Supplement

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Van Gogh Oil Field Development

Draft Public Environment Report (PER)

EPBC Referral 2007/3213

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Apache ENERGY

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For further information

www.apachevangogh.com.au

Myles Hyams - Environment Manager

Caroline de Mori - Public Affairs Manager

Email: vangogh.scg@aus.apachecorp.com

Tel: (08) 9422 7421

Apache Energy Limited
Level 3, 256 St Georges Terrace, Perth, 6000
www.apachecorp.com

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Contents

1.0 INTRODUCTION

This Draft Supplement to the Van Gogh Draft Public Environmental Report is a response to the submissions received during the Van Gogh Draft Public Environmental Report (PER) review period. The Draft PER was prepared by Apache Energy Limited (Apache) as the proponent of the Van Gogh development, and available for a four week public review period from the 25th February to the 26th March 2008.

The Draft PER and this Draft PER Supplement collectively make up the Van Gogh final Environmental Impact Assessment (EIA) for the proposed development and is provided to the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) for their environmental assessment and final decision on the proposed Van Gogh development.

The final EIA (comprising both the Draft PER and Draft PER Supplement) will be assessed by DEWHA under the Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act). As part of their review the Department will prepare an assessment report, which will make recommendations regarding the environmental approval decision for the proposed Van Gogh development to the Commonwealth Minister for the DEWHA. Under the EPBC Act, DEWHA has 40 business days to complete its assessment report and make its recommendations on the project. The Minister then reviews the assessment report and makes a final decision on the environmental approval of the project.

1.1 SUBMISSIONS RECEIVED

Two submissions were received during the public review period. These being from the:

1. Exmouth Cape Conservation Group; and
2. The Conservation Council of Western Australia

Copies of these submissions are included in **Appendix A**, and addressed in detail in this Draft Supplement.

The two submissions raised 26 individual issues.

1.2 ALTERATIONS TO THE PROJECT

No significant changes have been proposed to the project since the publishing of the Draft PER.

2.0 RESPONSE TO SUBMISSIONS RECEIVED

Apache has reviewed the two responses received during the public review period for the Draft PER and prepared response to the issues and questions raised in accordance with the requirements of the EPBC Act and the Company's Environmental Policy and its operating standards. The following section details the Company's responses to the two submissions received.

Copies of the original submissions have been included as **Appendix A**. A cross-referencing table is also provided in **Appendix B** which details where the response in this Draft Supplement can be found for the issues raised in the submissions.

The questions or comments received have, where possible been addressed individually, and are in the order as listed in the original submissions. Where common issues or questions have been raised these have been grouped to avoid unnecessary duplication.

The source of the questions or comments made is indicated by the following abbreviations which have been used throughout this Draft Supplement:

- CCG – submission from the Exmouth Cape Conservation Group
- CC WA – submission from the Conservation Council of Western Australia

2.1 WHALE MIGRATION SEASON

1. CCG — Installation is to be during October to January - having potential impacts on whale resting season in Exmouth Gulf- 2x HLV's insitu on moorings in the Gulf. Peak season may be mid September- but season continues past this point and large numbers continue to utilize the Gulf. CCG advocates liaison with Curt Jenner regarding this possible impact on humpback whales.

Apache has met and discussed the proposed Van Gogh development with Mr Curt Jenner (20/02/08) from the Centre for Whale Research in relation to the timing of the construction schedule and humpback whale activity within the Exmouth Gulf. Mr Jenner indicated that the peak humpback activity in the Gulf occurs during the months of September and October, relating to resting cows and feeding of their calves as well as some mating activity.

The timing of Apache's construction activities was stated in the PER in Section 2.6 and Figure 2.15, which indicated that the installation vessel the Toisa Proteus, would arrive at the Van Gogh offshore site in late September 2008. Whilst the commencement date for the installation phase has not been finalised as yet, it is still probable that this could occur at the earliest in late September 2008, with the Toisa Proteus commencing the first construction activities associated with the installation of the anchors and mooring lines for the FPSO at the Van Gogh site. This initial construction activity will take approximately 4 weeks to complete and will not involve any other vessel activity within the Gulf. The next phase of the construction schedule involves the installation of the disconnectable turret mooring (DTM) buoy for the FPSO. This will involve lifting the DTM off a Heavy Lift Vessel (HLV) and towing the DTM to the Van Gogh site for connection to the installed anchor mooring lines. The transfer of the DTM buoy from the HLV and its tow to the Van Gogh site is expected to take approximately three days to complete. Should the installation of the anchor and mooring lines have commenced in late September, then this would translate into the DTM transfer being undertaken in mid October at the earliest.

The transfer of the DTM from the HLV to the ocean and its tow to site has been planned to be undertaken outside the Gulf if its commencement date is within the month of October. However if bad weather makes this activity unsafe for any transfer outside of the Gulf, it is proposed to relocate the HLV to the Gulf and undertake the transfer and tow to site. There is therefore the potential that this activity may occur in mid October inside the Gulf should an early commencement to the construction schedule be achieved (late September) or bad weather impact upon the DTM transfer operation. Should this situation eventuate, Apache will continue to consult with Mr Jenner for his advice and assistance. Mr Jenner has indicated that he is likely to be in the Gulf undertaking whale research activities with his vessel during this time and will assist with any observations and further advice of whale activity.

2.2 DISCHARGE OF SEWAGE AND GREYWATER

2. CCG Does the "installation vessels" who will not discharge into Exmouth Gulf also cover, HLV's, and tenders?

The two HLV's and any other support vessels located inside the Gulf during the construction period, will have onboard dedicated sewage treatment systems to treat all black (sewage) and greywater, resulting in only treated wastewater being discharged into the Gulf.

2.3 EMISSIONS OF GREENHOUSE GASES AND ENERGY USE

3. CCG Is Apache involved in a Carbon onset program to counter act those emissions occurring? This would be a great company policy to initiate.

5. CCG What further factors can be introduced to reduce Apaches energy use?

15. CCG 1,102,000t of CO_2-e yearly is a huge amount of greenhouse gas emissions. Considering the time frame it would take to break down these gases, and the number of years of operation- this is not negligible.

21. CCG 1,172,000t/year emissions between the 5 sites- is significant emissions and needs to be addressed and reduced.

Apache is committed to evaluating and assessing throughout is operations, realistic and technically viable opportunities to reduce energy consumption and the generation of greenhouse gases (GHG). Apache through its participation with the Australian Petroleum Production and Exploration Association (APPEA) reports annually its GHG emissions and future strategies to reduce GHG to the Australian Government's Greenhouse Challenge Program.

Apache has undertaken several GHG emission offset programs associated with its more recent developments. One such program has involved installing waste heat recovery systems and hot oil systems to capture waste heat recovered from existing gas turbine exhausts. This captured heat is then transferred to newly constructed processing equipment that has required a heat source rather than installing a dedicated additional boiler that would burn natural gas to generate the heating energy. This practice has resulted in some of the carbon dioxide (CO_2) emissions generated from the new equipment being offset and equated to an annual emission saving of some 31,000 tonnes per annum of CO_2 equivalent or nearly 1,000,000 tonnes of CO_2 equivalent over the life of the facility. In this example, these measures alone resulted in a 28% reduction in CO_2 equivalent emissions from this project.

The main actions being implemented with the Van Gogh development to minimise GHG emissions and energy consumption include:

1. the use of conditioned natural gas as a fuel source on the FPSO rather than diesel.
2. the reinjection of surplus produced gas (that not used for fuel gas or lift gas) back into the Van Gogh reservoir to minimise flaring. A target for reinjection of 90% or more of the FPSO's connected operating time has been set for the project (see Section 2.7.2 of the Draft PER).
3. Waste heat recovered from other areas of the process on the FPSO will be used so as to minimise the requirement for additional dedicated heating and cooling systems on the FPSO.
4. A principle design of the oil separation system on the FPSO has been to minimise the volume of low pressure natural gas generated from the separator stages of the oil treatment system. Low pressure gas is usually sent to the flare. For the Van Gogh FPSO a booster gas compression system will recompress the gas released from the second stage and stabilisation separators, directing it into the main gas compression system, recovering it rather than flaring it.
5. Interlocks will be installed on the flare pilot(s) to ensure no process start up occurs until the flare pilot is ignited (to prevent venting of unburnt hydrocarbons such as methane which is 21 times more effective as a GHG than CO_2.)
6. Insulated flowlines to permit faster restarts on the FPSO and minimise flaring on start up.

Whilst the emphasis of the design of the FPSO has been to minimise energy use and GHG, Apache will periodically review the performance of the FPSO once it is operational in order to assess any further opportunities, where they are viable, to undertake additional initiatives to reduce energy use and GHG emissions. For the Van Gogh development no further direct offsets for greenhouse gas emissions are currently proposed.

In relation to the volume of GHG discharged form the five FPSO's, Section 5.6.1 of the Van Gogh PER details these emissions in relation to the Australian and Western Australian GHG emissions as well as comparisons to other current oil and gas industry emissions.

The combined GHG emissions from the five FPSO's represents a total of 0.2% of Australia's GHG emissions based on 2005 levels.

The largest source of GHG's emissions (90%) from the Van Gogh FPSO is associated with power generation (see Figure 5.3, page 175 of the PER) of which a large proportion of the power demand is from the electric powered reinjection pumps required to reinject produced formation water (PFW), which is normally treated then discharged to the ocean.

2.4 TOURISM AND EXMOUTH GULF VISUAL AMENITY

4. CCG — Tourism is one of the largest local businesses. Ningaloo is renowned for its remoteness and pristine environment. The impact of having large industrial ships anchored in Exmouth Gulf detracts for this significantly and is going to be one of the first visual impacts the tourist encounters with the local ocean. The local tourism market would argue that this does create a significant change with the cumulative impact of all operators.

Apache's construction activities associated with the Van Gogh project will result in only temporary use of the Gulf by a limited number of construction vessels and for limited periods during parts of the months from October to December/early January. This will not coincide with the construction activities from any other oil development project, so there will be no cumulative impacts from other construction vessels associated with FPSO developments in the Gulf.

2.5 TANKER CONVERSION

6. CCG — What are the plans for the removed materials from the MT Kudam? Have any of the materials been recycled? Have plans been put into place to ensure those materials not able to be recycled are disposed of in a responsible manner?

Scrap steel removed from the Kudam during its conversion will be recycled. Non recyclable materials will be removed and disposed of to approved disposal facilities such as a dedicated landfill site. Some asbestos materials was required to be removed from the vessel. This material was double bagged and disposed to an approved and dedicated asbestos disposal facility.

2.6 PUTRESCIBLE WASTE & SEWAGE TREATMENT

7. CCG — It should be company policy that laundry, kitchen and cleaning detergents purchased for use should be biodegradable unless contradicted.

Only biodegradable laundry, kitchen and cleaning detergents will be used on the FPSO. This is a standard practice that Apache uses on all its operating facilities.

2.7 ARTIFICIAL LIGHTING

8. CCG — FPSO lighting increased at night "to allow safe night-time loading and unloading of support vessels and offtake tankers"- there is a huge increase in accidents when operating at night. Include in table 5.6 Crude oil spills- FPSO (pg 142) no off loading at night, if it takes 30 hours to offload- this may not be possible but time of connection and disconnection should be within daylight hours.

Once commenced, offloading operations (export of crude oil from the FPSO to export tankers) will occur around the clock until the transfer has been completed. This is a standard practice that Apache undertakes for offloading of crude oil at all its operations. The risks of spillage associated with the connection and disconnection of the offloading hose to an export tanker at night are not significantly increased as the numerous controls associated with this activity ensure it is a suitable to be undertaken during night time (i.e., double carcass protection on the offloading hose, export hose on a reel and not left in the ocean, dry break valves on export hose, offloading procedures, tanker vetting procedures etc).

Refuelling from support vessels to the FPSO (diesel and chemical transfers) will preferably be undertaken during daylight hours, if weather and sea conditions permit. Refuelling or transfers to the FPSO of diesel and chemicals will occur at the discretion of the vessel master and Person-in-Charge (PIC) of the FPSO after taking into account site-specific factors and weather and sea conditions. Diesel transfer hoses will be fitted with a dry break coupling (self sealing connectors that prevent spillage), and will be regularly checked for leaks. Transfer hoses will be buoyant or have buoyancy devices attached so that they float on the water surface. All refuelling operations will be covered by Apache's refuelling procedures.

