BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY SCS CARBON TRANSPORT LLC FOR A PERMIT TO CONSTRUCT A CARBON DIOXIDE TRANSMISSION PIPELINE	**HLP22-001** **GERALD "JERRY" BRIGGS** **INITIAL PRE-FILED TESTIMONY IN SUPPORT OF LANDOWNER INTERVENORS**

Q: Please state your name.

A: Gerald Briggs and I go by Jerry.

Q: Could you tell the Commissioners what your occupation is?

A: Warren County Mississippi Fire EMS Chief and 911 Chief.

Q: Where do you live?

A: Vicksburg Mississippi which is in Warren County.

Q: Do have personal knowledge of the CO2 pipeline rupture and leak that occurred in Satartia Mississippi on February 22, 2020?

A: Yes.

Q: And are you appearing before the South Dakota Public Utilities Commission pursuant to your request that we present your testimony to the PUC to consider in relation to what happened at the CO2 pipeline leak in Satartia Mississippi.

A: Yes.

Q: Chief you mentioned that you are the Fire EMS coordinator in Warren County, Mississippi, what are your job duties and responsibilities in that regard?

A: My biggest job duty is fire protection for the county of Warren and maintaining fire protection equipment and training.

Q: How long have you been employed in that position as the fire and EMS Chief in Warren County?

A: I have been employed by the county since July of 2012.

Q: Have you received training in regard to serving as a Fire EMS chief?

A: Yes, I started my fire career in 1996 and have had numerous training courses since then through the Mississippi State Fire Academy.

Q: Is <u>Attachment No. 1</u> a copy of your resume in regard to your background and training in Fire EMS?

A: Yes.

Q: Please tell the Commissioners about your additional emergency response training and related positions.

A: I have been the training coordinator for Warren County for medical responders since 2008. I have attended the Mississippi State Fire Academy and additional training courses including the National Fire Academy which is the premier fire academy that some firefighters are allowed to attend. I have also got training by FEMA on many different topics. My emergency medical training is outlined there including being an EMT on the American College of Surgeons ACS committee on Trauma and EMT first responder and so on. I have also had Law Enforcement Training. I have a lengthy work history going back to the 1990s in Fire and EMS and also have a degree in criminology and additional education as an emergency medical technician.

Q: So, let's turn to the topic of natural gas, do you have natural gas in your part of Mississippi. Do you have training um in responding to what needs to be done in event of a natural gas leak?

A: Yes.

Q: Are you familiar with the emergency response efforts related to the CO2 pipeline rupture and leak in Satartia Mississippi on February 22, 2020?

A: Yes.

Q: Which CO2 pipeline ruptured and leaked?

A: It was a 24-inch diameter Denbury CO2 pipeline which was about 77 miles long with only one feed-in point.

Q: Are you aware that the proposed Summit CO2 hazardous pipeline is projected to be 2,000 miles long with over 33 ethanol plants that plan to feed into that hazardous pipeline system?

A: That is my understanding.

Q: Prior to this CO2 pipeline leak had you been provided with any training by Denbury or anyone about the pipeline and what to do from an emergency medical or firefighting or rescue perspective before the leak occurred?

A: No, I didn't know Denbury existed.

Q: Did Denbury provide the county specifically your organization with any protective equipment or emergency response equipment or self-contained breathing apparatuses, SCBA's, or other equipment to allow you to respond to a CO2 pipeline leak?

A: No.

Q: Where were you at when you learned the leak occurred and there was an emergency?

A: I was in Vicksburg, Warren County, Mississippi.

Q: And so, did you receive something on your cell phone like an automated alert?

A: No, actually I was approached by one of our local law enforcement asking if I'd heard about the explosion in Satartia.

Q: And so what did you do when you heard about that?

A: Called my counterpart in Yazoo County which is the county where Satartia is and asked what was going on, what did they know.

Q: Who was that counterpart and what did you discuss?

A: His name is Jack Willingham, and he is the County Emergency Management director for Yazoo County, and he really didn't have a lot of information. He was aware there was an explosion but didn't know what it was. He asked me to please

help. I perceived he was under distress and had virtually no information to help formulate an emergency response plan.

Q: Did you then proceed from Vicksburg to head towards Satartia?

A: Yes. I gathered a small crew of individuals to approach the leak from the south side.

Q: What did your crew consist of?

A: It was three additional guys, a UTV or side by side utility vehicle, our air equipment and probably 20 spare bottles of breathing air – not oxygen.

Q: How long did it take you to get from Vicksburg and to get organized and to be able to start your response efforts in Satartia Mississippi?

A: Around 45 minutes.

