
Moon to Kerna

Gas Pipeline

STATEMENT OF ENVIRONMENTAL OBJECTIVES

NOVEMBER 2002

Rev 3.

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1. INTRODUCTION

This document was prepared in accordance with the requirements of a Statement of Environmental Objectives (SEO) under Section 99 and 100, of the South Australian *Petroleum Act 2000* (the Act) and Regulations 12 and 13 of the *Petroleum Regulations 2000* of the Petroleum Act 2000. Therefore, it is considered that this document fulfils the purpose of a Statement of Environmental Objectives (SEO) and is accepted as such under schedule 6 of the Petroleum Act 2000. This document is subsequently referred to as an SEO.

This SEO has been adopted by Santos for the construction, operation, management and abandonment of the South Australian section of Moon #1 to Kerna Manifold Gas Pipeline.

Licence	Pipeline Licence
Licence description	PLA – Moon to Kerna Gas Pipeline (SA Section)
Location	Refer to Figure 1.
Activities covered by this CEP/SEO.	All regulated activities relating to the construction, operation and abandonment of the Moon to Kerna Pipeline.

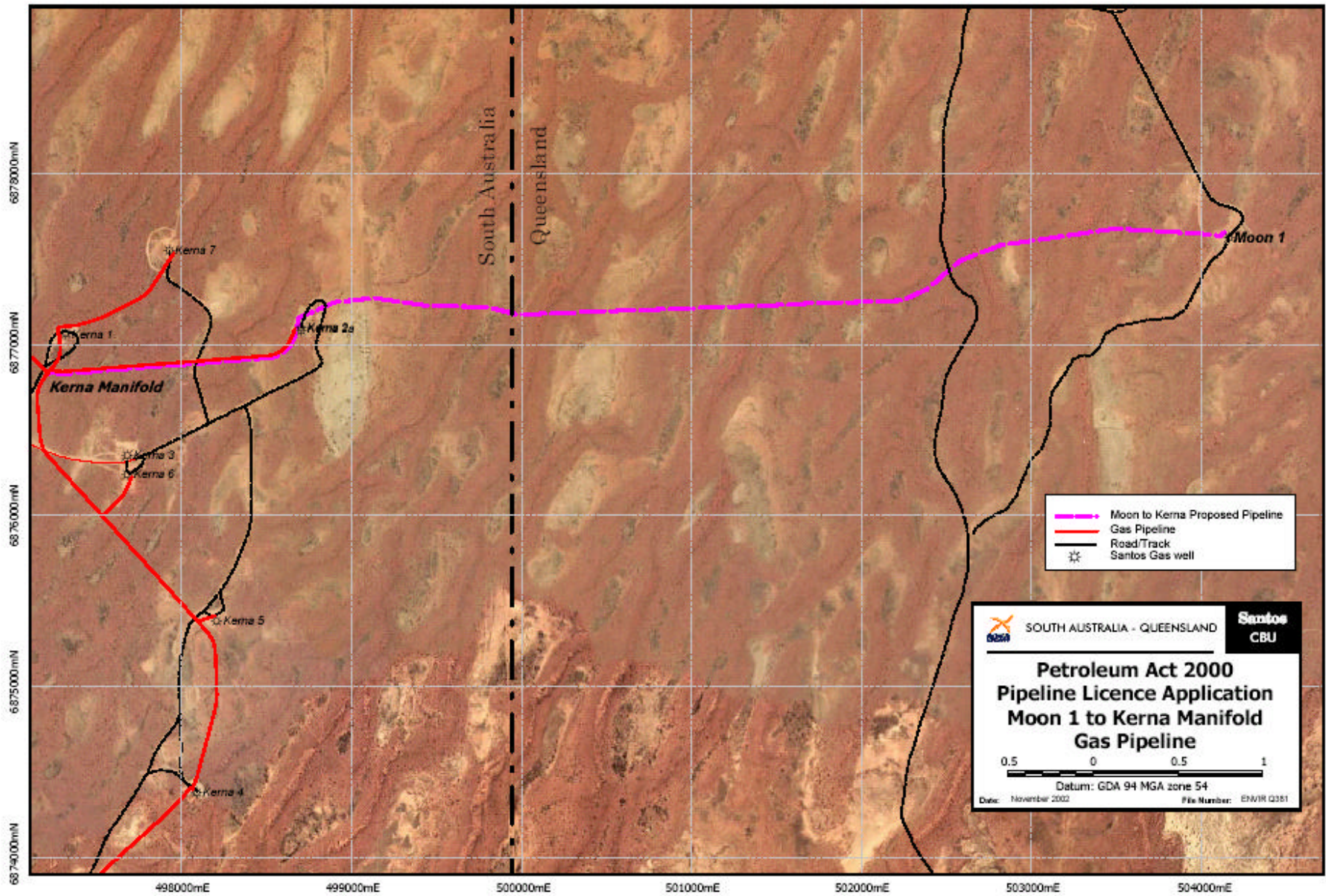
The objectives developed in this SEO are in keeping with the objectives of the Petroleum Act 2000, which include:

