

Environmental Impact Classification
Pursuant to Section 98 of the *Petroleum and Geothermal Energy Act 2000*

Officer Basin Exploration Drilling Operations

15 April 2010

INTRODUCTION

Pursuant to section 98 of the *Petroleum and Geothermal Energy Act 2000* (the Act) the Minister must classify the regulated activities covered by a prepared Environmental Impact Report (EIR) as either of low, medium or high environmental impact.

The classification must be made on the basis of:

- The prepared EIR;
- Criteria established for classifying the level of environmental impact of regulated activities, a copy of which is found on the PIRSA Petroleum and Geothermal Group (PIRSA) web page:

http://www.pir.sa.gov.au/data/assets/pdf_file/0008/27728/sigactv6.pdf; and

- Comment received from relevant Government departments in accordance with established administrative arrangements between these departments and PIRSA.

This document summarises the classification made by PIRSA on Ahava Energy's proposed exploration drilling activities in the Officer Basin. This classification is based on information provided in the original EIR prepared by Coffey Environment (February 2010).

SUMMARY OF CLASSIFICATION

- 1) From an analysis of the environmental significance of the events and potential impacts associated with the proposed activities against the classification criteria referred to above (assessment provided as Attachment 1), these regulated activities have been classified as **low environmental impact**.
- 2) The majority of events associated with the proposed exploration drilling operations were assessed to be of low environmental significance. This is due to the fact that appropriate management measures will be implemented by Ahava Energy to avoid or mitigate any potential environmental consequences.
- 3) For a low environmental impact classification, PIRSA is required to consult with Department for Environment and Heritage (DEH) and the Environment Protection Authority (EPA) in accordance with the administrative arrangement dated 11 November 2005 and 21 November 2005 respectively.
- 4) Comments received from DEH and EPA on 6 April 2010 and 7 April 2010 respectively, agreed with the low environmental impact classification.

Pursuant to delegated powers, I hereby classify this regulated activity as **low environmental impact**.



Barry Goldstein

Director Petroleum & Geothermal

Delegate of the Minister for Mineral Resources Development

Attachment 1

ACTIVITY:	Environmental Significance Assessment																		
PROJECT:	APY Lands - Exploration Drilling Operations																		
DATE:	4 March 2010																		
				ABBREVIATIONS: H = High certainty; M = Medium certainty; L = Low certainty															
				PREDICTABILITY						MANAGEABILITY									
REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	COMMENTS	Environmental significance	
	Natural Environment Impacts																		
	Soil Impacts																		
4.2, Table 4.1& 4.2, 6.4.1		Earthmoving activities during wellsite, access track and camp site preparation.	Soil erosion; Soil inversion; Soil compaction;	H	M	H	H	H	2	No	Med	Confined				3	Drilling activities will be accessed using existing tracks, seismic lines and roads where possible. Safety requirements will also be considered, as roads will have to be able to withstand heavy vehicle weights. Drilling pads are approximately 1 hectare in size to accommodate rig and associated infrastructure. Construction methods will vary depending on the land systems identified in Table 4.1 and 4.2. Camp sites are located near existing tracks or roads, and on previously disturbed areas where possible.	LOW	
4.2.1, Table 4.1& 4.2, 6.4.2		Vehicle movement during construction, drilling and monitoring activities	Soil erosion; Soil compaction; Wheel tracks	M	H	M	M	H	2	No	Med	Confined				3	Consultation will occur with APYLMU to determine truck routes, setting and observance of speed limits and usage of signs where appropriate. Existing tracks, seismic lines and roads will be used where possible. Roads will be constructed to withstand heavy vehicle weights.	LOW	
6.4.4		Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	Soil contamination	M	H	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW	
4.3, 6.4.4		Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Soil contamination	M	H	H	H	H	2	No	Low					1	A mud sump is constructed at the wellsite for the disposal of drill cuttings and the recirculation of water into the mud system. Drilling muds are generally composed of non-toxic materials or are likely to have a low effective chronic toxicity due to low concentrations present within the drilling mud. The volumes of drilling fluid used compared to aquifer volume is very small.	LOW	
6.4.6		Explosion or fire during drilling	Soil contamination	M	H	M	H	H	2	No	Low					1	Significant environmental damage can result from the unscheduled emission or burning of hydrocarbons. Oils recovered from drilling activities have the potential to contaminate the local environment if not handled and disposed of appropriately. The loss of some substances could result in an explosion or fire if an ignition source is activated.	LOW	
4.2.3, 6.4.6		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Soil contamination	M	H	H	H	H	2	No	Low					1	The primary hazard with the handling of hydrocarbons, fuel and chemicals is associated with fire, spills or leaks. EPA Guidelines for Bunding and Spill Management will be followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are positioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.	LOW	
4.2.3		Disposal of domestic and chemical waste; Sewage treatment	Soil contamination; soil inversion	M	H	H	H	H	2	No	Low					1	Contaminated material collected and disposed of at an EPA licensed facility, licensed to accept the material. Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.	LOW	
	Groundwater Impacts																		
4.5, 6.4.4		Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	Crossflow; Aquifer contamination; Reduction in aquifer pressure	M	M	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW	
4.4.1		Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Shallow groundwater contamination	M	H	M	H	H	2	No	Low					1	Initial production testing (IPT) is short term (< 10days) and usually involves small volumes of water and hydrocarbons. Water produced during IPT is disposed in the drilling sump where it evaporates. Water based fluid used in all hole sections and the use of polymers to minimise filtration invasion the production hole section. No synthetic or hydrocarbon based mud systems will be used.	LOW	