Q: Had any other first responders arrived before you?

A: Yes. The local fire department had already set up a roadblock or checkpoint south of the explosion area.

Q: At that point had any of the local fire fighters proceeded beyond the checkpoint?

A: No, they did not know what to do or where to go.

Q: At that point did you know what chemical or gas, or substance had exploded or was leaking?

A: We knew it had to be either chlorine or natural gas.

Q: Why did you think that's what it was?

A: That's what the Emergency Management director said he had in that area.

Q: And did you later find out that was incorrect?

A: Yes, after we were done, we learned it was actually CO2.

Q: At any time before or while you were in route to Satartia or while you're at the checkpoint did you receive any communication from Denbury pipeline company that there had been a leak in their pipeline?

A: No. No communication from the pipeline company. My understanding is other first responders reached out to Denbury an hour into the event to try to learn information from Denbury.

Q: Take us back to the checkpoint area, what direction is that from Satartia?

A: South and west of the explosion area.

Q: Is Attachment No. 2 some Google Earth photographs of Satartia and the leak site?

A: Yes, and I have verified the lines drawn and the measurements and distances stated are accurate.

Q: On the first page of Attachment No. 2, where in relation to what's shown there was this checkpoint to the South that you arrived at?

A: It would be at the bottom of your page, but it is not on this map.

Q: Okay and was that along Highway 3?

A: Yes. Approximately five miles from the leak.

Q: Why was the checkpoint, the southern checkpoint set up five miles um away from where the leak was?

A: The original department that was responding to the event - the 911 call of an explosion with green gas - tried to go out the normal route which is on 433 and their fire truck would not run, so they backed out went a different route and that's what put them at Highway 3 at that spot five miles from the leak and they just shut the traffic down. They didn't know what they were dealing with, so they didn't want anybody entering the area.

Q: And you said their fire trucks shut down what do you mean?

A: It would not run. It was an internal combustion engine and because of the presence of CO_2 displacing the oxygen the engine didn't have sufficient oxygen to run.

Q: And is that effect of CO2 something you observed on that day involving multiple vehicles involved in your evacuation and rescue efforts of citizens that there were many vehicles that had just stopped alongside the road and other locations?

A: Yes, most of them that I observed were stopped where they were at, they're in the middle of the highway or in the middle of the road, the headlights still on doors wide open unoccupied.

Q: What you did next once you were at the checkpoint?

A: We arrived at the checkpoint again I asked what type of leak we were dealing with so we would know what to take in with us or how we needed to prepare to respond to it and at that point they still did not know. So, we just loaded up everything we had bunker gear, air packs, spare bottles, whatever we needed into that side by side or UTV and proceeded towards the sound of what we believed was coming from the site of the explosion.

Q: The sound of where the leak was - could you hear a sound from the checkpoint which was five miles away from the explosion area?

A: You could hear it. It was just a light sound off in the distance, but you could tell it was something, it wasn't very loud five miles away but it was out of the ordinary.

Q: Did the sound change as you got closer to the leak?

A: It did, it sounded like a ruptured pipeline, or a jet crashed into the Earth and was still going. It was very loud, deafening.

Q: So, looking at <u>Attachment No. 2</u> from that location just off the first page the first photograph on Highway 3 to the South where did you proceed from there?

A: So thankfully there were no residences there and no livestock to my knowledge. It was uninhabited farmland in between our checkpoint area and Highway 433 where the town of Satartia is, so we proceeded there and our instructions from our command was to check the town of Satartia for victims.

Q: And so, in that route that we see on the photograph on Highway 3 would you have proceeded Northeast and then taking a left toward the village of Satartia?

A: Yes, we took a left on 433 or Satartia road at that point is what 433 turns into.

Q: On February 22, 2020, roughly how many residents were there of Satartia Mississippi?

A: I'm not sure the actual census counting but I would guess somewhere around 60 just judging by structures

Q: In Attachment No. 3, the PHMSA report, they report that there were 50 residents in the village of Satartia. Do you know if that's accurate?

A: It sounds pretty close.

Q: Regarding the SCBA and the extra air packs, tell the Commissioners about how long those tanks last when you're using them.

A: It's kind of a moving target they say 30 minute bottles but you know depending on your workload and your physical condition and they may last 10 or 15 minutes it all depends on what you're doing at the time if I was wearing one today just sitting in a chair in my house not moving I could probably wear it for an hour, and if I go out and start doing jumping jacks I might wear them for five minutes. It is highly dependent on your physical condition and physical activity level at the time of use essentially your breathing rate determines how long they last, and your breathing rate can depend on the level of physical activity or stress and anxiety.