- To minimise environmental damage from activities involved in exploration for, or the recovery or commercial utilisation of, petroleum and other resources; and
- To minimise the environmental damage from the activities involved in the construction or operation of transmission pipelines for transporting petroleum.

This document is based on Statements of Environmental Objectives/Codes of Environmental Practice (SEO/CEP) developed for the following recent pipeline projects:

- Pipeline Licence No 7 – Moomba to Adelaide Pipeline Looping Project
- Pipeline Licence No 9 – Stokes to Mettika Pipeline
- Pipeline Licence No 4 – South East Pipeline – Nangwarry Lateral Project

This SEO takes into account previous Declarations of Environmental Factors and Codes of Environmental Practice approved under the Petroleum Act 1940, and makes reference to the Australian Pipeline Industry Association Code of Environmental Practice: Part B – Onshore Pipeline Operations.



2. ENVIRONMENTAL OBJECTIVES

Santos is committed to achieving a range of environmental objectives in regard to the potential hazards associated with the proposed pipeline. These are listed below.

1. Minimise the risks to the safety of employees, contractors, the public and other third parties.
2. Minimise impacts to soil.
3. Avoid the introduction and/or spread of weeds and disease.
4. Avoid or minimise disturbance to pastoral infrastructure and landholders.
5. Avoid contamination of soil, groundwater and/or watercourses.
6. Avoid disturbance to surface water and natural drainage patterns.
7. Avoid disturbance to sites of cultural heritage significance.
8. Minimise disturbance to native vegetation and wildlife habitat.
9. Minimise risks to native fauna and stock.
10. Minimise loss of aquifer (GAB) pressure and contamination of freshwater aquifers.
11. Minimise risk of fire or explosion.
12. Minimise air pollution and contribution to the “greenhouse effect”.

3. HAZARDS AND POTENTIAL CONSEQUENCES: ENVIRONMENTAL OBJECTIVES ASSESSMENT CRITERIA

The EIR prepared for the proposed Moon-Kerna gas pipeline outlined all perceivable hazards and potential consequences associated with the construction, operation and abandonment of the proposed pipeline. Each of these has the potential to impact on the achievement of the environmental objectives covered in this SEO. Criteria that will be adopted for measuring the achievement of these environmental objectives are presented in Appendix A. These criteria may take any one of the following forms:

Defined conditions - the achievement of an objective can be assessed through ensuring defined conditions are met or carried out. Such conditions include prohibitions to undertake a specific action. For example, to achieve the objective 'Minimise impacts to soil', during construction of a pipeline the assessment criteria may be to prevent ripping or grading of the right-of-way in gibber plain areas.

Defined requirements - the achievement of an objective can be assessed against the implementation of specific procedures or actions required for an activity (e.g. the design and construction of the pipeline must meet the requirements of AS 2885.1—1997 Pipelines—Gas and liquid petroleum);

Goal Attainment Scaling (GAS) criteria - environmental objectives requiring visual assessment are likely to be prone to uncertainties of subjective judgement. To minimise this occurring, GAS is used to measure such objectives against a series of criteria described by a written description and/or photographs. GAS is applicable to measuring objectives related to minimisation of disturbances to natural vegetation, soil and rehabilitation of well sites and access tracks. Appendix B details GAS criteria applicable to the activities covered by this SEO.

