EFFECTS OF SOIL DISTURBANCE ON THE HUNTER RIVER From DRAYTON SOUTH COAL MINE

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KEY MANAGEMENT CONSTRAINTS

- shallow topsoil (indicated by soil survey)
- areas of sodic and saline subsoil - impossible for mine machinery to precisely remove a 0.1 m layer without disturbing and inadvertently including the subsoil

SODIC SUBSOIL

•Exposed sodic soil disperses on rain impact resulting in gullying and sediment loss

• The dispersed clay from the sediment forms a stable floc that does not settle out (refer Slide 4)

•This floc is conveyed to the Hunter River and will degrade the water quality and contributes to the smothering of aquatic ecosystems.

CONCLUSIONS-Hunter River water quality and aquatic ecosystems are at risk from this mine

Salinity

- Soil salinity also occurs in the topsoil and some shallow subsoils within the mine void footprint (from EIS).

- Exposure and erosion of saline soil will export salt to the Hunter River, increasing its salinity and degrading water quality.

- Use of the mix of topsoil and saline sodic subsoil to recreate Endangered Ecological Communities (EEC) is highly problematic as the non-salt tolerant plants simply will not establish.

KEY FINDINGS

- Shallow, **sodic soil** will be disturbed, exposed and stockpiled. This will lead to
  ***increased erosion and sediment availability,**
  ***decline in water quality**
  and
  ***contribute to the smothering of the Hunter River bed resulting in degradation of aquatic ecosystem**

- Shallow **saline soil** also will be disturbed, exposed and stockpiled. **These soils are extremely costly and difficult to rehabilitate. Also the impact of these soils would be in addition to the salinity impact to the final void.**

CONCLUSION

The critical impacts of the disturbance of sodic and saline soil have been ignored in the Final Assessment Report