Q: How often that day roughly did you have to change or replace your air packs?

A: When we first started not very often but obviously after we walked the entire Village of Satartia it was probably every 10 minutes.

Q: How many of those extra bottles of air did you bring with you?

A: Roughly 20. We had them on the UTV.

Q: What personal protective equipment in addition to the SCBA were you and your other members of the EMS wearing that day as you responded to this CO2 pipeline leak?

A: We were wearing full structural firefighting gear from head to toe, helmet hoods, masks, coats, pants, and boots. We were wearing what we had.

Q: And that SCBA does that cover your entire face?

A: It does.

Q: It's essentially what people might think of as a gas mask?

A: Yes, you could relate it to that.

Q: When you have that SCBA on and your other equipment on, approximately how much gear are you wearing? What does it weigh?

A: I would say probably 60-75 pounds total.

Q: Okay and was there a large cost associated with obtaining each SCBA?

A: They average between five and six thousand a piece.

Q: If we look on the first page of <u>Attachment No. 2</u> shows a distance between the leak point and is the leak point on the lower right of that photograph and that's where it's got a label site of CO2 pipeline rupture?

A: Yes sir

Q: Okay and then looking at the Google Earth map it looks like there's no residences anywhere nearby no structures that might be occupied is that correct?

A: If you look more Northeast that would be where Perry Creek Circle is and the actual resident is not shown on that map but there is a there is a residence pretty close.

Q: Okay and when you say pretty close how far away are we talking?

A: It would probably be a mile.

Q: Then it shows a distance into Satartia from the CO2 leak location of 1.24 miles, correct?

A: Yes.

Q: Tell the Commissioners what you observed um as you're driving on Highway 3 and then you turn left on 433 or Satartia Road in terms of what you observed in terms of any victims or individuals who were affected by the CO2 leak.

A: Well, my first observation of victims was at the checkpoint that other people had brought from the town of Satartia or nearby the town of Satartia, and they were laying on the ground waiting on an ambulance. I noticed several people laying on the ground with shortness of breath and vomiting.

Q: Did you understand those symptoms to be an effect from the CO2 exposure?

A: I figured it was a symptom of whatever gas it was which we did not know at that time.

Q: As you're then proceeding from the checkpoint towards Satartia, what did you observe?

A: I observed abandoned vehicles with doors open as I discussed before. There had been other rescue attempts before we arrived getting people to medical care but there was a deputy, Terry Gant, checking houses also as we're walking through, we ran across him that was -- we had to make him leave by ambulance to go get Medical Care at a hospital. There had been several people at their houses outside having a barbecue and one of the ladies came outside from the house to find them all collapsed on the ground.

Q: Where did you proceed next after observing the abandoned vehicles along Satartia Road and going into Satartia?

A: We checked the Satartia all the way to the Yazoo River which is on the **Attachment No. 2** map, which was the populated area according to the Weather Service plume model, that we needed to check. We were coming back out and Command asked us to check one more place. It was a road across Highway 3 on 433 it was Perry Creek Circle which was really close to the leak site.

Q: So, you are familiar with what a plume model is?

A: Yes. That's where we use the night of the explosion from the Weather Service to track where the plume may be headed and where potential victims may be.

Q: And are you aware in this case that Summit has refused to provide the public with a copy of their plume model?

A: I have been told that.

Q: Do you believe it's important for the public to know and be able to see what would happen based on a plume model in the event there was a leak in a CO2 pipeline?

A: I think it's important, but you would need more than one. You would want several based on the different geographies along the pipeline and ones that have taking into account all the weather variables.

Q: **Okay, back to <u>Attachment No. 2</u> and the photograph we are looking at, where would that be to the right-hand side of Highway 3 where we see 433 curve somewhat to the South**?

A: If you look just to the right of Highway 3 at Satartia there's actual label that says 43. That's the road to the left of that label that's Perry Creek Circle. If you look at the map it looks like some sort of Creek just there, that is right after the first turn in the road just on the other side of that Creek.

Q: What did you observe at that point on Perry Creek Road?

A: We encountered a small sedan in the middle of the road with headlights on doors closed with three victims inside of it.

Q: And were you on the UTV at the time?

A: Yes

Q: Was that able to operate or run?

A: It was the whole night it had not been working well like it was dying. I made a comment that we need to get the fuel filter changed. But it was it was still running just not very well and the closer we got on Perry Creek it did not want to run so I actually when we found the victims we bailed off and told our driver to go somewhere and make sure it stays running and we would neither drag these people out or call him back.

Q: So, this small vehicle you approached what did you observe?

