

**CLASSIFICATION OF THE LEVEL OF IMPACT OF THE ACTIVITY OF GEOPHYSICAL OPERATIONS IN THE OFFICER BASIN, SOUTH AUSTRALIA**

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Using the following criteria, the activity of geophysical operations, as described in the "PELs 81 & 253 Environmental impact report: geophysical operations in the Officer Basin, South Australia " (OBEPL 2007), has been assessed as a low impact activity.

EIR REFERENCE	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	PREDICTABILITY					MANAGEABILITY						COMMENTS	Environmental significance		
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS			STAKEHOLDERS	SIGNIFICANCE
Section 5.1.4 Section 5.3.1 Section 6.3	Natural Environment Impacts <i>Soil Impacts</i>	Line & access track preparation - earthworks, vehicle movement & excavations	Soil erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil erosion: - blade work is banned in claypans and flat easy terrain; - only minimal bladework is permitted elsewhere; - windrows will be removed and respread on line; - dune side cuts will be minimised; - sand will be ramped to the side of dune cuts; - creek bank vegetation left intact and detoured around; and - creek and watercourse channel banks reinstated. To minimise the potential for and impacts of soil compaction: - following previous offline wheel tracks is prohibited; - unavoidable compaction reported; and - compacted areas ripped upon completion if in suitable terrain.	Low
		Line & access track preparation - earthworks, vehicle movement & excavations	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for or impacts of wheel tracks: - existing roads or seismic lines will be used for access; and - offline driving (bush-bashing) is prohibited. To minimise the potential or subsequent impacts of wheel rutting: - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and susceptible areas will be avoided when possible; - no vehicles permitted on salt lakes and clay pans; and - wheel rut material will be used to fill in ruts.	Low
		Line & access track preparation - earthworks, vehicle movement & excavations	Soil inversion	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	Soil inversion is not an impact generally associated with seismic line preparation. No deep excavation or inversion of soil horizons occurs during line preparation. If upholes are drilled the hole is backfilled with the topsoil replaced at the surface. Soil disturbance occurs when vehicle access is required over sand dunes. Minimum amount of sand is disturbed to enable this access. The sand is stock-piled each side of the dune crossing and subsequently the dune re-profiles.	Low

<b>Section 5.1.4 Section 5.3.1 Section 6.3</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Introduction & spread of weeds & diseases	L	H	H	H	M	2	Yes	Low	Short	Small	Small	Low	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	<b>Low</b>
<b>Section 5.1.4 Section 5.3.1 Section 6.3</b>	Line & access track preparation - spills and leaks	Contamination of soil (Pollution)	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; and - spill kits available.	<b>Low</b>
<b>Section 5.1.5 Section 5.3.1 Section 6.3</b>	Line Surveying - vehicle movement	Soil erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil compaction: - following previous offline wheel tracks is prohibited; - unavoidable compaction reported; and - compacted areas ripped upon completion if in suitable terrain.	<b>Low</b>
<b>Section 5.1.5 Section 5.3.1 Section 6.3</b>	Line Surveying - vehicle movement	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the impacts of wheel tracks: - existing roads or seismic lines will be used for access; and - offline driving (bush-bashing) is prohibited. To minimise the impacts of wheel ruts: - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; and - no vehicles are permitted on salt lakes and clay pans.	<b>Low</b>
<b>Section 5.1.5 Section 5.3.1 Section 6.3</b>	Line Surveying - vehicle movement	Introduction & spread of weeds	L	M	H	H	H	4	Yes	Low	Long	Small	Small	Medium	3	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	<b>Medium</b>
<b>Section 5.1.5 Section 5.3.1 Section 6.3</b>	Line Surveying - spills & leaks	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.1 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Soil erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil compaction: - following previous offline wheel tracks is prohibited; - unavoidable compaction reported; all detours followed, no short cuts and - compacted areas ripped upon completion if in suitable terrain.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.1 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for or impacts of wheel tracks: - existing roads or seismic lines will be used for access; and - offline driving (bush-bashing) is prohibited. To minimise the potential or subsequent impacts of wheel rutting: - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; - no vehicles are permitted on salt lakes and clay pans; and - wheel rut material will be used to fill in ruts.	<b>Low</b>

