



# Newcastle Gas Storage Facility

**3rd Quarter Audit - June 2013**

AGL Energy Limited

August 2013

0169504rp01

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AGL Energy Limited

Newcastle Gas Storage  
Facility  
*3rd Quarter Audit - June 2013*

August 2013

Reference: 0169504rp01

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3rd Quarter Audit – August 2013

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AGL Energy Limited

August 2013

0169504 3rd Quarter Audit Report Final

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## **EXECUTIVE SUMMARY**

*Environmental Resources Management Australia Pty Ltd (ERM) was commissioned to perform a quarterly audit (third quarter) for the Newcastle Gas Storage Facility (NGSF) on behalf of AGL Energy Limited (AGL). The primary purpose of the audit was to satisfy the Department of Planning and Infrastructure (DoPI) Ministers' Conditions of Approval (MCoA) B54a which requires a Compliance Tracking Program that includes:*

*“(a) provisions for periodic reporting of compliance status to the Director-General including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project and within two years of operation commencement”.*

*The audit included a review of the implementation of the following plans:*

- Soil Management Sub Plan;*
- Surface Water Management Sub Plan; and*
- Acid Sulphate Soil Management Sub Plan.*

*The Contractor has established the control systems generally required for a project of this nature, and all staff interviewed demonstrated an understanding of requirements and a commitment to the application of the management systems.*

*Overall a high standard of compliance was noted achieved with the audit documents that were reviewed, with 13 non-conformances and 6 improvement opportunities identified for review and action by AGL and its contractors.*

## ABBREVIATIONS AND GLOSSARY

<b>Term</b>	<b>Description</b>
AGL	AGL Energy Limited
AQMSP	Air Quality Management Sub Plan
ASSMSP	Acid Sulphate Soil Management Sub Plan
CBI	CBI Constructors Pty Ltd
CEMP	Construction Environment Management Plan
CHMSP	Cultural Heritage Management Sub Plan
DGHMHMSP	Dangerous Goods & Hazardous Materials Handling Management Sub Plan
DP&I	Department of Planning and Infrastructure
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EPBC	Environment Protection and Biodiversity Conservation Act 1999
ERM	Environmental Resources Management Australia Pty Ltd
ERSP	Emergency Response Sub Plan
FERMSP	Flood Emergency Management Sub Plan
FFMSP	Flora and Fauna Management Sub Plan
GMP	Groundwater Monitoring Program
GMSP	Groundwater Management Sub Plan
MCoA	Ministers Conditions of Approval
NGSF	Newcastle Gas Storage Facility (the 'Project')
NVMSP	Noise and Vibration Management Sub Plan
SMSP	Soil Management Sub Plan
SoC	Statement of Commitments
SWMSP	Surface Water Management Sub Plan
TMSP	Traffic Management Sub Plan
VRMSP	Vegetation Rehabilitation Management Sub Plan
WMSP	Waste Management Sub Plan

## INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned to perform a quarterly audit (third quarter) for the Newcastle Gas Storage Facility (NGSF) (the 'Project') on behalf of AGL Energy Limited (AGL).

The primary purpose of the audit was to satisfy the New South Wales (NSW) Department of Planning and Infrastructure (DP&I) Ministers' Conditions of Approval (MCoA) B54a which requires a Compliance Tracking Program that includes:

*"(a) provisions for periodic reporting of compliance status to the Director-General including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project and within two years of operation commencement".*

Section 2.3 of the Compliance Tracking Program (Rev 1 issued 22/08/2012) commits to 3 monthly audits undertaken by the Project Environmental Representative to satisfy MCoA B549(b)

*"a programme of independent environmental auditing will be carried-out in accordance with AS/NZ ISO 19011:2003 - Guidelines for Quality and/or Environmental Management Systems Auditing".*

This audit is the third quarterly audit completed for the Project which covers the period 1 March 2013 to 6 June 2013.

### 1.1

#### PROJECT DESCRIPTION

AGL Energy Limited (AGL) is developing the Newcastle Gas Storage Facility in Tomago New South Wales to meet AGL's peak gas market requirements over winter and to provide additional security of gas supply during supply disruption events. New South Wales currently has no reliable gas storage capacity.

Construction of the Newcastle Gas Storage Facility by CBI Constructors Pty Ltd (CBI) includes the gas storage facility site, access road and utility corridor and gas pipeline access corridor (the Project). Additional works by other contractors include construction of the gas pipeline to connect the existing Jemena Gate Station at Hexham with the gas storage facility and construction of the main power supply.

## 1.2 *AUDIT OBJECTIVE*

The primary objectives for the 3<sup>rd</sup> quarterly compliance audit include the following:

- to verify the implementation of the following plans:
  - Soil Management Sub Plan;
  - Surface Water Management Sub Plan; and
  - Acid Sulphate Soil Management Sub Plan.
- review the status of the ERM 2<sup>nd</sup> quarter audit findings;
- to identify the areas for potential improvement for environmental management; and
- provide advice as to whether any amendments to sub-Plans are required.

This audit represents a snapshot of performance on the days of the audit.

## 1.3 *AUDIT SCOPE*

The audit scope is limited to the activities that have undertaken at the site during the audit period and includes the following:

- underboring across TAC Northern Access Road
- trenching works along Old Punt Road;
- road preparation finishing works along the Main Access Road;
- erosion and sediment control installation and maintenance;
- forming of the LNG Tank bund wall, foundation works and underground services work in the Primary Project Area (PPA); and
- installation of fencing along the main access road.

## 1.4 *AUDIT CRITERIA*

The audit covered the following specifications and standards, with a particular focus on activities associated with the current stages of construction. The documents relevant to this audit included:



- DP&I, Ministers Conditions of Approval MP10\_0133 issued 10 May 2012;
- Modification of Minister's Approval MP10\_0133 issued 5 February 2013;
- Statement of Commitments from the Preferred Project Report CR 6023\_1-\_v3 issued September 2011;
- the following sub plans of the Construction Environment Management Plan (Rev 1 issued 3/10/2012);
  - Soil Management Sub Plan (CBI Doc Number 170596-EN-PL-00007), Rev 1 issued 8 November 2012;
  - Surface Water Management Sub Plan (CBI Doc Number 170596-EN-PL-00003), Rev 1 issued 5 April 2013; and
  - Acid Sulphate Soil Management Sub Plan (CBI Doc Number 170596-EN-PL-00008), Rev 1 issued 8 November 2012.
- Environmental Representative Site Inspection Reports for period 1 March 2013 to 6 June 2013.

## 1.5 *LIMITATIONS OF THIS REPORT*

This disclaimer, together with any limitations specified in the report, applies to this report and its use.

This report was prepared in accordance with the contracted scope of services for the specific purpose stated and subject to the applicable cost, time and other constraints. In preparing this report, ERM relied on:

- a) client/third party information which was not verified by ERM except to the extent required by the scope of services, and ERM do not accept responsibility for omissions or inaccuracies in the client/third party information; and
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## 2.1 METHODOLOGY AND PROCESS

The audit comprised a site inspection, interviews with key personnel and review of records and other related documentation on 6 June 2013. The audit process included the following primary components:

- development of a Terms of Reference developed which included:
  - audit scope and objectives;
  - date and location of audit;
  - members of audit team;
  - list of people audited; and
  - list of reference documents and audit criteria.
- opening meeting was held on 6 June 2013 at the site office to confirm audit objectives and scope. Attendees included:
  - Megan McLachlan (ERM Auditor);
  - Craig Rivera (CB&I Environmental Manager); and
  - Keith Hughes (CB&I Environmental Advisor).
- a site inspection was undertaken on 6 June 2013;
- any identified gaps/issues were documented and followed up with site personnel and additional information was requested as required;
- a closeout meeting was held on 6 June 2013 to discuss initial findings and recommendations. Attendees included:
  - Megan McLachlan (ERM Auditor);
  - Craig Rivera (CB&I Environmental Manager); and
  - Keith Hughes (CB&I Environmental Advisor).
- preparation of draft audit report;
- meeting on 26 July 2013 was held to discuss the draft report and prepare a response and action plan (refer *Annex D*). Attendees included:
  - Megan McLachlan (ERM Auditor);

- Craig Rivera (CB&I Environmental Manager); and
- Aaron Clifton (AGL Environment Manager);
- preparation of final audit report.

Findings resulting from an assessment of audit evidence were divided into four categories as follows:

- **Conformance (C):** Adequate and appropriate implementation against audit requirements.
- **Non-conformance Category 1 (NC-1):** Failure to meet the requirements of the audit criteria in terms of legislative requirements, failure to achieve the management performance outcomes identified in documentation, or ineffective environmental management of the activity that represent an *immediate risk* to the environment or reputation of the company.
- **Non-conformance Category 2 (NC-2):** Failure to achieve the management performance outcomes identified in documentation, or ineffective environmental management of the development that does not represent an immediate risk to the environment. These will generally be associated with documentation, records or administrative requirements.
- **Improvement Opportunity (IO):** A finding which does not strictly relate to the scope of the audit and which could lead to performance improvement.
- **Not Applicable (NA):** requirement was not applicable to project operations during the audit as requirement or control was not applicable to the activities underway at the time.

### 3.1 PREVIOUS AUDIT FOLLOW-UP

#### 3.1.1 2<sup>nd</sup> Quarter Audit Report

The 2<sup>nd</sup> quarter audit completed 1 March 2013 against the requirements of the MCoA, SoC and DSEWPaC Approval conditions raised two non-conformances and two improvement opportunities. In addition, review of the documentation during the audit identified a further five improvement opportunities. Although these improvement opportunities were not directly related to the requirements of the MCoA, SoC and approval conditions from the DSEWPaC, it was considered the implementation of these may potentially improve site environmental performance.

A summary of CBI's and AGL's response to the audit findings is included in Table 3.1.

