QUEENSLAND COAL MINING BOARD OF INQUIRY

Coal Mining Safety and Health Act 1999

Establishment of a Board of Inquiry Notice (No 01) 2020

Before:

Mr Terry Martin SC, Chairperson and Board Member

> Mr Andrew Clough, Board Member

At Court 17, Brisbane Magistrates Court 363 George Street, Brisbane QLD

On Wednesday, 10 March 2021 at 10am (Day 15)

1 2	THE CHAIRPERSON: Yes, Ms O'Gorman.
3	MS O'GORMAN: Thank you, Mr Martin.
5	<pre><stephen [10am]<="" affirmation:="" donald="" former="" on="" pre="" smith,=""></stephen></pre>
7 8	<pre><examination by="" continuing:<="" ms="" o'gorman="" pre=""></examination></pre>
9	MS O'GORMAN: Q. Yesterday, you will recall, we got up
10	to the point in time chronologically of the inspectorate
11	being informed about the four exceedances that occurred on
12	longwall 104 on 21 April 2020.
13	A. Yes.
14	7. 100.
15	Q. And we went through the form 1A notifications that
16	your office received at or about that time?
17	A. Yes.
18	
19	Q. I just want to ask you some questions about the fact
20	that some of those exceedances, up until that point in
21	time - that is, up until 21 April 2020 - occurred in
22	batches, as it were?
23	A. Yes.
24	
25	Q. Earlier in the afternoon we spoke about the fact that
26	the inspectorate received notifications of exceedances on
27	longwall 104 occurring between 18 and 23 March 2020?
28	A. Yes.
29	
30	Q. And there were seven methane exceedances that occurred
31	over that five-day period?
32	A. Yes.
33	
34	Q. Because there was the one on the 18th, the one on the
35	19th, three on the 20th and then one on the 22nd and one on
36	the 23rd?
37	A. That's right, yes.
38	3
39	Q. And then, of course, by late yesterday afternoon, we
40	were looking at the fact that there were four methane
41	exceedances reported to your office as having occurred on
42	21 April 2020?
43	A. That's right.
44	-
45	Q. The seven that occurred in March, in that period
46	between 18 March and 23 March, largely were said to have
47	occurred because of failures of the goaf drainage plant

and, in particular, blockages across a particular goaf drainage hole?

A. Yes.

- Q. I think maybe one of them wasn't. The first one, to be fair, seemed to have just been thought to have been a scouring of the goaf?
- A. That's correct.

- Q. But the remaining six appeared to relate to either blockages on a hole or a complete shutdown of a hole on at least one or two occasions?
- A. Yes.

- Q. My question in relation to that batch of exceedances is whether or not it would have been appropriate to require the mine to demonstrate that it had in fact put in place the preventative action that it had nominated that is, installing a dual skid so that maintenance could be undertaken on a goaf drainage hole without compromising goaf drainage prior to allowing production at the mine to continue? Is that something that you are able to comment on?
- A. In terms of appropriateness to essentially suspend operations until they had done that --

- Q. Well, sorry, I will just be clear. On 19 March you were informed that there had been a methane exceedance that was a result of maintenance activities being carried out on a skid and exceedance occurring as a result of the compromising of the goaf drainage facility. In those circumstances, and in circumstances where your office, I think you said, was informed that there was going to be put in place a measure to prevent that sort of occurrence occurring again that is, the installing of a dual skid, a second split skid in your view, ought that not to have occurred before production continued?
- A. Not necessarily, because that presupposes that there is going to be another event with a goaf skid. I have evidence that they have had an HPI as a consequence of the flame arrestors blocking up and the miners focusing on, "We will source a second skid and set it in place so that we can move from one skid to the other so that when we have to do the maintenance work, we've got the redundancy there." At the time we received the notification, there is no exceedance and the mine is managing the gas in the tailgate again. There is no immediate unacceptable level of risk,

if you like, and there is no guarantee that there will be another one.

- Q. That's the position certainly as of 19 March, when you are notified about the first of the exceedances. What about the position on 20 March, by which time at least in the evening you have been notified about a further three exceedances all with the same problem. And if not by 20 March, by 22 March, when you are notified about a third one another one, rather, more than a third, and again on 23 March, when you are notified about another one, ought there not to have been a point at some time in that period where the change that was required to be made to prevent those HPIs occurring ought to have been made?

 A Yes I must my recollection of the time is that
- A. Yes, I must my recollection of the time is that I never when I received the HPI reports, I did not ask the UMM at that time had they installed the second skid, and that's one error on my part, if you like, on reflection. I would just add to that, on reading the later information, as I understand it, the sled was installed on the 20th, so the answer would have been, "Yes, we have installed the redundant device."

- Q. Do you know when that was done, when you were informed about that?
- A. I wasn't informed verbally. I noticed that in documentation when I was reviewing the HPIs and 5As.

Q. Do you recall from your review of that documentation what date it was that the second skid was installed?

A. I believe it was on the 20th.

- Q. If that's correct and the second skid was installed on the 20th, were there any concerns or ought there have been any concerns raised by the further exceedances that occurred on the 22nd and then on the 23rd in relation to a similar issue?
- A. I go back to what I said yesterday. The failures the failure on the 22nd was to my mind inexplicable if they had a second skid to operate, why the mine would think it necessary to change the settings on the skid as an alternative to using the second skid that I believe they had in place.

Q. Ought questions have been asked by someone at the inspectorate of the mine on the 22nd, in those circumstances?

A. The notification, when I received it, was that they had taken action - they had a plan for preventing the skid from shutting, and the plan failed. Again, I did not think to ask if the second skid was there, so I did not have that information. In answer to your question, I ought to have asked.

- Q. I presume that answer holds, then, for the further exceedance that occurred on 23 March, that perhaps further questions ought to have been asked at that time about why there was yet another exceedance related to a very similar cause in circumstances where the preventative action seemingly had been put in place?
- A. It was another opportunity for me to ask the question that I didn't take, no.

- Q. Can we move forward, then, to the batch of exceedances on 21 April?
- A. Yes.

Q. Because, as we saw yesterday, there were four HPIs notified to your office on that day, and I know that you alluded to there having been some further exceedances on that day. We will come to those. I just want to focus on the four that you were notified about. I appreciate not all of them were notified to your office on the 21st, because it seems from the documents we reviewed yesterday that the last of the four might actually have been notified to your office on 22 April?

Q. Or 23 April?

The 23rd?

A. I think.

Α.

 Q. In any event, on or around the period between 21 and 23 April, your office did become aware that there had been four methane exceedances at the mine on or around 21 April? A. We did, yes.

Q. The notifications given to your office indicated that each of those exceedances were picked up on the sensor which was installed in the shield 149 canopy?

43 A. That's correct.

Q. I've got some similar questions about those exceedances that I had in respect of the earlier batch we were just talking about. Once your office was informed of

- one or perhaps at least the second exceedance occurring close in time to each other related to what the mine, it seemed, considered to be a similar cause, ought the inspectorate not have been asking some further questions of the mine as to what it was doing to ensure that there wasn't going to be a repetition of those HPIs as a result of that singular cause?
 - A. I must say, I'm not familiar with the conversations that did take place between Inspector Brennan and the mine when those notifications came in. Now, my experience with Inspector Brennan is that he does ask a lot of questions when notifications do come in, and he is diligent in his approach to exploring the cause of a HPI with the mine. So whether questions were asked by Inspector Brennan and what questions, I can't say.

Q. All right. We will leave it there if you weren't a part of those conversations.

Could we move forward to 5 May, because that was the date that your office received the form 5As for each of the notifications that you had received about the exceedances for HPIs 8, 9 and 10?

A. Yes.

- Q. Could I ask that document AAMC.001.009.0424 be put up on the screen, please. You will recall that the exceedance which related to HPI number 8 was one which was detected on the shield 149 sensor, Mr Smith?
- A. Yes.

- Q. The document that we can see up there on the screen is the form 5A received by your office on 5 May in relation to it?
- A. Yes.

- Q. Could we go to page 2, please, Mr Operator, perhaps over to page 3. Can we have a look there, Mr Smith, at the section headed "Incident causes". You can see that section of the form?
- A. I can.

Q. We can see, can't we, that one of the causes is identified as being:

Gas make (SGE) greater than expected in excess of system capacity.

1		
2	Α.	Yes.
3		
4	Q.	And:
5		
6		No Longwall Ventilation Set Up Work Order
7		for the new sensor installation location.
8		
9	Α.	That's correct.
10	71.	That is controct.
11	Q.	And also:
12	Q.	And also.
13		Ventilation arrangements for TG drive area
14		not adequate to dilute a change in goaf
15		stream.
16	٨	Thatle compact
17	Α.	That's correct.
18	0	
19	Q.	One of the preventative actions listed there is to
20		ew the long-term sustainability of the section 243A
21		or under roof support 149 in consultation with DNRME?
22	Α.	Yes.
23		
24		We know from the evidence that you gave yesterday tha
25	in fa	act at about this time, and even moving beyond this
26	date,	there were a number of communications between the
27	mine	and your office about the positioning of that sensor?
28	Α.	That's right.
29		
30	Q.	Then we can see other actions listed there, including
31	condu	ucting a trial of alternate ventilation configuration
32		ne tailgate area and reporting to longwall team upon
33		letion?
34	Α. ΄	Yes.
35		
36	Q.	Updating the longwall standard area management system
37		d on a report from the trial ventilation arrangements
38		vent and gas super?
39	Α.	Yes.
40	71.	100.
41	Q.	And review and update the frictional ignition work
42		to include the inspection of the brattice and
43		uris located with tailgate drive area?
44	A.	Yes.
45	Λ.	163.
46	Ω	Do you know what inquiries if any your office made
46 47	Q.	Do you know what inquiries, if any, your office made the mine about which of those were done and when?
41	WILII	the mine about willou of those were dolle and whell?

1 2	A. To my knowledge, no particular inquiries were made with regard to this. I know I did not make any inquiries
3 4	with regard to this.
5	Q. Should they have been made? Should inquiries have
6	been made? Should the inspectorate have followed up with
7	the mine?
8 9	A. Circumstances on the following day changed everything
10 11	Q. What about on 5 May, should inquiries have been made on 5 May?
12	A. You will note that this was received at 4.56pm on
13	5 May, so I doubt very much that an inspector would have
14	seen this at that time.
15	Joen this at that time.
16	Q. Can we go to the form 5A for HPI number 9. The
17	document is AAMC.001.009.0416. You will recall, Mr Smith,
18	that when we spoke about HPIs number 9 and 10 yesterday,
19	they appeared to you, at least on review, to relate to
20	failures of some brattice in the C heading?
21	A. Yes.
22	
 23	Q. Such that on those particular occasions, methane was
24	detected in the general body in excess of 2.5 per cent on
25	the outbye sensor, the one furthest away from the longwall
26	face?
27	A. That's right, yes.
28	3 -, ,
29	Q. Let's have a look at this form 5A. The document up
30	there is the form 5A you received on this day, 5 May, in

Q. Let's have a look at this form 5A. The document up there is the form 5A you received on this day, 5 May, in relation to this exceedance? A. Yes.

32 33 34

Λ. 163.

35 36 Q. Could we go, please, to page 2 or 3, to the heading "Incident causes". Here the first organisational cause is listed as:

37 38

Less than adequate methane pre-drainage/recovery/dilution.

39 40 41

A. Yes, it is.

42 43

44

Q. That picks up some of the themes that we have noticed in the earlier form 5As?

45 A. It does.

46 47

Q. There are some others listed there, being:

1		
2		Gate stopped shearer at shield 115, however
3 4		the methane was 2.12% and 2.24%.
5	Α.	Yes.
6		
7	Q.	And:
8		
9		Less than adequate Ventilation Control
10		Devices to prevent goaf gases entering
11		C heading.
12 13	Α.	Yes.
13 14	Α.	res.
15	Q.	In respect of the preventative action nominated on
16		form, we can see that an additional shearer gate was
17		g to be installed at shield 90?
18	Ä.	Yes.
19		
20	Q.	And there was going to be an upgrade and installation
21		cont of the longwall of ventilation control devices in
22		tailgate?
23	Α.	Yes.
24 25	Q.	I assume given your answer in respect of the provious
26 26		I assume, given your answer in respect of the previous 5A that was received at the same time, that your
27		ce having received that on late on 5 May and in light
28		ubsequent events on 6 May didn't follow up whether
29		e actions were undertaken by the mine?
30	Α.	That's correct.
31		
32	Q.	Can we move to the last of the form 5As that you
33		ived on that day, and it involves document
34 35		.001.009.0420. If we could go, please, to page 2 or 3,
36		ne "Incident causes", again, like with the previous we can see here nominated as a cause:
37	one,	we can see here nominated as a cause.
38		Less than adequate methane
39		pre-drainage/recovery/dilution.
40		
41	Α.	Yes, we can.
12	_	
43 4.4	Q.	Also, the same cause with respect to the gate having
14 15		ped the shearer at shield 115?
45 16	Α.	That's correct.
46 47	Q.	And there is the reference to the less than adequate
т /	ω.	And there is the reference to the ress than adequate

ventilation control devices? 1 2 Yes. Α. 3 4 Q. Similarly we can see that the preventative actions were precisely the same as nominated for the previous 5 6 form 5A? Yes. 7 Α. 8 That takes us to the end of the documents that your 9 office was provided with prior to the explosion on 6 May 10 Can I ask you this: by 5 May, do you agree that the 11 circumstances known to the inspectorate were these -12 firstly, the mine had indicated on a number of occasions 13 14 that it had undertaken less than adequate pre-drainage of the P seam? 15 16 Α. That's correct. 17 Also, that it was experiencing greater than expected 18 19 gas make, at least in part as a result of the failure to undertake adequate pre-drainage of the P seam? 20 Yes. 21 Α. 22 23 Also, you were aware that the mine had nominated that there had been less than adequate methane recovery and 24 dilution processes in place? 25 26 Α. Yes. 27 28 Your office was also aware that there had been, by this stage, 14 methane exceedance HPIs on that longwall in 29 about eight weeks of operation? 30 31 Α. Yes. 32 Also, the last one of those HPIs identified to your 33 office on 21 April involved an exceedance such that there 34 was present methane in the explosive range and a duration 35 of exceedance above 2.5 per cent for 10 minutes? 36 37 Α. Yes. 38 Also, that your office was aware that the mine was 39 going to be or was presently mining through a fault and 40 that that would pose attendant problems for the mine? 41 Α. Yes. 42 43 44 In light of all of those circumstances that I have just nominated, should it have been that by at least 5 May 45 46 2020, the inspectorate had taken action to ensure that

47

corrective or remedial action was undertaken by the mine in

- 1 respect of those repeated HPIs?
 - A. If I can go back to the HPIs in batches, the --

Q. Well, before you do, my question is really a relatively straightforward one. I will just ask it again and I will ask you, if you can, to answer it directly. Should the inspectorate not by 5 May, at the very least, in the circumstances known to it, have required the mine to undertake timely corrective or remedial action in respect of those repeated HPIs?

A. In the context of the HPIs, the mine had already indicated that they had taken action with some of the HPIs and the results had been evident, in that that form of HPI had ceased, so the requirement for the inspectorate to direct the mine to take further actions seems, to me, to be unnecessary.

Q. Mr Operator, could we bring up on the screen, please, section 128 of the Act. Mr Smith, you can see there section 128 of the Act, the section which sets out the functions of inspectors and inspection officers?

A. I can.

Q. You will see in paragraph (g) one of the functions that I took you to at the beginning of questions yesterday? A. Yes.

Q. Paragraph (g) says, does it not, that inspectors and inspection officers have the following functions:

If unsafe practices or conditions at coal mines are detected, to ensure timely corrective or remedial action is being taken and, if not, require it to be taken.

You can see that section there?
A. I can.

Q. My question is this: notwithstanding the fact that the mine appeared to you to be addressing the precise specific causes of a number of the HPIs that you have talked about, was it not the case that by 5 May, the number of repeated HPIs over a two-month period were such to demonstrate that there were unsafe conditions at the mine? A. At the time of each exceedance, yes.

Q. And what about generally speaking? I'm talking about

- the eight-week period between 9 March and 5 May 2020. On and by 5 May 2020, ought it not to have been apparent to the inspectorate, given the repeated number of HPIs in that period of time, that conditions at that coal mine were unsafe?
 - A. As a general statement, I would not say that, no.

 Q. Let me turn, then, to the exceedances that you weren't notified about on 21 April. If we could have document AAMC.001.009.0568 brought up, please, this is one of the learning from incidents reports in respect of a number of the exceedances at the mine, and you can see which exceedances there on the front of the report?

A. Yes.

Q. This form wasn't provided to you either before the explosion on 6 May or even subsequently, other than to review as part of giving your evidence; is that right?

A. That's correct.

Q. Could we go, please, to pages 11 and 12 of the document. If you have a look at those pages, you can see that between 21 April and 23 April there were said to be eight events involving methane exceedances at the mine?

A. I can.

- Q. Four of those were notified to your office, as we have discussed?
- A. That's right.

- Q. They were events 1, 2, 3 and 6?
 - A. That's right.

- Q. Event 4 was not notified to your office?
 - A. I have no record of it, no.

 Q. It appears on the face of this document at least to have involved a reading on the shield 149 sensor of a peak of 2.9 per cent methane at about 2.33 in the afternoon?

A. Yes, it does.

Q. That was after three earlier methane exceedances?A. Yes.

Q. In respect of event 5, on the face of this document at least, it appears that there was another methane exceedance on the shield 149 sensor which peaked at 2.53 per cent at

- 1 4.50 that day?
 - A. That's correct.

- Q. And again, to your knowledge, that wasn't reported to your office?
- A. Not to my knowledge.

- Q. If you have a look at event 7, it appears that on 22 April, the next day, the shield 149 sensor detected a peak reading of methane of 2.67 per cent at about 3.17 in the morning?
- 12 A. Yes.

- Q. Again, to your knowledge, that wasn't reported to your office?
 - A. To my knowledge, no.

Q. Finally, event 8 appears to indicate that still on 22 April, the shield 149 sensor detected five discrete peaks of exceedances above 2.5 per cent, and they are nominated there as being 2.67 per cent, 2.59 per cent, 2.9 per cent, 3 per cent and 2.92 per cent, between 9.50 in the morning and 10.02 in the morning?

A. Yes.

- Q. Have you at any point been given an explanation as to why they were not reported as HPIs? Had you had knowledge of those at all prior to reviewing this document?
- A. Not until I had reviewed this document.

Q. In your statement, if I understand it correctly, at paragraph 202 - I might just read it to you - you say this:

 If the Inspectorate had knowledge of the content of the LFIs, including that some of the canopy sensor exceedances were not reported to the Inspectorate, intervention by the Inspectorate would have occurred.

A. Yes.

- Q. Can you explain to us what you mean by that? What intervention would have occurred if you had been told about these four methane exceedances?
- A. When I made that when I put those words in my statement, what was in my mind was finding out that I had not been informed of the methane exceedance would have

initiated, firstly, a phone call to the underground mine manager and the SSE to find out why they had decided these 2 events were not worthy of informing the inspectorate -3 firstly. Then the second matter would be, as I was 4 intending to go to the mine in a couple of weeks' time, I may very well have brought forward that inspection. That was what was in my mind.

7 8 9

1

5

6

Q. When you wrote that?

10

When I wrote that paragraph. Α.

11 12

13

14

15 16

So it is not a reference to the fact that the inspectorate would have taken any particular decisive action; simply that it would have been a further matter to be raised at that planned inspection on the 13th or 14th? It may have well have brought the planned inspection forward to the next day.

17 18 19

20

MS O'GORMAN: If I might just have a moment, Mr Martin? Those are the questions that I have for Mr Smith, thank you.

21 22 23

THE CHAIRPERSON: Thank you. Mr Holt?

24 25

<EXAMINATION BY MR HOLT:</pre>

26 27

28

29

30 31

32

33

36 37

38

Q. Good morning, Mr Smith. MR HOLT: My name is I'm one of the barristers for the Anglo Saul Holt. companies who have been given leave to appear at the Inquiry. Now, just some basics to start with. explained to, I think, Ms O'Gorman yesterday afternoon about your own experience in history both in coal mining and also as an inspector with the inspectorate? Yes. Α.

34 35

- Obviously that gives you a particular suite of expertise around coal mining and underground coal mining in particular?
- 39 Α. It does.

40 41

42 43

- You explained also that within your team and the inspectorate more broadly are some other specialisations electrical, mechanical, those sorts of things as well?
- There is. Α.

- 46 Q. Presumably you work together as a team?
- We do. 47 Α.

Q. And especially, I imagine, in your office, where you are managing a particular set of mines as kind of a group of mines that you are responsible for?

A. Yes.

- Q. You become therefore not just expert in longwall mining or underground mining and the various issues that arise both individually and as a group, but also in the particular mining conditions that exist for the group of mines that you are responsible for?
- A. We do become very well informed, yes.

- Q. And not just of the Bowen Basin and what it means to mine in the Bowen, to longwall mine in the Bowen, but also the particular issues for particular mines as they are moving forward in their development processes?
- A. Yes.

- Q. Because these are long, long time period operations; right?
 - A. Yes.

Α.

- Q. You get to know the teams pretty well, you get to know the set-up pretty well, you get to know the issues pretty well?
 - A. We do.

As well, yes.

Q. Indeed, part of being a good inspector and, with respect, running a good team is about making sure that it's not just the words in a form 1A or the words in a form 5A that are informing you about what's going on at the mine, but knowledge that comes from a tonne of other sources and interactions and materials as well?

Q. I will come back to that in a moment - actually, no, let's deal with that now. It comes in large measure from the personal relationships that you develop - I don't mean inappropriate; I mean just relationships that inspectors develop - with the senior folk on site?

A. Yes.

Q. Here, at Grosvenor, you would have been very familiar at any point in time, if Grosvenor were your responsibility, with the SSE, the underground mine manager and the other members of the senior leadership team?

A. Those that we have interaction - regular interaction with, yes.

Q. You would be aware, though, of course, that they don't just sit on their own trying to run a massive coal mine; they have teams underneath them of experts with expertise in different areas dealing with seamgas management, for example, dealing with geotechnical issues, dealing with planning for the next longwall and development, all those sorts of things as well?

A. Yes.

11 A.

 Q. You are also aware that for a company like Anglo, they have in Brisbane a set of experts also, people who are providing input into the mine, expert advice and expert assistance as well, and your expectation as well is that even within Grosvenor itself, for example - again, your expectation is not just the way in which Grosvenor manages an exceedance by filling in the words that we have seen on a 5A but that it would have other underlying processes that would have got it to the point of deciding how it was going to respond to an exceedance?

A. Yes.

Q. For example - and you would have been aware of this - the LFI process that we are now very familiar with?

A. Yes.

 Q. Learning from incidents, where a group is brought together to look at a particular incident, try and figure out why it happened and come up with solutions for it, analysing the data using various tools and techniques?

A. Yes.

Q. I won't be boring and go through it again, like we did last time. In addition, at Grosvenor, you are also aware of, and your inspectors are also aware of, a group that was established on an ad hoc basis, that is, on an "as required to respond to a particular situation" basis, called the IMT?

41 A. Yes.

Q. The incident management team, which gets formed to respond to one of these exceedances?

45 A. Yes.

Q. Again, when you are reading the 1A, or the 5A in

- 1 particular, and you see the words in it, you know that 2 underlying those words are a series of processes which the mine is operating under; right? 3 Yes. 4 Α. 5 6 In addition, and in case it is not obvious from what Q. you were saying today and yesterday, your expectation would 7 be that the mine wouldn't want to have further exceedances; 8
- 9 10 Α. That is my expectation, yes.
- 12 Because if they have exceedances, it trips power to 13 the longwall, to the shearer and the cutter, so they can't cut coal any more? 14 15
 - Yes. Α.

16

26

41

- It creates a whole lot of regulatory burden to come 17 and deal with you folk. I'm sure it's very pleasant, but 18 you don't want to be doing that every day? 19 Α. No. 20
- 21 22 Q. So your expectation is that the mine, through these professional processes that it has in place, is dealing 23 with these issues? 24
- Α. Yes. 25
- Ms O'Gorman I will come to it in detail later was 27 28 talking to you about timely responses to particular issues as they arise? 29 Α. Yes. 30
- 31 If we take that flame arrestor issue, for example, so 32 those first four or five exceedances, HPIs, that occurred 33 on longwall 104? 34
- Α. Yes. 35
- 36 What we see is that those occur over a matter of, 37 I think, about 72 hours or a few days, no more than that, 38 those flame arrestor issues? 39
- 40 Α. Yes.
- We then see no more of them again? 42 Q. 43 Α. That's right.
- So in terms of you being comfortable that the mine is 45 46 responding in a timely fashion to a particular issue, it tends to be borne out in that chronology, doesn't it? 47

Α. It does. 1

2 3

4

5 6

In terms of those sources of information that the inspectorate has beyond the bare words of a 5A - and I ought say it's clear enough, isn't it, looking at those 5As, that they can be improved? Α.

7 8 9

No-one can read them and go, "That's an awesome 5A"; Ω. right?

Α. No.

11 12

10

- Just as the inspectorate has found things for 13 improvement out of this process, I imagine you would expect 14 that Anglo has as well? 15 16
 - Α. I hope so.

17 18

19

20

21 22

- Again, though, those 5As, if you wanted to go and drill into the LFIs that sit under them, the IMT minutes that sit under them and the processes, you would expect to see diligent and professional work that has led to those conclusions?
- Α. Yes.

23 24 25

26

What can be done better, unquestionably, at the 5As is communicating the detail of that back to the inspectorate? Α. Yes.

27 28 29

30 31

32

In addition, there are ad hoc Thank you. communications, aren't there, between the inspectorate and the mines, different inspectors getting on the phone to Mr Niehaus or Mr Griffiths or others that they need to? That's correct.

33 34 35

And also the other way around, as we have seen, too? Q. That's correct. Α.

36 37 38

39

40

41

42

Indeed, as your statement explains in a lot of detail - we didn't go to it much in the last day or so there were times when there was an exchange of ideas between inspectors and the mine about how to manage challenging issues?

43 Α. Yes.

44

Not only was the senior management at Grosvenor open 45 46 to those conversations, it actually implemented some of 47 those proposals at different times in response to

1 suggestions made by the inspectorate? 2 They did. Α. 3 That's a function I would imagine you would see of 4 Q. a good relationship between a mine and an inspectorate who 5 have to work together over a very long period of time? 6 Certainly a sign of an effective relationship, yes. 7 8 In addition to that kind of ad hoc communication. 9 there are also, as we know, mine inspections both with and 10 without notice? 11 12 Yes, there are. Α. 13 We see examples of those in the mine record entry for 14 Grosvenor over the years? 15 16 Α. We do, yes. 17 They can be over a number of hours or even over 18 19 a number of days? Α. Yes. 20 21 22 Q. They can be targeted, as we will see, at particular topics or issues of concern? 23 Α. Yes. 24 25 26 And they involve talking both to senior management on the site and also to coal mine workers? 27 28 Α. They do. 29 So you don't just go, "Let's look at the fancy 30 PowerPoint presentation that the SLT are presenting"; you 31 actually go and talk to the folk who know what's going on 32 on the face? 33 34 Α. That's right. 35 In addition, you can look, and do look, as the mine 36 37 record entries show, at gas management data? We do. 38 Α. 39 40 You will ask to be shown processes and systems to see how well they work or not? 41 We do. Α. 42

43 We will come back to one of those in a little while. 44

You might review aspects of the SHMS? 45 46 Α. Yes.

- 1 Again, you have access to documents and people to satisfy the inquiries that you have? 2 3
 - We do. Α.

6

7

8

9

- Following those meetings, those inspections, again what we see in your statement and in the mine record entries is often communication between inspectors and the mine about particular issues that have emerged or been discussed on the visit?
- We do. 10 Α.

11

- 12 Email responses, suggestions, discussions, those sorts Q. 13 of things?
- 14 Α. That's correct.

15

- 16 Q. You don't always agree, right?
 - Α.

17 18

- 19 Q. It's not always skipping down the roadway hand in hand? 20
- No, we don't. 21 Α.

22 23

24

25

- There are plenty of robust conversations that go on between the inspectorate and senior management of Grosvenor and of any mine?
- Yes. Α.

26 27 28

29

30 31

- In addition, we saw, for example, yesterday the 17 April email from Mr Niehaus, where Mr Niehaus was talking about an anticipated complex situation of strata management and gas management that he might have coming up.
- He presented to me a hypothetical, as such.

32 33

- 34 Q. I'm not trying to trap you.
- No, no, no. It's just in how I perceived the 35 conversation with Inspector Nugent and then the email, 36 going, okay, you've had an experience previously and you've 37 got - you're anticipating similar conditions, so 38 hypothetically what would be the situation were that to 39 40 eventuate?

41 42

43

44

- But again, quite apart from how one characterises the communication, the fact that those kinds of communications are occurring, that the underground mine manager is wanting to explore those things with the inspectorate, would ultimately be a positive?
- 46
- 47 It is a positive. It is not a negative. Α.

Q. Thank you. In addition to those kinds of communications, the information that you have, also as a matter of formality under the regulation, as a requirement under the regulation, the inspectorate is provided with various documents about each longwall panel as it is going ahead?

A. That's correct.

Q. I should say I'm not suggesting for a moment that the inspectorate's job is to approve those plans or to read them in detail, but nonetheless they are available to you as part of your knowledge base, to the extent that you want to refer to it, about the mine?

A. They are.

- Q. That includes, by way of example, the risk assessment for the second workings of a longwall before operations commence?
- A. That's correct.

- Q. And the standard operating practices for second workings for each longwall?
- A. That's correct.

- Q. They include things like discussion of and representation of hazard maps, for example, pointing out the detail of the understanding of the longwall that's to be mined and identifying the kinds of hazards that might arise?
- A. That's right.

Q. Can we just pop an example of that up, please, because it is one we will come back to. Could I have, please, AGM.002.001.0019, and if we could go to page 13 of that, please, figure 4. Again, we will look at this a bit during the course of this Board of Inquiry, I'm sure, but this is what I was describing as the hazard map for longwall 104? A. That's right.

- Q. Again, I'm not asking you to give a technical description of anything, but you would recognise that what we're looking at here is a matter of chainage along the horizontal axis showing us how the longwall is going to progress?
- A. Correct.

Q. And then each of the bands that we can see there identifies different datasets to tell you a different thing about the longwall that you are approaching and the kinds of hazards that exist within it?

A. Yes.

Q. So, for example, if we look at the third one down, that is showing the geophysical strata rating, or the GSR rating, for the roof, to help you understand as a matter of hazard what the roof conditions are going to be like?

A. That's right.

 Q. Then if we go down to the next one, we can see borehole structures, gas compliance, gas drainage and hazards. Through the third one up from the bottom, we can see that?

A. Yes.

Q. We can't do it on the document that is here, but we will ensure that the Board is able to see it. I'm not asking you to zoom in because it won't work here - we'll just get pixels - but if you zoom in on that hazard, you can see it to quite an extraordinary level of detail, can't you, the things that have been mapped as potential hazards in the longwall as one goes through?

A. Yes.

Q. So the mine has mapped down, for example, to where someone lost a drill bit in a previous inseam operation, for example. That's the kind of planning that you see and informs your understanding of the way in which a mine like Grosvenor is planning for and working through its operations?

A. Yes.

Q. Can we then go back, on that basis, to some kind of basic things about these mines, particularly in the Bowen Basin - I guess Grosvenor in particular in its development. As we all know, longwall coal mines in the Bowen deal with very gassy coal seams?

A. Yes.

Q. The Goonyella Middle seam, the GML, is something approaching 100 per cent methane?

A. Yes.

Q. There are also, as we know, other seams within the

1 stratigraphy that also are gassy and need to be managed? 2 Α. 3 One of those is the P seam, which I will come back to 4 Q. in a moment. Speaking within the Bowen but I guess more 5 6 generally as well, managing methane is a constant issue and balance for longwall coal mining operations, isn't it? 7 Yes, it is. Α. 8 9 10 It is one of the key things you are trying to manage all the time? 11 12 Α. Yes. 13 14 Both through your planning and risk assessment Q. process? 15 16 Α. Yes. 17 But also to be responsive when the conditions change 18 19 and issues arise, as they do? That's right. 20 Α. 21 22 Q. The thing about methane is that you want it - indeed, you must have it, for obvious reasons - off the longwall 23 face and out of the areas where coal mine workers might be 24 25 present or working? 26 Α. That's right. 27 28 That's obviously so that coal mine workers have a respirable atmosphere but also to avoid the risk of 29 explosion? 30 31 Α. Yes. 32 But at the same time, you want to have as high 33 a concentration of methane as possible in the goaf behind 34 you, right, as you are mining forward? 35 Α. That's correct. 36 37 Obviously enough, you need that to be above the upper 38 Q. explosive limit of methane - that is, above 15 per cent? 39 Yes. 40 Α. 41 But you actually want it to be way closer to 42 43 100 per cent in the Bowen, so that you remove the risk of spontaneous combustion from oxidation of the coal through 44

oxygen?

Α.

45

46

47

You want it to exclude the oxygen.

- Q. Absolutely. So the balance always it's not about removing all of the methane from this whole area by pre-drainage. What you are trying to do is to make sure you can manage the methane in the areas where coal mine workers will be and on the longwall face, while ensuring that it sits in very high concentrations behind you in the goaf?
 - A. That's right.

Q. The processes to do that are gas drainage, that is, removal from the immediate vicinity of the longwall face?
A. Yes.

Q. And also ventilation processes and systems?A. Yes.

- Q. I know I'm simplifying it, but basically the management of the balance of that methane is a constant battle, a constant balance between those things, between your drainage and your ventilation system?
- A. Yes, and your operating speed.

Q. Absolutely. That's a means of creating more methane, right, by releasing it from the coal, so that's really important as well. At the same time as all of that, you have to manage the spontaneous combustion risk of too much oxygen anywhere near coal; right?

A. That's right.

- Q. Because you don't want coal to oxidate, or oxidise I can never remember which one it is heat and create a combustion source?
- 33 A. That's right.

- Q. Every mine is different, if I can put it that way, in terms of the way in which you have to manage those issues; right?
- A. Yes, they are.

- Q. Indeed, every longwall panel can be different?
 - A. Yes, they can be.

Q. Indeed, you see, even in the course of the material we have been through today, learnings from 101 to 102 to 103 to 104 are not just about learning about this area, but they are actually recognising that the mining conditions have changed both within and between a single longwall?

1 A. That's right.

- Q. So when our learned friend Ms O'Gorman talks about "ad hoc responses" to problems, and we know that "ad hoc" simply means something which is responsive to a particular problem or for a particular purpose, part of managing a coal mine is ad hoc responses to conditions as they change?
- A. Yes, it is.

- Q. It is a combination of good planning, good risk assessment, really smart people in the right roles and good capacity to adapt to the necessarily changing conditions underground?
- A. Yes.

- Q. Now, as far as the P seam is concerned, just because it has got such a big guernsey already in the last day or so, are you aware that Mr Andrew Self, who is one of the experts we understand who will be called before the Board, has indicated that he understands that the P seam has not otherwise been drained by anyone mining the Goonyella Middle seam?
- A. I'm not aware of that, no.

- Q. If he says that, I take it you wouldn't dispute it that drainage of the P seam is not something that you have come across as something regularly done by those who mine the --
- A. It's not information that I have available.

 Q. I understand, thank you. You are aware, though, that Grosvenor was looking to do drainage of the P seam as part of the process that it explained in its second workings document and its risk assessments to look at ways of managing what was unquestionably an underestimated gas make underground?

38 A. Right.

- Q. There were attempts made to drain the P seam using some horizontal wells, which failed?
- A. Yes.

- Q. Indeed, I take it you are not aware that Mr Williams, again another expert, has said that's not surprising because it is a really hard thing to do?
- 47 A. Yes, I'm not aware of Mr Williams' words, no.

Q. If we move then to HPIs, can I put this proposition to you, and it maybe captures some of the debate that you were having with our learned friend Ms O'Gorman and with Mr Hunter yesterday. The reality is that not all HPIs related to methane exceedances are the same?

A. That's correct.

Q. It is not a question of just going 3 per cent equals 3 per cent equals 3 per cent?

 Q. There are a tonne of variables that you want to look for, and indeed a good inspector and a good mine operator would be looking for, to make a proper, detailed and sophisticated assessment of each HPI?

A. Yes.

Α.

That's correct.

Q. They include things like obviously the level of methane, so what level the methanometer has got to?

A. Yes.

Q. That's because 2.51 for a few seconds is vastly different from 7 per cent for a day and a half?

A. Yes.

Q. You also look at the speed at which or the time which it has taken for the ventilation system to bring any particular spike back under control?

A. Yes.

) A. Y

Q. So if you can see that a cause has been identified and actually you can see in the data that the exceedance has been brought back down under 2.5 quickly, that affects obviously the way in which you assess the HPI and what you might need to do about it?

A. Yes.

Q. The other things, of course, are the trend data, so what have the methanometers been doing over time - you want to look at that and you would expect the mine to look at that?

A. I would.

Q. The location, so which of the sensors? A. Yes.

Q. And if one sensor is peaking, what is happening to the others, because that might tell you something important?

A. That's right.

- Q. The reason given: is there something obvious, as there are here on a few of them, something really obvious, where the mine has gone, "Look, we know what happened. Someone pulled a venturi off and didn't put it back on, and so the goaf stream scoured the 149 sensor", just for example --
- 11 A. Yes.

- 13 Q. -- as we know happened on one of these cases?
- 14 A. Yes.

- Q. Because that's not giving you an indication of a long-term problem; that's giving you an indication of something which was a mistake which needs solving immediately and systems put in place to avoid its repetition?
- A. That's right.

- Q. And that's what you would be looking for from the mine in those kinds of HPIs?
 - A. Yes.

- Q. In addition, of course, you don't just get what's in the 1A and the 5A. You also, as we discussed before, take into account your own knowledge of this mine and its own processes?
- A. Yes, you do.

Q. And its own history?

A. Yes.

- Q. And the conversations you might have with someone like Mr Niehaus about the reasons for it, what's preceded it, what might be coming, what other things are in the pipeline, those sorts of things?
 - A. Yes, those conversations are an opportunity to expand the knowledge base.

Q. In this case, in this Board, both at the first hearing and today, you have identified and the inspectorate has identified that there are improvements that could be made with the way in which HPIs are recorded and considered by the inspectorate?

1 A. Yes.

Q. To make sure they have been considered as a group; right? But here, for the benefit of the Board, you have gone through, given your experience and history, every single one of the HPIs on 103 and 104 and looked at them both individually and as a whole?

A. Yes.

Q. So you have effectively, if I can put it that way, done an end run around the systems problem that might previously have existed, and you have given us the benefit of looking at the whole suite of exceedances that might have occurred?

A. That's what I've attempted to do, yes.

Q. You weren't taken in any detail, or maybe even at all, to your statement in that regard, but your statement goes through every single one of these exceedances and explains the background knowledge the inspectorate had, how the data was interpreted and why ultimately you concluded that the response that was proposed by the mine was sufficient for those purposes?

A. It does.

Q. There was no need for any further step to be taken. In particular, your statement refers at various times to your knowledge of other processes that were going on and in particular the IMT, or incident management team, processes that were going on at Grosvenor?

A. That's right.

Q. And indeed some communication that we will come to by the mine to the inspectorate about the outcomes of that IMT process?

A. Yes.

Q. I guess one of the things that Ms O'Gorman put to you yesterday was whether there was a risk that you were - I'm paraphrasing it, probably unfairly - putting on the blinkers and looking at individual HPIs or individual groups of HPIs and missing the big picture, if I could put it that way. Do you understand that was what was being put to you? It's not what I'm suggesting.

A. I've got to say I don't recollect it specifically as that way, but --

- Q. That's all right. Let me put it this way, then. The reality is, taking into account all of those variables, all of those things that make each HPI or group of HPIs different, what you have done in your statement is to diligently analyse them as groups where they appear to have a genuine common cause; right?
 - A. That's what I've attempted to do, yes.

Q. And not fall into the trap of seeing each one as an individual event, pretending that none of the rest have happened, so actually looking for those ways in which they group together?

A. That's right.

- Q. But equally not falling into the trap of saying, "There are 14. Therefore, there is a problem", without analysing what groups they fall into and how those causes can be explained?
- A. And what was happening on either side as well, that's right.
- Q. By way of example, because I suggest to you that that approach makes perfect sense, there is no obvious connection between an exceedance caused by a door failure in a ventilation system, that C heading roadway issue we have here, a specific issue caused by a door failure, and the risk that a canopy sensor at 149 is detecting layering in the goaf stream. Those are two entirely separate questions?
- A. That's right.
- Q. And they should be dealt with separately?
- 33 A. Yes

- Q. Now, gas management let's turn to longwall 103, and we will go through 103 and 104 in the same way that you have been taken through it, not quite in the same way. Longwall 103 we know operated from December 2018 to December 2019?
- A. That's right.
- Q. It came again with, as you would know, the statutorily required risk assessment, second workings documents and so on being prepared and provided to the department and available as required?
- A. That's correct, yes.

.10/03/2021 (15)

- 1 It occurred against the background, obviously enough, of longwalls 101 and 102? 2 3
 - Α. Yes.

6

7

8

9

10

11

12 13

- Without taking time, because the material is all before the Board, would you agree with me that what the second workings, the risk assessment for the secondary extraction document and also the risk assessment document repeatedly do is to describe what Grosvenor encountered in 101 and 102, particularly in relation to gas make and exceedances, those kinds of issues, and to explain what steps they were seeking to take in 103 to try and ameliorate those issues?
- I would agree with you, yes.

14 15 16

Q. That included discussion of, for example, the P seam? Yes. Α.

17 18 19

20

21

22

- And it included bringing into play for 103 the lessons that had been learnt in the first 400 metres of the advance of longwall 102?
- Yes. Α.

23 24

In terms of trials as occurred during 103 of closer-spaced goaf wells on the tailgate side? Yes. Α.

26 27 28

29

25

And also ultimately for the addition of some wider-spaced goaf holes on the maingate side? Α.

30 31 32

33

34

35

In addition during 103, a recognition, because of the Isaac River which flows through that area and therefore would make drilling straight down impossible, of the need for slanted wells to assist in drainage? Yes. Α.

36 37 38

39 40

But also a recognition that there had been - again, this is all in that planning process - an underestimating of the likely gas make which we were seeing? Α. Yes.

41 42

- 43 In fact, part of the story of this is that the gas make becomes unexpectedly greater and greater and greater 44 45 as we go through --
 - Α. Right.

- Q. -- the various longwall panels. Now, as we then go through into 103, which, as we know, occurs in 2019, you are aware I think now you might not have been at the time that Anglo held a two-day gas management workshop in March 2019?
 - A. No, I'm not.

- Q. There was evidence given at the first set of hearings about that.
- 10 A. Right.

- Q. Let me ask you questions in this way, then. Firstly, having a two-day focus on management of gas at Grosvenor a few panels in, obviously just at least as a matter of theory, would be a sensible thing to do --
 - A. Yes.

- Q. -- especially given the issues that had arisen. And it would be sensible in that context to incorporate both the folk from the site who were going to be responsible in their own areas of expertise for dealing with Grosvenor going forward?
- A. Yes, it would.

Q. And also the technical and operations folk at Brisbane with Anglo, the experts that sit centrally at Anglo?

A. Yes.

- Q. It would also be sensible, wouldn't it, to bring in invited guests, recognised industry experts to assist in that planning process?
- A. It would.

