



CBI Constructors Pty. Ltd.

AGL Energy Limited

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Newcastle Gas Storage Facility Tomago, NSW, Australia



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1.0 INTRODUCTION

1.1 On the 9th of September 2012 AGL lodged an application under section 75W of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act) to modify the Part 3A Approval so as to authorise:

- the washing out of concrete mixers and pump trucks on site;
- the construction and operation of a small temporary concrete washout pit on site for initial concrete culvert and causeway works; and
- the construction and operation of a larger temporary concrete washout area (CWA) to replace the initial washout pit for all other concrete works required during the construction phase.

1.2 In the time since this application CBI investigated construction and maintenance of the CWA and after discussions with suppliers and subcontractors have further developed the plan for washing out of concrete trucks and pumps before they leave the construction site.

2.0 TECHNICAL AND OPERATIONAL REASONS

It is necessary to modify the Part 3A Approval so as to authorise the washing out of concrete mixers and pump trucks on site and the operation of temporary concrete washout skips on site for the following reasons:

- a. To prevent the uncontrolled discharge of remnant concrete or slurry from the truck while travelling from the site:

After the concrete truck has completed its pour, waste concrete is left in the chute and agitator. If this waste is not cleaned it is likely to fall from the truck during transit either on the site or the public road between the batch plant and site. These dropped piles of concrete would:

- be an illegal disposal of waste that the drivers would be liable for;
 - potentially damage the road surface;
 - pose a safety risk to motorists; and
 - pose a potential contamination risk to groundwater.
- b. To prevent drying of the remaining concrete in the bowl or chute that may cause damage to the truck and/ or contaminate future loads of concrete.
- c. Due to the reasons above, if this commitment is not modified and no concrete washout area is installed on site, it may not be possible to get concrete supply companies to deliver concrete to the site.

3.0 RESPONSIBILITIES

The following personnel have responsibilities defined in this exercise.

- Concrete Truck/Pump Operator
- Supervisor
- Environmental Advisor
- Concrete Supplier