**Table 3.1 Previous Audit Findings: Summary of Actions**

<b>Issue</b>	<b>Finding</b>	<b>Response</b>
<i>Ministers Conditions of Approval MP10_0133</i>		
Prior to the commencement of construction, the Proponent shall establish a dedicated website or maintain dedicated pages within its existing website for the provision of electronic information associated with the project. The Proponent shall publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to: (d) a copy of each plan, report, or monitoring programme required by this approval.	Not all plans required under the MCoA have been loaded onto website. Plans not uploaded include the FFMSp, CHMSp, SWMSp, FERMSp, NMSp, ASSMSp and TMSp. Website indicates these are available on request.	Website as at 1 March 2013 includes all plans as required
Prior to the commencement of construction works, the Proponent shall establish a meteorological monitoring station on the site, or at a representative location off-site, for the purpose of continuously monitoring meteorological conditions on the site for the life of the project. The meteorological monitoring station shall be located, operated and maintained to meet the requirements of the OEHL. The Proponent may satisfy this condition by demonstrating to the satisfaction of the OEHL that it has access to data from an existing meteorological monitoring station, representative of conditions on this site, and operated by a third party.	Formal EPA approval for use of TAC meteorological station is to be obtained.	Email received 5 April 2013 from Peter Jamieson of EPA confirming TAC monitoring station meets requirements.

<b>Issue</b>	<b>Finding</b>	<b>Response</b>
<i>Statement of Commitments</i>		
The surface water management plan will be prepared in consultation with HWC, OEH and NOW, and will include, but not be limited to: a) A description of the quantity and source of all surface water supplies relating to construction and operations; b) Detailed baseline data on surface water quality; c) Surface water quality impact assessment criteria and a protocol for the investigation, notification and mitigation of identified exceedances; d) A program to monitor surface water quality; e) Detailed design of all water crossings, culverts and in-stream works; f) A program to monitor and manage watercourse crossings, culverts and in-stream works;	Program to monitor and manage any in watercourse crossings, culverts and in-stream works to be added to SWMSP (now applicable to works package to be completed by CBI)	Surface Water Management Sub Plan revised (Rev 1) to include SoC 83. Audit against implementation of this plan include in Section 3.2.2 of this report.
Monitoring - Noise emissions during construction and operations to ensure equipment is meeting noise certification and criteria requirements and detect any faulty or damaged equipment.	Monitoring as per the Noise and Vibration Management Sub Plan to be implemented. Arrangements have been made to purchase a noise level meter to meet this commitment.	Noise monitoring procedure draft developed and implemented for ambient noise. Machinery noise under development. <b>IO</b> - consider consolidating noise results into spreadsheet to track compliance
<i>Document Review</i>		
Weekly toolbox talks	Consider the roll out of Environmental Work Method Statements into the weekly Toolbox talks	Completed - refer CBI monthly reports for topics covered.
Daily Inspection Checklist	Consider the addition of a formal check box for the completion of vibration monitoring (qualitative)	To be completed
Toolbox Training Register	Consider the addition of a column in the toolbox talk training register for which contractor companies attended toolbox training which will assist with tracking who has completed training and identify any gaps with contractor training.	Completed - reported in CBI monthly reports
Environment Document Register	Consider adding the Toolbox Training Register and the Weekly Erosion and Sediment Control Checklist.	Completed

Issue	Finding	Response
Materials Tracking Register	Consider the addition of the consignment number for the regulated waste tracking documents (to assist with tracking correct disposal of hazardous wastes)	Completed.

All previous audit findings have since been addressed with the exception of the addition of a qualitative check for vibration at the site boundary on the daily checklist. In addition an improvement opportunity has also been identified for the noise monitoring program. Consideration should be given to consolidating the noise results into an excel spreadsheet, or similar, to track compliance.

### 3.2

#### *ASSESSMENT OF CEMP SUB PLAN IMPLEMENTATION*

A compliance check of the MCoA and SoC conditions (field component) was completed against the commitments made in the targeted sub plans for the site. Non-conformances and improvement opportunities for each sub plan reviewed are summarised in *Table 3.2*.

A full review and audit findings for implementation of each Sub Plan are under the following Annexures:

- Soil Management Sub Plan *Annex A*
- Surface Water Management Sub Plan *Annex B*
- Acid Sulphate Soil Management Sub Plan *Annex C*

**Table 3.2 Summary of Non Conformances and Improvement Opportunities**

Item No	Assessment Requirement	Comment	Audit Classification
<b>Soil Management Sub Plan</b>			
<i>Minister's Conditions of Approval MP10_0133</i>			
B21	Erosion and Sediment controls consistent with Managing Urban Stormwater: Soils and Construction Manual (Landcom, 2004, or its latest version) shall be installed prior to the commencement of soil disturbing works and shall be maintained until such time as the disturbed areas have been rehabilitated.	Silt fences installed along site boundary - inspected daily and maintained as required. Erosion and Sediment Control Inspection and Maintenance Checklist recently updated to include sediment capacity, performance of measures and conditions of measures. Consider updating the SWMSP with the amended Checklist.	IO
B22	The Proponent shall carry out rehabilitation of disturbed areas progressively, and as soon as reasonably practicable following disturbance.	Old Punt Rd works have been completed with a delay noted for stabilising road edges. First raised in ER site inspection report of 1 May 2013 with works to be completed as at date of audit. Plan is for Wards Civil to roll edges of road to stabilise.	NC-1
<i>Statement of Commitments</i>			
1	Include a spill response plan in the emergency response plan and ensure that there is adequate spill response equipment stored onsite. Personnel will be trained on the emergency response plan and correct use of the spill response equipment.	Toolbox talks currently include spill response procedure. Consider including training on how to use the spill kits and material effectively.	IO
8	Use licensed contractors to collect, transport and dispose of hazardous materials such as waste solvents, paints, mercury absorption medium and hydrocarbons to a licensed off-site facility in accordance with EPA guidelines.	Copies of waste contractor EPLs obtained. Waste tracking requirements met with check of disposal facilities EPLs completed. Materials and consignment numbers are generally tracked in register, however four consignment numbers for contaminated soil material removed off site are still to be obtained from sub-contractors (>30days).  Consider confirming waste has actually reached disposal location as stated on tracking documents as "due diligence".	IO



Item No	Assessment Requirement	Comment	Audit Classification
14	Include inductions to construction personnel that outline measures on how to deal with suspected contaminated soil.	Induction directs personnel to contact supervisor if suspected contaminated soil is found during works. Consider including in induction how to recognise/identify contaminated soil for reporting to supervisor	IO
15	A construction Surface Water Management Plan that describes erosion and sediment control will be prepared in accordance with NSW DECC Managing Urban Stormwater: Soils and Construction - Volume 2A Installation of Services 2008 (DECC, 2008) and Managing Urban Stormwater: Soils and Construction (The Blue Book) (Landcom, 2004). All erosion control and drainage works will be designed in accordance with Urban and Sediment Control Guidelines (DLWC, 1992).	Installation of controls as per guidance documents with exception of diversion drains along cuts on Main Access Road. Consider installing diversion drains as per plans in SMSP (if possible, divert water away from site to minimise load on erosion and sediment controls).	NC-2
49	Secure disturbed bare soils by re-spreading topsoil, re-vegetating or applying a geo-fabric (or similar), as soon as practicable after reinstatement of earthworks.	Refer to MCoA B22 (duplicated)	NC-1
50	Re-vegetate exposed soils as soon as possible to reduce potential for sediment-laden runoff.	Refer to SoC49 and MCoA B22 (duplicated)	NC-1
59	Stabilise the banks of any disturbed watercourses adjacent to Old Punt Road using measures such as rock rip-rap, diversion berms, sediment fences, jute matting and reseeded.	Watercourse on Old Punt Road does not currently have erosion and sediment control structures installed. Consider installing erosion and sediment control devices around watercourse on Old Punt Rd until area surrounding is stabilised.	NC-1
60	Divert runoff upstream of disturbed areas to existing drainage lines to prevent the risk of increasing erosion and requiring further sediment control measures.	Refer to SoC15 (duplicated)	NC-1

Item No	Assessment Requirement	Comment	Audit Classification
<i>Additional SMSP Commitments</i>			
Section 3.2	<p>Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil management. Examples of training topics include:</p> <ul style="list-style-type: none"> <li>• Identification of potentially contaminated soil and fill material.</li> </ul>	Identification of potentially contaminated soil to be completed as per SoC14 (duplicated)	IO
Section 5.2	Regular environmental compliance audits against the EWMS (Task Observation as described in Section 5.4.3 of the CEMP) will also incorporate any issues relating to soil.	EWMSs are anecdotally reviewed, marked up and comments given to the sub-contractors. No written records are currently maintained. Consider including a simple cover page which includes date, name of EWMS reviewed and any comments. Attached this to copy of marked up EWMS and filed as evidence of check being completed.	NC-2
AGL	Provide workforce inductions and training to ensure personnel have knowledge of legislation regarding movement of soils (i.e. importing and exporting soils from site). Engage qualified consultants to assess materials proposed to be imported to or exported from site, and provide re-use/disposal options.	Legislation re movement of soils not included in induction. Topic not include in toolbox talks during audit period. Consider the inclusion of requirements to either inductions or target training to relevant staff.	NC-2
<b>Surface Water Management Sub Plan</b>			
<i>Statement of Commitments</i>			
37	Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	Daracon and Wards complete tests for different parameters and at different frequencies for dewatering. Consider developing standard procedure which outlines parameters to be tested and required frequency when dewatering and infiltrating to groundwater.	IO

Item No	Assessment Requirement	Comment	Audit Classification
<i>Additional SWMSP Commitments</i>			
Section 5.2.2	<p>For each sampling event, field water quality measurements will be recorded including field pH, electrical conductivity (EC), redox potential, turbidity, temperature and dissolved oxygen. Samples will be sent to a NATA accredited laboratory, for analysis of:</p> <ul style="list-style-type: none"> <li>• General parameters - total suspended solids (TSS), turbidity, total dissolved solids (TDS) and EC;</li> <li>• Major cations - calcium, magnesium, potassium and sodium;</li> <li>• Major anions - alkalinity, chloride, sulphate and fluoride;</li> <li>• Dissolved and total metals - arsenic, cadmium, chromium, copper, lead, nickel, zinc and iron;</li> <li>• Total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylenes (BTEX);</li> <li>• Nutrients - total nitrogen, total kjeldahl nitrogen (TKN), nitrate, nitrite and total phosphorus.</li> </ul> <p>Sampling and analysis of a volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) suite will also be undertaken at the start and end of the construction program.</p>	<p>Analytes tested as per commitment with exception of full suite of VOCs and SVOCs (BTEX and TPH tested monthly). Review likely contaminants and objectives of monitoring program and expand list of VOCs/SVOCs accordingly if required.</p>	NC-1
<b>Acid Sulphate Soil Management Sub Plan</b>			
<i>Additional SWMSP Commitments</i>			
Section 5.1	<p>Documented weekly environmental inspections of the construction site will also be undertaken by the EV using the weekly environmental inspection checklist and forwarded to the EM for review. The weekly checklist includes a section on ASS.</p>	<p>Weekly checklist does not include a section on ASS. Review weekly checklist and current commitment in ASSMSP. As future ASS works are limited, consider revising commitment in ASSMSP to include 'comment on any ASS works into Weekly Checklist comments section'.</p>	NC-2