- Q. One of the people it would be smart to bring in -I can tell you they did - would be someone like Ray Williams at that point?
- A. Yes, it would.

 Q. To help with that, ideas, external, black hat wearing, I suppose, testing ideas and those sorts of things, in about March 2019. Now, in addition - and again I don't know whether you are aware of this or not - there was a follow-up gas management workshop that we heard about in the last hearing in October 2019?

A. Okay.

Q. Again, you would hope and expect that that kind of

big-picture, "Let's step out of our operational role for
 a moment and really look at these issues hard, with the
 benefit of expert help" would be a good thing to do?
 A. It would.

Q. It would be an indication of a mature approach to managing those kinds of issues?

A. Yes.

Q. And taking advice from people like Roy Moreby, who you would be familiar with, probably the guru of gas prediction here, would be a smart thing to do as well?

A. Yes. It would be wise.

Q. Ultimately, managing these issues was not the inspectorate's problem, it was Anglo's job; right? A. That's correct.

- Q. Your job was just to make sure they were doing their job?
- 21 A. Yes.

 Q. Let's deal, then, with the HPIs and longwall 103 over the period of time that we're interested in. Exceedances obviously happen only in locations where there is a methanometer or a methane sensor. That's obvious enough? A. That's right.

Q. In the longwall 103 face, I don't necessarily expect you to know with precision, given the timing, but would you agree that there would have been methane sensors in six locations on 103? Even ballpark, you would accept that would be about right?

A. Yes, ballpark.

Q. Does this configuration sound sensible: two on the maingate drive, two on the tailgate drive, two on the shearer and two in the tailgate - one inbye and one outbye? A. Yes.

Q. Could we bring up a table of those exceedances just so we can get a sense of the chronology, AAMC.008.018.0001. This is just a table that has been put together by those instructing me so we can see all of them kind of in a row, with the sensors upon which the exceedances were measured. Obviously enough, it doesn't include all six, because the reality of 103 is that exceedances were only ever noted at

1 these three sensors? 2 That's right. Α. 3 At these two sensors, I'm sorry. We can see there the 4 tailgate sensor 400 metres outbye, which is called the 5 6 inbye sensor? Yes. 7 Α. 8 9 And then the tailgate sensor, which is at 3-4 cut-through, which we know is the outbye sensor? 10 That's right. Α. 11 12 13 Just so we can drill into this for a moment, the tailgate sensor, that is, the 400 metre one, is in the 14 location which 243A referred to? 15 16 Α. Yes. 17 Yes, 400 metres --18 Q. Zero to 400 metres, somewhere in that range. 19 Α. 20 Now back to 150, but at that point 400. 21 Just so we're 22 all clear, there was at all times a methanometer in the place that would comply with the 243A sensor location wise? 23 Yes. 24 Α. 25 26 What needed to happen at one point was a change in when it tripped the power to the shearer and the AFC? 27 28 That's correct. 29 Q. But it was always there? 30 31 Α. Yes. 32 Again, we can see there as we look through the timing, 33 we're talking here about 2 July, 3 July, 11 July, the 14th, 34 15th and so on, so those July ones are all happening within 35 a pretty short space of time? 36 37 Α. They are. 38 Again, not all the data you need here is here, but it 39 does tell you about what the levels are on each of those 40 two sensors for each of those HPI exceedances? 41 That's correct. 42 Α. 43 44 You have been through the numbers, and they are all in your statement, so I'm not going to take you through them 45

46

47

in detail in terms of how long each of these went for and the level of the exceedance in terms of concentration, but

- the highest of those exceedances was the 24 July exceedance at 3.39 per cent?
 - A. That's right.

- Q. And that took about two minutes on the inbye sensor for the gas to be brought back under control by the ventilation system?
- A. Yes.

- Q. Eleven out of those 13 don't go over 2.8 per cent, so they are sitting within 3 percentage points of that 2.5 limit?
- A. Yes.

Q. And there are a couple of exceptions, of course, that we will come to, but most of them are dealt with, that is, brought back under control by the ventilation system or by steps taken by the operator, within seconds or minutes? A. Yes.

- Q. Again, you have explained in your statement why, in respect of each, and also explained how they build on each other, the inspectorate was comfortable with the response to those HPIs and that no further formal action was required at that point?
- A. That's correct.

- Q. Leaving that up on the screen, I just want to now talk about how these HPIs that we see in this chronological form correlate with the conversations and communications that were going on between Anglo and the inspectorate at the relevant time. Can we start on that basis with 2 July, because it is the first one. On 2 July 2019, Inspector Brennan that's Keith Brennan attended at the mine?
- A. That's right.

- Q. There was a mine record entry, as there needed to be, about that?
 - A. Yes.

Q. We have produced this, so I hope it is already on the court book, AAMC.008.017.0003. Might we make that bigger? Now, this is 2 July. We can see there, without reading the whole thing, that he arrives on site at 6.45, has a brief meeting with Wouter Niehaus and then goes to the bull gang pre-start meeting. The under-manager provides a review of

activities and high potential incidents that had occurred during the previous tour, which included gas exceedances, in particular, which was what he was interested in?

A. Yes.

Q. He then goes to the control room, we can see there under the heading "Gas Data - Control Room", accompanied by Mr Niehaus, and reviews the data from Citect following the numerous methane exceedances that had occurred?

A. Yes.

Q. And he has - it's summarised here, but it's obviously the consequence of a technical discussion involving the review of Citect data and a discussion with the relevant onsite folk about why those things had occurred?

A. Yes.

- Q. Then there is a discussion of controls introduced to reduce exceedances?
 - A. Yes, there is.

Q. Again, if I can interrupt myself, all of this forms part of the knowledge that the inspectors have got when they are assessing the HPIs that then come in following? A. Yes.

Q. Not only does it help you understand what the mine are doing, what processes they have got in place, but it also helps you interpret what's in the 5As and 1As, doesn't it? A. It does.

Q. Which is pretty important, because for a fresh reader, you look at them and go, "What does that mean?", but the inspectors were aware of what was actually going on at the mine site; right?

A. Yes.

 Q. If we then go over the page, please, and pause there, what we can see there is that the MRE has included a screenshot demonstrating the kind of control or the kind of information that is available in the gas control room at any point in time at those various methanometers?

A. That's right.

Q. Which allows obviously a person who knows what they are doing to be looking at the relationships and the trends between them?

1 A. That's right.

Q. Then in particular, because it mattered, underneath that particular screenshot, lateral gas drainage hole GR03L016 located at 1760 chainage is due to come online, and then there is, again from the inspector, data that has been provided by the mine to understand where that particular goaf hole was located?

A. Yes.

11 Q. And why it mattered as to when it came online and how? 12 A. Yes.

- Q. And what the challenges about that were; right?
 - A. Yes.

Q. The other thing, of course, that you would be aware of at Grosvenor in particular, is that as well as having the Citect data and being able to observe at any point in time what gas levels are, Grosvenor also operates a smart system based on algorithms to automate, to engineer in hard solutions, so that when the shearer gets to a certain point, if gases are at certain levels on certain methanometers, then the shearer is automatically slowed or automatically stopped?

A. Yes.

- Q. That's not something you see in every longwall mine, is it, that technology?
- A. It's on I am seeing it on more mines, on more longwall mines.

Q. But it's relatively new technology?A. To me, it's relatively new, yes.

 Q. And again, if we look at - at some point in the first hearings, I think it may have been with Mr Rice, we were talking about controls and the hierarchy of controls and which are the good ones and which are less good ones; right?

A. Yes.

- Q. The less good ones are the ambulance at the bottom of the cliff. The good ones are hardwired engineering controls?
- 46 A. Yes.

- 1 Knowing that Grosvenor had the capacity to, and indeed did, manage its shearer movement using hardwired 2 engineering solutions which say, "If you get to chock 115 3 and methane at this particular sensor is at this particular 4 level, then you slow to speed X, or if it is at this level, 5 then you stop" is very important, isn't it, because it 6 manages that production of gas from the actual cutting 7 process? 8
 - A. That's right.

12 13

14

15 16

- Q. Again, I won't take you through the detail of it, but as you look at the documents, it becomes clear what we see through all of this is this reference, especially early on in the longwalls, to tweaking those parameters, to tweaking those numbers?
- A. Yes.

17 18

19

20

21 22

- Q. What do we do at 115 chock? We've to drop that a little bit. We've got to change that a touch. Again, knowing that that's what the mine was doing would have given you confidence to know that they could manage those issues that were arising?
- A. When it works, yes.

That's right.

232425

Q. Absolutely.

26 27 28

Q. And that's the thing about it, right? There are some mines who have had it and chosen to stop using it -- A. Yes.

30 31

29

- Q. -- because it is one of those things that requires constant tweaking. But if you can get it right, then it removes human intervention and it means you have hardwired engineering controls in place to manage those exceedances?
- 36 A. Yes.

Α.

37 38

39 40

41

- Q. It is certainly something you want mines exploring, isn't it?
 - A. I do. It doesn't remove the human, because the human because, as you pointed out earlier on, the circumstances are very dynamic and fluid.

42 43 44

- Q. Of course.
- A. So sometimes that particular hardwired control may actually be not what you want.

- 1 Q. Yes, and we see a couple of examples of that.
 - So we still need the humans interpreting. Α.

5

6

7

8

- Yes, I'm not suggesting you don't, but a system that says, "Audible alarm, human being to do something" is not as good as a system that says, "We know that if the methane is at this level and the shearer is here at 115, then we should slow"?
- Α. Yes.

9 10

- Q. And the system wires that in to happen? 11
- 12 Α.

13 14

15 16

17

18 19

- Thank you. Just following through that mine record entry, in addition, if we could go over the page, please, we can see that there is an opening meeting attended initially by Glen Britton for a period of time, with the SSE and the UMM. The meeting reviewed recent gas exceedances and HPIs?
- Α. Yes. 20

21

- 22 Q. Reviewed questions and responses between Mr Griffiths, the SSE and the Inspector of Mines, Mr Brown? 23 24
 - Yes. Α.

25

27

- Covering trigger points, possible reduction of shearer 26 speed, barometric lows and highs, diurnal effects and goaf drainage? 28
 - Yes Α.

29 30 31

- Again, at this very period, these kinds of detailed discussions are happening on site?
- Yes. Α. 33

34 35

36

32

- Mr Britton indicated, didn't he, that substantial funding had been budgeted for gas drainage? Α. He did.
- 37

38

- And given that he was a person central at Anglo, 39 I suppose, it would have been comforting, I would imagine, 40 for an inspector to hear that? 41
- Provides some confidence that the money will be 42 43 available, yes.

44 45

46

47

And as you may know, we heard through the course of the first hearing that in fact through project 17,000, which was intended to increase drainage capacity at

- Grosvenor to 17,000 litres per second, there were 1 substantial moneys budgeted for that purpose? 2 Yes. 3 Α. 4 Both in terms of short-term solutions, that is, just 5 Q. increased drainage from wells, and then the longer-term, 6 more expensive solutions about increasing the gas plant 7 facility on the site as well? 8 Α. Yes. 9 10 Again, aware of all of that from these discussions? Q. 11 12 Α. Yes. 13 14 Then, of course, we see a description of the underground inspection, which included what is described as 15 an excellent overview of the Citect system by a coal mine 16 worker who was able to access all of that information? 17 Α. Yes. 18 19 Again, a discussion by the inspector on that occasion 20 Q. of precise methane levels at different monitors? 21 22 Α. Yes. 23 Again, exactly the kind of more granular knowledge 24 25 that one might not pick up from just reading the 1As and 26 5As? Α. That's right. 27 28 29 While the inspector was there, as you noted yesterday, there was in fact an HPI? 30 31 Α. Yes. 32 There was in fact an exceedance on site? Q. 33 Yes. 34 Α. 35 That's described on page 5 of 6. iPads were being 36 37 introduced at that stage for statutory inspections, and that was part of familiarisation with it as well, wasn't 38 39 it? 40 Α. Yes, it was. 41 Again, a good thing to allow inspectors to have easy 42
- 44 A. Yes.
 45
 46 Q. The high potential incident is then described there,

access to data as they needed to?

- result of that exceedance occurring. The inspector was 1 informed by Mr Niehaus that the longwall would be stood for 2 36 hours? 3
 - Yes. Α.

7

- That means stopping mining to figure out what Q. happened?
- Α. Yes.

8 9

- Again, that was something that I think Mr Hunter or 10 Ms O'Gorman referred to - the appropriateness or not in 11 some circumstances of actually just stopping to figure out 12 13 what was going on. That's exactly what happens here? 14
 - That's right. Α.

15 16

17

18 19

20

- During that stand down, an IMT would be formed. IMT would explore placing the bleeder roads on return ventilation, slowing shearer speed and uni-di cutting. bleeder road on return ventilation was something that had been specifically raised by the inspector?
- It was. 21 Α.

22 23

24

25

26

27 28

- Then importantly, on 4 July, the inspector received the minutes from the IMT, with an objective, but then also, as we can see in the dot points down the page, the minutes from the IMT meeting in terms of what the actual plan was, immediate short, medium and long term, for improving those issues?
- Α. Yes

29 30 31

32

33

- So the inspector at this point, by 4 July, two days after his inspection, has actually got what in effect looks here like a plan?
- Yes. Α.

34 35 36

37

38

39 40

- Again, you would expect, without needing to actually go and check, because they have described it, that there would have been an incident management team process that underlay this, which would have involved documented review of the data?
- Α. Yes.

41 42

- 43 Q. An assessment of the options?
- 44 Α. Yes.

- 46 Q. The putting together of a plan?
- That's right. 47 Α.

- Q. Allocation of responsibility, as we saw during the course of the first hearings, via Enablon or other task management systems to particular folk to do those tasks?
- A. That's correct.

- Q. And a review process?
- A. Yes.

- 10 Q. None of that is your job to do?
- 11 A. No.

- Q. But that's how you understand the mine operates when it deals with these kinds of issues?
- 15 A. Yes, it is.

- Q. It kind of helps in that sense in that our learned friend Mr Hunter yesterday took you through a series of 5As about these very incidents, about these very exceedances, all of which referred in very shorthand form and I have already acknowledged the legitimate criticism of that to the intention to create a plan, in effect?
- 23 A. Yes.

- Q. But the reality was that the inspectorate not only knew that there was a plan formed by the IMT but in fact had the detail of it in the form of those minutes from 4 July?
- A. That's correct.

Q. Would you imagine that would help the inspectorate to look at that and go, "Well, that doesn't tell me much on its face, but I actually know what it is referring to"?

A. That's right.

- Q. Again, not perfect process?
- 37 A. No.

Q. But understandable when you look at it in those terms?A. That's right.

Q. Could we have a look, please, at an email of 11 July, again, just working through that sequence of events, RSH.001.002.0304. This is an email referred to in your statement. It is from Mr Niehaus, the underground mine manager, who is sending an email to Mr Brennan and to Mr Woods with additional information about methane

1 management at Grosvenor, referring specifically to another 2 process: 3 4 ... a meeting yesterday to assess the business plan risks and risks posed by 5 6 inadequate gas drainage capabilities at The current expansion plan to 7 Grosvenor. increase our gas drainage capabilities from 8 9,000 litres per second to [13,000] ... 9 10 and then ultimately to increase gas drainage capacity - it 11 says there to "1500", but in context that must be a typo. It must be "15,000", I suggest? 12 13 14 Α. Yes. 15 16 Then also further referral to the ventilation change, if we can go up to the second dot point, which was the one 17 that Mr Brennan had been discussing in particular? 18 19 Α. That's correct. 20 One of the points that you make in your statement, 21 might I respectfully suggest correctly, is that those first 22 set of exceedances on longwall 103, you were reviewing and 23 saying, in effect, look, we understood why that was 24 continuing to happen in the sense that the ventilation 25 change that was proposed - at least, that was what was 26 planned, and indeed it worked - which would have reduced 27 28 the available methane by about 0.5 per cent took some time to implement? 29 Α. Yes. 30 31 The point you make in your statement is that it took 32 some time to implement not because people were being slow 33 34 or incompetent, but because ventilation changes have to be planned and executed carefully? 35 Α. They do. 36 37 You can't just go, "We will just whack the air around 38 Q. another way." You risk assess it and you do it properly? 39 40 Α. That's right. 41 The time frame this took, in your assessment when you 42 43 went back and looked at it, was reasonable and appropriate

and professional?

Yes.

Α.

Q.

44

45

46 47

That allowed you to - if we could go back to that

table, please, Mr Operator, the table of exceedances for 103, the number of which I have now lost but which you may, because you're good at this, have already available. What we can now see, having now understood the history of things, is that the 2nd is the date that Mr Brennan is there, when all those conversations are happening?

A. That's correct.

Q. The minutes with the planner on the 4th, further information has been provided on the 11th, including about the ventilation change, right, and that's why you were comfortable saying, "I can deal with those as a group"?

A. Yes.

Q. Now, just one final MRE in this context. Could we go, please, to an MRE for 8 August 2019, so again throughout the period where you were taken to the 5As by our learned friend Mr Hunter yesterday. AAMC.008.017.0001.

THE CHAIRPERSON: Q. Mr Smith, while that is being done, you get the information I think on 4 and 11 July and you well know that a plan is being constructed and implemented. In the meantime, though, there continued to be methane exceedances; is that right?

Q. How does that figure into your object to ensure that the mine is safe? The plan is under way, but in the interim, before the plan is implemented, what is done?

A. In terms of each - in terms of what happens with each

Q. Well, you know that the plan is coming, and I think Mr Holt pointed out that a good plan is going to take a while to be created and implemented.

of the exceedances, is that the context of the question?

36 A. Yes.

Α.

Q. In the meantime, are repeated HPIs acceptable?
A. An HPI is not acceptable.

Q. I beg your pardon?

That's correct.

A. An HPI is not acceptable, but in the context of understanding that the mine has to take steps to develop their plan and develop the actions, my expectation is that the mine will operate at all times to avoid HPIs. That's their function.

But whilst the plan is being developed and 1 implemented, the mine is still getting HPIs. I thought 2 from the evidence we heard in the first tranche that HPIs 3 4 are regarded as a near miss?

5 6 7

8

9

10

Α.

They are.

- So should anything be done? Should, as was done at Q. one stage early in the piece, production be stopped whilst the plan is being created and implemented?
- In this particular circumstance, the mine had actually stopped production for the 36 hours.

11 12 13

14

15

16

17

18 19

20

- Q. That's what I'm referring to. They had already done that.
- They had already done that. They had formed their Α. incident management team and they had formulated a plan. The occurrence of additional HPIs is certainly unwanted and from a regulatory perspective is unacceptable. Being able to say that, as an inspector, I know they are going to have more HPIs before they have finished and implemented the plan is another question entirely.

21 22 23

24

25

26

27

But when they did, after they gave you information on the 11th, they still had more - I've just lost that note there, but they seemed to have more over the next few days? Yes, they did have some more as they were heading into their planned ventilation change, and then they had one when they did the ventilation change in and of itself.

28 29 30

31

32

I just get the impression, and I might be completely wrong, that it is regarded as acceptable - as long as the mine has a plan to address the problem, it is acceptable to keep mining until that is implemented? That's correct, ves.

33 34 35

36

38

Yes.

37

Α.

Q.

Α.

THE CHAIRPERSON: Thank you.

That is correct?

39 40

41 MR HOLT: Q. Could I just pick that point up, if I may? Α. Yes. 42

43 44

45 46

47

You describe at one point in your statement, I think it is picked up from something that one of the inspectors said - I'm not going to verbal the wrong person - that decisions about continuing to mine are themselves

a balance; that is, that there are risks in stopping mining just as there might be risks in continuing to mine?

A. That's correct.

Q. And so you have to be balancing, as we discussed at the outset, those kinds of issues all the time?

A. That's correct.

Q. Standing a longwall carries a risk of spontaneous combustion, for example --

10 combustion, f 11 A. It does.

Q. -- for a period of time. And so when you are dealing then with the question of what the mine is doing in response, of course you are going to have regard to the medium- and long-term planning, but you are also going to have regard to the immediate changes that the mine is looking to make, aren't you?

19 A. That's correct.

Q. As we will come to - and it might be after the morning break, Mr Martin - in relation to those earlier exceedances there was a planned short-term change, which was going to be the change to the ventilation system?

A. That's right.

Q. Longer-term changes, in terms of increased goaf drainage capacity, and also changes to the way in which the shearer was functioning, that it was being set to trip?

A. That's right.

Q. And so it wasn't just a question of saying, "We're unhappy with what you are doing at the moment, but you can carry on because in a few weeks you will be okay"; it was more sophisticated than that, in effect, which was, "We are satisfied you are taking immediate short-, medium- and long-term steps to try and deal with this"?

A. That's what I believe, yes.

Q. Equally, as we said before - and Mr Martin described an HPI as a near miss - without in any sense suggesting that HPIs are not significant or serious or ought not be taken as such, as we described at the outset, there is a world of difference between different kinds of HPIs, isn't there --

Yes.

Α.

-- in terms of what they mean. Here, for example, the 1 HPIs that occurred on the 3rd and 11th, which were the 2 second two of those, and on the 14th, were, for example, 3 2.52, 2.55, 2.52, and brought back under 2.5 within 4 60 seconds, 180 seconds and 60 seconds respectively? 5 6 Yes. Α. 7 Again, without saying that's okay, because that's the 8 statutory limit and so it is not okay, but without saying 9 that's okay, that's the kind of information you take into 10 account in deciding what the nature of the response ought 11 be at that point? 12 13 Α. That's right. 14 15 THE CHAIRPERSON: Q. Sorry, just to finish off, though, 16 you do recognise that any time there is an uncontrolled exceedance, it has the potential to rise well above 2.5 and 17 into the explosive zone? 18 19 Yes. Yes. That's correct. 20 I mean, we're not looking at things in hindsight once 21 22 one happens; you don't know what the next one's going to 23 be, do you? No, you don't. 24 Α. 25 26 Q. But you have got a history, as Mr Holt points out. That's right. 27 Α. 28 29 THE CHAIRPERSON: Mr Holt, would that be a convenient time? 30 31 MR HOLT: 32 Thank you. 33 34 THE CHAIRPERSON: Just a quarter of an hour, thank you. 35 SHORT ADJOURNMENT 36 37 THE CHAIRPERSON: 38 Yes, thank you, Mr Holt. 39 40 MR HOLT: Thank you, Mr Martin. 41 Mr Smith, just before the break I was going to take 42 43 you to a mine record entry for 8 August 2019. Just before we do that, would we bring up the table, please, 44

45 46

47

Mr Operator, just so we can contextualise this. We've been

through what happened on the 2nd, we've been through the

minutes of the IMT that were provided on the 4th, and an

1 email on the 11th, and now we're on 8 August, which we can 2 see, the context of this, is about three-quarters of the way down the table. Can you see that? 3 4 Correct, yes. 5 6 If we could now go to AAMC.008.017.0001, this was Q. a mine record entry in relation primarily to what was 7 called a safety reset meeting? 8 That's correct. 9 Α. 10 This was a process that was done I think at all mines, 11 from memory, where the mines had to go through a safety 12 13 reset process with their staff as a result of a direction that was given? 14 They did, yes. 15 Α. 16 The safety reset is not relevant for present purposes 17 but described under that first heading, and then the 18 19 inspector on this occasion, Mr Brown, took the opportunity to visit the technical services department --20 He did. 21 Α. 22 23 Q. -- which you understand is run by Mr Logan Mohr --I do. 24 Α. 25 -- and his team, and attended there to: 26 Q. 27 28 ... receive an update of gas drainage activities as part of the follow up for 29 methane exceedances on the longwall, and 30 31 also incidents involving methane discharging from the floor in development. 32 33 34 Α. That's right. 35 Again, an example, quite apart from what is said in 36 37 the 1As and the 5As, of the kinds of interactions that are happening between inspectors and the mines about issues as 38 significant as exceedances? 39 40 Α. It is. 41 Mr Brown here obviously, to state the obvious, not 42 43 Mr Brennan - but it is an indication, isn't it, of the way in which, even though there are different inspectors, they 44

Α.

up on visits to the mine?

They are.

45 46

47

are across the same kinds of issues and are following them

Q. I've just taken you through at the bottom of page 1 what the purpose of going to tech services was. Then if we go down to the next page, please, and call out that last paragraph:

 As a result of the meeting I was satisfied that plans are progressing to improving the gas drainage system in a staged and controlled manner. We discussed the fine balance between reducing or eliminating methane exceedances and not creating another hazard involving spontaneous combustion.

That's precisely the balance that we were talking about before, isn't it?

A. It is.

 Q. If we can then go back to the table, please, if I can use the shorthand, Mr Operator, and having now talked through some of those interactions between the mine and the inspectorate that were going on at about that period, can we then talk about the exceedances themselves. You went through a lot of this detail yesterday with Mr Hunter, so I won't need to do it in anything like the same level of detail, but it is right, isn't it, that the first four of the exceedances that we can see there, all of which involved exceedances the highest of which was 2.79, were part of that initial - effectively what you saw as being that discussion and planning around the ventilation roadway change?

A. That's right.

Q. And also, as I will take you to in a moment, understanding that the mine was also intending to immediately make changes to the way in which the smart algorithm worked for the shearer?

A. Yes.

Q. To try to change the speed or stopping of the shearer to avoid those exceedances occurring, quite apart from the underlying issue?

A. Yes.

Q. And then in addition, what we saw, indeed, as we heard yesterday and today on multiple occasions, is in almost

1 every document the mine continued to recognise that one of the underlying issues was the absence of sufficient 2 pre-drainage in light of the estimates of gas make? 3 4 Α. Yes.

5 6

7

8

9

10

11

- Indeed, might I respectfully suggest this, that you Q. actually would want a coal mine operator to be constantly aware of and indeed constantly repeating that kind of an issue to ensure that mines continue to be focused on short-, medium- and long-term ways of dealing with that issue?
- 12 Α. Yes.

13 14

15

Because ultimately as you deal with that issue, all of these other issues become easier to manage? Α. Yes.

16 17 18

19

20

21 22

- So again that sign of understanding, on a repeated basis, the underlying issue about drainage and the way of improving that up to 17,000 litres per second is something you would want to see?
- Α. Yes, it is.

23 24

As well as, as we were discussing before the break, short-term immediate solutions to immediate problems? Yes. Α.

26 27 28

29

30

31

32

33

34

35

36

25

If we could have a look, then, please, at the 5A for 2 July, AAMC.001.009.0336, which is the front page, and if we could go immediately to 338, so two pages in. Could we, for my benefit, blow up 25 for a moment. What we can see there, although our learned friend Mr Hunter focused on the first part, which was "Develop a plan to increase goaf drainage capacity" - well, let's deal with that for a moment. By the time this 5A comes in, you have already had the IMT minutes of 4 July come through? Α. That's right.

37 38 39

40

41

42 43

Which talked about specific steps to be taken in terms of blowers being acquired, skids being acquired and then the long-term planning to increase drainage capacity to 13,000 and then ultimately, as you know, to 17,000? Α. That's right.

- You may or may not be able to comment 17,000 litres 45 46 per second is huge drainage capacity, isn't it? 47
 - In the overall context of Grosvenor, it's two to three Α.

1 times what they were actually pulling from the goaf, is my 2 understanding. 3 It reflected, as we know, earlier estimates, 4 projections done by highly qualified consultants, in the 5 orders of 6,000 and then 10,000 litres per second, and so 6 it represented a need for a very significant change-up, 7 didn't it? 8 Α. It did. 9 10 As we talked about before, you were aware - indeed, we 11 heard in the first tranche of hearings - of the investment 12 13 that was being put into that process? Α. Yes. 14 15 16 Q. Under the heading of "Project 17,000"? 17 Α. 18 19 We can see that although it says "Develop a plan", and one can well understand the criticism of that that was made 20 at least implicitly yesterday, in fact the inspectorate had 21 the dot point details of a plan? 22 Α. We did. 23 24 25 And would have understood that there were other Q. 26 documents and processes that underlay that? That's right. 27 Α. 28 We then go on and see - sorry, we should just perch on 29 the "meet business plan productivity targets". I think you 30 31 made the point yesterday, but ultimately the point of a coal mine is to mine safely? 32 Yes, it is. 33 34 So you can't run a coal mine sensibly if you are 35 having to stop because of exceedances all the time? 36 37 Α. No, you can't. 38 So the need to manage methane to levels that meet 39 business plan productivity targets means managing methane 40 to a level which is acceptable to the regulator - in fact, 41 just lawful and consistent with the regulations? 42 43 That's one of their missions, yes. Α. 44 45 Q. The next part was: 46

47

Review shearer stop position in Tailgate

from #115 towards the Maingate to reduce the effect of the shearer flushing gas into the mine general body atmosphere when stopped during periods of low barometer.

Do you see that? A. Yes, I do.

Q. That is not contingent on the ventilation change? That's not about that issue, is it?

A. No, it's not.

Q. That's about, as we talked about before, something to be done immediately, which is changing the way in which the shearer is programmed and not just generally speaking, not just aspirationally, but at a particular point, at chock 115, which had been identified by the mine as being the place where the change needed to be made?

A. Yes.

Q. In addition to that, we've then got:

Complete ventilation change(s) to reverse tailgate 101 perimeter road as per IMT direction.

A. Yes.

Q. Again, you would understand, though a fresh reader to this might not, but you would understand and your inspectors would understand, IMT - incident management team formed to deal with these exceedances?

A. That's right.

Q. So again whilst lots of criticisms could be made of the absence of detail, and improvements to the 5As can and are being made, there are effectively three things identified there, one of which is immediate, the second of which is happening soon but safely, that is, the ventilation change, and the third, which is the plan to increase drainage capacity, the detail of which you had been given a few days earlier?

A. Yes.

Q. As we have noted, you have reviewed the learning from incident reports as part of your preparation for this?

A. I have.

1 2 Not at the time, I understand that. Q. Α. 3 No. 4 The learning from incidents report for this incident 5 we don't need to go to, but as you would expect it does, it 6 allocates these tasks in more detail to particular 7 individuals? 8 Yes. 9 Α. 10 And it has a plan then for review of that task Q. 11 12 completion? 13 Α. It does. 14 15 Q. And for evaluation of that task completion also? That's right. 16 Α. 17 All of which are noted as being recorded in the 18 19 Enablon system? Α. Yes. 20 21 22 Q. Which again, without you as an inspector needing to go and hold the company's hand, you would expect to have been 23 the position? 24 Α. I would. 25 26 Could we go back to the table, please, Mr Operator. 27 I'm sorry, no, we'll do it now that we're there. 11 July, 28 which is the third one - that was again an issue that you 29 saw as being essentially captured by the other changes, 30 31 particularly a ventilation change, that would need to be made, but it was also associated with a floor blower, 32 wasn't it? 33 34 Α. Yes, it was. 35 Could we have a look, please, at AAMC.001.009.0344, 36 37 Mr Operator, and go to 0346 of that. And again could we call out paragraph 25: 38 39 40 Identify areas of high-risk floor gas release and implement action plan for floor 41 gas drainage to remediate future areas of 42 43 concern. 44 Do you see that? 45 46 Α. I do. 47

- Q. Again, this would make sense of your expectation that the solution that was being proposed or the response that was being proposed would relate back to one of the reasons why the thing occurred?
 - A. Exactly.

8

- Q. And what the 1A explained was that there was a floor blower in this area?
- 9 A. Yes.

10

11 Q. Floor blowers, as we learnt during the first tranche 12 of hearings, are not wanted but not necessarily uncommon? 13 A. No.

14 15

16

17

- Q. Sometimes, as I think it was at Grasstree we learnt, there were none for most of the longwall, and then they had some periods of issues?
- A. Yes.

18 19 20

21

22

23

24

Q. Part of the planning, as we saw before, with that hazard map for 103 was actually about identifying where there had been some floor blower issues in earlier panels in order to understand that those were the areas that would be targeted for what are called floor touches, for example? A. Yes.

252627

28

29

Q. Again, all information indicating that the mine was aware of that issue, managing it on a planning basis, but also here responding to it on an ad hoc basis?

A. Yes.

30 31 32

33

34

35

36

Q. Again, because you have now had the advantage of seeing the LFI report for this incident, you will know that it is not just these words; there was in fact a plan to do this allocated to a person, with a due date and a review process, in Enablon?

37 38 39

40

41

42

Q. Can we go back to the table. We can then see the fifth one, that's the 15th, and you noted before, with respect correctly, that this one actually occurred on the day the ventilation change was happening?

43 44 45

46

47

- Q. And it was associated with the process of the ventilation change?
- A. Yes, it was.

That's right.

That's right.

Α.

Α.

- Q. So to that extent, as a specific issue and again, looking at the detail of every single incident it occurred because of the way in which the ventilation change was done?
- A. That's right.

- Q. In particular, what was identified as being an issue there was that the ventilation officer who was involved, the person who was doing the ventilation change, was concerned because he was getting to the end of the amount of time he could lawfully be working and so did a particular process more quickly than would normally be done?
- A. That's right.

- Q. That resulted, in the assessment that was made in the LFI report, for example, and elsewhere, in this exceedance occurring, in effect?
 - A. Yes.

- Q. Again, being brought under control pretty quickly, but nonetheless occurring?
- A. Yes.

Q. You saw, as you would expect to have seen in the LFI, that one of the changes that was sought to be made was management of precisely that human issue, I suppose?

A. Yes.

 Q. Making sure that when you are doing a ventilation change, those issues are being managed better?

A. Yes.

Q. But again, you would see that one as having been a very specific issue related to a very specific ventilation change?

38 A. I did.

- Q. Could we go back to the table, please, Mr Operator. Then over the next four days, or period of four days, so 21 to 24 July 2019, we see a series of five, which, if I could put it this way in terms of summary, were fundamentally about getting the right settings on the shearer smarts to manage the particular strata situation that the longwall was facing at that point in time?
- A. A combination of, as I saw it, the strata control

1 management on the face and in the tailgate and ensuring 2 that they operated the face. 3 4 Again, your expectation was that the response to that was both an immediate change being made to the way in which 5 6 the longwall was being managed? 7 Α. Yes. 8 9 And also, then, so that it wasn't lost in any way, the Ω. plan to continue to increase goaf drainage capacity? 10 That's right. Α. 11 12 13 Could we have a look, please, at the 5A for the 14 24 July incident, which is AAMC.001.009.0364, and if we could go to the familiar second or third page, please. 15 16 Again, we see the reference that you were taken to by Mr Hunter: 17 18 19 Develop a plan to increase goaf drainage capacity for peak SGE areas ... 20 21 22 I won't repeat the questions I asked about that in terms of what you had already been told, but in addition a specific 23 24 entry: 25 Pitch alarms set to Citect, add the 26 requirement for acknowledgment and time 27 28 stamp when accepted. 29 Α. Yes. 30 31 Which, as you have now had the opportunity to do, you 32 can go back and look at the LFI, you understand was 33 34 actually a very considered set of changes to deal with those issues? 35 Α. Yes. 36 37 38

Q. Could we go back to the table, please, and we come to 17 August, so we're three or four weeks later, on 17 August. What we can see there again in the material that was provided to the inspectorate, and you have now had a chance to look at the LFI, was that this was likely related to a goaf fall, because a coal mine worker in fact identified that he had heard a goaf fall at about the time that things were occurring?

A. That's right.

46 47

39

40

41

42 43

- Q. Goaf falls are, in a general sense, things that happen and will extrude methane onto the face from the goaf?

 A. They can.

- Q. That is partly because of that whole phenomenon we were talking about at the outset, that there will be methane in the goaf because you want there to be methane in the goaf?
- A. Yes.

Q. That's part of why the regulations recognise - I'm not saying this is an exemption; it was reported as an HPI - but as a causal factor, as a reason why this occurred, it is a recognised phenomenon that there will be goaf falls, which will lead to short spikes of methane in the workings? A. They can, yes.

Q. We should, though, perch on the 5A for this one, which is at AAMC.001.009.0376, and if we can go to page 0378, please, and call out the bottom part. Here what we see is again, as you would expect, though I imagine now would want more detail, that the control measures and actions include identifying the risk of roof collapse and implementing an action plan, to install additional goaf drainage capacity, and then specifically noting that that action already exists in the system from the action plan, with a number that you would expect to be an internal reference number? A. That's right.

Q. And then:

 Purchase additional Gas Monitoring Skids, VPS upgrade including 6th vac pumps. Purchase blower skids to greater than 5,000 litres capacity with flaring. Additional reticulation lines if required by modelling to accommodate additional gas drainage capacity.

A. That's right.

Q. So again, a level of detail consistent with what you had seen in those IMT minutes?

A. Yes.

Q. But also, since you have had a chance to go back and look at the LFI, the LFI also allocates again each of those

tasks in more detail to specific people, with time frames 1 and review processes associated with them? 2 Yes. 3 Α. 4 Which is exactly what you would hope would be the 5 6 case? Yes. 7 Α. 8 If we can go back to the table, and again without the 9 need to go into the detail of the documents, on 19 October, 10 so effectively two months later - which I imagine from the 11 inspectorate's perspective would be an indication that the 12 13 things that you had identified as being specific issues 14 capable of resolution looked like they had been resolved? That's right. 15 Α. 16 17 Q. But then on the 19th there was another issue relating to, in particular, the configuration of the longwall at 18 19 that point in time in low barometric pressure? 20 Α. Yes. 21 22 Q. And the need then for associated shearer changes to manage that gas make in those circumstances? 23 That's right. 24 Α. 25 26 And again, the first one of those issues in a very long time - not to devalue it, but recognising that there 27 was a plan for change effectively in place involving the 28 change in the way in which the longwall would be cut? 29 That's right. 30 Α. 31 Then the final one on 7 November, again, a floor 32 blower, which cleared reasonably quickly and occurred right 33 at the end of that longwall period? 34 Α. Yes. 35 36 37 You might recall yesterday, Mr Hunter took you to the 5A for the 7 November incident and noted that the plan in 38 response effectively was to deal with floor blowers in a 39 40 later panel? That's right. Α.

41 42

43

44

Q. The reality, of course, here, is that this panel was effectively nearly finished?

A. Within six weeks.

45 46 47

Q. And so in terms of dealing with a floor blower, which

is something that it is difficult to predict and manage 1 immediately and had not really been a feature of this 2 longwall, I imagine your assessment was that that was 3 4 a reasonable response? 5

Yes. Α.

6 7

8

9

10

11 12

- Recognising of course that all of these exceedances Q. occur in a context where, for obvious reasons, an exceedance of lower methane levels, say 2 per cent or 1.8 per cent, depending on the methanometer, result in power being cut to the AFC and shearer and power being cut to the longwall?
- Α. That's right, it does.

13 14 15

16

17

18 19

20

21

22

23

24

25

Can we turn then to longwall 104. Longwall 104 Q. commences on 9 March 2020. One of the issues obviously that this Board of Inquiry has been concerned with is the question of the decision to continue to mine versus the decision to stop - that balance that goes on. You may or may not know, but in the first tranche of hearings, evidence was given by Mr Mitchelson of Anglo that in relation to Grosvenor and longwall 104, a conscious choice was made to set the business plan for Grosvenor at 75 per cent of production that had been achieved on longwall 103?

Α. Right.

26 27 28

29

30 31

And that was precisely in order to give the mine the capacity to be able to manage those kinds of issues, these kinds of gas management issues, without any production pressure at all?

Α. Okay.

32 33 34

35

- And again, if that were done, that would be a good thing to do; right?
- Yes. Α.

36 37 38

Q. It would be sensible to remove that kind of pressure? Α. Yes.

39 40 41

42 43

44

- Again, without going through the detail of it, you are aware from the second workings documents and the risk assessments that were done for longwall 104 that they again sought to pick up the learnings of 103?
- They did. 45 Α.

46 47

And, in particular, specifically addressed the need to Q.

- deal with management of methane in the tailgate? 1
- 2 They did. Α.

- Q. In light of the issues that we've just been through that had occurred with 103?
 - That's correct. Α.

6 7 8

9

10

11

5

- And significant steps were taken, as were recorded in the SOP and the second workings document, to increase goaf drainage capacity particularly in that early period of the longwall?
- Yes. 12 Α.

13 14

15 16

- Including, again, the drilling of 25 metre spaced goaf holes on the tailgate side and also, again, goaf holes wider spaced on the maingate side, which weren't usually done?
- Α. That's right.

18 19

22

17

- In addition, there was an attempt to pre-drain the 20 P seam using horizontal wells? 21
 - Α. Yes.

23

- Again, for reasons which will be explored later in the 24 hearing, the attempt to do that failed? 25 26
 - Α. Right.

27 28

29

30 31

- Indeed, as we understand it, there will be some evidence given that that is actually a really hard thing to do, is to pre-drain the P seam, given the nature of the P seam.
- Α. Right.

32 33 34

35

36 37

38

- Now, in addition to all of that, what ultimately happens in relation to the horizontal for the P seam is that it ends up being intersected by the Dom fault, by one of the faults that's there, and one of the vertical goaf wells.
- Α. Right. 39

40 41

42 43

You might recall that it was that goaf well, the one that ultimately, it seems, got linked to the P seam, which was trying to drain, which was particularly high flowing? Yes. Α.

44 45 46

47

Q. And which was the one that caused the flame arrestor issues, which you were talking about with Ms O'Gorman this 1 morning?2 A. Yes.

Q. So even though the attempt to pre-drain the P seam itself had been unsuccessful, there was a goaf well that was drawing an awful lot of gas, and it was doing so, it seems, because it in fact was successfully linked to the P seam?

A. Okay.

Q. As I say, that's the goaf well which the flame arrestor issues occurred on. All right. So in that context, you were also aware that Anglo was, through Grosvenor, continuing to implement project 17,000? A. Right.

Q. Tell me if you don't know, but again we see it through the SOP documents and through the second workings documents, that wasn't just happening with a view to there being suddenly 17,000 litres per second in six months' time or a year's time. There were different stages of that being implemented, which we saw in those IMT minutes? A. Yes, that's right.

Q. They included the acquisition of three blower flare units at 7,500 litres per second capacity to supplement existing vacuum plant for the beginning of 104?

A. Right.

Q. Increasing the vacuum plant to six pumps from five, to give an additional 2,000 litres per second capacity?

A. Yes.

Q. Trial of the twin lateral goaf holes in the P seam that I have told you about?
A. Yes.

Q. And again, as we have noted, that use of much more closely spaced goaf wells, which had been trialled at the end of 103 with a level of success?

A. Yes.

Q. Now, in terms of the flame arrestor issue in 104, which was that first set of exceedances all related to the flame arrestor issue, as the LFI which you have now had a chance to review explains, it was the fact that it was such a high-flowing goaf well, which was a good thing

because it was linked to the P seam, that meant that the 1 flame arrestor was harder to manage than it had been on 2 other wells. Do you recall that from the LFI? 3 I do. 4 Α. 5 6

That's in particular because it was taking in dirt and Q. so on, which caused the flame arrestor to become blocked? Α. Yes.

8 9

7

- Or partially blocked, because of the very high flow of 10 methane that's coming out of it; right? 11 12
 - And the lack of a casing.

13

- Q. Absolutely. 14
- 15 Α. Yes.

16 17

18 19

20

21 22

- Because it wasn't thought that that would be what it would do, but it worked effectively in that way. Now, if we can talk about 104 and the setout of the methanometers on 104, in addition to the methanometers that you accepted were there on 103, there was also what we have called the 149 canopy sensor?
- That's right. Α.

23 24 25

26

- Which I will come back to. Now, that was in addition Q. to that 400 metre outbye sensor?
- It was. Α.

