

74 Hunter Street  
Newcastle, NSW 2300, Australia  
(PO Box 1346, Newcastle, NSW 2300, Australia)  
T +61 2 4925 9600 F +61 2 4925 3888 E newcastle@smec.com  
[www.smec.com](http://www.smec.com)

17 June 2014

30011141-NGSF LTR 0002 ~ Rev 0

AGL Energy Ltd  
Level 22, 101 Miller Street  
NORTH SYDNEY NSW 2060

Attn: Tim Knill

Dear Tim,

**Re: Newcastle Gas Storage Facility ISBL – Peer Review Services  
Summary Report to Period Ending 30 June 2014**

SMEC Australia (SMEC) has been engaged by AGL Energy Ltd (AGL) to undertake stormwater peer review services for design documentation and construction of the above project. These services are to satisfy a development condition for the project that was required by Hunter Water Corporation to ensure compliance with an agreed stormwater management philosophy for the works.

SMEC has commenced work on these review services and an update of our inspection program is provided below.

Item	Outcome	Reference and/or Inspection Date
<b>Review of Stormwater Modelling</b>	Satisfactory	SMEC Letter dated 30 <sup>th</sup> January 2011
<b>Review of Construction Documentation</b>	Satisfactory	SMEC Letter dated 19 <sup>th</sup> April 2013
<b>OSBL Construction Supervision Hold Points</b>		
1. Erosion and Sediment Controls Installed	Satisfactory	28 <sup>th</sup> November 2012
2. Pond and wetland – Bulk earthworks and final surface preparation completed, prior to liner installation	Satisfactory	9 <sup>th</sup> January 2014
3. Pond and Wetland – Liner completed, including all pipe penetration seals – also supply any hydrostatic test results	Satisfactory	17 <sup>th</sup> February 2014
4. Pond and Wetland – GPT and oil/ grease separator installed and wetland plants established	Pending	GPT and Oil/Grease separator installed. Wetland plants still to be established.
5. Pump Station Commissioning – wet well installed	Satisfactory	17 <sup>th</sup> March 2014
6. Pump Station Commissioning – Pumps installed	Satisfactory	17 <sup>th</sup> March 2014
7. Pump Station Commissioning – Pump Test	Satisfactory	17 <sup>th</sup> March 2014
8. Barometric chamber / discharge point	Satisfactory	17 <sup>th</sup> March 2014
9. Electrical Substation Bunding	Satisfactory	2 <sup>nd</sup> April 2014
10. Final inspection of pond and wetland including review of WAE survey and calculations showing required volumes are met	Satisfactory	13 <sup>th</sup> March 2014

Item	Outcome	Reference and/or Inspection Date
<b>ISBL Construction Supervision Hold Points</b>		
1. Erosion and Sediment Controls, particularly for Lay-down areas outside of plant area	Satisfactory	28 <sup>th</sup> November 2012
2. Layout of Bunded area for plant area – Formwork in place, reinforcement in place, prior to 1 <sup>st</sup> concrete pour	Satisfactory	10 <sup>th</sup> April 2013 – First Pour 13 <sup>th</sup> May 2013 – Wall Inspection (Extra)
3. Layout of Collection Sump area for plant area – Formwork in place, reinforcement in place, prior to 1 <sup>st</sup> concrete pour	Satisfactory	1 <sup>st</sup> August 2013 – First Pour 15 <sup>th</sup> August 2013 – Wall Inspection (Extra)
4. Final inspection of bunded area and sump including review of WAE survey and calculations showing required volumes are met	Satisfactory	11 <sup>th</sup> April 2014

Based on the inspections carried out to date, SMEC is satisfied that the standard of construction appears to be satisfactory to achieve the requirements of the Approved Stormwater Management Philosophy and the reviewed Construction Documentation.

At this stage the only outstanding item is the establishment of vegetation in the wetland and holding pond, which is currently scheduled to occur in the last quarter of 2014. After this stage the wetland can be filled and established. SMEC believe that this is an integral part of the stormwater management philosophy for the following reasons:

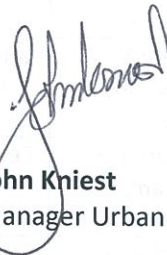
1. Maintenance of good water quality – vegetation is responsible for a considerable portion of nutrient removal.
2. Liner Protection – vegetation is critical to prevent erosion of the protective layer of soil over the HDPE liner. In its current state it is possible that the materials may slope, erode, etc over time.
3. Filling of the wetland is important to test the integrity of the liner in containing water within the wetland.