Item No	Assessment Requirement	Comment	Audit Classification
Appendix B Table 7-1	Monitoring of ASS stockpiles after treatment. pH monitoring after initial treatment event. If pH values are <4, additional treatments will be required.	No further testing of pH was completed on the treated ASS stockpiles. Material was stored for a period > 4 weeks. Although this material was treated as a precaution and was not considered ASS, ensure if any treated stockpiles are stored in the future, testing is completed to confirm effective treatment of ASS.	NC-2
Appendix B Table 7-5	Ensure an appropriate lime register is maintained, listing the source of lime, quantity imported and where it is used on site.	A lime register was not maintained. Review the legal and guidance requirements for maintaining a lime register and action accordingly.	NC-2
Appendix B Table 7-9	ASS monitoring records; Excavation records; Stockpile tracking records; Register of lime used for ASS treatment; and Records of offsite disposal of treated stockpiles (i.e. landfill waste disposal docket).	All required records maintained with exception of lime register. Duplicated finding - refer Table 7-5.	NC-2

## *CONCLUSION*

A quarterly audit to review the implementation of the following management plans was completed:

- Soil Management Sub Plan;
- Surface Water Management Sub Plan; and
- Acid Sulphate Soil Management Sub Plan.

Overall, substantial conformance was achieved with the audit documents that were reviewed with the exception of 13 non-conformances and 6 improvement opportunities.

Annex A

## Audit Table – Soil Management Sub Plan

**Table A1 Compliance Assessment – Implementation of the Soil Management Sub Plan**

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Regulatory Requirements - EPL 20130</b>					
<p>Licensed activities must be carried out in a competent manner. This includes:</p> <p>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</p> <p>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</p>	O1.1	<p>Site Inspections</p> <p>ER Site Inspection Reports</p> <p>CBI Daily and Weekly Site Inspection reports</p>	<p>Minor quantities of hydrocarbons stored inside bunded shipping containers - shipping containers are marked and SDSs included inside containers. Small volumes of fuel stored in impervious containers near work sites.</p> <p>All chemicals brought onto site require form filled out and submitted to CBI for review.</p> <p>Waste stored in designated bins. Contaminated soil (hydrocarbon) stored in drums and transported off site under waste tracking system - entered into Materials Tracking Register.</p>	C	
<p>All plant and equipment installed at the premises or used in connection with the licensed activity:</p> <p>a) must be maintained in a proper and efficient condition; and</p> <p>b) must be operated in a proper and efficient manner.</p>	O2.1	Daily vehicle inspection logs	<p>All vehicles checked during daily pre-start.</p> <p>Maintenance records maintained</p>	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>DoPI, Ministers Conditions of Approval MP10_0133 issued 10 May 2012</b>					
Except as may be expressly provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the Protection of the Environment Operations Act 1997 during construction of the project.	B20	Site Inspections ER Site Inspection Reports CBI Daily and Weekly Site Inspection reports Monitoring records	Dewatering of work areas after rainfall to groundwater - water tested as per SWMSP.  One discharge of sediment laden water pumped off site along Main Access Road on 6 March 2013 after heavy rainfall received on site - reported to EPA and DP&I as incident. Results indicate water was within project guidelines for pH and TSS (primary analytes of concern).  Dewatering added to WMS	C	
Erosion and Sediment controls consistent with Managing Urban Stormwater: Soils and Construction Manual (Landcom, 2004, or its latest version) shall be installed prior to the commencement of soil disturbing works and shall be maintained until such time as the disturbed areas have been rehabilitated.	B21	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Silt fences installed along site boundary - inspected daily and maintained as required.  Erosion and Sediment Control Inspection and Maintenance Checklist recently updated to include sediment capacity, performance of measures and conditions of measures.	IO	Update Erosion and Sediment Control Inspection and Maintenance Checklist in SWMSP
The Proponent shall carry out rehabilitation of disturbed areas progressively, and as soon as reasonably practicable following disturbance.	B22	Site Inspections ER Site Inspection Reports CBI Daily and Weekly Site Inspection reports	Old Punt Rd works completed - delay stabilising road edges. First raised in ER site inspection report of 1 May 2013 with works to be completed as at date of audit. Planned to roll edges of road to stabilise.	NC-1	Consider the stabilisation of Old Punt Rd where works are completed.



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Statement of Commitments from the Preferred Project Report CR 6023_1- v3 issued September 2011</b>					
Include a spill response plan in the emergency response plan and ensure that there is adequate spill response equipment stored onsite. Personnel will be trained on the emergency response plan and correct use of the spill response equipment.	SoC 1	Appendix B13 - Emergency Response Plan  Tool box records  Training Records	Spill response plan included in ERP and in Table 8-13 of SMSP.  Spill response include in toolbox talks - last 16/4/2013 for Wards. Daracon gave presentation to their staff on spill response April 2013.	IO	Include training in use of spill kits in training/toolbox
Ensure concrete mixers and pump trucks are washed on bunded hardstand areas so that no waste enters the environment.	SoC 2	Site Inspections  ER Site Inspection Reports  Modification to CoA	Modification of Minister's Approval MP10_0133 issued 5 February 2013 allowing washout outside of bunded hardstand areas until concrete hardstand areas are installed on the site.  Concrete washouts occur as per approval modification.	C	
Store potential acid sulfate soils capable of producing leachate within lined bunds.	SoC 3	Site Inspections  ER Site Inspection Reports  CBI Daily and Weekly Site Inspection reports	Treated PASS stored in plastic lined bunded area. Material classifies as solid waste and removed off site. Area to be decommissioned	C	
Provide workforce inductions and training to ensure personnel have knowledge of the correct use of refuelling systems and chemical handling procedures.	SoC 5	Induction slide pack	Induction includes refuelling and chemical handling requirements for the site.	C	
Restrict vehicle movements to sealed or dedicated areas and roadways, as far as practical.	SoC 6	Site Inspections  ER Site Inspection Reports	Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Ensure drainage around vehicle and equipment servicing areas, workshops and chemical storage areas is directed to sumps.	SoC 7	Site Inspections ER Site Inspection Reports	Vehicles and equipment not currently serviced on site.	NA	
Use licensed contractors to collect, transport and dispose of hazardous materials such as waste solvents, paints, mercury absorption medium and hydrocarbons to a licensed off-site facility in accordance with EPA guidelines.	SoC 8	Site Inspections ER Site Inspection Reports Materials Tracking Register	EPLs of waste contractors obtained. Waste tracking requirements met with check of disposal facilities EPLs completed. Materials and consignment numbers tracked in register.	IO	Four consignment numbers for contaminated soil material to be obtained from sub-contractors.  Consider confirming waste has actually reached disposal location as stated on tracking documents as "due diligence".
Remove wastewater and sewage from site by an EPA licensed operator for treatment at an EPA-approved wastewater treatment facility.	SoC 9	Site Inspections ER Site Inspection Reports Materials Tracking Register	Checks completed and EPLs obtained	C	
Regularly inspect hazardous material containment facilities to ensure their integrity.	SoC 10	CBI Daily and Weekly Site Inspection reports	Checks completed and recorded by CBI	C	
Perform an assessment (in accordance with the SEPP 55 and NEPM 1999) to confirm the contaminant type, concentrations and extent of contamination in the event of unearthing historically contaminated soil. Action will then be undertaken in accordance with relevant EPA requirements and land use criteria to either remediate the impacted area or remove the contaminants.	SoC 12	Interview - Environment Manager	No contaminated soil material has been unearthed to date of audit.	NA	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Include inductions to construction personnel that outline measures on how to deal with suspected contaminated soil.	SoC 14	Interview - Environment Manager Induction slide pack	Requirement to contact supervisor in case of uncovering contaminated soil outlined in induction.	IO	Consider including in induction how to recognise/identify contaminated soil for reporting to supervisor
A construction Surface Water Management Plan that describes erosion and sediment control will be prepared in accordance with NSW DECC Managing Urban Stormwater: Soils and Construction - Volume 2A Installation of Services 2008 (DECC, 2008) and Managing Urban Stormwater: Soils and Construction (The Blue Book) (Landcom, 2004). All erosion control and drainage works will be designed in accordance with Urban and Sediment Control Guidelines (DLWC, 1992).	SoC 15	Appendix C to the SWMP	SWMSP developed in accordance with guidance documents. Controls and guidance on installation included in Appendix C of plan.  Installation of controls as per guidance documents with exception of diversion drains along cuts on Main Access Road.	NC-2	Install diversion drains as per plans in SMSP (if possible, divert water away from site to minimise load on erosion and sediment controls)
Inspecting and monitoring hazardous material containment facilities to ensure their integrity.	SoC 23	CBI Daily and Weekly Site Inspection reports	Checks completed and recorded by CBI	C	Duplicate with SoC 10
Inspecting and maintaining erosion and sedimentation control structures.	SoC 24	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Inspecting and monitoring of works to ensure soil erosion or contamination is not occurring.	SoC 25	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	
Restrict construction traffic movement to formed access tracks to avoid excess disturbance to soil and creation of bare areas where practicable.	SoC 46	Site Inspections ER Site Inspection Reports	Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.	C	Duplicate with SoC6
Select construction equipment to minimise the disturbance to soils.	SoC 47	Site Inspections ER Site Inspection Reports	Majority of machines have rubber tyres with track vehicles only used when works require.	C	
Minimise duration of subsoil (including stockpiles) exposure to weather.	SoC 48	Site Inspections ER Site Inspection Reports	Subsoil emplaced in final locations as soon as practicable.	C	
Secure disturbed bare soils by re-spreading topsoil, revegetating or applying a geo-fabric (or similar), as soon as practicable after reinstatement of earthworks.	SoC 49	Site Inspections ER Site Inspection Reports	Rehabilitation works have commenced along northern side of Main Access track. Old Punt Rd to be stabilised. All other areas remain active	NC-1	Refer to MCoA B22 for actions (duplicated)
Revegetate exposed soils as soon as possible to reduce potential for sediment-laden runoff.	SoC 50	Site Inspections ER Site Inspection Reports	Refer above	NC-1	Refer above