A: I looked in the in the rear right passenger window and observed a male slumped over the rear seat did not appear to be breathing and was foaming out of the mouth and then the front seats were the same - two individuals appeared not to be breathing with frothy stuff coming out of their nose and their mouth and their vehicle was still in drive and the radio was on.

Q: Did those victims appear to be unconscious?

A: They were absolutely unconscious – unresponsive. It did not appear that they were even alive so my first instinct was to break the glass to get gain access to the victims to verify that they were alive. Thankfully they were they were breathing six to eight times a minute and shallow.

Q: What does that tell you if a victim is breathing six to eight times a minute?

A: If you were breathing six times a minute I would be bagging you to make you breathe.

Q: Did you consider this a life-or-death situation for these individuals?

A: We needed to get them to medical care right away. I actually made the comment that I didn't expect them to live through the night.

Q: And you said you had to break the window to gain access to these victims were their windows closed at the time?

A: All of their windows were closed, and doors were locked just as you would driving your car.

Q: Did you determine at any point during this process whether the vehicle for these victims was in drive or park or neutral?

A: It was in drive but sitting still the driver had his foot on the brake. The engine could not run given the situation and it was on a flat surface. We then secured the vehicle as we do with any type of motor vehicle wreck.

Q: Did you believe it was necessary to immediately try to get those victims to a location where they could receive medical treatment and potentially be in a location where there'd be sufficient oxygen for them to breathe without an SCBA?

A: Yes, and that was that was our first communication back to that checkpoint was to make sure there was ambulances available that we were coming out with three critical patients.

Q: Did you do anything to see if you could revive them at the scene?

A: Revive no but part of your checking for an unresponsive is trying to figure out what they are responsive to whether they're just alert or verbally they'll understand you're saying something or painful or that kind of thing so we did the sternum rub just the knuckles in the chest to try to get some response out of them and we didn't

get anything. If any of them had been semi-conscious you would expect them to make some groan or some noise once somebody rubs on their sternum.

Q: And they made no movement?

A: There was nothing.

Q: So, all you had was one UTV that wasn't running well, and you already had the three of your crew on that. Was there any discussion about how do we take them out, one at a time? All together?

A: We did and one of my guys actually asked if we were going to take them one at a time because we didn't have room, the two of us had to ride on the rear the driver had to have his pack in the seat beside him so he could breathe also and then we had all of our equipment piled in the back as well so we talked about taking one and our consensus was if we left the other two they wouldn't be alive when we got back so we just kind of piled them all on top of each other and um we one of our guys actually got up there with them to hold them in the back and I hung on the side and we came out.

Q: Where did you take these victims how far away before they were at a location where there was sufficient oxygen without an SCBA for them to potentially breathe?

A: I don't know where that point would be, but we took them back to the checkpoint five miles away. Because we didn't come off of our air for that five-mile trip back so, I couldn't tell you where that line was.

Q: The PHMSA report indicates that out of the 50 residents in Satartia 45 out of 50 were medically treated or had to go to the hospital or were perhaps hospitalized is that your understanding as well?

A: I do understand it's 45 total patients but out of Satartia I'm not sure because there were some people just traveling down the highway that did not live in Satartia that ended up being hospitalized as well.

Q: What was the wind direction that day?

A: It was to the north and kind of to the northeast? Geography wise it was blowing out of the hills of Vicksburg before the delta of Mississippi and blowing down into the river bottom.

Q: Could a plume be seen or see anything visual it would tell you which direction that plume was going or which way the CO2 was traveling?

A: There were a number of reports that there was a plume or a gas or a fog or a green gas. The plume modeling data received from our command who received it from the weather services showed movement of the plume in the northeast direction.

Q: Have you had further contact with at least one of these victims in in terms of their -- whether they've had any long-term effects from this CO2 leak exposure?

A: I have talked to one of them, I've actually got to meet one of the guys that we pulled out of the car probably a year after the event and then I also talked to him again this year we exchanged numbers and I ironically talked to him on Super Bowl Sunday of this year because he wanted to know who I was pulling for.

Q: Did he offer anything in terms of his medical condition and what if any ongoing effects he had from the CO2 exposure?

A: I didn't ask him directly, but he offered up that he was still having some problems due to it and I asked what type of problems he said he was still having severe headaches and nausea and couldn't sleep at night.

Q: So, after you got these three victims that were foaming at the mouth and nose unconscious to medical care, where did you go after that?

A: We looked back at the plume model we had some better mapping at that point, and we continued on out I guess it would be northwest or northeast whichever direction it was of the plume and we noticed there were some houses out that way as well going towards the next town so we went and searched those houses as well.