Where environmental objectives are identified as not being adhered to, variances will be recorded and reported as required (refer Section 5).

4. ENVIRONMENTAL RISK

The Environmental objectives detailed in this SEO have specifically been identified in response to the environmental hazards and potential consequences that can be associated with the proposed pipeline. The EIR prepared for the proposed pipeline presented a risk assessment analysis against these hazards and consequences. A summary of this assessment is provided in Table 1.0 below.

Table 1.0 Summary of Environmental Hazards and Potential Consequences

Aspect of Activity/ Source of Risk	Hazard	Severity	Likelihood	Risk
Pipeline Construction	Movement of heavy machinery and vehicles along ROW and access tracks	Negligible	Unlikely	LOW
	Spills and leaks associated with chemical and fuel storage and handling	Negligible	Unlikely	LOW
	Earthworks (eg. grading, trenching and backfilling)	Negligible	Virtually Certain	LOW
	Ignition of fire along ROW	Minor	Rare	LOW
	Disposal of hydrotest water	Negligible	Virtually Certain	LOW
Pipeline Operation	Explosion or fire along an Gas pipeline	Minor	Unlikely	LOW
	Spill or leak associated with pipeline failure to land	Negligible	Unlikely	LOW
Pipeline Abandonment	Movement of heavy machinery and vehicles along ROW and access tracks during rehabilitation	Negligible	Unlikely	LOW
	Spills and leaks associated with chemical and fuel storage and handling	Negligible	Unlikely	LOW
	Earthworks (eg. grading, ripping and backfilling)	Negligible	Virtually Certain	LOW
	Ignition of fire along ROW	Minor	Rare	LOW

5. REPORTING REQUIREMENTS

It is a requirement under Section 85 of the *Petroleum Act 2000* that any incidents that are determined to be ‘serious’ or ‘reportable’ incidents must be reported to the Minister. Regulation 12 (2) of the *Petroleum Regulations 2000* requires that a SEO identify events that could cause a Serious or a Reportable incident to occur.

Serious Incidents must be reported to the PIRSA Minister as soon as practicable after the occurrence, as per Section 85 of the *Petroleum Act 2000* and Section 32 of the *Petroleum Regulations 2000*.

Reportable Incidents must be reported to PIRSA on a quarterly basis within 1 month of the end of the quarter, as per Section 32 of the *Petroleum Regulations 2000*.

5.1 Serious Incidents

Pursuant to Section 85(1) of the *Petroleum Act 2000*, the following incidents are considered to be serious incidents:

- A person is seriously injured or killed;
- An imminent risk to public health or safety arises; or
- Serious environmental damage occurs or an imminent risk of serious environmental damage arises; or
- Security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises.

Pursuant to Regulation 12(2) the incidents listed below are considered to be serious incidents that may arise from Santos' activities associated with the proposed pipeline covered under this SEO:

- Any spill of fuel, oil or hazardous material which encroaches into land used for purposes other than petroleum production and processing or into groundwater supplies;
- Any facility or utility failure that threatens or poses imminent threat to security of supply;
- Any disturbance to sites of Aboriginal or non-Aboriginal heritage significance;
- Explosion or fire at the pipeline or any associated facility;
- Pipeline failure that threatens gas supply or poses an imminent safety or environmental risk; or
- Unauthorised activity on the pipeline where the pipeline is actually contacted.

5.2 Reportable Incidents

Pursuant to Regulation 12(2) the incidents listed below are considered to be reportable incidents that may arise from Santos' activities associated with the proposed pipeline covered under this SEO:

- Unauthorised activity (including that of a third party) on the pipeline easement where the pipeline is not contacted;
- Any oil or hazardous material spills outside of an area not specifically designed to contain such spills;
- Complaint from a landowner as a result of operations (eg. pipeline construction activities);
- Removal of rare, vulnerable or endangered flora and fauna species (without appropriate permits and approvals);
- Any introduction of weed species; or
- Detection of pipeline corrosion beyond that for which management procedures are in operation.