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Provide wind-breaks (or equivalent control measures) around exposed areas and stockpiles to prevent wind erosion.	SoC 51	Site Inspections ER Site Inspection Reports	Not applicable as material is sandy with no dust noted coming off stockpiles during site inspections - includes windy days	NA	
Place soil stockpiles upslope of excavations and not in drainage lines.	SoC 52	Site Inspections ER Site Inspection Reports	Excavations primarily in Primary Project Area which is relatively flat.  Trenches along Main Access Road - material placed longitudinally (perpendicular to drainage lines).  No material noted in drainage lines during audit period.	C	
Construct roadside swales to capture runoff from the Primary Project Area access roads during construction.	SoC 53	Site Inspections ER Site Inspection Reports	Roadside swales installed along Main Access Road.	C	
Design drains to minimise water velocities.	SoC 54	Site Inspections	Drain width is maximised. Rock checks placed along lengths on southern side of road. Mulch and jute mesh where required	C	
Install velocity reduction devices, such as sandbags, in drains and sloped drains to reduce erosion.	SoC 55	Site Inspections	Sandbags have been placed in drains where required - additional sandbags to be placed to prevent scouring around edges.	C	
Install sediment capture devices, such as silt fences and bunding, down-slope of exposed soils and soil stockpiles.	SoC 56	Site Inspections	Silt fences installed along site boundaries.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Construct suitably lined sediment control ponds down-slope of construction work areas upfront. These will subsequently be developed into permanent wetlands during the operations stage.	SoC 57	Site Inspections	Sediment control pond to be installed in Primary Project Area.	NA	
Treat construction tracks to minimise surface degradation, e.g., compaction or topping with gravel.	SoC 58	Site Inspections	Main Access Road and Gas Pipeline Track both sealed with crushed gravel material.	C	
Stabilise the banks of any disturbed watercourses adjacent to Old Punt Road using measures such as rock rip-rap, diversion berms, sediment fences, jute matting and reseeded.	SoC 59	Appendix C (Section 4.2)	Watercourse on Old Punt Road does not currently have erosion and sediment control structures installed. Area around drain to be stabilised	NC-1	Consider installing erosion and sediment control devices around watercourse on Old Punt Rd until area surrounding is stabilised.
Divert runoff upstream of disturbed areas to existing drainage lines to prevent the risk of increasing erosion and requiring further sediment control measures.	SoC 60	Site Inspections ER Site Inspection Reports	Diversion drains to be installed as per SMSP	NC-1	Duplicated (refer SoC 15)
Undertake daily inspections of all runoff, erosion and sediment control structures during the construction period.	SoC 61	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Checks completed daily (split into work areas with all areas covered over the week). All areas inspected after rainfall events.	C	
Maintain runoff, erosion and sediment control structures according to appropriate standards.	SoC 62	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	CBI Checklists reports on effectiveness if controls Site inspections indicate maintenance works are on-going.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Ensure silt fences are in a vertical position and securely fixed and remove sediment or residue behind sediment control barriers.	SoC 63	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	CBI Checklists report in general condition of structures	C	
Monitor earthwork areas regularly for signs of erosion.	SoC 64	CBI Daily and Weekly Site Inspection reports	Checks for erosion completed and recorded	C	
Install and commission at the operations phase, runoff, erosion and sediment control measures as soon as practical.	SoC 65	Site Inspections	Project still in construction phase	NA	
<b>Additional Management Plan Commitments</b>					
<b><i>Training and Awareness</i></b>					
All project personnel will undergo a general project induction prior to commencing work with CBI. This will include a soil component to reinforce the importance of management and the measures that will be implemented to protect soil.  Project inductions will include: <ul style="list-style-type: none"> <li>• Basic erosion and sediment control principles;</li> <li>• Acid Sulfate Soils</li> <li>• Contaminated soil; and</li> <li>• Spill response.</li> </ul>	Section 3.2	Induction slide pack	States controls to minimise erosion have been installed  ASS considered low risk however explained regular checks are required during excavation. Material must be contained in bunded areas  Any soil contamination to be reported to supervisor.  Spill response discussed a number of slides throughout presentation including safety.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<p>Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil management. Examples of training topics include:</p> <ul style="list-style-type: none"> <li>• Sediment basin construction;</li> <li>• Sediment basin maintenance;</li> <li>• Working near or in drainage lines and creeks;</li> <li>• Emergency response measures in high rainfall events;</li> <li>• Spill response;</li> <li>• Erosion and Sediment Controls;</li> <li>• Stockpile location criteria; and</li> <li>• Identification of potentially contaminated soil and fill material.</li> </ul>	Section 3.2	Toolbox talks register	<p>Toolbox topics during audit period included dewatering, bunding of fuels and chemicals, trenching works JSA, trenching and surface water management, in stream works, ASS detention and treatment.</p> <p>Sediment basins to be constructed.</p> <p>Stockpiles in final locations until works completed.</p> <p>Identification of potentially contaminated soil to be completed.</p>	IO	Refer to SoC14 (duplicated)
<b><i>Monitoring and Review</i></b>					
Daily visual inspections of the construction site will be undertaken by the EV and construction personnel to identify actual or potential soil management issues.	Section 5.1	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Checks completed daily (split into work areas with all areas covered over the week). All areas inspected after rainfall events.	C	



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Documented weekly environmental inspections that include monitoring of erosion and sediment control devices control devices, including sediment fences and dams will also be undertaken by the EV and forwarded to the EM for review	Section 5.1	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	
Inspections of erosion and sediment control devices will be undertaken as follows: <ul style="list-style-type: none"> <li>• Weekly; or</li> <li>• Following a rainfall event of 10 mm or greater or unless there has been significant preceding rainfall; and</li> <li>• Within 24 hours of cessation of a rainfall event causing runoff to occur from the site premises.</li> </ul>	Section 5.1	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	
The Environmental Review Group (ERG) and ER will inspect the site regularly.	Section 5.1	ER Site Inspection Reports	ER site inspections completed at least fortnightly - increasing to weekly during critical works such as clearing.	C	
Six monthly internal audits for compliance against the CoA, SoC and other relevant licences and approvals will include an audit of the worksite and subcontractors to assess compliance with this Sub Plan and site EWMS, including all environmental management aspects related to soil.	Section 5.2	1st Six Monthly Compliance Report	Compliance report completed and sent to DP&I.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Regular environmental compliance audits against the EWMS (Task Observation as described in Section 5.4.3 of the CEMP) will also incorporate any issues relating to soil.	Section 5.2	CEMP Interview - Environment Manager	EWMS's are anecdotally reviewed, marked up and comments given to the sub-contractors. No written records are maintained	NC-2	Consider including a simple cover page which includes date, name of EWMS reviewed and any comments.
Provide workforce inductions and training to ensure personnel have knowledge of legislation regarding movement of soils (i.e. importing and exporting soils from site). Engage qualified consultants to assess materials proposed to be imported to or exported from site, and provide re-use/disposal options.	AGL	Induction slide pack Interview - Environment Manager	Legislation re movement of soils not included in induction.	NC-2	Consider the inclusion of requirements to either inductions or target training to relevant staff.

Annex B

## Audit Table – Surface Water Management Sub Plan

**Table B1 Compliance Assessment –Implementation of the Surface Water Management Sub Plan**

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>DoPI, Ministers Conditions of Approval MP10_0133 issued 10 May 2012</b>					
The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within seven days of becoming aware of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.	A15	Incident report 13 March 2013  Email to EPA, HWC and DP&I 6 March 2013  EPA hotline reference number C03812-213	Correspondence to agencies confirms this condition has been met.	C	
During construction, the Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with:  (a) all relevant Australian Standards; and  (b) DECC's Environment Protection Manual Technical Bulletin – Bunding and Spill Management.  In the event of an inconsistency between the requirements listed from (a) to (b) above, the most stringent requirement shall prevail to the extent of the inconsistency.	B15	Site Inspections  ER Site Inspection Reports  DG Notification Form	Minor amounts of fuel and oils currently kept on site. Contained in DG cabinets or banded shipping containers.  Site inspections indicate small fuel cans are stored on self-contained bunds or inside dedicated self banded shipping container.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site during construction, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.	B41	Delivery dockets - Hanson's Site Inspections	Site does not accept waste.  No apparent contamination visible in material emplaced on roads  Gravel material used for onsite roads (pipeline track and main access track) sourced from Hanson's Brandy Hill Quarry - spot check of delivery dockets completed.	C	
<b>Statement of Commitments from the Preferred Project Report CR 6023_1-_v3 issued September 2011</b>					
Minimise water use.	33	Site Inspections	Bulk of water use for dust suppression. Where possible, water from dewatering operations is used for dust suppression. Dust suppression water will be sourced from stormwater pond once installed.  Toilets have half flush, taps in toilets have timer cut offs installed.	C	
Source water from existing water supply infrastructure. Until the permanent water supply is available, it is currently proposed that this will be supplied to construction sites by either water tankers or from a standpipe such as a HWC metered standpipe along Old Punt Road.	34	Site Inspections	Water supplied to site via tankers sourcing water from HWC metered standpipe on Old Punt Rd. Potable water pipeline installed - to be hydro tested before commissioning.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<p>Develop hydrostatic test management measures in consultation with HWC and NSW Office of Water (NOW). The management measures will address:</p> <p>Hydrostatic test water supply. This is likely to be potable water from existing HWC water supply infrastructure, untreated water from HWC Pump Station 20 bores, groundwater locally abstracted from new bores or a combination of these.</p> <p>Assessment of potential changes to groundwater levels if groundwater is abstracted from existing HWC and new AGL bores.</p>	35	Site Inspections, SWMSP.	<p>Plan includes Section 2.4 and Table 8-12 outlining commitments and basic procedure. Water for hydrostatic testing to be potable water – added to latest version of plan.</p> <p>Original plan was developed in consultation with NOW and HWC.</p> <p>NOW and HWC to be consulted for the hydrostatic test management measures proposed in the SWMSP</p>	C	
Transport amenities wastewater offsite by a licensed operator to a licensed disposal facility.	36	Site Inspections Materials Tracking Register Interview – Environment Manager	<p>Review of materials tracking register indicates amenities wastewater transported by Affordable Sanitation Services – service dockets are left at site office. Disposal location is appropriately licenced (EPL downloaded from EPA website).</p> <p>Written confirmation of disposal location from transporter obtained.</p>	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	37	Site Inspections Interview - Environment Manager Water quality results Wards Stormwater Testing Checklist Daracon - Dewatering Monitoring Spreadsheet	SWMSP refers to Table 8-10 - water to be infiltrated back into groundwater table if clean enough to do so. If water is suspected of being contaminated it will be tested and disposed of or used accordingly.  Wards tested pH and completed visual check for grease every hour during dewatering activities.  Dewatering by Daracon of sumps to groundwater - pH, EC, NTU, DO and TDS sampled daily.	IO	Consider clarifying the procedure/parameters to be tested when dewatering and infiltration to groundwater.
Divert runoff from outside the work area to existing drainage lines to prevent the formation of new surface flow paths.	38	Site Inspections Soil Management Sub Plan - Figures 10-2 and 10-3	Installation of diversion drains underway along eastern portion of Main Access Road. This water is diverted to culverts located on site.	C	
Install culverts under new roads to maintain existing surface drainage flows.	39	Site Inspections	Construction of culverts along Main Access Road underway - works 90% complete.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Restrict vehicle movements to formed access roads and sealed roads to avoid surface compaction where practicable.	40	Site Inspections ER Site Inspection Reports	Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.	C	
Monitor the potential for flooding by observing weather reports and river levels during potential flood events.	41	Site Inspections Wards Meeting Room Daracon noticeboard Prestart records	Adverse weather forecasts are discussed in pre start meetings (prestart records) with weather reports posted on meeting room wall or noticeboards where relevant.  No potential for site flooding during audit period.	C	
Store equipment securely when not in use to prevent it being washed away in a flood.	42	Site Inspections	Site inspections indicate tools and other equipment are packed into storage containers when not in use - theft prevention additional driver.  Site noted to be neat and tidy during site inspections	C	
Avoid unnecessary clearing of vegetation and excavation works.	43	Site Inspections ER Site Inspection Reports	Vegetation cleared along delineated boundaries. Trees along boundary line retained as noted in ER site inspection reports. Clearing now completed	C	