<b>Section 5.1.6 Section 5.3.1 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.1 Section 6.3</b>	Recording - spills & leaks	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1 Section 6.3</b>	Campsites & associated supplies - site preparation	Soil inversion, erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	Campsites are selected in clear areas, which are naturally devoid of vegetation. Locating camps adjacent to established tracks and using only these for access reduce site access impacts. On completion and where appropriate campsites are ripped.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1 Section 6.3</b>	Campsites & associated supplies - vehicle movement	Soil erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil compaction: - following previous offline wheel tracks is prohibited; - unavoidable compaction reported; and - compacted areas ripped upon completion if in suitable terrain.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1 Section 6.3</b>	Campsites & associated supplies - vehicle movement	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for or impacts of wheel tracks: - existing roads or seismic lines will be used for access; and - offline driving (bush-bashing) is prohibited. To minimise the potential or subsequent impacts of wheel rutting: - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; - no vehicles are permitted on salt lakes and clay pans; - wheel rut material will be used to fill in ruts; - campsites are selected in clear areas which are naturally devoid of vegetation; - site access impacts are reduced by locating camps adjacent to established tracks; and - using only these for access.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1 Section 6.3</b>	Campsites & associated supplies - spills & leaks	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; and - management of sewage wastes in compliance with <i>Public and Environmental Health (Waste Control) Regulations 1995</i> .	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1 Section 6.3</b>	Campsites & associated supplies - disposal of domestic & chemical waste	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate, and - management of sewage wastes in compliance with <i>Public and Environmental Health (Waste Control) Regulations 1995</i> .	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1 Section 6.3</b>	Uphole drilling & logging - vehicle movement	Soil erosion, inversion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of soil compaction: - following previous offline wheel tracks is prohibited; - unavoidable compaction reported; - compacted areas ripped upon completion if in suitable terrain; and - any soil from drill holes is restored to as near as practical to its original position in the soil profile.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1 Section 6.3</b>	Uphole drilling & logging - vehicle movement	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for or impacts of wheel tracks: - existing roads or seismic lines will be used for access; and - offline driving (bush-bashing) is prohibited. To minimise the potential or subsequent impacts of wheel rutting: - operations will be shut down during wet weather or flooding events;	<b>Low</b>