6. GLOSSARY

ALARP	As Low As Reasonably Practical
APIA	Australian Pipeline Industry Association
DEF	Declaration of Environmental Factors
EPA	Environment Protection Authority
EIR	Environmental Impact Report. Prepared in accordance with Section 97 of the <i>Petroleum Act 2000</i> and Regulation 10 of the <i>Petroleum Regulations 2000</i> .
PIRSA	Primary Industries and Resources, South Australia
Planning SA	Department of Transport, Urban Development and the Arts
ROW	Right of Way
SEO	Statement of Environmental Objectives. Prepared in accordance with Section 99 and 100 of the <i>Petroleum Act 2000</i> and Regulations 12 and 13 of the <i>Petroleum Regulations 2000</i> .

7. REFERENCES

APIA 1998: *Code of Environmental Practice*

APPENDIX A

ENVIRONMENTAL OBJECTIVES AND ASSESSMENT CRITERIA

Facilities	Environmental Objectives	Comment	Assessment Criteria
<i>PIPELINES</i>			
Pipeline Construction	<ul style="list-style-type: none"> ▪ Minimise impacts to soil 	The impacts associated with soil disturbance can potentially include erosion, dust generation, compaction and inversion of the soil profile. The main source of disturbance is vehicle movement in off-road locations and sub-surface excavations (eg. trenching).	<ul style="list-style-type: none"> ▪ Works are restricted to construction right-of-way ▪ No evidence of blading with earthmoving equipment in terrain which is naturally conducive to vehicular access (eg. clay pans) ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B ▪ The need to traverse sensitive landsystems and the method of managing the impacts will be justified in accordance with company procedures and recorded and available for auditing.
	<ul style="list-style-type: none"> ▪ Avoid introduction and/or spread of weeds 	Movement of vehicles and equipment is a potential source of weeds. Soil transport also presents an avenue for promoting weed movement.	<ul style="list-style-type: none"> ▪ Local weed and disease management issues are identified and documented prior to the commencement of construction works ▪ Any fill from borrow pits is assessed as 'weed free' and documented prior to transportation to the construction site ▪ Construction areas assessed as 'weed free' following completion of construction, including periodic review. ▪ No new weed infestations in easement as a result of construction activities
	<ul style="list-style-type: none"> ▪ Avoid disturbance to surface water and natural drainage patterns 	Pipeline route selection aims to minimise impact to drainage systems, by avoiding sensitive areas.	<ul style="list-style-type: none"> ▪ Construction activities shut in during periods of flood inundation ▪ Access tracks designed and located to avoid any diversion of water during flood inundation ▪ Interference or blockage of natural drainage patterns is avoided ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B ▪ Surface drainage paths returned to original contours
	<ul style="list-style-type: none"> ▪ Avoid contamination of soil, groundwater and/or watercourses 	Fuels or chemicals stored on site during construction are a source of potential contamination.	<ul style="list-style-type: none"> ▪ No spills of chemicals or fuels to ground or water