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4.0 DESCRIPTION OF WORKS

4.1 Establishment

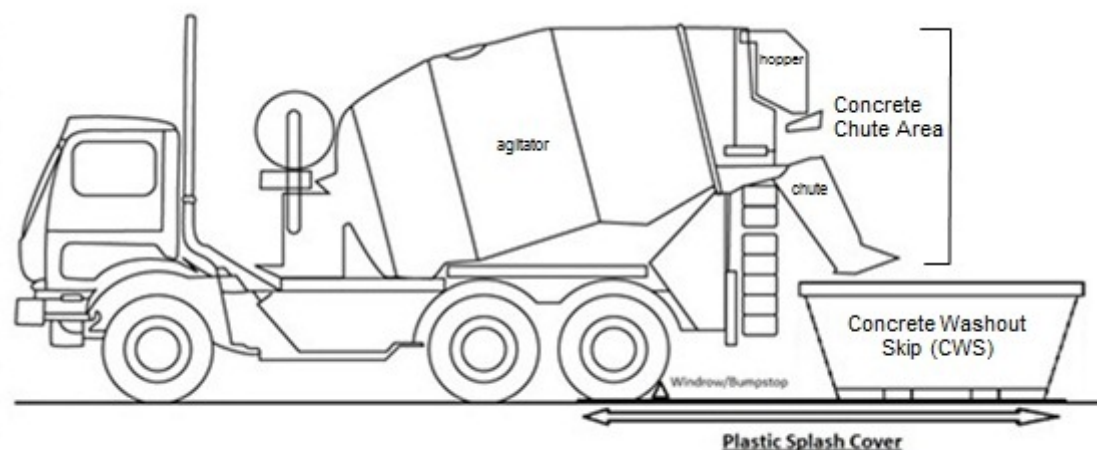
- 4.1.1 A site traffic management plan will be updated to coordinate onsite concrete truck movements with other ongoing *onsite* construction works at the time. The plan may be changed daily to suit the internal construction traffic conditions on the day. This plan is different to the Traffic Management Plan which was approved by the Department of Planning and Infrastructure in August 2012 which deals with all *offsite* traffic.
- 4.1.2 It is anticipated that 6 concrete trucks will be in use at any time during concrete pours and if any queuing of trucks is required it will be within established laydown areas inside the Project footprint.
- 4.1.3 Approximately 4,000 m³ of concrete will be required to complete construction over the duration of the project. It is estimated that there could be up to 30,000 litres of wastewater generated from washout of chutes and pump equipment. Concrete wastes will temporarily be stored in the concrete washout skips (CWS) and removed from site as per waste classification set out in this Plan.
- 4.1.4 All concrete trucks will wash down their chutes and rinse their bowls before exiting the site onto public roads to prevent tracking. Wash down will be undertaken only at the CWS's which will be used to capture liquid and solid concrete washout waste produced at the end of a concrete pour.
- 4.1.5 The CWS will be established in close proximity to the area of the pour and a minimum of 20 metres from storm drains, open ditches or water bodies. It will be signposted for ease of identification and regularly checked to ensure controls are maintained. The skips will be water tight and have covers to prevent intrusion of rainwater. The volume of the combined CWS's will be over 120 per cent of the estimated volume of waste for the largest concrete pour on site.
- 4.1.6 CBI will procure three off 3 cubic metre skips for use with this procedure with a combined capacity of 9,000 litres. The use of three skips means that waste can be removed and still have two active CWS's meaning that the CWS's can be emptied even during on-going works and as per the procedure will not be filled to capacity. CBI expects that the largest concrete pour will be approximately 450 cubic metres producing approximately 5,000 litres of waste water.
- 4.1.7 The CWS may be lined with plastic to prevent solids hardening in the skip.
- 4.1.8 The ground in front of and under the skip will be covered with a plastic liner to provide a clean area for the operator to wash out from.
- 4.1.9 The use of the skip will prevent any possibility of the waste contaminating the surface and groundwater. The portability of the skips will allow the skips to be placed in the most appropriate place for each pour ensuring the minimum distance the dirty trucks must travel and maximum distances away from waterways. The skips will be pumped out before transport by truck.
- 4.1.10 CBI will incorporate requirements for concrete waste management into material supplier and subcontractor agreements and will arrange for the subcontractors representative to enforce concrete waste management procedures.
- 4.1.11 Concrete wastes to be placed in the CWS include:
- concrete washings;
 - concrete effluent;
 - excess concrete delivered to site but not used for the development; and
 - any other waste material containing concrete.
- 4.1.12 Concrete waste taken from the CWS will be transported to a local batching plant, disposed of at an approved landfill or by a waste concrete recycler.

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4.2 Washing out Procedure

- 4.2.1 The CWS is to be positioned as close as practical to the pours in conformance with the site traffic management plan on a plastic splash cover with a windrow or bump stop to guide the trucks to the correct position.
- 4.2.2 After a truck is emptied it is to proceed to the area designated for concrete wash out and position the truck as shown in Figure 1 below with a spotter if required.

Figure 1: Chute over Concrete Washout Skip



- 4.2.3 Onboard water supply will be used to rinse residual concrete from the chute area into the CWS.
- 4.2.4 The operator will inspect the chute area to ensure residual concrete waste materials will not be spread onto site before they leave the CWS.
- 4.2.5 All movement of concrete trucks on site are to be managed under the site traffic management plan, this management plan will allow for the quantity and frequency of trucks as well as scheduled waste removal i.e. emptying the concrete washout skips.

4.3 Inspection and Maintenance

- 4.3.1 Inspect and verify that CWS safeguards/ control measures are in place prior to the commencement of associated activities;
- 4.3.2 Repeat step 1 after rain events;
- 4.3.3 Maintaining CWS must include removing and disposing of hardened concrete.
- 4.3.4 Hardened concrete materials should be removed and disposed of in accordance with WMP sub plan.

4.4 Removal of Concrete Washout Skips

- 4.4.1 Excess liquid will be pumped out and transported by a licensed contractor to a licensed waste disposal facility;
- 4.4.2 Where liquids are removed and the skip is to be transported off site with solids remaining then the level of liquid remaining in the skip will be low enough that none escapes during transport.
- 4.4.3 Concrete solids removed from the skip will be disposed of at a concrete recycling facility.
- 4.4.3 Any plastic laid will be disposed of at a licensed landfill.