27 28 29

- Q. And also the one at 3-4 cut-through?
- Α. 30

31

- Can I get you to have a look at this diagram, please, 32 which is AAMC.008.014.0001. I should say, this is as at 33 6 May. 34
 - Α. Yes.

35 36

- 37 Obviously earlier the goaf area is going to be smaller; right? 38
- Α. Yes. 39

40 41

42 43

44

So we're mining away from the goaf area, and the goaf is coming in behind. This is just to help us identify where those various locations of sensors are. a sensor (shearer A) and (shearer B); we can see that? Yes. Α.

45 46 47

Q. Those are not in issue in this case at all. haven't had any triggers on those, exceedances on those.
The maingate drive A and B, it has the methanometers down the bottom there as well that we can see. The canopy 149 sensor, obviously up in the canopy of chock 149 at the tailgate end. And then the two tailgate drive sensors A and B?

Α.

- Q. Then we have the inbye sensor, that's the 400 metre one?
- A. Yes.

Yes.

- Q. The one that, before the last set of changes, would have complied with 243A?
- A. Yes.

Q. It's 400 metres down the tailgate roadway. Then off the map, on the left-hand side, there is an arrow pointing to the location of the methanometer at 3-4 cut-through, which at this point was about 4 kilometres from the face? A. Yes.

Q. Thank you. Can I then pull up a similar table to the one we had for 103, Mr Operator. This is AAMC.008.014.0003. I am sorry, I gave you the wrong number. We want 018.0002. No. Could this come down? Sorry, there is just some controversy about one column, which we have removed. I want to make sure I have the right document, Mr Martin. Could we try AAMC.008.018.0002. My mistake. Yes, thank you.

 So this is the table again, just to give us a sense of those timings that we were talking about previously, and also the particular sensors we're talking about. We can see what's described as the 243A sensor. That's not there to create controversy. That's just what it was originally intended for. We will call it the 149 or canopy sensor. A. That's fine.

Q. Then we've got the tailgate sensor, which is the 400 metre sensor, and then the 3-4 cut-through sensor, which is the one 4 kilometres down the tailgate roadway. Again, we can see there the levels that were reached on each, which is part of that set of data that you have when you are assessing form 1As and form 5As?

The first four all involved a very particular issue 1 Q. associated with that flame arrestor, didn't they? 2 3 Α. They did. 4 Sorry, the first one may have been a scouring --5 Q. 6 That's right. Α. 7 -- but at least the three after that involved the 8 9 flame arrestor issue, and might I suggest that's obviously a very specific issue? 10

11 12 Α.

In the sense that we can see that a very high-performing goaf well in the early stages of the retreat of the longwall - which is obviously going to really matter at that early stage of the retreat, right?

It does.

It is.

17 18 19

13

14

15 16

> Q. All of your wells won't have come online yet? Α.

20 21 22

23

24

25

- Q. So if you have a high-performing well, which is what you want at that point, then if something is an issue with that, then you can see the very specific reason why these exceedances occur?
- That's correct. Α.

26 27 28

29

- And that was identified by the mine, not immediately but relatively quickly?
- Α. Yes.

30 31 32

33

34

35

Again, there are issues that will emerge underground where what happens is immediately obvious, and others where you need to get people together to really think about what has happened and put the data together?

That's right. Α. 36

37 38

39 40

41

42

So what happens here is that over that three-day Q. period, we see the exceedances that result from that as a result of the unexpectedly high flow in that goaf well, and ultimately, then, there was an engineering solution to that, right?

Α. There was.

43 44 45

46

47

The engineering solution was not just to get redundancy by getting an additional goaf skid, but it was also about improving the communication between the surface

- and underground in relation to when and how the flame arrestor was cleaned and dealt with?
 - A. It was, yes.

6

7

- Q. So it wasn't just a simple problem and a band-aid solution; it was a specific problem with an engineered solution tailored to that specific problem?
- A. That's right.

8 9

- 10 Q. Which then doesn't emerge again?
 - A. That's right.

11 12

- 13 The next one, if I can refer to number 6 - well, it doesn't have a number, but on 22 March 2020, can I suggest 14 again, with the need to actually drill into why 15 16 a particular exceedance occurred, this was in effect an electrical issue in the sense that there was a change being 17 made to the oxygen trigger on the surface from 12 per cent 18 19 to 8 per cent, and as a result of that not occurring properly, the goaf well closed? 20
- 21 A. Yes.

22

- Q. And it did so on an automated basis, as it was designed to do?
- A. I think, to be correct, they changed the setting from 8 per cent to 12 per cent.

27 28

29

- Q. I'm sorry, yes.
- A. So that it wouldn't close when they did the work that they intended to do.

30 31 32

33

34

- Q. Yes.
- A. And that change that they made did not have the result that they anticipated it would have, and the goaf hole closed anyway.

35 36 37

38

39

Q. So the solution to that again was an engineering solution. It was an electrical solution, in effect, to ensure that that situation could not occur again?

A. Yes.

40 41

Q. But again, a very specific reason, shutting off a high-flowing goaf hole at a particular point in time? A. Yes, yes.

45 46

47

Q. If we then go to the next one, which is on 23 March 2020, and then 6 April and 7 April, the ones that are noted

1 as exceedances on the outbye sensor, that is, the 3-4 cut-through sensor? 2 That's correct. 3 Α. 4 All three of those were related, weren't they, to 5 6 issues associated with the ventilation setup around C heading roadway? 7 That's correct. Α. 8 9 10 That was a particular setup for ventilation that was put into place to deal with the differential between 11 longwalls 103 and 104 --12 13 Α. Right. 14 -- and a particular existence of the roadways there? 15 16 And would you agree with me - I can take you to it if we need to - that that ventilation plan was set out in the 17 second workings document? 18 19 Α. It was. 20 So therefore ultimately known, if anyone wanted to 21 22 look, that that was the proposal for it? Α. Yes. 23 24 25 The reality of the issues that arose in relation to that ventilation issue is that there was an unexpected 26 failure of some double doors, which again resulted in an 27 28 engineering solution to those? Yes. 29 Α. 30 31 And then, in addition, there was an issue with some brattice being blown by the effects of a goaf fall? 32 Yes. 33 34 35 Q. And again, that required a repair? Yes, it did. 36 Α. 37 Managing the goaf stream and methane underground in 38 Q. 39

those circumstances requires those sorts of engineering solutions, doesn't it?

It does. Α.

41 42

40

43 So you will set up brattice wings, we've heard about Sherwood curtains in the first tranche of hearings? 44 Yes.

45 Α.

46 47

Q. You will be checking your seals, you will be dealing

- with your doors those are standard ways of managing ventilation and managing methane flow in an underground coal mine?
 - A. Very basic mining practices, yes.

- Q. So the issues that occurred in this context and resulted in those exceedances were, again, attributable to an immediate cause and able to be fixed?
- A. Yes.

- Q. In particular, it is important to note, isn't it, as I think you do in your statement, that because this related to the C heading roadway, the methane exceedance here reported to that sensor which is up to 4 kilometres down the tailgate roadway?
- A. That's right.

Q. And because effectively it must necessarily have gone down that C heading roadway, it missed the longwall face?

A. That's right.

- Q. So it effectively went in an area that would not have been of great concern in the general scheme of things?

 A. It didn't go past any electrical ignition sources or mechanical ignition sources, which an exceedance coming
- directly from the goaf out the tailgate roadway would, yes.

- Q. Can I then take you to the 149 sensor readings, which make up, as we read it, five of the exceedances that occur here?
- 31 A. Yes.

- Q. And again, at the risk of going over old ground, what is clear, isn't it, on those 149 sensor exceedances is that they only report to the 149 sensor?
- A. That's correct.

- Q. So there is no indication on anything else, any other methanometer, including all of the ones that I took you to before in and around that area, of exceedances at that point in time?
- A. No, there is not, that's right.

Q. You were aware, I think we discussed this last time, that the 149 sensor was placed there by Grosvenor with a view to complying with section 243A of the regulation?

A. It was.

Q. And the rationale - and I understand that there was a disagreement and ultimately the regulator wins because the regulator wins in those settings - ultimately you understood that the rationale was that the canopy sensor was as close as could be got to an area of concern - that is, the area where the sprocket is - and, in particular, that the 400 metre sensor wouldn't be reading methane until it had had to travel for about two minutes to get there?

A. That's right.

Q. That was the rationale behind it; right?

13 A. Yes.

- Q. So the 400 metre sensor was kept, so it still existed there in the mine, but this extra sensor was put on the 149 canopy?
- A. That's right.

Q. As things turned out - and we can see it here, we saw it in Grasstree and we saw it in Moranbah - it appears that what the 149 sensor was measuring on these occasions is likely one of two things: one is layering, as you have noted in your statement?

A. Yes.

- Q. And the other is the potential for it to be measuring goaf stream if the chocks are pushed out far enough into the tailgate roadway?
- A. That's right.

- Q. Neither of those are general body?
- A. In general, no, that's right.

That's correct.

Q. And as you said before, with respect entirely correctly, actually, that sequence of events has resulted in the fortuitous situation that there is now good information being got about an area of potential methane concentrations in underground coal mines?

- Q. Your view is it should stay and it is a good thing because we are learning good things from it?
- A. I personally would leave it there, yes.

- Q. I understand. And the mine has kept it there, right?
- 47 A. Yes, they have.

Α.

- Q. As the other Anglo mines have done?
 - A. Yes, they have.

- Q. What they have done is they have managed it in perfectly sensible ways, including setting up localised ventilation solutions to ensure that the goaf stream is being pushed out and around that sensor to avoid the sensor from measuring goaf stream?
- 10 A. Yes.

- Q. That necessarily helps to contextualise the 149 exceedances, doesn't it?
- 14 A. It does.

- Q. Again, though, they were still obviously enough, those ones that we see there were reported to the inspectorate as HPIs?
- A. They were.

- Q. They resulted, as we have seen, in 1As and 5As.
- A. They did, yes.

- Q. Again, localised solutions, including ventilation systems in the form of brattice and venturis to take the air around were what were proposed as solutions?
 - A. That's right.

Q. Ultimately, those solutions ended up appearing to work in the period of time that you had to assess that?

A. They did.

- Q. Now, having said all of that, that then takes us to the last of the exceedances on 21 April 2020, which is the 5.04 per cent?
 - A. That's right.

- Q. Obviously, anything which has a 5 in front of it with methane is a concern, because of what we know about the lower explosive limit or the lower flammable limit of methane?
- A. That's correct.

Q. But again, as with all things, it is important to be really precise about how and why something occurs; right?

A. That's right.

Q. Because ultimately what occurs in relation to that last HPI, as you know, is that a coal mine worker dealing with another issue on the armoured face conveyor took a hose off a venturi and used it for a different purpose. A. That's correct.

Q. And the venturi in that circumstance was in fact the venturi that was being used with the brattice for the localised ventilation solution to keep the goaf stream around the canopy, so that it didn't trigger the canopy sensor?

12 A. Yes.

- Q. The result of that, obviously, is that the almost certainty, I would suggest, but at least the reasonable conclusion is that that 5 per cent was measuring goaf stream as a result of the removal of that local ventilation solution?
- A. That was my conclusion.

- Q. So not measuring general body methane but measuring goaf stream?
- A. Yes.

- Q. Again, you understood that an obvious engineering solution to that issue was implemented that is, to put a T-piece on that particular airline so that it could be used for multiple purposes?
- A. To remove the opportunity for a coal mine worker to eliminate the control the mine required to keep the ventilation appropriate under the canopy, yes.

Q. And also a big sign saying, "Don't do this without talking to the ERZ controller". Again, perfectly sensible localised responsive solutions to a particular issue?

A. Yes.

Q. Again, during the course of longwall 104 there were multiple interactions between the inspectorate and the team at Grosvenor, quite apart from what was being communicated by the 1As and the 5As?

A. That's right.

- Q. Just as you would expect there to be?
- 45 A. Yes.

Q. Of the same kinds - I won't go through them all

again - that we talked about on 103?A. That's correct.

3

5

7

- Q. If we can just perch on an example in a mine record entry of 19 March 2020 Mr Operator, this is
 - AGM.002.001.2164. As I say, this is an entry on 19 March 2020. It is the first time we see a coronavirus check being done at the outset, so that tells us when that was.
- being done at the outset, so that tells us when that was.

 Again, this records a meeting between Mr Stephen Smith, but
 not you, the other Stephen Smith, deputy shift
- under-manager, Mr Niehaus and Mr Brownett,
- 12 Inspector Brownett?

13 A. Yes.

14 15

Q. I think he was someone you describe as being particularly diligent in terms of following issues? A. Yes.

17 18 19

20

21 22

23

16

Q. And again, Mr Niehaus gives - as we can see, if we can scroll down the page, please, Mr Operator - an update summary of the mine, including where the retreat of the first goaf formation was, what was happening in terms of the goaf drainage wells which were operating, and all that sort of technical detail?

242526

A. That's correct, yes.

27 28

Q. Which allows the inspector to be on top of the kind of issues that are being managed in the immediate retreat of a longwall?

A. That's right.

30 31

32

33 34

29

Q. Because one of the challenges in the immediate retreat of the longwall, as had been seen in Grosvenor previously,

is just how quickly or slowly the goaf wells come online?

35 A. That's right.

36

- Q. In order to be able to be taking enough out at an early stage?
- 39 A. Yes.

40

- Q. You would appreciate from these kind of communications, but also from the second workings and the risk assessment, that that was exactly the issue that much of the planning was associated with?
- 45 A. It was.

46 47

Q. Again, we can probably just scroll down slowly through

the page to get a sense of the detail. If we can go then to the last page - I'm sorry, could we go back up? Yes, there we are. Just pause there, please. We can see there that, as well as talking about goaf drainage, the inspector was also getting information from a visit to the control room, reviewing the gas alarm register?

A. That's right.

Q. And then an underground inspection that followed that? A. That's right.

- Q. If we can keep going down, please, and again a review by the inspector on that occasion of tailgate general body gas readings --
- A. That's right.

- Q. -- taken by the ERZ controller, goaf stream gas recording, relevant in the context we've just been talking about?
 - A. Yes, that's right.

- Q. Methane off the scale, but it's the goaf stream.
 - A. That's right.

- Q. Unsurprising. And again, a detailed understanding from the information given of the longwall ventilation, quantity and so on?
- A. That's right.

That's right.

Q. You describe Mr Brownett as being a diligent inspector, and this bears that out, doesn't it?

A. I believe so.

Q. Can we just then keep going to the last page, please. The close out of the meeting included a discussion involving Mr Niehaus, the underground mine manager, and Mr Bevin Mulcahy, the gas drainage engineer, about planned actions to control gas levels on the longwall 104 return. So again, apart from the 1A and 5As, this is an indication of the way in which this issue was live, being discussed between the mine and the inspectorate?

Q. Thank you. If we could then go back to the table, please. Again, as we discussed with 103 - and so I will just do it briefly in relation to 104 - as well as the 1As and the 5As that you were receiving, you were aware and

Α.

expected that the mine would have robust learning from incident processes and incident management team processes?

A. Yes.

- Q. And the IMT process in particular seems to have been one that Grosvenor deployed during the course of this whole period?
- A. That's right.

- Q. And that involved getting together the right group of senior people to deal with an incident and respond to that incident immediately?
 - A. That's right.

- Q. Whereas the learning from incidents process is intended to take that slightly longer-term view and approach of things?
- A. Yes.

- Q. Our learned friend Ms O'Gorman yesterday noted that you received a series of 5A forms from the mine on or about 15 April?
 - A. That's right.

- Q. They all sort of came in at once?
 - A. Yes.

- Q. That reflected, didn't it, the fact that there had been a bunch of exceedances which had occurred in a short time frame about two or three weeks earlier?
 - A. That's correct.

- Q. And so it is not surprising that the 5As would have come in at the same time?
- A. That's not a surprise, no.

- Q. Could we then go to one of those 5As which our learned friend took you to this morning, or yesterday, maybe, AAMC.001.009.0388, and if we could go to 0390 of that and call out item 25. We have been through already. Mr Smith, the kind of categorisation of the 104 exceedances that had occurred up until about this point, and if we look at that section 25 wording we can see, can't we, issues that relate back to a number of the matters that we've already
- 45 discussed?
- 46 A. Yes, we can, yes.

1 2	Q.	So:
2 3 4 5 6		P seam drainage strategy for each longwall block to design and complete prior to longwall production phase.
7 8 9	That A.	looks very much like a longer-term future strategy? It does.
10 11 12 13		But again, you want the mine thinking about that as don't you? I do.
14 15 16 17	Q.	Investigate Citect alarm & messaging system failure and implement controls to prevent a re-occurrence.
19 20 21 22 23	arres A.	s about those issues associated with the flame stor as well, isn't it? It is, and communication between the seamgas people the mine underground people.
24 25 26 27 28	the i	Which was one of the things that was picked up from ncident that could be improved to avoid those tions occurring in the future? It was, that's right.
29 30 31 32		And again, it's actually positive that that has been ed up? It is.
33 34 35	Q . A .	Those kind of human systems issues? Yes.
36 37 38		As well as the engineering issues? Yes.
39 40 41 42 43	Q.	Thank you: Document the IMT process currently used onsite for acknowledgment of action allocation & understanding.
44 45 46 47	that	again, because of your knowledge of it, you are aware that relates to the fact that the IMT had issued some tives which it appeared hadn't been appropriately

```
1
         communicated or followed?
 2
              That's right.
         Α.
 3
 4
         Q.
              So there was a need to formalise the way in which that
         was being done?
 5
              Yes.
 6
         Α.
 7
              Again, this opportunity was taken for that to occur?
 8
         Q.
              It was.
9
         Α.
10
         Q.
              And:
11
12
13
              Investigate modifications to goaf skid
              flame arrestor to allow current fleet to be
14
              maintained whilst remaining in service.
15
16
         That's the redundancy point?
17
              Yes.
         Α.
18
19
         Q.
              Then:
20
21
22
              Ventilation network for longwall tailgates
              to assess for risk of failure when using
23
              dual return roadways.
24
25
26
         Again, that's picking up that C heading issue; right?
              It is.
27
         Α.
28
29
         Q.
              Again:
30
              Amend the gas drainage TARP to add guidance
31
              for high flow goaf hole maintenance
32
              practices.
33
34
         Again, because we had this high flow hole likely linked to
35
         the P seam, and it was sensible to adjust TARPs to be able
36
37
         to deal with that?
              That's right.
38
         Α.
39
40
              Again, that's all just in one paragraph in a 5A, but
         your reasonable expectation would be that the mine would
41
         have disciplined processes underlying that to assess the
42
43
         need for those tasks, to allocate them and to review them?
              Yes.
44
         Α.
45
46
              And indeed, having had the opportunity to review the
         LFI processes, you would see that that's actually precisely
47
```

- 1 what happened? It is. 2 Α.
- 3

4 Q. Could we just go to an example, please.

AAMC.001.003.0030, which is one of the LFIs. We are very 5 I don't think we have looked at one 6 familiar with these. yet today in these hearings, but from the first we are. 7 8

This is a learning from incidents report that you have seen dated 3 April 2020?

That's right. 10 Α.

11 12

13

14

15 16

9

- Could we go over, please, to 0033. We can see there, in "Description of incident", at the top, a recognition that there was a four-day period with events from 18 March to 23 March 2020?
- Α. That's right.

17

- And the decision made by the mine to investigate all 18 19 of them together? 20
 - Yes. Α.

21 22

23

- Q. Again, as we have discussed I think on a previous occasion, a sensible approach --
 - Yes. Α.

24 25 26

27

28

-- to understand the links between them. Could we go down, then, please, to 0046. Again, it is a lengthy report, you would agree, which goes through the data and --It does. Α.

29 30 31

-- various analytical strategies to try to understand how the problems emerged? Yes. Α.

33 34

32

- And then "Preventative actions and recommendations". 35 There are what we can see - it might be being too generous 36 37 to say summarised in the 5A, but at least alluded to in the 5A, are a series of task descriptions addressed to those 38 particular issues which have been identified in that 39 40 process, and again, as we have discussed, allocated to
- a person with a due date and with a task ID? 41
- That's right. 42 Α.

43

44 Again, if we can scroll whichever direction it is toward the bottom of the page, please, we can see picked up 45 46 again at the bottom there, for example, "Amend the gas drainage TARP", those issues being picked up, regulated and 47

- 1 followed?
- 2 A. That's right.

- Q. Could we then go to 0068, please. This is just an appendix, because you will know from these LFIs, often documents that are referred to are annexed as appendices to the reports?
- A. Yes.

- Q. So this is a memo from to Grosvenor under-managers and control room operators about the filter and detonation arrestor becoming blocked and of things that needed to be done as a result of it?
- A. That's right.

- Q. That was exactly the communication, wasn't it, that there was an issue with it being communicated and followed appropriately?
- A. That's right.

- Q. Again, they have identified the steps that need to be taken, identified an issue in terms of communication, and sought to fix that through the LFI process?

 A. Yes.
- 24 A.

- Q. Again, that's exactly what you would expect a sophisticated operator to do?
 - A. I would.

- Q. To learn from those mistakes?
- 31 A. I would.

Q. Could we then, please, in terms of a final topic, go to the topic which you were taken to at the very end of your evidence by Ms O'Gorman, which was unreported exceedances, and in particular this related to an LFI, learning from incidents, report for events on 21, 22 and 23 April, which you got to review in preparation for your evidence today -- A. I did.

- Q. -- or in this hearing. Let's go to AAMC.001.009.0568, and if we can scroll down, please there is a table, I apologise, I don't have the page reference for it. If we keep going, it is the one with the orange lines across it. There we are. 0678. The LFI deals with the gas history of
- these particular days by events, in effect?

```
Α.
              Yes.
 1
2
         Q.
 3
              And a number of those events were reported as HPIs?
 4
         Α.
              They were.
 5
6
         Q.
              And four of them were not?
              That's right.
 7
         Α.
 8
9
              In particular, if I can suggest this to you, what is
         described as event 4 was a canopy sensor recording a peak
10
         of 3 seconds?
11
12
         Α.
              Right.
13
              In those circumstances, a 3-second peak in the canopy
14
         sensor - that is, 3 seconds over and then brought back
15
16
         under control, in the canopy sensor with everything that we
         have dealt with - would unquestionably, would you agree, be
17
         a temporary increase brought back immediately under
18
19
         control?
         Α.
              By the ventilation system, yes.
20
21
              I'm sorry?
22
         Q.
              Yes.
23
         Α.
24
         Q.
              By the ventilation system. Exactly so.
25
              Yes.
26
         Α.
27
28
         Q.
              And equally event 5 was, I suggest, 6 seconds?
29
         Α.
              Right.
30
31
         Q.
              Same analysis would apply?
              Yes.
32
         Α.
33
34
              And then event 7, again - the precise time isn't
         clear, but certainly less than 30 seconds?
35
         Α.
              Right.
36
37
         Q.
              Again, similar description you would give to that?
38
         Α.
              Yes.
39
40
              That idea of "temporary", a temporary increase brought
41
         back under control, in the regulation, obviously - I don't
42
43
         mean this critically - isn't a term of art? It is not
         20 seconds, 30 seconds, 50 seconds?
44
```

Α.

Q.

45

46 47 No, it is not.

And operators tend to use rules of thumb, don't they,

- 1 for that?
- 2 A. They can do, yes.

5

6

7

- Q. And a rule of thumb of 30 seconds was being applied at this time. Again, you might not agree with it, but would you accept that as being not unreasonable for a temporary increase brought back under control?
- A. I would agree it's not unreasonable.

8 9

- 10 Q. And I'm not trying to say --
- A. What I would say is what surprised me reading these was that some of these events occurred in and around the times that notifications were being made to the inspector.

14 15

- Q. Absolutely.
- A. So to my way of thinking, the notifier was aware, would have been aware, that these other events had occurred, and it surprised me that they didn't make mention of them.

20

21

22

- Q. I understand that. I understand that's the point you make.
- 23 A. It is an opportunity to.

24 25

- Q. As you have said, and as we have said previously also, these are all learning opportunities?
- A. Yes.

27 28

26

- Q. Indeed, in that vein, what we come to is the last one, which is event 8, where there were five recorded individual very little spikes, but all within a 12-minute period?
- 32 A. Yes.

33

- Q. That wasn't reported?
 - A. No.

35 36

- Q. And I think Anglo would accept that it should have been.
- 39 A. Yes.

40

- Q. And you would accept that it should have been, I imagine?
- A. I would, yes, particularly when you learn the cause of it.

- 46 Q. I'm sorry?
- A. Particularly when you are made aware of the cause of

1	the spikes.
2 3 4 5 6 7	Q. Yes. But again, the reality here, of course, is that the LFI process and the report that was created by the LFI process dealt with all of the data over that whole period of time? A. It did.
8 9 10 11	Q. And sought to learn lessons from it and deal with it on that basis?A. That's right.
12 13	MR HOLT: Thank you, that's the cross-examination.
14 15	THE CHAIRPERSON: Mr Crawshaw?
16 17 18	<examination by="" crawshaw:<="" mr="" td=""></examination>
19 20	MR CRAWSHAW: Thank you, Mr Chair.
21 22 23 24 25 26 27 28 29 30	Q. Mr Smith, you have got your statement in front of you no doubt. At various points in your statement you say words to the effect that, in your view, no further action was required by the inspectors. Do you agree with that? A. I do.
	Q. Firstly, in your statement you were looking, in expressing those opinions, at whether the inspectorate should have done more? A. That's correct.
31 32 33 34 35	Q. You were not addressing the question of whether the coal mining company should have done more? A. No, I wasn't.
36 37 38 39	Q. You were not addressing the question of whether the labour hire company should have done more? A. No, I wasn't.
40 41 42 43	Q. You weren't present at most of the investigations that were carried out onsite? A. I'm sorry, I missed that question.
44 45 46	Q. Are you hearing me properly?A. I - in general, yes, I am.

Q.

47

Good.

1 Α. But I missed all of the question, I'm sorry. 2 You weren't present at most of the 3 4 investigations that were carried out on site during this period from July 2019 to May 2020? 5 6 That's correct. I wasn't - was not present for any of Α. them. 7 8 9 As you said this morning in relation to at least one of those investigations, you don't know what conversations 10 occurred between your inspectors and management? 11 No, I don't. I don't keep a record of those, of that 12 13 information. It may be passed to me in conversation in the office or during a weekly meeting, but I don't recollect 14 any specifics, no. 15 16 So you are not really in any position to know whether 17 further action was required by the inspectors in relation 18 19 to any of those particular incidents? 20 I made my comment based on my assessment of the form 1As, the form 5As, the LFIs and the - sorry, not the 21 22 LFIs - and my knowledge of the MREs and other documents provided. 23 24 25 But you are not in a position to know whether the 26 inspectors in those conversations raised other issues? No, I'm not, not unless they spoke with me 27 28 specifically. 29 Or whether they followed up on issues that had been 30 31 previously raised? That's correct. 32 33 34 And your answer may be different depending on which longwall we are talking about or even depending on each 35 HPI, but when you proffer your view as to whether the 36 37 inspectorate should have done more, are you proffering a view - the view that you had at the time that no further 38 action was taken, or are you proffering that view in 39 hindsight? Please tell me if that's too general. 40 It's a bit of both. Some of it is hindsight, some of 41 it is at the time. 42 43

I presume you can't distinguish those two at this

notifications that I received and the notifications with

Some of them I can distinguish. Certainly with the

44

45

46

47

point in time?

l	regard to the canopy sensor in April of 2020, the decisions
2	that I made at the time. The ones in July, I've made those
3	in hindsight from reading the information - July of 2019,
1	sorry.

- Q. Sorry. From August to November 2019 you weren't as hands-on, because you were acting as the deputy chief inspector?
- 8 inspector?9 A. That's correct.

- 11 Q. So they are more likely to be hindsight observations as well?
 - A. That's correct.

- Q. Generally speaking, the opinions you offer in relation to longwall 104 were your view at the time as well as in hindsight?
- A. That's right.

- Q. I think you might have already answered this, but can you just make it clear: would you have done anything different, in hindsight, in response to the HPIs at Grosvenor between July 2019 and May 2020?
- A. In hindsight, as I said earlier today, I missed the opportunity to inquire as to whether the second goaf sled had been installed and I took the confirmation that that had occurred based on the fact that I did not receive another phone call notifying me of a failure with the goaf sled.

Similarly, had I been aware of the other exceedances in the canopy towards the second half of April, then I may well have brought forward my intent to conduct the inspection at Grosvenor earlier than I did plan it for.

- Q. So are those matters that you now, in hindsight, say you may have done more, matters that really only came to your mind today when you were asked questions?
- A. I'm sorry, I'm --

- Q. You have mentioned two matters that were raised by counsel assisting with you this morning. Prior to that, were you of the opinion that more could have been done?

 A. The matter with the second sled was in my mind shortly
- after I received the last notification. The matter with regard to the canopy sensors, after I had had the opportunity to review the LFIs. So in the last that one

in the last few weeks. The other one towards the end of March.

- Q. So nothing else comes to mind as to what you would have done differently?
- A. Not at this stage, no.

- Q. I think you have mentioned in your evidence that you now have a new system that throws up the history of HPIs on repeated occurrences?
- A. That's correct.

Q. Do I take it from your evidence that this would not have made any difference to the inspectorate's response to the HPIs at Grosvenor, if that system had been in place?

A. No, I don't believe you can take that as read, no.

- Q. How would that system have made a difference to the inspectorate's response at Grosvenor?
- A. Had that information if that information was available, it's in front of the inspector when they enter the HPI into the system, into the database, and it gives the inspector immediate feedback as to other HPIs. So it provides that direct connection between the current HPI that the inspector is dealing with and others that are in the record.

- Q. But how would that have manifested itself in a different response by the inspectorate to that that you have given evidence about and which you have said, apart from the two matters that you have mentioned, wouldn't be any different in hindsight?
- A. It would give the inspector the opportunity to consider the previous matters directly, and that then may have led to the inspectors raising matters with other inspectors or with myself.

- Q. And that didn't occur?
- A. Because no, it didn't, in terms of the inspectors going back through, checking all of the previous exceedances, having a system that did that.

- Q. But the answer you gave me talked about raising the matter with other inspectors or with you. That didn't occur?
- A. It certainly did at various times, but I can't recall any specific instances of that certainly in 2019.

2 Q. What about in 2020?

A. There was a - following the first two exceedances we had a meeting, I had a meeting with Inspector Brownett and Inspector Nugent about the exceedances that - his inspection the day before.

A recent discussion with Inspector Brennan, who had received the notifications with regard to the C heading exceedances in longwall 104 reminded me that he and I did meet in the office one day with regard to those. So there were other interactions.

- Q. But you are not suggesting that you didn't know the history of these HPIs when they kept recurring? You personally you knew the history?
- A. I knew the history of longwall 104, yes.

Q. Well, you knew the history of 103 as well, didn't you? A. Not as well as I know the history of 104, no.

- Q. But you would expect the inspectors that were doing the investigations on site knew the history of longwall 103 in terms of HPI incidents involving methane?
- A. I would, which as I understood it was the imperative for the inspection on 2 July 2019 when Inspector Brennan went to the mine following a couple of months of a couple of months of operation of longwall 103 where quite a few exceedances had occurred, and Inspector Brennan attended the site as a consequence of that.

- Q. Likewise, the inspectors who were investigating on site in 2020 you are not suggesting that they didn't know the history of the methane HPIs?
- A. No, I'm not.

- Q. They didn't need any new system to throw up that history for them, did they?
 - A. No, they didn't.

THE CHAIRPERSON: Mr Crawshaw, would this be a convenient time for lunch?

44 MR CRAWSHAW: I see the time. Sorry, yes.

THE CHAIRPERSON: That's all right. All right, 2.15, thank you.

1 2 3	LUNCI	HEON ADJOURNMENT
4 5	THE (CHAIRPERSON: Yes, thank you, Mr Crawshaw.
6 7	MR CI	RAWSHAW: Thanks, Mr Chair.
8 9 10	Q. Monda A.	Mr Smith, the inspectorate holds weekly meetings every ay; is that right? That's correct.
12 13 14		From July 2019 until May 2020 you attended those ings? Yes, I did.
15 16 17 18	Q. A.	Even when you were acting deputy chief inspector? That's correct, yes, I did.
19 20 21 22	Α.	Were the methane gas exceedances at Grosvenor ussed at any of those weekly meetings? I would expect some of them certainly would have been. n't recall exact circumstances.
23 24 25 26 27	Q. this A.	I don't want you to be indulging in conjecture about Do you remember or not? I don't remember any specific occurrences, no.
27 28 29 30	Q. A.	Are minutes kept of those meetings? They are.
31 32 33 34	Q. makin A.	You haven't had a look at them for the purposes of ng your statement? No, I haven't.
35 36 37 38 39 40 41	HPIs unus A.	for methane exceedances at Grosvenor stand out as ual compared to the rest of the Queensland coal mines? I suggest that the history - the history that I've through would suggest that that was certainly the . To say it was front of my mind is certainly not the
13 14 15	Q. perio A.	You mean it wasn't front of your mind during that time od after you started and up until May 2020? That's correct.
46 47	Q.	But you have since had a look at the history, and the

- position is that they were unusual at Grosvenor compared to the rest of the Queensland coal mines?
- A. In the history, there's two mines that stand out, and Grosvenor is one of them.

- Q. What's the other one?
- A. It's another Anglo mine called Grasstree.

7 8 9

10

- Q. They stand out compared to other so-called gassy mines in the Bowen Basin?
- A. They do.

11 12

- Q. I've diverted away from your statement. Could we just go to paragraphs 10 and 11. In paragraph 10 you refer to the different risks that may be introduced by stopping production. Do you see that?
 - A. I do. I do.

17 18 19

20

21

 Q. Is that a reference to what you have mentioned earlier in your evidence about spontaneous combustion being a risk?
 A. It is, in addition to other principal hazards of strata control.

22 23 24

Q. Those risks, I take it, arise from initially starting production, stopping and then starting production again?

A. In my mind, they do, yes.

26 27 28

25

- Q. When you say in your mind, why do you say that? Is it a fact or not?
- A. I believe that to be the case, yes.

30 31 32

33

34

29

- Q. In paragraph 11(b) you refer to excessive drainage holes having the potential to introduce other risks associated with increased oxidisation in the goaf.
- A. That's correct.

35 36

Q. Is that a reference again to spontaneous combustion? A. Yes, it is.

39

- Q. Of course, spontaneous combustion can also occur when production is taking place?
- 42 A. It can.

43

- Q. And it is of the utmost importance that all available measures are taken to avoid spontaneous combustion?

 A. It is.
- +0

- Q. Was the risk of spontaneous combustion at Grosvenor from July 2019 to May 2020 addressed by the inspectorate in any of the documents that you examined for the purpose of making your statement?
 - A. It is mentioned in the MRE by Inspector Brown in August 2019, when he spoke with the technical services personnel at the mine and discussed the importance of balancing the production of the longwall and the management of the risks to ensure that both gas exceedances and the chance of spontaneous combustion were both addressed.

Q. Was it addressed on any other occasion, to your
 knowledge?

- A. Not to my knowledge, not in any of the other particular documents.
- Q. Was it discussed with you on any occasion in relation to the Grosvenor mine?
- A. Not as a general conversation, no, not that I can recall.
- Q. Not as a specific conversation either, I take it? A. No, that's correct.
 - Q. Could we just have up, Mr Operator, document AGM.002.001.0937. Can you see that document, Mr Smith? A. I can.
 - Q. Have you seen that document before?
 A. I have.
- 32 Q. When did you see that? 33 A. I believe in April 2020.
- Q. Are you talking about the document that was sent to you when you asked for a risk assessment?
 - MS HOLLIDAY: Can I just object at this stage. There is a practice direction in place where if a person is going to be cross-examined about a document, that has to be identified to the Board. At least from RSHQ's perspective, it was not known that this witness was going to be examined upon this document.
- THE CHAIRPERSON: Yes. Mr Crawshaw, you have seen the practice direction.

5

7

8

9

10

14

15 16

21

24

25

26

27

28 29

30

31

34

38

39

40

41

42 43

44

1 2 3	MR CRAWSHAW: Yes, I'm sorry for this. It only really arose when Ms O'Gorman took the witness to that document yesterday.
4 5	THE CHAIRPERSON: So the document was shown yesterday?
6 7 8	MR CRAWSHAW: That's what I'm trying to ascertain, whether this is the same document that was shown yesterday.
9 10 11	MS HOLLIDAY: No, it is not.
12 13 14 15 16 17 18 19 20 21 22 23	MR CRAWSHAW: I only want to ask one question about it, and that question really arose from the opening of counsel assisting, Mr Hunter.
	THE CHAIRPERSON: All right. Ms Holliday, I think it will be faster simply to deal with it, and if a further problem arises, we will address it then, I think. Carry on, Mr Crawshaw.
	MR CRAWSHAW: Q. I think you told us that you saw that in April 2020, Mr Smith? A. That's correct.
24 25 26 27	Q. Are you saying that is the risk assessment that was sent to you when you asked for the risk assessment on the sensor?
28 29	A. My apologies, Mr Crawshaw. That's the risk assessment for longwall 104 goaf drainage.
30 31 32 33	Q. Yes. A. The risk assessment I had in my mind that I received in April was the risk assessment for second workings.
34 35 36 37	Q. Yes. A. My apologies.
38 39 40	Q. I will come back to that in a minute. I just wanted to ask you one - so you haven't seen this document before? A. Not to my recollection, no.
41 42 43	Q. You will see it was a WRAC to complete a broadbrush risk assessment on the proposed goaf drainage for

You have no knowledge of anyone in the inspectorate

longwall 104?

Α.

Q.

I can see that, yes.

44

45

46

1 2	seeing this? A. I don't, no.
3	
4	Q. Could we just scroll ahead to page 0953. You may have
5	heard Mr Hunter's opening yesterday, where he referred to
6	this matter of increased spontaneous combustion risk?
7	A. With all due respect to Mr Hunter, I did not listen to
8	his opening address yesterday.
9	
10	Q. Fair enough. That might be the best thing to do in
11	the circumstances. I know it might be hard to read, but if
12	you assume that the handwritten note says:
13	,
14	Increased spontaneous combustion risk due
15	to increased gas drainage has not been
16	assessed in this WRAC.
17	assessed III tills witho.
18	Additional WRAC required to assess &
19	control spon com risk.
	Control spon Com 11sk.
20	And then there is the name Weyter Nichaus. Then in the mod
21	And then there is the name Wouter Niehaus. Then in the red
22	handwriting, there is a note which finishes:
23	T 7 / / 04 /5 /0000
24	To complete by 31/5/2020.
25	
26	A. I can - yes, I can see that.
27	
28	Q. Do you know whether there was any such exercise
29	carried out?
30	A. No, not that I'm aware of, no.
31	
32	Q. Would it have made any difference to the attitude of
33	the inspectorate to production commencing in longwall 104
34	if it had seen this prior to production commencing?
35	A. It may have.
36	·
37	Q. Can I just ask you this more directly: should
38	production in longwall 104 have even started in
39	circumstances where increased spontaneous combustion risk
40	due to gas drainage had not been assessed in the risk
41	assessment?
42	A. No, it should not, in my view. I'm presuming the note
43	is in reference to this specific risk assessment. Am
44	I interpreting that correctly?
44	I Three precing that correctly!
	O Wall I dan't want to interpret it for you but your
46	Q. Well, I don't want to interpret it for you, but your
47	answers are given on the assumption that the note is

- 1 referencing this particular risk assessment?
 - A. That's right, yes.

- Q. I think we can move on on that basis. Just on the question of risk assessments, you gave evidence in your statement and indeed orally yesterday about requesting a copy of a risk assessment that had been done regarding the installation of the methane monitor?
- A. That's correct.

- Q. That's what you were referring to earlier?
- A. That's correct.

- Q. We may be able to avoid going to it. When you asked for that risk assessment, you were sent a longer risk assessment, which you referred to earlier in your evidence; is that right?
- A. That's right. That's right.

Q. You were asked some questions about that longer risk assessment yesterday, particularly pages 64 and 67, but at the time you received that document, were you more concerned about looking at the risk assessment for the CHR monitor rather than the broader risk assessment that had previously taken place prior to production commencing? A. Yes, I was. The purpose of asking for the risk assessment, or one of the purposes of asking for the risk assessment, was that I had been informed that the proposal to locate the 243A sensor in the canopy tip had been included in the risk assessment, so I was focused on that.

Q. But it was merely fortuitous that you received the more comprehensive risk assessment that had occurred before production commenced?

A. It was the risk assessment associated with the SOP, the SOP for secondary extraction. So as it was directly related to their comment that - the comment that the sensor was covered inside the risk assessment that I asked for that particular one. We had - RSHQ had actually received the risk assessment and the SOP back in early March via Inspector Brown. I could not find it in our system at the time, due to my skill set with regard to Lotus at the time, and hence I asked for them to provide that copy.

Q. Are you talking there about the broader risk assessment that was carried out prior to production commencing?

1 A. I am.

- Q. So the inspectorate had that risk assessment. Do you know any other risk assessments that it had prior to production commencing in longwall 104, relevant to longwall 104?
- A. There was a sealing process that the mine undertook around Christmas of 2019 to seal the roadway that led around the back of the goafs of 103, 102 and 101. As part of that sealing, there will have been a risk assessment with that, but I have not referred to it at all. That's the one that comes to mind as another possible risk assessment provided to the department.

- Q. But it should be fundamental to the assessment of safety by the inspectorate to see any risk assessments relating to current and upcoming work; would you agree?
- A. With regard to the secondary extraction process?

- Q. No, I'm asking you about risk assessment generally. I'm asking you whether the inspectorate should see all risk assessments?
- A. No, not as a matter of form, no, I don't believe that to be the case, no.

- Q. But should it be the case?
- A. No, I don't believe it needs to be the case, no.

- Q. So you don't think --
- 30 A. If a --

- Q. Sorry.
- A. My apologies. I think too long and then start to speak. An inspector of mines, during an inspection and an audit or their attendance at a mine it is quite within their powers to review, to ask the mine to provide a risk assessment, any and all risk assessments that they have had performed at the mine. It's not something that necessarily happens every time an inspector attends a mine, but it happens occasionally, I'm sure.

- Q. I want to suggest to you that it should happen frequently.
- 44 A. Right.

- 46 Q. What do you say about that?
 - A. I think it should occur when the inspector believes

that they need to see the risk assessment to validate a concern they might have or to validate controls that the mine has said they intend to put in place or that they have identified. It's not something that I can imagine that we as an organisation could cope with if every mine that we regulate was required to provide us with every risk assessment. It would be far too many documents for us to process. let alone actually review.

- Q. What about risk assessments of the nature that I have just shown you and the other document that you said you saw in March or the inspectorate saw in March 2020 they are more broad-ranging risk assessments, aren't they?

 They are I would have expected the risk assessment
- A. They are. I would have expected the risk assessment that you showed me a moment ago would have been a consideration during the risk assessment done by the mine for the secondary extractions of longwall 104.

Q. Can I just ask you while we're dealing with documents that you saw or didn't see, you say towards the end of your statement that you didn't see certain LFIs and you have given some evidence about that. Did the inspectorate know that LFIs existed? I'm talking about prior to May 2020.

A. I believe some inspectors were aware of their

existence. I can't speak - I can't say I was particularly aware of their existence.

Q. Just jumping back to your paragraph 9, where you are giving evidence generally about longwalls 103 and 104, you say that the form 5As identified pre-drainage as an issue, and there are references to a less than adequate pre-drainage program in the lower seams and gas make greater than expected.