Facilities	Environmental Objectives	Comment	Assessment Criteria
	<ul style="list-style-type: none"> ▪ Avoid disturbance to sites of cultural heritage significance 	<p>The aim of the objective is to ensure that any sites of cultural (Aboriginal or Non-Aboriginal) heritage significance are identified and protected. Sites can be identified during the planning stages of pipeline route selection or can be discovered during construction activities.</p>	<ul style="list-style-type: none"> ▪ Proposed pipeline route and associated access tracks surveyed for rare, vulnerable and endangered flora species by appropriately trained and experienced personnel before the commencement of construction ▪ Survey records are kept and are available for auditing ▪ A mechanism is in place to appropriately report and respond to any sites discovered during construction activities ▪ Any sites identified have been flagged and subsequently avoided ▪ No cultural sites have been disturbed by pipeline activities ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B <p>Note: Where a negotiated agreement or determination for heritage clearance is in place, compliance to this agreement or determination takes precedence over the above criteria.</p>
	<ul style="list-style-type: none"> ▪ Minimise disturbance to native vegetation and wildlife habitat 	<p>Pipeline construction requires a degree of land clearance along the right-of-way.</p>	<ul style="list-style-type: none"> ▪ Proposed pipeline route and associated access tracks surveyed for rare, vulnerable and endangered flora species by appropriately trained and experienced personnel before the commencement of construction ▪ Vegetation clearance minimised and takes into account the conservation needs of particular species ▪ Records of vegetation clearance kept and available for auditing ▪ Any sites of rare, vulnerable and endangered flora identified, flagged and successfully avoided during construction ▪ Survey records kept and available for auditing ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B
	<ul style="list-style-type: none"> ▪ Avoid or minimise disturbance to pastoral infrastructure and landholders 	<p>Communication and the establishment of good relations with landowners and community is fundamental to minimising disturbance to as low as practicably possible.</p>	<ul style="list-style-type: none"> ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B ▪ Reasonable landowner requirements are incorporated into management strategies ▪ Landowner complaints are recorded and addressed ▪ Damage to pastoral infrastructure has been avoided or minimised ▪ Where damage has occurred, repairs have been carried out promptly

Facilities	Environmental Objectives	Comment	Assessment Criteria
	<ul style="list-style-type: none"> ▪ Minimise the risks to the safety of the public and third parties. 		<ul style="list-style-type: none"> ▪ All personnel are competent, are given adequate training/induction and are provided with appropriate documentation and procedures that ensure safety risks are managed and minimised to acceptable levels and are as low as reasonably practical. ▪ No injuries to the public or third parties as a result of pipeline construction activities <p>Note: Risks to the public resulting from road traffic accidents involving vehicles engaged in regulated activities are not covered by this SEO.</p>
	<ul style="list-style-type: none"> ▪ Minimise risks to native fauna and livestock 	<p>Open trenches pose the greatest risk to native fauna and livestock. Livestock may also be at risk of escape from unclosed gates.</p>	<ul style="list-style-type: none"> ▪ Proposed pipeline route and associated access tracks surveyed for rare, vulnerable and endangered fauna species by appropriately trained and experienced personnel before the commencement of construction. Identified sites subsequently avoided. ▪ Survey records kept and available for auditing ▪ All reinstated construction areas, tracks and borrow pits satisfy GAS criteria (refer Appendix B) ▪ No livestock injured as a result of pipeline construction activities.
Pipeline Operation	<ul style="list-style-type: none"> ▪ Avoid contamination of soil, groundwater and/or watercourses 	<p>Potential sources of contamination include leaks from the pipeline and/or fire and explosion.</p>	<ul style="list-style-type: none"> ▪ Review, monitoring and inspection of pipeline undertaken in a manner which addresses the relevant risks identified in accordance with AS 2885 for the pipeline. ▪ Leak detection and corrosion control adopted for the pipeline addresses the risks associated with the pipeline. ▪ No spills of chemicals or fuels to ground or water
	<ul style="list-style-type: none"> ▪ Minimise risks to native fauna and livestock 	<p>Potential risks to native fauna and livestock from pipeline operation minimised by adherence to AS2885</p>	<ul style="list-style-type: none"> ▪ Any sites of rare, vulnerable and endangered fauna identified, flagged and subsequently avoided ▪ No livestock injured as consequence of pipeline operation activities ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B

