Having looked through the responses a couple of bits are still unresolved to my mind - there are a number of reasons I have no faith in the responses received thus far, primarily the cherry picking of items to reply to and total disregard for the remainder of the question - evidenced below - explain all about the block valve selection (which they are still working on) and completely ignore the main question with regards venting of the inventory – it was very disappointing that AI could not competently annotate the discussion or questions posed in the video call we attended, it seems like we are not being given due consideration or that they feel our argument though robust lacks credence and therefore is dismissed without any kind of validation.

## **REF 2.1**

"Previous questions which had previously not adequately been responded to. First is on pipeline inventory, nearly 10,000 tonnes of CO2. Applicant's response was they didn't see a situation where full inventory would need to evacuated" The Question posed was regarding the inventory within the pipeline and secondly the suitability of the block valves and elastomers for purpose - the response details the construction and suitability of the block valves - Quotes ISO 15848-1 which we do not have a copy of and will cost to purchase, we can only assume that they are correct in their interpretation of the document.

There is no response with regards the inventory and any requirement to vent, as previously stated if block valve #1 were to leak and require intervention then the whole inventory would require venting to allow access to the valve.

Regardless of the suitability and conformity of the block valves being utilised (still not selected so some doubt as to exactly which will be chosen. "The Applicant's selected Front End Engineering Design (FEED) Contractor is currently engaging with several valve manufacturers") the block valve presents a potential single point failure, if there was a failure at the Gate/Seat resulting in a leak path there is always the possibility, due to the pressure differential, that the emitted jet/stream of dense phase CO2 will transition phases resulting in rapid localised downstream cooling which could result in significant temperature differential across the valve Gate/Seat potentially causing micro fractures that could propagate into full fractures resulting in complete valve failure. As for there being no risk of erosion there will always be the risk of fluid cut to the elastomer and gate/seat material, the additional contaminants entrained within the CO2 steam can precipitate especially where free water is present.

## **REF 2.2**

"The emitters will monitor the composition of their own individual CO2 stream and transmit real-time compositional data to the Proposed Development. The Applicant will monitor the composition of the commingled CO2 stream entering the onshore pipeline. Key impurities, for example water, will be monitored continuously". Duty holder responsibility to ensure the emitters are compliant and the CO2 stream is of suitable composition - monitoring of the commingled stream can provide a false assurance - if 4 are compliant and under the requirement and a 5th is above the requirement the overall result may be a stream that is just under the required levels therefore no intervention is

required but 1 emitter is still non compliant and escaping the scrutiny or penalty for this lapse. Duty holder is responsible and should perform due diligence not deflect the responsibility onto other emitters "individual emitters will be responsible for ensuring that their individual CO<sub>2</sub> stream is within the agreed CO<sub>2</sub> specification" - 1st court case will have the defence - we were compliant it was them with a pointed finger, not good enough in my opinion.

## **REF 2.3**

"The Proposed Development does not contain any amine-based process equipment" Does this include the other emitters streams - as it is a false and mendacious statement if only the self generated stream is amine free, if the emitters streams are generated using amine based process then there is a high likelihood that amine byproducts will in fact-be present in the commingled stream and that Viking CCS seem to be purposely obfuscating, evidenced by the prevaricating in their response. I'm not sure I fully understand the VIKING CCS perspective on this. Could they please clarify the details for me?

Aqueous Sodium carbonate (Na2CO3) and potassium carbonate (K2CO3) based CO2 capture technology results in the formation of Aqueous Sodium bicarbonate or Potassium bicarbonate and Wegscheider's salt, bicarbonate can result in but not limited to - frequent urge to urinate, (continuing), loss of appetite (continuing), mood or mental changes, or , nervousness or restlessness, slow breathing, swelling of feet or twitching, or lower legs, unpleasant taste, unusual tiredness or weakness - the introduction of only 0.1% SO2 reduces the efficacy of the solid bed absorption technology by approximately 76% this has some significant cost and disposal implications also this would produce sodium sulfite Na2SO3 which has some guite serious health implications - when there is an increase of sodium sulfite concentration, the resulting toxic mechanism inhibits cell proliferation, damages the mitochondrial integrity, and promotes apoptosis. During a venting cycle is there any possibility that sodium sulfite could be entrained with the dense phase fluid and inadvertently be released as part of the blow down. What if any safeguards are in place to mitigate potential for exposure in the wider community.