Yours sincerely,



**Brian Oberdorf**  
Senior Civil Engineer

Reviewed By



**John Kniest**  
Manager Urban Development, Hunter Region

Encl

*Supervision Inspection reports*

## ***Construction Supervision Inspection reports***



**SITE INSPECTION REPORT**

Process Area LNG Sump – Process Area,  
Sump Wall, 1<sup>st</sup> Pour

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>13-05-2013 10AM to12PM</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Mathew Westley / Brendan Drake</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Ben Marmont</b>
<b>Contact:</b>	<b>Vito DiRenzo (CBI)</b>	<b>Page:</b>	<b>1 of 3</b>

1. SMEC inspected the Process Area LNG Impoundment Sump Wall reinforcement and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site.
2. Construction appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy. In particular SMEC noted water stops placed in position in accordance with the design drawings (refer to photos attached).
3. SMEC notes that we did not undertake a pre-pour inspection from a structural perspective and have assumed that the structural design was carried out in accordance with the appropriate standards, and in particular AS3600 “Concrete Structures” and AS3735 “Concrete Structures for Retaining Liquids”
4. SMEC is satisfied with the standard of the works subject to the following:
  - a. Approval shall first be obtained from a qualified Structural Engineer prior to placement of concrete;
  - b. Subsequent pours shall be carried out in a “hit & miss” pattern to minimise shrinkage impacts;

.....

.....

.....

.....

.....

.....



Waterstop at base and side of wall.



Correct detailing of reinforcement at corners



Note clean and tidy work area



Water stop and adequate splicing of reinforcement



**SITE INSPECTION REPORT**

Process Area LNG Sump – Process Area,  
Sump Wall, 1<sup>st</sup> Pour

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>15-08-2013 3:45 PM to 5:00 PM</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Mathew Westley</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Ben Marmont</b>
<b>Contact:</b>	<b>Vito DiRenzo (CBI)</b>	<b>Page:</b>	<b>1 of 3</b>

1. SMEC inspected the Tank Area LNG Impoundment Sump Wall reinforcement and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site.
2. Construction appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy. In particular SMEC noted water stops placed in position in accordance with the design drawings (refer to photos attached).
3. SMEC notes that we did not undertake a pre-pour inspection from a structural perspective and have assumed that the structural design was carried out in accordance with the appropriate standards, and in particular AS3600 “Concrete Structures” and AS3735 “Concrete Structures for Retaining Liquids”
4. SMEC is satisfied with the standard of the works subject to the following:
  - a. Approval shall first be obtained from a qualified Structural Engineer prior to placement of concrete;

.....

.....

.....

.....

.....

.....

.....



Photo showing installation of reinforcement.



Waterstop located in side wall





Corner reinforcement



**SITE INSPECTION REPORT**

Process Area LNG Impoundment Sump –  
Foundation base pour.....

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>10-4-2013 3PM to4PM</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Brian Oberdorf / Brendan Drake</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Tim Knill</b>
<b>Contact:</b>	<b>Vito DiRenzo (CBI)</b>	<b>Page:</b>	<b>1 of 2</b>

1. SMEC inspected the Process Area LNG Impoundment Sump Foundation and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site. This corresponds to ISBL Inspection 2. Layout of Bunded area for plant area.
2. Construction appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy. In particular SMEC noted water stops placed in position in accordance with the design drawings (refer to photos attached).
3. SMEC notes that we did not undertake a pre-pour inspection from a structural perspective and have assumed that the structural design was carried out in accordance with the appropriate standards, and in particular AS3600 “Concrete Structures” and AS3750 “Concrete Structures Retaining Liquids”
4. SMEC is satisfied with the standard of the works subject to the following:
  - a. Approval shall first be obtained from a qualified Structural Engineer prior to placement of concrete;
  - b. Subsequent pours shall be carried out in a “hit & miss” pattern to minimise shrinkage impacts;
  - c. Attention is paid to saw cuts to ensure they do not cut reinforcement.

.....

.....

.....

.....

.....

.....



Waterstop in Wall – Note significant blinding layer in background and generally clean work area.



Waterstop at base of slab below future sawcut



**SITE INSPECTION REPORT**  
Tank Area LNG Impoundment  
Sump –Base Pour

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>01/08/2013 3PM</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Brendan Drake</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Tim Knill</b>
<b>Contact:</b>	<b>Vito DiRenzo (CBI)</b>	<b>Page:</b>	<b>1 of 2</b>

1. SMEC inspected the Tank Area LNG Impoundment Sump Base pour and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site. This corresponds to ISBL Inspection 2. Layout of Bunded area for plant area.
2. Construction appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy. In particular SMEC noted water stops placed in position in accordance with the design drawings (refer to photos attached).
3. SMEC notes that we did not undertake a pre-pour inspection from a structural perspective and have assumed that the structural design was carried out in accordance with the appropriate standards, and in particular AS3600 “Concrete Structures” and AS3735 “Concrete Structures Retaining Liquids”
4. SMEC is satisfied with the standard of the works subject to the following:
  - a. Approval shall first be obtained from a qualified Structural Engineer prior to placement of concrete;
  - b. Attention is paid to saw cuts to ensure they do not cut reinforcement and are sealed correctly

.....