Facilities	Environmental Objectives	Comment	Assessment Criteria
	<ul style="list-style-type: none"> ▪ Minimise the risks to the safety of the public or third parties. 		<ul style="list-style-type: none"> ▪ All personnel are competent, are given adequate training/induction and are provided with appropriate documentation and procedures that ensure safety risks are managed and minimised to acceptable levels and are as low as reasonably practical. ▪ No injuries to the public or third parties as a result of pipeline operation activities <p>Note: Risks to the public resulting from road traffic accidents involving vehicles engaged in regulated activities are not covered by this SEO.</p>
	<ul style="list-style-type: none"> ▪ Avoid or minimise disturbance to pastoral infrastructure and landholders 	<p>Communication and the establishment of good relations with landowners and community is fundamental to minimising disturbance to as low as practicably possible.</p>	<ul style="list-style-type: none"> ▪ Landowner complaints are recorded and addressed ▪ No damage to pastoral infrastructure occurs ▪ Refer to Goal Attainment Scaling (GAS) Criteria - Appendix B
	<ul style="list-style-type: none"> ▪ Avoid introduction and/or spread of weeds 	<p>Movement of vehicles and equipment is a potential source of weeds.</p>	<ul style="list-style-type: none"> ▪ No new weed infestations in easement as a result of pipeline operation activities
	<ul style="list-style-type: none"> ▪ Minimise air pollution and contribution to the "greenhouse effect" 	<p>Environmental hazards which are a potential source of atmospheric emissions include explosion or fire along a pipeline (eg. particulates and raw gas) and a leak associated with pipeline.</p>	<ul style="list-style-type: none"> ▪ Emergency response plans in place for response to a gas leak or fire ▪ In the event of a leak or fire emergency plan implemented and leak or fire contained/controlled promptly

APPENDIX B

GOAL ATTAINMENT SCALING (GAS) CRITERIA

<i>Ref.</i>	<i>Goal</i>	<i>EXPECTED GOAL EXCEEDED</i>		<i>EXPECTED GOAL ATTAINED</i>	<i>MINOR SHORTFALL</i>	<i>SIGNIFICANT SHORTFALL</i>
		+2	+1	0	-1	-2
R.O.W. PREPARATION						
1.	Minimise R.O.W. width standard (15m).	R.O.W. never exceeds, and often is less than 15m on the standard section (>25% of R.O.W.).	R.O.W. never exceeds and is sometimes less than 15m on the standard section (<25% of R.O.W.).	R.O.W. does not exceed 15m on the standard section.	R.O.W. sometimes exceeds 15m of the of standard section (<25% of R.O.W.).	R.O.W. often exceeds 5m on the standard section (>25% of R.O.W.).
2.	Minimise R.O.W. width - dense vegetation (9m).	R.O.W. width is generally less than 9m on the 'dense vegetation' sections.	R.O.W. width is less than 9m on parts of the 'dense vegetation' sections, and never exceeds 9m.	R.O.W. width does not exceed 9m on the dense vegetation' sections.	R.O.W. width sometimes exceeds 9m of the 'dense vegetation' sections (<25% of R.O.W.).	R.O.W. width often exceeds 9m of the 'dense vegetation' sections (>25% of R.O.W.).
3.	Leave trees on R.O.W.	In addition to trees identified for preservation in Line of Sight (LOS) document, there are numerous other trees left on the R.O.W.	In addition to trees identified for preservation in Line of Sight (LOS) document, there are some other trees left on the R.O.W.	All trees identified for preservation in Line of Sight (LOS) document remain standing.	Some clearance of trees identified for preservation in Line of Sight (LOS) document.	All trees removed from R.O.W.
4.	Trim (rather than clear) trees in dense woodland.			Extensive tree trimming in designated areas.	Minor tree trimming in designated areas. Some evidence of tree removal where trimming appropriate.	No trimming evident. Obvious evidence of tree removal where trimming appropriate.
5.	Leave rootstock (ie. minimal grading of R.O.W.).			No evidence of root-stock removal on R.O.W. beyond 3m of trench line. R.O.W. is either only lightly graded or not graded.	Evidence of some root- stock removal beyond 3m of trench line (<25% of R.O.W.).	All rootstock removed. R.O.W. generally deeply graded for full R.O.W. width (>25% of R.O.W.).
6.	Stockpile topsoil.			Topsoil removed to a depth of 50mm and stockpiled separately.		No evidence of topsoil having been stockpiled.
R.O.W. RESTORATION						
7.	Remove all windrows.			No windrows associated with the pipeline are evident (except on dunes where some windrows are inevitable after reprofiling, but will quickly disappear).	Occasional windrows remain on the R.O.W. (<10% of R.O.W.).	Regular windrows remain on the R.O.W. (>10% of R.O.W.).
8.	Follow crown protocol.			No crown present, or crown present over	Crown over trench but periodic breaches	Backfill insufficient to fill trench.