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
The gas storage facility will have a minimum floor level equivalent to the 100-year ARI flood level (approximately 4.6 m AHD) plus a freeboard of 0.5 m (i.e., at least 5.1 m AHD). The preliminary design for the facility has a finished floor level of 6.3 m AHD.	44	Site Inspections ER Site Inspection Reports	Design is compliant with this condition - construction currently underway with further confirmation of compliance once earthworks completed.	C	
Ensure that the banks of watercourses are not disturbed during construction.	87	Site Inspections ER Site Inspection Reports	Works within one water course on Old Punt Rd. Some disturbance in existing disturbed area (culverts). Further stabilisation using sandbags as per SoC 59.	C	Refer SoC 59
Minimise groundwater use	91	Site Inspections ER Site Inspection Report Flow data from dewatering activities - Daracon	Minor volumes of groundwater from dewatering activities used for dust suppression (6.6kL). Bulk of water sourced from potable water supply.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Additional Management Plan Commitments</b>					
<i>Monitoring and Review</i>					
Monitoring will be undertaken both upstream and downstream of the Project site, and the results obtained can be used to assess construction impacts on the environmental values of the waterways, creeks and other vegetation (SW1, SW2 and Holding Pond outlet) and any other sediment ponds created for the construction period).	Section 5.1	Coffey Groundwater and Surface Water Monitoring Report – Jan to March 2013	Monitoring completed at SW1 and SW2 during the audit period.  Holding pond to be constructed.  Baseline sampling being completed at SW3 and SW4 (Old Punt Rd)	C	
Monitoring of water quality in the sediment basins will be conducted prior to any releases to stormwater.	Section 5.1	Site Inspections  Surface Water Sampling Results 5/04/2013	Sediment basin to be constructed. Surface water ponded around LNG Tank construction area tested prior to release to groundwater	C	
Monitoring of surface water will occur regularly (at least quarterly) throughout the construction phase of the project by AGL	Section 5.2.2	Coffey Groundwater and Surface Water Monitoring Report – Jan to March 2013	Currently surface water is tested monthly – will decrease to quarterly after first 12 months of construction.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
During the first 12 months of construction monitoring of surface water quality will be conducted monthly by AGL. The construction monitoring program will involve monitoring at SW1 and SW2 and also include new on-site locations where there is surface water ponding or surface water collection prior to off-site disposal or groundwater infiltration.	Section 5.2.2	Coffey Groundwater and Surface Water Monitoring Report – Jan to March 2013  Surface Water Sampling Results 5/04/2013	Currently surface water is tested monthly – will decrease to quarterly after first 12 months of construction.  Sediment pond water to be tested monthly for first 12 months after construction completed.  Surface water ponded around LNG Tank construction area tested prior to release to groundwater	C	
Monitoring of hydrotest water will also be carried out by AGL prior to off-site disposal.	Section 5.2.2	Site Inspection  Interview – Environment Manager	Hydrotesting to commence after this audit period	NA	
After 12 months the construction monitoring program will be reviewed to determine whether analytical suites and frequencies will be increased or decreased, based on an assessment of results obtained up to that point. Monitoring of surface water quality by AGL will continue throughout the construction phase at a frequency of at least quarterly.	Section 5.2.2	Site Inspection  Interview – Environment Manager	Within first 12 months of construction	NA	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<p>For each sampling event, field water quality measurements will be recorded including field pH, electrical conductivity (EC), redox potential, turbidity, temperature and dissolved oxygen. Samples will be sent to a NATA accredited laboratory, for analysis of:</p> <ul style="list-style-type: none"> <li>• General parameters - total suspended solids (TSS), turbidity, total dissolved solids (TDS) and EC;</li> <li>• Major cations - calcium, magnesium, potassium and sodium;</li> <li>• Major anions - alkalinity, chloride, sulphate and fluoride;</li> <li>• Dissolved and total metals - arsenic, cadmium, chromium, copper, lead, nickel, zinc and iron;</li> <li>• Total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylenes (BTEX);</li> <li>• Nutrients - total nitrogen, total kjeldahl nitrogen (TKN), nitrate, nitrite and total phosphorus.</li> </ul> <p>Sampling and analysis of a volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) suite will also be undertaken at the start and end of the construction program.</p>	Section 5.2.2	<p>Coffey Groundwater and Surface Water Monitoring Report - Jan to March 2013</p> <p>Surface Water Sampling Results 5/04/2013</p>	Analytes tested as per commitment with exception of full suite of VOCs and SVOCs (BTEX and TPH tested monthly).	NC-1	Review likely contaminants and objectives of monitoring program and expand list of VOCs/SVOCs accordingly if required.

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Surface Water monitoring results will be evaluated against natural background concentrations (the primary comparison) determined during baseline monitoring, and where analytes are not detected during baseline monitoring then the ANZECC 2000 and/or NHMRC 2004 Australian drinking water guideline values will be applied.	Section 5.3	Coffey Groundwater and Surface Water Monitoring Report – Jan to March 2013  Surface Water Sampling Results 5/04/2013	Results are evaluated against trigger values derived from background sampling results, ANZECC and ADWG.	C	
During construction AGL will monitor surface water monthly for the first 12 months and at least quarterly thereafter. This data will be provided to CBI within 24 hours of receipt by AGL	Section 5.4.2	Coffey Groundwater and Surface Water Monitoring Report – Jan to March 2013  Interview – Environment Manager	Surface water is tested monthly – will decrease to quarterly after first 12 months of construction.  Reports are sent to CBI Environment Manager once reports are received by AGL.	C	
The following records relating to surface water management and monitoring are to be maintained by CBI:  <ul style="list-style-type: none"> <li>• Spill or incident reports;</li> <li>• Records of daily/weekly inspections during construction;</li> <li>• Volumes of water discharged offsite via the stormwater pump and pipeline system; and</li> <li>• Additionally, a copy of this SWMP is to be maintained on AGL's dedicated website for the NGSF project.</li> </ul>	Section 5.4.3	Website  CBI Records  Interview – Environment Manager	CBI maintain relevant records  Volume of water discharged offsite to be monitored once stormwater system constructed  Copy of plan accessed on website 23/07/2013	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<p>The following records are to be maintained by AGL:</p> <ul style="list-style-type: none"> <li>• Monthly/event monitoring data and analytical reports;</li> <li>• 6-monthly surface water quality monitoring reports; and</li> <li>• Records of periodic site inspections where stormwater management is considered.</li> </ul>	Section 5.4.3	<p>Website CBI Records Interview - Environment Manager (AGL)</p>	<p>Monitoring data sent to AGL via reports (Sub contractor monitoring reports, CBI weekly and monthly reports, six monthly compliance report).  AGL audits site quarterly - last quarter audit report pending.  Site inspections diarised.</p>	C	
<p>Quarterly internal audits for compliance against the CoA, SoC and other relevant licences and approvals will be undertaken (as shown in Table 5 2) and will include an audit of the worksite and subcontractors to assess compliance with this Plan and site EWMS, including all environmental management aspects related to surface water.</p>	Section 5.5	<p>Audit reports - CBI Internal 01/05/2013 ERM External - 01/03/2013</p>	<p>Audits completed by AGL, CBI and ERM.  Check of EWMS completed during site inspections by ERG</p>	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Duplicated Commitments with Soil Management Sub Plan</b>					
Except as may be expressly provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the Protection of the Environment Operations Act 1997 during construction of the project.	B20	Site Inspections ER Site Inspection Reports CBI Daily and Weekly Site Inspection reports Monitoring records	Dewatering of work areas after rainfall to groundwater - water tested as per SWMSP.  One discharge of sediment laden water pumped off site along Main Access Road on 6 March 2013 after heavy rainfall received on site - reported to EPA, DP&I as incident. Results indicate water was within project guidelines for pH and TSS (primary analytes of concern).  Dewatering added to WMS	C	
Erosion and Sediment controls consistent with Managing Urban Stormwater: Soils and Construction Manual (Landcom, 2004, or its latest version) shall be installed prior to the commencement of soil disturbing works and shall be maintained until such time as the disturbed areas have been rehabilitated.	B21	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Silt fences installed along site boundary - inspected daily and maintained as required.  Erosion and Sediment Control Inspection and Maintenance Checklist recently updated to include sediment capacity, performance of measures and conditions of measures.	IO	Update Erosion and Sediment Control Inspection and Maintenance Checklist in SWMSP