All chemical transfers will be via bulk containers transferred onto the FPSO and then connected into place (i.e., no need to decanter from containers to onboard storage tanks). This eliminates the potential for any spillage associated with transferring chemicals to any onboard storage tanks.

2.8 CRUDE OIL SPILLS & EXERCISES

9. CCG — This being the biggest potential devastating impact of the project it is vital that oil spill plans are not only in place but are practiced (frequently) so that the event of a "worst case scenario" it is dealt with in the fastest most effective possible manner.

13. CCG — The importance of these and their regularity cannot be understated. All personal should be involved in training and regular mocks on the vessel (not limited to table top exercises). Having a response process on paper is not considered to be adequate. Proof that physical implementation should be included.

16. CCG In view of the fact there are combined response planned between the 3 companies- there should be combined mocks to practice for such a scenario. Not just on paper- real time practical responses, checking both equipment and personal will be effective in a real situation.

18. CCG What about major oil spill response- where the response is significantly different and impact also (from minor oil spills).

19. CCG This needs to be practiced

Apache will amend its existing North West Shelf Oil Spill Contingency Plan (OSCP) to include the Van Gogh development. The OSCP is required to be in place and reviewed by the WA Department of Industry & Resources (DoIR) before approval is given to commence operations. This is a requirement under the Petroleum (Submerged Lands)(Management of Environment) Regulations.

Apache appreciates the communities concern in relation to the low probability event of an oil spill with the potential for significant consequences to the surrounding marine environment. Apache actively manages this risk with regular training exercises centred on responding to an oil spill incident from its WA facilities. Oil spill response exercises are routinely undertaken by Apache to test and prepare the Company to respond should an oil spill occur from any of its operating facilities. Such exercises include both desk top simulations of oil spills as well as field deployment of oil spill containment and recovery equipment. These regular training exercises provide ongoing experience to management and field personnel who would be involved first hand in an initial company response to an oil spill. For example in the first quarter of 2007, a major oil spill training exercise involving Apache's entire emergency response team was undertaken from Varanus Island and involved the deployment of booms to protect beaches of Varanus Island (see **Photo 1**) and the response of other containment and recovery equipment stored at this location. This is supplemented with ongoing desktop exercises undertaken two to three times a year involving varying scenarios from differing Apache operated sites in WA. Such exercises are critiqued by external risk consultants to record and report on Apache's preparedness and performance so as to look for opportunities to improve and confirm the actions from the training. The Van Gogh operation will be added to Apache's oil spill training program.

Apache, as a participating member Company, also has access to the equipment and trained staff from the Australian Marine Oil Spill Centre (AMOSC) which are available on call 24 hours a day, with the capability to be at the scene of a spill anywhere within Australia's coast within 12 to 24 hours. Collaboration between AMOSC, Apache and other FPSO operators off the coast of Exmouth (BHP Billiton and Woodside) has also established a greater oil spill capability through the purchase and combined storage of oil spill response equipment at Exmouth.

Under the WestPlan-MOP (State response plan managed by the Department of Primary Industries) and the National Oil Spill Response Plan (NATPLAN – managed by the Australian Marine Safety Authority) further assistance is available to secure additional equipment and resources, should they be required.

Photo 1: Deployment of booms in the 2007 major oil spill response exercise.

2.9 TURTLE HATCHLINGS

10. CCG Is there research to show whether hatchlings move towards light once in the water? If this is the case then hatchlings would drawn to the FPSO and the contaminants in the FPSO's close proximity. This needs further clarification.

The issue of lighting and its impact on turtle hatchlings is largely restricted to there initial emergence from the nest and transition to the ocean. Turtle hatchlings are attracted to light on emerging from the nest as an initial navigational cue, however once in the water other more dominant cues assist with there transition from land to the open ocean. The impact of lights from the FPSO, being some 43 km offshore, will not impact on there passage from land to the ocean. Similarly once at sea the effects of ocean currents and wind conditions will be the dominant factors in there resultant offshore movement. Once in the open ocean the effect of lights as an attractant is diminished.

2.10 SKYWEST FLIGHTS

11. CCG Can it been shown that the number of economy seats available remains unchanged- or are these full price seats?

Apache is part of the Exmouth Aviation Consortium (EAC) that consists of the current oil and gas companies operating out of Exmouth. The consortium is committed to purchasing a number of seats on each Skywest flights to Exmouth. The consortium does not purchase nor have access to the economy seats available to the

general public. These are reserved by Skywest for purchase by the public.The consortium guarantees Skywest an allocated number of pre-purchased seats on each flight to Exmouth. This permits Skywest to underwrite these flights with the added benefit of increasing the number of flights to Exmouth, and therefore the number of economy priced seats.

2.11 WORST-CASE OIL SPILL MODELING AND CYCLONIC WINDS

12. CCG Cyclonic winds were excluded from worst-case oil spill modeling. Why is this? It is physically impossible to have an oil spill during the disconnection process? Cyclonic winds actually create strong enough winds, for a long enough time in the direction towards the Ningaloo reef system and are likely events. They should have been modeled.

The region experiences between two to three cyclones each year, mainly between January and March. Cyclonic winds were excluded form the oil spill modelling undertaken for the Van Gogh development as they do not represent a plausible scenario for conditions that the FPSO will experience. In order to avoid extreme weather conditions such as cyclones, the FPSO has been equipped for automatic (un-assisted) disconnection and reconnection from the disconnectable turret mooring (DTM) buoy, under any loading condition, with the ability for the FPSO to sail away using its own power. The FPSO will therefore not experience cyclonic conditions whilst it is on location, taking precautionary action to avoid such conditions.

The DTM has been designed such that the FPSO will not need to be disconnected from the DTM buoy during 100 year return non-cyclonic events. Never-the-less, standard operating conditions will be for the FPSO to disconnect and sail away from the Van Gogh site should a cyclone be predicted to impact the FPSO location. The FPSO will be fitted with metocean equipment capable of continuously monitoring wind speed and direction, and wave height and direction. Apache is a special services client of the Bureau of Meteorology and receives continuous seven day forecasts for weather conditions, including the potential for cyclone development, for all its facilities. During a watch for the potential development of a cyclone, the Bureau provides its modelling results to Apache detailing how the developing low or newly formed cyclone may impact upon any of Apache's operations (trajectory, time expected to impact upon particular location, wind speed, expected cyclone development etc). The FPSO will receive this information directly from the Bureau in order to ensure early activation of Apache's cyclone response procedure.

2.12 NOISE LEVELS

14. CCG No additive increase in the received noise level from 5 operational FPSO's. No- BUT there would be a much increased size of the footprint that the noise covers. Noise was identified as having a detrimental impact and the area would become much harder for species to avoid; especially migrating whales.

The increase in underwater noise as a result of all five FPSO's operating simultaneously has been predicted to have a negligible residual cumulative impact on humpback whales. As shown in the Van Gogh PER (Section 6.4.1 page 237), the plots of predicted combined underwater noise from the five FPSO's under calm and moderate ambient noise conditions results in an increase in high noise levels between 5 to 10 km from an operating FPSO (half this on the approach to the FPSO and half on the departure from the source).

Cetaceans, and baleen whales in particular (such as humpbacks), are considered to be the most sensitive of the listed species to underwater noise. The threshold for causing an observable change in behaviour varies considerably between species, individuals and even individuals at different times, but is generally taken to occur when the continual broadband noise levels exceeds 115 dB re 1µpa. The general ensonified areas around each FPSO operating under normal conditions and independently (i.e., no other sources considered) were modelled using two-dimensional grids of received levels created for each source to generate contours of 115, 120, 125 and 130 dB re 1µPa around each FPSO. The mean range from the source location to these contours and the area encapsulated by each primary contour were then calculated and indicated an area of between 5 to 7.35 km^2 (See Table 6.3, page 237 of the PER) where the modelled noise level exceeded 115 dB re 1µpa (maximum area of approximately 1.5 km radius around the FPSO).

At the spatial scale at which all cetaceans operate (hundreds of thousand of square kilometres) the cumulative effects of underwater noise form five FPSO's is therefore unlikely to cause any significant behavioural impacts. Anecdotally this has been observed on BHP Billiton's Griffin venture Operating FPSO where humpback whales have been observed alongside the operating FPSO.

2.13 EXCLUSION ZONE OF 500M TO EACH FPSO

17. CCG How will that be enforced? Being so close to a major shipping route, there is increased chance of error and collision? Decreasing the lighting on the FPSO's and decreased flaring will make it even more difficult to see, being a "ship" not a rig. Especially at night.

AMSA is the responsible authority for the enforcement of the safety exclusion zone. The subsea infrastructure and FPSO location will be indicated on the regions marine chart (AUSLIG – Australian Surveying and Land Information Group navigation maps) and a 'notice to mariners', issued to vessel operators notifying them of the location of the FPSO. Apache will monitor the exclusion zone through the use of the FPSO's anti-collision radar. Other measures implemented on the FPSO to avoid impacts to shipping include having adequate navigational lighting installed, and the installation of a range of communications equipment to assist with vessel to vessel communications.

2.14 OFFTAKE TANKER FREQUENCY

20. CCG — This averages a vessel every day between the 5 projects - a cumulative impact that needs assessment.

Under the Commonwealth Navigation Act 1912, all vessels operating in Australian waters are required to report their location on a daily basis to the Rescue Coordination Centre in Canberra. This database forms the Australian Ship Reporting System (AUSREP) managed by the Australian Marine Safety Authority (AMSA). This data indicates that an average of 1,200 vessels per year pass through the North West Cape waters (1993-2002 data) with over 500 vessels annually passing through the Van Gogh development area (see Figure 4.20, page 120 of the Van Gogh PER). Whilst no designated shipping lanes exist off the North West Cape region, ships do use regular paths on their passage northwards and southwards along the Western Australian coastline (see Figure 4.20, page 120 of the Van Gogh PER).

The operation of five FPSO's in this region may result in regular shipping activity diverting further west away from the FPSO facilities, avoiding the potential for vessel collisions. The addition of export tankers associated with liftings from the FPSO's is not expected to significantly impact on the existing vessel traffic. Whilst production rates in the initial 1-2 years of each of the developments will involve weekly or in some cases two liftings per week for some FPSO's (see Table 5.1 page 127 of the Van Gogh PER) this additional level of shipping activity does not represent a significant congestion issue to the existing volume of shipping traffic operating through the region. The number of tanker liftings will progressively decline for each FPSO facility after the subsequent years of commencing production (i.e., as an example see Figure 2.1 Van Gogh production profile, page 23 of the PER). As the commissioning of each FPSO has been staggered (not all commenced at the same time) some developments will experience declining production rates resulting in a lesser number of liftings and therefore less tanker traffic.

Scheduling of tanker arrivals, vetting procedures and approvals for suitable export tankers, arrival and piloting procedures which are all standard practices for oil operating companies, will ensure the cumulative impact from export tankers is managed to minimise the potential for tanker collisions.

2.15 DECOMMISSIONING

22. CCG — Are there plans in place to recycle obsolete equipment at the end of the project?

As stated in Section 6.6.1 (page 241 of the Van Gogh PER), much of the waste (scrap steel) generated during the decommissioning phase of the project will be recycled.

Decommissioning of the Van Gogh development will commence when production from the reservoir reaches the end of its economic life.

The majority of the subsea infrastructure will have limited reuse for any future subsea development and is likely to be recycled as scrap steel. Decommissioning of the FPSO is a simple process of disconnecting it from the DTM and sailing it away. The vessel will then either be:

- Used by another similar development as an FPSO (modified and refurbished as appropriate).
- Converted to another use.
- Salvaged for topside parts and the vessel sold as scrap metal if deemed to have no reuse.

2.16 FLIGHTS

23. CCG — With the majority of employees flying in and out of Learmonth- does Apache have a flight carbon offset policy to offset all employee flights (only about $8 return per flight from Perth to Learmonth)?