<b>Section 5.1.8 Section 5.3.1 Section 6.3</b>	Uphole drilling & logging - uphold drilling activity & disposal of wastes	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	<ul style="list-style-type: none"> <li>- operations will only recommence once conditions are suitable;</li> <li>- unavoidable damage will be reported and reinstated;</li> <li>- areas of soft friable soils and soft susceptible areas will be avoided when possible;</li> <li>- no vehicles are permitted on salt lakes and clay pans; and</li> <li>- wheel rut material will be used to fill in ruts.</li> </ul> <p>To minimise the potential for and impacts of soil contamination:</p> <ul style="list-style-type: none"> <li>- all operational equipment is inspected and maintained in accordance with industry standards and operational requirements;</li> <li>- spills and leaks reported, chemically treated or bio-remediated in dry areas; and</li> <li>- sites will be ripped where appropriate.</li> </ul>	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1 Section 6.3</b>	Uphole drilling & logging - spills & leaks	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	<p>To minimise the potential for and impacts of soil contamination:</p> <ul style="list-style-type: none"> <li>- all operational equipment is inspected and maintained in accordance with industry standards and operational requirements;</li> <li>- spills and leaks reported, chemically treated or bio-remediated in dry areas; and</li> <li>- sites will be ripped where appropriate.</li> </ul>	<b>Low</b>
<b>Section 5.1.9 Section 5.3.1 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Soil erosion, inversion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Medium	1	<p>To minimise the potential for and impacts of soil erosion:</p> <ul style="list-style-type: none"> <li>- bladework is banned in claypans and flat easy terrain;</li> <li>- only minimal bladework is permitted elsewhere;</li> <li>- sand will be ramped to the side of dune cuts;</li> <li>- creek and watercourse channel banks reinstated.</li> </ul> <p>To minimise the potential for and impacts of soil compaction:</p> <ul style="list-style-type: none"> <li>- following previous offline wheel tracks is prohibited;</li> <li>- unavoidable compaction reported; and</li> <li>- compacted areas ripped upon completion if in suitable terrain.</li> </ul> <p>To minimise the potential for soil inversion:</p> <ul style="list-style-type: none"> <li>- topsoil will be separated and returned to the surface on restoration.</li> </ul>	<b>Low</b>
<b>Section 5.1.9 Section 5.3.1 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	<p>To minimise the potential for or impacts of wheel tracks:</p> <ul style="list-style-type: none"> <li>- existing roads or seismic lines will be used for access; and</li> <li>- offline driving (bush-bashing) is prohibited.</li> </ul> <p>To minimise the potential or subsequent impacts of wheel rutting:</p> <ul style="list-style-type: none"> <li>- operations will be shut down during wet weather or flooding events;</li> <li>- operations will only recommence once conditions are suitable;</li> <li>- unavoidable damage will be reported and reinstated;</li> <li>- areas of soft friable soils and soft susceptible areas will be avoided when possible;</li> <li>- no vehicles are permitted on salt lakes and clay pans; and</li> <li>- wheel rut material will be used to fill in ruts.</li> </ul>	<b>Low</b>
<b>Section 5.1.9 Section 5.3.1 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	<p>To minimise the introduction and spread of weeds and diseases:</p> <ul style="list-style-type: none"> <li>- all vehicles will be thoroughly cleaned prior to commencing work in the survey area;</li> <li>- weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and</li> <li>- weed control measures will be implemented as directed by relevant authorities.</li> </ul>	<b>Low</b>
<b>Section 5.1.9 Section 5.3.1 Section 6.3</b>	Line & access track & campsite restoration - spills & leaks	Contamination of soil	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	<p>To minimise the potential for and impacts of soil contamination:</p> <ul style="list-style-type: none"> <li>- all operational equipment is inspected and maintained in accordance with industry standards and operational requirements;</li> <li>- spills and leaks reported, chemically treated or bio-remediated in dry areas; and</li> <li>- sites will be ripped where appropriate.</li> </ul>	<b>Low</b>
<b>Section 5.1.10 Section 5.3.1 Section 6.3</b>	Monitoring of selected locations - vehicle movements	Soil erosion, compaction & disruption	H	H	H	H	H	1	No	Low	Short	Small	Small	Medium	1	<p>To minimise the potential for and impacts of soil compaction:</p> <ul style="list-style-type: none"> <li>- following previous offline wheel tracks is prohibited;</li> <li>- unavoidable compaction reported; and</li> <li>- compacted areas ripped upon completion if in suitable terrain.</li> </ul>	<b>Low</b>
<b>Section 5.1.10 Section 5.3.1 Section 6.3</b>	Monitoring of selected locations - vehicle movements	Wheel rutting & tracks	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	<p>To minimise the potential for or impacts of wheel tracks:</p> <ul style="list-style-type: none"> <li>- existing roads or seismic lines will be used for access; and</li> <li>- offline driving (bush-bashing) is prohibited.</li> </ul> <p>To minimise the potential or subsequent impacts of wheel rutting:</p> <ul style="list-style-type: none"> <li>- operations will be shut down during wet weather or flooding events;</li> <li>- operations will only recommence once conditions are suitable;</li> <li>- unavoidable damage will be reported and reinstated;</li> </ul>	<b>Low</b>



<b>Section 5.1.6 Section 5.3.1.7 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Disturbance to natural drainage patterns	H	H	H	H	H	1	No	Low	Short	Small	Small	Medium	1	To minimise the impacts to natural drainage patterns: - creek bank vegetation is left intact and detoured around; - creek crossings boxed and filled to original level when required; - windrows will be removed from swales, and other areas of noted drainage; - no camps will be established near surface water features; and - no blading in susceptible areas that may lead to erosion and silting of local watercourses.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.1.7 Section 6.3</b>	Recording - spills & leaks	Contamination of surface water	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1.7 Section 6.3</b>	Campsites & associated supplies - site preparation	Disturbance to natural drainage patterns	H	H	H	H	H	1	Yes	Low	Short	Small	Small	Low	1	To minimise the impacts to natural drainage patterns: - no camps will be established near surface water features; and - no blading in susceptible areas that may lead to erosion and silting of local watercourses.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1.7 Section 6.3</b>	Campsites & associated supplies - spills & leaks	Contamination of surface water	H	H	H	H	H	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; - all refuelling points at campsites have spill containment facilities in place; - minimise generation of waste; and - all waste managed effectively.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1.7 Section 6.3</b>	Campsites & associated supplies - disposal of domestic & chemical waste	Contamination of surface water	H	H	H	H	H	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1.7 Section 6.3</b>	Uphole drilling & logging - uphole drilling activity & disposal of wastes	Contamination of surface water	H	H	H	H	H	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - drilling operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1.7 Section 6.3</b>	Uphole drilling & logging - spills & leaks	Contamination of surface water	H	H	H	H	H	1	No	Low	Short	Small	Small	Medium	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; and - spill clean up kits on site.	<b>Low</b>

