment of the risk-weighted consequences of various options

If the precautionary principle so-defined were applied, would the Applicant not take an even more cautious approach to the identification and management of areas of potential sensitivity until more data are generated to refine the predictive model?

Is the Applicant able to expand on the rationale for its selection and non-selection of certain variables typically useful to the generation of a Cultural Heritage Zoning Scheme (CHZS) and sensitivity maps? For example, given the level of detailed data available in relation to geology and ecology, can the Applicant advise why no attempt was made to refine the predictive model to test for, for example, potential for quarries (correlates with geology), potential for grinding areas (correlates with geology and water), and potential scarred trees (correlates with vegetation patterns). Does the Applicant consider that it would be a desirable or fruitful exercise to further refine the CHZS and Sensitivity Map to generate separate predictive models for such site types given known correlations?

The Applicant states that the relationship between stream order and site density is unclear, but stream order is still used as one of only two variables to map relative sensitivity. Could the Applicant clarify the rationale for using stream order, rather than (or as well as) the strategy for predicting by site type described above, which would rely on geology and ecology?

The Applicant states that the highest density of sites within the data audit area is between 200- 300m from existing watercourses, and that the association of Aboriginal cultural heritage places with water is 'overstated within the Data Audit Area' (CHQCHM 2016: 86). However, we note that 99.5% of sites (n=268) occur within 300m of watercourses. Is the Applicant able to reconcile their observation and these data?

*Aboriginal objects, places or values, and other management measures as appropriate are to be implemented to minimise or mitigate harm.*

#### *Precautionary Principle*

*The implementation of actions that are reasonable and practicable to minimise causing harm to known Aboriginal objects; and/or*

*Identifying Aboriginal objects so they can be managed in accordance with the provisions of relevant legislation and regulations, and by implementing reasonable and practicable management measures for these Aboriginal objects.*

*Reasonable and practicable measures are determined on a case by case basis*

These definitions were developed having regard to the consultation undertaken with the Aboriginal community and the purpose of the CHMP. The capacity of the project to survey before the clearance of vegetation, and then avoid the most sensitive site types, was discussed exhaustively. The definitions used were adopted because they are appropriate in accordance with the community desire that avoidance and precaution in the CHMP explicitly include Aboriginal cultural heritage values.

In no instance does the precautionary principle rely on application of a 'predictive model'. All locations, of whatever current category, will be subject of pre-clearance survey in accordance with the CHMP. Other aspects of the precautionary principle will likewise be applied with no reference to the 'predictive model'. So, the 'predictive model' will not influence in any way the application of the precautionary principle. The ACHAR makes clear that it is anticipated that the results of all elements of the precautionary approach will see the sensitivity model regularly revised over the life of the project.

The proponent has made clear that the currently available data is of a limited quality and quantity such that predictions made on the basis of the data set would be of limited value. There is little purpose served in further refining data and sensitivity in the way suggested until such time as significant additional data are available. Accordingly, the applicant intends to apply the precautionary principle such that all proposed locations for drilling and infrastructure are



Further, given that according to the Applicant's own data audit 38.5% of Aboriginal cultural heritage places occur between 200-300m from watercourses, can the Applicant expand on the rationale for its recommendation a 200m, rather than 300m or greater buffer, around Yarrie Lake?

One variable utilised in the production of the sensitivity map is landform system. The Applicant states that some landform units are overrepresented in terms of previous studies of cultural heritage, and some under-represented. For example, in table 4-9, Gilgai Landform Units are assessed as being of 'Low' sensitivity due to a lack of survey. However, the Applicant states that these landforms are 'known to be important sources of seasonal/ephemeral water'. Would the precautionary principle not require a more cautious assessment of Gilgai landform units (e.g. making them of high significance) until further survey has been undertaken, and additional data gathered, to test that assessment?

Another variable (additional to stream order) that is utilised in the sensitivity map is 'landform system'. Can the Applicant explain its use of the broad categories it applies, rather than using finer-scale landform units as suggested by some submitters – for example, ridge crests, spur crests etc.? Other submissions have noted that the relationship of ACH to these finer resolution landform units is well established. Can the Applicant clarify what formulae are used to define the thresholds for very low, low, medium and high sensitivity in Table 4-9. What are the cut-offs for each level of sensitivity, and how are they calculated?

In relation to the table headed 'Mitigation Measures to be Applied to Site Types', contained within Schedule 4 (page 25) of the CHMP, is the Applicant able to advise whether the proposed mitigation measures reflect feedback received during Aboriginal community consultation? Presently, the mitigation measures in Schedule 4 appear to focus on archaeological sites that have been assessed for their scientific significance. Is this consistent with the feedback received from Aboriginal parties during consultation? Is it consistent with the data presented in the 2002 Brigalow Belt South Bioregion assessment? What mechanism is contained within the CHMP to manage the scenario in which, say, an artefact scatter is also identified by Aboriginal persons as embodying social or spiritual values that cannot be mitigated solely with an 'archaeological' response? Can this table be cross-referenced with other sections of

subject to pre-clearance surveys prior to use, and then the greater percentage of sites are guaranteed to be avoided.

Dr Sneddon Comment	Response
	<p>the CHMP relevant to this management issue? Similarly, the table of site types in Schedule 4 does not include sites that are significant to Aboriginal people from more recent 'historical' periods. For example, applying the table from Schedule 4 of the CHMP, how would the archaeological remains from a 1940s Aboriginal camp site be managed?</p>