Skywest Airlines, in conjunction with Carbon Neutral Ltd, provides its customers with the opportunity to offset their flight emissions by joining its Skygreen program. The program offers the opportunity whereby the carbon dioxide emissions associated with air travel are offset through the planting of trees in Western Australia. Carbon Neutral, an initiative of Men of The Trees, is a not for profit organisation.

Based on the destination and the number of people travelling an estimate is calculated of the flight's emissions according to actual fuel use, the Australian Greenhouse emission factors and methodology and an IPCC radiative forcing factor. Carbon neutral then organises to plant trees to offset the flight's greenhouse gas emissions. Apache will discuss with Skywest the opportunity for it to participate in its Skygreen Corporate program.

2.17 PREVIOUS EIS FOR OTHER PROJECTS APPROVED IN THE EXMOUTH GULF

24. CCWA — CCWA has reviewed the PER and found that the majority of comments made in these submissions *(Enfield, Vincent, Stybarrow and Pyrenees)*, are also applicable to the Van Gogh PER. Hence, CCWA requests that the Proponent addresses all recommendations (where relevant) made in these documents in the PER Supplement.

Apache has replied to the comments and attachments it received from the CCWA and the CCG in this supplement (see **Appendix A**). The comments made by the CCG mirror those made in previous submissions for the Enfield, Vincent, Stybarrow and Pyrennes Draft Environmental Impact Statements.

2.18 PER PROCESS

25. CCWA Activities that would be reasonably expected to be undertaken following environmental approval have already commenced, undermining the integrity of the legislated and PER consultation process. For example, the:

    (a) Proponent has awarded major contracts and given FEED to the Development prior to receiving environmental approvals.

    (b) Proponent has commenced construction of an FPSO prior to environmental approval being granted/considered and conditions being placed on the Development based on this design option by Government.

    (c) Drilling Environment Plan has been approved by Government prior to environmental approval being given for the Development itself.

Apache's has chosen to take the business risk of running both the initial engineering design and the environmental approval process in parallel. The advantage of this method is that it has the benefit of providing certainty about what is being proposed for the project and therefore permits the environmental impacts to be accurately defined and management controls specified to address the actual residual environmental risks. It also provides the opportunity to feedback into the design any changes or alterations that could improve the environmental outcome of the project. This decision has in no way compromised the environmental approval process nor pre-empted its outcome. All equipment Apache has committed to can be on-sold if the project does not secure environmental approval.

Apache has opted for an FPSO design that is comparable to any of the other FPSO developments currently operating or proposed for the offshore Exmouth sub-basin (i.e., see Table 5.1, page 126 of Van Gogh PER). Apache has also taken on learning opportunities from those FPSO's currently operating in the Exmouth sub-basin in order to improve the performance of its FPSO.

The drilling component of the project (EPBC 2007/3495) was separately referred to the Department of the Environment, Water, Heritage and the Arts (DEWHA) and assessed as "not a controlled action", provided it is undertaken in accordance with the manner prescribed. These measures included:

- Listed threatened species and communities (sections 18 & 18A)
- Listed migratory species (sections 20 & 20A)
- Commonwealth marine areas (section 23 & 24A)

1. Apache must have an oil spill contingency plan for the Van Gogh region in operation before the commencement of any drilling.
2. Well closure and site restoration in accordance with current industry best practice must be undertaken for all abandoned appraisal and production drilling wells
3. A report must be provided to the Department within two months of any well abandonment. The report should detail the extent of well closure and restoration actions carried out.

During the public notification of DEWHA's decision no comments were received on this level of assessment.

With the drilling programme no longer requiring any further approvals under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) Act, it required environmental approval under the Commonwealth Petroleum (Submerged Lands) Act 1967 by the WA Department of Industries and Resources (DoIR) acting as the Designated Authority for the Commonwealth Department of Resources, Energy and Tourism (DRET). A drilling Environment Plan (EP) and Oil Spill Contingency Plan (OSCP) was then prepared and forwarded to the (DoIR) who approved both documents.

2.19 PREFERRED FPSO DESIGN

26. CCWA CCWA does not support the Proponents preferred design option (FPSO) in light of alternatives (tieback to Vincent FPSO) that would minimise environmental impact and risk (environmental impact associated with FPSO, cumulative impact of 5 FPSOs, reduction of potential for spills via off-takes and disconnection process, use of supply vessels for mooring in known breeding and resting grounds including the Exmouth Gulf and regular shipping across known migratory paths of vulnerable species etc).

    Insufficient argument or substantiation has been provided in relation to the purported "Disadvantages" for the Tie-back scenario.

    The design option should be based on proximity to the Ningaloo Reef and resting, migratory and breeding areas of vulnerable species rather than a perceived risk or likelihood of significant environmental harm largely determined by desktop studies and workshops.

The tie-back to Woodside's Vincent FPSO was subject to suitable commercial arrangements being available to Apache. Apache did approach Woodside to discuss this option, however the terms being offered were not favourable leaving Apache's standalone FPSO option as the most economically feasible.

Apache's proposed Van Gogh FPSO is the furthest away from the Marine park boundary of all the FPSO's existing and currently proposed in the Exmouth sub-basin. As previously stated the proposed design option for the Van Gogh FPSO is similar to all the other operating or proposed FPSO located in the Exmouth sub-basin

(i.e., see Table 5.1, page 126 of Van Gogh PER). The proposed design incorporates the environmental sensitivities of the Exmouth region ensuring best environmental management practices are employed (i.e., FPSO and subsea infrastructure designed for reinjection of both produced formation water and natural gas etc). The risk assessment process, as with any activity Apache undertakes, is an integral part of analysing the known and potential environmental, engineering, safety and societal impacts associated with the proposed Van Gogh development. The identification of environmental hazards and their risk assessment is an important part of the environmental impact assessment process. This is undertaken by Apache in accordance with the Australian risk management standard AS/NZS 4360:1999. This risk assessment process Apache employs is both a qualitative and quantitative assessment involving numerous hazard assessment workshops where Apache personnel and its contractors knowledge and experience of both the Exmouth sub-basin and oil and gas development activities, is used to arrive at a design that mitigates or prevents adverse environmental impacts.

27. CCWA

Section 2 states that the FPSO will be double hulled and provides justification for the use of a double hull, however, later in the same section on page 37 it states, *"The FPSO will be double-sided, with a single-hulled bottom. This means the sides of the vessel (around the cargo tanks) will have two layers of steel to minimise the chance of an oil spill occurring should a collision breach the external hull of the FPSO. As part of the development's hazard identification process, it was determined that a single-hulled bottom was environmentally appropriate given the low risk of running aground and associated rupture of the bottom of the vessel, as it will be either moored on site or transiting out to sea in deep water during adverse weather conditions (i.e., it is not proposed to need to enter into a harbour or shallow-water area during bad weather)".*

As the Proponent is aware based on the public Submissions made by the CCWA and CLO the 4 nearby Developments, CCWA opposes the use of a single hull bottom on the FPSO (or single hull oil tankers servicing the FPSO). Precents and industry best practice is proven and demonstrated by the 4 nearby Developments for which the FPSOs are double hulled. History has shown that single hulls do not afford adequate protection from spills.

In addition, submissions made by CCWA and the CLO on previous EIS for nearby Developments have clearly stated that both FPSO and Oil Tankers should be double hulled and these options have been adopted for those developments.

The PER states that the potential for the FPSO to run aground in negligible and that the disconnection process in the case of severe weather events would be a 6 hour period. Contrary to this, the EIS for the Vincent EIS states that this process is likely to take 12 hours with an internal turret system. The age of the tanker to be converted should be provided and the design criteria used to addresses extreme weather conditions.

The PER only ever refers to the Van Gogh FPSO being proposed as a double-sided hull. In the Executive Summary under "Alternatives Considered", the PER details the alternatives evaluated for the Van Gogh project including the assessment of a double-sided hull versus a double hull. In Table 5.1, page 126 of the Van Gogh PER, there is a comparison of the proposed Van Gogh FPSO to the other FPSO developments operating and proposed for the Exmouth sub-basin that includes a comparison of the varying hulls detailing the Van Gogh FPSO to be a double-sided, single bottom hull. Also in the Glossary and Acronyms section of the PER (Section 10), a definition for a double-side hull is provided – "a structural configuration of a ship that is similar to a double hull, only the vessel has a double-side and a single-skin bottom". Such a configuration for an FPSO is possible because the facility remains moored in one location for the majority of its life and so running aground is not a potential risk.

The PER states that Apache's hazard identification process determined that a single-hulled bottom was environmentally appropriate given the low risk of any possible rupture of the bottom of the vessel, as it will be either moored on site or transiting out to sea in deep water during adverse weather conditions. The FPSO is not required to enter a harbour or shallow-water area. The issue for vessel impacts to the FPSO (the most likely risk scenario) is that a double-side hull will provide the same level of protection afforded by a double hull.

Apache has strict vetting requirements (scrutinising process for accepting to load chartered oil tankers). Once an oil cargo is sold these vetting requirements along with Apache's offloading procedures are forwarded to the buyer who is responsible for organising and chartering an export oil tanker to deliver its crude. The buyer is required to choose an oil tanker that complies with the requirements Apache has specified as being acceptable to the Van Gogh FPSO and its offloading conditions. Apache has the right to reject the buyers nominated tanker and refuse permission for any oil tanker to berth and load at its FPSO facility if it does not conform to the Company's required standards (i.e., refusal to load single hulled vessels). Apache will also comply with the requirements of the Australian Maritime Safety Authority (AMSA) and the International Maritime Organisation (IMO) relating to double-hulled tanker use in Australia. The IMO has stated an accelerated phase-out of single-hulled oil tankers, with 2010 set as the principle cut-off date for the use of single-hulled tankers. Apache has been advised by AMSA that in relation the Van Gogh oil being classed as a heavy crude oil, its transportation by single-hulled tankers has been banned in Australia. This has been effective since the 5th April 2005.

Woodside's Vincent internal turret system is not identical to Apache's proposed disconnectable turret mooring system, hence the stated time difference required to disconnect from each of the FPSO's is different.

The MV Kudam was built by Ishikawajima-Harima Heavy Industries. The keel was laid on the 2 June 1981 with the tanker delivered to the first owner on 23 December 1981. The ship in therefore 27 years old prior to it being converted to an FPSO.

As a requirement of the Classification Society Lloyds Register of Shipping, during conversion of the tanker into an FPSO, the vessel must be brought back to an "as new" condition. As such, the repair and life extension process requires the entire hull to surveyed by qualified surveyors with particular attention payed to sections of the hull showing signs of corrosion and fatigue cracking. In addition, all structurally significant steel sections are measured for thickness, allowing the hulls actual strength to be assessed. After thickness gauging, any steel sections that are identified to be unable to achieve the hull strength requirements for the extreme weather conditions encountered at Van Gogh, whilst still achieving the15 year FPSO design life (incorporating a yearly corrosion rate), are replaced with new steel of the same thickness (and strength) or thicker. On completion of this repair and life extension process, the hull structural strength is in an 'as new condition'. This process of repairing and extending the life of the tanker must be reviewed and approved by the classification society to ensure quality and correctness.

During the conversion process from a tanker to an "as new" FPSO, the hull has additional strengthening installed to cope with the weights of the new oil and gas processing equipment. In addition the entire vessel is repainted with a coating system specifically selected to prevent corrosion (thus maintaining the ship strength) during the 15 yr design life. Again this process is monitored by the classification society to ensure quality and correctness.

The FPSO has been designed to achieve strength and stability requirements for a number of different environmental design criteria thus ensuring the vessels structural integrity and stability for a number of various operating scenarios. This assessment must be reviewed and approved by the classification society. These include several design criteria for when the vessel is connected to the mooring and for when it is disconnected from the mooring and sailing to avoid a cyclone.

A description of the more significant design criteria utilised for the FPSO to address extreme weather conditions is as follows:

- Tanker offloading - Tandem Moored tanker able to be moored to FPSO in conditions up to 1 year return period non-cyclonic storm.
- FPSO connected to mooring – extreme condition (Oil processing operations ceased) – 100 year return period non cyclonic storm.
- FPSO connected to mooring - survival condition – 10 year return period cyclonic conditions.
- Disconnecting FPSO from mooring – design condition – approx 1 year return period non-cyclonic storm.
- Disconnecting FPSO from mooring – extreme condition - 100 year return period non-cyclonic storm.
- Reconnecting FPSO to mooring – Ambient conditions up to 3m high wave and 18 m/s wind.
- Disconnected and sailing – 100 year return period cyclonic conditions.

