

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

McNamara Park #1 Well Proposal

19th April 2001

INTRODUCTION

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

The classification must be made on the basis of:

- The prepared Environmental Impact Report (EIR);
- Criteria established for classifying the level of environmental impact of regulated activities, a copy of which is found on the PIRSA Petroleum Group web page:
<http://www.pir.sa.gov.au/dhtml/ss/section.php?sectID=437&templD=8>;
and
- Comment received from Planning SA, Department of Environment and Heritage (DEH) and Department for Water Resources (DWR) in accord with established administrative arrangements between these respective departments and PIRSA.

This document summarises the classification made by PIRSA on the McNamara Park #1 well proposal (regulated activity) in PEL 72 in the Otway Basin in South Australia. This classification is based on the information provided in the EIR and draft Statement of Environmental Objectives (SEO) both dated February 2001 as submitted to PIRSA by Origin Energy Ltd on the 5 March 2001.

SUMMARY OF CLASSIFICATION

- 1) From an analysis of the environmental significance of the various potential impacts associated with this operation – summarised in attachment #1 against the classification criteria – this regulated activity has been classified as **low impact**.
- 2) Comments received from DEH and DWR concur with this classification.
- 3) Despite all potential impacts having been assessed as being of low environmental significance (attachment #1), the most significant threat associated with any drilling in this region remains to be the potential for contamination of the Gambier Limestone and Dilwyn Formation aquifers. The major source of risk for this threat stems from the potential of fluid crossflow from poorer water quality aquifers and/or hydrocarbon bearing formations into these key freshwater aquifers. The risk of such crossflow results mainly in the case of poor cement integrity behind casing and/or in

cement plugs where set to isolate different formations within the well bore at abandonment.

In the case of this well, the precautions and measures outlined in the EIR and SEO that will be taken are assessed to be sufficient to ensure a very low chance of poor cement integrity resulting in poor isolation between various reservoirs.

- 4) Therefore pursuant to delegated powers dated 25 September 2000, gazetted 28 September 2000, I hereby classify this regulated acted as low impact.

R A LAWS
Director Petroleum Group
Office of Minerals and Energy Resources
Delegate of the Minister for Minerals and Energy

McNamara Park#1 - Environmental Significance Assessment				Attachment #1														
				ABBREVIATIONS: H = High certainty; M = Medium certainty; L = Low certainty														
REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						Environmental significance		
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS		SIGNIFICANCE	
Natural Environment Impacts																		
Soil Impacts																		
1.3.1, 3.1.2, Table 2		Construction of access track, pad, sump and flare pit.	Soil compaction and/or dust mobilization, increased erosion, loss of topsoil and loss of soil productivity.	H	H	H	H	H	1	No	High	Short	Small	Small	Low	2	600 meter gravelled access track will be built off existing road to the drill site. Area for drill pad of 150 m by 150 m including 15 to 20 m firebreak perimeter will be cleared. A 18 m by 10 meter pad will be constructed involving excavation to a depth of 70 cm and built up with compacted gravel to support weight of rig. As specified in the assessment criteria of objective 3 in the SEO, restoration of the drill site and access track will be undertaken to the satisfaction of the land owner.	Low
1.3.2, 3.1.2, Table 2		Camp site construction.	Soil compaction.	H	H	H	H	H	1	No	High	Short	Small	Small	Low	2	50m by 50 m camp site will be cleared to house about 30 personnel during the drilling period of the well up to 2 weeks.	Low
3.1.2, Table 2		Accidental chemical or diesel fuel spills.	Soil contamination, reducing soil fertility.	M	H	H	M	H	2	No	Very Low					1	The chances of a spill are considered to be quite low with the biggest risk being where chemicals and diesel are stored and handled which will be in designated areas designed to contain any such spills with drains from these areas designed to direct the spills to lined pit for containment. As specified in the assessment criteria of objective 3 in the SEO, any soil contaminated will either be removed and replaced with clean fill or under go bioremediation in the case of an oil/diesel spill to an EPA standard.	Low
Vegetation Impacts																		
3.1.3, Table 2		Construction of access track, pad, sump and flare pit.	Physical damage to and/or removal of vegetation.	H	H	H	H	H	1	No	High	Small	Small	Low	Low	2	The total area to be affected by the construction of the access track, drilling pad and mud and flare pits is small. Also the land holder has no concerns regarding any potential adverse consequences this vegetation clearance may have on pasture.	Low
			Removal of endangered and vulnerable species.	H	H	H	H	H	1	Yes						1	No endangered or vulnerable species have been identified in this area.	Low
			Introduction of exotic weeds.	M	M	M	M	H	3	No	Very Low					1	The introduction of weeds or plant pathogens into this area as a result of the equipment coming into the area to construct the access track, well pad and to drill the well is considered to be very highly unlikely. This is based on the fact that the equipment to be used will be coming from an identical environment in Victoria near Port Campbell where no such plants exist.	Low
Surface Water Impacts																		
2.1.5, 3.1.5		Obstruction of natural water channels by access track.	Diversion of natural water flows.	H	H	H	H	H	1	Yes						1	Relatively small size of access track and well pad and the fact that no such streams exist in this location makes this risk irrelevant.	Low
Groundwater Impacts																		
1.4.2, 3.1.4, Table 2		Well penetration of Gambier Limestone and Dilwyn Formation aquifers.	Contamination of aquifers with drilling fluids.	M	M	M	M	M	3	No	High	Short	Small	Low	Low	2	Volume of drilling mud that may infiltrate into the aquifers is considered to be insignificant in relation to the size of these aquifers and also the non-toxic nature of these muds will not result in any contamination of the water in these aquifers. Also the extraneous measures taken when drilling the well to minimise the risk of any contamination as outlined in Table 2 under the heading "Minimising risk of contamination and crossflow in aquifers" provides further assurance that aquifer contamination is not a significant concern.	Low