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Ensure concrete mixers and pump trucks are not washed on site.	2	Site Inspections ER Site Inspection Reports Modification to CoA	Modification of Minister's Approval MP10_0133 issued 5 February 2013 allowing washout outside of bunded hardstand areas until concrete hardstand areas are installed on the site.  Concrete washouts occur as per approval modification.	C	
Restrict construction traffic movement to formed access tracks to avoid excess disturbance to soil and creation of bare areas where practicable.	SoC 46	Site Inspections ER Site Inspection Reports	Movements are along Main Access Road or Gas Pipeline Track. Movements on PPA also confined to delineated areas.	C	Duplicate with SoC6
Select construction equipment to minimise the disturbance to soils.	SoC 47	Site Inspections ER Site Inspection Reports	Majority of machinery have rubber tyres with track vehicles only used when works require	C	
Minimise duration of subsoil (including stockpiles) exposure to weather.	SoC 48	Site Inspections ER Site Inspection Reports	Subsoil emplaced in final locations as soon as practicable.	C	



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Secure disturbed bare soils by re-spreading topsoil, revegetating or applying a geo-fabric (or similar), as soon as practicable after reinstatement of earthworks.	SoC 49	Site Inspections ER Site Inspection Reports	Rehabilitation works have commenced along northern side of Main Access track.  Old Punt Rd to be stabilised.  All other areas remain active.	NC-1	Refer to MCoA B22 for actions (duplicated)
Revegetate exposed soils as soon as possible to reduce potential for sediment-laden runoff.	S0C 50	Site Inspections ER Site Inspection Reports	Refer above	NC-1	Refer above
Provide wind-breaks (or equivalent control measures) around exposed areas and stockpiles to prevent wind erosion.	SoC 51	Site Inspections ER Site Inspection Reports	Not applicable as material is sandy with no dust noted coming off stockpiles during site inspections - includes windy days.	NA	
Place soil stockpiles upslope of excavations and not in drainage lines.	SoC 52	Site Inspections ER Site Inspection Reports	Excavations primarily in Primary Project Area which is relatively flat.  Trenches along Main Access Road - material placed longitudinally (perpendicular to drainage lines).  No material noted in drainage lines during audit period.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Construct roadside swales to capture runoff from the Primary Project Area access roads during construction.	SoC 53	Site Inspections ER Site Inspection Reports	Roadside swales installed along Main Access Road.	C	
Design drains to minimise water velocities.	SoC 54	Site Inspections	Drain width is maximised. Rock checks placed along lengths on southern side of road. Mulch and jute mesh where required	C	
Install velocity reduction devices, such as sandbags, in drains and sloped drains to reduce erosion.	SoC 55	Site Inspections	Sandbags have been placed in drains where required - additional sandbags to be placed to prevent scouring around edges.	C	
Install sediment capture devices, such as silt fences and bunding, down-slope of exposed soils and soil stockpiles.	SoC 56	Site Inspections	Silt fences installed along site boundaries.	C	
Construct suitably lined sediment control ponds down-slope of construction work areas upfront. These will subsequently be developed into permanent wetlands during the operations stage.	SoC 57	Site Inspections	Sediment control pond to be installed in Primary Project Area.	NA	
Treat construction tracks to minimise surface degradation, e.g., compaction or topping with gravel.	SoC 58	Site Inspections	Main Access Road and Gas Pipeline Track both sealed with crushed gravel material.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Stabilise the banks of any disturbed watercourses adjacent to Old Punt Road using measures such as rock rip-rap, diversion berms, sediment fences, jute matting and reseeded.	SoC 59	Appendix C (Section 4.2)	Watercourse on Old Punt Road does not currently have erosion and sediment control structures installed. Area around drain to be stabilised	NC-1	Consider installing erosion and sediment control devices around watercourse on Old Punt Rd until area surrounding is stabilised.
Divert runoff upstream of disturbed areas to existing drainage lines to prevent the risk of increasing erosion and requiring further sediment control measures.	SoC 60	Site Inspections ER Site Inspection Reports	Diversion drains to be installed as per SMSP	NC-1	Duplicated (refer SoC 15)
Undertake daily inspections of all runoff, erosion and sediment control structures during the construction period.	SoC 61	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Checks completed daily (split into work areas with all areas covered over the week). All areas inspected after rainfall events.	C	
Maintain runoff, erosion and sediment control structures according to appropriate standards.	SoC 62	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	CBI Checklists reports on effectiveness of controls Site inspections indicate maintenance works are on-going.	C	
Ensure silt fences are in a vertical position and securely fixed and remove sediment or residue behind sediment control barriers.	SoC 63	Site Inspections ER Site Inspection Reports CBI Erosion and Sediment Control Inspection and Maintenance Checklist	CBI Checklists report in general condition of structures	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Monitor earthwork areas regularly for signs of erosion.	SoC 64	CBI Daily and Weekly Site Inspection reports	Checks for erosion completed and recorded	C	
Install and commission at the operations phase, runoff, erosion and sediment control measures as soon as practical.	SoC 65	Site Inspections	Project still in construction phase	NA	
<b><i>Training and Awareness</i></b>					
Examples of topics that will be covered during project induction and toolboxes include <ul style="list-style-type: none"> <li>•Erosion and sediment controls</li> <li>•‘Clean’ and ‘dirty’ water on the Project site; and</li> <li>• Spill response.</li> </ul>	Section 3.2	Induction slide pack	States controls to minimise erosion have been installed  Spill response discussed a number of slides throughout presentation including safety.	C	
Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil and management. Examples of training topics include: <ul style="list-style-type: none"> <li>• Sediment basin construction;</li> <li>• Sediment basin maintenance;</li> <li>• Working near or in drainage lines and creeks;</li> <li>• Emergency response measures in high rainfall events;</li> <li>• Spill response;</li> <li>• Erosion and Sediment Controls;</li> <li>• Stockpile location criteria; and</li> <li>• Identification of potentially contaminated soil and fill material.</li> </ul>	Section 3.2	Toolbox talks register	Toolbox topics during audit period included dewatering, bunding of fuels and chemicals, trenching works JSA, trenching and surface water management, in stream works, ASS detention and treatment.  Sediment basins to be constructed.  Stockpiles in final locations until works completed.  Identification of potentially contaminated soil to be completed.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<i>Monitoring and Review</i>					
Erosion and sediment control measures installed during construction will be inspected weekly and after each rainfall event that causes runoff to occur from the site to ensure the controls are working efficiently and effectively.	Section 5.1	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	
Inspections of erosion and sediment control devices will be undertaken as follows: <ul style="list-style-type: none"> <li>• Weekly; or</li> <li>• Following a rainfall event of 10 mm or greater or unless there has been significant preceding rainfall; and</li> <li>• Within 24 hours of cessation of a rainfall event causing runoff to occur from the site premises.</li> </ul>	Section 5.2	CBI Erosion and Sediment Control Inspection and Maintenance Checklist	Erosion and Sediment Control Inspection and Maintenance Checklist completed which includes sediment capacity, performance of measures and conditions of measures.	C	
The Environmental Review Group (ERG) and ER will inspect the site regularly.	Section 5.1	ER Site Inspection Reports	ER site inspections completed at least fortnightly - increasing to weekly during critical works such as clearing.	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Regular environmental compliance audits against the EWMS (Task Observations as described in Section 5.4.3 of the CEMP) and weekly work area environmental inspections by the EV will also incorporate any issues relating to surface water.	Section 5.5	CEMP Interview - Environment Manager	EWMS's are anecdotally reviewed, marked up and comments given to the sub-contractors. No written records are maintained	NC-2	Consider including a simple cover page which includes date, name of EWMS reviewed and any comments. Attached this to copy of marked up EWMS and filed as evidence of check being completed.

Annex C

## Audit Table – Acid Sulfate Soil Management Sub Plan

**Table C1 Compliance Assessment – Acid Sulfate Soil Management Sub Plan**

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Regulatory Requirements - EPL 20130</b>					
The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	O3.1	Site Inspections ER Site Inspection Reports	Site inspections confirm dust carts are used on site for dust suppression with dust levels acceptable	C	
<b>DoPI, Ministers Conditions of Approval MP10_0133 issued 10 May 2012</b>					
As part of the Construction Environmental Management Plan required under condition B56 of this approval, the Proponent shall prepare and implement the following:  a detailed Acid Sulfate Soil Management Plan prepared in consultation with DPI (Aquatic Habitat Protection Unit), and NOW prior to any construction activity in areas mapped as Potential Acid Sulfate Soils or Actual Acid Sulfate Soils. The plan shall include reference to the water quality monitoring programme contained in the Groundwater and Surface Water Management Plans. The plan shall be prepared in accordance with the Acid Sulfate Soils Manual (ASSMC, 1998). As part of the plan, a Contingency Plan to deal with the unexpected discovery of actual or potential acid sulfate soils shall be prepared in consultation with NOW.	B57 (g)	Email- DPI dated 28/03/2012	Email with ASSMSP attached sent to DPI 22 March 2012, response received form DPI 28 March 2012 accepting plan.  ASSMSP includes contingency plan	C	