34 A. That's correct.

Q. As a result, the mine needed to develop and implement strategies to manage risk and prevent recurrence.

A. That's correct.

Q. Then in paragraph 109 you also say - and this is in relation to longwall 104 - that the mine recognised that gas management treatment had not been developed. Is this a reference to the same problem that Ms O'Gorman took you to yesterday in relation to P seam or is it a more general problem?

A. I took it as a more general - I read it as a more general acknowledgment by the mine that their overall gas

drainage program has not been sufficient to give them unconstrained production.

3

5

7

Q. In relation to the strategies that had to be developed, what can you tell us about the follow-up carried out by the inspectorate to see that gas management treatment had been developed?

The strategies that I'm referring to are in general 8 the strategies that the mine would have to implement in 9 order to manage their - to constrain their production to 10 cope with the fact that they had a higher gas load than 11 they anticipated they would have because of the less than 12 13 adequate pre-drainage. So it's in reference to the 14 strategies required to constrain production and along with, as in their IMT minutes, the plan in their IMT minutes, the 15 16 acquisition and installation of additional gas drainage equipment over time. 17

18 19

20

21

- Q. In paragraph 109 you are saying that the inspectorate raised this problem on the need for such strategies as far back as 15 October 2019.
- A. That's right.

22 23 24

- Q. It would have been your expectation that those strategies would be in place by the time production commenced on longwall 104?
- A. Yes, those that --

272829

30 31

25

26

- Q. I'm sorry? I missed that answer.
- A. That's okay. Yes, it was my expectation that the mine would implement suitable strategies so that they could constrain production and eliminate the gas exceedances caused by not constraining the production.

33 34 35

36 37

32

- Q. To your knowledge, did the inspectorate follow up whether gas management treatment had been developed prior to production commencing in longwall 104?
- A. Not as a specific agenda, no. No.

38 39 40

41

- Q. When you say "Not as a specific agenda", you have no knowledge of that occurring at all, I take it?
- A. No, that's correct.

42 43

- Q. So after production commenced, it came to the inspectorate's knowledge that this fundamental problem in P seam, at least, was present?
 - A. That's correct.

Q. I wasn't quite clear about your evidence yesterday. You saw it as a fundamental problem yourself in hindsight? A. I do.

Q. Did you know about it at the time? A. No.

- Q. But in hindsight, which to some extent you are using in giving your evidence, you agree that it was a fundamental problem?
- A. Yes, I do, but a fundamental problem that the mine had to manage.

Q. Yes. I'm not suggesting you should manage it, but it would have been better if it had been addressed prior to the production commencing; isn't that correct?

A. If the mine had completed their P seam strategy, it should have reduced the gas load on longwall 104 for them, had it been successful, and that would be, of course, preferable to have in place before they started the longwall. The fact was, as they pointed out to us in October, that they knew they would not be in that position

and that they would have to operate the mine with

constraints on their production as a consequence.

Q. Are you saying they knew back in October that there would be a problem with P seam gas drainage?

A. No. No, I'm not saying that. I'm saying that they told us in October that they knew they had not done enough with regard to managing the gas load on the longwall. In specific terms, I didn't have that and I don't have that to say that it was specific to the P seam or specific to managing the floor gas emissions and so on. It's just an acknowledgment by the mine that they would have to - they would be in a position where they could not operate production without constraints.

Q. Are you saying that didn't bother the inspectorate?

A. Well, up until - from August through till the end of longwall 103, Grosvenor had successfully significantly reduced the occasions on which they had a gas exceedance in their tailgate, so they had, to my way of thinking, demonstrated the capacity to be able to manage the longwall and operate and produce with appropriate constraints in place when they set their mind to it.

- Q. So you put your mind to that question at the time, did you, before production commenced on longwall 104? A. No, I did not.

- Q. So you can't make a simplistic equation of what happened on longwall 103 with what might happen on longwall 104 in terms of risk, can you?
- A. Looking back at the information, I can clearly see that with the work commenced by Inspector Brennan in July 2019, Grosvenor took significant steps to reduce the occurrence of gas exceedances on longwall 103, which to me demonstrates that they had the capability of operating the longwall effectively but not with production unconstrained.

- Q. You have said that. My question is and I suppose it is more a suggestion to you that you can't make a simplistic equation of longwall 104 with longwall 103 in terms of the risks that might arise and the management of those risks?
- A. The equation that I'm working through is one that in longwall 103, Grosvenor has had difficulty managing the gas load in longwall 103, and when they set their mind to that management of gas load, they were able to reduce it significantly and that they were going to face very similar issues when they were mining in longwall 104. So they had demonstrated the capacity to manage the situation when they were finishing longwall 103. I would have no reason to think that they could not apply themselves to the same challenge in longwall 104.

- Q. So you acted on the basis that the risks were going to be similar in longwall 104 to longwall 103?
- A. I acted on the basis that the challenge for the mine is to manage the risk with the tools that they had available to them and that it would be similar to 103, if not a little worse.

Q. So is the answer to my question yes or no? Did you equate the risks between the two longwalls?

A. When I review the situation following the - to prepare my statement, I do equate them directly, yes. At the time of the commencement of longwall 104, I had no - I had not done that work, as such, so I was not in a position to make

Q. So was there a fault in longwall 103?

that calculation, if you like.

A. I'm not familiar with the structures in longwall 103

- at all, but I imagine that as there are some faults in longwall 104, some of those may well appear in longwall 103 and some won't.

 Q. The reason why you have a separate risk assessment when you go from one longwall to the other is that
 - when you go from one longwall to the other is that different risks might arise; isn't that the case?

 A. That's correct.
- Q. I think you talked in your oral evidence about the need for the coal mining company to be on top of its game because of the problems that you already knew about in longwall 104?
 - A. That's correct.

8

14

15 16

17

18 19

20

21 22

23

2425

26

27 28

29

30

31

32 33 34

35

36 37

38

- Q. Was that a hindsight opinion or was that your opinion at the time?
 - A. It's certainly my opinion now. At the time of commencement of longwall 104, my understanding is that I can't recall actually having any particular opinion one way or the other.
 - Q. But you think they had been at the top of their game in longwall 103, do you?
 - A. I think they have improved they improved their performance in the months August, September, October, November, December compared to the months immediately preceding that.
 - Q. That's based on the number of methane HPIs decreasing during that time?
 - A. That's correct.
 - Q. So your measure of performance in terms of the company being at the top of its game or otherwise is dependent on the number of methane HPIs that are occurring?
- A. It's certainly one of the measures that I use, yes.
- Q. Well, on that basis, you must have been pretty worried by April 2020?
- 41 A. I was very disappointed by April 2020.
- 42 43 Q. You knew by then that they weren't at the top of their 44 game?
- A. I knew by then that they had had exceedances that were generated by fundamental basic mining issues.

1	Q. I'm nearly finished. I just want to take you back to
2	paragraph 14 for a minute, where you give an overall
3	opinion about longwall 104 and whether the inspectorate
4	ought to have deployed an inspector to the site at the time
5	or issued a directive. You see that?
6	A. I do.
7	

 Q. You say what are the relevant factors. Do I take it that what you are saying in paragraph 14, although not expressly, is that at the time, and in hindsight, the exceedances were not such that the inspectorate ought to have deployed an inspector to the site at the time or issued a directive?

A. That's right.

- Q. And that was the view you formed prior to the explosion?
- A. That's correct. I say that in the context that the first two exceedances, there was an inspector at the mine at the time, that there had been an intervention at the mine with regard to the 243A sensor in early April 2020, and because of the nature of the other exceedances. And towards the end, I was planning a site the deployment of myself to the mine for early May.

Q. That wasn't at your initiative, though, was it?
A. That was a direction from the chief inspector at the time, yes.

Q. You were of the view that there was no directive required; that's what you just told me?

A. That's correct.

Q. But the chief inspector was of a different view, because he directed you to undertake an inspection?

MS HOLLIDAY: I have to object to that one, Mr Martin. There is a difference between a directive pursuant to the legislation and a direction to go to a mine, and it needs to be clear, that question, because it is an important one.

THE CHAIRPERSON: Yes, all right. I think the witness is in a position to reply to it, isn't he? Yes, Mr Smith?

THE WITNESS: The chief inspector's direction to me was that he wished me to attend each of the mines which I had issued a directive with regard to the section 243A sensors

1 to, so it was a direction from the chief inspector, as 2 opposed to a directive.

3 4

5

6

7

8

- MR CRAWSHAW: Q. I think that's what Ms Holliday just said, yes.
- Yes. So it was my intent to - my plan was to visit both Grosvenor and Moranbah North in, I think, the second week of May and Grasstree mine either the week earlier or the week after that.

9 10

14

15 16

17

18 19

20

When did the chief inspector actually direct you to do Q.

11 12 that? 13

I do not have the exact date or time for that. I believe it was at one of our Monday morning - during one of our Monday morning weekly meetings. I've been through the minutes for the ones around that time and I can't find a record of it, so I can't say whether it was the week prior - the week of the canopy sensor exceedances around 21 and 22 April or whether it was the week later. I can't answer that with any accuracy at all. I just know - I know it was around that time.

21 22 23

> 24 25

- Had you actually scheduled any inspections for those three mines?
 - I had, yes, following that direction.

26 27

All three of them? Q.

28

Α. Yes, I had.

29 30

31

32

33 34

35

36 37

- Q. So when was the inspection scheduled for Grasstree and Moranbah North?
 - I think the inspection for Moranbah North was scheduled for - it was scheduled for the 14th, I think, of May, and for Grasstree I think the following week or the week after. For Grosvenor it was - because Grosvenor and Moranbah North are easily reached from the town of Moranbah, they were on consecutive days, so one on the 13th, I think, and one on the 14th.

38 39 40

41

42

- Q. Did those inspections occur?
- No, they did not. I did do an inspection at Grasstree some weeks later. The exact date I can't recall, Mr Crawshaw.

43 44

45 Can I just ask you one final question. In hindsight, 46 do you think it would have made any difference if you had gone to the Grosvenor mine before the explosion? 47

A. It may well have. It would depend upon what the results of the inspection were.

- Q. So basically you are telling me it's hypothetical, which it is?
- A. Yes, it is. Yes, it is.

- Q. What factors do you think would have made such an inspection make a difference?
- A. The answers to my queries with regard to how the mine was managing the local ventilation at the tailgate to eliminate the tailgate sensor from being a cause of exceedances to the mine; how they were proposing to ensure that each of the ERZCs who might be responsible for the longwall were going to be able to manage that effectively; plus confirming that the 243A sensor was in the appropriate location may have also stimulated some change with regard to ventilation or positioning. I will never know the answer to that, Mr Crawshaw, I'm afraid.

- Q. You didn't propose to ask them about the fundamental problem in P seam gas drainage?
- A. No. No, I did not. That was not in my mind at all.

Q. You didn't propose to ask them about spontaneous combustion?

A. I would have taken copies of the recent HPIs that I had received from the mine with me and spoken with them about their preventative and corrective actions that they have included in those documents to see how they were progressing with those matters. As those matters pertain to spontaneous combustion or gas management, I would have expected to discuss those matters with them.

- Q. So you would have discussed gas drainage?
- A. In the context of what they were doing with regard to the reports that they had made to us in writing and the actions that they proposed to take, yes.

- Q. Those reports didn't mention spontaneous combustion, did they?
- A. Not that I recall, no.

44 MR CRAWSHAW: Thank you, Mr Chair.

THE CHAIRPERSON: Yes, thank you. Ms Grant, are you with us?

 MS GRANT: I am, Mr Martin, and I have no questions of the witness.

THE CHAIRPERSON: Thank you. Mr Trost?

MR TROST: Thank you, Mr Chair.

<EXAMINATION BY MR TROST:</pre>

MR TROST: Q. Mr Smith, I'm counsel representing one of the injured workers. Mr Smith, do you agree that there are lots of moving parts in any underground mine, lots of factors that can impact on the level of methane in a mine? A. I would.

- Q. And these factors can cause spikes that might not necessarily be exceedances?
- A. They can.

Q. But the obligation according to the regulation remains, does it not, that the operator has to keep methane levels below the required level of 2.5 per cent?

A. That's correct.

Q. Ideally, closer to the face where the shearer is operating, it would be even lower than that. Obviously there are systems that might shut things down at even 2 per cent, as I think was the case here, but you want to keep it as low as possible, close to zero per cent?

A. As minimum as possible, yes.

Q. Some of these factors include things like pre-drainage efficacy - yes?
A. Yes.

- Q. Geological issues, like desorption from other geological areas around the longwall?
- 39 A. Yes.

- Q. There can be faults, as we have seen in longwalls 103 and 104?
- 43 A. Yes.

Q. There are strata issues, barometric pressure changes, floor blower issues - those are all other factors that can impact on methane levels?

1 A. They are.

2

4

5

7

8

9

Q. And then once you are mining, as well, there are other factors that come into play: you have moving machinery which can impact on ventilation flows; there are goaf falls that are an expected and continuing phenomenon in the process of mining a longwall; as I have mentioned, ventilation and production rates also. All of these factors also can impact on methane levels?

10 A. They can.

11

12 Q. Human error can also have an impact on methane levels? 13 A. It can.

14 15

16

17

18 19 Q. And we've seen that in this case where some maintenance issues arose. For instance, on one of the sleds, a filter effectively got blocked. That's the fire sorry, what's the --

A. The flame arrestors.

20 21

Q. The flame arrestors, that's right.

A. Yes.

23

22

Q. And there can be just human error with setting the limit at 12 per cent that doesn't actually work?

A. That did not do the job, that's right.

27 28

29

30 31 Q. But despite all of these factors, which you have acknowledged are well known in the process of mining a longwall, there is still an obligation, is there not, to keep the methane level below 2.5 per cent?

A. There is.

32

33 34

35

36 37

39 40

41

Q. The reason for that is that you want to keep it from being dangerous, because ultimately it is kept below 2.5 per cent because people are being sent down there to do work?

38

Q. And you want to keep them as free from danger as possible in what is already a dangerous situation?

42 A. That's correct.

Α.

That's right.

- Q. You would also acknowledge that it is more difficult to keep methane under control when a longwall first starts, because goaf drainage hasn't necessarily come online?
- 47 A. If that is the case, then you increase the degree of

1 difficulty of managing it, yes. 2 Q. Those are all known factors? 3 4 Α. Yes. 5 With longwall 104 in particular, the need for 6 Q. effective pre-drainage had been acknowledged before mining 7 started on the longwall? 8 Α. It had. 9 10 Anglo was also aware of the issues with longwall 103, 11 and you were also aware of them, as the inspectorate? 12 13 In terms of the? 14 In terms of the fact that it was a gassy longwall 15 Ω. 16 already and there were already issues with controlling methane exceedances? 17 Yes. Α. 18 19 In that context, turning to your statement, you have 20 Q. analysed the exceedances with respect to longwalls 103 and 21 22 104? Α. I have. 23 24 25 And in respect of each of those, you stated that no further action should have been taken by the inspectorate 26 at that time? 27 28 Α. That's right. 29 Some of the causes identified in those form 1As and 30 31 5As were very discrete causes? Α. Yes. 32 33 34 We already mentioned the blocked filter with the flame There was a drainage shut-off. 35 There was reference to brattice stoppings and floor blowers, the 36 37 shearer stop positions? Yes. 38 Α. 39 40 All fairly discrete causes of these particular exceedances? 41 That's correct. Α. 42 43 44 Was it concerning to you, either in hindsight or at the time if you happened to review them, that it was these

causing exceedances?

45 46

47

single fairly discrete failures that were apparently

It was concerning to me with respect to longwall 104 initially, the exceedances with regard to the goaf sleds, it was indicative to me that they were having trouble managing the basics of managing the goaf sleds on the surface and that they had not thought at the start that perhaps they might need redundancy up there and the ability to switch between sleds so that they could do maintenance. That, to me, is an example of a missed opportunity by the mine to avoid the exceedances by neglecting or not seeing that opportunity.

Q. So that was something that ought to have been considered before commencing the longwall?

A. I believe so, yes.

THE CHAIRPERSON: Q. Mr Smith, were you aware that by 1 May the SSE was expressing that the methane levels at the tailgate were on the brink of unmanageable?

A. I was not.

Q. Would that have impacted in any way on the inspectorate's functions and duties in relation to the mine had you known that?

A. If I'd known the SSE had the view that managing the tailgate gas was approaching unmanageable, yes, it would have. It may have stimulated a suggestion that they stop mining until they figure out how to manage them.

THE CHAIRPERSON: Yes, Mr Trost.

- MR TROST: Q. Mr Smith, in your statement you considered that addressing those fairly discrete single issues was satisfactory for the inspectorate. Is that, albeit a very brief summary, correct?
- A. Yes. For the individual occurrences, yes.

- Q. Obviously this is largely with the benefit of hindsight, but in your view, would that have then wiped the slate clean, as it were, and satisfied the inspectorate that Anglo would, from that point on, comply with its obligation to keep the mine safe, as in keep the methane levels under 2.5 per cent?
- A. When you say "wiped the slate clean", no. The HPI history is there for I'll say for eternity, but as long as the database holds it. But with regard to that particular at that particular point in time, the unacceptable level of risk has been managed away and the

mine no longer has an unacceptable level of risk.

- Q. Is that a stated process or an adopted process from the inspectorate that where a particular exceedance has been dealt with, notwithstanding exceedances that have happened before, that is sufficient --
- A. No, it's not. That's from if I could take you to August sorry, July 2019, the visit to the mine by Inspector Brennan was in early July, and in the period prior to the period being covered by this inquiry, in June, May and April 2019, there had been a rash a suite of exceedances had been reported to the inspectorate, and those exceedances were responded to by Inspector Brennan on that visit. So it's not, "Wipe the slate clean, forget about it, everything's okay." It's, "What's the history? What's going on?"

I might add there that prior to April, I think, 2019, for the financial year, Grosvenor had up until that point in time made a significant reduction in the number of gas exceedances, and that performance was badly affected by the exceedances that occurred in the April/May/June period of that time. Consequently, Inspector Brennan's visit to the mine and the plan to change their behaviour and their activities and to reverse the ventilation and do the immediate short-term and longer-term actions that they identified in the IMT at that time.

 Q. Going back to the regulation, which is an obligation to keep the levels from even getting to 2.5 per cent, you are saying that is the obligation or that is the process that the inspectorate takes, that it looks at a mine and considers the number of exceedances - because that's a failure, isn't it, to keep under 2.5 per cent, if there is an exceedance?

- Q. Would it be the inspectorate's view, therefore, that where there are ongoing exceedances, there is a failure to comply with the regulation on an ongoing basis?
- A. Yes. there is.

It is, ves.

- Q. And would that flag that there might be a future inability for a mine to comply with that obligation, keep it under 2.5 per cent, notwithstanding that they had addressed a previous exceedance?
- A. That might flag it, yes, absolutely. You can see in

Α.

2019 that the inspectorate has responded to that, and even prior to that, with some of the other interventions that the inspectorate undertook between 2016 through to 2019.

- Q. So was it also concerning that it sometimes took Anglo several attempts to keep exceedances from reoccurring from what were largely similar causes?
- A. Depending on the cause of the exceedance, yes. If there is an immediate relatively simple fix for it and that kept occurring, that would be of concern. If the exceedance required more work to determine an appropriate resolution for it, then the fact that that might take a week or two weeks is understandable. So if you are going to reverse the ventilation, you can't do that today. You have to do the work.

- Q. But the obligation remains over that one or two weeks --
- A. To keep yes, absolutely. It never goes away. The obligation never leaves.

Q. That's obviously what the inspectorate is there for to enforce that obligation?

A. Yes.

- Q. So when that kept occurring and when exceedances occurred either as a result of the same sort of discrete, fairly basic mining practices, I think was your phrase that you used yesterday, or because they were investigating potential other factors that were at play, didn't that suggest to you that at least with longwall 104, by the time it got to March and April 2020, it was too often teetering on the edge of a methane exceedance?
- A. The exceedances through March and April were certainly indicative that the mine had to stay very focused on their management activities and the operation of the longwall to ensure they didn't get exceedances, that they had very little room to move, if you like.

Q. And if there is little room to move because there are these ongoing issues that we have identified in April and March 2020, and you have already acknowledged that there are a myriad of other factors that can also impact on the levels of methane within a mine - barometric issues, geological issues, those sorts of things - wasn't it of an even bigger concern that if Anglo wasn't able to necessarily manage these exceedances then, with all of that

knowledge from longwall 103, either because of simple discrete errors that caused exceedances or taking an approach such as reversing ventilation, if they weren't able to control exceedances in those circumstances, that if these other factors also came into play, there was an even bigger risk of an even bigger exceedance? I don't think I can reach that conclusion particularly.

- Q. Would you accept that where there are multiple reasons for methane levels to peak, even if it doesn't quite achieve exceedance, if they play out at the same time, it is far more likely that there will be an exceedance and, indeed, far more likely that it will reach the combustible level?
- A. No, I don't believe so, not given the controls used by the mine during production to manage the movements on the face, which are related which they use all the data, all the information that they are collecting in real time from the monitors in all the locations that Mr Holt took us through earlier today, that those algorithms and those settings are designed to prevent that occurring, if you like that a barometric low, for example, will occur when the shearer is releasing a significant amount of gas from the face itself.

 Q. But these real-time assessments and also, pre starting the longwall, the geological assessments and learnings from previous longwalls - those are already all taken into account, presumably to try to keep methane levels well below 2 per cent so that you can continue production?

A. Yes, I would expect that, yes.

- Q. But despite all of those systems being in place, exceedances continued to occur?
- A. They did.

- Q. You acknowledged to my learned friend Mr Holt earlier that there is a constant battle or balance between ventilation and drainage?
- A. Yes.

- 43 Q. That every longwall is different yes?
 - A. Yes.

- 46 Q. That there is a need to adapt to any HPI?
 - A. That's correct.

Q. That there are a tonne of variables involved in assessing an HPI?

A. Yes.

Q. You also acknowledged that the mine was clearly underestimating gas make in longwall 104 - yes?

A. Right.

Q. You acknowledged that the mine went through some fairly complex responses to the exceedances?

A. Yes.

- Q. We've already discussed that the obligation to keep methane levels under 2.5 per cent for the safety of workers remains; correct?
- A. That's right.

 Q. So in circumstances where this battle or balance of ventilation and drainage and the adaptation to the longwall and these responses to all of these factors weren't working, you just said to my learned friend Mr Crawshaw that you were very disappointed by what had happened in April 2020 - where these weren't working, and where their assessments and their studies had already underestimated gas make and where these variables considered did not stop HPIs, didn't that make you think that the risk of sending workers underground was unacceptable?

A. No, it did not.

- Q. Did it not concern you at that time that knowing all that you know and that Anglo had informed you of and the difficulties in controlling these HPIs didn't that ever make you think that perhaps, at least in hindsight, Anglo
- make you think that perhaps, at least in hindsight, Anglo couldn't meet its obligations under the regulation to keep methane under 2.5 per cent?
 - A. I hadn't formed that opinion, no.

- Q. In general terms, Mr Smith, where there are very difficult conditions at a longwall or a mine site in general, but where the regulations obviously still apply and that's for the purpose of keeping workers safe would you expect that a mine operator would be required to set even higher standards of monitoring, control measures, in response to those difficult conditions?
- A. I would expect them to appropriately risk assess their proposed activities and to identify suitable controls for

the risks that they identify, and if those suitable controls were developed to increase the level of control at the mine - and using a longwall as an example, for example, by changing the points that a detector affects the operation of the longwall and making it lower - then I would expect them to implement those.

- Q. Having implemented those sorts of measures, have you ever come across or could you ever foresee a point where because those measures aren't effective, it's not possible to comply with the regulations and that therefore the mine, or a specific longwall, even, can't operate with people underground?
- A. Could that happen, is your question?

- Q. Has it happened or could you foresee it happening?
- A. Hypothetically it could certainly happen.

- Q. In your view, or the inspectorate's view, it is the operator's job to shut down the mine either temporarily or permanently if it cannot comply with that obligation to keep methane levels below 2.5 per cent?
- A. If the operator is aware that they have no chance of keeping it below within the regulatory limits, then they would be obliged to.

Q. There was talk - and there is mention in your statement that stopping production can raise the risk of spontaneous combustion, of course?

30 A. It can.

 Q. But of course that doesn't put people's lives at risk if you have extracted the people?

A. That's right.

- Q. So it is the inspectorate's job to also make an assessment of the measures that the mine is taking and potentially shut down a mine if it can't comply with the regulation?
- A. If we form that opinion, yes, it is our role.

- Q. Just turning back to longwall 104, in hindsight and in light of these ongoing HPIs that continued to occur despite measures being put in place in hindsight, do you consider that Anglo could not comply with its obligations under the regulation?
- A. No, I don't.

1 That's all the questions I have. 2 MR TROST: 3 THE CHAIRPERSON: Mr O'Brien? 4 5 6 MR O'BRIEN: No, thank you. 7 THE CHAIRPERSON: Ms Holliday. 8 9 <EXAMINATION BY MS HOLLIDAY:</pre> 10 11 Mr Smith, if I can firstly take you 12 MS HOLLIDAY: Q. 13 back to three aspects of your evidence yesterday. first was questioning from Ms O'Gorman in relation to HPIs 14 numbers 14 to 20 and the fact that the inspectorate 15 16 received those form 5As on the same day, on 15 April 2020. You were asked whether yourself or anyone else, on or after 17 15 April, had reviewed those form 5As, and your answer was: 18 19 20 Not that I'm aware of, no. I didn't. 21 22 I take it from the answer that you gave that you viewed the question as one of whether or not anyone had collectively 23 reviewed those form 5As? 24 I believe I did. 25 Α. 26 Because the individual form 5As were reviewed, weren't 27 28 they, by the individual inspectors to which they were allocated for management? 29 Mine were, certainly. 30 Α. 31 And they were three of the exceedances? 32 Q. Α. Yes. 33 34 You have also now - and I'm not saying that you did at 35 the time, but Mr Brownett and Mr Brown have provided 36 37 statements for the purpose of the Board of Inquiry? Yes. 38 Α. 39 40 They detail in their respective statements that they reviewed the form 5As that they received in relation to 41 each of those relevant exceedances? 42 43 Α. Yes. 44 45 Indeed, in the first tranche of hearings, you gave 46 evidence - and this is just for the record - at

47

TRA.500.002.0001 at 0034 line 19 - that you expected the

individual inspectors to review the form 5As at the time that they were received from the mine?

A. That's correct.

- Q. And that's what occurred here?
- A. Yes.

- Q. In relation to collective review of those form 5As, you are aware that there are improvements to the process of the inspectorate reviewing not just form 5As but HPIs generally, more collectively?
- 12 A. Yes.

- Q. And you are aware that Mr Newman, or Chief Inspector Newman, gave a statutory declaration to the Board of Inquiry for the first tranche of hearings that details the improvements that are to be made?
- A. Yes.

 Q. I have used the words, future tense, "are to be made", but you are aware, aren't you, that stage one of those proposed changes has already been implemented?

A. They have.

Q. So that means that when a form 5A is received from a mine, where it is determined that the actions contained in the form 5A are adequate and there is no trend of repeated HPIs, a file note is now recorded in Lotus Notes by the nominated inspector; that's correct?

A. That's correct.

Q. If follow-up action is required, a file note in Lotus Notes will detail the actions that are required?

A. That's right.

Q. And then of course those actions are taken? A. Yes.

Q. Just prior to that evidence, you were asked by Ms O'Gorman whether having received those form 5As - so again those collective form 5As in relation to HPIs numbers 14 to 20 - the inspectorate contacted the mine or did anything else to prevent further HPIs on longwall 104. Now, in relation to any other action that was taken by the inspectorate following receipt of those form 5As on 15 April 2020, it is correct, isn't it, that in fact on that day there is an inspection taking place at the mine?

A. That's correct.

Q. And further, there has been some evidence given in relation to an email that was sent by the mine on 17 April 2020, but that email wasn't the only communication around that content, was it? There was a number of conversations before the email was sent and there was a number of follow-up conversations as well, wasn't there?

A. That's correct.

)

Q. In your evidence this morning to Ms O'Gorman, you spoke about the fact that Inspector Brennan is a thorough inspector in terms of following up with the mines, and indeed it is the case, isn't it, that on 21 and 22 April 2020 he, in conversations with the underground mine manager, discussed the HPIs generally and also mechanisms by which those exceedances could be reduced if not eliminated?

A. That's correct.

 Q. If I can take you now to another portion of the evidence to which you were taken yesterday by Ms O'Gorman, and it was in relation to the second workings and the notification to the inspectorate in relation to those second workings. The words that Ms O'Gorman used yesterday were whether or not the document - and she referred to it as a particularly large document, referring to the second workings risk assessment --

 Q. She asked firstly whether it was reviewed by the inspectorate before mining was commenced, and later she said it would have been provided to the inspectorate prior to commencement of longwall 104. You made the point that it was received in the first week of March, and the longwall started on 9 March. It's correct, isn't it, that the legislation - we might actually bring up, Mr Operator, the relevant portion of the regulation, which is section 320 of the regulation. If we can scroll down to section 320, firstly, the legislation provides at subsection (1) that:

Before second workings are started ... the site senior executive for the mine must give an inspector notice about the proposed second workings.

1 A. That's correct.

- Q. The provision at the moment doesn't stipulate when that notice has to be given?
 - A. No, it doesn't.

- Q. Or indeed even what the contents of that notice need to be?
- 9 A. No.

11 Q. In relation to this particular case, the notice was 12 given three days prior - that's correct, isn't it? 13 A. That's correct.

- Q. And in terms of what the email contained I'll take you to, Mr Operator, RSH.002.040.0001. That's a copy, is it not, if we scroll down the page a little bit, of an email from the underground mine manager to Mr Brown of the inspectorate?
- A. That's correct.

Q. It is providing notice of second workings. Mr Operator, if we can just scroll up so we can see the commencement of the email. It is headed "Notice to Commence Second Workings", is the subject, and attaching documents to give official notice as per section 320? A. Yes, it is.

- Q. You can see there that it is sent, of course, at 11.30am on 6 March?
- A. Yes, it is.

- Q. Longwall production started on the Monday, 9 March. It contains as attachments the "Notice to Commence Second Working letter" and then the relevant documents the "Risk Assessment" and the "Standard Operating Procedure"; that's correct? In relation to the letter itself that accompanied that email, and it is that first dot point there, the "Notice to Commence Second Working letter", Mr Operator, if we can go to RSH.002.040.0168 I will just read it out. It should be there. I will have it located. It is the letter that notifies of the intention to commence second workings, and it refers to the fact that section 317 of the regulation and section 318 of the regulation have been complied with.
- A. Yes.

1 2	Q.	And that - and I quote:
2 3 4 5 6 7		the risk assessment has addressed [all] the hazards adequately and that there was no significant change as defined in Section 320 that impacts the mining method
8		
9 10	So th	hat's the notice that is given to the inspectorate? Yes.
11		
12	Q.	If we can go back to the regulation again, that at the
13	mome	nt complies with the regulation, because it's notice
14	that	is given about proposed second workings?
15	Α.	That's correct.
16		
17		So at the moment it doesn't require any independent
18		d party technical specialists to review the second
19		ings document before it's submitted to the
20	•	ectorate; that's correct?
21	Α.	That's correct.
22	0	
23	Q.	Indeed, that may happen, but in terms of it being
24	-	ired under the legislation, that's not necessary?
25	Α.	That's right, yes.
26	0	Co it sould be that a mine has its sum technical
27	Q.	So it could be that a mine has its own technical
28	•	ialists Yes.
29 30	Α.	ies.
31	Q.	undertake the necessary work to complete the risk
32	-	ssment, but there is no true independent third party
33		ing at those documents to assess whether or not the
34		is adequate?
35	A.	That's right.
36	, , ,	That o'r igher
37	Q.	When you look at section 317 of the regulations and
38		are looking at the types of matters that need to be
39	-	uded in a risk assessment - and they are set out there
40		aragraph (2) - they are clearly highly technical
41	-	ers; you would agree?
42	Α.	They are.
43		•
44	Q.	Where in many, if not all, cases, additional
45	subs	pecialised expertise would be required?
46	Α.	It would.
47		

- 1 That would include such people as a strata control engineer, by way of one example? 2 Yes. 3 Α. 4 If you go down to section 318, Mr Operator, it sets 5 6 out what must be included in the standard operating
- procedure. Again, the procedure must provide for 7 establishing, under subsection (5), a number of highly 8 technical fields? 9
- Yes. 10 Α.

13

14

15 16

17

18 19

- Are you aware that a recommendation is to be made such Q. that the following can be given effect to, and that is that the mine must ensure that a full strata engineering and separate gas and ventilation management review is conducted by competent independent third party strata control engineer and gas management engineers, that that has to be undertaken of the second workings risk assessment and the standard operating procedure?
- Α. I have recently become aware, yes.

20 21 22

23

24

25

- Q. And that that independently reviewed second workings risk assessment and SOP then have to be submitted to the regulator six months prior to the second workings commencing?
- Α. Yes, I've been made aware of that recently as well.

26 27 28

29

That recommendation, if enacted, would ensure that there is sufficient time of notice given to the regulator? That's right. Α.

30 31 32

33 34

- It would also ensure that there has been an independent assessment of those risk assessment and SOP documents?
 - It would. Α.

35 36

- By suitably qualified experts? 37 Q. 38
 - That's right. Α.

39 40

41

42

43 44

You have been asked many questions over the past two days, and Mr Holt was asking you effectively about a chronology, from the start of longwall 103 through to longwall 104, of interaction between the mine and inspectorate in relation to gas management. Yes. Α.

45

46 47

Q. Now, of course, that chronology doesn't take into

1 account the myriad of other interactions that the inspectorate was having with the mine about other issues. 2 This Board of Inquiry is focusing only on gas exceedances, 3 and that's the reason why the chronology only includes 4 matters relevant to that; do you accept that? 5 6 I do. Α. 7 At the very start of the relevant HPIs to the terms of 8 reference, there was engagement by the inspectorate at the 9 mine in the form of an inspection by Mr Brennan? 10 That's correct. Α. 11 12 13 Mr Holt has taken you through that mine record entry 14 which sets out what Mr Brennan and therefore the inspectorate was informed in relation to steps that the 15 16 mine was putting into place, both short term and long term, in relation to managing gas exceedances at Grosvenor? 17 That's correct. Α. 18 19 20 Indeed, upon request, the mine provided to the Q. inspectorate some IMT minutes of 4 July 2019? 21 22 Α. That's correct. 23 Those minutes set out the plan of medium- and 24 long-term strategies for addressing gas exceedances? 25 26 Α. They do. 27 28 Q. You also knew that there was a short-term strategy that was proposed, and it was actually suggested by 29 Mr Brennan, to put ventilation on return? 30 That's correct. 31 Α. 32 33

That in fact occurred on 16 July 2019? Q.

34

15th. Α.

35 36

15 July, that's right, one day before the underground mine manager had indicated that it would occur, on 16 July 2019?

39 40

41

42

37

38

He had notified that to the inspectorate on an email of 11 July 2019? Α. That's right.

43 44 45

46

47

Mr Holt didn't bring your attention to some other documents, but they show, don't they, that there were other steps being put in place by the mine, not just the

Α.

That's correct.

ventilation being put in reverse, and we might bring one of those up now. It is AAMC.001.009.0273. You would recognise that as the form 1A in relation to HPI number 3 on 23 July 2019? A. Yes.

Q. If I can take you to the second page of that, you can see there the third dot point, that the longwall was producing in uni-di to reduce the impact of gas production when the shearer was cutting towards the tailgate. Indeed, that was one of the suggestions Mr Brennan when he met with the mine in July --

A. That's correct.

That's correct.

Α.

Q. -- at the beginning of July 2019, and further it is one of the recommendations or suggestions or proposals that you put forward in your statement at paragraph 11 as to what a mine can do when it needs to constrain production because it knows that there are going to be issues in relation to gas?

 Q. Mr Operator, can we go to RSH.002.116.0001 and go to the second page of that document. That's an incident notification form, or Lotus Notes, as it has been called in the Board of Inquiry. It relates to that same exceedance, HPI number 3. You can see, if we can focus in on the top-left section under "Instructions or advice given to Mine/Operation", this part of Lotus Notes can be used by an inspector, can't it, to manually enter details of conversations that have been had with the mine?

A. That's correct.

Q. And indeed that's exactly what happened here - that it detailed a conversation that had been had by the inspector with the underground mine manager, Mr Niehaus?

A. Yes.

Q. It details that, again, there was a discussion about goaf gas drainage, that the barometer was on low, that there was then probing and asking about the gas reservoir in the lower seams, and the underground mine manager provided information in relation to what the mine was doing to further investigate matters in relation to where methane was coming from to contribute to the gas make?

A. That's correct.

Q. The last two sentences there, that the inspector asked if the uni-di had made any improvement, and the response was yes, and it had reduced the frequency of exceedances?

A. Yes.

Q. That was 23 July 2019. Mr Holt then took you to the MRE of the safety reset meeting of 6 August 2019. A. Yes.

Q. Mr Brown used that safety reset meeting as an opportunity, whilst at the mine, to get an update of the gas drainage activities that the mine was implementing. A. He did.

- Q. The MRE notes that the inspector was satisfied that the plans were progressing to improve the gas drainage system.
- A. It does.

Q. There was a discussion of what you detail at paragraph 9 of your statement of that fine balance that's necessary between reducing or eliminating methane exceedances and not creating another hazard of spontaneous combustion?

A. There was, that's right.

Q. I suggest to you that when you have reread that MRE, it's clear, isn't it, that the inspector queried and questioned and probed the mine in relation to issues to do with its gas drainage activities?

A. It is.

 Q. Mr Holt also took you to the form 5A in relation to the 11th exceedance, and you informed Mr Holt that the contents of that form 5A demonstrated that there was action being taken in alignment with the medium- and long-term strategies that were set out in the IMT minutes?

A. That's right.

 Q. There was then another inspection at the mine, on 15 October 2019, and again you have been taken through that MRE. The inspectorate was informed that the mine would proactively manage the risks?

A. We were.

Q. There were other inspections at the mine as well. As I commenced in terms of questioning of you that we're

- focusing only on gas exceedances here, or management of 1 methane, but the inspectorate also went to the mine on 2 21 January 2020, 13 February 2020 and 19 February 2020, 3 didn't it? 4 Yes. Α. 5 6 And then longwall 104 started in March, on 9 March? 7 Q. That's right. 8 Α. 9 Then on 19 March, so only 10 days later, Mr Brownett 10 received a briefing during underground inspection on the 11 event that led to the high methane readings recorded in the 12 13 tailgate? That's correct. 14 Α. 15 16 You have been taken to that MRE as well. wasn't just the inspection at the mine on that day, was it? 17 Mr Brownett - it was quite late at night - then had 18 19 a follow-up conversation with the mine? Α. Yes. 20 21 22 Q. Inquiring in relation to and ensuring that actions were being put in place as had been proposed during the 23 inspection on 19 March 2020? 24 Α. Yes. 25 26 Then you and two other inspectors had a conversation 27 with the underground mine manager the next day, 20 March 28 2020? 29 Α. That's correct. 30 31 That conversation included a focus on where the mine 32 was up to with restoring its goaf well capacity? 33 34 Α. Yes. 35 The cleaning of filters and the additional goaf sled? 36 Q. 37 Α. Yes. 38 You in fact had the mine plan brought into the meeting 39 so that that could be discussed? 40 Α. Yes. 41 42 43 Q. And so that the explanation could be considered to be
- adequate by reference to the actual mine plan? 44 Yes. Α. 46
- 45

There was then the issue of the directive in relation 47 Q.

- 1 to the 243A sensor on 9 April 2020? 2
 - That's right. Α.

5 6

- Q. I won't go through it now with you, but there was a large amount of correspondence and interaction with the mine leading up to and post that directive?
- There was. 7 Α.

8 9

- Q. You set that out in your statement from paragraphs 176 to 187?
- Yes. Α. 11

12

10

- Then on 15 April 2020 two inspectors were at the mine? 13 Q. 14
 - Α. That's right.

15 16

17

- Q. And questions were asked in relation to the 400 metre sensor?
- Α. Yes. 18

19

- Q. There was also an inspection of the longwall? 20
 - Α. Yes.

21 22 23

24

25

26

27

28

31

32

33

34

35

36 37

38

40 41

42

- Then on 21 April 2020 we've already detailed this -Mr Brennan had a number of conversations on both that day and 22 April 2020 in relation to the HPIs generally but also mechanisms which the mine should employ to reduce those exceedances?
- He did. Α.

29 30

- You were asked a question by Mr Martin this morning that it is regarded as acceptable - as long as the mine has a plan to address the problem, it is acceptable to keep mining until that is implemented, in other words, that there is an HPI, and as long as there is a plan in place, that it is acceptable to keep mining. Now, I take it that your answer to that question was in light of the questions that were being asked by Mr Holt and it was referencing those HPIs in early July 2019?
- 39
- Because each case has to be considered individually with its own specific nuances, doesn't it?
- 43 Α. It does.

Α.

44

There would well and truly be cases, when an HPI 45 46 occurs, that a directive is taken to suspend operations, and indeed that happened only a week or so ago? 47

Yes, that was my understanding.

1	A. That's right.
2 3 4 5 6 7 8 9	Q. Even if the mine, that particular mine, had told you, "Don't worry, we've got a plan in place", that would not have satisfied the inspectorate, and they took that action because of the fact that there had been demonstrated an unacceptable level of risk? A. That's right.
10 11 12 13	Q. But it is your evidence here that an unacceptable level of risk was not demonstrated post the HPIs being reported to the inspectorate? A. That's right.
14 15 16 17	THE CHAIRPERSON: Mr Smith, you couldn't have given better evidence yourself, I must say. Carry on, please, Ms Holliday.
18 19 20 21 22 23 24	MS HOLLIDAY: Q. And further that in relation to the functions of the inspectorate at section 128 of the Act, they, and each one of them, were discharged by the inspectorate? A. That's right.
25 26 27 28	Q. In relation to a question that Mr Crawshaw asked you, he asked you about whether, as of March 2020, you were aware of LFI reports? A. Yes.
29 30 31 32 33 34 35	Q. And you said that you weren't. It is the case, though, isn't it, that you just didn't know them by that name? You were asked this question in the first tranche of the proceedings, and you knew them as the name of a 201 report or an investigation report or an ICAM report? A. Yes.
36 37 38 39 40	Q. So you did know of their existence; you just didn't know that that's the acronym that the mine used? A. That's right.
41 42	MS HOLLIDAY: I have no other questions, thank you.
43 44	<examination by="" ms="" o'gorman:<="" td=""></examination>
45 46 47	MS O'GORMAN: Q. Mr Smith, during the course of questioning by Mr Crawshaw, you were referred to a document which was described as the risk assessment for the

- 1 longwall 104 goaf drainage? That's correct. 2 3 4 Ω. That was the document that was put up on the screen when he was asking you questions. You could see it was 5 dated 15 January 2020? 6 That's correct. 7 8 9
 - You will recall that at the commencement of that Ω. document, it was made clear that the risk assessment had been done with respect to potential issues or risks that may result from the proposed goaf drainage plan for longwall 104?

Α. Yes.

14 15 16

17

18 19

20

21 22

10

11

12 13

- You are aware that the proposed goaf drainage plan for longwall 104 included considerably more goaf drainage than had been used in longwall 103?
- I'm not sure that I I couldn't say that I was aware of numbers, if you like, of proposed goaf holes or other goaf holes, inseam drainage or surface to seam drainage. I wouldn't be comfortable to say that I knew exactly that there was a significant difference between the two.