<i>Ref.</i>	<i>Goal</i>	<i>EXPECTED GOAL EXCEEDED</i>		<i>EXPECTED GOAL ATTAINED</i>	<i>MINOR SHORTFALL</i>	<i>SIGNIFICANT SHORTFALL</i>
		+2	+1	0	-1	-2
				the trench with periodic breaches.	(where required) not evident.	
9.	Avoid subsidence.			No subsidence evident on pipe trench.	Minor subsidence (<50mm) evident (<10% of the trench).	Significant subsidence (<50mm) evident, or regular minor subsidence (>10% of the trench).
10.	Respread cleared vegetation.			Where vegetation removed it has been respread over full width of R.O.W., excluding access track.	Vegetation respread over the R.O.W., but some areas have been missed.	Little evidence of vegetation respread over the R.O.W. Stockpiled vegetation left unspread.
11.	Reprofile dunes to pre-existing contours.			Dune profiles have been restored consistent with surrounding dune profiles for all dunes crossed.	Dune profiles have generally been restored consistent with surrounding dune profiles with occasional exceptions (<10% of dunes).	Dune profiles have not been restored consistent with surrounding dune profiles for numerous dunes crossed (>10% of dunes).
12.	Rip compacted areas (eg. access tracks).			All compacted soil ripped.	Some areas of compacted soil have not been ripped (<25%).	Numerous areas of compacted soil have not been ripped (>25%).
13.	Leave trench open <1 day to minimise fauna impacts.	Trench never open for more than 1 day.		Trench rarely open for more than 1 day (<20% of pipeline).	Trench occasionally open for more than 3 days (<20% of pipeline).	Trench often open for more than 4 days (>20% of pipeline).
WASTE MATERIAL						
14.	Appropriate sewage disposal.			Evidence/records show that appropriately designed sewage pits have been constructed.	No evidence/records of appropriately designed sewage pits.	Open pits of waste water and sewage. Pits are not of approved design.
15.	Remove all rubbish.			No evidence of waste on R.O.W. or at campsites.	Evidence that rubbish has been cleaned up, but some rubbish still on R.O.W.	Little or no evidence that rubbish has been cleaned up.
AT INTERSECTION WITH PUBLIC TRACKS						
16.	Reduce R.O.W. width to less than 9m.	R.O.W. width reduced to 5m at track crossing.	R.O.W. width less than 9m at track crossing.	R.O.W. width 9m at track crossing.	R.O.W. width greater than 9m at track crossing.	R.O.W. width greater than 15m at track crossing.
17.	Dogleg R.O.W. to break line-of-sight.	R.O.W. cannot be identified, except by signposts (required by legislation).	R.O.W. doglegs at track crossing so that less than 50m is visible either side of the track.	R.O.W. doglegs at track crossing so that less than 100m is visible either side of the track.	R.O.W. doglegs at track crossing, but 250m of R.O.W. is visible either side of the track.	R.O.W. does not bend at track crossing and greater than 250m of R.O.W. is visible either side of the

