Soil pH and phosphorus
Cut areas are associated with low yields
Deeper cut soils have increasing soil pH
Soil P availability is affected by soil pH –
  At low soil pH –
    P is bound as iron phosphate;
  As pH increases –
    P is bound as aluminium phosphate;
  At high soil pH –
    P is bound as calcium phosphate.

The effect of flooding
Low pH soils upon flooding, iron changes from Fe+++ to Fe++ form as the redox potential falls and P can increase in availability
At higher soil pH, Aluminium and Calcium Phosphates do not change form upon flooding and P availability does NOT increase –
  Apply more P to cut areas because native P is low and P is not released from the soil when flooded, as soil pH is high
  Consider increased P applications from soil pH(CaCl_2) levels > 6, definitely pH > 7.
P fertiliser application should be varied across varying field soil pH. In non-landformed fields, or fields with limited depths of cut and fill, then EM mapping can provide a basis upon which to direct soil sampling to assess soil pH and soil phosphorus status.

Other Findings
  On non-topsoiled landformed fields, growers should manage N fertiliser to compensate for the lower nitrogen fertility of the cut areas and preferably use differential N fertiliser applications prior to permanent flood.
  Where deep cuts occur, growers may also need to consider modification of the deep fills (i.e. often where deep cut material has been placed).
  Planned land-forming should consider the benefits/uniformity of “topsoiling”. Topsoiling should be used where possible in cut and fill operations so that soil variations in nitrogen, phosphorus and organic matter content are reduced following cut and fill.
  When liming to address low soil pH issues, ensure that soils are not over-limed and that liming should be confined to areas that require lime rather than be applied uniformly across fields.
  Growers should utilise existing data on spatial variability (cut and fill/ EM data) to apply nitrogen fertiliser in a targeted manner, particularly prior to permanent flood, to improve rice crop performance.
  Cut and fill data from landformed fields should be retained by growers as a basis for future crop zone management strategies.