23 24 25

26

27

In fact, I think that you said to Mr Crawshaw that you couldn't recall having seen that particular document that was shown to you, the risk assessment document?

28

That's correct. Α.

29 30

Q. And you are not familiar with the contents of it even as you sit there today?

That's correct.

32 33 34

35

36 37

31

You were taken to one of the pages on the document, which was marked in some handwriting to the effect that, "Risk of spontaneous combustion due to increased gas drainage has not been assessed in this risk assessment"? That's correct. Α.

38 39 40

41

42 43

You could see the handwritten notification there that there was a task to be actioned by someone at the mine to do that risk assessment with a due date given, being 31 May 2020?

That's correct. Α.

44 45 46

47

If you had known either before or shortly after longwall 104 commenced that there had not been an

- assessment of the spontaneous combustion risk posed by the 1 gas drainage that had been planned for longwall 104, would 2 that have caused you or the inspectorate concern? 3 4
 - It would have caused me concern, yes.

- And might it have influenced how you responded to the Q. various HPIs that occurred on that longwall?
- It may well have.

8 9 10

11

12 13

14

15 16

17

18 19

7

- As I understood the gist of your evidence in respect of questioning from various parties this afternoon, the fact of the repeated 14 methane exceedance HPIs at Grosvenor in March and April 2020 was essentially tolerable to the inspectorate. Do I understand that to be your position?
- The occurrence of the exceedances is not tolerable. The action - the requirement of the mine, or the SSE and the UMM at the mine, to take effective action to eliminate the causes is what is required. So in terms of toleration, no, an HPI is not tolerable.

20 21 22

23

24

25

- We might be at cross-purposes. I'm not talking about any one of the individual 14 HPIs. I did hear you say in evidence earlier that each individual HPI is, by its nature, unacceptable.
- Yes. Α.

26 27 28

29

30 31

32

33 34

35

36 37

38

39

40

What I'm talking about is my understanding from the questions that were asked of you this afternoon. understanding was that essentially by 5 May 2020, the situation at Grosvenor, the fact that there had been 14 HPIs in March and April 2020, was a situation which was tolerable to the inspectorate?

It was a situation that, bearing in mind that an inspection by myself was planned at the mine, I would be it would be of great interest to me how the mine was intending to prevent future occurrences, particularly with regard to the canopy sensor and what they intended to do in that area of the mine. But there was no - to my mind, there's no imperative for the inspectorate to take action to require the mine to stop production.

41 42 43

44

45 46

- If I can just ask you this by way of a final question: if that situation were repeated again in the future, would it still be the inspectorate's position that there would be no imperative to take immediate action?
- Α. The imperative to take immediate action is dependent

upon the circumstances at that time, so in terms of - as I think I said in my answer to one of the questions today or yesterday, had I been aware of the other exceedances on the canopy sensor, it would have initiated firstly direct contact with the mine to understand - to have them explain why they thought it necessary not to let us know about those exceedances in the first instance; and, secondly, most likely, stimulated a visit to the mine to find out exactly what they had found out about those particular exceedances and any other matters.

Q. Sorry, I don't want to cut you off.

 A. That's okay.

 Q. I guess what I'm asking you is this: as of 5 May 2020, the inspectorate was content, knowing what had unfolded in the months before, to wait to conduct a planned inspection at the mine on either 13 or 14 May 2020?

A. I was content to wait until I could get to the mine, yes.

Q. My question is simply this: if you had your time over again, or if that situation was to confront you again, would you be content to wait for a planned inspection some days hence, or would action be taken earlier?

A. It may bring forward the action - the intent to visit the mine and conduct an inspection. To say to you absolutely it would have - I couldn't say absolutely it would have, but there is a probability that it would have, particularly with the additional exceedances disclosed unknowingly to the department, if you like.

MS O'GORMAN: Those are all of the questions that I have, thank you, Mr Martin.

THE CHAIRPERSON: Thank you, Mr Clough.

 MR CLOUGH: Q. Mr Smith, I only have a couple of questions. I want to try to get a little bit of context in general terms around paragraph 10 of your statement, which talks about the balance between keeping production going versus the risks associated with stopping production when you have potentially another hazard that is happening concurrently.

A. Yes.

Q. That's my words, but that's more or less what you

1 said; is that correct? That's correct. 2 Α. 3 4 Q. Just by way of understanding the operation of longwalls, and we both understand the operations of 5 6 longwalls, there are regular periods when you do stop a longwall producing as part of normal operations; do you 7 agree with that? 8 Α. That is correct. 9 10 Some of those stoppages can be in the order of 11 24 hours or more if it is a major component replacement 12 13 or --14 Α. Correct. 15 16 So it's not to say you can't stop a longwall 17 producing? No, it's not. Α. 18 19 20 Q. There are also instances where continuing to produce can exacerbate an existing hazard? 21 22 Α. Exactly. 23 Q. One that comes to mind is going through broken ground? 24 25 Α. 26 Having to stop to PUR or consolidate? 27 Q. 28 Α. 29 I'm just making sure we're on the same page here, 30 31 because I have a concern that that paragraph could be interpreted that you just keep going, irrespective of 32 a pending hazard. Was that your intention? 33 No, not at all. I think the example that counsel 34 raised earlier on, which is that the inspectorate is made 35 aware of an event at a mine, and regardless of the 36 37 circumstances of the production equipment or production capacity, the overwhelming need is to prevent people from 38 39 returning to the mine until the event that has happened that has caused the withdrawal and the ceasing of 40 production is clearly understood and brought back into 41 42 control.

43 44

45 46

47

If I may - for example, if one of the detectors on the longwall face saw in excess of its setting at which it is supposed to trip the power, there is an exceedance, but there is a failure of a significant control on the face,

and that, to me, changes the whole nature of that
particular HPI. To my way of assessing that event, it
would be, in that case, if you can't rely on your controls
to do the job that they are required to do, you need to
stop until you can assure us that you can, that they will
do the job that they are supposed to do.

Q. If you need to stop the face for a considerable period of time to address a hazard - and one of the risks you mentioned was spontaneous combustion, I believe?

A. Yes.

- Q. -- there are measures you can take to minimise that risk during an extended stoppage?
 - A. There are indeed.

- Q. Would you like to share what some of those measures are?
 - A. For example, in the current event, inerting the goaf to ensure that you are eliminating the oxygen from the goaf area. It is an option that is available to the mine if the stoppage would appear to be one that may be extended. That's always available to the mine.

- Q. And measures to perhaps limit oxygen getting into the goaf other measures?
- A. In terms of they could potentially consider reducing the ventilation pressures across the face. It depends on they might complete some stoppings that they haven't actually completed at this time.

- Q. Yes, okay.
- A. There are a number of factors, but they will all be dependent upon the circumstances that the longwall face is in at that time.

- Q. Thanks for that. I just have one last question. It just has arisen listening to this discussion about the advice from Inspector Brennan in terms of putting the perimeter roadway in longwall 103 on return and cutting in uni-di.
- 42 A. Yes.

- Q. Are you aware whether those controls were implemented on longwall 104?
- A. On longwall 104 the perimeter when longwall 104 commenced, the mine had sealed the perimeter road around

the back of longwalls 103, 102 and 101, so that was now a sealed area. The ventilation for longwall 104 was essentially - I was going to say standard U ventilation, other than the fact that they had an intake shaft at the back that they proposed to use to provide cooler ventilation to the face by bringing the air through coolers, around the back of the goaf and into the face to join the standard U ventilation.

In terms of uni-di, I wasn't aware one way or the other whether they were proposing to bi-di or uni-di particularly on the face. Uni-di has the advantage of you only cut half of the coal on a pass, so you only release the methane generally from that half that you cut. If you operate in bi-di, where you cut all of the seam in one go and release all of the gas, I would guess that if you operated slowly enough you could match the gas output of uni-di, if that was your target.

So there is a way of operating in bi-di that releases roughly the same amount of gas, provided you know how much you have got in each section that you intend to cut.

 It raises other issues in terms of strata control and movement on the face. Uni-di - the AFC stays back and it closes the walkway up for the coal mine workers as they retreat back to the maingate to take the second cut, but it does have the advantage in allowing the chocks to come across and close the roof up rapidly.

MR CLOUGH: I have no more questions, thank you.

THE CHAIRPERSON: Thank you. Mr Smith, thank you for your attendance. You are excused.

<THE WITNESS WITHDREW

 THE CHAIRPERSON: Ladies and gentlemen - and I include those in the public gallery and those who may be watching on the stream - when the inquiry resumes tomorrow at 10am it will be in private hearing.

Mr Adam Maggs, deputy or ERZ controller, who was on shift and present at the longwall maingate at the time of the serious accident spoke to Anglo personnel very shortly after the events on 6 May. This interaction was videorecorded.

The purpose of the private hearing is to play the video to all parties to the inquiry and/or their legal representatives. The description of the events given in the video is helpful to the Inquiry. However, it also contains poignant and emotional descriptions. Mr Maggs and others went to the assistance of the injured workers immediately at the time of the accident.

At the request of Mr Maggs, this video will not be made public. Mr Maggs has also been interviewed by the inspectorate. That interview was audio recorded and a transcript of the interview has been made and passages have been redacted in accordance with Mr Maggs' request. The redacted transcript will be made available to the public.

I expect that the private hearing will finish before 10.30 in the morning.

Nothing else before we adjourn? Yes, thank you. 10 o'clock.

AT 4.15PM THE INQUIRY WAS ADJOURNED TO THURSDAY, 11 MARCH 2021 AT 10AM

#	1385:27, 1400:34,	1395:38, 1395:47,	2.15 [1] - 1466:46	1500:24, 1500:29,
#	1404:38, 1407:45,	1396:9, 1396:19,	2.24% [1] - 1392:3	1501:1, 1501:13,
	1411:6, 1412:36,	1410:9, 1412:27,	2.33 [1] - 1395:39	1501:23, 1501:25,
#115 [1] - 1434:1	1441:15, 1441:22,	1444:22, 1445:3,	2.5 [17] - 1391:24,	1502:26, 1503:6,
	1441:43, 1443:27,	1445:4, 1445:37,	1393:36, 1396:20,	1503:43, 1504:13,
0	1443:43, 1444:19,	1449:28, 1449:34,	1409:34, 1417:11,	1504:30, 1504:32,
_	1444:20, 1448:12,	1449:35, 1449:45,	1429:4, 1429:17,	1505:16, 1505:18
	1452:38, 1454:38,	1450:17, 1450:22,	1482:23, 1483:31,	2021 [2] - 1384:41,
0.5 [1] - 1425:28	1454:46, 1455:41,	1451:12	1483:36, 1485:42,	1509:25
0033 [1] - 1458:12	1464:16, 1466:10,	14th [5] - 1397:15,	1486:30, 1486:34,	20th [4] - 1385:35,
0034 [1] - 1491:47	1466:17, 1466:20,	1416:34, 1429:3,	1486:45, 1489:15,	1387:21, 1387:31,
0046 [1] - 1458:27	1470:29, 1470:44,	1480:33, 1480:38	1489:36, 1490:22	1387:34
0068 [1] - 1459:4	1471:33, 1471:38,	15 [11] - 1384:42, 1406:39,	2.51 [1] - 1409:23	21 [16] - 1385:12, 1385:21,
01 [1] - 1384:18	1473:5, 1473:6,	1455:22, 1475:21,	2.52 [2] - 1429:4	1385:42, 1388:18,
018.0002 [1] - 1445:26	1474:17, 1474:29,	1491:16, 1491:18,	2.53 [1] - 1395:47	1388:35, 1388:37,
0346 [1] - 1435:37	1474:41, 1475:26,	1492:46, 1497:36,	2.55 [1] - 1429:4	1393:34, 1395:9,
0378 [1] - 1439:19	1475:37, 1476:19,	1499:41, 1501:13,	2.59 [1] - 1396:21	1395:23, 1437:42,
0390 [1] - 1455:39	1477:2, 1477:7,	1503:6	2.67 [2] - 1396:10, 1396:21	1451:34, 1459:37,
0678 [1] - 1459:46	1477:17, 1477:25,	15,000 [1] - 1425:13	2.79 [1] - 1431:29	1480:18, 1493:14,
0953 [1] - 1471:4	1477:29, 1477:32,	150 [1] - 1416:21		1500:3, 1501:23
	1477:42, 1478:2,	1500 [1] - 1425:12	2.8 [1] - 1417:10	21st [1] - 1388:26
1	1478:13, 1478:19,	15th [3] - 1416:35,	2.9 [2] - 1395:39, 1396:22	22 [9] - 1387:9, 1388:29,
<u> </u>	1479:3, 1482:42,	1436:40, 1497:34	2.92 [1] - 1396:22	1396:9, 1396:19,
4. 4005.04 445.1-5	1484:6, 1484:22,	16 [2] - 1497:33, 1497:37	20 [6] - 1387:6, 1387:9,	1447:14, 1459:37,
1 [4] - 1395:31, 1431:2,	1485:1, 1487:31,	17 [5] - 1384:36, 1403:29,	1460:44, 1491:15,	1480:19, 1493:14,
1485:17, 1493:41	1489:7, 1490:42,	1438:39, 1438:40,	1492:42, 1500:28	1501:25
1.8 [1] - 1441:10	1492:43, 1493:34,	1493:4	201 [1] - 1502:34	22nd [4] - 1385:35,
10 [9] - 1384:41, 1389:23,	1496:43, 1500:7,	17,000 [8] - 1421:46,	2016 [1] - 1487:3	1387:36, 1387:39,
1391:18, 1393:36,	1503:1, 1503:13,	1422:1, 1432:20,	2018 [1] - 1412:38	1387:46
1468:14, 1500:10,	1503:17, 1503:47,	1432:42, 1432:45,	2019 [36] - 1412:39,	23 [12] - 1385:27, 1385:46,
1505:40, 1509:22	1504:2, 1507:45,	1433:16, 1443:14,	1414:2, 1414:5,	1387:11, 1388:9,
10,000 [1] - 1433:6	1507:46, 1508:2	1443:20	1414:41, 1414:44,	1388:32, 1388:36,
10.02 [1] - 1396:23	109 _[2] - 1474:40, 1475:19		1417:33, 1426:16,	1395:23, 1447:46,
10.30 [1] - 1509:19	10am [3] - 1384:41,	176 [1] - 1501:9 1760 [1] - 1419:5	1429:43, 1437:42,	1458:15, 1459:38,
100 [2] - 1405:44, 1406:43	1385:5, 1508:40		1463:5, 1464:3, 1464:6,	1498:4, 1499:6
101 [6] - 1407:44, 1413:2,	10AM [1] - 1509:25	18 [3] - 1385:27, 1385:46,	1464:23, 1465:47,	23rd [3] - 1385:36,
1413:10, 1434:24,	11 [9] - 1395:21, 1416:34,	1458:14	1466:26, 1467:12,	1387:36, 1388:30
1473:9, 1508:1	1424:42, 1426:21,	180 [1] - 1429:5	1469:2, 1469:6, 1473:8,	24 [4] - 1417:1, 1437:42,
102 [6] - 1407:44, 1413:2,	1435:28, 1468:14,	187 [1] - 1501:10	1475:21, 1477:10,	1438:14, 1506:12
1413:10, 1413:21,	1497:42, 1498:17,	18th [1] - 1385:34	1486:8, 1486:11,	243A [11] - 1390:20,
1473:9, 1508:1	1509:25	19 [9] - 1386:27, 1387:4,	1486:18, 1487:1,	1416:15, 1416:23,
103 [52] - 1407:44, 1411:6,	11(b [1] - 1468:32	1440:10, 1453:5,	1487:3, 1497:21,	1445:14, 1445:35,
1412:35, 1412:36,	11.30am [1] - 1494:30	1453:6, 1491:47,	1497:33, 1497:38,	1449:46, 1472:29,
1412:38, 1413:12,	115 [6] - 1392:2, 1392:44,	1500:3, 1500:10,	1497:42, 1498:4,	1479:21, 1479:47,
1413:19, 1413:24,	1420:3, 1420:18,	1500:24	1498:15, 1499:6,	1481:16, 1501:1
1413:32, 1414:2,	1421:7, 1434:17	1999 [1] - 1384:15	1499:7, 1499:41,	25 [5] - 1432:31, 1435:38,
1415:23, 1415:29,	11th [5] - 1426:10,	19th [2] - 1385:35,	1501:38	1442:14, 1455:40,
1415:32, 1415:47,	1427:24, 1429:2,	1440:17	202 [1] - 1396:32	1455:43
1425:23, 1426:2,	1430:1, 1499:34	1A [7] - 1385:15, 1398:31,	2020 [56] - 1384:18,	2nd [2] - 1426:5, 1429:46
1436:21, 1441:25,	12 [4] - 1395:21, 1447:18,	1399:47, 1410:28,	1385:12, 1385:21,	
1441:44, 1442:5,	1447:26, 1483:25	1436:7, 1454:39, 1498:3	1385:27, 1385:42,	3
1443:40, 1444:21,	12-minute [1] - 1461:31	1As [9] - 1418:29,	1393:11, 1393:46,	<u> </u>
1445:24, 1448:12,	128 [3] - 1394:19, 1394:20,	1422:25, 1430:37,	1395:1, 1395:2,	
1453:1, 1454:45,	1502:20	1445:45, 1451:21,	1441:16, 1447:14,	3 [15] - 1389:38, 1391:34,
1466:19, 1466:23,	13 [4] - 1404:35, 1417:10,	1452:41, 1454:46,	1447:47, 1451:34,	1392:34, 1395:31,
1466:28, 1473:9,	1500:3, 1505:18	1463:21, 1484:30	1453:5, 1453:7, 1458:9,	1396:22, 1409:9,
1474:29, 1476:41,	13,000 [2] - 1425:9,		1458:15, 1463:5,	1409:10, 1416:34,
1477:6, 1477:11,	1432:42	2	1464:1, 1464:23,	1417:11, 1458:9,
•	1702.72		1466:2, 1466:33,	1460:11, 1460:15,
1477:17, 1477:21,	13th [2] - 1307·15		1467:12, 1467:44,	
1477:17, 1477:21, 1477:22, 1477:27,	13th [2] - 1397:15,	2 [14] - 1389:37 1391:34		1498:3, 1498:27
	1480:38	2 _[14] - 1389:37, 1391:34, 1392:34, 1395:31.	1469:2, 1469:33,	3-4 [5] - 1416:10, 1444:29,
1477:22, 1477:27,	1480:38 14 [10] - 1393:29, 1412:16,	1392:34, 1395:31,	1469:2, 1469:33, 1470:22, 1474:12,	
1477:22, 1477:27, 1477:32, 1477:35,	1480:38 14 [10] - 1393:29, 1412:16, 1479:2, 1479:9,	1392:34, 1395:31, 1416:34, 1417:32,	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40,	3-4 [5] - 1416:10, 1444:29,
1477:22, 1477:27, 1477:32, 1477:35, 1477:46, 1477:47,	1480:38 14 _[10] - 1393:29, 1412:16, 1479:2, 1479:9, 1491:15, 1492:42,	1392:34, 1395:31, 1416:34, 1417:32, 1417:33, 1417:44,	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40, 1478:41, 1479:21,	3-4 [5] - 1416:10, 1444:29, 1445:19, 1445:41,
1477:22, 1477:27, 1477:32, 1477:35, 1477:46, 1477:47, 1478:2, 1478:24,	1480:38 14 _[10] - 1393:29, 1412:16, 1479:2, 1479:9, 1491:15, 1492:42, 1504:12, 1504:23,	1392:34, 1395:31, 1416:34, 1417:32, 1417:33, 1417:44, 1432:29, 1441:9,	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40, 1478:41, 1479:21, 1487:32, 1487:42,	3-4 [5] - 1416:10, 1444:29, 1445:19, 1445:41, 1448:2 3-second [1] - 1460:14
1477:22, 1477:27, 1477:32, 1477:35, 1477:46, 1477:47, 1478:2, 1478:24, 1482:41, 1484:11,	1480:38 14 [10] - 1393:29, 1412:16, 1479:2, 1479:9, 1491:15, 1492:42, 1504:12, 1504:23, 1504:32, 1505:18	1392:34, 1395:31, 1416:34, 1417:32, 1417:33, 1417:44, 1432:29, 1441:9, 1466:26, 1482:29,	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40, 1478:41, 1479:21, 1487:32, 1487:42, 1489:24, 1491:16,	3-4 [5] - 1416:10, 1444:29, 1445:19, 1445:41, 1448:2 3-second [1] - 1460:14 3.17 [1] - 1396:10
1477:22, 1477:27, 1477:32, 1477:35, 1477:46, 1477:47, 1478:2, 1478:24, 1482:41, 1484:11, 1484:21, 1488:1,	1480:38 14 [10] - 1393:29, 1412:16, 1479:2, 1479:9, 1491:15, 1492:42, 1504:12, 1504:23, 1504:32, 1505:18 149 [20] - 1388:42,	1392:34, 1395:31, 1416:34, 1417:32, 1417:33, 1417:44, 1432:29, 1441:9, 1466:26, 1482:29, 1488:31, 1495:40	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40, 1478:41, 1479:21, 1487:32, 1487:42, 1489:24, 1491:16, 1492:46, 1493:5,	3-4 [5] - 1416:10, 1444:29, 1445:19, 1445:41, 1448:2 3-second [1] - 1460:14 3.17 [1] - 1396:10 3.39 [1] - 1417:2
1477:22, 1477:27, 1477:32, 1477:35, 1477:46, 1477:47, 1478:2, 1478:24, 1482:41, 1484:11, 1484:21, 1488:1, 1496:42, 1503:18,	1480:38 14 [10] - 1393:29, 1412:16, 1479:2, 1479:9, 1491:15, 1492:42, 1504:12, 1504:23, 1504:32, 1505:18	1392:34, 1395:31, 1416:34, 1417:32, 1417:33, 1417:44, 1432:29, 1441:9, 1466:26, 1482:29,	1469:2, 1469:33, 1470:22, 1474:12, 1474:23, 1478:40, 1478:41, 1479:21, 1487:32, 1487:42, 1489:24, 1491:16,	3-4 [5] - 1416:10, 1444:29, 1445:19, 1445:41, 1448:2 3-second [1] - 1460:14 3.17 [1] - 1396:10

	1	1	1	
31 [1] - 1503:42	1430:37, 1434:36,	AAMC.001.009.0344 [1] -	1412:2, 1429:11,	1486:18
31/5/2020 [1] - 1471:24	1445:45, 1451:21,	1435:36	1488:30, 1497:1	addition [21] - 1399:36,
317 [2] - 1494:43, 1495:37	1452:41, 1454:39,	AAMC.001.009.0364 [1] -	accuracy [1] - 1480:20	1400:6, 1401:29,
318 [2] - 1494:44, 1496:5	1454:47, 1455:33,	1438:14	achieve [1] - 1488:12	1402:9, 1402:36,
320 [4] - 1493:39, 1493:40,	1455:37, 1463:21,	AAMC.001.009.0376 [1] -	achieved [1] - 1441:24	1403:28, 1404:2,
1	1474:30, 1484:31,	• • • • • • • • • • • • • • • • • • • •	acknowledge [1] -	1410:27, 1413:28,
1494:26, 1495:6	1491:16, 1491:18,	1439:19	•	1413:32, 1414:41,
338 [1] - 1432:30		AAMC.001.009.0388 [1] -	1483:44	
36 [2] - 1423:3, 1427:11	1491:24, 1491:27,	1455:39	acknowledged [7] -	1421:15, 1431:46,
363 [1] - 1384:37	1491:41, 1492:1,	AAMC.001.009.0416 [1] -	1424:21, 1483:29,	1434:21, 1438:23,
3rd [1] - 1429:2	1492:8, 1492:10,	1391:17	1484:7, 1487:42,	1442:20, 1442:34,
	1492:40, 1492:41,	AAMC.001.009.0420 [1] -	1488:38, 1489:6,	1444:20, 1444:25,
4	1492:45	1392:34	1489:10	1448:31, 1468:21
	_	AAMC.001.009.0424 [1] -	acknowledgment [4] -	additional [14] - 1392:16,
	6	1389:26	1438:27, 1456:42,	1424:47, 1427:17,
4 [12] - 1395:34, 1404:36,		AAMC.001.009.0568 [2] -	1474:47, 1476:35	1439:24, 1439:32,
1423:23, 1423:31,	0 4000 00 4000 40	1395:10, 1459:42	acquired [2] - 1432:40	1439:35, 1439:37,
1424:28, 1426:21,	6 [12] - 1392:28, 1393:10,	AAMC.008.014.0001 [1] -	acquisition [2] - 1443:25,	1443:31, 1446:46,
1432:36, 1445:20,	1395:17, 1395:31,	1444:33	1475:16	1471:18, 1475:16,
1445:42, 1449:14,	1422:36, 1444:34,	AAMC.008.014.0003 [1] -	acronym [1] - 1502:38	1495:44, 1500:36,
1460:10, 1497:21	1447:13, 1447:47,	1445:25	Act [4] - 1384:15, 1394:19,	1505:30
4.15PM [1] - 1509:24	1460:28, 1494:30,	AAMC.008.017.0001 [2] -	1394:20, 1502:20	address [5] - 1427:32,
4.50 [1] - 1396:1	1499:7, 1508:46	1	· ·	1470:18, 1471:8,
4.56pm [1] - 1391:12	6,000 [1] - 1433:6	1426:18, 1430:6	acted [2] - 1477:31,	1501:32, 1507:9
400 [13] - 1413:20, 1416:5,	6.45 [1] - 1417:45	AAMC.008.017.0003 [1] -	1477:33	addressed [8] - 1441:47,
1416:14, 1416:18,	60 [2] - 1429:5	1417:43	acting [2] - 1464:7,	
1416:14, 1416:16,	64 [1] - 1472:21	AAMC.008.018.0001 [1] -	1467:16	1458:38, 1469:2,
1444:26, 1445:9,	67 [1] - 1472:21	1415:42	action [31] - 1386:18,	1469:10, 1469:12,
* * * * * * * * * * * * * * * * * * * *	6th [1] - 1439:33	AAMC.008.018.0002 [1] -	1388:2, 1388:12,	1476:16, 1486:46,
1445:17, 1445:41,		1445:29	1392:15, 1393:46,	1495:3
1450:8, 1450:15,	7	ability [1] - 1485:6	1393:47, 1394:9,	addressing [5] - 1394:40,
1501:16	1	able [16] - 1386:22,	1394:12, 1394:33,	1462:32, 1462:36,
4th [2] - 1426:9, 1429:47		1405:20, 1419:19,	1397:14, 1417:24,	1485:32, 1497:25
_	7 [6] - 1396:8, 1409:24,	1422:17, 1427:18,	1435:41, 1439:24,	adequate [13] - 1390:14,
5	1440:32, 1440:38,	1432:45, 1441:29,	1439:25, 1439:26,	1391:38, 1392:9,
	1447:47, 1460:34	1449:8, 1453:37,	1456:42, 1462:23,	1392:38, 1392:47,
E 1041 1290:20 1290:22	7,500 [1] - 1443:26	1457:36, 1472:14,	1463:18, 1463:39,	1393:14, 1393:20,
5 [21] - 1389:20, 1389:33,	72 [1] - 1400:38	1476:44, 1477:23,	1484:26, 1492:32,	1393:24, 1474:31,
1391:10, 1391:11,	75 [1] - 1441:24	1481:15, 1487:46,	1492:44, 1499:35,	1475:13, 1492:27,
1391:13, 1391:30,	75[1] - 1441.24	1488:4	1502:5, 1504:17,	1495:34, 1500:44
1392:27, 1393:11,	0	absence [2] - 1432:2,	1504:18, 1504:40,	adequately [1] - 1495:4
1393:45, 1394:7,	8	1434:36	1504:46, 1504:47,	adjourn [1] - 1509:21
1394:42, 1395:1,		absolutely [9] - 1407:1,	1505:25, 1505:26	ADJOURNED [1] -
1395:2, 1395:45,	8 [9] - 1389:23, 1389:28,	• • • • • • • • • • • • • • • • • • • •	actioned [1] - 1503:41	1509:24
1422:36, 1451:38,	1396:18, 1426:16,	1407:23, 1420:25,	actions [16] - 1390:19,	ADJOURNMENT [2] -
1452:16, 1460:28,	1429:43, 1430:1,	1444:14, 1461:15,	1390:30, 1392:29,	1429:36, 1467:2
1496:8, 1504:30,	1	1486:47, 1487:19,	· · · · · · · · · · · · · · · · · · ·	adjust [1] - 1457:36
1505:15	1447:19, 1447:26, 1461:30	1505:28	1393:4, 1394:15,	• • • • • • • • • • • • • • • • • • • •
5,000 [1] - 1439:34	1401.30	accept [6] - 1415:32,	1426:44, 1439:22,	adopted [1] - 1486:3
5.04 [1] - 1451:35		1461:6, 1461:37,	1454:38, 1458:35,	advance [1] - 1413:20
50 [1] - 1460:44	9	1461:41, 1488:10,	1481:29, 1481:38,	advantage [3] - 1436:32,
5A [25] - 1389:33, 1391:16,		1497:5	1486:26, 1492:26,	1508:12, 1508:28
1391:29, 1391:30,	9 [11] - 1389:23, 1391:16,	acceptable [9] - 1426:38,	1492:33, 1492:36,	advice [4] - 1399:15,
1392:26, 1393:6,	1391:18, 1395:1,	1426:39, 1426:42,	1500:22	1415:10, 1498:28,
1398:31, 1399:20,	1441:16, 1474:28,	1427:31, 1427:32,	activities [8] - 1386:29,	1507:39
1399:47, 1401:4,	1493:36, 1494:33,	1433:41, 1501:31,	1418:1, 1430:29,	AFC [3] - 1416:27,
1401:9, 1410:28,	1499:21, 1500:7, 1501:1	1501:32, 1501:35	1486:25, 1487:36,	1441:11, 1508:25
1432:28, 1432:35,		accepted [2] - 1438:28,	1489:47, 1499:12,	affected [1] - 1486:21
1438:13, 1439:18,	9,000 [1] - 1425:9	1444:21	1499:30	affects [2] - 1409:34,
1440:38, 1455:21,	9.50 [1] - 1396:22	access [3] - 1403:1,	actual [3] - 1420:7,	1490:4
1457:40, 1458:37,	90 [1] - 1392:17	1422:17, 1422:43	1423:26, 1500:44	affirmation [1] - 1385:5
1458:38, 1492:25,	_	accident [2] - 1508:45,	ad [7] - 1399:38, 1401:29,	afraid [1] - 1481:19
	A	1509:8	1402:9, 1408:4, 1408:7,	afternoon [6] - 1385:25,
1492:27, 1499:33,		accommodate [1] -	1436:29	1385:39, 1395:39,
1499:35	A AMC 001 003 0030 to	1439:37	Adam [1] - 1508:43	1397:31, 1504:11,
5As [34] - 1387:27,	AAMC.001.003.0030 [1] -	accompanied [2] - 1418:7,	adapt [2] - 1408:13,	1504:29
1389:21, 1391:44,	1458:5	1494:37	1488:46	agenda [2] - 1475:38,
1392:32, 1401:6,	AAMC.001.009.0273 [1] -		adaptation [1] - 1489:20	1475:40
1401:18, 1401:25,	1498:2	accordance[1] - 1509:14	add [4] - 1387:19,	
1418:29, 1422:26,	AAMC.001.009.0336 [1] -	according [1] - 1482:21	1438:26, 1457:31,	AGM.002.001.0019 [1] -
1424:18, 1426:17,	1432:29	account [5] - 1410:29,	1430.20, 1437.31,	1404:35
10/02/3	2021 (15)———			
10/03/2	<u> </u>		•	

	T			
AGM.002.001.0937 [1] -	1441:21, 1443:13,	1396:9, 1396:19,	1425:4, 1425:39,	attaching [1] - 1494:25
1469:26	1451:2, 1461:37,	1403:29, 1447:47,	1451:30, 1457:23,	attachments [1] - 1494:34
AGM.002.001.2164 [1] -	1468:7, 1484:11,	1451:34, 1455:22,	1457:42, 1471:18,	attempt [3] - 1442:20,
1453:6	1485:40, 1487:5,	1458:9, 1459:38,	1489:46, 1495:33	1442:25, 1443:4
ago [2] - 1474:15, 1501:47	1487:46, 1489:32,	1464:1, 1464:32,	assessed [3] - 1471:16,	attempted [2] - 1411:15,
agree [16] - 1393:11,	1489:34, 1490:45,	1469:33, 1470:22,	1471:40, 1503:37	1412:7
1403:16, 1413:6,	1508:45	1470:33, 1478:40,	assessing [4] - 1418:24,	attempts [2] - 1408:40,
1413:14, 1415:31,	Anglo's [1] - 1415:16	1478:41, 1479:21,	1445:45, 1489:3, 1507:2	1487:6
1448:16, 1458:28,	annexed [1] - 1459:6	1480:19, 1486:11,	Assessment [1] - 1494:36	attend [1] - 1479:46
1460:17, 1461:5,	answer [15] - 1387:21,	1486:18, 1487:32,	assessment [63] -	attendance [2] - 1473:35,
1461:8, 1462:24,	1388:5, 1388:8,	1487:34, 1487:41,	1404:17, 1406:14,	1508:34
1473:17, 1476:10,	1392:25, 1394:6,	1489:24, 1491:16,	1408:12, 1409:16,	attendant [1] - 1393:41
1482:12, 1495:41,	1463:34, 1465:43,	1491:18, 1492:46,	1412:43, 1413:7,	
1506:8	1475:29, 1477:38,	1493:4, 1493:14,	1413:8, 1423:43,	attended [5] - 1417:34,
ahead [2] - 1404:7, 1471:4	1480:20, 1481:19,	1501:1, 1501:13,	1425:42, 1437:17,	1421:16, 1430:26,
aid [1] - 1447:5	1491:18, 1491:22,	1501:23, 1501:25,	1441:3, 1453:43,	1466:29, 1467:12
	1501:36, 1505:2	1504:13, 1504:32	· · · · · · · · · · · · · · · · · · ·	attends [1] - 1473:39
air [3] - 1425:38, 1451:26,	answered [1] - 1464:20	April/May/June [1] -	1463:20, 1469:36, 1470:25, 1470:26,	attention [1] - 1497:45
1508:6		1486:22		attitude [1] - 1471:32
airline [1] - 1452:27	answers [2] - 1471:47,	area [18] - 1390:13,	1470:28, 1470:32,	attributable [1] - 1449:7
alarm [3] - 1421:5, 1454:6,	1481:10	1	1470:33, 1470:43,	Audible [1] - 1421:5
1456:15	anticipated [3] - 1403:30,	1390:32, 1390:36,	1471:41, 1471:43,	audio [1] - 1509:12
alarms [1] - 1438:26	1447:34, 1475:12	1390:43, 1407:2,	1472:1, 1472:7,	audit [1] - 1473:35
albeit [1] - 1485:33	anticipating [1] - 1403:38	1407:45, 1413:33,	1472:15, 1472:16,	August [11] - 1426:16,
algorithm [1] - 1431:38	anyway [1] - 1447:35	1436:8, 1444:37,	1472:21, 1472:23,	1429:43, 1430:1,
algorithms [2] - 1419:21,	apart [6] - 1403:42,	1444:41, 1449:22,	1472:24, 1472:27,	1438:39, 1438:40,
1488:21	1430:36, 1431:42,	1449:40, 1450:6,	1472:28, 1472:30,	1464:6, 1469:6,
alignment [1] - 1499:36	1452:40, 1454:39,	1450:7, 1450:38,	1472:33, 1472:35,	1476:40, 1478:26,
allocate [1] - 1457:43	1465:30	1504:39, 1507:21,	1472:38, 1472:40,	1486:8, 1499:7
allocated [3] - 1436:35,	apologies [3] - 1470:28,	1508:2	1472:46, 1473:3,	automate [1] - 1419:21
1458:40, 1491:29	1470:36, 1473:33	areas [9] - 1399:7,	1473:10, 1473:13,	automated [1] - 1447:23
allocates [2] - 1435:7,	apologise [1] - 1459:44	1406:24, 1407:4,	1473:15, 1473:20,	automatically [2] -
1439:47	apparent [1] - 1395:2	1414:21, 1435:40,	1473:37, 1474:1,	1419:24, 1419:25
allocation [2] - 1424:2,	appear [4] - 1397:29,	1435:42, 1436:23,	1474:7, 1474:14,	available [13] - 1404:12,
1456:43	1412:5, 1478:2, 1507:22	1438:20, 1482:38	1474:16, 1478:5,	1408:30, 1412:45,
allow [2] - 1422:42,	appeared [4] - 1386:10,	arise [7] - 1398:9,	1490:37, 1493:28,	1418:41, 1421:43,
1457:14	1391:19, 1394:40,	1400:29, 1404:30,	1495:3, 1495:32,	1425:28, 1426:3,
allowed [1] - 1425:47	1456:47	1406:19, 1468:24,	1495:39, 1496:18,	1465:21, 1468:44,
allowing [2] - 1386:21,	appearing[1] - 1451:29	1477:18, 1478:7	1496:23, 1496:33,	1477:35, 1507:21,
1508:28	appendices [1] - 1459:6	arisen [2] - 1414:18,	1502:47, 1503:10,	1507:23, 1509:15
allows [2] - 1418:45,	appendix [1] - 1459:5	1507:38	1503:27, 1503:37,	avoid [9] - 1406:29,
1453:27	applied [1] - 1461:4	arises [1] - 1470:18	1503:42, 1504:1	1410:19, 1426:45,
	apply [3] - 1460:31,	arising [1] - 1420:22	assessments [12] -	, , ,
alluded [2] - 1388:23,	1477:28, 1489:41	armoured [1] - 1452:3	1408:35, 1441:43,	1431:42, 1451:8,
1458:37	appreciate [2] - 1388:25,	arose [4] - 1448:25,	1472:5, 1473:4,	1456:25, 1468:45,
almost [2] - 1431:47,	1 **	1470:2, 1470:13,	1473:16, 1473:22,	1472:14, 1485:9
1452:14	1453:41	1483:16	1473:37, 1474:10,	aware [52] - 1388:36,
alone [1] - 1474:8	approach [6] - 1389:13,	arrangements [2] -	1474:13, 1488:27,	1393:23, 1393:28,
alternate [1] - 1390:31	1412:23, 1415:6,	1390:13, 1390:37	1488:28, 1489:25	1393:39, 1399:4,
alternative[1] - 1387:42	1455:17, 1458:23,	arrestor [15] - 1400:32,	assist [2] - 1413:35,	1399:13, 1399:25,
ambulance [1] - 1419:43	1488:3	1400:39, 1442:46,	1414:30	1399:36, 1399:37,
ameliorate [1] - 1413:13	approaching [3] - 1405:3,	1443:12, 1443:43,	assistance [2] - 1399:16,	1408:19, 1408:24,
amend [1] - 1457:31	1405:44, 1485:25	1443:45, 1444:2,	1509:7	1408:32, 1408:44,
Amend [1] - 1458:46	appropriate [6] - 1386:16,	1444:7, 1446:2, 1446:9,	assisting [2] - 1464:42,	1408:47, 1414:3,
amount [4] - 1437:11,	1425:43, 1452:31,	1447:2, 1456:20,	1470:14	1414:42, 1418:34,
1488:24, 1501:5,	1476:45, 1481:16,	1457:14, 1459:12,	associated [11] - 1435:32,	1419:17, 1422:11,
1508:21	1487:11		1436:45, 1440:2,	1432:8, 1433:11,
analyse [1] - 1412:5	appropriately [3] -	1484:35		1436:28, 1441:42,
analysed [1] - 1484:21	1456:47, 1459:18,	arrestors [3] - 1386:41,	1440:22, 1446:2, 1448:6, 1453:44,	1443:13, 1449:44,
analysing [2] - 1399:32,	1489:46	1483:19, 1483:21	· · · · · · · · · · · · · · · · · · ·	1454:47, 1456:45,
1412:17	appropriateness [2] -	arrives [1] - 1417:45	1456:19, 1468:34,	1461:16, 1461:17,
analysis [1] - 1460:31	1386:24, 1423:11	arrow [1] - 1445:18	1472:35, 1505:42	1461:47, 1464:31,
analytical [1] - 1458:31	approve[1] - 1404:11	art [1] - 1460:43	assume [2] - 1392:25,	1471:30, 1474:24,
Andrew [2] - 1384:29,	April [47] - 1385:12,	ascertain [1] - 1470:7	1471:12	1474:26, 1484:11,
1408:19	1385:21, 1385:42,	aspects [2] - 1402:45,	assumption [1] - 1471:47	1484:12, 1485:16,
	1388:18, 1388:29,	1491:13	assure [1] - 1507:5	1490:23, 1491:20,
Anglo [21] - 1397:28,	1388:32, 1388:36,	aspirationally [1] -	AT [2] - 1509:24, 1509:25	1492:9, 1492:14,
1399:13, 1401:15,	1388:37, 1393:34,	1434:16	atmosphere [2] - 1406:29,	1492:21, 1496:12,
1414:4, 1414:26,	1395:9, 1395:23,	assess [9] - 1409:35,	1434:3	1496:20, 1496:26,
1417:31, 1421:39,				
.10/03/2	2021 (15)———	<u> </u>	1	
	` ,	script produced by F		