2.20 FPSO OPERATOR, CONTRACTORS AND THIRD PARTIES

28. CCWA

CCWA does not accept the Proponent's position of abrogating responsibility for the FPSO to the third party who would *"be the responsible owner of the FPSO Operations Environment Plan on behalf of Apache"* (1.3.4, page 15). This does not meet industry best practice set by the Proponents for nearby Developments who accept responsibility for the actions (and any consequences) of third parties/contractors. Details on the proposed Contractor including their environmental record, should be addressed in the PER Supplement.

The PER Supplement should include emergency response arrangements for third party vessel operators associated with the Development (e.g. Places of refuge in the case of cyclonic or severe storm event, support vessels including tug boats for operational issues such as engine failure etc). The PER Supplement should demonstrate how such third party operators would be made aware of the importance of the adjacent Marine Parks and detail any training that would be provided by the Proponent to such operators.

The operating arrangements associated with the FPSO will not in anyway abrogate Apache's environmental responsibilities. Similar operating arrangements are in place with other FPSO's currently operating and proposed for the Exmouth sub-basin. The Operating Environment Plan (EP) will be developed cooperatively between Apache and Prosafe. Apache will have an Operations senior position (Person-in-charge) onboard the FPSO who will also audit and monitor Prosafe's performance against the EP.

Prosafe Production Public Limited (Prosafe Production) is a major owner and operator of floating production, storage and offloading (FPSO) vessels. The Company operates globally with a current workforce of some 1,200 employees. It is headquartered in Larnaca, Cyprus and is applying for listing on the Oslo stock exchange.

Prosafe Production owns and operates seven FPSO's located throughout the world. It also has four oil tankers of which three are under conversion to FPSO's and are estimated to be operational by late 2008.

Prosafe Production has more than three decades of operational experience from the world's largest oil and gas provinces. During this time it has only recorded two significant incidents associated with a discharge of petroleum into the marine environment. The first incident occurred on the 28th March 2006 involving the discharge of approximately 8 m3 of oily water in excess of 100 ppm into the marine environment offshore from the Ivory Coast. No legal proceeding or penalty resulted form this incident. The second incident occurred on the 21st October 2007 when approximately

23 m^3 of produced formation water (PFW is water separated from the recovered production well fluids), with a high percentage of oil content was discharged from the FPSO "Umuroa" slops tanks whilst it was located off the New Plymouth coastline in New Zealand. On the 24th October oil residues was found washed up on the shore line near the New Plymouth area, estimated at approximately 6 m^3. This incident occurred during the early months of operation from the FPSO and was a result of the slop tank not being skimmed of oil prior to discharging the PFW overboard. The primary causes of this incident was the inherent limitation of design, the lack of understanding of the intent of the slop tanks and the over reliance in the oil-water monitor as a fail safe system. The design and operation of Apache's FPSO and subsequent FPSO's converted by Prosafe Production have been modified to address this potential problem thereby eliminating or preventing the recurrence of similar incidents in the future. Prosafe Production has recently been served with a New Plymouth District Court Summons in relation to this incident and the matter is pending resolution.

Effective implementation of the operations environment plan requires that the appropriate capabilities, operational environmental management controls and systems are adequately communicated and implemented. This information and the relevant responsibilities will be communicated by Apache to all project personnel prior to the commencement of each development phase through an environmental education/induction programme. All personnel, from management level to field operations and contractor staff are required to undertake an environmental induction.

The environmental induction will cover the following information as a presentation to all personnel associated with the development:

- An overview of the environmental commitments of the environmental plan
- Regulatory and procedural requirements
- The Apache Environmental Management Policy
- Environmental sensitivities of the development area
- Environmental resources at risk
- Environmental management procedures, including the following:
  - Waste management
  - Fluids management
  - Oil and chemical spill response
  - Cetacean observation recording.

Permanent environmental educational material will be displayed prominently onboard each vessel contracted to Apache (in the mess room, corridors and other appropriate areas), in the form of:

- Information posters on resources sensitivities, for example
  - Nearby coastal and inland sensitivities.
  - Marine Parks and reserves.
  - Whale migration routes.
  - Turtle and whale shark conservation.
  - Impacts of oil spills.

2.21 REINJECTION OF PRODUCED WATER AND GAS

29. CCWA — The area is subject to extreme natural events (tsunami's, earthquakes and tremors etc). The PER Supplement should verify how safe this form of storage is, in both the short term and long term (beyond the life of Development). This should be verified bearing in mind the changes to the seabed resulting from this and nearby Developments (i.e. Consequence of removing oil from earth's crust and the purpose of oil in the geology of the area).

The Van Gogh oil, gas and water were originally reservoired in the Barrow formation with the cap rock above the Barrow being the Muderong shale (upper confining layer). The hydrocarbons originally migrated into the Van Gogh field over approximately 10 million years ago where they have then become trapped as a result of extreme natural events and confined within a sedimentary seal.

Any water and gas recovered with the Van Gogh oil will be separated on the FPSO and re-injected directly back into the formation from which the fluids were withdrawn. The gas will be reinjected back into the gas cap above the oil layer and the water reinjected into the aquifer below. The reinjection minimises depletion from the reservoir (Apache's reservoir modelling and simulation runs show that the final pressure will be over 95% of the original reservoir pressure) and reduces any environmental discharge to the ocean or air. This reinjection method is typical of best practice oil and gas developments across the world. The gas will be held in place by the overlying Muderong shale, which was effective at retaining the gas since it first migrated into the field. At the time of field abandonment, the production and reinjection wells will be abandoned and cemented according to procedures approved by the relevant regulatory authority (currently the W.A. Department of Industries and Resources). The abandoned wells will be pressure tested at high pressures to confirm that there is no leak path from the reservoir.

The Van Gogh reservoir lies within a thick and areally extensive high permeability aquifer 10's of kilometres in size. As a consequence any voids created by withdrawal of the oil will continually be replaced by expansion of the aquifer water into these voids. This ingress of water will in a period of years or tens of years return the pressure of the reservoir to its original pre-production pressure, limiting any pressure/stress changes. All other current FPSO operators in the Exmouth sub-basin are undertaking the same operating philosophy of replacing the majority of the fluids produced to maintain the reservoir pressure. As a consequence, there will be negligible seabed subsidence or stress changes within the reservoir compared to that which might result from an earthquake or tremor.

2.22 CUMULATIVE IMPACTS

30. CCWA

The cumulative impact study should include the likely activities of the surrounding region for the life of the Development (i.e. Other 4 Developments and "reasonably foreseeable activities" (including potential tiebacks, use of the Gulf and Exmouth onshore infrastructure etc).

The PER Supplement should demonstrate that the response and recovery equipment and the numbers of trained personnel in Exmouth are sufficient to cope with spills involving the combined developments in the Exmouth Sub-basin.

In addition, the PER Supplement should detail any investigations undertaken into alternative routing of coastal shipping to the west of the Development (as well as other nearby developments) in order to reduce congestion on the eastern side of the Development (i.e. Reducing the likelihood of collision of vessels, noise and collision impacts on cetacean migration routes, interference with fishing activities etc).

Finally, the PER Supplement should contain a commitment to address cumulative impact as part of any future Environment Plans (and other applicable documentation) with particular reference in the context of the activity and its timing.

The criteria for the cumulative impact session of the Draft PER were well stated in the PER and included the type of activities that were considered based on the following criteria:

- Only those activities that exist or have a high degree of certainty of proceeding in the future, such as those with construction activities underway or for which approvals and budgets have been obtained, were included.
- Hypothetical activities or those activities that were conceptual in nature were excluded.
- Activities for which Apache had limited information, insufficient to conduct reasonable environmental impact assessment were also excluded.
- Non-oil and gas related activities, such as fishing, tourism, shipping and recreational use: were considered to be outside the scope of this Draft PER and were excluded from the assessment.

Activities that were located a significant distance from the proposed Van Gogh development, whereby interaction with or influences of the development are unlikely, were also excluded.

Based on these elements, the following statements clarify the spatial scale of the cumulative environmental impact assessment:

- Only the Van Gogh, Vincent, Pyrenees and Stybarrow FPSO's were considered in the cumulative impact assessment as they all occurred within a 16 km radius of a point centred on the Ravensworth oil field.
- Besides the potential for further exploration and development within the Notional Development area (see Figure 1.1 of the Van Gogh Draft PER) resulting in any possible tie-backs to the Van Gogh FPSO, neither Apache or its Joint Venture participant Inpex have any current or future expansions or developments planned for the Exmouth sub-basin
- Apache is not aware of any future expansions or developments planned for the Exmouth sub-basin by the current petroleum operators in the region.

Apache considers the cumulative impact assessment as detailed in the Draft PER is consistent with the Commonwealth governments issued guidelines for the PER and which were considered to have satisfied these requirements based on the approval to release the Draft PER for public comment.

Spills involving the combined developments in the Exmouth Sub-basin would be categorised as either a Tier 2 or 3 oil spill under the National and State oil spill response plans. These are defined as large spills between 10 to greater than 1,000 tonnes. Under these plans spills of this size are coordinated by either State or Federal government departments (WA - DPI or Commonwealth - AMSA) as the on-scene commanders.

Such large spills would trigger a response from other Government and no-government organisations that are in place to respond to large oil spill incidents and would not be entirely dependant upon the resource available within Apache and Exmouth, although these would provide an important first response. For example the Australian Marine Oil Spill Centre (AMOSC), which was established by the oil industry in 1990 to provide the equipment and trained personnel required to respond to a major oil spill off the Australian coast, would be a critical organisation to assist with a major oil spill incident in the Exmouth region. This equipment and the trained staff are on call 24 hours a day, and they can be at the scene of a spill anywhere off Australia's coasts within 12 to 24 hours of being called out. AMOSC, which has a network of response nodes throughout the country where it has stockpiles of spill response equipment, in conjunction with Apache, BHP Billiton and Woodside has chosen to make Exmouth a node for warehousing sufficient inventory to respond to a Tier 2 or 3 oil spill, of which Apache as well as other petroleum operators in the region have also contributed equipment to. Similarly under the Australian National Plan (NATPLAN), managed by the Australian Marine Safety Authority (AMSA), additional resources for Tier 2 and 3 spills are available in Fremantle and Dampier. Apache is also a member of OSRL/EARL (Oil Spill Response and East Asia Response Limited), the world's largest technical resource for preparation and response to an oil spill on a global basis, and has the resources of OSRL/EARL based in Singapore to call on should they be required, on

a 24 hours a day, 365 days of the year. These include a modified L-382 Hercules aircraft suitable for equipment transportation or airborne dispersant spraying.

Apache is required to have an Oil Spill Contingency Plan (OSCP) prior to the commencement of operations from its FPSO. The OSCP will detail the organisational arrangements in place, resources available and linkages to external resources for rapidly and effectively responding to an oil spill.

Whilst no designated shipping lanes exist off the North West Cape region to restrict shipping to controlled routes, ships do use regular paths on their passage northwards and southwards along the Western Australian coastline that indicate vessels transit through the area where the proposed Van Gogh and existing FPSO's operate. The operation of five FPSO's in this region may result in regular shipping activity diverting further west away from the FPSO facilities in order to avoid the potential for collisions with the FPSO's. AMSA, the responsible Commonwealth government authority responsible for coastal shipping will issue 'Notice to mariners', to avoid the area and will update the national navigational charts for the area denoting the FPSO and the exclusion zone around it, however it has not indicated proposing alternative routing of coastal shipping west of the FPSO operating area.

The Petroleum (Submerged Lands)(Management of Environment) Regulations 1999 specifies that the operator of a petroleum activity must not carry out a petroleum activity unless there is an accepted Environment Plan (EP) in force for the activity. The WA DoIR assesses and approves EPs as the designated authority on behalf of the Commonwealth. Apache will prepare and submit for approval, an operations EP to DoIR. The broad objectives of the Van Gogh operational EP will be to:

- Achieve and demonstrate best-practice environmental management of any aspect of Apache's development that may have an impact on the environment.
- Minimise and manage the consequences from the Van Gogh FPSO where such an impact is unavoidable.