Q: If we look at um the second page of <u>Attachment No. 2</u> with the distance there's a line from the pipeline rupture or leak location and then it has an endpoint on Satartia Road, what's that end point on the upper left-hand side?

A: The endpoint looks like it's in the middle of a field but that's three and a half miles from the blast site but if you also look before the end point there's a few scattered structures in there and that was some residences, those were the last residence on that road.

Q: So, where I see the words Satartia Road the second one from the left it appears just to the left of that there's some type of buildings or structures is that correct?

A: Yes, there are a couple houses and several mobile homes in that area.

Q: Did you proceed there to see if there were any victims from the CO2 in that location?

A: We did we went there again on our side-by-side UTV and the conditions for it running were better out there for the side by side to run and we did find several people that were experiencing some shortness of breath but no major symptoms but wanted to go to the hospital to be seen to be sure. We continued to have our SCBA on and operating.

Q: And that location where those victims were experiencing shortness of breath was how far from where the leak location was?

A: That's roughly three miles away.

Q: Okay and the individuals in Satartia you understand had been evacuated and rescued by others?

A: Yes sir, they had two checkpoints one north of the event and one south so they went in both directions.

Q: And the one to the north was that further to the north on highway three?

A: Yes, it is not shown on the map.

Q: And then if we look at the third page of Attachment No. 2, we can see there that there is farmland it goes all 2.49 miles but other than the structures you talked about on the prior photograph it does not appear there's any residences or occupied structures at all is that correct?

A: Correct, the next closest thing probably five miles out would be Fish Camps that weren't occupied in February.

Q: If we turn to the fourth page of Attachment No. 2 is that taking us out further from Satartia so now we're a distance of 6.21 miles away from the leak location?

A: Yes.

Q: Then on the last page of Attachment No. 2, a National Forest and a National Wildlife Refuge -- actually two National Wildlife refuges Theodore Roosevelt and Panther swamp and the Delton National Forest, is that pretty much as you get further away completely unoccupied and in its National Wildlife and National Forest land?

A: Yes, the biggest occupancy you have there are some deer camps, it is very scattered.

Q: And those deer camps would I be correct understanding in on February 22nd, 2020, they wouldn't be in use?

A: Hopefully not because deer season would have been closed on January 31st. Fortunately the entire area of the where the plume traveled was very scattered rural communities. I couldn't imagine this type of severity of an incident happening somewhere closely populated. I think they're fortunate that it happened on a Friday night at about seven o'clock, so most people went to the nearest town to eat or go out or whatever it was and not everybody being at home.

Q: In Satartia at that time at least were there any restaurants where you could go on a Friday night or places to go?

A: Only the grill in your yard would be your restaurant.

Q: Let's talk about the actual leak it itself and you indicated that you could hear the noise and as you got closer to the leak it was a very loud noise?

A: Yes, deafening.

Q: If you turn to the PHMSA Report, Attachment No. 3, and look at page 12 of 21.

A: Okay.

Q: Does page 12 of 21 show the direction of the plume from Satartia?

A: Yes, as provided from the weather service.

Q: And is that your understanding of the direction of travel of the plume from this CO2 leak event on February 22, 2020?

A: Yes, that's not the map that I received by text but general direction yes.

Q: It indicates that the plume went 40 kilometers which is about 25 miles does that sound correct?

A: I think it's actually 24.8 miles.

Q: Okay uh so then let's talk about this uh this timeline that is provided in Attachment No. 3, the PHMSA report and you you've seen that before it's the PHMSA report regarding this Satartia Mississippi CO2 leak event on February 22, 2020, on the Denbury pipeline, please turn then to page six that has the timeline on it. Do you see the fourth paragraph down on page four that they define that MLBV as the main line block valves?

A: Yes.

Q: The timeline and it says at 7:14 PM, eight minutes later that these valves what they call MLVBs - one was shut down upstream of the rupture site and two valves were shut down downstream of the rupture correct?

A: Yes.

Q: But then this report from PHMSA indicates towards the bottom of the pipeline at 7:43 IC confirmed Denbury CO2 pipeline ruptured however no one could get close to the release site due to the ongoing release of CO2. So, despite the Denbury remotely shutting off these valves it didn't stop the leak is that your understanding?

A: I could hear the leak for probably two to three hours so that seems reasonable.

Q: So, if Denbury is telling PHMSA in this report they shut it off eight minutes after the leak occurred by closing the remote valves you weren't even at Satartia at that time correct?

A: No, I probably got there closer to eight o'clock.