<b>Section 5.1.9 Section 5.3.1.7 Section 6.3</b>	Line & access track & campsite restoration - spills & leaks	Contamination of surface water	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of surface water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; - spill clean up kits are on site; and - no below ground sumps will be used.	<b>Low</b>
<b>Section 5.1.7 Section 6.3</b>	<b>Groundwater Impacts</b> Campsites & associated supplies - spills & leaks	Contamination of ground water	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of ground water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; - sites will be ripped where appropriate; and - spill clean up kits on site.	<b>Low</b>
<b>Section 5.1.7 Section 6.3</b>	Campsites & associated supplies - disposal of domestic & chemical waste	Contamination of ground water	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of ground water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate;	<b>Low</b>
<b>Section 5.1.8 Section 6.3</b>	Uphole drilling & logging - uphole drilling activity & disposal of wastes	Contamination of ground water	H	H	H	H	H	1	No	Low	Short	Small	Small	Low	1	To minimise the potential for and impacts of ground water contamination: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; - most operations will only be conducted in dry, conducive conditions, minimising contact with surface water; - spills and leaks reported, chemically treated or bio-remediated in dry areas; and - sites will be ripped where appropriate;	<b>Low</b>
<b>Section 5.1.8 Section 6.3</b>	Uphole drilling & logging - uphole drilling activity & disposal of wastes	Uncontrolled discharge of water from aquifers	M	H	H	H	H	2	Yes	Low	Long	Small	Small	Medium	2	To minimise the potential for and impacts on aquifers: - all operational equipment is inspected and maintained in accordance with industry standards and operational requirements; and - all artesian flows are immediately plugged and monitored for effectiveness.	<b>Medium</b>
<b>Section 5.1.4 Section 5.2.2 Section 5.2.3 Section 6.3</b>	<b>Flora Impacts</b> Line & access track preparation - earthworks, vehicle movement & excavations	Loss of or damage to vegetation	H	H	H	H	H	1	No	Low	Short	Small	Small	Medium	1	To minimise the loss of or damage to vegetation: - offline driving (bush bashing or short cuts) is prohibited; - lines will be prepared to a single blade width (4-5 metres); - lines will weave every 100 metres maximum, utilising vegetation stands as appropriate; - significant plant species will be prioritised for avoidance; - rootstock, topsoil and seeds will be left on line during line preparation where appropriate; and - all vehicles will be thoroughly cleaned prior to commencing work.	<b>Low</b>
<b>Section 5.1.4 Section 5.3.2 Section 5.3.3 Section 6.3</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Introduction & spread of weeds & diseases	L	H	H	H	H	4	Yes	Low	Medium	Medium	Small	Medium	2	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	<b>Medium</b>