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b>Statement of Commitments from the Preferred Project Report CR 6023_1-_v3 issued September 2011</b>					
Minimise disturbance and exposure of ASS.	SoC 17	Site Inspections ER Site Inspection Reports ASS Risk Map SWMS - trenching	Site is low risk with exception of some areas of Old Punt Rd. Excavations occurred in this area during the audit period.  Trenching works completed each evening with material reinstated. Excess material treated and stored in designated area.	C	
Store excavated ASS in conditions that simulate its natural state, or treat and store away from water bodies and drainage lines.	SoC 18	Site Inspections ER Site Inspection Reports SWMS - Trenching	PASS reinstated at end of each day or treated and stored in designated area.  Designated area near entrance to site away from drainage lines and water bodies.	C	
Treat excavated ASS using agricultural lime with machinery sufficient to perform adequate mixing, where practicable.	SoC 19	Site Inspections ER Site Inspection Reports SWMS - Trenching Wards Work Docket #01142 24/04/2013	Volumes of material requiring treatment approximately 1 - 2m <sup>3</sup> per batch. Lime mixed in with excavator	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Bund areas where ASS is exposed to prevent leachate entering the wider environment.	SoC 20	Site Inspections ER Site Inspection Reports SWMS - Trenching	ASS exposed during trenching works with any runoff or leachate contained within excavations.	NA	
Undertake any potential ASS remediation works in accordance with the Port Stephens Council LEP (Port Stephens Council, 2000), the Port Stephens Council ASS Policy, 2004 and the Acid Sulfate Soils Manual (ASSMAC, 1998).	SoC 22	SWMSP Site Inspections SWMS - Trenching	Douglas Partners provided oversight and training to Wards Civil personnel. ASSMSP and SWMS developed in accordance with Port Stephens Council LEP (Port Stephens Council, 2000), the Port Stephens Council ASS Policy, 2004 and the Acid Sulfate Soils Manual (ASSMAC, 1998).	C	
Monitoring soil quality around project works prior to and during construction to ascertain the presence of contaminated soil or acid sulfate soils.	SoC 26	Douglas Partners Report, Report on Waste Classification Testing, March 2013.  Douglas Partners ASS Screening Test Sheet 23/04, 24/04 and 29/04/2013	Sampling commenced 28 February 2013 by Douglas Partners to characterise soil along Punt Rd prior to excavations.  Douglas Partners also tested materials along southern portion of Old Punt Rd where ASS risk profile was high during works. Material tested as clear of PASS/ASS with no further testing required. Material was treated with lime regardless if removed to storage area	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Store PASS capable of producing leachate within lined bunds.	SoC 29	Site Inspections ER Site Inspection Reports	Treated PASS only stored for more than one day. Stored in plastic lined area with rollover bunds to prevent surface water runoff.	C	
Ensure that the banks of watercourses are not disturbed during construction.	SoC 30	Site Inspections ER Site Inspection Reports	Works within one water course on Old Punt Rd. Some disturbance in existing disturbed area (culverts). Further stabilisation using sandbags as per SoC 59.	C	Refer SoC 59 and SoC 87
<b>Additional Management Plan Commitments</b>					
<i>Training and Awareness</i>					
Examples of topics that will be covered during project induction and toolboxes include: <ul style="list-style-type: none"> <li>• Unexpected discovery of ASS/PASS; and</li> <li>• Location of ASS treatment areas.</li> </ul>	Section 3.2	CBI Monthly Reports - March, April and May 2013	Review of toolbox talk topics indicates the following topics were discussed during the audit period: <ul style="list-style-type: none"> <li>• Instream works (Ward)</li> <li>• Trenching and surface water management (Ward)</li> <li>• Soil treatment and disposal (Ward)</li> <li>• Trenching across Old Punt Road and work on the western side of the culvert (Ward)</li> <li>• SDS for lime used in ASS treatment including the need for the correct PPE (Ward)</li> </ul>	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
			<ul style="list-style-type: none"> <li>Trenching on Old Punt Road working under the aerials and trenching across cables (Ward)</li> <li>Toolbox talk conducted on ASS detection and treatment (Ward)</li> </ul>		
<b>Implementation of Controls</b>					
A field screening test using hydrogen peroxide (H <sub>2</sub> O <sub>2</sub> ) should be performed regularly on excavated soils in areas where ASS or PASS is anticipated, or on suspect soils.	Section 4.1.1	Douglas Partners ASS Screening Tests Sheet – 23/04/2013, 24/04/2013 and 29/04/2013	Field tests completed on PASS with results confirming ASS with net acidity below QASSIT action criteria.	C	
Based on the results of pH monitoring, visual assessment and field screening, selected soils samples (at a minimum rate of 10% of screened samples) will be sent for laboratory analysis using the chromium reducible suite (Scr) method to confirm the peroxide screening test results to confirm the required liming rate.	Section 4.1.1	Douglas Partners ASS Screening Tests Sheet – 23/04/2013, 24/04/2013 and 29/04/2013	Based on field test results no further monitoring was required	NA	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<b><i>Monitoring and Review</i></b>					
Daily visual inspections of the construction site will be undertaken by the EV and construction personnel to identify actual or potential ASS concerns.	Section 5.1	Daily Inspection Checklist - CBI	Upper areas of Old Punt Rd identified as high risk. All other areas of site are considered low risk.  CBI complete daily inspections of all work sites	C	
Documented weekly environmental inspections of the construction site will also be undertaken by the EV using the weekly environmental inspection checklist and forwarded to the EM for review. The weekly checklist includes a section on ASS.	Section 5.1	Weekly Inspection Checklist - CBI	Weekly inspections completed by CBI.  Weekly checklist does not include a section on ASS.	NC-2	Review weekly checklist and current commitment in ASSMSP. As future ASS works are limited, consider revising commitment in ASSMSP to include 'comment on any ASS works into Weekly Checklist comments section'.
<b><i>Appendix B - Acid Sulphate Soil Management and Mitigation Measures</i></b>					
Monitoring of ASS stockpiles after treatment.  pH monitoring after initial treatment event. If pH values are <4, additional treatments will be required.	Table 7-1	Site Inspections ER Site Inspection Reports  Interview - Environment Manager  Douglas Partners Monitoring Records	Treated ASS stockpiles - no further testing completed. Material stored for approximately 4 weeks.	NC-2	Ensure if any treated stockpiles are stored in the future, testing is completed to confirm effective treatment of ASS.

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Ensure appropriate areas are set aside for the treatment of ASS. These areas should be adequately barricaded and marked with appropriate signage. Sediment controls (such as silt fences or hay bales) should be established around the perimeter of these areas.	Table 7-2	Site Inspections ER Site Inspection Reports SWMS - Trenching	ASS treated near area of extraction and either emplaced after each shift or removed to treated ASS area for eventual disposal.	C	
Stockpiles should be placed in the designated areas (as above). Stockpiles should be placed on an impermeable barrier and surrounded with appropriate sediment controls.  Temporary stockpiling of untreated ASS should not exceed 5 days (for fine textured soils).  Medium term stockpiles should not exceed 28 days (for fine textured soils) with provision for collection of leachate and run-off water.	Table 7-3	Site Inspections ER Site Inspection Reports SWMS - Trenching	Untreated ASS stockpiles less than 5 days.  Material reinstated after each shift therefore controls not required.	NA	
If there is evidence of oxidation (i.e. jarosite staining or pH less than 4), or the material has been excavated for longer than 4 days, than the following treatment will be required:  <ul style="list-style-type: none"> <li>A treatment pad is required in general accordance with the Figure 4, page 24 of Queensland ASS Technical Manual (shown in Figure 5-4). A guard layer should also be provided.</li> <li>The treatment pad should be located at least 40m from a permanent waterway or creek and if possible placed in a topographically high area to avoid inundation following heavy rain.</li> </ul>	Table 7-4	Site Inspections ER Site Inspection Reports Interview - Environment Manager SWMS - Trenching Douglas Partners Monitoring Records	Although the material did not meet any of the criteria, the soil was treated with lime at the excavation location before emplacement back into the trench after each shift.  Any excess material was removed and placed in a designated stockpile area for eventual disposal off site.  Liming rates reportedly as per Queensland ASS Technical Manual - refer to Douglas Partners Monitoring Records	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
<ul style="list-style-type: none"> <li>• Stockpiled soil should be spread in thin (&lt;200mm) layers on impervious pads within the boundary of the site works.</li> <li>• Lime should be added by hand or light weight truck followed by mixing, using light weight rotovators or similar tools. following liming rates to be applied, based on existing laboratory results, are:</li> <li>• 3.7kg lime/tonne for aeolian soils near the Gas Storage Facility.</li> </ul> <p>The preliminary lime rates given above include a factor of safety of 1.5 to account for incomplete mixing and a neutralising value (NV) of 100.</p> <p>Appropriate records should be maintained regarding the treatment of ASS.</p>					
<p>Ensure that the lime is imported for direct use on ASS stockpiles, or is placed in a suitable designated area for later use.</p> <p>Ensure an appropriate lime register is maintained, listing the source of lime, quantity imported and where it is used on site.</p>	Table 7-5	Site Inspections ER Site Inspection Reports Lime Register - Douglas Partners	<p>Lime transported in 20kg bags and stored on pallet outside TAC Northern Access Rd Compound - covered in plastic to prevent water ingress.</p> <p>Lime register was not maintained.</p>	NC-2	
<p>Ensure that ASS stockpiles are not re-used on site or disposed offsite until suitably treated.</p> <p>Successfully limed material is suitable for re-use on site above the water table.</p>	Table 7-6	Douglas Partners Report, Report on Waste Classification Testing, March	<p>Material tested and classified as general solid waste - to be removed to landfill</p>	C	

Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
Treated ASS stockpiles are required to be disposed to licensed landfill if offsite disposal is required. Further waste classification may be required prior to offsite disposal.		2013			
<p>Ensure that an appropriate dewatering system is established to minimise the risk of impacted runoff water on the remainder of the site.</p> <p>Stormwater that collects in pits should be tested for pH and total dissolved solids.</p> <p>If the pH is above 6, and total dissolved solids are below 1,500mg/L, than the water is suitable for use as dust suppression or to be irrigated over vegetated areas.</p> <p>If pH is less than 6, lime should be added to the water until the pH is above 6.</p>	Table 7-7	<p>Site Inspections</p> <p>ER Site Inspection Reports</p> <p>Interview - Environment Manager</p>	<p>ASS exposed during trenching works with any runoff or leachate contained within excavations.</p> <p>No dewatering of trenches was anecdotally completed during audit period</p>	C	
Materials encountered during construction works that is suspected of being ASS (material that is dark grey in colour and has a high organic odour) should be stockpiled separately and advice from a suitably qualified environmental consultant should be sought.	Table 7-8	<p>Site Inspections</p> <p>ER Site Inspection Reports</p> <p>Interview - Environment Manager</p>	No material suspected of being PASS or ASS encountered in Project Area with exception of Old Punt Rd which was expected to contain PASS and was tested accordingly prior to works commencing	C	