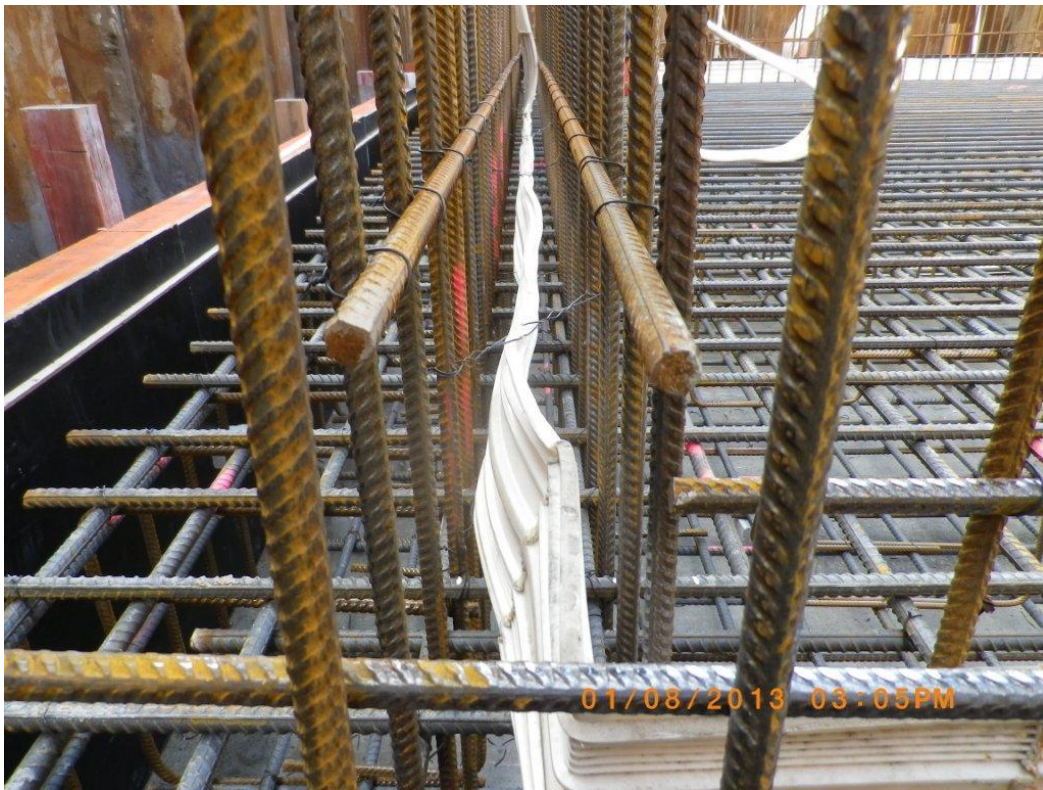
.....

.....

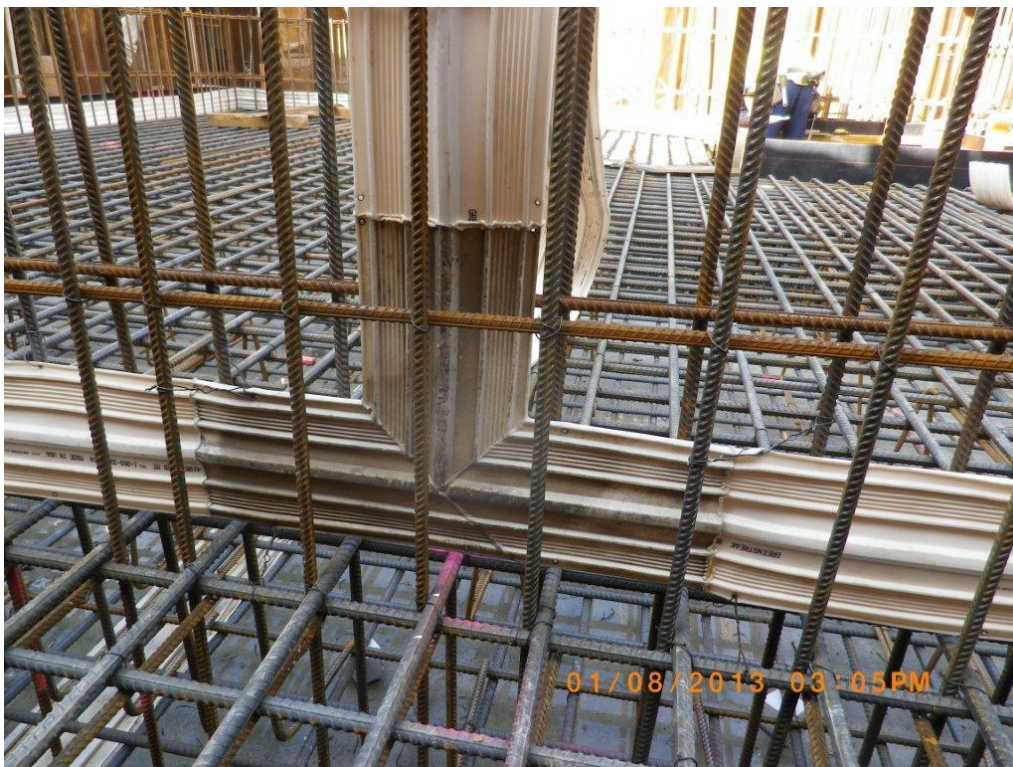
.....