Q: Okay and after eight o'clock you could hear the noise from the CO2 pipeline continuing to leak for two to three hours more?

A: Yes, probably closer to 10 p.m. or 10:30 p.m.

Q: So, the distance of 24-inch pipeline between the valves that have been described here that could be closed was 9.55 miles between the two of them nearest the rupture location?

A: That's what I was told that night because our Command kept telling me that it was closed so I relayed back, well they may say each valve on either side of the leak is closed but I am here and I can still hear it and they said well it just takes time for it to bleed out of the line that it was off – which was two to two and a half hours later because I was there around 8 p.m.

Q: Was the entire village of Satartia evacuated because of this incident?

A: The entire Village was yes.

Q: Are you aware that here in South Dakota Summit is proposing 20 miles of distance between shutoff valves on the same size 24-inch pipeline?

A: That is my understanding.

Q: You understand then if there was a leak somewhere in that 20 miles it would take longer than what happened in Satartia for that CO2 in the 20-mile pipeline to bleed out depending on how big the rupture was and where it was?

A: I think that's a fair statement depending on the leak. You will obviously have about two times more length of pipeline with CO2 in it that presumably will find its way out of the pipeline.

Q: Did you observe or come to the conclusion that any of the victims you encountered were confused?

A: The elderly people that we evacuated were confused with shortness of breath.

Q: Have you heard of hydrogen sulfide?

A: Yes.

Q: Hydrogen sulfide when there's just a small portion of parts per million can cause a rotten egg smell something like people might be familiar with from natural gas or propane?

A: If you're referring to H2S, hydrogen sulfide, yes.

Q: If you look at <u>Attachment No. 4</u> do you see that document which comes is a chart from OSHA information identifying the effects of H2S or hydrogen

sulfide identifies symptoms depending on the parts per million that someone with is exposed to H2S you see that there?

A: Yes.

Q: And then turn to page 8 Attachment No. 3 which is the PHMSA report. The last paragraph down before it says summary of return to service and I'll just read this the paragraph above that according to first-hand accounts as well as second hand accounts from first responders there was a "rotten eggs" odor associated with the CO2 release in gas and gas plume rotten eggs odor can be attributed to the presence of H2S which is naturally occurring in the geologic formation that serves as a source of the CO2 in the pipeline. It goes on to say PHMSA reviewed the CTEH air monitoring results and did not identify any observed readings of H2S by monitoring equipment. The monitoring equipment's detection limit for H2S was 0.1 parts per million. Do you see that there?

A: Yes.

Q: So, does that tell you that the monitoring equipment that was used detected parts per million of H2S in the area of the leak of 0.1 parts per million?

A: Yes.

Q: Okay and if we go back to the chart in Attachment No. 4 and we look on there for the parts per million of 0.1 it has a range there and it says when someone's exposed to H2S of 0.01 to 1.5 parts per million, what will happen is there'll be an odor threshold in a rotten egg smell correct?

A: That's right.

Q: It doesn't report that you'll have any physical symptoms or problems or issues as a result of that low-level parts per million of H2S correct?

A: That's right.

Q: Then even if you go up to 10 parts per million which would be over 10 times what was reported in the PHMSA report you can have exposure over eight hours without any physical symptoms correct?

A: Yes.

Q: Do you believe that any of they symptoms of the victims you observed or heard about suffered from any exposure to H2S?

A: No, the symptoms that I observed with the victims that I dealt with were not typical symptoms of H2S.

Q: And the symptoms that you observed do you believe those were symptoms of the CO2 exposure from the Denbury pipeline.

A: I do.

Q: Since the event in Satartia the leak event have you been involved in different panels and been at different events where the dangers of CO2 and a leak in a pipeline have been discussed and addressed?

A: Yes.

Q: Please tell the Commissioners about that.

A: The latest one I participated in was in Baton Rouge Louisiana. They're going through a similar now.

Q: I'd like to talk about lessons learned from this CO2 leak in in Satartia. Have you come to any conclusion regarding what if any public engagement and first responder education efforts are necessary to best prepare for such incidents?