1502:27, 1503:16, becomes [2] - 1413:44, 1444:10, 1459:12, 1508:6 1408:13, 1420:1, 1503:19, 1505:3, 1420:12 1483:17, 1484:34 brink [1] - 1485:18 1421:47, 1425:11, 1428:28, 1432:34, 1506:36, 1507:44, blocking [1] - 1386:41 **becoming** [1] - 1459:12 Brisbane [4] - 1384:36, 1432:41, 1432:46, 1508:10 beg [1] - 1426:41 blow [1] - 1432:31 1384:37, 1399:14, awesome [1] - 1401:9 beginning [3] - 1394:25, blower [8] - 1435:32, 1414.25 1434:41, 1438:10, 1438:20, 1439:24, Britton [2] - 1421:17, awful [1] - 1443:6 1443:27, 1498:15 1436:8, 1436:22, axis [1] - 1404:44 1439:34, 1440:33, 1421:35 1439:35, 1439:38, behaviour[1] - 1486:24 behind [4] - 1406:34. 1440:47, 1443:25, broad [1] - 1474:13 1441:29, 1442:10, 1443:26, 1443:31, В 1407:6, 1444:42, 1482:46 broad-ranging [1] -1476:44, 1477:26, blowers [4] - 1432:40, 1474:13 1450:12 1436:11, 1440:39, 1500:33, 1506:38 believes [1] - 1473:47 broadbrush [1] - 1470:42 background [2] - 1411:20, captured [1] - 1435:30 1484:36 below [6] - 1482:23, broader [2] - 1472:24, 1413:1 captures [1] - 1409:3 blown [1] - 1448:32 1483:31, 1483:35, 1472:45 badly [1] - 1486:21 carefully [1] - 1425:35 BOARD [1] - 1384:11 broadly [1] - 1397:42 1488:31, 1490:22, balance [12] - 1406:7, Board [15] - 1384:18, carried [6] - 1386:29, 1490:24 broken [1] - 1506:24 1407:1, 1407:18, 1462:41, 1463:4, benefit [5] - 1411:4, 1384:27, 1384:30, brought [16] - 1395:10, 1407:19, 1428:1, 1404:37, 1405:20, 1471:29, 1472:46, 1411:12, 1415:3, 1397:6, 1397:16, 1431:11, 1431:16, 1475:5 1432:31, 1485:37 1408:20, 1410:43, 1399:29, 1409:34, 1441:19, 1488:39, carries [1] - 1428:9 best [1] - 1471:10 1411:4, 1413:6, 1417:6, 1417:17, 1489:19, 1499:21, 1441:17, 1469:41, carry [3] - 1428:34, better [4] - 1401:25, 1429:4, 1437:22, 1505:41 1470:18, 1502:16 1491:37, 1492:15, 1437:32, 1476:16, 1460:15, 1460:18, balancing [2] - 1428:5, 1497:3, 1498:26 case [20] - 1394:42, 1502:15 1460:41, 1461:7, 1469:8 1400:6, 1410:43, between [43] - 1385:27, **body** [5] - 1391:24, 1464:33, 1500:39, ballpark [2] - 1415:32, 1434:3, 1450:32, 1440:6, 1444:47, 1385:46, 1388:35, 1506:41 1415:34 1452:21, 1454:13 1467:40, 1467:41, 1389:9, 1390:26, Brown [8] - 1421:23, band [1] - 1447:5 1468:30, 1473:24, **book** [1] - 1417:43 1430:19, 1430:42, 1395:1, 1395:23, **band-aid** [1] - 1447:5 borehole [1] - 1405:14 1473:26, 1473:27, 1396:22, 1401:30, 1469:5, 1472:41, bands [1] - 1405:1 1478:7, 1482:29, 1401:41 1402:5 **boring** [1] - 1399:35 1491:36, 1494:18, bare [1] - 1401:4 1499:10 1483:15, 1483:47, 1403:7, 1403:24, borne [1] - 1400:47 barometer [2] - 1434:4, 1493:14, 1494:11, 1407:19, 1407:47, bother [1] - 1476:39 Brownett [7] - 1453:11, 1498:40 1501:41, 1502:30, 1412:24, 1417:31, **bottom** [7] - 1405:15, 1453:12, 1454:30, barometric [5] - 1421:27, 1418:47, 1421:22, 1419:43. 1431:2. 1466:4, 1491:36, 1507:3 1440:19, 1482:45, cases [3] - 1410:13, 1428:44, 1430:38, 1439:20, 1445:3, 1500:10, 1500:18 1487:44, 1488:23 1495:44, 1501:45 1431:11, 1431:22, budgeted [2] - 1421:36, 1458:45, 1458:46 barristers [1] - 1397:28 1446:47, 1448:11, 1422:2 casing [1] - 1444:12 Bowen [8] - 1398:14, base [2] - 1404:13, categorisation[1] -1452:39, 1453:9, build [1] - 1417:22 1398:15, 1405:37, 1410:41 1455:41 1454:41, 1456:21, 1405:39, 1406:5, **bull** [1] - 1417:46 based [5] - 1390:37, 1458:26, 1463:11, causal [1] - 1439:13 1406:43, 1468:10 bunch [1] - 1455:29 1419:21, 1463:20, 1464:23, 1465:24, caused [9] - 1412:24, brattice [7] - 1390:42, burden [1] - 1400:17 1464:27, 1478:30 1477:39, 1479:38, 1412:26, 1442:46, 1391:20, 1448:32, business [4] - 1425:5, basic [4] - 1405:37, 1485:7, 1487:3, 1444:7, 1475:33, 1448:43, 1451:25, 1433:30, 1433:40, 1449:4, 1478:46, 1488:39, 1496:43, 1488:2, 1504:3, 1504:4, 1452:8, 1484:36 1441.23 1487:28 1499:22, 1503:23, break [3] - 1428:22, 1506:40 BY [6] - 1385:7, 1397:25, basics [2] - 1397:30, causes [9] - 1389:43, 1505:41 1429:42, 1432:24 1462:17, 1482:9, 1485.4 Bevin [1] - 1454:37 1392:35, 1394:41, Brennan [22] - 1389:9, 1491:10, 1502:43 Basin [3] - 1398:14, beyond [2] - 1390:25, 1412:17, 1484:30, 1389:11, 1389:14, 1405:38, 1468:10 1484:31, 1484:40, 1401.4 1417:34, 1424:46, C basis [14] - 1399:38, 1487:7, 1504:19 **bi** [3] - 1508:11, 1508:15, 1425:18, 1426:5, 1399:39, 1405:36, 1508:20 causes" [2] - 1389:39, 1430:43, 1466:8, 1417:32, 1432:19, calculation [1] - 1477:44 1391:35 bi-di [3] - 1508:11, 1466:26, 1466:29, cannot [1] - 1490:21 1436:28, 1436:29, 1508:15, 1508:20 causing [1] - 1484:47 1477:9, 1486:9, canopy [22] - 1388:42. 1447:23 1462:10 ceased [1] - 1394:14 **big** [4] - 1408:18, 1411:42, 1486:13, 1493:12, 1472:4, 1477:31, 1396:36, 1412:27, 1415:1, 1452:33 1497:10, 1497:14, ceasing [1] - 1506:40 1477:33, 1478:39, 1444:22, 1445:3, 1497:30, 1498:11, cent [44] - 1391:24, **big-picture** [1] - 1415:1 1445:4, 1445:37, 1486:40 bigger [4] - 1417:43, 1501:24. 1507:39 1393:36, 1395:39, batch [3] - 1386:15, 1450:5, 1450:17, 1487:46, 1488:6 **Brennan's** [1] - 1486:23 1395:47, 1396:10, 1388:17, 1388:46 1452:10, 1452:31, bit [6] - 1404:36, 1405:29, brief [2] - 1417:45, 1396:20, 1396:21, batches [2] - 1385:22, 1460:10, 1460:14, 1396:22, 1405:44, 1420:19, 1463:41, 1485:34 1394:2 1460:16, 1464:1, 1494:17, 1505:39 briefing [1] - 1500:11 1406:39, 1406:43, battle [3] - 1407:19, 1464:32, 1464:46, black [1] - 1414:39 briefly [1] - 1454:46 1409:9, 1409:10, 1472:29, 1480:18, 1488:39, 1489:19 1409:24 1417:2 bleeder [2] - 1423:17, bring [10] - 1394:18, bearing [1] - 1504:34 1504:38, 1505:4 1417:10, 1425:28, 1423:19 1409:28, 1414:29, capabilities [2] - 1425:6, bears [1] - 1454:31 1441:9, 1441:10, blinkers [1] - 1411:41 1414:34, 1415:41, become [6] - 1388:36, 1425:8 1441:24, 1447:18, block [1] - 1456:4 1429:44, 1493:37, capability [1] - 1477:12 1398:7, 1398:12, 1447:19, 1447:26, 1497:45, 1498:1, blockages [2] - 1386:1, capable [1] - 1440:14 1432:15, 1444:7, 1451:35, 1452:16, 1386:11 1505:26 capacity [23] - 1389:47, 1496:20 1482:23, 1482:29, blocked [5] - 1444:7, bringing [2] - 1413:19, -.10/03/2021 (15)-

1482:30, 1483:25,	change-up [1] - 1433:7	clearly [4] - 1477:8,	1410:38, 1426:33,	1486:44, 1490:11,
1483:31, 1483:36,	changed [3] - 1391:8,	1489:6, 1495:40,	1444:11, 1444:42,	1490:21, 1490:38,
· ·		· · · · · · · · · · · · · · · · · · ·		
1485:42, 1486:30,	1407:47, 1447:25	1506:41	1449:25, 1498:45	1490:45
1486:34, 1486:45,	changes [13] - 1425:34,	cliff [1] - 1419:44	commence [2] - 1404:19,	complying [1] - 1449:46
1488:31, 1489:15,	1428:17, 1428:27,	close [6] - 1389:2,	1494:42	component [1] - 1506:12
1489:36, 1490:22	1428:28, 1431:37,	1447:29, 1450:6,	Commence [3] - 1494:25,	comprehensive[1] -
central [1] - 1421:39	1435:30, 1437:27,	1454:35, 1482:30,	1494:34, 1494:39	1472:33
centrally [1] - 1414:26		1508:29	*	
• • •	1438:34, 1440:22,		commenced [9] - 1472:34,	compromising [2] -
certain [4] - 1419:22,	1445:13, 1482:45,	closed [2] - 1447:20,	1475:26, 1475:44,	1386:20, 1386:31
1419:23, 1474:21	1492:22, 1507:1	1447:35	1477:2, 1477:9,	concentration [2] -
certainly [16] - 1387:4,	changing [3] - 1408:13,	closely [1] - 1443:39	1493:32, 1499:47,	1406:34, 1416:47
1402:7, 1420:38,	1434:14, 1490:4	closer [3] - 1406:42,	1503:47, 1507:47	concentrations [2] -
1427:17, 1460:35,	characterises [1] -	1413:25, 1482:26	commencement [5] -	1407:6, 1450:39
1463:46, 1465:46,	1403:42	· ·	1477:42, 1478:19,	· ·
		closer-spaced [1] -		concern [12] - 1402:23,
1465:47, 1467:21,	check [2] - 1423:37,	1413:25	1493:34, 1494:24,	1435:43, 1449:23,
1467:39, 1467:40,	1453:7	closes [1] - 1508:26	1503:9	1450:6, 1451:39,
1478:18, 1478:37,	checking [2] - 1448:47,	Clough [2] - 1384:29,	commences [1] - 1441:16	1474:2, 1487:10,
1487:34, 1490:17,	1465:40	1505:36	commencing [9] -	1487:46, 1489:31,
1491:30	chief [7] - 1464:7,	CLOUGH [2] - 1505:38,	1471:33, 1471:34,	1504:3, 1504:4, 1506:31
certainty [1] - 1452:15	1467:16, 1479:27,	1508:31	1472:25, 1472:47,	concerned [4] - 1408:17,
• • • •			, , , , , , , , , , , , , , , , , , ,	
chainage [2] - 1404:43,	1479:34, 1479:45,	coal [34] - 1394:31,	1473:5, 1475:37,	1437:11, 1441:17,
1419:5	1480:1, 1480:11	1395:4, 1397:32,	1476:17, 1485:13,	1472:23
chair [3] - 1462:19,	Chief [1] - 1492:14	1397:37, 1399:5,	1496:25	concerning [3] - 1484:44,
1467:6, 1482:7	chock [4] - 1420:3,	1400:14, 1402:27,	comment [5] - 1386:22,	1485:1, 1487:5
Chair [1] - 1481:44	1420:18, 1434:17,	1405:39, 1405:40,	1432:45, 1463:20,	concerns [2] - 1387:34,
Chairperson [1] - 1384:27	1445:4	1	1472:37	1387:35
		1406:7, 1406:24,		
CHAIRPERSON [26] -	chocks [2] - 1450:28,	1406:28, 1406:44,	common [1] - 1412:6	concluded [1] - 1411:21
1385:1, 1397:23,	1508:28	1407:4, 1407:24,	communicated [3] -	conclusion [3] - 1452:16,
1426:20, 1427:39,	choice [1] - 1441:22	1407:27, 1407:30,	1452:40, 1457:1,	1452:19, 1488:7
1429:15, 1429:29,	chosen [1] - 1420:29	1408:7, 1422:16,	1459:17	conclusions [1] - 1401:22
1429:34, 1429:38,	CHR [1] - 1472:23	1432:7, 1433:32,	communicating [1] -	concurrently [1] - 1505:44
1462:15, 1466:41,	_ · ·	1433:35, 1438:43,	1401:26	•
	Christmas [1] - 1473:8	1		conditions [12] - 1394:31,
1466:46, 1467:4,	chronological [1] -	1449:3, 1450:39,	communication [9] -	1394:44, 1395:4,
1469:45, 1470:5,	1417:29	1452:2, 1452:29,	1402:9, 1403:7,	1398:10, 1403:38,
1470:16, 1479:42,	chronologically [1] -	1462:33, 1467:37,	1403:43, 1411:33,	1405:10, 1406:18,
1481:46, 1482:5,	1385:10	1468:2, 1478:11,	1446:47, 1456:21,	1407:46, 1408:7,
1485:16, 1485:29,		1508:13, 1508:26	1459:16, 1459:22,	1408:13, 1489:40,
1491:4, 1491:8,	chronology [5] - 1400:47,	COAL [1] - 1384:11	1493:5	1489:45
	1415:42, 1496:42,			
1502:15, 1505:36,	1496:47, 1497:4	Coal [1] - 1384:15	communications [6] -	conduct [3] - 1464:33,
1508:33, 1508:38	circumstance [2] -	collapse [1] - 1439:23	1390:26, 1401:30,	1505:17, 1505:27
challenge [2] - 1477:29,	1427:10, 1452:7	collecting [1] - 1488:19	1403:43, 1404:3,	conducted [1] - 1496:15
1477:33	circumstances [21] -	collective [2] - 1492:8,	1417:30, 1453:42	conducting [1] - 1390:31
challenges [2] - 1419:14,	1386:32, 1387:47,	1492:41	companies [1] - 1397:29	confidence [2] - 1420:21,
1453:32	, ,		company [5] - 1399:13,	
challenging [1] - 1401:42	1388:12, 1391:8,	collectively [2] - 1491:23,		1421:42
5 5 · · ·	1393:12, 1393:44,	1492:11	1462:33, 1462:37,	configuration [3] -
chance [5] - 1438:42,	1394:8, 1420:42,	column [1] - 1445:27	1478:11, 1478:34	1390:31, 1415:36,
1439:46, 1443:46,	1423:12, 1440:23,	com [1] - 1471:19	company's [1] - 1435:23	1440:18
1469:10, 1490:23	1448:39, 1460:14,	combination [2] -	compared [4] - 1467:37,	confirmation [1] - 1464:26
change [35] - 1387:13,	1467:22, 1471:11,	1408:11, 1437:47	1468:1, 1468:9, 1478:27	confirming [1] - 1481:16
1387:41, 1390:14,	1471:39, 1488:4,	combustible [1] - 1488:14	competent [1] - 1496:16	U
1406:18, 1408:8,			•	confront [1] - 1505:23
	1489:19, 1505:1,	combustion [22] -	complete [7] - 1386:11,	conjecture [1] - 1467:24
1416:26, 1420:19,	1506:37, 1507:34	1406:44, 1407:26,	1434:23, 1456:4,	connection [2] - 1412:24,
1425:16, 1425:26,	Citect [6] - 1418:8,	1407:32, 1428:10,	1470:42, 1471:24,	1465:24
1426:11, 1427:27,	1418:14, 1419:19,	1431:14, 1468:20,	1495:31, 1507:29	conscious [1] - 1441:22
1427:28, 1428:23,	1422:16, 1438:26,	1468:37, 1468:40,	completed [2] - 1476:18,	consecutive [1] - 1480:37
1428:24, 1431:32,	1456:15	1468:45, 1469:1,	1507:30	
1431:41, 1433:7,			completely [1] - 1427:30	consequence [4] -
	clean [3] - 1485:39,	1469:10, 1471:6,	• • • • • • • • • • • • • • • • • • • •	1386:40, 1418:13,
1434:9, 1434:18,	1485:43, 1486:14	1471:14, 1471:39,	completion [3] - 1390:33,	1466:30, 1476:25
1434:40, 1435:31,	cleaned [1] - 1447:2	1481:26, 1481:32,	1435:12, 1435:15	consequently [1] -
1436:42, 1436:46,	cleaning [1] - 1500:36	1481:40, 1490:29,	complex [2] - 1403:30,	1486:23
1437:4, 1437:10,	clear [11] - 1386:27,	1499:24, 1503:36,	1489:11	consider [3] - 1465:34,
1437:32, 1437:37,	1401:5, 1416:22,	1504:1, 1507:10	compliance [1] - 1405:14	1
1438:5, 1440:28,			• • • • • • • • • • • • • • • • • • • •	1490:44, 1507:27
1440:29, 1447:17,	1420:12, 1449:34,	comfortable [4] - 1400:45,	complied [2] - 1445:14,	considerable [1] - 1507:8
	1460:35, 1464:21,	1417:23, 1426:12,	1494:45	considerably [1] - 1503:17
1447:33, 1481:17,	1476:2, 1479:40,	1503:22	complies [1] - 1495:13	consideration [1] -
1486:24, 1495:5	1499:28, 1503:10	comforting [1] - 1421:40	comply [8] - 1416:23,	1474:16
change(s [1] - 1434:23	cleared [1] - 1440:33	coming [7] - 1403:31,	1485:40, 1486:40,	considered [9] - 1389:3,
		,	, , , , ,	1000.0,
10/03/2	021 (15)———	<u> </u>		
. 10/03/2	` ,	sorint produced by E		

459:11, 1460:16, 460:19, 1460:42, 461:7, 1468:22, 471:19, 1483:45, 488:4, 1489:44, 490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40, 4147:20, 1429:6	1447:25, 1448:3, 1448:8, 1449:36, 1450:40, 1451:42, 1452:5, 1453:2, 1453:25, 1455:31, 1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:30, 1492:29, 1492:30, 1492:29, 1493:19, 1493:9, 1493:19, 1493:9, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1497:22, 1497:31, 1497:39, 1498:32, 1498:21, 1498:32, 1498:46, 1500:14, 1500:30, 1503:2,	Court [2] - 1384:36 covered [2] - 1472:38, 1486:10 covering [1] - 1421:26 Crawshaw [12] - 1462:15, 1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] - 1462:13	1418:14, 1419:6, 1419:19, 1422:43, 1423:40, 1445:44, 1446:35, 1458:28, 1462:5, 1488:18 database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7, 1399:8, 1400:23,
460:19, 1460:42, 461:7, 1468:22, 471:19, 1483:45, 488:4, 1489:44, 490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1448:8, 1449:36, 1450:40, 1451:42, 1452:5, 1453:2, 1453:25, 1455:31, 1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1495:20, 1495:21, 1497:31, 1497:18, 1497:39, 1498:13, 1497:39, 1498:32, 1498:46, 1500:14,	covered [2] - 1472:38, 1486:10 covering [1] - 1421:26 Crawshaw [12] - 1462:15, 1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1419:19, 1422:43, 1423:40, 1445:44, 1446:35, 1458:28, 1462:5, 1488:18 database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
461:7, 1468:22, 471:19, 1483:45, 488:4, 1489:44, 490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1450:40, 1451:42, 1452:5, 1453:2, 1453:25, 1455:31, 1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:16, 1494:11, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1486:10 covering [1] - 1421:26 Crawshaw [12] - 1462:15, 1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1423:40, 1445:44, 1446:35, 1458:28, 1462:5, 1488:18 database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
471:19, 1483:45, 488:4, 1489:44, 490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1452:5, 1453:2, 1453:25, 1455:31, 1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1495:20, 1495:21, 1497:31, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	covering [1] - 1421:26 Crawshaw [12] - 1462:15, 1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1446:35, 1458:28, 1462:5, 1488:18 database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
488:4, 1489:44, 490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1453:25, 1455:31, 1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:32, 1498:46, 1500:14,	Crawshaw [12] - 1462:15, 1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1462:5, 1488:18 database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
490:2, 1496:1, 496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1462:30, 1463:6, 1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1466:41, 1467:4, 1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	database [2] - 1465:22, 1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
496:16, 1506:42, 506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 558:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1463:32, 1464:9, 1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1497:22, 1497:31, 1497:39, 1498:32, 1498:21, 1498:32, 1498:46, 1500:14,	1469:45, 1470:19, 1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW[10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1485:45 datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
506:47, 1508:24 ntrolled [1] - 1431:10 ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1464:13, 1465:11, 1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:29, 1493:11, 1493:36, 1494:11, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1497:20, 1495:21, 1497:21, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1470:28, 1480:43, 1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW[10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	datasets [1] - 1405:2 date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntrolled [1] - 1431:10 ntrolled [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1467:10, 1467:17, 1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:19, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:21, 1497:18, 1497:18, 1497:22, 1497:31, 1497:39, 1498:21, 1498:32, 1498:46, 1500:14,	1481:19, 1489:22, 1502:25, 1502:46, 1503:25 CRAWSHAW[10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	date [9] - 1387:30, 1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntroller [2] - 1454:17, 508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1467:45, 1468:35, 1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:21, 1498:32, 1498:46, 1500:14,	1502:25, 1502:46, 1503:25 CRAWSHAW[10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1389:21, 1390:26, 1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
508:43 ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1469:23, 1470:23, 1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:29, 1493:11, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1503:25 CRAWSHAW[10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1426:5, 1436:35, 1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntroller" [1] - 1452:34 ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1472:9, 1472:12, 1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:30, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	CRAWSHAW [10] - 1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1458:41, 1480:13, 1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntrolling [2] - 1484:16, 489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1474:34, 1474:38, 1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:30, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1462:17, 1462:19, 1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1480:42, 1503:42 dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
489:33 ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1475:42, 1475:47, 1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1466:44, 1467:6, 1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	dated [2] - 1458:9, 1503:6 days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntrols [12] - 1418:18, 419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1476:17, 1478:8, 1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1470:1, 1470:7, 1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	days [13] - 1400:38, 1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
419:38, 1419:45, 420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1478:14, 1478:32, 1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1470:12, 1470:21, 1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1402:19, 1423:31, 1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
420:35, 1456:16, 474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1479:18, 1479:32, 1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1480:4, 1481:44 create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1427:25, 1434:42, 1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
474:2, 1488:16, 489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1482:24, 1483:42, 1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	create [3] - 1407:31, 1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1437:41, 1459:47, 1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
489:47, 1490:2, 507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1484:42, 1485:34, 1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1424:22, 1445:36 created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1480:37, 1494:12, 1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
507:3, 1507:44 ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1488:47, 1489:16, 1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	created [3] - 1426:35, 1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1496:41, 1500:10, 1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1445:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
ntroversy [2] - 1445:27, 445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1492:3, 1492:29, 1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1427:9, 1462:4 creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1505:25 deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
445:36 nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1492:30, 1492:46, 1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	creates [1] - 1400:17 creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	deal [17] - 1398:38, 1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
nvenient [2] - 1429:29, 466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1493:1, 1493:9, 1493:19, 1493:36, 1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	creating [3] - 1407:23, 1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1400:18, 1405:39, 1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
466:41 nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1493:19, 1493:36, 1494:1, 1494:12, 1494:31, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1431:12, 1499:23 critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1415:23, 1426:12, 1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
nversation [8] - 403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1494:1, 1494:12, 1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	critically [1] - 1460:43 criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1428:37, 1432:14, 1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
403:36, 1463:13, 469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1494:13, 1494:20, 1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	criticism [2] - 1424:21, 1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1432:34, 1434:32, 1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
469:19, 1469:22, 498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1494:37, 1495:15, 1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1433:20 criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1438:34, 1440:39, 1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
498:35, 1500:19, 500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1495:20, 1495:21, 1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	criticisms [1] - 1434:35 cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1442:1, 1448:11, 1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
500:27, 1500:32 nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1497:11, 1497:18, 1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	cross [3] - 1462:13, 1469:40, 1504:22 cross-examination [1] -	1455:11, 1457:37, 1462:9, 1470:17 dealing [12] - 1399:7,
nversations [15] - 389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1497:22, 1497:31, 1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	1469:40, 1504:22 cross-examination[1] -	1462:9, 1470:17 dealing [12] - 1399:7,
389:8, 1389:18, 401:46, 1403:23, 410:36, 1410:40,	1497:39, 1498:13, 1498:21, 1498:32, 1498:46, 1500:14,	cross-examination [1] -	dealing [12] - 1399:7,
401:46, 1403:23, 410:36, 1410:40,	1498:21, 1498:32, 1498:46, 1500:14,		<u> </u>
410:36, 1410:40,	1498:46, 1500:14,	1462:13	1399:8, 1400:23,
447-20 442C-C	1500:30 1503:2	cross-examined [1] -	1414:21, 1428:13,
417:30, 1426:6,		1469:40	1432:10, 1440:47,
463:10, 1463:26,	1503:7, 1503:28,	cross-purposes [1] -	1448:47, 1452:2,
493:6, 1493:8,	1503:32, 1503:38,	1504:22	1465:25, 1474:19
493:15, 1498:31,	1503:44, 1506:1,	current [5] - 1425:7,	deals [2] - 1424:14,
501:24	1506:2, 1506:9, 1506:14	1457:14, 1465:24,	1459:46
nveyor [1] - 1452:3	corrective [4] - 1393:47,	1473:17, 1507:19	dealt [6] - 1412:32,
oler [1] - 1508:5	1394:9, 1394:33,	curtains [1] - 1448:44	1417:16, 1447:2,
olers [1] - 1508:7	1481:29	cut [15] - 1400:14,	1460:17, 1462:5, 1486:5
pe [2] - 1474:5, 1475:11	correctly [5] - 1396:31,	1416:10, 1440:29,	debate [1] - 1409:3
pies [1] - 1481:27	1425:22, 1436:41,	1441:11, 1444:29,	December [3] - 1412:38,
py [3] - 1472:7,	1450:36, 1471:44	1445:19, 1445:41,	1412:39, 1478:27
472:43, 1494:16	correlate [1] - 1417:30	1448:2, 1505:12,	decided [1] - 1397:2
ronavirus [1] - 1453:7	correspondence[1] -	· · · · · · · · · · · · · · · · · · ·	deciding [2] - 1399:21,
	1501:5		1429:11
	counsel [4] - 1464:42,		decision [3] - 1441:18,
	1470:13, 1482:11,		1441:19, 1458:18
, ,	1506:34	<u> </u>	decisions [2] - 1427:47,
	couple [6] - 1397:5,		1464:1
	1417:15, 1421:1,	1	decisive [1] - 1397:13
	1466:27, 1505:38	1	declaration [1] - 1492:15
	course [26] - 1385:39,	9	
	1399:4, 1404:37,		decreasing [1] - 1478:30
		1507:40	defined [1] - 1495:5
			degree [1] - 1483:47
		D	demonstrate [2] -
			1386:17, 1394:44
		danger (1) - 1483:40	demonstrated [5] -
			1476:44, 1477:26,
		_	1499:35, 1502:6,
			1502:11
			demonstrates [1] -
420.7, 1428.19,			1477:12
			demonstrating [1] -
429:19, 1430:4,			1418:40
429:19, 1430:4, 430:9, 1442:6,		1410.39, 1410.0,	department [4] - 1412:44,
429:19, 1430:4,	court [1] - 1417:43		
r 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	rect [118] - 1386:8, 887:33, 1388:43, 890:9, 1390:17, 892:30, 1392:45, 893:16, 1395:19, 896:2, 1401:33, 801:36, 1403:14, 804:8, 1404:20, 804:24, 1404:46, 806:36, 1409:7, 809:11, 1412:46, 815:17, 1416:28, 816:42, 1417:26, 8124:5, 1424:29, 8125:19, 1426:7, 8126:25, 1427:34, 8127:36, 1428:3, 8128:7, 1428:19, 8129:19, 1430:4, 830:9, 1442:6,	1501:5 1	1501:5 1508:13, 1508:14, 1508:13, 1508:14, 1508:22, 1508:27 1508

1430:20, 1473:13,	1474:42, 1475:5,	disagreement [1] - 1450:3	1441:42, 1443:18,	1425:11, 1428:28,
1505:31	1475:7, 1475:36, 1490:2	disappointed [2] -	1443:19, 1459:6,	1430:28, 1431:9,
dependent [3] - 1478:35,	development [4] -	1478:41, 1489:23	1463:22, 1469:3,	1432:3, 1432:19,
1504:47, 1507:34	1398:17, 1399:9,	discharged [1] - 1502:21	1469:15, 1474:7,	1432:34, 1432:41,
deployed [3] - 1455:6,	1405:38, 1430:32	discharging [1] - 1430:32	1474:19, 1481:30,	1432:46, 1434:41,
1479:4, 1479:12	device [1] - 1387:22	disciplined [1] - 1457:42	1494:26, 1494:35,	1435:42, 1438:10,
deployment [1] - 1479:23	Devices [1] - 1392:10	disclosed [1] - 1505:30	1495:33, 1496:34,	1438:19, 1439:24,
deputy [4] - 1453:10,	devices [2] - 1392:21,	discrete [7] - 1396:19,	1497:46	1439:37, 1442:10,
1464:7, 1467:16,	1393:1		Dom [1] - 1442:36	1453:23, 1454:4,
1508:43	di [12] - 1423:18, 1498:9,	1484:31, 1484:40,	DONALD[1] - 1385:5	1454:37, 1456:3,
describe [4] - 1413:9,	1499:2, 1507:41,	1484:46, 1485:32,	done [39] - 1386:25,	1457:31, 1458:47,
1427:44, 1453:15,		1487:27, 1488:2	1387:24, 1390:47,	1468:32, 1470:29,
	1508:10, 1508:11,	discuss [1] - 1481:33	1401:25, 1408:28,	1470:43, 1471:15,
1454:30	1508:12, 1508:15,	discussed [18] - 1395:28,	1411:11, 1412:4,	1471:40, 1474:30,
described [10] - 1422:15,	1508:18, 1508:20, 1508:25	1403:9, 1410:28,	1426:20, 1426:29,	1474:32, 1475:1,
1422:36, 1422:46,		1428:5, 1431:10,	1427:7, 1427:13,	1475:13, 1475:16,
1423:37, 1428:40,	diagram [1] - 1444:32	1449:44, 1454:40,	1427:15, 1430:11,	1476:28, 1481:22,
1428:43, 1430:18,	difference [8] - 1428:44,	1454:45, 1455:45,	1433:5, 1434:14,	1481:35, 1482:33,
1445:35, 1460:10,	1465:14, 1465:18,	1458:22, 1458:40,	1437:5, 1437:14,	1483:46, 1484:7,
1502:47	1471:32, 1479:38,	1467:20, 1469:7,	1441:34, 1441:43,	1484:35, 1488:40,
describing [1] - 1404:38	1480:46, 1481:9,	1469:17, 1481:35,	· · · · · · · · · · · · · · · · · · ·	
description [5] - 1404:42,	1503:23	1489:14, 1493:16,	1442:17, 1451:2,	1489:20, 1498:40, 1499:12, 1499:16,
1422:14, 1458:13,	different [22] - 1399:7,	1500:40	1451:5, 1453:8, 1457:5,	1499:12, 1499:16,
1460:38, 1509:4	1401:31, 1401:47,	discussing [2] - 1425:18,	1459:13, 1462:29,	· · · ·
descriptions [2] -	1405:2, 1407:35,	1432:24	1462:33, 1462:37,	1503:12, 1503:16,
1458:38, 1509:6	1407:40, 1409:24,	discussion [12] - 1404:26,	1463:37, 1464:21,	1503:17, 1503:21,
design [1] - 1456:4	1412:4, 1422:21,	1413:16, 1418:13,	1464:37, 1464:43,	1503:37, 1504:2
designed [2] - 1447:24,	1428:44, 1430:44,	1418:14, 1418:18,	1465:5, 1472:7,	drainage/recovery/
1488:22	1443:21, 1452:4,	1422:20, 1431:31,	1474:16, 1476:30,	dilution [2] - 1391:39,
desorption [1] - 1482:37	1463:34, 1464:22,	1454:35, 1466:8,	1477:43, 1503:11	1392:39
despite [3] - 1483:28,	1465:29, 1465:32,	1498:39, 1499:20,	door [2] - 1412:24,	drained [1] - 1408:22
1488:34, 1490:43	1468:15, 1478:7,	1507:38	1412:26	drawing [1] - 1443:6
detail [26] - 1400:27,	1479:34, 1488:43	discussions [3] - 1403:12,	doors [2] - 1448:27,	drill [4] - 1401:19,
1401:26, 1401:39,	differential [1] - 1448:11	1421:32, 1422:11	1449:1	1405:29, 1416:13,
1404:12, 1404:28,	differently [1] - 1465:5	dispute [1] - 1408:26	dot [5] - 1423:25, 1425:17,	1447:15
1405:23, 1411:17,	difficult [4] - 1441:1,	distinguish [2] - 1463:44,	1433:22, 1494:38,	drilling [2] - 1413:34,
1416:46, 1420:11,	1483:44, 1489:40,	1463:46	1498:8	1442:14
1424:27, 1431:25,	1489:45	diurnal [1] - 1421:27	double [1] - 1448:27	drive [6] - 1390:13,
1431:27, 1434:36,	difficulties [1] - 1489:33	diverted [1] - 1468:13	doubt [2] - 1391:13,	1390:43, 1415:37,
1434:41, 1435:7,	difficulty [2] - 1477:21,	DNRME [1] - 1390:21	1462:22	1445:2, 1445:5
1437:3, 1439:22,	1484:1	document [42] - 1389:26,	down [28] - 1403:19,	drop [1] - 1420:18
1439:42, 1440:1,	diligent [4] - 1389:12,	1389:32, 1391:17,	1405:7, 1405:13,	dual [3] - 1386:19,
1440:10, 1441:41,	1401:21, 1453:16,	1391:29, 1392:33,	1405:28, 1409:34,	1386:35, 1457:24
1453:24, 1454:1,	1454:30	· ·	1413:34, 1423:16,	due [9] - 1419:5, 1436:35,
1491:40, 1492:33,	diligently [1] - 1412:5	1395:9, 1395:22,	1423:25, 1430:3,	1458:41, 1471:7,
1499:20		1395:37, 1395:45,	1431:4, 1445:2,	1471:14, 1471:40,
	dilute [1] - 1390:14	1396:28, 1396:29,	1445:17, 1445:26,	1472:42, 1503:36,
detailed [5] - 1409:15,	dilution [1] - 1393:25	1405:19, 1408:35,	1445:42, 1449:14,	1503:42
1421:31, 1454:25, 1408:35, 1501:23	direct [4] - 1394:15,	1413:8, 1432:1, 1442:9,	1449:19, 1453:20,	duration [1] - 1393:35
1498:35, 1501:23	1465:24, 1480:11,	1445:29, 1448:18,	1453:47, 1454:12,	during [23] - 1404:36,
details [4] - 1433:22,	1505:4	1456:41, 1469:25,	1458:27, 1459:43,	<u> </u>
1492:16, 1498:30,	directed [1] - 1479:35	1469:26, 1469:29,	1436.27, 1439.43, 1482:28, 1483:36,	1413:24, 1413:32,
1498:39	direction [10] - 1430:13,	1469:35, 1469:40,		1418:2, 1423:16,
detected [5] - 1389:28,	1434:25, 1458:44,	1469:43, 1470:2,	1490:20, 1490:38,	1424:2, 1434:4,
1391:24, 1394:32,	1469:39, 1469:46,	1470:5, 1470:8,	1493:39, 1494:17, 1496:5	1436:11, 1452:38,
1396:9, 1396:19	1479:27, 1479:39,	1470:39, 1472:22,		1455:6, 1463:4,
detecting [1] - 1412:27	1479:45, 1480:1,	1474:11, 1493:26,	drain [5] - 1408:40,	1463:14, 1467:35,
detector [1] - 1490:4	1480:25	1493:27, 1495:19,	1442:20, 1442:30,	1467:43, 1473:34,
	directive [9] - 1479:5,	1498:24, 1502:46,	1442:43, 1443:4	1474:16, 1478:31,
detectors [1] - 1506:44		1503:4, 1503:10,	drainage [74] - 1385:47,	1480:14, 1488:17,
determine [1] - 1487:11	1479:13, 1479:30,		1386:2, 1386:20,	1500:11, 1500:23,
	1479:13, 1479:30, 1479:38, 1479:47,	1503:26, 1503:27,	· · · · · · · · · · · · · · · · · · ·	1500.45 4507.44
determine [1] - 1487:11		1503:26, 1503:27, 1503:34	1386:21, 1386:31,	1502:45, 1507:14
determine [1] - 1487:11 determined [1] - 1492:26	1479:38, 1479:47,		1386:21, 1386:31, 1393:14, 1393:20,	duties [1] - 1485:22
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11	1479:38, 1479:47, 1480:2, 1500:47,	1503:34	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3,	
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11 devalue [1] - 1440:27	1479:38, 1479:47, 1480:2, 1500:47, 1501:6, 1501:46	1503:34 documentation [2] -	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3, 1407:10, 1407:20,	duties [1] - 1485:22 dynamic [1] - 1420:42
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11 devalue [1] - 1440:27 develop [8] - 1398:39,	1479:38, 1479:47, 1480:2, 1500:47, 1501:6, 1501:46 directives [1] - 1456:47	1503:34 documentation [2] - 1387:27, 1387:29	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3, 1407:10, 1407:20, 1408:27, 1408:33,	duties [1] - 1485:22
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11 devalue [1] - 1440:27 develop [8] - 1398:39, 1398:41, 1426:43,	1479:38, 1479:47, 1480:2, 1500:47, 1501:6, 1501:46 directives [1] - 1456:47 directly [6] - 1394:6,	1503:34 documentation [2] - 1387:27, 1387:29 documented [1] - 1423:39	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3, 1407:10, 1407:20, 1408:27, 1408:33, 1413:35, 1419:4,	duties [1] - 1485:22 dynamic [1] - 1420:42
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11 devalue [1] - 1440:27 develop [8] - 1398:39, 1398:41, 1426:43, 1426:44, 1432:33,	1479:38, 1479:47, 1480:2, 1500:47, 1501:6, 1501:46 directives [1] - 1456:47 directly [6] - 1394:6, 1449:26, 1465:34,	1503:34 documentation [2] - 1387:27, 1387:29 documented [1] - 1423:39 documents [23] - 1388:27,	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3, 1407:10, 1407:20, 1408:27, 1408:33, 1413:35, 1419:4, 1421:28, 1421:36,	duties [1] - 1485:22 dynamic [1] - 1420:42
determine [1] - 1487:11 determined [1] - 1492:26 detonation [1] - 1459:11 devalue [1] - 1440:27 develop [8] - 1398:39, 1398:41, 1426:43, 1426:44, 1432:33, 1433:19, 1438:19,	1479:38, 1479:47, 1480:2, 1500:47, 1501:6, 1501:46 directives [1] - 1456:47 directly [6] - 1394:6, 1449:26, 1465:34, 1471:37, 1472:36,	1503:34 documentation [2] - 1387:27, 1387:29 documented [1] - 1423:39 documents [23] - 1388:27, 1393:9, 1403:1, 1404:6,	1386:21, 1386:31, 1393:14, 1393:20, 1405:14, 1407:3, 1407:10, 1407:20, 1408:27, 1408:33, 1413:35, 1419:4,	duties [1] - 1485:22 dynamic [1] - 1420:42

	1		T	1
1446:14, 1446:16,	encountered [1] - 1413:9	establishing [1] - 1496:8	1413:16, 1428:10,	1455:29, 1455:41,
1453:38, 1472:40,	end [11] - 1393:9, 1411:11,	Establishment [1] -	1429:1, 1429:3,	1459:36, 1464:31,
1479:21, 1479:24,	1437:11, 1440:34,	1384:18	1430:36, 1436:24,	1465:41, 1466:3,
1486:9, 1501:38	1443:40, 1445:5,	estimates [2] - 1432:3,	1437:18, 1453:4,	1466:5, 1466:10,
easier [1] - 1432:15	1459:34, 1465:1,	1	1458:4, 1458:46,	1466:29, 1467:19,
		1433:4		1467:36, 1469:9,
easily [1] - 1480:36	1474:20, 1476:40,	eternity [1] - 1485:44	1485:8, 1488:23,	
easy [1] - 1422:42	1479:23	evaluation[1] - 1435:15	1490:3, 1496:2,	1475:32, 1477:11,
edge [1] - 1487:33	ended [1] - 1451:29	evening[1] - 1387:7	1506:34, 1506:44,	1478:45, 1479:11,
effect [12] - 1423:32,	ends [1] - 1442:36	event [16] - 1386:39,	1507:19	1479:19, 1479:22,
1424:22, 1425:24,	enforce [1] - 1487:23	1388:35, 1395:34,	examples [2] - 1402:14,	1480:18, 1481:13,
1428:35, 1434:2,	engagement [1] - 1497:9	1395:45, 1396:8,	1421:1	1482:18, 1484:17,
1437:19, 1447:16,	engineer [4] - 1419:21,	1396:18, 1412:10,	exceedance [42] -	1484:21, 1484:41,
1447:38, 1459:47,	1454:37, 1496:2,	1460:10, 1460:28,	1386:28, 1386:30,	1484:47, 1485:2,
1462:23, 1496:13,	1496:17	1460:34, 1461:30,	1386:46, 1388:9,	1485:9, 1486:5,
1503:35	engineered [1] - 1447:6	1500:12, 1506:36,	1388:11, 1389:1,	1486:12, 1486:13,
effective [4] - 1402:7,	engineering [11] -	1506:39, 1507:2,	1389:27, 1391:31,	1486:21, 1486:22,
1484:7, 1490:10,	1419:44, 1420:3,	1507:19	1393:29, 1393:34,	1486:33, 1486:39,
1504:18	1420:35, 1446:41,	events [14] - 1392:28,	1393:36, 1394:45,	1487:6, 1487:26,
effectively [14] - 1411:10,	1446:45, 1447:37,	1395:24, 1395:31,	1395:46, 1396:47,	1487:34, 1487:37,
1431:30, 1434:37,	1448:28, 1448:39,	1397:3, 1424:43,	1399:19, 1399:22,	1487:47, 1488:2,
1440:11, 1440:28,	1452:25, 1456:36,	1450:36, 1458:14,	1409:33, 1412:24,	1488:4, 1488:35,
1440:39, 1440:44,	1496:14	1459:37, 1459:47,	1416:47, 1417:1,	1489:11, 1491:32,
1444:18, 1449:18,	engineers [1] - 1496:17	1460:3, 1461:12,	1422:33, 1423:1,	1491:42, 1493:17,
1449:22, 1477:13,	•	1461:17, 1508:46,	1429:17, 1437:18,	1497:3, 1497:17,
1449:22, 1477:13, 1481:15, 1483:17,	ensure [15] - 1389:5,	1509:4	1441:9, 1447:16,	1497:25, 1499:3,
	1393:46, 1394:32,		1449:13, 1449:25,	1499:23, 1500:1,
1496:41	1405:20, 1426:27,	eventuate [1] - 1403:40	1476:42, 1486:4,	1501:27, 1504:16,
effects [2] - 1421:27,	1432:9, 1447:39,	evidence [30] - 1386:40,	1486:35, 1486:46,	1505:3, 1505:7,
1448:32	1451:7, 1469:9,	1390:24, 1395:18,		1505:10, 1505:30
efficacy [1] - 1482:34	1481:13, 1487:37,	1414:8, 1427:3,	1487:8, 1487:11,	
eight [3] - 1393:30,	1496:14, 1496:28,	1441:21, 1442:29,	1487:33, 1488:6,	excellent [1] - 1422:16
1395:1, 1395:24	1496:32, 1507:20	1459:35, 1459:39,	1488:12, 1488:13,	exceptions [1] - 1417:15
eight-week [1] - 1395:1	ensuring [3] - 1407:5,	1465:8, 1465:13,	1498:26, 1499:34,	excess [3] - 1389:47,
either [11] - 1386:10,	1438:1, 1500:22	1465:30, 1468:20,	1504:12, 1506:46	1391:24, 1506:45
1395:16, 1412:19,	enter [2] - 1465:21,	1472:5, 1472:16,	exceedances [127] -	excessive[1] - 1468:32
1469:22, 1480:8,	1498:30	1474:22, 1474:29,	1385:11, 1385:20,	exchange [1] - 1401:40
1484:44, 1487:27,	entering [1] - 1392:10	1476:2, 1476:10,	1385:26, 1385:30,	exclude [1] - 1406:46
1488:1, 1490:20,	entirely [3] - 1412:28,	1478:10, 1491:13,	1385:41, 1386:15,	excused [1] - 1508:34
1503:46, 1505:18	1427:21, 1450:35	1491:46, 1492:39,	1387:5, 1387:8,	executed [1] - 1425:35
electrical [4] - 1397:43,	entries [2] - 1402:37,	1493:3, 1493:11,	1387:35, 1388:17,	executive [1] - 1493:44
1447:17, 1447:38,	1403:7	1493:22, 1502:10,	1388:23, 1388:37,	exemption [1] - 1439:12
1449:24	entry [9] - 1402:14,	1502:16, 1504:10,	1388:41, 1388:46,	exercise [1] - 1471:28
eleven [1] - 1417:10	1417:38, 1421:15,	1504:24	1389:22, 1395:8,	exist [2] - 1398:10, 1405:4
eliminate [4] - 1452:30,	1429:43, 1430:7,	evident [1] - 1394:13	1395:12, 1395:13,	existed [3] - 1411:12,
1475:32, 1481:12,	1438:24, 1453:5,	exacerbate [1] - 1506:21	1395:24, 1395:42,	1450:15, 1474:23
		exact [3] - 1467:22,	1396:20, 1396:36,	existence [4] - 1448:15,
1504:18 eliminated [1] - 1493:18	1453:6, 1497:13	1480:13, 1480:42	1396:44, 1399:44,	1474:25, 1474:26,
	equally [3] - 1412:15,		1400:8, 1400:12,	1502:37
eliminating [3] - 1431:11,	1428:40, 1460:28	exactly [12] - 1422:24,	1400:33, 1409:6,	
1499:22, 1507:20	equals [2] - 1409:9,	1423:13, 1436:5,	1411:13, 1411:19,	existing [2] - 1443:27,
elsewhere [1] - 1437:18	1409:10	1440:5, 1453:43,	1413:11, 1415:24,	1506:21
email [15] - 1403:12,	equate [2] - 1477:39,	1459:16, 1459:26,	1415:41, 1415:45,	exists [1] - 1439:26
1403:29, 1403:36,	1477:41	1460:25, 1498:34,	1415:47, 1416:41,	expand [1] - 1410:40
1424:42, 1424:44,	equation [3] - 1477:5,	1503:22, 1505:9,	1417:1, 1418:2, 1418:9,	expansion [1] - 1425:7
1424:46, 1430:1,	1477:17, 1477:20	1506:22	1417:1, 1410.2, 1410.3, 1418:19, 1420:35,	expect [20] - 1401:14,
1493:4, 1493:5, 1493:7,	equipment [2] - 1475:17,	EXAMINATION[6] -	1421:19, 1424:19,	1401:20, 1409:41,
1494:15, 1494:18,	1506:37	1385:7, 1397:25,	1425:23, 1426:1,	1414:47, 1415:29,
1494:24, 1494:38,	error [3] - 1387:18,	1462:17, 1482:9,		1423:36, 1435:6,
1497:41	1483:12, 1483:24	1491:10, 1502:43	1426:24, 1426:31,	1435:23, 1437:26,
emerge [2] - 1446:32,	errors [1] - 1488:2	examination [1] - 1462:13	1428:22, 1430:30,	1439:21, 1439:27,
1447:10	ERZ [3] - 1452:34,	examined [3] - 1469:3,	1430:39, 1431:12,	1452:44, 1459:26,
emerged [2] - 1403:8,	1454:17, 1508:43	1469:40, 1469:42	1431:24, 1431:28,	1466:22, 1467:21,
1458:32	ERZCs[1] - 1481:14	example [31] - 1399:8,	1431:29, 1431:42,	1488:32, 1489:43,
emissions [1] - 1476:34	especially [3] - 1398:2,	1399:17, 1399:25,	1433:36, 1434:32,	1489:46, 1490:6,
emotional [1] - 1509:6	1414:18, 1420:13	1400:32, 1403:28,	1441:7, 1443:44,	1509:18
employ [1] - 1501:26	essentially [5] - 1386:24,	1404:17, 1404:27,	1445:1, 1446:25,	expectation [11] -
Enablon [3] - 1424:3,	1435:30, 1504:13,	1404:33, 1405:7,	1446:39, 1448:1,	1399:16, 1399:18,
1435:19, 1436:36		1405:28, 1405:30,	1449:7, 1449:29,	1400:7, 1400:10,
	1504:30, 1508:3	1410:10, 1412:22,	1449:34, 1449:40,	1400:22, 1426:44,
enacted [1] - 1496:28	established [1] - 1399:38	, , , , , , , , , , , , , , , , , , , ,	1451:13, 1451:34,	
10/03/2	.021 (15)———	8		<u> </u>
	.02 1 (10)			

