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Major Project Assessment  
NSW Planning & Infrastructure

**Submission - Champions Quarry Application & Preliminary Environmental Assessment  
(09\_0080)**

As an Environmental Scientist specialising in acid sulfate soils, wetlands and rivers I would like to lodge an objection to the assessment on the following grounds -

**3.4.3 Acid Mine Drainage** states no pyrite present in bore holes while Champions Quarry EA (2010) under the heading acid mine drainage stated pyrite was only present at one of four holes in two bands (8.2.1 Geology) and that the extent of pyrite which may be uncovered is unknown and no provision is made for long term site remediation.

**Champions quarry EA (2010) - Part C: Environmental Interactions**

**13.4.2 Characterisation of the Resource**

Boral specifies that the sulfate content of sand not exceed 0.01%, while the sulfate content of sand from Champions Quarry is 0.15% or 15 times higher.

This demonstrates that this 2011 document totally dismisses testing that was done under Champions original environmental assessment process therefore the assessment is flawed. The sulfate content will result in oxidisation and acidification of runoff water while evaporation will concentrate acidity within dams. Sulfate (S), iron (Fe) and organic matter in the low energy environment of the dams will likely form a layer of monosulfidic black ooze (MBO) (FeS) in dam sediment. MBO held underwater is anaerobic and will also contain heavy metals and nutrients. If heavy rain were to cause dam failure, mobilised MBO sediments will oxidise and strip oxygen from any water it mixes with, killing all aquatic organisms in any receiving waters and depositing heavy metals across the landscape.

The chance of dam failure is relatively large as rainfall figures are understated. Champions EA (2010) used average rainfall data for Lismore of 1,343 for calculations while locally recorded rainfall is 1,542 mm or 199 mm in excess. The average yearly rainfall from the last four years is 2,006 mm or 464 mm in excess. Rainfall of 245 mm fell on the day on June 3<sup>rd</sup> 2010 and rainfall of 250 mm fell on 27<sup>th</sup> October 2009 which is approximately one sixth of average annual rainfall falling on one day and this has not been accounted for in any assessment.

Dismissing pyrite content and understating rainfall figures does not engender confidence in this latest assessment.

Yours Sincerely