The Operations Environment Plan will be revised and resubmitted for approval every five years, as per the regulations. An annual environmental performance report detailing the FPSO's environmental performance against the environment plan's stated objectives and criteria will also be submitted to DoIR for their review and approval, as per the requirements of the regulations.

The Van Gogh Draft PER assessment of the cumulative impacts associated with the five operating FPSO's in the Exmouth sub-basin concluded that there was no significant change compared to the environmental impacts of the Van Gogh development when assessed on its own.

2.23 COMMUNITY CONSULTATION

31. CCWA

CCWA considers the consultation process for the PER is flawed for the following reasons.

1. Commencement

(a) The process commenced after the Referral by the Proponent and setting by the Government of the level of environmental approval. Proponents of nearby Developments commenced this process prior to this stage of the environmental approvals process and notified environment groups of its Referrals and their intentions in a timely manner.

(b) It has been made clear in the past (a PER level of assessment was sought for Stybarrow and the Referral was responded to by CCWA) that an EIS level of assessment should be set for any Developments (or proposed additional activities) due to the close proximity to the Ningaloo Marine Park Boundary and migratory paths for vulnerable species. CCWA considers that a government and industry precedent was set with the requirement of Environmental Impact Statements (EIS) for the 4 nearby Developments.

2. Involvement of Conservation Groups

Since 2001, Exmouth, Perth and National Conservation Groups have been consulted and provided with the resources to participate in the EIS Consultation process for the nearby Developments. Proponents of nearby Developments with existing environmental approvals made available a resource (independent CLO) to local, state and national conservation groups to allow for their participation in any consultation processes (e.g. attendance at community/stakeholder meetings and review of documents arising). Resources were not offered to Conservation Groups for this Development.

3. Consultation Tools & General Public Awareness

The PER suggests that the SCG meetings were poorly attended by stakeholders due to saturation of the issues. CCWA does not agree with this and in the case that the Proponent was receiving such feedback (claims should be verified by data in PER Supplement), may have chosen another approach or consultation method. Examples of other suggested reasons for poor attendance include

- Lack of resources (in the case of community and non-profit organisations)
- Fear that their involvement or level of participation in the consultation process may be misinterpreted as endorsement of either the consultation process or the proposed Development (see PER Attachment Newsletter 2, June 2007).
- It is noted in Attachment 1 that less than 14 days was provided between the date of public advertising for SCG members and the first meeting. Examples have not been provided on the nature of advertisements for stakeholders beyond Exmouth.

Whilst specific stakeholders have been made aware of the details of the proposed Development, it is suggested that the general public of Exmouth, WA and Australia is not aware. This may require the use of mainstream media rather than tools used to target specific stakeholders such as SCGs and newsletters. Awareness (and promotion) of the existence of the website by the general public is unknown (and not demonstrated by website data collected).

The PER Supplement should provide detail on the level of consultation undertaken with key NGOs including conservation groups and the indigenous community.

Apache's consultation process was initiated with the Exmouth local community as early as possible (April 2007) once the project was sanctioned by Apache's board, the level of environmental assessment had been determined for the project and sufficient details were available to commence meaningful dialogue of what was being proposed for the Van Gogh development.

Apache referred its Van Gogh development to the Department of the Environment, Water, Heritage and the Arts (DEWHA) for assessment under the Environmental Protection and Biodiversity Conservation (EPBC) Act. Apache was notified on the 15th January that the proposed project was a 'controlled action' under the Act requiring assessment and approval by the Australian Government before it could proceed. The level of environmental assessment prescribed for the Van Gogh development was determined by the DEWHA as a Public Environment Report (PER) on the 26th April 2007.

Actions can be assessed under the Act using one of the following assessment approaches:

- accredited assessment (eg bilateral agreements)
- assessment on referral information (assessment undertaken solely on the information provided in the referral form)
- assessment on preliminary documentation (referral form and any other relevant material identified by the Minister as being necessary to adequately assess a proposed action)
- assessment by Environmental Impact Statement (EIS) or Public Environment Report (PER)
- assessment by public inquiry

Both Environmental Impact Statements (EIS) and PER's are recognised as being both formal environmental assessment processes requiring a public review period under the EPBC Act. There are essentially no significant differences between previous EIS documents and the Van Gogh Draft PER, with the exception being that more definitive detail on what is being proposed has been provided in the Van Gogh PER and that the public review period for the Draft PER was set for a duration of four weeks compared to six weeks for an EIS.

The Conservation Council of WA (CCWA) was approached by Apache to discuss the use of adopting the independent Conservation Liaison Officer (CLO) model for the Van Gogh development which was previously used by other proponents of FPSO's for the Exmouth sub-basin. The CCWA subsequently informed Apache that they did not prefer that this model be used for the Van Gogh development. Apache took these consideration on board in forming its stakeholder consultation groups (SCG) and continued to notify and invite the CCWA to its SCG meetings and forwarded all minutes and updates on the project. An affiliated group of the CCWA, the Exmouth Cape Conservation Group (CCG), was an active member of the Exmouth SCG. A member of the CCG was resourced to attend the environmental hazard assessment for the project in Perth.

2.24 INDIGENOUS ISSUES

32. CCWA

The following comments are as per feedback received via consultation with the Endorsed Representative for the Custodian of the North West (NW) Cape, Mr Syd Dale. The Endorsed Representative is also the Chairperson of *'NW Cape Exmouth Aboriginal Corporation'.*

1 The PER states (page 124) that *"The Jinigudira and Baiyungu people, or tribes, were the first to occupy the area, with the former occupying most of the land adjacent to the reef and northern cape (CALM/MPRA, 2005)… Both tribes are recognised as the traditional owners of this land, although these families now live in regional centres, including Onslow and Carnarvon".*

The statement contains incorrect references to the traditional owners. The Jinigudira ancestors and their people are the traditional owners and people of NW Cape (i.e. not the Baiyungu). Their country covers from Mauds Landing across and up the coast past Tent Island.

The heart of Baiyungu's country is Minilya. The tribes meet at Mauds Landing every second year. Verification of this comes from the Baiyungu matriarch, Mrs Bessie Lyndon.

2 The PER states (page 124) that *"Six Exmouth residents are of Aboriginal ancestry according to the ABS 2006 Census (ABS, 2007)".*

Six Exmouth residents of aboriginal ancestry are associated with the Custodian for NW Cape, Mr Syd Dale, and his family. Although not official, there are more than six Exmouth residents of aboriginal ancestry (estimated more than 50) and other aboriginal families living in Exmouth.

3 The PER states (page 124) that *"An endorsed representative for the Custodian of the North West Cape, Mr Syd Dale, works for the North West Cape (Exmouth) Aboriginal Corporation dealing with development and other issues that may impact on Aboriginal heritage sites or values in the region. Apache has liaised with his endorsed representative to ensure its activities do not impinge on Aboriginal sites or values".*

It should be noted that nothing is passed by the Endorsed Representative. All must be endorsed by the Custodian.

The reference to *'North West Cape (Exmouth) Aboriginal Corporation'* should exclude the brackets.

The final sentence in the above PER statement is incorrect. The Endorsed Representative has not been approached by the Proponent specifically with regards to Aboriginal sites or values.

The following comments are made with regards to the consultation process undertaken by the Proponent with the Endorsed Representative.

One introductory meeting was held prior to forming the Stakeholder Consultation Group (SCG) in May 2007 (see Table 3.3 page 72). Some SCG meetings were not attended by the Endorsed Representative due to Gnulli business off country.

The PER Attachment (page 334) *"Newsletter 2, June 2007",* whilst general about government representation at the first SCG meeting, makes specific reference to the *'North West Cape Exmouth Aboriginal Corporation'.* The Proponent has not sought approval from the Endorsed Representative for use of the Corporation's name in such context in Proponent's marketing/publications.

The name suggested by the Proponent for the proposed FPSO was not given nor endorsed by the Custodian of NW Cape or his representatives.

Verbal contact was made prior to 15 August 2007 for approval of an aboriginal name for the vessel (FPSO). After consultation with the Custodian an email was sent from the Chairperson to the Proponent instructing them that there are very strict processes and protocol for any name giving. Endorsement of the name was required by the Proponent within a limited time frame and it should be noted that such processes may take from 8 months to 1 year.

The example has been set, having been put in place by all liaison activities and events with Woodside, Maersk and Mitsui for the care of his country. These existing processes are recommended for this and any future activities as the Proponents and Custodian have a cultural and heritage responsibility to the ancestors of Jinigudira country.

The Endorsed Representative supports with respect, communication and negotiations that are held with the Custodian and his representatives regarding all activities relating to any developments that come onto the country and seas for which he is responsible.

The Endorsed Representative, on behalf of the Custodian, looks forward to receiving the following documentation under Van Gogh's project to compliment this PER including, but not limited to:

- Written information regarding the indigenous name proposed by the Proponent of the FPSO;
- PER Supplement; and
- Any Draft and Final Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response Plans etc.

The information on Aboriginal heritage referred to in the PER (Section 4.5.13, page 124) has been referenced from a Western Australian government publication (the Department of Conservation and Land Management, Management Plan for Ningaloo Marine Park and Muiron Islands Marine Management Area 2005-2015). The information provided on this point, the 2006 census data for Exmouth residents of Aboriginal ancestry and the correct reference to the North West Cape Exmouth Aboriginal Corporation and matters relating to it are noted.

Request for suggested names was put to the Exmouth SCG members with the preferred option being selected as the Ningaloo Vision.

All environmental documents relating to the Van Gogh development as mentioned, will be prepared and distributed to the Exmouth and Perth SCG members for their comments.

2.25 FUTURE CONSULTATION

33. CCWA

As some information is not available prior to the detailed design stage of the project, as per the precedent set by Proponents of nearby Developments, the PER Supplement should include a commitment that consultation would occur during the Development of any associated plans (i.e. Including, but not limited to, Draft and Final versions of Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response Plans etc).

The PER Supplement should also include a commitment that consultation would be undertaken in the case of any future phases, tiebacks, workovers, additional wells or other associated activities (e.g. Gas pipelines, surveys etc).

The Van Gogh consultation process will continue with the SCG's beyond the approval process for the PER, although this may occur in a different format and frequency. As stated above, all environmental documents relating to the Van Gogh development will be prepared and distributed to the Exmouth and Perth SCG members for their comments.

The Draft PER describes the possibility of fields within the 'Notional Development Area (NDA)' being 'tied back' to the Van Gogh FPSO. Sufficient information has been presented in the Draft PER that includes the NDA and the potential environmental impacts from any proposed 'tie back' for an assessment of environmental impacts to be undertaken without the requirement for formal assessment under the EPBC Act. Such actions, should they be proposed, will be referred to the Commonwealth Government for their decision and confirmation on this matter.