Department for Environment and Heritage
National Parks and Wildlife SA

19-Apr-01

Chief Executive
Department of Primary Industries and
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Dear Sir,

The Department for Environment and Heritage has considered the application described below by consulting with the various groups within the Department.
The following comments are offered:

DME reference: SR27/4/07845/000 **type:** PEL72(2)

locality: Otway Basin, McNamara Park 1

applicant: Origin Energy Resources Limited

comments:

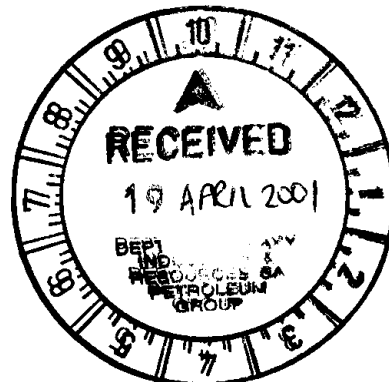
In accordance with Section 5.2(b) of the Memorandum of Administrative Arrangement dated 24 October 2000, your preliminary assessment, based on the EIR supplied, that the proposed activities are of low environmental impact, is supported.

Further to Section 5.2(e) the draft SEO is considered to be adequate for the proposed activities, as they are unlikely to have any deleterious impacts on the native vegetation, fauna and surface hydrology of the surrounding area.

Yours sincerely



Alex McDonald
MANAGER, CONSERVATION
PLANNING



Government
of South Australia

Department for Water Resources

Resource Assessment

Our Ref: DWR0149/01

1 May 2001

Michael Malavazos
Manager Petroleum Engineering Regulation
Office of Minerals and Energy Resources SA
Department of Primary Industries and Resources SA
GPO Box 1671
ADELAIDE SA 5001

Dear Sir

RE **McNamara Park #1 Well Proposal, Otway Basin**

I refer to your email request, dated 29 March 2001, seeking comment on the 'McNamara Park #1 Well Proposal (Otway Basin), impact classification and Statement of Environmental objectives (SEO), which were forwarded to this Department for consideration and comment.

Background

The proponent, Origin Energy Resources Limited proposes to drill the gas exploration well McNamara Park #1 in PEL 72 in the south-east of the State.

In the event that the well is successful it will be cased and cemented for future production. Aquifers in the Gambier Limestone and Dilwyn Formation will be isolated from the hydrocarbon bearing formations by casing bonded to the formation with cement.

In the event of failure, the well will be plugged and abandoned, which will involve placing plugs between permeable zones to ensure permanent isolation of aquifers.

The drilling of this well has been classified by PIRSA as being one of low impact.

The EIR and SEO

The EIR identifies the environmental issues, the response to which is stated in the SEO. The surface water contamination issues are adequately dealt with.

RECEIVED
- 4 MAY 2001

BY:.....

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Government
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C2001/00500



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The major risks, from the water resource perspective, relate to groundwater contamination that may occur in response to:

- Drilling activities, especially the possibility of total fluid losses.
- Inadequate casing and cementing, allowing communication and cross-flow between aquifers with difference salinity and pressure, and possibly cross-flow from the gas producing zone into the aquifers.

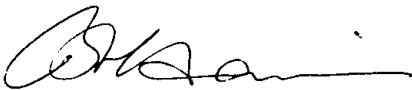
The PIRSA assessment and classification as low impact is appropriate, and is supported by this agency.

However, the SEO does not identify the procedure that is to be implemented in the event that cementing is determined to be inadequate from geophysical logging. It is understood that in such cases, the casing can be perforated over the interval where the cementing is unsatisfactory, and cement squeezed and circulated to achieve a satisfactory bond.

It is also advised that the water supply well, to be completed in the unconfined aquifer, will require a well construction permit from this agency. Authorisation, under section 11 of the *Water Resources Act 1997*, is required to take water from the unconfined aquifer, which is a prescribed resource. This agency will seek an authorisation from the Minister for Water Resources to cover this activity.

Please contact Stephen Howles on 8204 9814 if you have any queries concerning this matter.

Yours sincerely



Bryan Harris
DIRECTOR RESOURCE ASSESSMENT
DEPARTMENT FOR WATER RESOURCES

