From: Greg Chapman
To: Do-Not-Reply IPCN Submissions Mailbox
Subject: Response to the proponent's submission Annexure 8
Date: Wednesday, 14 February 2024 10:00:35 PM

Dear Commissioners, I have had a quick look at the proponent's last minute soil and land assessment in Annexe 8 and here are my comments.

Extensive Geotech investigation How do we know if this is true? Has it covered all land form elements on the development footprint? Has it covered all slope classes on the development footprint? Has it representatively sampled all lithologies and geological formations within, and buffered around, the development footprint To answer this we really need a map showing location of the investigation sites, along with 10m interval contours, superimposed on best publicly available geological mapping. Are the sites biased towards flat areas where equipment can easily excavate?

50 plus test pits! When were these established? Was there sufficient opportunity to include these in an amendment to the GIS? If so when why not? If the results were as re-assuring as they are purported to be, then why have they not been made available?

It is customary in all professional geoscience based reports, including EIS, and one would assume submissions to the IPC, to include pit and borehole logs and to present the actual laboratory data in an appendix. How hard is it to do that?

Yet the data remains mysterious. The quality of the data cannot be assessed, and it cannot be examined because it is absent. With no analysis everyone, including the Commissioners are just left with what could perhaps be interpreted as patronising and condescending statements that there is nothing to worry about. Coming, without data, such statements may indicate a different expectation for those with worldly experience.

If there is a consistent geological profile then where is it? What does it look like?

'Pre- established requirements' - what are they? A reasonable expectation would be that the requirements include serious consideration and plans:

- to prevent mass movement, (once again not mentioned, addressed or assessed)
- prevent soil erosion and (once again not addressed or assessed)
- prevent deterioration of water quality. Legitimate concerns about high phosphorous levels in the soil have been raised but are still not addressed. It is doubtful if there was any testing of available or total phosphorous in any of the 160 odd soil or regolith samples.

The blinkers of constructibility seem to restrict broader considerations of environmental impact. This is not just about constructibility but should encompass a fair dinkum assessment of environmental impact stemming from both the terrain and the interaction of the terrain with the development. A reasonably detailed and data rich assessment has still not been provided.

No class 8 soils. Is that for mass movement assessment or is it for water erosion assessment? [not specified] What criteria were used? I don't believe that any of this was properly assessed.

Class 8 for mass movement is based on evidence of:

previous mass movement (slopes which have slipped are likely to move again
- Slope - which we know is in many places very very steep
- Soil type - basalt CH soils are known to be a particular hazard

Interestingly 51 soil pits are not required to map LSC as being class 8. Just examining the terrain and slope is sufficient. So why include the statement that there is no class 8 on site?

There are the criteria for assessing water erosion hazard for LSC, from the NSW government:

The reference for the LSC assessments is:

https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/land-soil-capability-assessment-scheme-120394.pdf

Tables below indicate criteria for assessment of mass movement and assessment of water erosion hazard.

Table 16. LSC class for mass movement hazard

Mean annual rainfall (mm)	Mass movement present	Slope class (%)	LSC class
<500	No	n/a	1
	Yes	n/a	8
>500	No	n/a	1
	Yes	<20	6
		>20–50	7
		>50 or any scree or talus slope	8

Note that scree or talus slopes go automatically into Class 8.

Table 4. Slope class for each LSC class used to determine water erosion hazard

NSW division	Slope class (%) for each LSC class							
	Class 1	Class 2	Class 3	Class 4[1]	Class 5[2]	Class 6	Class 7	Class 8
Eastern and Central divisions	<1	1 to <3	3 to <10 or 1 to <3 with slopes >500 m length	10 to <20	10 to <20	20 to <33	33 – <50	>50
Western Division[3]	<1	1 to <3 or <1 for hardsetting red soils	1–3	3–5	3–5	5–33	33–50	>50

Sand bodies are classified as Class 1 for water erosion hazard.
[1] No gully erosion or sodic/dispersible soils are present.
[2] Gully erosion and/or sodic/dispersible subsoils are present.
[3] Western CMA provided advice on the slope classes.

Clearly the controversy remains.

I humbly suggest the Commissioners ask for all the EIS and its amendments, the two reports prepared by Dr Banks, the report I wrote on the EIS and Dr Banks and my presentations at the public meeting, my written submission, as well as the proponent's recently announced geotechnical data and maps to be reviewed by an NSW Government experts, namely the

Soil and Landscape Assessment Team
Environment Protection Science (EPS) Science | Economics and Insights Division
NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)

for the soil and land and water quality environmental impacts expected from the proposed development.

Government assessment was done by Planners for biodiversity. Soil and land also deserve government expert assessment.

Yours sincerely
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