1436:1, 1438:4,	1407:5, 1407:11,	1503:30	1414:12, 1462:27,	1453:16, 1466:3,
1457:41, 1475:24,	1415:29, 1424:33,	familiarisation [1] -	1491:12, 1493:31,	1466:27, 1477:40,
1475:30	1438:1, 1438:2, 1439:2,	1422:38	1493:40, 1505:4	1480:25, 1480:34,
expected [8] - 1389:46,	1445:20, 1449:19,	fancy [1] - 1402:30	five [7] - 1385:31, 1396:19,	1492:45, 1493:13,
1393:18, 1455:1,	1452:3, 1477:24,	far [6] - 1408:17, 1450:28,	1400:33, 1437:42,	1496:13
1474:14, 1474:33,	1482:26, 1488:18,	1474:7, 1475:20,	1443:30, 1449:29,	foresee [2] - 1490:9,
1481:33, 1483:6, 1491:47	1488:25, 1506:45,	1488:13, 1488:14	1461:30	1490:16
	1506:47, 1507:8, 1507:28, 1507:34,	fashion [1] - 1400:46	five-day [1] - 1385:31	forget [1] - 1486:14
expensive [1] - 1422:7 experience [4] - 1389:10,	1508:6, 1508:7,	faster [1] - 1470:17	fix [2] - 1459:23, 1487:9	form [46] - 1385:15, 1389:21, 1389:33,
1397:32, 1403:37,	1508:12, 1508:25	fault [3] - 1393:40,	fixed [1] - 1449:8 flag [2] - 1486:43, 1486:47	1389:40, 1391:16,
1411:5	facility [2] - 1386:31,	1442:36, 1477:46 faults [3] - 1442:37,	flame [17] - 1386:41,	1391:29, 1391:30,
experiencing [1] - 1393:18	1422:8	1478:1, 1482:41	1400:32, 1400:39,	1391:44, 1392:16,
expert [5] - 1398:7,	facing [1] - 1437:46	feature [1] - 1441:2	1442:46, 1443:11,	1392:26, 1392:32,
1399:15, 1408:45,	fact [39] - 1385:19,	February [2] - 1500:3	1443:43, 1443:45,	1393:6, 1394:13,
1415:3	1385:25, 1385:40,	feedback[1] - 1465:23	1444:2, 1444:7, 1446:2,	1395:16, 1398:31,
expertise [4] - 1397:37,	1386:17, 1390:25,	few [9] - 1400:38, 1409:23,	1446:9, 1447:1,	1417:29, 1424:20,
1399:6, 1414:21,	1394:39, 1397:12,	1410:6, 1414:14,	1456:19, 1457:14,	1424:27, 1445:45,
1495:45	1403:43, 1413:43,	1427:25, 1428:34,	1483:19, 1483:21,	1451:25, 1463:21,
experts [6] - 1399:6,	1421:46, 1422:30,	1434:42, 1465:1,	1484:34	1473:23, 1474:30,
1399:14, 1408:20,	1422:33, 1424:26,	1466:28	flammable [1] - 1451:40	1484:30, 1490:40,
1414:26, 1414:30,	1433:21, 1433:41,	fields [1] - 1496:9	flare [1] - 1443:25	1491:16, 1491:18,
1496:37	1436:34, 1438:43,	fifth [1] - 1436:40	flaring [1] - 1439:35	1491:24, 1491:27,
explain [3] - 1396:42,	1443:7, 1443:46,	figure [6] - 1399:30,	fleet [1] - 1457:14	1491:41, 1492:1,
1413:11, 1505:5	1452:7, 1455:28,	1404:36, 1423:6,	floor [14] - 1430:32,	1492:8, 1492:10,
explained [7] - 1397:31,	1456:46, 1464:27,	1423:12, 1426:27,	1435:32, 1435:40,	1492:25, 1492:27,
1397:41, 1408:34,	1468:29, 1475:11,	1485:27	1435:41, 1436:7,	1492:40, 1492:41,
1412:18, 1417:21,	1476:22, 1484:15,	file [2] - 1492:28, 1492:32	1436:11, 1436:22,	1492:45, 1497:10,
1417:22, 1436:7	1487:12, 1491:15,	filling [1] - 1399:19	1436:24, 1440:32,	1498:3, 1498:25,
explains [3] - 1401:38,	1492:46, 1493:12,	filter [3] - 1459:11,	1440:39, 1440:47,	1499:33, 1499:35
1411:19, 1443:46	1494:43, 1497:33,	1483:17, 1484:34	1476:34, 1482:46,	formal [1] - 1417:24
explanation [2] - 1396:26,	1500:39, 1502:6,	filters [1] - 1500:36	1484:36	formalise [1] - 1457:4
1500:43	1503:25, 1504:12,	final [5] - 1426:15,	flow [5] - 1444:10,	formality [1] - 1404:4
explore [2] - 1403:45,	1504:31, 1508:4	1440:32, 1459:33,	1446:40, 1449:2,	formation [1] - 1453:22
1423:17	factor [1] - 1439:13	1480:45, 1504:43	1457:32, 1457:35	formed [7] - 1399:43,
explored [1] - 1442:24	factors [15] - 1479:8,	finally [1] - 1396:18	flowing [3] - 1442:43,	1423:16, 1424:26,
exploring [2] - 1389:13,	1481:8, 1482:14,	financial [1] - 1486:19	1443:47, 1447:43	1427:15, 1434:32,
1420:38	1482:17, 1482:33,	fine [3] - 1431:10,	flows [2] - 1413:33, 1483:5	1479:16, 1489:37
explosion [5] - 1393:10,	1482:46, 1483:4,	1445:38, 1499:21	fluid [1] - 1420:42	former [1] - 1385:5
1395:17, 1406:30,	1483:9, 1483:28,	finish [2] - 1429:15,	flushing [1] - 1434:2	forms [2] - 1418:22,
1479:17, 1480:47	1484:3, 1487:30,	1509:18	focus [4] - 1388:24,	1455:21
explosive [4] - 1393:35,	1487:43, 1488:5,	finished [3] - 1427:20,	1414:13, 1498:27,	formulated [1] - 1427:16
1406:39, 1429:18,	1489:21, 1507:33	1440:44, 1479:1	1500:32	fortuitous [2] - 1450:37,
1451:40	failed [3] - 1388:3,	finishes [1] - 1471:22	focused [4] - 1432:9,	1472:32
expressing [2] - 1462:28,	1408:41, 1442:25	finishing [1] - 1477:27	1432:32, 1472:30,	forward [10] - 1388:17,
1485:17	failure [11] - 1387:39,	fire [1] - 1483:17	1487:35	1389:20, 1397:6,
expressly [1] - 1479:10	1393:19, 1412:24,	first [37] - 1386:5, 1387:5,	focusing [3] - 1386:41,	1397:17, 1398:17,
extended [2] - 1507:14,	1412:26, 1448:27,	1391:35, 1400:33,	1497:3, 1500:1	1406:35, 1414:22,
1507:22	1456:16, 1457:23,	1410:43, 1413:20,	folk [7] - 1398:41,	1464:33, 1498:17,
extent [3] - 1404:13,	1464:28, 1486:34,	1414:8, 1417:33,	1400:18, 1402:32,	1505:26
1437:2, 1476:9	1486:39, 1506:47	1419:36, 1421:46,	1414:20, 1414:25,	four [16] - 1385:11,
external [1] - 1414:39	failures [4] - 1385:47,	1424:3, 1425:22,	1418:15, 1424:4	1385:40, 1388:21,
extra [1] - 1450:16	1387:38, 1391:20,	1427:3, 1430:18,	follow [8] - 1392:28,	1388:25, 1388:28,
extracted [1] - 1490:33	1484:46	1431:27, 1432:33,	1414:43, 1430:29,	1388:37, 1395:27,
extraction [3] - 1413:8,	fair [2] - 1386:6, 1471:10	1433:12, 1436:11,	1475:5, 1475:35,	1396:44, 1400:33,
1472:36, 1473:18	fairly [5] - 1484:40,	1440:26, 1441:20,	1492:32, 1493:8,	1431:27, 1437:41,
extractions [1] - 1474:17	1484:46, 1485:32, 1487:28, 1480:11	1443:44, 1446:1,	1500:19	1438:39, 1446:1,
extraordinary [1] -	1487:28, 1489:11	1446:5, 1448:44,	follow-up [5] - 1414:43,	1458:14, 1460:6
1405:23	fall [5] - 1412:9, 1412:17,	1453:7, 1453:22,	1475:5, 1492:32,	four-day [1] - 1458:14
	1438:43, 1438:44,	1458:7, 1466:3,	1493:8, 1500:19	frame [2] - 1425:42,
extrude [1] - 1439:2	1448.37	1470.40 1400.45	followed [6] - 1391:6,	1455:30
	1448:32	1479:19, 1483:45,		
extrude [1] - 1439:2	falling [1] - 1412:15	1479.19, 1463.45,	1454:9, 1457:1, 1459:1,	frames [1] - 1440:1
	falling [1] - 1412:15 falls [3] - 1439:1, 1439:14,	1491:14, 1491:45, 1492:16, 1493:35,	1459:17, 1463:30	free [1] - 1483:40
F	falling [1] - 1412:15 falls [3] - 1439:1, 1439:14, 1483:5	1491:14, 1491:45,	1459:17, 1463:30 following [16] - 1391:8,	free [1] - 1483:40 frequency [1] - 1499:3
F face [28] - 1391:26,	falling [1] - 1412:15 falls [3] - 1439:1, 1439:14, 1483:5 familiar [8] - 1389:8,	1491:14, 1491:45, 1492:16, 1493:35,	1459:17, 1463:30	free [1] - 1483:40 frequency [1] - 1499:3 frequently [1] - 1473:43
F face [28] - 1391:26, 1395:37, 1395:45,	falling [1] - 1412:15 falls [3] - 1439:1, 1439:14, 1483:5 familiar [8] - 1389:8, 1398:44, 1399:26,	1491:14, 1491:45, 1492:16, 1493:35, 1494:38, 1502:32,	1459:17, 1463:30 following [16] - 1391:8,	free [1] - 1483:40 frequency [1] - 1499:3 frequently [1] - 1473:43 fresh [2] - 1418:32,
F face [28] - 1391:26,	falling [1] - 1412:15 falls [3] - 1439:1, 1439:14, 1483:5 familiar [8] - 1389:8,	1491:14, 1491:45, 1492:16, 1493:35, 1494:38, 1502:32, 1505:7	1459:17, 1463:30 following [16] - 1391:8, 1394:29, 1403:5,	free [1] - 1483:40 frequency [1] - 1499:3 frequently [1] - 1473:43

frictional [1] - 1390:41	1474:47, 1475:6,	1494:12, 1495:9,	Grosvenor [51] - 1398:44,	hazard [11] - 1404:27,
friend [9] - 1408:3, 1409:4,	1475:11, 1475:16,	1495:14, 1496:13,	1398:45, 1399:17,	1404:38, 1405:10,
1424:18, 1426:18,	1475:32, 1475:36,	1496:29, 1498:28,	1399:18, 1399:36,	1405:22, 1431:13,
1432:32, 1455:20,	1476:19, 1476:28,	1502:15, 1503:42,	1401:45, 1402:15,	1436:21, 1499:23,
1455:38, 1488:38,	1476:31, 1476:34,	1509:4	1403:24, 1405:32,	1505:43, 1506:21,
1489:22	1476:42, 1477:11,	Glen [1] - 1421:17	1405:38, 1408:33,	1506:33, 1507:9
front [8] - 1392:21,	1477:21, 1477:23,	GML [1] - 1405:43	1411:30, 1413:9,	hazards [6] - 1404:29,
1395:13, 1432:29,	1481:22, 1481:32,	goaf [88] - 1385:47,	1414:13, 1414:21,	1405:4, 1405:15,
1451:38, 1462:21,	1481:35, 1485:25,	1386:1, 1386:7,	1419:18, 1419:20,	1405:24, 1468:21,
1465:21, 1467:40,	1486:20, 1488:24,	1386:20, 1386:21,	1420:1, 1422:1, 1425:1,	1495:4
1467:43	1489:7, 1489:26,	1386:31, 1386:39,	1425:7, 1432:47,	headed [2] - 1389:39,
	1496:15, 1496:17,	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	,
full [1] - 1496:14		1390:14, 1392:10,	1441:22, 1441:23,	1494:24
function [2] - 1402:4,	1496:44, 1497:3,	1406:34, 1407:7,	1443:14, 1449:45,	heading [13] - 1391:20,
1426:46	1497:17, 1497:25,	1410:9, 1412:28,	1452:40, 1453:33,	1391:34, 1392:11,
functioning [1] - 1428:29	1498:9, 1498:20,	1413:25, 1413:29,	1455:6, 1459:10,	1412:25, 1418:7,
functions [5] - 1394:21,	1498:40, 1498:41,	1419:8, 1421:27,	1464:23, 1464:34,	1427:26, 1430:18,
1394:24, 1394:29,	1498:45, 1499:12,	1428:27, 1432:33,	1465:15, 1465:19,	1433:16, 1448:7,
1485:22, 1502:20	1499:16, 1499:30,	1433:1, 1438:10,	1467:19, 1467:36,	1449:13, 1449:19,
fundamental [7] -	1500:1, 1503:36,	1438:19, 1438:43,	1468:1, 1468:4, 1469:1,	1457:26, 1466:9
1473:15, 1475:45,	1504:2, 1508:16,	1438:44, 1439:1,	1469:18, 1476:41,	Health [1] - 1384:15
· · · · · · · · · · · · · · · · · · ·	1508:17, 1508:21	1439:2, 1439:7, 1439:8,	1477:10, 1477:21,	hear [2] - 1421:41,
1476:3, 1476:11,	gases [2] - 1392:10,	1439:14, 1439:24,	1480:7, 1480:35,	1504:23
1476:12, 1478:46,	1419:23	· · · · · · · · · · · · · · · · · · ·	1480:47, 1486:19,	
1481:21		1442:9, 1442:14,		heard [8] - 1414:43,
fundamentally [1] -	gassy [4] - 1405:40,	1442:15, 1442:37,	1497:17, 1504:13,	1421:45, 1427:3,
1437:44	1406:1, 1468:9, 1484:15	1442:41, 1443:5,	1504:31	1431:46, 1433:12,
funding [1] - 1421:36	gate [3] - 1392:2, 1392:16,	1443:11, 1443:34,	ground [2] - 1449:33,	1438:44, 1448:43,
furthest [1] - 1391:25	1392:43	1443:39, 1443:47,	1506:24	1471:5
future [7] - 1435:42,	general [19] - 1391:24,	1444:37, 1444:41,	group [10] - 1398:3,	hearing [9] - 1410:43,
1456:7, 1456:26,	1395:6, 1434:3, 1439:1,	1446:14, 1446:40,	1398:9, 1398:10,	1414:44, 1421:46,
1486:43, 1492:20,	1449:23, 1450:32,	1446:46, 1447:20,	1399:29, 1399:37,	1442:25, 1459:42,
	1450:33, 1452:21,	1447:34, 1447:43,	1411:3, 1412:3,	1462:44, 1508:41,
1504:37, 1504:44	1454:13, 1462:45,	1448:32, 1448:38,	1412:12, 1426:12,	
		1449:26, 1450:28,	1455:10	1509:2, 1509:18
G	1463:40, 1469:19,			hearings [10] - 1414:8,
	1474:44, 1474:46,	1451:7, 1451:9, 1452:9,	groups [3] - 1411:42,	1419:37, 1424:3,
4500:20	1474:47, 1475:8,	1452:16, 1452:22,	1412:5, 1412:17	1433:12, 1436:12,
gallery [1] - 1508:39	1489:39, 1489:41,	1453:22, 1453:23,	GSR [1] - 1405:8	1441:20, 1448:44,
game [4] - 1478:11,	1505:40	1453:34, 1454:4,	guarantee [1] - 1387:1	1458:7, 1491:45,
1478:23, 1478:35,	generally [10] - 1394:47,	1454:17, 1454:22,	guernsey [1] - 1408:18	1492:16
1478:44	1406:6, 1434:15,	1457:13, 1457:32,	guess [5] - 1405:38,	heat [1] - 1407:31
gang [1] - 1417:46	1464:15, 1473:20,	1464:25, 1464:28,	1406:5, 1411:38,	held [1] - 1414:4
Gas [3] - 1389:46, 1418:7,	1474:29, 1492:11,	1468:34, 1470:29,	1505:15, 1508:16	help [6] - 1405:9, 1414:39,
1439:32	1493:16, 1501:25,	1470:43, 1483:5,	guests [1] - 1414:30	1415:3, 1418:27,
gas [95] - 1386:46,	1508:14	1483:46, 1485:2,	guidance [1] - 1457:31	, ,
1390:38, 1393:19,	generated [1] - 1478:46	1485:4, 1498:40,	_	1424:31, 1444:42
1402:37, 1403:31,	•	1500:33, 1500:36,	guru [1] - 1415:11	helpful [1] - 1509:5
	generous [1] - 1458:36			helps [3] - 1418:29,
1405:14, 1407:10,	gentlemen [1] - 1508:38	1503:1, 1503:12,	H	1424:17, 1451:12
1408:36, 1412:35,	genuine [1] - 1412:6	1503:16, 1503:17,		hence [2] - 1472:43,
1413:10, 1413:40,	geological [4] - 1482:37,	1503:20, 1503:21,	half (1 4400:04	1505:25
1413:43, 1414:4,	1482:38, 1487:45,	1507:19, 1507:20,	half [4] - 1409:24,	hierarchy [1] - 1419:38
1414:13, 1414:43,	1488:28	1507:26, 1508:7	1464:32, 1508:13,	high [15] - 1406:33,
1415:11, 1417:6,	geophysical [1] - 1405:8	goafs [1] - 1473:9	1508:14	1407:6, 1418:1,
1418:2, 1418:41,	George [1] - 1384:37	Goonyella [2] - 1405:43,	hand [4] - 1403:19,	1422:46, 1435:40,
1419:4, 1419:20,	geotechnical [1] - 1399:8	1408:22	1403:20, 1435:23,	1442:43, 1443:47,
1420:7, 1421:18,	gist [1] - 1504:10	Grant [1] - 1481:46	1445:18	1444:10, 1446:14,
1421:36, 1422:7,	•	GRANT [1] - 1482:2	hands [1] - 1464:7	
1425:6, 1425:8,	given [34] - 1388:40,	granular [1] - 1422:24	hands-on [1] - 1464:7	1446:22, 1446:40,
1425:11, 1430:28,	1392:25, 1395:3,	Grasstree [7] - 1436:15,	handwriting [2] - 1471:22,	1447:43, 1457:32,
1431:9, 1432:3, 1434:2,	1396:26, 1397:29,		1503:35	1457:35, 1500:12
	1410:5, 1411:5,	1450:21, 1468:7,	handwritten [2] - 1471:12,	high-flowing [2] -
1435:40, 1435:42,	1411:12, 1414:8,	1480:8, 1480:30,	• •	1443:47, 1447:43
1439:37, 1440:23,	1414:18, 1415:30,	1480:34, 1480:41	1503:40	high-performing [2] -
1441:30, 1443:6,	1420:21, 1421:39,	great [2] - 1449:23,	hard [5] - 1408:46, 1415:2,	1446:14, 1446:22
1454:6, 1454:14,	1430:14, 1434:42,	1504:36	1419:21, 1442:29,	high-risk [1] - 1435:40
1454:17, 1454:37,	1441:21, 1442:29,	greater [7] - 1389:46,	1471:11	higher [2] - 1475:11,
1454:38, 1457:31,	1442:30, 1454:26,	1393:18, 1413:44,	harder [1] - 1444:2	1489:44
1458:46, 1459:46,	1465:30, 1471:47,	1439:34, 1474:33	hardwired [4] - 1419:44,	highest [2] - 1417:1,
1467:19, 1469:9,	1474:22, 1488:16,	Griffiths [2] - 1401:32,	1420:2, 1420:34,	
1471:15, 1471:40,	1493:3, 1494:4,	1421:22	1420:45	1431:29
1474:32, 1474:42,	1 100.0, 1404.4,	GRO3L016 [1] - 1419:5	hat [1] - 1414:39	highly [3] - 1433:5,
	004 (45)			
.10/03/2	.U∠I (I5)———	<u> </u>	1	1

1495:40, 1496:8	1402:18, 1423:3,	1481:4	implemented [14] -	include [8] - 1390:42,
highs [1] - 1421:27	1427:11, 1506:12	hypothetically [2] -	1401:46, 1426:22,	1404:26, 1409:19,
hindsight [20] - 1429:21,	HPI [30] - 1386:40,	1403:39, 1490:17	1426:29, 1426:35,	1415:46, 1439:22,
1463:40, 1463:41,	1387:16, 1389:13,		1427:2, 1427:9,	1482:33, 1496:1,
1464:3, 1464:11,	1389:28, 1391:16,	I	1427:20, 1427:33,	1508:38
1464:17, 1464:22,	1394:13, 1409:16,		1443:22, 1452:26,	included [13] - 1413:16,
1464:24, 1464:36,	1409:35, 1412:3,	ICAM [1] - 1502:34	1490:8, 1492:22,	1413:19, 1418:2,
1465:32, 1476:3,	1416:41, 1422:30,	ID [1] - 1458:41	1501:33, 1507:44	1418:39, 1422:15,
1476:9, 1478:16,	1426:39, 1426:42,		implementing [2] -	1443:25, 1454:35,
1479:10, 1480:45,	1428:41, 1439:12,	idea[1] - 1460:41	1439:23, 1499:12	1472:30, 1481:30,
1484:44, 1485:38,	1452:2, 1463:36,	ideally [1] - 1482:26	implicitly [1] - 1433:21	1495:39, 1496:6,
1489:34, 1490:42,	1465:22, 1465:24,	ideas [3] - 1401:40,	importance [2] - 1468:44,	1500:32, 1503:17
1490:44	1466:24, 1485:43,	1414:39, 1414:40	1469:7	includes [2] - 1404:17,
hire [1] - 1462:37	1488:46, 1489:3,	identified [20] - 1389:44,	important [7] - 1407:25,	1497:4
history [21] - 1397:32,	1498:3, 1498:27,	1393:33, 1409:32,	1410:2, 1418:32,	including [9] - 1390:30,
1410:33, 1411:5,	1501:34, 1501:45,	1410:44, 1410:45,	1420:6, 1449:11,	1396:35, 1426:10,
1426:4, 1429:26,	1504:20, 1504:24,	1434:17, 1434:38,	1451:44, 1479:40	1439:33, 1442:14,
1459:46, 1465:9,	1507:2	1437:8, 1438:44,	importantly [1] - 1423:23	1449:39, 1451:6,
1466:15, 1466:16,	HPIs [69] - 1387:14,	1440:13, 1446:28,	impossible [1] - 1413:34	1451:24, 1453:21
1466:17, 1466:19,	1387:27, 1388:21,	1458:39, 1459:21,	impression [1] - 1427:30	incompetent [1] - 1425:34
1466:20, 1466:23,	1389:6, 1389:23,	1459:22, 1469:41,	improve [1] - 1499:16	incorporate [1] - 1414:19
1466:34, 1466:38,	1391:18, 1393:29,	1474:4, 1474:30,	improved [4] - 1401:6,	increase [14] - 1421:47,
1467:38, 1467:47,	1393:33, 1394:1,	1484:30, 1486:27,	1456:25, 1478:25	1425:8, 1425:11,
1468:3, 1485:44,	1394:2, 1394:10,	1487:41	improvement [2] -	1432:33, 1432:41,
1486:15	1394:11, 1394:12,	identifies [1] - 1405:2	1401:14, 1499:2	1434:41, 1438:10,
hoc [7] - 1399:38,	1394:41, 1394:43,	identify [4] - 1435:40,	improvements [4] -	1438:19, 1442:9,
1401:29, 1402:9,	1395:3, 1396:27,	1444:42, 1489:47,	1410:45, 1434:36,	1460:18, 1460:41,
1408:4, 1408:7, 1436:29	1400:33, 1409:2,	1490:1	1492:9, 1492:17	1461:7, 1483:47, 1490:2
hold [1] - 1435:23	1409:5, 1410:24,	identifying [3] - 1404:29,	improving [4] - 1423:27,	increased [8] - 1422:6,
holds [3] - 1388:8, 1467:8,	1410:46, 1411:6,	1436:21, 1439:23	1431:8, 1432:20,	1428:27, 1468:34,
1485:45	1411:41, 1411:42,	ignition [3] - 1390:41,	1446:47	1471:6, 1471:14,
hole [10] - 1386:2,	1412:3, 1415:23,	1449:24, 1449:25	IMT [23] - 1399:40,	1471:15, 1471:39,
1386:11, 1386:20,	1417:24, 1417:29,	imagine [11] - 1398:2,	1401:19, 1411:29,	1503:36
1419:4, 1419:8,	1418:24, 1421:19,	1401:14, 1402:4,	1411:34, 1423:16,	increasing [2] - 1422:7,
1447:34, 1447:43,	1426:38, 1426:45,	1421:40, 1424:31,	1423:17, 1423:24,	1443:30
1457:32, 1457:35	1427:2, 1427:3,	1439:21, 1440:11,	1423:26, 1424:26,	indeed [28] - 1398:29,
holes [7] - 1413:29,	1427:17, 1427:20,	1441:3, 1461:42,	1429:47, 1432:36,	1401:38, 1406:22,
1442:15, 1443:34,	1428:42, 1428:44,	1474:4, 1478:1	1434:24, 1434:31,	1407:40, 1407:43,
1468:33, 1503:20,	1429:2, 1451:18,	immediate [17] - 1386:47,	1439:43, 1443:22,	1408:44, 1409:14,
1503:21	1460:3, 1464:22,	1407:11, 1423:27,	1455:5, 1456:41,	1411:33, 1420:1,
HOLLIDAY [7] - 1469:38,	1465:9, 1465:15,	1428:17, 1428:36,	1456:46, 1475:15,	1425:27, 1431:46,
1470:10, 1479:37,	1465:23, 1466:15,	1432:25, 1434:38,	1486:27, 1497:21,	1432:6, 1432:8,
1491:10, 1491:12,	1466:34, 1467:36,	1438:5, 1449:8,	1499:37	1433:11, 1442:28,
1502:19, 1502:41	1478:30, 1478:36,	1453:28, 1453:32,	inability [1] - 1486:44	1457:46, 1461:29,
Holliday [4] - 1470:16,	1481:27, 1489:27,	1465:23, 1486:26,	inadequate [1] - 1425:6	1472:6, 1488:14,
1480:4, 1491:8, 1502:17	1489:33, 1490:43,	1487:9, 1504:46,		1491:45, 1493:14,
holt [2] - 1397:23, 1429:38	1491:14, 1492:10,	1504:47	inappropriate[1] -	1494:7, 1495:23,
HOLT [6] - 1397:25,	1492:28, 1492:41,	immediately [11] -	1398:40	1497:20, 1498:10,
1397:27, 1427:41,	1492:43, 1493:16,	1410:19, 1431:37,	inbye [4] - 1415:38,	1498:34, 1501:47,
	1497:8, 1501:25,	1432:30, 1434:14,	1416:6, 1417:5, 1445:9	1507:15
1429:32, 1429:40, 1462:13	1501:38, 1502:11,	1441:2, 1446:28,	incident [22] - 1389:39,	independent [4] -
1462:13	1504:7, 1504:12,	1446:33, 1455:12,	1391:35, 1399:30,	1495:17, 1495:32,
Holt [13] - 1397:28,	1504:23, 1504:32	1460:18, 1478:27,	1399:43, 1411:29,	
1426:34, 1429:26,	huge [1] - 1432:46	1509:8	1422:46, 1423:38,	1496:16, 1496:33
1429:29, 1488:20,	human [8] - 1420:34,	impact [7] - 1482:14,	1427:16, 1434:31,	independently [1] -
1488:38, 1496:41,	1420:40, 1420:41,	1482:47, 1483:5,	1434:46, 1435:5,	1496:22
1497:13, 1497:45,	1421:5, 1437:28,	1483:9, 1483:12,	1436:33, 1437:3,	indicate [1] - 1396:18
1499:6, 1499:33,	1456:33, 1483:12,	1487:43, 1498:9	1438:14, 1440:38,	indicated [6] - 1388:40,
1499:34, 1501:37	1483:24	impacted [1] - 1485:21	1455:2, 1455:11,	1393:13, 1394:12,
hope [4] - 1401:16,	humans [1] - 1421:2	impacts [1] - 1495:6	1455:12, 1456:25,	1408:21, 1421:35,
1414:47, 1417:42,	Hunter [10] - 1409:5,	imperative [4] - 1466:25,	1458:13, 1498:24	1497:37
1440:5		_ ·	Incident [1] - 1392:35	indicating [1] - 1436:27
horizontal [4] - 1404:44,	1423:10, 1424:18,	1504:40, 1504:46,	incidents [11] - 1395:11,	indication [7] - 1410:16,
1408:41, 1442:21,	1426:18, 1431:25,	1504:47	1399:29, 1418:1,	1410:17, 1415:6,
1442:35	1432:32, 1438:17,	implement [9] - 1425:29,	1424:19, 1430:31,	1430:43, 1440:12,
hoco (4) 1/152:/	1440:37, 1470:14, 1471:7	1425:33, 1435:41,	1435:5, 1455:15,	1449:38, 1454:39
11056 [1] - 1432.4	1717.1.7	1443:14, 1456:16,	4450 0 4450 07	indicative [2] - 1485:3,
hose [1] - 1452:4 hour [1] - 1429:34			1458:8, 1459:37,	· · · · · · · · · · · · · · · · · ·
	Hunter's [1] - 1471:5 hypothetical [2] - 1403:32,	1474:36, 1475:9, 1475:31, 1490:6	1458:8, 1459:37, 1463:19, 1466:24	1487:35

individual [10] - 1411:41,	1479:35, 1480:30,	1463:37, 1465:29,	instructing [1] - 1415:44	irrespective[1] - 1506:32
1412:10, 1461:30,	1480:32, 1480:41,	1467:8, 1469:2,	instructions [1] - 1498:28	Isaac [1] - 1413:33
1485:35, 1491:27,	1481:2, 1481:9, 1492:47, 1497:10,	1470:47, 1471:33, 1473:3, 1473:16,	intake [1] - 1508:4	issue [39] - 1387:37,
1491:28, 1492:1, 1504:23, 1504:24	1499:40, 1500:11,	1473:21, 1474:12,	intend [2] - 1474:3, 1508:22	1400:32, 1400:46, 1406:6, 1412:25,
individually [3] - 1398:9,	1500:17, 1500:24,	1474:22, 1475:6,	intended [5] - 1421:47,	1400.0, 1412.23,
1411:7, 1501:41	1501:20, 1504:35,	1475:19, 1475:35,	1445:37, 1447:30,	1432:9, 1432:11,
individuals [1] - 1435:8	1505:18, 1505:24,	1476:39, 1479:3,	1455:16, 1504:38	1432:14, 1432:19,
indulging [1] - 1467:24	1505:27	1479:11, 1484:12,	intending [3] - 1397:5,	1434:10, 1435:29,
industry [1] - 1414:30	inspections [6] - 1402:10,	1484:26, 1485:33,	1431:36, 1504:37	1436:28, 1437:2,
inerting [1] - 1507:19	1403:5, 1422:37,	1485:39, 1486:4,	intent [3] - 1464:33,	1437:8, 1437:28,
inexplicable [1] - 1387:39	1480:23, 1480:40,	1486:12, 1486:32,	1480:6, 1505:26	1437:36, 1440:17,
influenced [1] - 1504:6	1499:46	1487:1, 1487:3,	intention [3] - 1424:22,	1443:43, 1443:45,
information [23] -	inspector [44] - 1391:13,	1487:22, 1491:15,	1494:42, 1506:33	1444:47, 1446:1,
1387:20, 1388:5,	1397:33, 1398:29,	1492:10, 1492:42,	interaction [5] - 1399:1,	1446:9, 1446:10,
1401:3, 1404:3,	1409:14, 1419:6,	1492:45, 1493:24,	1496:43, 1501:5,	1446:23, 1447:17,
1408:30, 1418:41,	1421:41, 1422:20, 1422:29, 1423:1,	1493:32, 1493:33, 1494:19, 1495:9,	1508:46	1448:26, 1448:31,
1422:17, 1424:47,	1423:20, 1423:23,	1495:20, 1496:44,	interactions [6] - 1398:34,	1452:3, 1452:26, 1452:35, 1453:43,
1426:10, 1426:21,	1423:31, 1427:19,	1497:2, 1497:9,	1430:37, 1431:22,	1454:40, 1457:26,
1427:23, 1429:10, 1436:27, 1450:38,	1430:19, 1435:22,	1497:15, 1497:21,	1452:39, 1466:12, 1497:1	1459:17, 1459:22,
1454:5, 1454:26,	1453:27, 1454:4,	1497:41, 1499:42,	interest [1] - 1504:36	1474:30, 1500:47
1463:13, 1464:3,	1454:13, 1454:31,	1500:2, 1502:5,	interested [2] - 1415:24,	issued [4] - 1456:46,
1465:20, 1477:8,	1461:13, 1464:8,	1502:12, 1502:20,	1418:3	1479:5, 1479:13,
1488:19, 1498:43	1465:21, 1465:23,	1502:22, 1504:3,	interim [1] - 1426:29	1479:47
informed [14] - 1385:11,	1465:25, 1465:33,	1504:14, 1504:33,	internal [1] - 1439:27	issues [69] - 1398:8,
1386:28, 1386:33,	1467:16, 1473:34,	1504:40, 1505:16,	interpret [2] - 1418:29,	1398:16, 1398:25,
1387:24, 1387:26,	1473:39, 1473:47,	1506:35, 1509:12	1471:46	1399:8, 1400:24,
1388:47, 1396:47,	1479:4, 1479:12,	Inspectorate [3] -	interpreted [2] - 1411:21,	1400:28, 1400:39,
1398:12, 1423:2,	1479:19, 1479:27,	1396:34, 1396:37, 1396:38	1506:32	1401:42, 1402:23,
1472:28, 1489:32,	1479:34, 1480:1, 1480:11, 1492:29,	inspectorate's [11] -	interpreting [2] - 1421:2,	1403:8, 1406:19,
1497:15, 1499:34,	1493:13, 1493:45,	1404:11, 1415:16,	1471:44	1407:36, 1413:11, 1413:13, 1414:18,
1499:42 informing [2] - 1397:3,	1498:30, 1498:35,	1440:12, 1465:14,	interrupt [1] - 1418:22	1415:2, 1415:7,
1398:32	1499:1, 1499:15,	1465:19, 1475:45,	intersected [1] - 1442:36	1415:15, 1420:22,
informs [1] - 1405:31	1499:28	1485:22, 1486:38,	intervention [4] - 1396:37,	1423:28, 1424:14,
initial [1] - 1431:30	Inspector [21] - 1389:9,	1490:19, 1490:36,	1396:43, 1420:34, 1479:20	1428:6, 1430:38,
initiated [2] - 1397:1,	1389:11, 1389:14,	1504:45	interventions [1] - 1487:2	1430:45, 1432:2,
1505:4	1403:36, 1417:34,	inspectors [29] - 1394:21,	interview [2] - 1509:12,	1432:15, 1436:17,
initiative [1] - 1479:26	1421:23, 1453:12,	1394:28, 1398:40,	1509:13	1436:22, 1437:32,
injured [2] - 1482:12,	1466:4, 1466:5, 1466:8,	1399:37, 1401:31,	interviewed [1] - 1509:11	1438:35, 1440:13,
1509:7	1466:26, 1466:29,	1401:41, 1403:7,	introduce [1] - 1468:33	1440:26, 1441:16,
input [1] - 1399:15	1469:5, 1472:41,	1418:23, 1418:34,	introduced [3] - 1418:18,	1441:29, 1441:30,
inquire [1] - 1464:25	1477:9, 1486:9, 1486:13, 1486:23,	1422:42, 1427:45, 1430:38, 1430:44,	1422:37, 1468:15	1442:4, 1442:47, 1443:12, 1446:32,
inquiries [6] - 1390:46,	1492:14, 1493:12,	1434:31, 1462:24,	Investigate [1] - 1456:15	1448:6, 1448:25,
1391:1, 1391:2, 1391:5,	1507:39	1463:11, 1463:18,	investigate [3] - 1457:13,	1449:6, 1453:16,
1391:10, 1403:2	inspector's [1] - 1479:45	1463:26, 1465:35,	1458:18, 1498:44	1453:28, 1455:43,
inquiring [1] - 1500:22	inspectorate [94] -	1465:36, 1465:39,	investigating [2] -	1456:19, 1456:33,
inquiry [3] - 1486:10, 1508:40, 1509:3	1385:10, 1385:26,	1465:44, 1466:22,	1466:32, 1487:29	1456:36, 1458:39,
INQUIRY [2] - 1384:11,	1387:46, 1389:4,	1466:32, 1474:24,	investigation [1] - 1502:34	1458:47, 1463:26,
1509:24	1391:6, 1393:12,	1491:28, 1492:1,	investigations [4] -	1463:30, 1477:25,
Inquiry [9] - 1384:18,	1393:46, 1394:7,	1500:27, 1501:13	1462:40, 1463:4, 1463:10, 1466:23	1478:46, 1482:37,
1397:30, 1404:37,	1394:14, 1395:3,	install [1] - 1439:24	1463:10, 1466:23 investment[1] - 1433:12	1482:45, 1482:46,
1441:17, 1491:37,	1397:3, 1397:13,	installation [4] - 1390:7,	invited [1] - 1414:30	1483:16, 1484:11,
1492:16, 1497:3,	1397:33, 1397:42,	1392:20, 1472:8,	involve[1] - 1402:26	1484:16, 1485:32,
1498:26, 1509:5	1401:4, 1401:13, 1401:26, 1401:30,	1475:16 installed [8] - 1387:17,	involved[9] - 1393:34,	1487:41, 1487:44, 1487:45, 1497:2,
inseam [2] - 1405:29,	1401.20, 1401.30,	1387:20, 1387:22,	1395:38, 1423:39,	1497.43, 1497.2,
1503:21	1403:24, 1403:45,	1387:30, 1387:33,	1431:29, 1437:9,	1503:11, 1508:24
inside [1] - 1472:38	1404:5, 1410:44,	1388:42, 1392:17,	1446:1, 1446:8,	item [1] - 1455:40
inspection [30] - 1390:42,	1410:47, 1411:20,	1464:26	1455:10, 1489:2	itself [6] - 1399:17,
1394:21, 1394:29,	1411:34, 1417:23,	installing [2] - 1386:19,	involves [1] - 1392:33	1427:28, 1443:5,
1397:6, 1397:15,	1417:31, 1424:25,	1386:35	involving [7] - 1395:24,	1465:28, 1488:25,
1397:16, 1422:15,	1424:31, 1431:23,	instance [2] - 1483:16,	1418:13, 1430:31,	1494:37
1423:32, 1454:9, 1464:34, 1466:6,	1433:21, 1438:41,	1505:7	1431:13, 1440:28,	
1466:26, 1473:34,	1451:18, 1452:39,	instances [2] - 1465:47,	1454:36, 1466:24	
	1454:41, 1462:28,	1506:20	iPads [1] - 1422:36	
10/03/2	021 (15)——	12———12————	<u> </u>	