.....

.....



General photo showing installed slab reinforcement and waterstop



General photo showing installed slab reinforcement and waterstop



**SITE INSPECTION REPORT**

Electrical Substation  
Volume Check

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>11-4-2014</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Brian Oberdorf</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Tim Knill</b>
<b>Contact:</b>	<b>Vito DiRenzo (CBI)</b>	<b>Page:</b>	<b>1 of 1</b>

1. SMEC inspected the WAE Survey and Volume calculations for the Electrical Substation provided by CBI on 11/4/2014.
2. Based on the calculations provided the substations complies with the Approved Storm Water Management Philosophy. In particular SMEC notes that the volume exceeds the requirements of the approved philosophy.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



**SITE INSPECTION REPORT**

ISBL and OSBL Sediment and Erosion Controls .....

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>28-11-2012 ~ 1PM to 2PM</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Brian Oberdorf / Ben Morris</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Tim Knill</b>
<b>Contact:</b>	<b>Luke Cheyne (CBI)</b>	<b>Page:</b>	<b>1 of 3</b>

1. SMEC inspected the site Sediment and Erosion Controls and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site. This inspection combines the following two items:
  - a. OSBL Inspection 1 - Erosion and Sediment Controls Installed
  - b. ISBL Inspection 1 - Erosion and Sediment Controls, particularly for Lay-down areas outside of plant area
2. Works appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy.
3. SMEC is satisfied with the standard of the works subject to the following:
  - a. Controls are regularly inspected and maintained;
  - b. Controls are modified to suit site works.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Generators bundled and sheltered from Rainfall and upslope runoff



Sediment fence to perimeter of Site



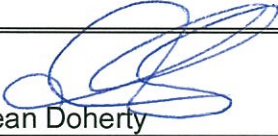



Access Track with sediment fence and barrier fencing. Mulch used to stabilise access tracks.





Sediment fence and barrier fencing



CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION**REPORT REFERENCE NO. **SC003A-HP-009**

<b>Process :</b>	WETLAND AND POND INSPECTION PRIOR TO HDPE LINER INSTALLATION
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Wetlands & Holding Pond
<b>Spec Ref :</b>	401020-03390-CW-CI-SPC-0001 170596-000-PI-SP-400018
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with the WorleyParson specification 401020-03390-CW-CI-SPC-0001 Clause 12.2.4.1 and at the request of CBI/SMEC, we notify your office the Wetlands and Holding Pond have been trimmed and compacted including the removal of roots, and are available for inspection & approval prior to installation of the HDPE liner.	
Inspection: Thursday 9 <sup>th</sup> January 2014	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 08/01/14	
<b>Comments:</b>	
SMEC staff have inspected the works in conjunction with a Geotechnical Representative from WorleyParsons. SMEC is satisfied that the quality of work appeared to be of a standard to comply with the approved Storm Water Management Philosophy and construction drawings. SMEC assume that the WorleyParsons representative will certify the foundation conditions, and that the HDPE installer will approve the surface each day as per the specification and carry out any remedial works as required. SMEC recommends the establishment of vegetation in the ponds ASAP to minimise any erosion	
<b>Released by Client</b>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Signature:  Date: 7-11-13	

CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION****REPORT REFERENCE NO. SC003A-HP-011**



<b>Process :</b>	WETLAND AND POND INSPECTION - HDPE LINER INSTALLED
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Wetlands & Holding Pond
<b>Spec Ref :</b>	401020-03390-CW-CI-SPC-0001 170596-000-PI-SP-400018
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with the WorelyParson specification 401020-03390-CW-CI-SPC-0001 and at the request of CBI/SMEC, we notify your office the HDPE Liner works including installation of liner, all pipe penetration sleeves/seals and testing of the same are complete in the Wetlands and Holding Pond and are available for inspection & approval.	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 18/01/14	
<b>Comments:</b>	
SMEC staff have inspected the above HPDE liner and is satisfied that the quality of work appeared to be of a standard to comply with the Approved Storm water Management Philosophy and Construction Drawings.	
SMEC has not reviewed the full set of QA test records, and requires that this be completed by CBI to confirm the adequacy of the works.	
<b>Released by Client</b>	
YES <input checked="" type="checkbox"/>	
NO <input type="checkbox"/>	
Signature:  Date: 28/3/14	

CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION**REPORT REFERENCE NO. **SC003A-HP-004**

<b>Process :</b>	Site Inspection
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	SPEL Stormceptor Tank
<b>Spec Ref :</b>	N/A
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with SMEC specification extract received from CBI (31/10/13) Item 2.4, see attached, we notify CBI the Spel Stormceptor Tank installation shall be undertaken and completed within the following period and is available for inspection during this period.  Commence Installation: 31 <sup>st</sup> October 2013 Complete Installation: 1 <sup>st</sup> November 2013	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 31/10/13	
<b>Comments:</b>	
SMEC staff have inspected the works and is satisfied that the quality of work appeared to be of a standard to comply with the approved Storm Water Management Philosophy and construction drawings.	
I note that at the time of inspection the wetland plants were not established, as at the time the HDPE liner had not been installed.	
<b>Released by Client</b>	
YES <input checked="" type="checkbox"/>	
NO <input type="checkbox"/>	
Signature:  Date: 7-11-13	

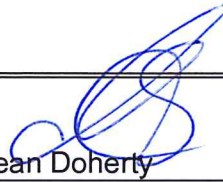
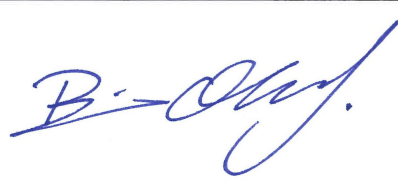
2.	<p><b>OSBL Hold Points for Construction Supervision by SMEC</b></p> <ul style="list-style-type: none"> <li>• BP / GS agreed likely inspection / hold points that SMEC would like to witness prior to further work proceeding: <ol style="list-style-type: none"> <li>1. Erosion and Sediment Controls Installed</li> <li>2. Pond and wetland – Bulk earthworks and final surface preparation completed, prior to liner installation</li> <li>3. Pond and Wetland – Liner completed, including all pipe penetration seals – also supply any hydrostatic test results</li> <li>→ 4. Pond and Wetland – GPT and oil/ grease separator installed and wetland plants established</li> <li>5. Pump Station Commissioning – wet well installed</li> <li>6. Pump Station Commissioning – Pumps installed</li> <li>7. Pump Station Commissioning – Pump Test</li> <li>8. Barometric chamber / discharge point</li> <li>9. Electrical Substation Bunding</li> <li>10. WAE Survey of pond and wetland including calculations showing required volumes are met</li> </ol> </li> </ul>
3.	<p><b>ISBL Hold Points for Construction Supervision by SMEC</b></p> <ul style="list-style-type: none"> <li>• BP / GS agreed likely inspection / hold points that SMEC would like to witness prior to further work proceeding: <ol style="list-style-type: none"> <li>1. Erosion and Sediment Controls, particularly for Lay-down areas outside of plant area</li> <li>2. Layout of Bunded area for plant area – Formwork in place, reinforcement in place, prior to 1<sup>st</sup> concrete pour</li> <li>3. Layout of Collection Sump area for plant area – Formwork in place, reinforcement in place, prior to 1<sup>st</sup> concrete pour</li> <li>4. WAE Survey of bunded area and sump including calculation showing required volumes are met</li> </ol> </li> </ul>

CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION**REPORT REFERENCE NO. **SC003A-HP-005**

<b>Process :</b>	Site Inspection
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Package Pump Station
<b>Spec Ref :</b>	N/A
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with SMEC specification extract received from CBI (31/10/13) Item 2.5, see attached, we notify CBI the Pump Station Wet Well will be installed within the following period and request CBI representative to release the same following inspection.  Commence Installation: 6 <sup>th</sup> November 2013 Complete Installation: 7 <sup>th</sup> November 2013	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 31/10/13	
<b>Comments:</b>	
SMEC staff have inspected the works and is satisfied that the quality of work appeared to be of a standard to comply with the approved Storm Water Management Philosophy and construction drawings.	
<b>Released by Client</b>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Signature:	 Date: 7-11-13

