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PO Box 5024  
Elanora Heights NSW 2101

Telephone: (61 2) 9913 7284  
Facsimile: (61 2) 9913 7930  
Email: deanshewring@optusnet.com.au

Cowman Stoddart Pty Ltd  
PO Box 738  
Nowra NSW 2541

**Attention: Stephen Richardson**

**Subject: Assessment of the Proposed Modifications to the Shoalhaven Starches 2018 Expansion Project Scope**

Dear Stephen,

I have reviewed the Preliminary Hazard Analysis<sup>1</sup> (PHA) for the Shoalhaven Starches 2018 modification proposal (MOD 16) with respect to the following proposed changes:

- Modify the location of the baghouse for the No. 5 Starch Dryer;
- Install a 'services lift' to the outside of the existing staircase adjacent to the No. 5 Starches Dryer Building to allow on-going access for personnel and customers to the floors within the building; and
- Modify the service conduit extending from the Shoalhaven Starches factory site on the southern side of Bolong Road to the proposed Packing Plant on the northern side of Bolong Road by elevating a section of the conduit above ground level.

The baghouse filter for Starch Dryer 5 is proposed to be located closer to Bolong Road. It is understood that the explosion vent will be located 16 m above ground level. Preliminary calculations show that the estimated length of the fireball is approximately 32 m. From the layout drawings supplied to Pinnacle Risk Management, the distance from the proposed baghouse filter to the site boundary is approximately 36 m. Given the height of the explosion vent, the limited duration of vented dust explosions and that the estimated fireball length is less than the distance to the nearest site boundary then the off-site risk of fatality is deemed to be acceptable, i.e. this modification does not change the findings of the 2018 PHA. This modification will be reviewed in detail with

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<sup>1</sup> Pinnacle Risk Management, Preliminary Hazard Analysis, Proposed Modification Application to MP06-0228, Shoalhaven Starches Expansion Project, Proposed New Specialty Processing Facility, New Gluten Dryer and Other Associated Works at 22, 24 And 171 Bolong Road, Bomaderry, NSW, 15 May 2018

the other dust explosion vents in the Final Hazard Analysis when the design details are known.

The services lift (for personnel) has no impact on the PHA assessment and results.

The service conduit will contain the following services:

1. Pneumatic transfer lines (lean phase conveyors, 150 kPa maximum pressure):

- Four starch transfer pipes; and
- Three gluten transfer pipes.

The pipes will be 200 mm diameter nominal, 304L stainless steel with rolled long radius elbows.

2. One waste water return pipe (80 mm diameter nominal, 304L stainless steel). The waste water will be wash down water from the truck loadout area (where powder can spill onto the ground). This area will be primarily cleaned with a dry vacuum but the design will include an allowance for a sump return.

An analysis of pipe failures (for natural gas) was included in the PHA (Section 5.2.2). The likelihood of pipe failures with subsequent ignition was shown to be low and acceptable. This modification also does not impact the findings of the PHA.

Yours sincerely,



**Dean Shewring**  
**Principal Risk Consultant**