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6.4.4		Loss of radioactive source down hole	Groundwater contamination	H	M	H	H	H	2	No	Low					1	The likelihood of losing a tool downhole is considered unlikely and can generally be retrieved. However, if it cant be retrieved the tool is cemented in the hole to prevent it moving into adjacent formations.	LOW		
6.4.4		Drilling fluids in down hole environment	Groundwater contamination of freshwater aquifers	M	H	M	H	H	2	No	Low					1	During drilling activities, if lost or partial circulation occurs, drilling fluids could potentially invade freshwater aquifers and cause contamination. However, drilling muds are generally composed of non-toxic materials or are likely to have a low effective chronic toxicity due to the low concentrations present within the drilling mud. The volumes of drilling fluid used compared to the aquifer volume is also very small.	LOW		
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Groundwater contamination	M	H	H	H	H	2	No	Low					1	EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are positioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.	LOW		
6.4.4		Explosion or fire during drilling	Crossflow; Aquifer contamination; Reduction in aquifer pressure	M	H	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW		
6.4.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Groundwater contamination	M	H	H	H	H	2	No	Low					1	Use of approved portable sewerage treatment plants. Segregate bins for rubbish removal and use of EPA approved vehicles for removing liquid hydrocarbons or other waste oil.	LOW		
6.4.7		Aquifer use for water supply during drilling	Depletion of artesian and sub-artesian aquifers	M	H	H	M	H	2	No	Low					1	Water will be supplied from existing bores. If insufficient supply is available new wells may be drilled near wellsites. Only small amounts of water will be required for exploration drilling activities.	LOW		
	Surface Water Impacts																			
4.2, Table 4.1& 4.2, 5.5.1, 6.4.1		Earthmoving activities during wellsite, access track and camp site preparation.	Disturbance to natural drainage patterns	M	H	H	M	H	2	No	Low					1	All of the rivers in the licence areas are ephemeral and are short in length. Drilling activities will be accessed using existing tracks, seismic lines and roads where possible. Safety requirements will also be considered, as roads will have to be able to withstand heavy vehicle weights. Drilling pads are approximately 1 hectare in size to accomodate rig and associated infrastructure. Construction methods will vary depending on the land systems identified in Table 4.1 and 4.2. Camp sites are located near existing tracks or roads, and on previously disturbed areas where possible.	LOW		
6.4.6		Explosion or fire during drilling	Surface water contamination	M	H	M	H	H	2	No	Low					1	Significant environmental damage can result from the unscheduled emission or burying of hydrocarbons. Oils recovered from drilling activities have the potential to contaminate the local environment if not handled and disposed of appropriately. The loss of some substances could result in an explosion or fire if an ignition source is activated.	LOW		
4.4.1		Disposal of drilling and completion fluids to flare pits during well testing and clean-up; Disposal of drill cuttings and muds	Surface water contamination; disturbed drainage patterns	M	H	M	H	H	2	No	Low					1	Initial production testing (IPT) is short term (< 10days) and usually involves small volumes of water and hydrocarbons. Water produced during IPT is disposed in the drilling sump where it evaporates. Water based fluid used in all hole sections and the use of polymers to minimise filtration invasion the production hole section. No synthetic or hydrocarbon based mud systems will be used.	LOW		
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Surface water contamination	M	H	H	H	H	2	No	Low					1	EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are positioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.	LOW		