Commitment	Commitment Reference	Reference / Evidence	Comments	Audit Classification	Recommendations
ASS monitoring records; Excavation records; Stockpile tracking records; Register of lime used for ASS treatment; and Records of offsite disposal of treated stockpiles (i.e. landfill waste disposal dockets).	Table 7-9	Interview - Environment Manager	Copy of records sighted. All required records maintained with exception of lime register.	NC-2	Duplicated finding (Table 7-5)
<b>Duplicated Commitments with Soil Management Sub Plan</b>					
<b>Regulatory Requirements - EPL 20130</b>					
All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	O2.1	Daily vehicle inspection logs	All vehicles checked during daily pre-start.  Maintenance records maintained	C	
The Environmental Review Group (ERG) and ER will inspect the site regularly.	Section 5.1	ER Site Inspection Reports	ER site inspections completed at least fortnightly - increased to weekly during critical works such as clearing.	C	

Annex D

## AGL and CBI Audit Response and Action Table

**Table D.1 AGL and CBI Audit Response and Action Table**

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
<b>Soil Management Sub Plan</b>				
<i>Minister's Conditions of Approval MP10_0133</i>				
B21	Erosion and Sediment controls consistent with Managing Urban Stormwater: Soils and Construction Manual (Landcom, 2004, or its latest version) shall be installed prior to the commencement of soil disturbing works and shall be maintained until such time as the disturbed areas have been rehabilitated.	Erosion and Sediment Control Inspection and Maintenance Checklist recently updated to include sediment capacity, performance of measures and conditions of measures. Consider updating the SWMSP with the amended Checklist.	Added reference to 170596-EN-C08-Erosion and Sediment Control Inspection and Maintenance Checklist to Table 8-1 and Section 4.1. Also added revised checklist to Appendix D of SMSP	Completed
B22	The Proponent shall carry out rehabilitation of disturbed areas progressively, and as soon as reasonably practicable following disturbance.	Old Punt Rd works have been completed with a delay noted for stabilising road edges. First raised in ER site inspection report of 1 May 2013 with works to be completed as at date of audit. Plan is for Wards Civil to roll edges of road to stabilise.	Road edges have been compaction rolled on several occasions but deteriorate with vehicle usage after rain event. Road edge is stabilised but trench area further in from verge is prone to sinking when trafficked in wet conditions.	30/08/13
<i>Statement of Commitments</i>				
1	Include a spill response plan in the emergency response plan and ensure that there is adequate spill response equipment stored onsite. Personnel will be trained on the emergency response plan and correct use of the spill response equipment.	Toolbox talks include spill response procedure. Consider including in the toolbox talks, training on how to use the spill kits and material effectively.	CBI is preparing a training module for how to use spill kits effectively for use in upcoming toolbox talks.	30/08/13

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
8	Use licensed contractors to collect, transport and dispose of hazardous materials such as waste solvents, paints, mercury absorption medium and hydrocarbons to a licensed off-site facility in accordance with EPA guidelines.	Four consignment numbers for contaminated soil material removed off site to be obtained from sub-contractors.  Consider confirming waste has actually reached disposal location as stated on tracking documents as "due diligence".	Four missing consignment numbers for contaminated soil removal have been obtained from the subcontractor.  CBI contacted the waste disposal company to confirm that waste was received by the tip. This was based on the job number, date and a description of the waste.	Completed  30/08/13
14	Include inductions to construction personnel that outline measures on how to deal with suspected contaminated soil.	Induction directs personnel to contact supervisor if suspected contaminated soil is found during works. Consider including in induction how to recognise/identify contaminated soil for reporting to supervisor	Unexpected find and information on how to identify contaminated soil has been added to the environmental induction (Rev 6)	Completed
15	A construction Surface Water Management Plan that describes erosion and sediment control will be prepared in accordance with NSW DECC Managing Urban Stormwater: Soils and Construction - Volume 2A Installation of Services 2008 (DECC, 2008) and Managing Urban Stormwater: Soils and Construction (The Blue Book) (Landcom, 2004). All erosion control and drainage works will be designed in accordance with Urban and Sediment Control Guidelines (DLWC, 1992).	Installation of controls as per guidance documents with exception of diversion drains along cuts on Main Access Road. Consider installing diversion drains as per plans in SMSP (if possible, divert water away from site to minimise load on erosion and sediment controls).	Drainage has been designed as per drawings. Alterations to the design require approval and allocation of funds before physical changes can be made.	Completed
49	Secure disturbed bare soils by re-spreading topsoil, re-vegetating or applying a geo-fabric (or similar), as soon as practicable after reinstatement of earthworks.	Refer to MCoA B22 (duplicated)	Noted	NA

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
50	Re-vegetate exposed soils as soon as possible to reduce potential for sediment-laden runoff.	Refer to SoC49 and MCoA B22 (duplicated)	Noted	NA
59	Stabilise the banks of any disturbed watercourses adjacent to Old Punt Road using measures such as rock rip-rap, diversion berms, sediment fences, jute matting and reseeded.	Watercourse on Old Punt Road does not currently have erosion and sediment control structures installed. Consider installing erosion and sediment control devices around watercourse on Old Punt Rd until area surrounding is stabilised.	Erosion and sediment controls have been added above and on the banks of the culvert. This will be left in place until the area stabilises.	Completed
60	Divert runoff upstream of disturbed areas to existing drainage lines to prevent the risk of increasing erosion and requiring further sediment control measures.	Refer to SoC15 (duplicated)	Noted	NA
<i>Additional SMSP Commitments</i>				
Section 3.2	Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil management. Examples of training topics include: <ul style="list-style-type: none"> <li>• Identification of potentially contaminated soil and fill material.</li> </ul>	Identification of potentially contaminated soil to be completed as per SoC14 (duplicated)	Refer Item No 14	NA
Section 5.2	Regular environmental compliance audits against the EWMS (Task Observation as described in Section 5.4.3 of the CEMP) will also incorporate any issues relating to soil.	EWMSs are anecdotally reviewed, marked up and comments given to the sub-contractors. No written records are currently maintained. Consider including a simple cover page which includes date, name of EWMS reviewed and any comments. Attached this to copy of marked up EWMS and filed as evidence of check being completed.	Task observation record to be developed and used in the field to confirm check has been completed.	30/08/13

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
AGL	Provide workforce inductions and training to ensure personnel have knowledge of legislation regarding movement of soils (i.e. importing and exporting soils from site). Engage qualified consultants to assess materials proposed to be imported to or exported from site, and provide re-use/disposal options.	Legislation re movement of soils not included in induction. Topic not include in toolbox talks during audit period. Consider the inclusion of requirements to either inductions or target training to relevant staff.	Topic added into the environmental induction regarding importing and exporting soil to and from site	Completed
<b>Surface Water Management Sub Plan</b>				
<i>Statement of Commitments</i>				
37	Test and treat water generated by dewatering of trenches or excavations if required, and infiltrate back into the groundwater table at designated infiltration areas, or alternatively transport offsite to a licensed disposal facility.	Daracon and Wards complete tests for different parameters and at different frequencies for dewatering. Consider developing standard procedure which outlines parameters to be tested and required frequency when dewatering and infiltrating to groundwater.	Dewatering procedure being developed to clarify requirements for future dewatering and infiltration activities.	30/08/13
<i>Additional SWMSP Commitments</i>				
Section 5.2.2	For each sampling event, field water quality measurements will be recorded including field pH, electrical conductivity (EC), redox potential, turbidity, temperature and dissolved oxygen. Samples will be sent to a NATA accredited laboratory, for analysis of: <ul style="list-style-type: none"> <li>General parameters - total suspended solids (TSS), turbidity, total dissolved solids (TDS) and EC;</li> <li>Major cations - calcium, magnesium, potassium and sodium;</li> <li>Major anions - alkalinity, chloride, sulphate and fluoride;</li> </ul>	Analytes tested as per commitment with exception of full suite of VOCs and SVOCs (BTEX and TPH tested monthly). Review likely contaminants and objectives of monitoring program and expand list of VOCs/SVOCs accordingly if required.	List of analytes will be included as part of the dewatering procedure being developed.	30/08/13

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
	<ul style="list-style-type: none"> <li>Dissolved and total metals - arsenic, cadmium, chromium, copper, lead, nickel, zinc and iron;</li> <li>Total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene and xylenes (BTEX);</li> <li>Nutrients - total nitrogen, total kjeldahl nitrogen (TKN), nitrate, nitrite and total phosphorus.</li> </ul> <p>Sampling and analysis of a volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) suite will also be undertaken at the start and end of the construction program.</p>			
<b>Acid Sulphate Soil Management Sub Plan</b>				
<i>Additional ASSMSP Commitments</i>				
Section 5.1	Documented weekly environmental inspections of the construction site will also be undertaken by the EV using the weekly environmental inspection checklist and forwarded to the EM for review. The weekly checklist includes a section on ASS.	Weekly checklist does not include a section on ASS. Review weekly checklist and current commitment in ASSMSP. As future ASS works are limited, consider revising commitment in ASSMSP to include 'comment on any ASS works into Weekly Checklist comments section'.	Weekly checklist updated to include comment on whether excavations are occurring in acid sulphate soils	Completed
Appendix B Table 7-1	Monitoring of ASS stockpiles after treatment. pH monitoring after initial treatment event. If pH values are <4, additional treatments will be required.	No further testing of pH was completed on the treated ASS stockpiles. Material was stored for a period > 4 weeks. Although this material was treated as a precaution and was not considered ASS, ensure if any treated stockpiles are stored in the future, testing is completed to confirm effective treatment of ASS.	Noted and agreed.	NA

Item No	Assessment Requirement	Audit Finding	Response/Action	Due Date
Appendix B Table 7-5	Ensure an appropriate lime register is maintained, listing the source of lime, quantity imported and where it is used on site.	A lime register was not maintained. Review the legal and guidance requirements for maintaining a lime register and action accordingly.	Review of ASMAC and other guidelines is silent on lime register. Original source reference to lime register is in Section 3 Table 6 of AGL ASSMP NGSF-AGL-NAS-EN-PLN-0005 (October 2011). Lime rate was set by Douglas Partners at 10kg/tonne in March 2013. Total lime used was 143 x 20 kilo bags.	Completed
Appendix B Table 7-9	ASS monitoring records; Excavation records; Stockpile tracking records; Register of lime used for ASS treatment; and Records of offsite disposal of treated stockpiles (i.e. landfill waste disposal dockets).	All required records maintained with exception of lime register. Duplicated finding - refer Table 7-5.	As above	NA



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