Submissions received for the Van Gogh PER

COMMENTS RECEIVED FROM THE EXMOUTH CAPE CONSERVATION GROUP

Section of Draft PER	PER Page No.	Reference	Comment
Executive Summary 5.7.1	XXIX	Figure 5 (and Figure 2.2 on page 24) pg 52	Installation is to be during October to January- having potential impacts on whale resting season in Exmouth gulf- 2x HLV's insitu on moorings in gulf. Peak season may be mid September- but season continues past this point and large numbers continue to utilize the gulf.
	177	Commencing installation post peak whale migration season	
Executive Summary	XXXIX	Table 1- Continuous sewage & greywater discharge	Does the "installation vessels" who will not discharge into Exmouth gulf also cover, HLV's, and tenders?
Executive Summary	XLI	Table 1- Continuous emissions of greenhouse gases	Is Apache involved in a Carbon onset program to counter act those emissions occurring? This would be a great company policy to initiate.
Executive Summary 5.8.2	LI	Table 3- Tourism- potential for loss of "wilderness" appeal	Tourism is one of the largest local businesses. Ningaloo is renown for its remoteness and pristine environment. The impact of having large industrial ships anchored in Exmouth gulf detracts for this significantly and is going to be one of the fist visual impacts the tourist encounters with the local ocean. The local tourism market could argue that this does create a significant change with the cumulative impact of all operators.
	181	Exmouth Gulf visual amenity	
1.4.3	17	Apache one of 250 companies using 0.5PJ energy /year	What further factors can be introduced to reduce Apaches energy use?
2.4.1	35	Tanker conversion	What are the plans for the removed materials from the MT Kudam? Have any of the materials been recycled? Have plans been put into place to ensure those materials not able to be recycled are disposed of in a responsible manner?
2.4.5	45	Ancillary Systems- Putrescible Waste & Sewage Treatment	Maybe a small point but could it be company policy that laundry, kitchen and cleaning detergents purchased for use be biodegradable unless contraindicated?
5.3.3	146	Artifical Lighting	FPSO lighting increased at night "to allow safe night-time loading and unloading of support vessels and offtake tankers"- there is an huge increase in accidents when operating at night. Include in table 5.6 Crude oil spills- FPSO (pg 142) no off loading at night, if it takes 30 hours to offload- this may not be possible but could time of connection and disconnection be within daylight hours?
Table 5.5	142-3	Crude oil spills	This being the biggest potential devastating impact of the project it is vital that oil spill plans are not only in place but are practiced (frequently) so that the event of a "worst case scenario" it is dealt with in the fastest most effective possible manner.
5.7.2	178	Turtle hatchlings move towards bright light in lab and field	Is there research to show whether hatchlings move towards light once in the water- if this were the case then they could drawn to the FPSO and the contaminates in it's close proximity.
5.8.6	187	Skywest indicates all flight remain with extra seat capacity during 2007	Can it been shown that the number of economy seats available remains unchanged- or are these full price seats?

Section of Draft PER	PER Page No.	Reference	Comment
5.9.9	208	Cyclonic winds were excluded from worst-case oil spill modeling	Why is this? It is physically impossible to have an oil spill during the disconnection process? Cyclonic winds actually create strong enough winds, for a long enough time in the direction towards the Ningaloo reef system and are likely events. They should have be modeled.
5.9.11	230	Oil spill exercises	The importance of these and their regularity cannot be understated. All personal should be involved in training and regular mocks on the vessel (not limited to table top exercises).
6.4.1	237	No additive increase in the received noise level from 5 operational FPSO's	No- BUT there would be a much increased size of the footprint that the noise covers. Noise was identified as having a detrimental impact and the area would become much harder for species to avoid; especially migrating whales
6.7.1	242	The residual impact of 5 FPSO greenhouse gas emissions is negligible	1,102,000t of CO_2-e yearly is a huge amount of greenhouse gas emissions. Considering the time frame it would take to break down these gases, and the number of years of operation- this is an area which should be constantly worked on to be improved.
6.8	243-247	Cumulative effect of marine oil spills	In view of the fact there are combined response planned between the 3 companies- there should be combined mocks to practice for such a scenario.
6.9.4	256	Exclusion zone of 500m to each FPSO	How will that be enforced? Being so close to a major shipping route, surely there is increased chance of error and collision? Decreasing the lighting on the FPSO's and decreased flaring will make it even more difficult to see, being a "ship" not a rig. Especially at night.
7.4.2	264	Practical on board education includes minor oil spill response	What about major oil spill response- where the response is significantly different and impact also.
7.4.7	269	Oil spill contingency Plan	Not practiced.
Other	127	Offtake tanker frequency	This averages a vessel every day between the 5 projects
Other	127	Greenhouse gas emissions	1,172,000t/year emissions between the 5 sites
Other		Decommissioning	Are there plans is place to recycle obsolete equipment at the end of the project?
Other		Flights	With the majority of employees flying in and out of Exmouth- does Apache have a flight carbon offset policy to offset all employee flights (only about $8 return per flight from Perth to Learmonth)?

COMMENTS RECEIVED FROM THE CONSERVATION COUNCIL OF WESTERN AUSTRALIA

CONSERVATION COUNCIL
OF WESTERN AUSTRALIA INC.

26 March 2008
Apache Energy Ltd
PO Box 477
West Perth, WA, 6872
Email: vangogh.scg@aus.apachecorp.com

Dear Sir/Madam

RE: Public Environment Report (PER) – Apache Van Gogh Field Development

1. INTRODUCTION

1.1 CCWA Interest in Proposal

The Conservation Council is Western Australia's peak non-government, non-profit conservation organisation. We are an umbrella organisation for 90 affiliated conservation-focused groups throughout WA who share our passion and vision for taking responsibility for WA's unique environments. For 40 years the Conservation Council (CCWA) has been an advocate for a sustainable society in WA and pushed for the protection of the State's wildlife and natural areas.

CCWA has an interest in any development that causes any environmental impact (low to worst case scenario) or is located in close proximity to areas of high ecological value including the Ningaloo Marine Park and the Muiron Island Marine Management Area and Nature Reserves.

1.2 CCWA approach to Submission

Since 2001, CCWA has made significant comments, either directly or via a "Conservation Liaison Officer (CLO)", for the 4 Developments that have been granted environmental approval for the Exmouth Sub Basin namely Enfield, Vincent, Stybarrow and Pyrenees.

For the Enfield EIS and Stybarrow EIS, comments and questions in Submissions detailed references on a sentence, page and section basis. Based on feedback from Proponents, comments and questions were subsequently made on a more general/issue basis on the Vincent EIS and Pyrenees EIS.

CCWA has reviewed the PER and found that the majority of comments made in these submissions are also applicable to the Van Gogh PER. Hence, CCWA requests that the Proponent addresses all recommendations (where relevant) made in these documents in the PER Supplement. The 4 Submissions are attached for ease of reference.

In addition to the comments and questions raised in the attached documents, the key issues identified by CCWA within the PER are described below.

In this case, CCWA raises issues with the approach that the Proponent has taken with regards to this Development (i.e. PER process, technical design and consultation process).

2. INTEGRITY OF PER PROCESS

PER Section 5 "Environmental Impact Assessment"

Activities that would be reasonably expected to be undertaken following environmental approval have already commenced, undermining the integrity of the legislated and PER consultation process. For example, the:

(d) Proponent has awarded major contracts and given FEED to the Development prior to receiving environmental approvals.

(e) Proponent has commenced construction of an FPSO prior to environmental approval being granted/considered and conditions being placed on the Development based on this design option by Government.

(f) Drilling Environment Plan has been approved by Government prior to environmental approval being given for the Development itself.

3. DESIGN & INDUSTRY BEST PRACTICE

PER Section 2 "Project Description"

3.1 Preferred Design

CCWA does not support the Proponents preferred design option (FPSO) in light of alternatives (tieback to Vincent FPSO) that would minimise environmental impact and risk (environmental impact associated with FPSO, cumulative impact of 5 FPSOs, reduction of potential for spills via off-takes and disconnection process, use of supply vessels for mooring in known breeding and resting grounds including the Exmouth Gulf and regular shipping across known migratory paths of vulnerable species etc).

Insufficient argument or substantiation has been provided in relation to the purported "Disadvantages" for the Tie-back scenario.

The design option should be based on proximity to the Ningaloo Reef and resting, migratory and breeding areas of vulnerable species rather than a perceived risk or likelihood of significant environmental harm largely determined by desktop studies and workshops.

3.2 FPSO Design

Section 2 states that the FPSO will be double hulled and provides justification for the use of a double hull, however, later in the same section on page 37 it states, *"The FPSO will be double-sided, with a single-hulled bottom. This means the sides of the vessel (around the cargo tanks) will have two layers of steel to minimise the chance of an oil spill occurring should a collision breach the external hull of the FPSO. As part of the development's hazard identification process, it was determined that a single-hulled bottom was environmentally appropriate given the low risk of running aground and associated rupture of the bottom of the vessel, as it will be either moored on site or transiting out to sea in deep water during adverse weather conditions (i.e., it is not proposed to need to enter into a harbour or shallow-water area during bad weather)".*

As the Proponent is aware based on the public Submissions made by the CCWA and CLO the 4 nearby Developments, CCWA opposes the use of a single hull bottom on the FPSO (or single hull oil tankers servicing the FPSO). Precents and industry best practice is proven and demonstrated by the 4 nearby Developments for which the FPSOs are double hulled. History has shown that single hulls do not afford adequate protection from spills.

In addition, submissions made by CCWA and the CLO on previous EIS for nearby Developments have clearly stated that both FPSO and Oil Tankers should be double hulled and these options have been adopted for those developments.

The PER states that the potential for the FPSO to run aground in negligible and that the disconnection process in the case of severe weather events would be a 6 hour period. Contrary to this, the EIS for the Vincent EIS states that this process is likely to take 12 hours with an internal turret system. The age of the tanker to be converted should be provided and the design criteria used to addresses extreme weather conditions.

3.3 Responsibility for FPSO Operator, Contractors and Third Parties

CCWA does not accept the Proponent's position of abrogating responsibility for the FPSO to the third party who would *"be the responsible owner of the FPSDO Operations Environment Plan on behalf of Apache"* (1.3.4, page 15). This does not meet industry best practice set by the Proponents for nearby Developments who accept responsibility for the actions (and any consequences) of third parties/contractors. Details on the proposed Contractor including their environmental record, should be addressed in the PER Supplement.

The PER Supplement should include emergency response arrangements for third party vessel operators associated with the Development (e.g. Places of refuge in the case of cyclonic or severe storm event, support vessels including tug boats for operational issues such as engine failure etc). The PER Supplement should demonstrate how such third party operators would be made aware of the importance of the adjacent Marine Parks and detail any training that would be provided by the Proponent to such operators.

3.4 Reinjection of Produced Water and Gas

The area is subject to extreme natural events (tsunami's, earthquakes and tremors etc). The PER Supplement should verify how safe this form of storage is, in both the short term and long term (beyond the life of Development). This should be verified bearing in mind the changes to the seabed resulting from this and nearby Developments (i.e. Consequence of removing oil from earth's crust and the purpose of oil in the geology of the area).

4. CUMULATIVE IMPACT

PER Section 6 "Cumulative Impact"

The cumulative impact study should include the likely activities of the surrounding region for the life of the Development (i.e. Other 4 Developments and "reasonably foreseeable activities" (including potential tiebacks, use of the Gulf and Exmouth onshore infrastructure etc).

The PER Supplement should demonstrate that the response and recovery equipment and the numbers of trained personnel in Exmouth are sufficient to cope with spills involving the combined developments in the Exmouth Sub-basin.

In addition, the PER Supplement should detail any investigations undertaken into alternative routing of coastal shipping to the west of the Development (as well as other nearby developments) in order to reduce congestion on the eastern side of the Development (i.e. Reducing the likelihood of collision of vessels, noise and collision impacts on cetacean migration routes, interference with fishing activities etc).

Finally, the PER Supplement should contain a commitment to address cumulative impact as part of any future Environment Plans (and other applicable documentation) with particular reference in the context of the activity and its timing.

5. COMMUNITY CONSULTATION

PER Section 3 "Community Consultation"

CCWA considers the consultation process for the PER is flawed for the following reasons.

5.1 Commencement

(c) The process commenced after the Referral by the Proponent and setting by the Government of the level of environmental approval. Proponents of nearby Developments commenced this process prior to this stage of the environmental approvals process and notified environment groups of its Referrals and their intentions in a timely manner.

(d) It has been made clear in the past (a PER level of assessment was sought for Stybarrow and the Referral was responded to by CCWA) that an EIS level of assessment should be set for any Developments (or proposed additional activities) due to the close proximity to the Ningaloo Marine Park Boundary and migratory paths for vulnerable species. CCWA considers that a government and industry precedent was set with the requirement of Environmental Impact Statements (EIS) for the 4 nearby Developments.

5.2 Involvement of Conservation Groups

Since 2001, Exmouth, Perth and National Conservation Groups have been consulted and provided with the resources to participate in the EIS Consultation process for the nearby Developments. Proponents of nearby Developments with existing environmental approvals made available a resource (independent CLO) to local, state and national conservation groups to allow for their participation in any consultation processes (e.g. attendance at community/stakeholder meetings and review of documents arising). Resources were not offered to Conservation Groups for this Development.