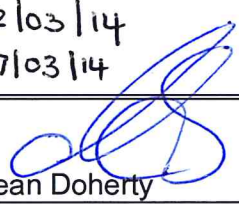
2.	<p><b>OSBL Hold Points for Construction Supervision by SMEC</b></p> <ul style="list-style-type: none"> <li>• BP / GS agreed likely inspection / hold points that SMEC would like to witness prior to further work proceeding:             <ol style="list-style-type: none"> <li>1. Erosion and Sediment Controls Installed</li> <li>2. Pond and wetland – Bulk earthworks and final surface preparation completed, prior to liner installation</li> <li>3. Pond and Wetland – Liner completed, including all pipe penetration seals – also supply any hydrostatic test results</li> <li>4. Pond and Wetland – GPT and oil/ grease separator installed and wetland plants established</li> <li>→ 5. Pump Station Commissioning – wet well installed</li> <li>6. Pump Station Commissioning – Pumps installed</li> <li>7. Pump Station Commissioning – Pump Test</li> <li>8. Barometric chamber / discharge point</li> <li>9. Electrical Substation Bunding</li> <li>10. WAE Survey of pond and wetland including calculations showing required volumes are met</li> </ol> </li> </ul>
3.	<p><b>ISBL Hold Points for Construction Supervision by SMEC</b></p> <ul style="list-style-type: none"> <li>• BP / GS agreed likely inspection / hold points that SMEC would like to witness prior to further work proceeding:             <ol style="list-style-type: none"> <li>1. Erosion and Sediment Controls, particularly for Lay-down areas outside of plant area</li> <li>2. Layout of Bunded area for plant area – Formwork in place, reinforcement in place, prior to 1<sup>st</sup> concrete pour</li> <li>3. Layout of Collection Sump area for plant area – Formwork in place, reinforcement in place, prior to 1<sup>st</sup> concrete pour</li> <li>4. WAE Survey of bunded area and sump including calculation showing required volumes are met</li> </ol> </li> </ul>

CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION****REPORT REFERENCE NO. SC003A-HP-006**

<b>Process :</b>	Site Inspection
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Package Pump Station
<b>Spec Ref :</b>	N/A
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with SMEC specification extract received from CBI (31/10/13) Item 2.6, see attached, we notify CBI the Pump Station pumps will be installed within the following period and request CBI representative to release the same following inspection.	
Commence Installation:	8 <sup>th</sup> November 2013 → Completed 25/02/14
Complete Installation:	11 <sup>th</sup> November 2013
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 31/10/13	
<b>Comments:</b>	
SMEC has inspected the installed pumps at the stormwater pump station. Based on the advised specifications and quality of work observed, and subject to commissioning results, SMEC consider the pumps would comply with the Approved Stormwater Management Philosophy and Construction Drawings.	
<b>Released by Client</b>	
YES <input checked="" type="checkbox"/>	
NO <input type="checkbox"/>	
Signature:  Date: 28-3-2014	



CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION****REPORT REFERENCE NO. SC003A-HP-007**

<b>Process :</b>	Site Inspection
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Package Pump Station
<b>Spec Ref :</b>	N/A
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
In accordance with SMEC specification extract received from CBI (31/10/13) Item 2.7, see attached, we notify CBI the Pump Station Initial Pump Test will be undertaken on the following date and request CBI representative to release the same following inspection. <ul style="list-style-type: none"><li>12<sup>th</sup> November 2013 – date is subject to preceding works and shall be confirmed 48 hours prior to test.<ul style="list-style-type: none"><li>↳ Revised date 12/03/14</li><li>↳ Completed date 17/03/14</li></ul></li></ul>	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 21/10/13	
<b>Comments:</b>	
SMEC has witnessed the Pump Station's Initial Pump Test and confirms that the pump has adequate capacity. At the time of testing, SMEC note that the duty was recorded at 88L/s compared to the specified of only 75L/s.	
This release is contingent on the condition that should the duty flow of the pumpstation be modified, where the flowrate is reduced to lower than the specified duty (75L/s) CBI will obtain approval from WorleyParsons that the stormwater system still complies with the Approved Stormwater Methodology and/or carries out any remedial works required.	
<b>Released by Client</b>	YES <input checked="" type="checkbox"/>
	NO <input type="checkbox"/>
Signature:	Date:



## SITE INSPECTION REPORT

Electrical Substation  
Concrete Pour

<b>Project Title:</b>	<b>AGL NGSF</b>	<b>Date:</b>	<b>02/04/2014</b>
<b>Ref No:</b>	<b>30011141</b>	<b>By:</b>	<b>Bruce Gunn</b>
<b>Client:</b>	<b>AGL</b>	<b>Issued To:</b>	<b>Tim Knill</b>
<b>Contact:</b>	<b>Ray King (AGL)</b>	<b>Page:</b>	<b>1 of 1</b>

1. SMEC inspected the Electrical Substation Bunding construction and found it to generally be in accordance with the approved Storm Water Management Philosophy for the site. This corresponds to OSBL Inspection 9. Electrical Substation Bunding.
2. Construction appeared to be of a standard that would allow the works to comply with the Approved Storm Water Management Philosophy.
3. SMEC notes that we did not undertake a pre-pour inspection from a structural perspective and have assumed that the structural design was carried out in accordance with the appropriate standards, and in particular AS3600 "Concrete Structures" and AS3735 "Concrete Structures Retaining Liquids"
4. SMEC is satisfied with the standard of the works subject to the following:
  - a. Approval shall first be obtained from a qualified Structural Engineer prior to placement of concrete;
  - b. Attention is paid to saw cuts to ensure they do not cut reinforcement and are sealed correctly

.....