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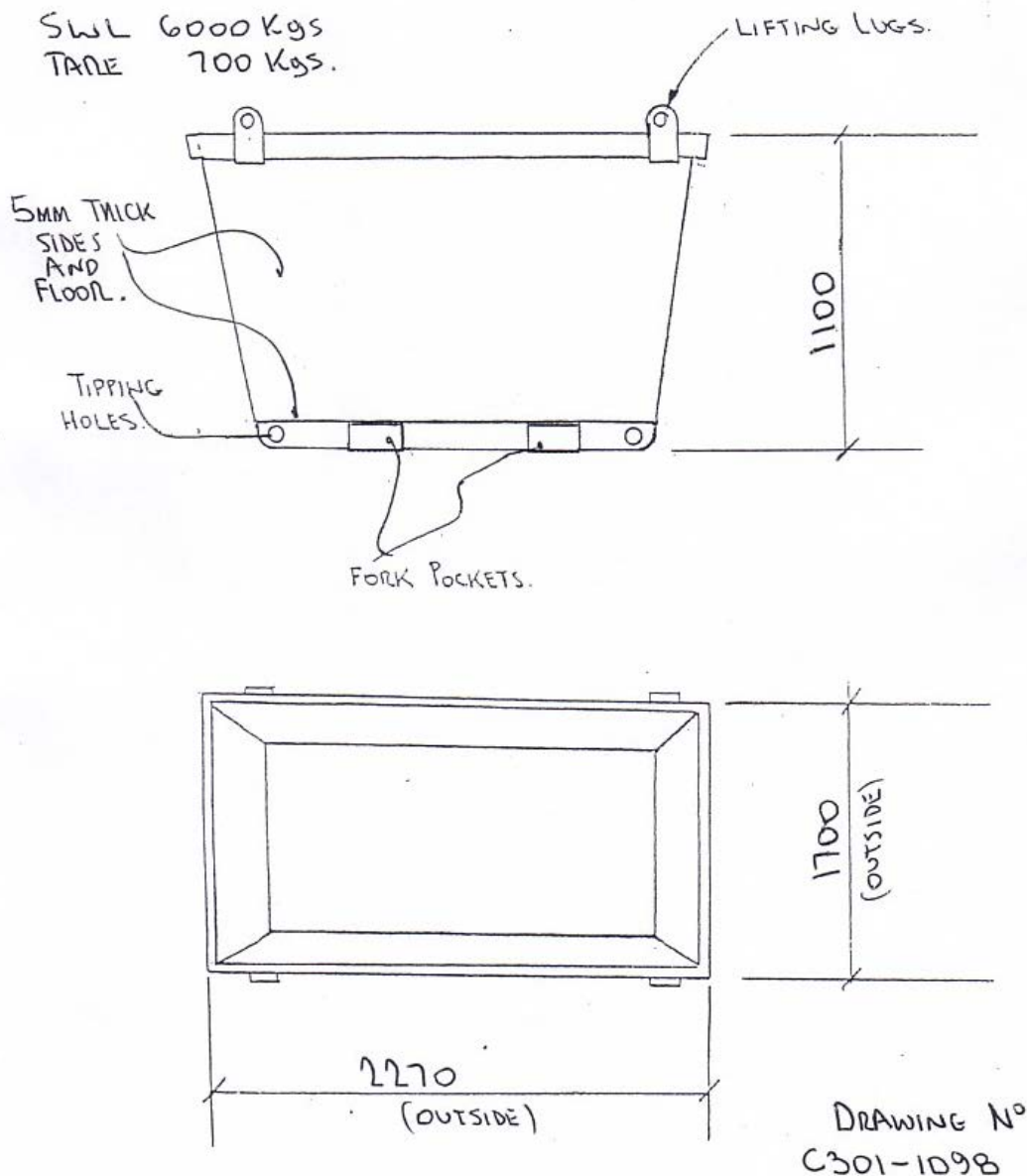
4.4.4 CWSs that have had liquid and solid content removed can be used for other purposes as a general skip bin.

4.5 Technical Specification

4.5.1 The indicative design of the proposed concrete washout skip is shown below in Figure 2. The skips will have covers to prevent rainwater being captured when not in use. The skips will be clearly sign posted have a marker to indicate when the acceptable maximum capacity is reached.