5.3 Consultation Tools & General Public Awareness

The PER suggests that the SCG meetings were poorly attended by stakeholders due to saturation of the issues. CCWA does not agree with this and in the case that the Proponent was receiving such feedback (claims should be verified by data in PER Supplement), may have chosen another approach or consultation method. Examples of other suggested reasons for poor attendance include:

- Lack of resources (in the case of community and non-profit organisations)
- Fear that their involvement or level of participation in the consultation process may be misinterpreted as endorsement of either the consultation process or the proposed Development (see PER Attachment Newsletter 2, June 2007).
- It is noted in Attachment 1 that less than 14 days was provided between the date of public advertising for SCG members and the first meeting. Examples have not been provided on the nature of advertisements for stakeholders beyond Exmouth.

Whilst specific stakeholders have been made aware of the details of the proposed Development, it is suggested that the general public of Exmouth, WA and Australia is not aware. This may require the use of mainstream media rather than tools used to target specific stakeholders such as SCGs and newsletters. Awareness (and promotion) of the existence of the website by the general public is unknown (and not demonstrated by website data collected).

The PER Supplement should provide detail on the level of consultation undertaken with key NGOs including conservation groups and the indigenous community.

6. INDIGENOUS ISSUES

PER Sections 3 "Community Consultation" and "4.5.13 Aboriginal Heritage, Social and Cultural Values"

The following comments are as per feedback received via consultation with the Endorsed Representative for the Custodian of the North West (NW) Cape, Mr Syd Dale. The Endorsed Representative is also the Chairperson of *'NW Cape Exmouth Aboriginal Corporation'.*

6.1 The PER states (page 124) that *"The Jinigudira and Baiyungu people, or tribes, were the first to occupy the area, with the former occupying most of the land adjacent to the reef and northern cape (CALM/MPRA, 2005)… Both tribes are recognised as the traditional owners of this land, although these families now live in regional centres, including Onslow and Carnarvon".*

The statement contains incorrect references to the traditional owners. The Jinigudira ancestors and their people are the traditional owners and people of NW Cape (i.e. not the Baiyungu). Their country covers from Mauds Landing across and up the coast past Tent Island.

The heart of Baiyungu's country is Minilya. The tribes meet at Mauds Landing every second year. Verification of this comes from the Baiyungu matriarch, Mrs Bessie Lyndon.

6.2 The PER states (page 124) that *"Six Exmouth residents are of Aboriginal ancestry according to the ABS 2006 Census (ABS, 2007)".*

Six Exmouth residents of aboriginal ancestry are associated with the Custodian for NW Cape, Mr Syd Dale, and his family. Although not official, there are more than six Exmouth residents of aboriginal ancestry (estimated more than 50) and other aboriginal families living in Exmouth.

6.3 The PER states (page 124) that *"An endorsed representative for the Custodian of the North West Cape, Mr Syd Dale, works for the North West Cape (Exmouth) Aboriginal Corporation dealing with development and other issues that may impact on Aboriginal heritage sites or values in the region. Apache has liaised with his endorsed representative to ensure its activities do not impinge on Aboriginal sites or values".*

It should be noted that nothing is passed by the Endorsed Representative. All must be endorsed by the Custodian.

The reference to *'North West Cape (Exmouth) Aboriginal Corporation'* should exclude the brackets.

The final sentence in the above PER statement is incorrect. The Endorsed Representative has not been approached by the Proponent specifically with regards to Aboriginal sites or values.

The following comments are made with regards to the consultation process undertaken by the Proponent with the Endorsed Representative.

One introductory meeting was held prior to forming the Stakeholder Consultation Group (SCG) in May 2007 (see Table 3.3 page 72). Some SCG meetings were not attended by the Endorsed Representative due to Gnulli business off country.

The PER Attachment (page 334) *"Newsletter 2, June 2007",* whilst general about government representation at the first SCG meeting, makes specific reference to the *'North West Cape Exmouth Aboriginal Corporation'.* The Proponent has not sought approval from the Endorsed Representative for use of the Corporation's name in such context in Proponent's marketing/publications.

The name suggested by the Proponent for the proposed FPSO was not given nor endorsed by the Custodian of NW Cape or his representatives.

Verbal contact was made prior to 15 August 2007 for approval of an aboriginal name for the vessel (FPSO). After consultation with the Custodian an email was sent from the Chairperson to the Proponent instructing them that there are very strict processes and protocol for any name giving. Endorsement of the name was required by the Proponent within a limited time frame and it should be noted that such processes may take from 8 months to 1 year.

The example has been set, having been put in place by all liaison activities and events with Woodside, Maersk and Mitsui for the care of his country. These existing processes are recommended for this and any future activities as the Proponents and Custodian have a cultural and heritage responsibility to the ancestors of Jinigudira country.

The Endorsed Representative supports with respect, communication and negotiations that are held with the Custodian and his representatives regarding all activities relating to any developments that come onto the country and seas for which he is responsible.

The Endorsed Representative, on behalf of the Custodian, looks forward to receiving the following documentation under Van Gogh's project to compliment this PER including, but not limited to:

- Written information regarding the indigenous name proposed by the Proponent of the FPSO;
- PER Supplement; and

- Any Draft and Final Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response
  Plans etc.

7. FUTURE CONSULTATION

As some information is not available prior to the detailed design stage of the project, as per the precedent set by Proponents of nearby Developments, the PER Supplement should include a commitment that consultation would occur during the Development of any associated plans (i.e. Including, but not limited to, Draft and Final versions of Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response Plans etc).

The PER Supplement should also include a commitment that consultation would be undertaken in the case of any future phases, tiebacks, workovers, additional wells or other associated activities (e.g. Gas pipelines, surveys etc).

Cross-reference Table of Submissions and Responses

CROSS-REFERENCE TABLE, LISTING COMMENTS/QUESTIONS RECEIVED, SECTIONS IN THE DRAFT PER AND RESPONSES PROVIDED IN THE SUPPLEMENT

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
1.	CCG	Executive Summary page XXIX & Section 5.7.1 Marine Mammals page 177	Installation is to be during October to January- having potential impacts on whale resting season in Exmouth gulf- 2x HLV's insitu on moorings in gulf. Peak season may be mid September- but season continues past this point and large numbers continue to utilize the gulf. CCG advocates liaison with Curt Jenner regarding this possible impact on humpback whales.	**Section 2.1**
2.	CCG	Executive Summary page XXXIX Table 1	Does the "installation vessels" who will not discharge into Exmouth gulf also cover, HLV's, and tenders?	**Section 2.2**
3.	CCG	Executive Summary page XLI Table 1	Is Apache involved in a Carbon onset program to counter act those emissions occurring? This would be a great company policy to initiate.	**Section 2.3**
4.	CCG	Executive Summary page LI Table 3 Section 5.8.2 Impacts on Tourism page 181	Tourism is one of the largest local businesses. Ningaloo is renown for its remoteness and pristine environment. The impact of having large industrial ships anchored in Exmouth gulf detracts for this significantly and is going to be one of the fist visual impacts the tourist encounters with the local ocean. The local tourism market would argue that this does create a significant change with the cumulative impact of all operators.	**Section 2.4**
5.	CCG	Section 1.4.3 Energy Efficiencies Opportunity Act page 17	What further factors can be introduced to reduce Apaches energy use?	**Section 2.3**
6.	CCG	Section 2.4.1 Tanker Conversion Page 35	What are the plans for the removed materials from the MT Kudam? Have any of the materials been recycled? Have plans been put into place to ensure those materials not able to be recycled are disposed of in a responsible manner?	**Section 2.5**
7.	CCG	Section 2.4.5 Ancillary Systems Page 45	It should be company policy that laundry, kitchen and cleaning detergents purchased for use be biodegradable unless contradicted.	**Section 2.6**
8.	CCG	Section 5.3.3 Artificial Lighting Page 146	FPSO lighting increased at night "to allow safe night-time loading and unloading of support vessels and offtake tankers"- there is an huge increase in accidents when operating at night. Include in table 5.6 Crude oil spills- FPSO (pg 142) no off loading at night, if it takes 30 hours to offload- this may not be possible but time of connection and disconnection should be within daylight hours.	**Section 2.7**
9.	CCG	Table 5.5 page 142-143	This being the biggest potential devastating impact of the project it is vital that oil spill plans are not only in place but are practiced (frequently) so that the event of a "worst case scenario" it is dealt with in the fastest most effective possible manner.	**Section 2.8**
10.	CCG	Section 5.7.2 Turtles page 178	Is there research to show whether hatchlings move towards light once in the water? If this is the case then hatchlings would drawn to the FPSO and the contaminates in the FPSO's close proximity. This needs further clarification.	**Section 2.9**

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
11.	CCG	Section 5.8.6 Impacts on Other Industry & Commerce page 187	Can it been shown that the number of economy seats available remains unchanged- or are these full price seats?	**Section 2.10**
12.	CCG	Section 5.9.9 Oil Spill Fate & Trajectory Modelling Results page 208	Why is this? It is physically impossible to have an oil spill during the disconnection process? Cyclonic winds actually create strong enough winds, for a long enough time in the direction towards the Ningaloo reef system and are likely events. They should have been modeled.	**Section 2.11**
13.	CCG	Section 5.9.11 Mitigation & Management Measures for Hydrocarbon Spills page 230	The importance of these and their regularity cannot be understated. All personal should be involved in training and regular mocks on the vessel (not limited to table top exercises). Having a response process on paper is not considered to be adequate. Proof that physical implementation should be included.	**Section 2.8**
14.	CCG	Section 6.4.1 FPSO's page 237	No- BUT there would be a much increased size of the footprint that the noise covers. Noise was identified as having a detrimental impact and the area would become much harder for species to avoid; especially migrating whales.	**Section 2.12**
15.	CCG	Section 6.7.1 Greenhouse Gases page 242	1,102,000t of CO_2-e yearly is a huge amount of greenhouse gas emissions. Considering the time frame it would take to break down these gases, and the number of years of operation- this is not negligible. This area needs to be worked on and improved.	**Section 2.3**
16.	CCG	Section 6.8 Oil Spills page 243-247	In view of the fact there are combined response planned between the 3 companies- there should be combined mocks to practice for such a scenario. Not just on paper- real time practical responses, checking both equipment and personal will be effective in a real situation.	**Section 2.8**
17.	CCG	Section 6.9.4 Shipping page 256	How will that be enforced? Being so close to a major shipping route, there is increased chance of error and collision? Decreasing the lighting on the FPSO's and decreased flaring will make it even more difficult to see, being a "ship" not a rig. Especially at night.	**Section 2.13**
18.	CCG	Section 7.4.2 Environmental Education page 264	What about major oil spill response- where the response is significantly different and impact also.	**Section 2.8**
19.	CCG	Section 7.4.7 Emergency Preparedness & Response page 269	This needs to be practiced.	**Section 2.8**
20.	CCG	Table 5.1 page 127	This averages a vessel every day between the 5 projects- a cumulative impact that needs assessment.	**Section 2.14**

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
21.	CCG	Table 5.1 page 127	1,172,000t/year emissions between the 5 sites- is significant emissions and needs to be addressed and reduced.	**Section 2.3**
22.	CCG	N.A.	Are there plans in place to recycle obsolete equipment at the end of the project?	**Section 2.15**
23.	CCG	N.A.	With the majority of employees flying in and out of Learmonth- does Apache have a flight carbon offset policy to offset all employee flights (only about $8 return per flight from Perth to Learmonth)?	**Section 2.16**
24.	CCWA	N.A.	CCWA has reviewed the PER and found that the majority of comments made in these submissions are also applicable to the Van Gogh PER. Hence, CCWA requests that the Proponent addresses all recommendations (where relevant) made in these documents in the PER Supplement.	**Section 2.17**
25.	CCWA	Section 5 Environmental Impact Assessment pages 125-232	Activities that would be reasonably expected to be undertaken following environmental approval have already commenced, undermining the integrity of the legislated and PER consultation process. For example, the:	**Section 2.18**
			(g) Proponent has awarded major contracts and given FEED to the Development prior to receiving environmental approvals.	
			(h) Proponent has commenced construction of an FPSO prior to environmental approval being granted/considered and conditions being placed on the Development based on this design option by Government.	
			(i) Drilling Environment Plan has been approved by Government prior to environmental approval being given for the Development itself.	
26.	CCWA	Section 2 Project Description pages 21-65	CCWA does not support the Proponents preferred design option (FPSO) in light of alternatives (tieback to Vincent FPSO) that would minimise environmental impact and risk (environmental impact associated with FPSO, cumulative impact of 5 FPSOs, reduction of potential for spills via off-takes and disconnection process, use of supply vessels for mooring in known breeding and resting grounds including the Exmouth Gulf and regular shipping across known migratory paths of vulnerable species etc).	**Section 2.19**
			Insufficient argument or substantiation has been provided in relation to the purported "Disadvantages" for the Tie-back scenario.	
			The design option should be based on proximity to the Ningaloo Reef and resting, migratory and breeding areas of vulnerable species rather than a perceived risk or likelihood of significant environmental harm largely determined by desktop studies and workshops.	