Section 5.1.5 Section 5.3.2 Section 5.3.3 Section 6.3	Line Surveying - vehicle movement	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.6 Section 5.3.2 Section 5.3.3 Section 6.3	Recording - vehicle & vibrator movement & operations	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.7 Section 5.3.2 Section 5.3.3 Section 6.3	Campsites & associated supplies - site preparation	Loss of or damage to vegetation	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	Campsites are selected in clear areas that are naturally devoid of vegetation. Locating camps adjacent to established tracks and using only these for access reduce site access impacts. On completion and where appropriate campsites are ripped.	Low
Section 5.1.7 Section 5.3.2 Section 5.3.3 Section 6.3	Campsites & associated supplies - fire	Fire damage to vegetation	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	Campsites are selected in clear areas that are naturally devoid of vegetation. Locating camps adjacent to established tracks and using only these for access reduce site access impacts. On completion and where appropriate campsites are ripped. Standard fire prevention and fire fighting procedures in place	Low
Section 5.1.8 Section 5.3.2 Section 5.3.3 Section 6.3	Uphole drilling & logging - vehicle movement	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.9 Section 5.3.2 Section 5.3.3 Section 6.3	Line & access track & campsite restoration - earthworks & vehicle movements	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.10 Section 5.3.2 Section 5.3.3 Section 6.3	Monitoring of selected locations - vehicle movements	Introduction & spread of weeds & diseases	H	H	H	H	M	2	Yes	Low	Short	Small	Small	Medium	2	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.4 Section 5.3.3 Section 6.3	<b>Fauna Impacts</b> Line & access track preparation - earthworks, vehicle movement & excavations	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the potential for and impacts of fauna: - - only minimal blade work is permitted; - windrows will be removed and respread on line; - dune side cuts will be minimised; - sand will be ramped to the side of dune cuts; - creek bank vegetation left intact and detoured around; - creek and watercourse channel banks reinstated; and - disturbance of faunal refuges such as hollow logs will be avoided.	Low
Section 5.1.4 Section 5.3.3 Section 6.3	Line & access track preparation - earthworks, vehicle movement & excavations	Introduction & spread of weeds & diseases	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; and - weed control measures will be implemented as directed by relevant authorities.	Low
Section 5.1.5 Section 5.3.3 Section 6.3	Line Surveying - vehicle movement	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the disturbance or damage to fauna & habitat: - offline driving (bush bashing or short cuts) is prohibited; - lines will be prepared to a single blade width (4-5 metres); - lines will weave every 100 metres maximum, utilising vegetation	Low

<b>Section 5.1.5 Section 5.3.3 Section 6.3</b>	Line Surveying - vehicle movement	Introduction & spread of weeds & diseases	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	stands as appropriate; - rootstock, topsoil and seeds will be left on line during line preparation where appropriate; - dense creek bank vegetation will be left intact; and - all vehicles will be thoroughly cleaned prior to commencing work. To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; - weed control measures will be implemented as directed by relevant authorities; and - domestic wastes will be managed to prevent the encouragement of pest animals.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.3 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise potential for disturbance: - existing roads or seismic lines will be used for access; - offline driving (bush-bashing) is prohibited; and - vehicles will be thoroughly cleaned prior to entering the survey area.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.3 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Introduction & spread of weeds & diseases	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the introduction and spread of weeds and diseases: - all vehicles will be thoroughly cleaned prior to commencing work in the survey area; - weed management strategies will be developed to ensure vehicles are washed down before moving to or from areas of known infestation; - weed control measures will be implemented as directed by relevant authorities; and - domestic wastes will be managed to prevent the encouragement of pest animals.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.3 Section 6.3</b>	Campsites & associated supplies - site preparation	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Campsites are selected in clear areas that are naturally devoid of vegetation. Locating camps adjacent to established tracks and using only these for access reduce site access impacts. On completion and where appropriate campsites are ripped. If prepared as per standards very little restoration work is required. Standard fire prevention and fire fighting procedures in place.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.3 Section 6.3</b>	Campsites & associated supplies - fire	Fire damage to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Standard fire prevention and fire fighting procedures in place.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.3 Section 6.3</b>	Uphole drilling & logging - vehicle movement	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise damage to fauna and faunal habitats: - drill holes are restored on completion; - vehicles are confined to current survey seismic lines; and - no bush bashing allowed.	<b>Low</b>
<b>Section 5.1.9 Section 5.3.3 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Loss of & damage or disturbance to fauna & habitats	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Campsites are selected in clear areas that are naturally devoid of vegetation. Locating camps adjacent to established tracks and using only these for access reduce site access impacts. On completion and where appropriate campsites are ripped. If prepared as per standards very little restoration work is required.	<b>Low</b>
<b>Section 5.1.4 Section 5.3.1.4 Section 6.3</b>	<b>Sensitive Area Impacts</b> Line & access track preparation - earthworks, vehicle movement & excavations	Erosion impacts in highly prone parts of Stony Plains	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	This highly sensitive land system can be easily damaged by vegetation clearance, alteration to drainage patterns, spills & fire. Areas of friable soils will be totally avoided where possible. If these areas cannot be avoided: - specific consultation will be sought on best practice operations; - specific management procedures will be developed (i.e. hand carrying); and - seismic personnel will be educated accordingly.	<b>Low</b>
<b>Section 5.1.4 Section 5.3.1.6 Section 6.3</b>	<b>Social Environment Community Resource Impacts</b> Line & access track preparation - earthworks, vehicle movement & excavations	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the visual impact of seismic line preparation: - lines will be prepared to a single blade width (4-5 metres); - lines will weave every 100 metres maximum, utilising vegetation stands as appropriate; - lines will be doglegged at public roads, utilising vegetation stands as appropriate;	<b>Low</b>