.....

.....

.....

.....


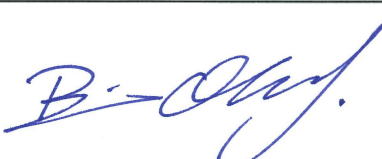
.....

.....

.....

.....

CONTRACT TITLE: **AGL – NEWCASTLE GAS STORAGE FACILITY**  
PROJECT NO: **1224**Revision Number: 02  
Date: 04 January 2010**HOLD POINT NOTIFICATION**REPORT REFERENCE NO. **SC003A-HP-010**

<b>Process :</b>	WETLAND AND POND AS-BUILT SURVEY - VOLUME
<b>ITP Reference No. :</b>	1224-ITP-PONDS
<b>Name :</b>	WETLANDS & HOLDING POND CONSTRUCTION
<b>Drawing Reference :</b>	-
<b>Location :</b>	Wetlands & Holding Pond
<b>Spec Ref :</b>	401020-03390-CW-CI-SPC-0001
The following evidence of compliance is submitted to the Superintendent's Representative/Quality Assurance Representative for release of the hold point.	
<b>Details:</b>	
Please find attached for your review and approval As-Built Survey Report 1224-MP-STD-1301-PONDS050 providing details of the as-built pond volume to RL 5.85m i.e. top of emergency spill way.  Volume = 5,151,369 litres	
<b>Project Manager / Project QA Manager</b>	
Signature: Sean Doherty  Date: 12/03/14	
<b>Comments:</b>	
SMEC has inspected the above wetland and reviewed the attached As-Built Survey. In addition SMEC has reviewed the attached email which contains a detailed breakdown of the As-Built Survey.	
Based on this SMEC consider that the proposed volumes are within expected construction tolerances, and therefore would comply with the Approved Stormwater Management Philosophy and Construction Drawings.	
<b>Released by Client</b>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Signature: 	Date: 28/3/14

## Oberdorf, Brian

---

**From:** Luke Cheyne <LCheyne@CBI.com>  
**Sent:** Thursday, 13 March 2014 12:52 PM  
**To:** Oberdorf, Brian; Gunn, Bruce  
**Subject:** Fw: Wetland Ponds - As-Built Survey Report - Pond Volume

**Categories:** AGL

Brian/Bruce,

Volume calculations as requested.

Regards,



**Luke Cheyne**  
NGSF / Construction Engineer  
ph: 0439452813  
[lcheyne@CBI.com](mailto:lcheyne@CBI.com)  
CB&I  
Old Punt Rd  
Tomago, NSW  
Australia  
[www.CBI.com](http://www.CBI.com)

----- Forwarded by Luke Cheyne/Australia/CBI on 13/03/2014 12:43 PM -----

**From:** Sean Doherty <SeanD@daracon.com.au>  
**To:** Luke Cheyne <LCheyne@CBI.com>  
**Cc:** Project 1224 - Tomago AGL <1224@daracon.com.au>, Jeff Charlton <JeffC@daracon.com.au>  
**Date:** 13/03/2014 10:23 AM  
**Subject:** RE: Wetland Ponds - As-Built Survey Report - Pond Volume

---

Luke,

As-Built Survey Volumes as requested:

WETLAND PONDS		DESIGN	AS-BUILT
BASE LEVEL		4.0m	4.0m
PERMANENT	- LEVEL	5.14m	5.14m
	- VOLUME	735m3	781m3
EXTENDED DETENTION	- LEVEL	5.64m	5.64m
	- VOLUME	775m3	771m3
HOLDING POND		DESIGN	AS-BUILT
1 YR ARI HOLDING	- LEVEL	4.85m	4.85m
	- VOLUME	1095m3	1189m3
100 YEAR ARI DETENTION	- LEVEL	5.85m	5.85m
	- VOLUME	2850m3	3171m3
BASE LEVEL		4.0m	4.0m

VOLUME FROM POND DESIGN RL 5.85 WITH AN ADOPTED BASE RL 4.00	- LEVEL	5.85m	5.85m
	- VOLUME	2850m <sup>3</sup>	3026m <sup>3</sup>

Regards,

**Sean Doherty | Project Engineer | DARACON GROUP**

17 James Street | PO Box 299, Wallsend NSW 2287, Australia  
 p: 02 4903 7000 | f: 02 4951 1070 | m: 0437 394 759  
[seand@daracon.com.au](mailto:seand@daracon.com.au) | [www.daracon.com.au](http://www.daracon.com.au)



**From:** Luke Cheyne [<mailto:L.Cheyne@CBI.com>]  
**Sent:** Thursday, 13 March 2014 7:25 AM  
**To:** Sean Doherty  
**Cc:** Project 1224 - Tomago AGL; Jeff Charlton  
**Subject:** Re: Wetland Ponds - As-Built Survey Report - Pond Volume

Sean,

Sorry about this but it looks like I gave you a bum steer.