A: Absolutely. For starters, better outreach and education from the Pipeline companies. We need to know exactly what the best practices and methods are to deal with such incidents and we need them to equip us with the most up-to-date equipment and tools necessary to do our jobs properly. The biggest thing that we needed is self-contained breathing apparatus or SCBA or air pack is another term. The irony is that these hazardous pipelines often occupy many miles of more sparsely populated areas that your major metropolitan communities but we don't have the people-power or the capacity to necessarily fully address all of the issues when a rupture or leak occurs. At least annual training and refresher courses should be offered by the pipeline companies at their expense. Prior to this incident in 2020 I had no idea Denbury existed and I actually made the comment to a Denbury representative on scene and I said thank God I don't have this running through my county. He asked me what my County was and I told him and he said the pipeline runs right through the middle of it. And my response was we need to talk. That was in 2020 he just came to my office in April 2023. Gas or air monitors per first responder would also be helpful. A coordinated waring system from the

pipeline company to immediately notify the public and first responders of what is happening would be helpful like reverse 911 but more widely broadcasted. So training, supplies, and equipment those are the things that that if this pipeline gets sited that you need to insure and will often get overlooked especially in the rural setting that it's not a big city, they don't have the resources so we may tell one person this is what you need to do with the turnover rate for volunteer property requirements is so high they may not be there next year or the year after that. It needs to be annual in-service training. Electric UTV type vehicles provided by the pipeline company and replaced as technology improves would be helpful to have. There are many things that could be improved.

Q: In in relation to this smell of the rotten eggs that people could smell, or some people smelled, who didn't have the SCBA on do you think that was actually helpful in this situation with the leak in Satartia, that there was some odor that people could smell?

A: Yes, it at least alerts a person that something is off something is wrong and gives them at least a chance of protecting themselves and their families.

Q: And if there is no odorant like H2S as Summit plans not to have any odorant in the in their proposed hazardous pipeline, is it your understanding that CO2 will be colorless, odorless won't get any notice that it is in the atmosphere around you at elevated levels?

A: Yes.

Q: Do you believe a CO2 pipeline without any odorant or warning system built in is more or less dangerous than one that would have such a notification feature?

A: I think it's kind of twofold. Certainly, yes as to I believe it is more likely faster reporting will occur and individuals would have a better chance of getting out of that area if there is an odorant they can detect. However, if you're not in a big city you have to wait on the big city to come to you. So that doesn't hold very well for the people that are trapped in their house or in their car or not breathing waiting on the City EMS or others to come with their response teams. So, to a degree it will definitely help but for those in more rural areas if they are in need of help you better hope the local first responders are fully trained and equipped with all the tools and techniques and technology to minimize victim impact and injury.

Q: Based on your experience and knowledge do you believe it would be wise or safe to locate such a hazardous CO2 pipeline as Summit is proposing anywhere near populated areas?

A: No.

Q: **Summit takes the position that these CO2 pipelines are no more dangerous than a natural gas pipeline or an oil pipeline. Do you agree with that?**

A: No. All hazardous pipelines are dangerous but the one difference is the weight of the product with CO2 that is not going to go straight up in the atmosphere it's going to sink. And it's going to sink in your lower line areas and remain invisible and odorless. You can smell natural gas and it will dissipate faster. Oil is obvious when you see it and it is more localized and predicable once out of the pipeline as it is not affect by the changing air streams like CO2 is. I am not aware of a natural gas rupture directly affecting persons three or more miles away from the leak or rupture site as the CO2 did in Satartia.

Q: Do you believe that CO2 pipelines pose a significant safety risk to the public?

A: Yes.

Q: Based on your experience, education, training and background how far away should these CO2 pipelines be placed, if they are going to be sited at all, in relation to populated areas.

A: Just in my experience for what I've seen in Yazoo County, a couple miles at least that's where we stopped seeing victims in that three to three and half mile range.

Q: On the night that this of this incident on February 22, 2020 did you actually see or lay eyes on the leak itself?

A: After our mission was over, I was asked to go look at the leak, the leak site.

Q: Was the pipe where the leak happened, was that buried down into the ground?

A: Visually no. I think what happened there, is the ground left the pipe. It was on the side of a hill.

Q: Well, what did it look like.

A: It looked like a broken pipe down in the bottom of a ravine

Q: So on the night when the leak was active were you ever within 1000 feet of the leak?

A: No.

Q: Would you have gone within 1000 feet of the leak without a mask on?

A: No

Q: Was there any residences or any people within a thousand feet of where this leak was?

A: I think the closest that came was the fire truck that didn't know where they were going.

Q: And that fire truck did it just driving and then it just died on the road, how what happened?

A: They encountered the cloud or the gas or the green whatever it was, the truck started spitting and sputtering and the passenger in the truck got sick so they backed out of this the area and treated the passenger.

Q: All right and we've heard a lot of talk about PHMSA regulations and federal regulations as if local control and local regulations are not important - was this Denbury pipeline regulated by PHMSA both before and after its explosion?

A: Yes.

Q: South Dakota has a lot of rural volunteer fire fighters, what kind of things do the rural firefighters need other than you said some annual training because the turnover is high, what about equipment?