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4.2.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Surface water contamination	M	H	H	H	H	2	No	Low					1	Putrescible wastes are stored on site along with other wastes prior to disposal in a way that is aligned with EPA and Anangu requirements. Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.	LOW		
6.4.4		Blowout or kick during drilling; Equipment or tubular failure; Down hole problems; Casing or cement failure	Surface water contamination	M	H	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW		
	Vegetation Impacts																			
6.4.3		Vegetation clearance for well sites, camps and access tracks	Loss of vegetation	H	M	H	H	H	2	No	Med	Med	Confined			3	Native vegetation clearance will generally be avoided or minimised by placing wellsites and camps on previously cleared/disturbed areas. Care will be taken to avoid or minimise the clearance of heavily wooded areas (eg. woodlands that are found in or near drainage lines). Campsites will be located at the nearest available naturally clear area in which construction does not require a significant disturbance to vegetation.	LOW		
4.1.3, 4.6.6		Vegetation clearance for wellsites, camps and access tracks	Dispersion of weeds and pathogens	H	M	M	M	H	2	No	Low					1	Conduct an environmental clearance survey prior to conducting drilling activities to determine the presence of noxious weeds. Wash down of vehicles and equipment prior to entry onto the APY Lands and when moving from areas of known weed infestations.	LOW		
4.2.3		Spills and leaks associated with drilling operations, storage or transport of oil, fuels and chemicals, storage of drilling and completion fluids, refuelling operations and use of high pressure hydraulic systems.	Loss of vegetation and habitat	M	H	H	H	H	2	No	Low					1	EPA Guidelines for Bunding and Spill Management followed. Staff appropriately trained in the use of spill response equipment, to ensure spills are managed appropriately. Drip trays are positioned at the refuelling bowser and mechanical workshop to eliminate fuel and oil ground contamination.	LOW		
6.4.2		Vehicle movement during construction, drilling and monitoring activities	Loss of vegetation and habitat; Dispersion of weeds and pathogens	M	H	M	M	H	2	No	Low					1	The traversing of vehicles (eg. trucks, bulldozers, 4wds and supply trucks) to and from a well site or camp can have an impact on vegetation and contribute to weed invasion. Drilling activities will be accessed using existing tracks, seismic lines and roads where possible.	LOW		
4.2.3, 6.4.5		Disposal of domestic and chemical waste; Sewage treatment	Loss of vegetation and habitat	M	H	H	H	H	2	No	Low					1	Putrescible wastes are stored on site along with other wastes prior to disposal in a way that is aligned with EPA and Anangu requirements. Sewage systems must be managed in accordance with Public and Environmental Health (Waste Control) Regulations 1995 or operated to the satisfaction of the Department of Health.	LOW		
6.4.4		Explosion or fire during drilling	Loss or damage to vegetation and habitat	M	H	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW		
	Fauna Impacts																			
4.1.3		Earthmoving activities during preparation of drill pad, mud sump, flare pit, water sump, access tracks, camp sites and borrow pits; Heavy vehicle and rig movement	Loss of fauna habitat; disturbance to native fauna	M	H	M	H	H	2	No	Med	Med	Confined			3	Environmental clearance surveys will be conducted where drilling activities are considered to have a significant impact (direct or indirect). In particular surveys are required to determine the presence of mallee fowl and great desert skinks, as these are considered priority species in the APY Lands. Appropriately trained trackers (Anangu where possible) to identify the locations and habitats of priority species so they can be flagged and avoided.	LOW		
4.1.3		Earthmoving activities during preparation of drill pad, mud sump, flare pit, water sump, access tracks, camp sites and borrow pits; Heavy vehicle and rig movement	Provision of passage to invasive fauna species and predator species	M	H	M	M	H	2	No	Low					1	The construction of new tracks through native vegetation has the potential to increase access to non-native predators. Where possible determine baseline numbers of feral predators prior to exploration drilling. Follow-up surveys should occur periodically following well closure and restoration to determine whether numbers of predators have increased.	LOW		
6.4.4		Explosion or fire during drilling	Loss of habitat; disturbance to native fauna	M	H	M	H	H	2	No	Low					1	Blow outs are uncommon in exploratory drilling. Relevant industry guidelines, practices and procedures designed to avoid a drilling blow out which include the certification of trained individuals in well control procedures and the use of specialised well control equipment.	LOW		

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