SMEC have come back and asked that the volume calculations be done to match the following four measurements;

OPERATING LEVEL

WETLAND

BASE LEVEL	= 4.0m
PERMANENT - LEVEL	= 5.14m
- VOLUME	= 735m <sup>3</sup>
EXTENDED DETENTION - LEVEL	= 5.64m
- VOLUME	= 775m <sup>3</sup>

HOLDING POND

1 YR ARI HOLDING LEVEL	= 4.85m
VOLUME	= 1095m <sup>3</sup>
100 YEAR ARI DETENTION - LEVEL	= 5.85m
- VOLUME	= 2850m <sup>3</sup>
FREE BOARD LEVEL	= 6.2m

This means splitting the two wetland ponds from the big holding pond. Are you able to do this?

Regards,



**Luke Cheyne**  
 NGSF / Construction Engineer  
 ph: 0439452813  
[lcheyne@CBI.com](mailto:lcheyne@CBI.com)

CB&I  
 Old Punt Rd  
 Tomago, NSW  
 Australia  
[www.CBI.com](http://www.CBI.com)

From: Sean Doherty <[SeanD@daracon.com.au](mailto:SeanD@daracon.com.au)>  
To: Luke Cheyne <[L.Cheyne@CBI.com](mailto:L.Cheyne@CBI.com)>  
Cc: Jeff Charlton <[JeffC@daracon.com.au](mailto:JeffC@daracon.com.au)>, Project 1224 - Tomago AGL <[1224@daracon.com.au](mailto:1224@daracon.com.au)>  
Date: 11/03/2014 05:20 PM  
Subject: Wetland Ponds - As-Built Survey Report - Pond Volume

---

Luke,

As requested please find attached the As-Built Survey Report for the Ponds indicating the volume of the pond up to RL 5.85 at the emergency spillway.

Total Volume is 5,151,369 litres.

Regards,

**Sean Doherty | Project Engineer | DARACON GROUP**  
17 James Street | PO Box 299, Wallsend NSW 2287, Australia  
p: 02 4903 7000 | f: 02 4951 1070 | m: 0437 394 759  
[seand@daracon.com.au](mailto:seand@daracon.com.au) | [www.daracon.com.au](http://www.daracon.com.au)



---

The information and attachments contained in this e-mail are confidential to the intended addressee(s). Access to the e-mail by any other person is unauthorised. If you receive this e-mail in error, you must not reproduce, distribute, or take actions to use part or whole of the information contained in the e-mail. Such acts are prohibited and may be unlawful. You should delete it immediately.

Daracon Engineering has taken steps to ensure that the message does not contain viruses. However, it is the responsibility of the recipient to scan for viruses upon receipt of the e-mail. Daracon Engineering accepts no liability for loss or damage resulting from the use of the e-mail and its attachments.

Daracon Engineering ACN 002 640 262[attachment "1224-MP-STD-1301-PONDS050 - Ponds Volume.pdf" deleted by Luke Cheyne/Australia/CBI]

*This e-mail and any attached files may contain CB&I (or its affiliates) confidential and privileged information. This information is protected by law and/or agreements between CB&I (or its affiliates) and either you, your employer or any contract provider with which you or your employer are associated. If you are not an intended recipient, please contact the sender by reply e-mail and delete all copies of this e-mail; further, you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.*

---

The information and attachments contained in this e-mail are confidential to the intended addressee(s). Access to the e-mail by any other person is unauthorised. If you receive this e-mail in error, you must not reproduce, distribute, or take actions to use part or whole of the information contained in the e-mail. Such acts are prohibited and may be unlawful. You should delete it immediately.

Daracon Engineering has taken steps to ensure that the message does not contain viruses. However, it is the responsibility of the recipient to scan for viruses upon receipt of the e-mail. Daracon Engineering accepts no liability for loss or damage resulting from the use of the e-mail and its attachments.

Daracon Engineering ACN 002 640 262

*This e-mail and any attached files may contain CB&I (or its affiliates) confidential and privileged information. This information is protected by law and/or agreements between CB&I (or its affiliates) and either you, your employer or any contract provider with which you or your employer are associated. If you are not an intended recipient, please contact the sender by reply e-mail and delete all copies of this e-mail; further, you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.*

---

This e-mail has been scanned for viruses by Symantec.Cloud.