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
27.	CCWA	Section 2.4 Floating Production, Storage & Offloading Vessel page 35	*Section 2 states that the FPSO will be double hulled and provides justification for the use of a double hull, however, later in the same section on page 37 it states, "The FPSO will be double-sided, with a single-hulled bottom. This means the sides of the vessel (around the cargo tanks) will have two layers of steel to minimise the chance of an oil spill occurring should a collision breach the external hull of the FPSO. As part of the development's hazard identification process, it was determined that a single-hulled bottom was environmentally appropriate given the low risk of running aground and associated rupture of the bottom of the vessel, as it will be either moored on site or transiting out to sea in deep water during adverse weather conditions (i.e., it is not proposed to need to enter into a harbour or shallow-water area during bad weather)".*	**Section 2.19**
			As the Proponent is aware based on the public Submissions made by the CCWA and CLO the 4 nearby Developments, CCWA opposes the use of a single hull bottom on the FPSO (or single hull oil tankers servicing the FPSO). Precents and industry best practice is proven and demonstrated by the 4 nearby Developments for which the FPSOs are double hulled. History has shown that single hulls do not afford adequate protection from spills.	
			In addition, submissions made by CCWA and the CLO on previous EIS for nearby Developments have clearly stated that both FPSO and Oil Tankers should be double hulled and these options have been adopted for those developments.	
			The PER states that the potential for the FPSO to run aground in negligible and that the disconnection process in the case of severe weather events would be a 6 hour period. Contrary to this, the EIS for the Vincent EIS states that this process is likely to take 12 hours with an internal turret system. The age of the tanker to be converted should be provided and the design criteria used to addresses extreme weather conditions.	
28.	CCWA	Section 1.3.4 Environment Plan page 13	CCWA does not accept the Proponent's position of abrogating responsibility for the FPSO to the third party who would *"be the responsible owner of the FPSDO Operations Environment Plan on behalf of Apache"* (1.3.4, page 15). This does not meet industry best practice set by the Proponents for nearby Developments who accept responsibility for the actions (and any consequences) of third parties/ contractors. Details on the proposed Contractor including their environmental record, should be addressed in the PER Supplement.	**Section 2.20**
			The PER Supplement should include emergency response arrangements for third party vessel operators associated with the Development (e.g. Places of refuge in the case of cyclonic or severe storm event, support vessels including tug boats for operational issues such as engine failure etc). The PER Supplement should demonstrate how such third party operators would be made aware of the importance of the adjacent Marine Parks and detail any training that would be provided by the Proponent to such operators.	
29.	CCWA	Section 2.7.2 Oil Processing, PFW, Gas Treatment & Crude Storage page 61	The area is subject to extreme natural events (tsunami's, earthquakes and tremors etc). The PER Supplement should verify how safe this form of storage is, in both the short term and long term (beyond the life of Development). This should be verified bearing in mind the changes to the seabed resulting from this and nearby Developments (i.e. Consequence of removing oil from earth's crust and the purpose of oil in the geology of the area).	**Section 2.21**

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
30.	CCWA	Section 6 Cumulative Impact Assessment page 233-262	The cumulative impact study should include the likely activities of the surrounding region for the life of the Development (i.e. Other 4 Developments and "reasonably foreseeable activities" (including potential tiebacks, use of the Gulf and Exmouth onshore infrastructure etc).	**Section 2.22**
			The PER Supplement should demonstrate that the response and recovery equipment and the numbers of trained personnel in Exmouth are sufficient to cope with spills involving the combined developments in the Exmouth Sub-basin.	
			In addition, the PER Supplement should detail any investigations undertaken into alternative routing of coastal shipping to the west of the Development (as well as other nearby developments) in order to reduce congestion on the eastern side of the Development (i.e. Reducing the likelihood of collision of vessels, noise and collision impacts on cetacean migration routes, interference with fishing activities etc).	
			Finally, the PER Supplement should contain a commitment to address cumulative impact as part of any future Environment Plans (and other applicable documentation) with particular reference in the context of the activity and its timing.	
31.	CCWA	Section 3 Community Consultation page 67-76	CCWA considers the consultation process for the PER is flawed for the following reasons.	**Section 2.23**
			1 Commencement (e) The process commenced after the Referral by the Proponent and setting by the Government of the level of environmental approval. Proponents of nearby Developments commenced this process prior to this stage of the environmental approvals process and notified environment groups of its Referrals and their intentions in a timely manner.	
			(f) It has been made clear in the past (a PER level of assessment was sought for Stybarrow and the Referral was responded to by CCWA) that an EIS level of assessment should be set for any Developments (or proposed additional activities) due to the close proximity to the Ningaloo Marine Park Boundary and migratory paths for vulnerable species. CCWA considers that a government and industry precedent was set with the requirement of Environmental Impact Statements (EIS) for the 4 nearby Developments.	
			2 Involvement of Conservation Groups |Since 2001, Exmouth, Perth and National Conservation Groups have been consulted and provided with the resources to participate in the EIS Consultation process for the nearby Developments. Proponents of nearby Developments with existing environmental approvals made available a resource (independent CLO) to local, state and national conservation groups to allow for their participation in any consultation processes (e.g. attendance at community/stakeholder meetings and review of documents arising). Resources were not offered to Conservation Groups for this Development.	

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
			3 Consultation Tools & General Public Awareness The PER suggests that the SCG meetings were poorly attended by stakeholders due to saturation of the issues. CCWA does not agree with this and in the case that the Proponent was receiving such feedback (claims should be verified by data in PER Supplement), may have chosen another approach or consultation method. Examples of other suggested reasons for poor attendance include:	
			• Lack of resources (in the case of community and non-profit organisations) • Fear that their involvement or level of participation in the consultation process may be misinterpreted as endorsement of either the consultation process or the proposed Development (see PER Attachment Newsletter 2, June 2007). • It is noted in Attachment 1 that less than 14 days was provided between the date of public advertising for SCG members and the first meeting. Examples have not been provided on the nature of advertisements for stakeholders beyond Exmouth.	
			Whilst specific stakeholders have been made aware of the details of the proposed Development, it is suggested that the general public of Exmouth, WA and Australia is not aware. This may require the use of mainstream media rather than tools used to target specific stakeholders such as SCGs and newsletters. Awareness (and promotion) of the existence of the website by the general public is unknown (and not demonstrated by website data collected).	
			The PER Supplement should provide detail on the level of consultation undertaken with key NGOs including conservation groups and the indigenous community.	
32.	CCWA	Section 3 Community Consultation page 67-76 & Section 4.5.13 Aboriginal Heritage, Social & Cultural Values	The following comments are as per feedback received via consultation with the Endorsed Representative for the Custodian of the North West (NW) Cape, Mr Syd Dale. The Endorsed Representative is also the Chairperson of 'NW Cape Exmouth Aboriginal Corporation'.	**Section 2.23**
			1 The PER states (page 124) that *"The Jinigudira and Baiyungu people, or tribes, were the first to occupy the area, with the former occupying most of the land adjacent to the reef and northern cape (CALM/MPRA, 2005)… Both tribes are recognised as the traditional owners of this land, although these families now live in regional centres, including Onslow and Carnarvon".*	
			The statement contains incorrect references to the traditional owners. The Jinigudira ancestors and their people are the traditional owners and people of NW Cape (i.e. not the Baiyungu). Their country covers from Mauds Landing across and up the coast past Tent Island.	
			The heart of Baiyungu's country is Minilya. The tribes meet at Mauds Landing every second year. Verification of this comes from the Baiyungu matriarch, Mrs Bessie Lyndon.	
			2 The PER states (page 124) that *"Six Exmouth residents are of Aboriginal ancestry according to the ABS 2006 Census (ABS, 2007)".*	

Ref. No.	Respondent	Relevant Section of Draft PER	Comment/Question Raised	Response in Supplement
			Six Exmouth residents of aboriginal ancestry are associated with the Custodian for NW Cape, Mr Syd Dale, and his family. Although not official, there are more than six Exmouth residents of aboriginal ancestry (estimated more than 50) and other aboriginal families living in Exmouth.	
			3 The PER states (page 124) that "*An endorsed representative for the Custodian of the North West Cape, Mr Syd Dale, works for the North West Cape (Exmouth) Aboriginal Corporation dealing with development and other issues that may impact on Aboriginal heritage sites or values in the region. Apache has liaised with his endorsed representative to ensure its activities do not impinge on Aboriginal sites or values".*	
			It should be noted that nothing is passed by the Endorsed Representative. All must be endorsed by the Custodian.	
			The reference to *'North West Cape (Exmouth) Aboriginal Corporation'* should exclude the brackets.	
			The final sentence in the above PER statement is incorrect. The Endorsed Representative has not been approached by the Proponent specifically with regards to Aboriginal sites or values.	
			The following comments are made with regards to the consultation process undertaken by the Proponent with the Endorsed Representative.	
			One introductory meeting was held prior to forming the Stakeholder Consultation Group (SCG) in May 2007 (see Table 3.3 page 72). Some SCG meetings were not attended by the Endorsed Representative due to Gnulli business off country.	
			The PER Attachment (page 334) *"Newsletter 2, June 2007"*, whilst general about government representation at the first SCG meeting, makes specific reference to the '*North West Cape Exmouth Aboriginal Corporation'.* The Proponent has not sought approval from the Endorsed Representative for use of the Corporation's name in such context in Proponent's marketing/publications.	
			The name suggested by the Proponent for the proposed FPSO was not given nor endorsed by the Custodian of NW Cape or his representatives.	
			Verbal contact was made prior to 15 August 2007 for approval of an aboriginal name for the vessel (FPSO). After consultation with the Custodian an email was sent from the Chairperson to the Proponent instructing them that there are very strict processes and protocol for any name giving. Endorsement of the name was required by the Proponent within a limited time frame and it should be noted that such processes may take from 8 months to 1 year.	
			The example has been set, having been put in place by all liaison activities and events with Woodside, Maersk and Mitsui for the care of his country. These existing processes are recommended for this and any future activities as the Proponents and Custodian have a cultural and heritage responsibility to the ancestors of Jinigudira country.	

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			The example has been set, having been put in place by all liaison activities and events with Woodside, Maersk and Mitsui for the care of his country. These existing processes are recommended for this and any future activities as the Proponents and Custodian have a cultural and heritage responsibility to the ancestors of Jinigudira country.	
			The Endorsed Representative supports with respect, communication and negotiations that are held with the Custodian and his representatives regarding all activities relating to any developments that come onto the country and seas for which he is responsible.	
			The Endorsed Representative, on behalf of the Custodian, looks forward to receiving the following documentation under Van Gogh's project to compliment this PER including, but not limited to: • Written information regarding the indigenous name proposed by the Proponent of the FPSO; • PER Supplement; and • Any Draft and Final Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response Plans etc.	
33.	CCWA	N.A.	As some information is not available prior to the detailed design stage of the project, as per the precedent set by Proponents of nearby Developments, the PER Supplement should include a commitment that consultation would occur during the Development of any associated plans (i.e. Including, but not limited to, Draft and Final versions of Environment Plans, Oil Spill Contingency Plans, Cyclone Contingency Plans, Decommissioning Plans, Waste Management Plans, Safety Case, Wildlife Response Plans etc).	**Section 2.26**
			The PER Supplement should also include a commitment that consultation would be undertaken in the case of any future phases, tiebacks, workovers, additional wells or other associated activities (e.g. Gas pipelines, surveys etc).	

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