<b>Section 5.1.4 Section 6.3</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Damage to infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	- dozers will be walked with the blade up when appropriate; - dune crest, side and base cuts will be minimised; and - no cutting will be done on dunes adjacent to public roads.	<b>Low</b>
<b>Section 5.1.5 Section 5.3.1.6 Section 6.3</b>	Line Surveying - vehicle movement	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise risk of damage to infrastructure: - lines will be planned to avoid infrastructure; - safety precautions will be implemented; - waste management policies will be enforced; and - landowners consulted with as per Petroleum Act 2000.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.1.6 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Loss of visual amenity	H	H	H	H	M	17	Yes	Low	Short	Small	Small	Medium	1	To minimise the loss of visual amenity attributed to vehicle movements: - existing roads or seismic lines will be used for access; - offline driving (bush-bashing) is prohibited; - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; and - no vehicles are permitted on salt lakes and clay pans.	<b>Low</b>
<b>Section 5.1.6 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Damage to infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise risk of damage to infrastructure: - lines will be planned to avoid infrastructure; - safety precautions will be implemented; - waste management policies will be enforced; and - landowners consulted with as per Petroleum Act 2000.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.1.6 Section 6.3</b>	Campsites & associated supplies - site preparation	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the visual impacts of campsites: - a minimal number of campsites will be used; - campsites will be located in naturally clear areas where applicable. - no rubbish or man-made items left behind; - campsite tine-ripped to remove compaction and wheel tracks in areas other than those with a stony mantle; and - shoulders of adjacent tracks are reinstated.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1.6 Section 6.3</b>	Uphole drilling & logging - vehicle movement	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the loss of visual amenity attributed to vehicle movements: - existing roads or seismic lines will be used for access; - offline driving (bush-bashing) is prohibited; - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; and - no vehicles are permitted on salt lakes and clay pans.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.1.6 Section 6.3</b>	Uphole drilling & logging - uphold drilling activity & disposal of wastes	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the loss of visual amenity attributed to uphold drilling: - drill cuttings are returned to the hole and the hole is capped; - surplus drill cuttings are dispersed around the hole or removed completely from sensitive areas; and - colourants may be used to colour any remaining drill cuttings.	<b>Low</b>
<b>Section 5.1.9 Section 5.3.1.6 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Loss of visual amenity	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the loss of visual amenity attributed to vehicle movements: - existing roads or seismic lines will be used for access; - offline driving (bush-bashing) is prohibited; - operations will be shut down during wet weather or flooding events; - operations will only recommence once conditions are suitable; - unavoidable damage will be reported and reinstated; - areas of soft friable soils and soft susceptible areas will be avoided when possible; and - no vehicles are permitted on salt lakes and clay pans.	<b>Low</b>