<i>Ref.</i>	<i>Goal</i>	<i>EXPECTED GOAL EXCEEDED</i>		<i>EXPECTED GOAL ATTAINED</i>	<i>MINOR SHORTFALL</i>	<i>SIGNIFICANT SHORTFALL</i>
		+2	+1	0	-1	-2
						track.
18.	Leave vegetation on R.O.W. to conceal R.O.W.			Some trees and/or shrubs have been left on the R.O.W. to break the line of sight.		All vegetation has been cleared from the R.O.W.
19.	Re-establish the verge of the track.			Verge of track is intact.		Verge has not been re-established.
BORROW PIT CONSTRUCTION						
20.	Perennial vegetation clearance minimised	No trees or vegetation removed.	No trees removed, only vegetation of priority 4 in Field Guide ¹ cleared.	Trees and vegetation removed in area where could not have been avoided.	Trees of priority 2 or 3 in Field Guide ¹ removed in area where could have been avoided.	Trees of priority 1 in Field Guide ¹ removed in area where could have been avoided.
21.	Site pit appropriately	Borrow pit not visible from road.	Borrow pit shielded from road by utilising screening vegetation or landform.	Borrow pit less than 50m from road.	Borrow pit less than 50m from road.	Borrow pit less than 20m from road.
22.	Protect and avoid sites of natural, scientific, or heritage significance	Sites identified, flagged and avoided by 100m.		Sites identified, flagged and avoided.		Sites disturbed.
BORROW PIT RESTORATION						
23.	Minimise impact on vegetation	Acceptable revegetation after rainfall	Vegetation type and density indistinguishable from surrounding landscape.		Perennial grasses and shrubs revegetated, type consistent with surroundings. Some bare patches still present. Vegetation cover uniform over base and sides of pit.	Revegetation localised on the base of the pit but none or very little on the sides of the pit.
24.	Minimise impact on soil	Minimise erosion	No erosion anywhere on the pit.		Minor erosion along the sides of the pit.	Moderate erosion.
25.	Minimise visual impacts	Borrow pit effectively recontoured and ripped	Pit contours indistinguishable from surrounding landscape. Access ripped.	Pit contours blend well into surrounding landscape, although still evident.	Pit sides battered and ripped along the contour, but is still highly visible. Topsoil and vegetation respread over disturbed area.	Pit sides battered but not ripped.
26.	Site to be left in a clean and tidy condition	Rubbish removed			No evidence of litter.	Small items of litter present on site.
PASTORAL ISSUES						
27.	Repair fences to 'as before' standard.			Fences repaired to 'as before' standard.	Fences repaired, but slightly poorer than before (but still	Fences either not repaired, or very poorly repaired (not

<i>Ref.</i>	<i>Goal</i>	<i>EXPECTED GOAL EXCEEDED</i>		<i>EXPECTED GOAL ATTAINED</i>	<i>MINOR SHORTFALL</i>	<i>SIGNIFICANT SHORTFALL</i>
		+2	+1	0	-1	-2
					stockproof).	stockproof).
28.	Consult with pastoralist.			Pastoralist consulted, and happy with the Project.	Pastoralist consulted, but has some concerns.	Pastoralist not contacted concerning the Project.
ABORIGINAL HERITAGE						
29.	Sites identified in LOS and preliminary surveys are not disturbed.			Sites identified by the archaeological survey are recorded, reported and remain undisturbed.	No evidence of disturbance to sites, but some procedural recommendations not followed.	There is evidence that sites identified by the archaeological survey have been disturbed. Key recommendation not followed.
30.	Correct protocol followed for sites discovered during construction.			Either no sites encountered, or records show correct procedures were followed to avoid damage to additional sites.		Evidence that additional sites have been disturbed, and there are no records of ameliorative measures having been taken to avoid damage.
R.O.W REHABILITATION – AFTER 2 YEARS						
31.	R.O.W. is stable (ie. no evidence of gulying or blowouts 2 years after R.O.W. restoration).			No evidence of erosion on R.O.W.	Minor rills and/or deflation on R.O.W., but unlikely to worsen (<200mm deep).	Significant gully or blowout on R.O.W. (>200mm deep).
32.	Good vegetation 2 years after R.O.W. restoration.	Vegetation indistinguishable from surrounding landscape.		Vegetation type and density consistent with surrounding landscape, but less mature.	Some sections of the R.O.W. have poor revegetation (<25% of R.O.W.).	Revegetation of the R.O.W. is generally poor (>25% of R.O.W.).

1 FIELD GUIDE TO THE COMMON PLANTS OF THE COOPER BASIN – SOUTH AUSTRALIA AND QUEENSLAND. SANTOS LTD. (SEA PTY LTD 1997)