A: The gas monitoring would help because a lot don't have it. It may be different here but back home that wasn't a common thing that we had typically our role in a pipeline incident is just to evacuate the area, wait on somebody a better, you know bigger town or city brings their response team in or whatever. This was a little different because we had known victims on the highway. So maybe some air monitoring and like I say just overall training of what's in the pipe and what they can expect if something catastrophic does happen.

Q: What was the cause of the Denbury pipeline rupture?

A: The soil gave loose, and I think that's what caused the I think it was a weld fracture if I remember correctly and it just severed the pipe. It really wasn't like a

pinhole or a specific leak, I think the pipe was severed. And that is the scary part – soil can give way anywhere at any time.

Q: I think you answered or stated a lot as far as the safety in what local responders need to mitigate risk you need proper equipment you need annual training, is there anything else I mean, equipment, vehicles anything else that in your discussion on panels or whatever as far as what else is needed to mitigate risk for a pipeline like this?

A: From our side of it from the fire fighter side of it is just what I said the training the equipment because and I think what they were alluding to we're going to have problems in our communities whether it's his pipeline or railroad incident or whatever but the training and these pipeline groups whether it's this one at Summit or whoever being involved in each one of these communities getting out in touch with these rural areas not just doing it one time and making sure that they have the proper equipment to respond to your community and to your citizens.

Q: I guess I'm going to take it or as far as response besides the company in like the EMS and Fire Department what other community leaders need to be involved if an incident like this occurred I mean was your mayor involved, did you have shelters identified where they set up I mean because you said that the community was gone maybe out in another Community but was there a period of time where they were not allowed back into the residences?

A: It was and I think the pipeline group were doing air monitoring to allow them to come back into their community I don't think it was that long maybe 10 or 12 hours and as was said most of the community went to the hospital so by the time all that was over with they were they were back but there was a shelter set up in Yazoo City which is roughly 20 miles to the north of the incident. The first victim we had in this was the deputy that went to see what was going on, so they need to be educated as well, your law enforcement they're usually going to be the first on the scene of any event.

Q: So, one can technically say the whole Community needs to be educated?

A: Yes, absolutely and re-educated. It can’t be a one-time check the box kind of deal. Had we known and could set off some type of warning device the very minimum shelter in place stay in your house you know shut your AC off shut your ventilation off, shut your heating and stuff off to circulating air through your house and just shelter in place but you need to have some way of notifying these people of what's going on and when it's safe to go outside because your first inclination of a big boom is you go outside and see where it just went boom.

Q: And that was what I was kind of going a little deeper getting at notification system it affects potentially everyone in the community you know it did, you know your Sheriff you know the responders, everyone there needs to be a notification.

A: Yes, I agree.

Q: If you had one thing you could change in the whole incident besides perhaps having the pipe break what would it be one piece of equipment or siren or what would it be?

A: For me it would be some type of monitoring system but for the community I think it would be a notification system these people move in there the pipeline was built I think in 2009. There are people that move there renting houses that had no idea there's a pipeline in their community, that weren't there like we are here today talking about it they bought a house and didn't know that you know it's half a mile from a pipeline. So how do you notify these people that there's a problem that they don't even know exists – that is what is needed.

Q: In terms of what the leak area looked like is that depicted by the aerial photo on page 9 of <u>Attachment No. 3</u>?

A: Yes, I think that photo was taken by drone the next day or the next afternoon.

Q: And did you see more ice in that area earlier than when this photograph was taken?

A: Yes, the road that is shown there and probably for at least a thousand feet that I was walking, and it was frozen the trees were frozen there was the reason the road was closed as long as it was because it was frozen mud all over the road where the pipeline actually exploded.

Q: The road you refer to as 433 is the road shown above where the leak is where the vehicle is positioned on this photograph on page 9, correct?

A: Yes, 433.

Q: Is the pipeline breach, or the failed pipe section, depicted on page 11 of <u>Attachment No. 3</u>?

A: Yes.

Q: Was there a second CO2 pipeline leaked by Denbury after this one on February 22, 2020?

A: Yes, it was just down the road from the initial leak probably two weeks later three weeks later.

Q: Within this area of the plume were there any animals or any livestock that you located or saw injured or dead?

A: I heard there were some dead animals near that blast site where the ice was.

Q: Did I hear you right, the ground was frozen for a thousand feet around this pipeline.

A: Roughly it seemed like that when you're walking in it was probably a thousand feet. It was frozen mud that had blown out of the hole.

Dated June 15, 2023

/s/ Gerald Briggs
Gerald Briggs