<b>Section 5.1.4 Section 5.3.6 Section 6.3</b>	<b>Cultural &amp; Heritage Impacts</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts to heritage sites (aboriginal): - lines will be cleared by appropriate cultural heritage personnel prior to preparation; - sites of cultural significance will be flagged and detoured around; - receiver lines may be laid out by foot only in some sensitive areas; - all crew and ancillary personnel given cultural heritage training prior to commencing operations; and - dozer operators are required to keep watch for any cultural heritage sites which would be subsequently flagged and detoured around. To minimise the impacts to heritage sites (non-indigenous and natural): - listed heritage sites will be identified and deviated around where possible; - in areas that can not be avoided, relevant authorities will be contacted and permission sought; and - specific management procedures will be developed.	<b>Low</b>
<b>Section 5.1.5 Section 5.3.6 Section 6.3</b>		Line Surveying - vehicle movement	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.6 Section 5.3.6 Section 6.3</b>		Recording - vehicle & vibrator movement & operations	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.7 Section 5.3.6 Section 6.3</b>		Campsites & associated supplies - site preparation	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.8 Section 5.3.6 Section 6.3</b>		Uphole drilling & logging - vehicle movement	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.9 Section 5.3.6 Section 6.3</b>		Line & access track & campsite restoration - earthworks & vehicle movements	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.10 Section 5.3.6 Section 6.3</b>		Monitoring of selected locations - vehicle movements	Impact or damage to cultural & heritage sites	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the impacts MT and other heritage sites: - all crew and ancillary personnel given appropriate cultural heritage training prior to commencing operations; and - work area clearances undertaken by MT prior to start of activity.	<b>Low</b>
<b>Section 5.1.4 Section 5.3.5 Section 6.3</b>	<b>Community Health &amp; Safety</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Facilitation of third party access	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise the likelihood of third party access of seismic activities: - no line preparation will be carried out on dunes adjacent to public tracks; - lines that intersect a public track will be doglegged and vegetation stands used as a screen where appropriate; - windrows and shoulders will be reinstated; and - lines adjacent public roads may also be 'road blocked' with timber.	<b>Low</b>
<b>Section 5.1.4 Section 6.3</b>		Line & access track preparation - earthworks, vehicle movement & excavations	Noise generation	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Lines will be planned to avoid MT infrastructure	<b>Low</b>
<b>Section 5.1.6 Section 6.3</b>		Recording - vehicle & vibrator movement & operations	Noise generation	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Lines will be planned to avoid MT infrastructure	<b>Low</b>
<b>Section 5.1.8 Section 6.3</b>		Uphole drilling & logging - vehicle movement	Noise generation	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Lines will be planned to avoid MT infrastructure	<b>Low</b>

<b>Section 5.1.8 Section 6.3</b>	Uphole drilling & logging - uphole drilling activity & disposal of wastes	Noise generation	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Lines will be planned to avoid MT infrastructure	<b>Low</b>
<b>Section 5.1.9 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Noise generation	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	Lines will be planned to avoid MT infrastructure	<b>Low</b>
<b>Economic Environment</b>																	
<b>Section 5.1.4 Section 6.3</b>	Line & access track preparation - earthworks, vehicle movement & excavations	Damage to MT infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise disturbance to MT infrastructure: - MT landholders are consulted and notified prior to commencement of operations; - lines will deviate around infrastructure such buildings, airstrips, dams, bores and tanks; - fences will be laid down only with the permission of the landholder; - infrastructure such as pipelines, powerlines and roads will be crossed with the permission of the owner and under appropriate standards; and - signage and safety precautions will be implemented when operating near or on public roads. To minimise disturbance to future petroleum production facilities: - below ground pipelines are crossed at existing or authorised crossing points; - above ground pipelines will be detoured around and not ramped; - lines will deviate around wellheads by 30 m; - no seismic energy source will operated within 30 m of pipelines or wellheads; and - any production facilities will be avoided and operations discussed with the plant manager.	<b>Low</b>
<b>Section 5.1.6 Section 6.3</b>	Recording - vehicle & vibrator movement & operations	Damage to MT infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise disturbance to M/T landholders: - landholders are consulted and notified prior to commencement of operations; - lines will deviate around buildings, airstrips, bores and tanks; - gates will be left as found; - fences will be laid down only with the permission of the M/T landholders; - water will only be sourced from authorised sources; and - waste management policies will be enforced.	<b>Low</b>
<b>Section 5.1.8 Section 6.3</b>	Uphole drilling & logging - uphole drilling activity & disposal of wastes	Damage to MT infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise disturbance to MT infrastructure: - MT landholders are consulted and notified prior to commencement of operations; - gates will be left as found; - fences will be laid down only with the permission of the landholder; - water will only be sourced from authorised sources; and - waste management policies will be enforced.	<b>Low</b>
<b>Section 5.1.9 Section 6.3</b>	Line & access track & campsite restoration - earthworks & vehicle movements	Damage to MT infrastructure	H	H	H	H	M	1	Yes	Low	Short	Small	Small	Medium	1	To minimise disturbance to MT infrastructure: - landholders are consulted and notified prior to commencement of operations; - gates will be left as found; - fences will be laid down only with the permission of the landholder; - water will only be sourced from authorised sources; and - waste management policies will be enforced.	<b>Low</b>