4.5.2 All relevant workers will be made aware of this Procedure through

Figure 2: Design of Concrete Washout Skip

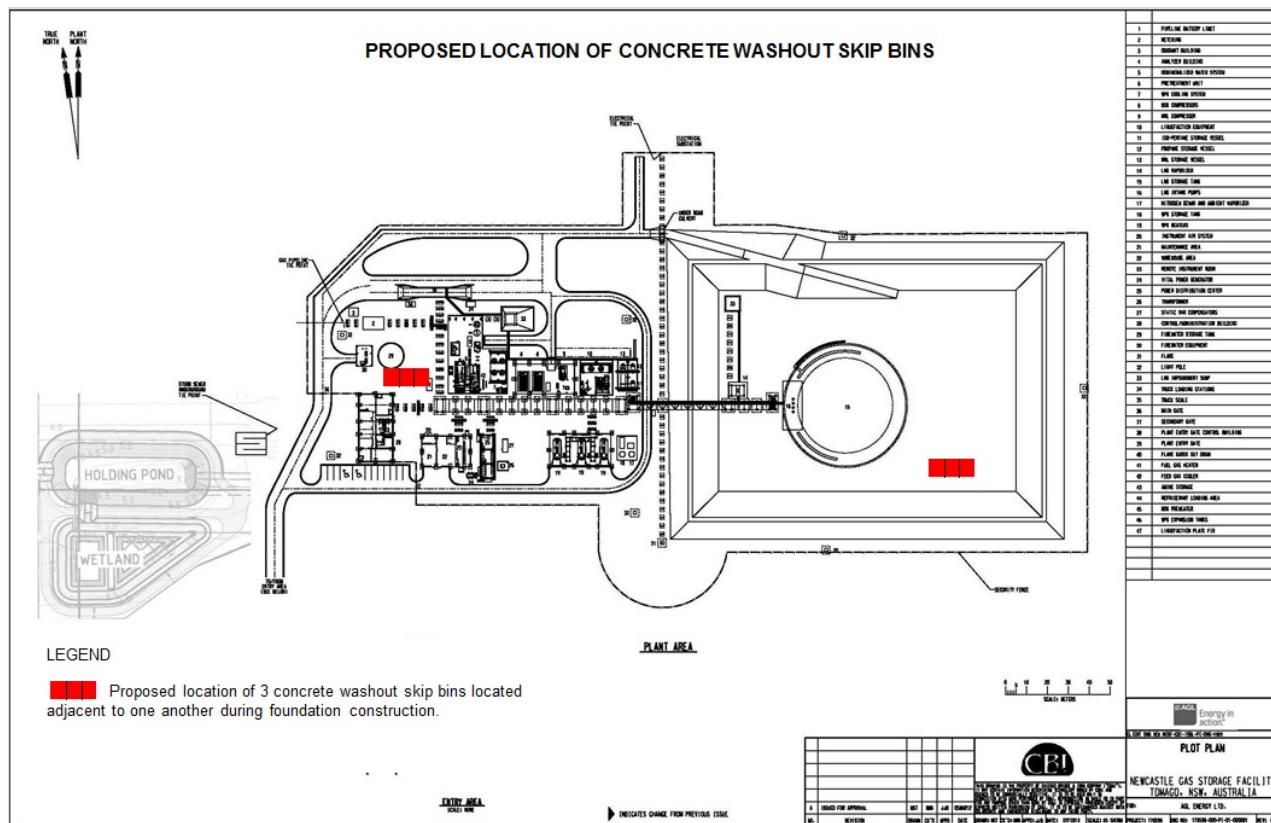


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4.6 Indicative Locations

The likely location for the bulk of the concrete works and position of skip bins is shown in Figure 3 below.

Figure 3: Location of Concrete Washout Skip Bins during Construction Works



4.7 Indicative Timing

The culverts and causeways installed as part of the civil infrastructure works are the first activity requiring concrete delivery to site. It is currently proposed that this work will begin in late December 2012.

For this work (which would require one or two trucks per pour) a temporary washout skip shall be used in consultation with the civil contractor.

The three concrete washout skips (each 3 cubic metres) will be in place before the first large pour for the LNG foundation in first quarter 2013.

4.8 Consultation

Hunter Water Corporation, EPA and NSW Office of Water have been consulted in regard to this proposal. They are satisfied that AGL will be able to manage the potential risks associated with the installation of the temporary wash out areas.