				1
J	1404:2, 1404:29,	1455:20, 1455:37,	1487:44, 1488:11,	Logan [1] - 1430:23
	1405:3, 1410:24,	1488:38, 1489:22	1488:30, 1489:15,	long-term [8] - 1390:20,
	1413:11, 1415:7,	learning [11] - 1395:11,	1490:22	1410:17, 1428:16,
January [2] - 1500:3,	1421:31, 1424:14,	1399:29, 1407:45,	LFI [17] - 1399:26,	1428:37, 1432:10,
1503:6	1428:6, 1428:44,	1434:45, 1435:5,	1436:33, 1437:18,	1432:41, 1497:25,
job [10] - 1404:11,	1430:37, 1430:45,	1450:43, 1455:1,	1437:26, 1438:33,	1499:36
1415:16, 1415:19,	1441:29, 1441:30,	1455:15, 1458:8,	1438:42, 1439:47,	longer-term [5] - 1422:6,
1415:20, 1424:10,	1452:47	1459:37, 1461:26	1443:45, 1444:3,	1428:27, 1455:16,
1483:26, 1490:20,	knowing [4] - 1420:1,	learnings [3] - 1407:44,	1457:47, 1459:23,	1456:7, 1486:26
1490:36, 1507:4, 1507:6	1420:20, 1489:31,	1441:44, 1488:28	1459:36, 1459:46,	Longwall [1] - 1390:6
join [1] - 1508:8	1505:16	learnt [3] - 1413:20,	1462:4, 1502:27	longwall [158] - 1385:12,
July [38] - 1416:34,	knowledge [24] - 1391:1,	1436:11, 1436:15	LFIs [9] - 1396:35,	1385:27, 1390:32,
1416:35, 1417:1,	1396:4, 1396:6,	least [20] - 1386:12,	1401:19, 1458:5,	1390:36, 1391:25,
1417:32, 1417:33,	1396:14, 1396:16,	1387:6, 1389:1,	1459:5, 1463:21,	1392:21, 1393:29,
1417:44, 1423:23,	1396:27, 1396:34,	1391:19, 1393:19,	1463:22, 1464:47,	1398:7, 1398:15,
1423:31, 1424:28,	1398:33, 1404:13,	1393:45, 1394:7,	1474:21, 1474:23	1399:9, 1400:13,
1424:42, 1426:21,	1410:29, 1410:41,	1395:37, 1395:46,	light [6] - 1392:27,	1400:34, 1404:6,
1432:29, 1432:36,	1411:20, 1411:28,	1414:14, 1425:26,	1393:44, 1432:3,	1404:18, 1404:23,
1435:28, 1437:42,	1418:23, 1422:24,	1433:21, 1446:8,	1442:4, 1490:43,	1404:28, 1404:38,
1438:14, 1463:5,	1456:45, 1463:22,	1452:15, 1458:37,	1501:36	1404:44, 1405:3,
1464:2, 1464:3,	1469:13, 1469:14,	1463:9, 1469:41,	likely [8] - 1413:40,	1405:25, 1405:39,
1464:23, 1466:26,	1470:47, 1475:35,	1475:46, 1487:31,	1438:42, 1450:23,	1406:7, 1406:23,
1467:12, 1469:2,	1475:41, 1475:45,	1489:34	1457:35, 1464:11,	1407:5, 1407:11,
1477:9, 1486:8, 1486:9,	1488:1	leave [3] - 1389:17,	1488:13, 1488:14,	1407:40, 1407:47,
1497:21, 1497:33,	known [9] - 1393:12,	1397:29, 1450:44	1505:8	1412:35, 1412:38,
1497:36, 1497:37,	1394:8, 1448:21,	leaves [1] - 1487:20	likewise [1] - 1466:32	1413:21, 1414:1,
1497:42, 1498:4,	1469:42, 1483:29,	leaving [1] - 1417:28	limit [7] - 1406:39,	1415:23, 1415:29,
1498:12, 1498:15,	1484:3, 1485:23,	led [4] - 1401:21, 1465:35,	1417:12, 1429:9,	1419:28, 1419:31,
1499:6, 1501:38	1485:24, 1503:46	1473:8, 1500:12	1451:40, 1483:25,	1423:2, 1425:23,
jumping [1] - 1474:28	knows [2] - 1418:45,	left [2] - 1445:18, 1498:28	1507:25	1428:9, 1430:30,
June [1] - 1486:11	1498:19	left-hand [1] - 1445:18	limits [1] - 1490:24	1436:16, 1437:46,
		legal [1] - 1509:3	line [1] - 1491:47	1438:6, 1440:18,
K	I	legislation [4] - 1479:39,	lines [2] - 1439:36,	1440:29, 1440:34,
		1493:37, 1493:40,	1459:45	1441:3, 1441:12,
		1495:24	linked [4] - 1442:42,	1441:15, 1441:22,
keep [27] - 1427:33,	labour [1] - 1462:37	legitimate [1] - 1424:21	1443:7, 1444:1, 1457:35	1441:25, 1441:43,
1452:9, 1452:30,	lack [1] - 1444:12	lengthy [1] - 1458:27	links [1] - 1458:26	1442:11, 1446:15,
1454:12, 1454:34,	ladies [1] - 1508:38	less [12] - 1391:38,	listed [4] - 1390:19,	1449:19, 1452:38,
1459:45, 1463:12,	large [3] - 1398:38,	1392:9, 1392:38,	1390:30, 1391:36,	1453:29, 1453:33,
1482:22, 1482:30,	1493:27, 1501:5	1392:47, 1393:14,	1391:47	1454:26, 1454:38,
1483:31, 1483:34,	largely [3] - 1385:46,	1393:24, 1419:39,	listen [1] - 1471:7	1456:3, 1456:5,
1483:40, 1483:45,	1485:37, 1487:7	1419:43, 1460:35,	listening [1] - 1507:38	1457:22, 1463:35,
1485:41, 1486:30,	last [20] - 1388:28,	1474:31, 1475:12,	litres [9] - 1422:1, 1425:9,	1464:16, 1466:10,
1486:34, 1486:44,	1392:32, 1393:33,	1505:47	1432:20, 1432:45,	1466:17, 1466:23,
1487:6, 1487:19,	1399:36, 1401:39,	lessons [2] - 1413:19,	1433:6, 1439:35,	4400.00 4400.0
1488:30, 1489:14, 1489:35, 1490:22,	1408:18, 1414:44,	10000110[2] 1110.10,		1466:28, 1469:8,
1489 35 1490 22		1462.9	· · · · · · · · · · · · · · · · · · ·	1470:29, 1470:44,
	1431:4, 1445:13,	1462:9	1443:20, 1443:26,	, ,
1501:32, 1501:35,	1431:4, 1445:13, 1449:44, 1451:34,	letter [4] - 1494:35,	1443:20, 1443:26, 1443:31	1470:29, 1470:44,
1501:32, 1501:35, 1506:32	1431:4, 1445:13,	letter [4] - 1494:35, 1494:37, 1494:39,	1443:20, 1443:26, 1443:31 live [1] - 1454:40	1470:29, 1470:44, 1471:33, 1471:38,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42,	1431:4, 1445:13, 1449:44, 1451:34,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10, 1432:8, 1441:38,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47 leading [1] - 1501:6	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43, 1454:38, 1482:23,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19, 1481:17	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19, 1478:24, 1479:3,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10, 1432:8, 1441:38, 1453:27, 1453:41,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47 leading [1] - 1501:6 learn [3] - 1459:30, 1461:43, 1462:9	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43, 1454:38, 1482:23, 1482:47, 1483:9,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19, 1481:17 locations [4] - 1415:25,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19, 1478:24, 1479:3, 1481:15, 1482:38,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10, 1432:8, 1441:38, 1455:41, 1456:33	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47 leading [1] - 1501:6 learn [3] - 1459:30,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43, 1454:38, 1482:23, 1482:47, 1483:9, 1483:12, 1485:17,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19, 1481:17 locations [4] - 1415:25, 1415:32, 1444:43,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:29, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19, 1478:24, 1479:3, 1481:15, 1482:38, 1483:7, 1483:30,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10, 1432:8, 1441:38, 1453:27, 1453:41,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47 leading [1] - 1501:6 learn [3] - 1459:30, 1461:43, 1462:9 learned [9] - 1408:3, 1409:4, 1424:17,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43, 1454:38, 1482:23, 1482:47, 1483:9,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19, 1481:17 locations [4] - 1415:25,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:17, 1477:21, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19, 1478:24, 1479:3, 1481:15, 1482:38, 1483:7, 1483:30, 1483:45, 1484:6,
1501:32, 1501:35, 1506:32 keeping [3] - 1489:42, 1490:24, 1505:41 Keith [1] - 1417:34 kept [7] - 1450:15, 1450:46, 1466:15, 1467:28, 1483:35, 1487:10, 1487:26 key [1] - 1406:10 kilometres [3] - 1445:20, 1445:42, 1449:14 kind [17] - 1398:3, 1402:9, 1405:30, 1405:36, 1414:47, 1415:44, 1418:40, 1422:24, 1424:17, 1429:10, 1432:8, 1441:38, 1453:27, 1453:41, 1456:33 kinds [16] - 1403:43,	1431:4, 1445:13, 1449:44, 1451:34, 1452:2, 1454:2, 1454:34, 1461:29, 1464:45, 1464:47, 1465:1, 1499:1, 1507:37 late [3] - 1385:39, 1392:27, 1500:18 lateral [2] - 1419:4, 1443:34 lawful [1] - 1433:42 lawfully [1] - 1437:12 layering [2] - 1412:27, 1450:23 lead [1] - 1439:15 leadership [1] - 1398:47 leading [1] - 1501:6 learn [3] - 1459:30, 1461:43, 1462:9 learned [9] - 1408:3,	letter [4] - 1494:35, 1494:37, 1494:39, 1494:42 level [21] - 1386:47, 1405:23, 1409:19, 1409:20, 1416:47, 1420:5, 1421:7, 1431:26, 1433:41, 1439:42, 1443:40, 1482:14, 1482:23, 1483:31, 1485:47, 1486:1, 1488:15, 1490:2, 1502:7, 1502:11 levels [20] - 1416:40, 1419:20, 1419:23, 1422:21, 1433:39, 1441:9, 1445:43, 1454:38, 1482:23, 1482:47, 1483:9, 1483:12, 1485:17,	1443:20, 1443:26, 1443:31 live [1] - 1454:40 lives [1] - 1490:32 load [5] - 1475:11, 1476:19, 1476:31, 1477:22, 1477:23 local [2] - 1452:17, 1481:11 localised [4] - 1451:6, 1451:24, 1452:9, 1452:35 locate [1] - 1472:29 located [4] - 1390:43, 1419:5, 1419:8, 1494:41 location [6] - 1390:7, 1409:45, 1416:15, 1416:23, 1445:19, 1481:17 locations [4] - 1415:25, 1415:32, 1444:43,	1470:29, 1470:44, 1471:33, 1471:38, 1473:5, 1473:6, 1474:17, 1474:41, 1475:26, 1475:37, 1476:19, 1476:22, 1476:31, 1476:41, 1476:44, 1477:2, 1477:6, 1477:7, 1477:11, 1477:13, 1477:22, 1477:25, 1477:27, 1477:29, 1477:32, 1477:42, 1477:46, 1477:47, 1478:2, 1478:6, 1478:13, 1478:19, 1478:24, 1479:3, 1481:15, 1482:38, 1483:7, 1483:30, 1483:45, 1484:6, 1484:8, 1484:11,

	T	1	<u></u>	T
1485:13, 1487:31,	1451:40, 1474:32,	1453:11, 1454:36,	1464:36, 1464:37,	1507:10
1487:36, 1488:1,	1482:27, 1490:5,	1493:16, 1494:18,	1464:41, 1465:31,	merely [1] - 1472:32
1488:28, 1488:43,	1498:42	1497:37, 1498:36,	1465:34, 1465:35,	messaging [1] - 1456:15
1489:7, 1489:20,	lows [1] - 1421:27	1498:42, 1500:28	1481:31, 1481:33,	met [1] - 1498:11
1489:40, 1490:3,	lunch [1] - 1466:42	managers [1] - 1459:10	1495:38, 1495:41,	methane [89] - 1385:30,
1490:5, 1490:12,	LUNCHEON [1] - 1467:2	manages [2] - 1399:18,	1497:5, 1498:44,	1385:40, 1386:28,
1490:42, 1492:43,		1420:7	1505:10	1388:37, 1391:23,
1493:34, 1493:36,	M	managing [21] - 1386:46,	mature [1] - 1415:6	1391:38, 1392:3,
1494:33, 1496:42,	IVI	1398:3, 1406:6, 1408:6,	mean [8] - 1396:42,	1392:38, 1393:24,
1496:43, 1498:8,		1408:36, 1415:7,	1398:39, 1398:40,	1393:29, 1393:35,
1500:7, 1501:20,	machinery [1] - 1483:4	1415:15, 1433:40,	1418:33, 1429:1,	1395:24, 1395:39,
1503:1, 1503:13,	Maggs [4] - 1508:43,	1436:28, 1448:38,	1429:21, 1460:43,	1395:42, 1395:46,
1503:17, 1503:18,	1509:6, 1509:10,	1449:1, 1449:2,	1467:43	1396:10, 1396:44,
1503:47, 1504:2,	1509:11	1476:31, 1476:34,	means [7] - 1398:14,	1396:47, 1405:44,
1504:7, 1506:7,	Maggs' [1] - 1509:14	1477:21, 1481:11,	1407:23, 1408:5,	1406:6, 1406:22,
1506:16, 1506:45,	Magistrates [1] - 1384:36	1484:1, 1485:4,	1420:34, 1423:6,	1406:34, 1406:39,
1507:34, 1507:40,	Maingate [1] - 1434:1	1485:24, 1497:17	1433:40, 1492:25	1407:2, 1407:4,
1507:45, 1507:46,	maingate [6] - 1413:29,	manifested [1] - 1465:28	meant [1] - 1444:1	1407:18, 1407:23,
1508:2, 1508:44	1415:37, 1442:16,	manner [1] - 1431:10	meantime [2] - 1426:23,	1409:6, 1409:20,
longwalls [11] - 1413:2,	1445:2, 1508:27,	manually [1] - 1498:30	1426:38	1415:26, 1415:31,
1420:14, 1448:12,	1508:44	map [3] - 1404:38,	measure [3] - 1386:34,	1418:9, 1420:4, 1421:6,
1474:29, 1477:39,	maintained [1] - 1457:15	1436:21, 1445:18	1398:38, 1478:34	1422:21, 1424:47,
1482:41, 1484:21,	maintenance [6] -	mapped [2] - 1405:24,	measured [1] - 1415:45	1425:28, 1426:23,
1488:29, 1506:5,	1386:19, 1386:29,			1420:20, 1420:23, 1430:31,
1506:6, 1508:1	1386:44, 1457:32,	1405:28	measures [12] - 1439:22, 1468:45, 1478:37,	1430:30, 1430:31,
Look [1] - 1410:7	1483:16, 1485:7	maps [1] - 1404:27		1433:40, 1439:2,
look [36] - 1389:38,	major [1] - 1506:12	March [41] - 1384:41,	1489:44, 1490:8,	1439:7, 1439:15,
1391:29, 1395:22,	manage [27] - 1401:41,	1385:27, 1385:45,	1490:10, 1490:37,	1441:9, 1442:1,
1396:8, 1399:30,	1406:10, 1407:4,	1385:46, 1386:27,	1490:44, 1507:13,	1444:11, 1448:38,
1402:30, 1402:36,	1407:26, 1407:36,	1387:4, 1387:6, 1387:9,	1507:17, 1507:25, 1507:26	1449:2, 1449:13,
1404:36, 1405:7,	1420:2, 1420:21,	1387:11, 1388:9,		1450:8, 1450:38,
1408:35, 1409:13,	1420:35, 1432:15,	1395:1, 1414:5,	measuring [6] - 1450:22,	1451:39, 1451:41,
1409:27, 1409:41,	1433:39, 1437:45,	1414:41, 1441:16,	1450:27, 1451:9,	1452:21, 1454:22,
1415:2, 1416:33,	1440:23, 1441:1,	1447:14, 1447:46,	1452:16, 1452:21	1466:24, 1466:34,
1418:33, 1419:36,	1441:29, 1444:2,	1453:5, 1453:6,	mechanical [2] - 1397:43,	1467:19, 1467:36,
1420:12, 1424:32,	1474:37, 1475:10,	1458:14, 1458:15,	1449:25	1472:8, 1478:30,
1424:39, 1424:42,	1476:13, 1476:15,	1465:2, 1472:40,	mechanisms [2] -	1478:36, 1482:14,
1425:24, 1432:28,	1476:44, 1477:26,	1474:12, 1487:32,	1493:16, 1501:26	1482:22, 1482:47,
1435:36, 1438:13,	1477:34, 1481:15,	1487:34, 1487:42,	medium [6] - 1423:27,	1483:9, 1483:12,
1438:33, 1438:42,	1485:27, 1487:47,	1493:35, 1493:36,	1428:16, 1428:36,	1483:31, 1483:45,
1439:47, 1444:32,	1488:17, 1499:43	1494:30, 1494:33,	1432:10, 1497:24,	1484:17, 1485:17,
1448:22, 1455:42,	managed [6] - 1406:1,	1500:7, 1500:10,	1499:36	1485:41, 1487:33,
1467:31, 1467:47,	1437:32, 1438:6,	1500:24, 1500:28,	meet [4] - 1433:30,	1487:44, 1488:11,
1495:37	1451:5, 1453:28,	1502:26, 1504:13, 1504:32	1433:39, 1466:11,	1488:30, 1489:15,
looked [4] - 1411:6,	1485:47		1489:35	1489:36, 1490:22,
1425:43, 1440:14,	management [39] -	MARCH _[1] - 1509:25	meeting [16] - 1417:46,	1498:44, 1499:22,
1458:6	1390:36, 1399:7,	marked [1] - 1503:35	1417:47, 1421:16,	1500:2, 1500:12,
looking [18] - 1385:40,	1399:43, 1401:45,	Martin [11] - 1384:26,	1421:18, 1423:26,	1504:12, 1508:14
1401:5, 1404:43,	1402:26, 1402:37,	1385:3, 1397:19,	1425:4, 1430:8, 1431:7,	methanometer [6] -
1408:33, 1409:15,	1403:24, 1403:31,	1428:22, 1428:40,	1453:9, 1454:35,	1409:20, 1415:26,
1410:23, 1411:13,	1407:18, 1411:29,	1429:40, 1445:29,	1463:14, 1466:4,	1416:22, 1441:10,
1411:41, 1412:11,	1412:35, 1414:4,	1479:37, 1482:2,	1499:7, 1499:10,	1445:19, 1449:39
1418:46, 1428:18,	1414:13, 1414:43,	1501:30, 1505:34	1500:39	methanometers [6] -
1429:21, 1437:3,	1423:38, 1424:4,	massive [1] - 1399:5	meetings [6] - 1403:5,	1409:40, 1418:42,
1462:27, 1472:23,	1425:1, 1427:16,	match [1] - 1508:17	1467:8, 1467:13,	1419:24, 1444:20,
1477:8, 1495:33,	1434:31, 1437:28,	material [3] - 1407:43,	1467:20, 1467:28,	1445:2
1495:38	1438:1, 1441:30,	1413:5, 1438:40	1480:15	method [1] - 1495:7
looks [3] - 1423:32,	1442:1, 1455:2,	materials [1] - 1398:34	Member [2] - 1384:27,	metre [8] - 1416:14,
1456:7, 1486:32	1463:11, 1469:8,	matter [13] - 1397:4,	1384:30	1442:14, 1444:26,
lost [4] - 1405:29, 1426:2,	1474:42, 1475:6,	1397:14, 1400:37,	members [1] - 1398:47	1445:9, 1445:41,
1427:24, 1438:9	1475:36, 1477:18,	1404:4, 1404:43,	memo [1] - 1459:10	1450:8, 1450:15,
Lotus [5] - 1472:42,	1477:23, 1481:32,	1405:9, 1414:14,	memory [1] - 1430:12	1501:16
1492:28, 1492:32,	1487:36, 1491:29,	1446:16, 1464:44,	mention [3] - 1461:18,	metres [5] - 1413:20,
1498:25, 1498:29	1496:15, 1496:17,	1464:45, 1465:44,	1481:40, 1490:27	1416:5, 1416:18,
low [5] - 1434:4, 1440:19,	1496:44, 1500:1	1471:6, 1473:23	mentioned [8] - 1464:41,	1416:19, 1445:17
1482:30, 1488:23,	manager [13] - 1397:2,	mattered [2] - 1419:3,	1465:8, 1465:31,	Middle [2] - 1405:43,
1498:40	1398:46, 1403:44,	1419:11	1468:19, 1469:5,	1408:23
lower [7] - 1441:9,	1417:47, 1424:46,	matters [15] - 1455:44,	1483:7, 1484:34,	might [47] - 1388:28,
		4.4		
10/03/2	2021 (15)———	<u> </u>	1	L

	T		1	1
1396:32, 1397:19,	1419:28, 1420:20,	1500:32, 1500:39,	missing [1] - 1411:42	1470:12, 1470:21,
1402:45, 1403:31,	1421:14, 1422:16,	1500:44, 1501:6,	missions [1] - 1433:43	1480:4, 1481:44,
				· · · ·
1404:29, 1406:24,	1424:13, 1424:45,	1501:13, 1501:26,	mistake [2] - 1410:18,	1482:7, 1482:9,
1409:36, 1410:2,	1426:28, 1426:43,	1501:31, 1502:3,	1445:30	1482:11, 1485:31,
1410:36, 1410:38,	1426:45, 1427:2,	1502:38, 1503:41,	mistakes [1] - 1459:30	1491:2, 1491:6,
1411:11, 1411:13,	1427:10, 1427:32,	1504:17, 1504:18,	Mitchelson [1] - 1441:21	1505:38, 1508:31
1414:3, 1417:43,	1427:47, 1428:2,	1504:35, 1504:36,	modelling [1] - 1439:36	MRE [9] - 1418:39,
1422:25, 1425:22,	1428:14, 1428:17,	1504:39, 1504:41,	modifications [1] -	1426:15, 1426:16,
1427:30, 1428:2,	1429:43, 1430:7,	1505:5, 1505:8,	1457:13	1469:5, 1499:7,
1428:21, 1432:6,	1430:46, 1431:22,	1505:18, 1505:19,		1499:15, 1499:27,
1434:30, 1440:37,	1431:36, 1432:1,	1505:27, 1506:36,	Mohr [1] - 1430:23	1499:42, 1500:16
		· · ·	moment [15] - 1397:19,	· ·
1442:41, 1446:9,	1432:7, 1433:32,	1506:39, 1507:21,	1398:37, 1404:10,	MREs [1] - 1463:22
1458:36, 1461:5,	1433:35, 1434:3,	1507:23, 1507:47,	1406:5, 1415:2,	MS [15] - 1385:3, 1385:7,
1464:20, 1471:10,	1434:17, 1436:27,	1508:26	1416:13, 1422:47,	1385:9, 1397:19,
1471:11, 1474:2,	1438:43, 1441:18,	Mine/Operation [1] -	1428:33, 1431:35,	1469:38, 1470:10,
1477:6, 1477:18,	1441:28, 1446:28,	1498:29	1432:31, 1432:35,	1479:37, 1482:2,
1478:7, 1481:14,	1449:3, 1450:16,	mined [1] - 1404:29		1491:10, 1491:12,
1482:17, 1482:28,	1450:46, 1452:2,	miners [1] - 1386:41	1474:15, 1494:3,	1502:19, 1502:41,
1485:6, 1486:18,	1452:29, 1452:30,		1495:13, 1495:17	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·	mines [26] - 1394:32,	Monday [4] - 1467:9,	1502:43, 1502:45,
1486:43, 1486:47,	1453:4, 1453:21,	1398:3, 1398:4,	1480:14, 1480:15,	1505:33
1487:12, 1493:37,	1454:36, 1454:41,	1398:11, 1398:16,	1494:33	Mulcahy [1] - 1454:37
1498:1, 1504:6,	1455:1, 1455:21,	1401:31, 1405:37,	money [1] - 1421:42	multiple [4] - 1431:47,
1504:22, 1507:29	1456:10, 1456:22,	1405:39, 1419:30,	moneys [1] - 1422:2	1452:28, 1452:39,
mind [19] - 1387:39,	1457:41, 1458:18,	1419:31, 1420:29,	ļ	1488:10
1396:46, 1397:7,	1466:27, 1468:7,	1420:38, 1430:11,	monitor [2] - 1472:8,	
1464:38, 1464:44,	1469:7, 1469:18,	, , , , , , , , , , , , , , , , , , ,	1472:24	must [12] - 1387:15,
· · · · · · · · · · · · · · · · · · ·		1430:12, 1430:38,	monitoring [1] - 1489:44	1389:8, 1406:23,
1465:4, 1467:40,	1473:7, 1473:35,	1432:9, 1450:39,	Monitoring [1] - 1439:32	1425:12, 1425:13,
1467:43, 1468:26,	1473:36, 1473:38,	1451:2, 1467:37,	monitors [2] - 1422:21,	1449:18, 1478:39,
1468:28, 1470:32,	1473:39, 1474:3,	1468:2, 1468:3, 1468:9,	1488:20	1493:44, 1496:6,
1473:12, 1476:46,	1474:5, 1474:16,	1473:34, 1479:46,	month [1] - 1394:43	1496:7, 1496:14,
1477:1, 1477:22,	1474:36, 1474:41,	1480:24, 1493:13		1502:16
1481:23, 1504:34,	1474:47, 1475:9,	Mines [1] - 1421:23	months [7] - 1440:11,	myriad [2] - 1487:43,
1504:39, 1506:24	1475:30, 1476:12,	minimise [1] - 1507:13	1466:27, 1466:28,	•
mine [235] - 1386:17,	1476:18, 1476:24,		1478:26, 1478:27,	1497:1
11111 e [235] - 1300.17,	1470.10, 1470.24,	minimum [1] - 1482:31	1406:24 1505:17	
1000 01 1000 10	4.470.05 4.477.00		1496:24, 1505:17	
1386:21, 1386:46,	1476:35, 1477:33,	mining [30] - 1393:40,	•	N
1387:40, 1387:46,	1479:19, 1479:21,	mining [30] - 1393:40, 1397:32, 1397:37,	months' [1] - 1443:20	N
			months' [1] - 1443:20 Moranbah [6] - 1450:21,	
1387:40, 1387:46,	1479:19, 1479:21,	1397:32, 1397:37,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31,	name [4] - 1397:27,
1387:40, 1387:46, 1388:37, 1389:2,	1479:19, 1479:21, 1479:24, 1479:39,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36,	
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37	name [4] - 1397:27,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10	name [4] - 1397:27, 1471:21, 1502:32,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:41, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:24, 1486:32, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:41, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:41, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:39, 1393:41, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:41, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:8, 1403:25,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:1, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:41, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:44, 1404:14,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:41, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:40, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:44, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:13,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:44, 1404:14, 1405:28, 1405:31,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:41, 1486:8, 1486:24, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:40, 1489:40, 1489:43, 1490:3, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:41, 1393:47, 1394:8, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1404:14, 1405:28, 1405:31, 1406:24, 1406:28,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1404:14, 1405:28, 1405:31, 1406:24, 1407:35,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1406:28, 1407:4, 1407:35, 1408:7, 1408:28, 1407:4, 1408:28, 1407:4, 1407:35, 1408:7, 1408:28,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1404:14, 1405:28, 1405:31, 1406:24, 1407:35,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1406:28, 1407:4, 1407:35, 1408:7, 1408:28, 1407:4, 1408:28, 1407:4, 1407:35, 1408:7, 1408:28,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:8, 1394:11, 1394:15, 1394:40, 1394:44, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:4, 1406:28, 1407:4, 1407:35, 1408:7, 1408:28, 1409:14, 1409:41,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:31, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36, 1498:42, 1498:43,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37 miss [2] - 1427:4, 1428:41	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41, 1429:32, 1429:40,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26, 1433:7, 1433:39,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:41, 1393:47, 1394:8, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:8, 1403:25, 1403:44, 1404:14, 1405:28, 1407:4, 1407:35, 1408:7, 1408:28, 1409:14, 1410:23, 1	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36, 1498:42, 1498:43, 1499:11, 1499:12,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37 miss [2] - 1427:4, 1428:41 missed [6] - 1449:19,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26, 1433:7, 1433:39, 1435:6, 1435:31,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:41, 1393:47, 1394:8, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:8, 1403:25, 1403:44, 1404:14, 1405:28, 1407:4, 1407:35, 1408:7, 1408:28, 1407:4, 1409:41, 1410:7, 1410:23, 1410:29, 1411:22, 1411:34, 1417:35,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36, 1498:42, 1498:43, 1499:11, 1499:12, 1499:29, 1499:46,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37 miss [2] - 1427:4, 1428:41 missed [6] - 1449:19, 1462:42, 1463:1,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41, 1429:32, 1429:40,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26, 1433:7, 1433:39, 1435:6, 1435:31, 1440:10, 1440:22, 1441:47, 1446:34,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:41, 1393:47, 1394:8, 1394:40, 1394:44, 1395:4, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:10, 1402:14, 1402:27, 1402:36, 1403:6, 1403:8, 1403:25, 1403:44, 1404:14, 1405:28, 1407:4, 1407:35, 1408:7, 1408:28, 1407:4, 1409:41, 1410:7, 1410:23, 1410:29, 1411:22, 1411:34, 1417:35, 1417:38, 1418:27,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36, 1498:42, 1499:46, 1500:2, 1500:17,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37 miss [2] - 1427:4, 1428:41 missed [6] - 1449:19, 1462:42, 1463:1, 1464:24, 1475:29,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41, 1429:32, 1429:40, 1462:13, 1462:17,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26, 1433:7, 1433:39, 1435:6, 1435:31, 1440:10, 1440:22, 1441:47, 1446:34, 1447:15, 1448:17,
1387:40, 1387:46, 1388:37, 1389:2, 1389:5, 1389:9, 1389:13, 1390:27, 1390:47, 1391:7, 1392:29, 1393:13, 1393:23, 1393:47, 1394:40, 1394:41, 1394:41, 1395:12, 1395:24, 1397:1, 1397:5, 1398:15, 1398:32, 1398:46, 1399:5, 1399:15, 1400:3, 1400:8, 1400:22, 1400:45, 1401:41, 1402:5, 1402:14, 1402:27, 1402:36, 1403:4, 1404:14, 1405:28, 1403:44, 1405:28, 1406:24, 1406:28, 1407:4, 1407:35, 1408:7, 1408:28, 1409:14, 1409:41, 1410:7, 1410:23, 1411:22, 1411:34, 1417:35, 1417:38, 1418:27, 1418:35, 1419:7,	1479:19, 1479:21, 1479:24, 1479:39, 1480:8, 1480:47, 1481:10, 1481:13, 1481:28, 1482:13, 1482:14, 1485:9, 1485:22, 1485:41, 1486:31, 1486:32, 1486:44, 1487:35, 1487:44, 1488:17, 1489:6, 1489:10, 1489:40, 1489:43, 1490:3, 1490:11, 1490:20, 1490:37, 1490:38, 1491:30, 1492:2, 1492:26, 1492:42, 1492:47, 1493:4, 1493:15, 1493:44, 1494:18, 1495:27, 1496:14, 1496:43, 1497:2, 1497:10, 1497:13, 1497:16, 1497:20, 1497:37, 1497:47, 1498:12, 1498:18, 1498:31, 1498:36, 1498:42, 1498:43, 1499:11, 1499:12, 1499:29, 1499:46,	1397:32, 1397:37, 1398:8, 1398:10, 1406:7, 1406:35, 1407:46, 1408:22, 1423:6, 1427:33, 1428:1, 1444:41, 1449:4, 1462:33, 1477:25, 1478:11, 1478:46, 1483:3, 1483:7, 1483:29, 1484:7, 1485:27, 1487:28, 1493:32, 1495:6, 1501:33, 1501:35 MINING [1] - 1384:11 Mining [1] - 1384:15 minute [2] - 1470:38, 1479:2 minutes [20] - 1393:36, 1401:19, 1417:5, 1417:18, 1423:24, 1423:25, 1424:27, 1426:9, 1429:47, 1432:36, 1439:43, 1443:22, 1450:9, 1467:28, 1475:15, 1480:16, 1497:21, 1497:24, 1499:37 miss [2] - 1427:4, 1428:41 missed [6] - 1449:19, 1462:42, 1463:1,	months' [1] - 1443:20 Moranbah [6] - 1450:21, 1480:7, 1480:31, 1480:32, 1480:36, 1480:37 Moreby [1] - 1415:10 morning [14] - 1396:11, 1396:23, 1397:27, 1428:21, 1443:1, 1455:38, 1463:9, 1464:42, 1480:14, 1480:15, 1493:11, 1501:30, 1509:19 most [5] - 1417:16, 1436:16, 1462:40, 1463:3, 1505:8 move [8] - 1386:43, 1388:17, 1389:20, 1392:32, 1409:2, 1472:4, 1487:38, 1487:40 movement [2] - 1420:2, 1508:25 movements [1] - 1488:17 moving [4] - 1390:25, 1398:17, 1482:13, 1483:4 MR [24] - 1397:25, 1397:27, 1427:41, 1429:32, 1429:40, 1462:13, 1466:44,	name [4] - 1397:27, 1471:21, 1502:32, 1502:33 nature [6] - 1429:11, 1442:30, 1474:10, 1479:22, 1504:25, 1507:1 near [3] - 1407:27, 1427:4, 1428:41 nearly [2] - 1440:44, 1479:1 necessarily [10] - 1386:38, 1408:13, 1415:29, 1436:12, 1449:18, 1451:12, 1473:38, 1482:18, 1483:46, 1487:47 necessary [5] - 1387:41, 1495:24, 1495:31, 1499:22, 1505:6 need [34] - 1401:32, 1406:1, 1406:38, 1409:36, 1411:26, 1413:34, 1416:39, 1421:2, 1431:26, 1433:7, 1433:39, 1435:6, 1435:31, 1440:10, 1440:22, 1441:47, 1446:34,

0 148823, 148835, 0469, 14923,					
44781, 14846. 44852, 148526, 148526, 148526, 148526, 148526, 148527, 148538, 148526, 14852			0	1488:23, 1488:35,	
148626, 148864, 148663, 148647, 148673, 148626, 148627, 148627, 148627, 148628	, ,	,		· · · · · · · · · · · · · · · · · · ·	, ,
149627, 149538,			O'Brien (1) - 1491:4	• •	
1509.88, 1507.4, 1507.8 1509.21 1509.21 1509.22 1385.47, 1386.37, 1386.38, 1386.5, 1386.5, 1487.43, 1484.18, 1496.12 1494.7, 1494.11, 1494.18, 1496.12 1494.7, 1494.11, 1494.86, 1494.22, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.26, 1492.24, 1494.27, 1496.39, 1					
needing -141628, -1417-38, 1422-13,	1	• • • • • • • • • • • • • • • • • • • •			
1417-38, 1422-33, 1439-12, 1439-13, 143					· ·
1447-136 149-12, 149-23 149-24, 149-24, 149-24, 149-24, 149-23, 149-24		I	_ · ·		
149423 149629 149513 149629 149513 149629 149513 149629 149513 149629 149513 149629 149513 149629 149513 149624 149634 149624 149638 149639 149513 149624 149639 1			1408:3, 1409:4,		
1495.22 1410-18.	1474:36	1494:22, 1494:26,	1411:38, 1423:11,	1413:1, 1413:24,	1389:1, 1389:28,
needs -1410-18	needing [2] - 1423:36,	1495:9, 1495:13,	1442:47, 1455:20,	1418:1, 1418:9,	1389:43, 1390:19,
1493-27, 1479-39, 1494-34, 1498-34, 1498-31, 1498-32, 149					1391:25, 1392:36,
1498-18					
negatire -1403-47 negatire -1403-47 negatire -1485-92 network -1457-22 new -1397-16 1407-31 -1481-18 1407-31 -1481-18 1407-31 -1481-18 1407-31 -1481-18 1407-31 -1481-18 1407-31 -1481-18 1408-37 1408-37 1408-37 1408-37 1408-38 1408-38 1408-38 1408-38 1408-39 1408-39 1408-31 1408-3					
1985/1 1485/1 1487/2 1487/2 1488/1 1485/2 1489/2 1					
					· · · · · · · · · · · · · · · · · · ·
1887-18	• • • • • • • • • • • • • • • • • • • •				
1497-23, 1481-18, 1498-25, 1593-30 1498-27, 1486-27, 1486-27, 1486-27, 1486-27, 1487-27, 1					
1487.20			object [3] - 1426:27,		
149:34 1485.9 1388:15 1388:26 1388:15 1388:26 1486:37 1487:21 1497:17 1487:17 1447:17 1447:18 1447:19 1447:1	1	, ,	1469:38, 1479:37	1472:33, 1486:22,	1407:31, 1408:19,
1486:37 1388:40 1389:10 1483:30 1485:41 1486:29 1486:31 1487:21 1486:31 1477:11 1504:16 1417:33 1413.8 1412.9 1487:20 1487:2	· · · · · · · · · · · · · · · · · · ·	notifications [10] -	objective[1] - 1423:24	1487:27, 1492:5,	1410:1, 1410:13,
Newman	1419:34, 1465:9,	1385:15, 1385:26,	• • • •		
1492:15 next ₁₁₂ -1396.9, 1466:19 1486:14, 1487:17, 1487:20, 1487:11, 1504:16 next ₁₁₂ -1396.9, 1466:9 1497:14, 1497:21, 1497:23, 1497:41 1490:24, 1497:24, 1490:25 1490:24, 1490:25 1490:34, 1497:41 1490:32, 1490:32, 1490:32, 1490:34, 1490:3	1466:37	1388:40, 1389:10,	· · · · · · · · · · · · · · · · · · ·		
next			1 ' '		
1397.17, 1399.9,				· ·	
1405:13, 1427:25, 1387:7, 1387:9, 1387:7, 1387:9, 1397:1, 1388:22, 1490:45			1		
1429-22, 1431-4, 1387-11, 1388-22, 1490-45 1467-13, 1447-14, 1388-25, 1388-26, 1386-28, 1395-9, 1395-27, 1395-34, 1467-14, 1467-13, 1447-14, 147-13, 1447-14, 147-13, 1467-14, 147-13, 1467-14, 147-13, 1467-14, 147-14, 147-14, 147-14, 147-14, 147-18, 147-14,	1	• •	· ·		
1433.45, 1437.41, 1388.25, 1388.26, 1388.26, 1388.26, 1388.28, 1395.9, 1388.28, 1395.9, 1388.28, 1395.9, 1388.28, 1395.9, 1388.28, 1395.9, 1388.28, 1395.9, 1388.28, 1395.21, 1497.41 1403.7, 1403.24, 1410.37, 1403.24, 1410.37, 1403.24, 1410.37, 1403.24, 1410.37, 1403.24, 1437.19, 1438.34, 1438.2, 1428.24, 1437.19, 1438.34, 1438.2, 1438.24, 1438.28, 1438	· · · · ·		•	*	
1447.13, 1447.46, 1388.28, 1395.9, 1395.27, 1395.34, 1467.15, 1467.	· · · · ·			• • •	
1500:28	· · · · ·				
Niehaus					1433:20, 1433:43,
1417:46, 1418.8, notifying 1444:42 1406:23, 1410:5, 1447:19, 1456:26, 1436:41, 1437:27, 1437:31, 1437:32, 1437:31, 1437:31, 1437:32, 1447:33, 1447:34, 1440:33, 1445:33, 1445:34, 1440:38, 1440			observe [1] - 1419:19	1431:42, 1437:19,	1434:38, 1435:29,
14232, 142445,	1403:29, 1410:37,	notifier [1] - 1461:16	obvious [10] - 1400:6,	1437:23, 1438:45,	· · · · · · · · · · · · · · · · · · ·
1453:11, 1453:19, noting 1-1439:25 1415:26, 1430:42, 1487:10, 1487:26, 1440:26, 1440:32, 1445:36, 1471:21, notwithstanding 1-1446:33, 1394:39, 1486:5, 1486:25 1486:25 1486:25 1486:25 1486:25 1486:25 1486:25 1486:36, 1498:36 1440:38, 1466:5, 1466:81, 1406:38, 1466:38, 1466:38, 1466:38, 1466:38, 1466:5, 1466:38, 1466:5, 1466:1, 1466:18, 1466	1417:46, 1418:8,	notifies [1] - 1494:42	1406:23, 1410:5,		
1454:36, 1471:21, 1498:36 1394:39, 1486:5, 1486:45 109-10-100:18 109-10-100:18 109-10-100:18 109-10-100:18 109-10-100:18 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-100:19 109-10-10-10-10-10 109-10-10-10-10-10-10-10-10-10-10-10-10-10-		,			
1498:36 1394:39, 1486:45 1452:25 1451:45, 1452:1, 1442:37, 1442:37, 1442:41, 1451:3, 1461:15 1452:26 1451:38, 1465:3, 1466:16, 1466:11, 1466:11, 1466:11, 1466:14, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:3, 1466:4, 1466:3, 1466:4		_			, ,
night(n) - 1500:18 no-one (n) - 1401:9 nominated (s) - 1386:18, 1486:45 November (a) - 1440:32, 1393:5, 1393:23, 1393:345, 1396:21, 1492:29 none (g) - 1412:10, 1424:10, 1436:16 nonetheless (a) - 1404:12 normall (n) - 1506:7 normall (n) - 1406:73 1480:32, 1480:33, 1480:32, 1480:33, 1480:32, 1480:34,	1	• • • • • • • • • • • • • • • • • • • •			, ,
November 4 - 1401:9					
nominated			• • •		
1392:15, 1392:36, 1478:27 1413:1, 1414:14, 1440:10, 1475:21, 1445:42, 1446:5, 1393:5, 1393:23, 1492:29 1466:5 1492:41 1416:5, 1416:5, 1416:5,			1		1445:24, 1445:27,
1393:5, 1393:23, nuances [1] - 1501:42 Nugent [2] - 1403:36, 1415:25, 1415:46, 1416:45, 1416:23, 1476:27, 1447:13, 1447:46, 1416:23, 1476:27, 1447:13, 1447:46, 1416:12, 1418:45, 1476:23, 1476:27, 1447:13, 1447:46, 1455:37, 1455:32, 1455:32, 1455:32, 1455:37, 1455:32, 1455:37, 1455:40, 1455:37, 1455:40, 1455:40, 1455:50, 1455:37, 1455:40, 1455:37, 1455:40, 1455:37, 1455:40, 1455:37, 1455:40, 1455:37, 1455:40, 1455:37, 1455:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1457:40, 1456:24, 1456:24, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:32, 1456:24, 1456:29, 1456:32, 1456:29, 1456:40, 1456:40, 1456:32, 1456:24, 1457:40, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:24, 1456:29, 1456:29, 1456:29, 1456:29, 1456:37, 1456:29, 1456:29, 1456:44, 1466:11, 1456:24, 1456:29, 1456:24, 1456:29, 1456:29, 1456:29, 1456:29, 1456:44, 1466:11, 1456:24, 1456:29, 1456:29, 1456:29, 1456:49, 1466:41, 1466:11, 1456:24, 1466:11, 1456:24, 1456:29, 1456:29, 1456:29, 1456:39, 1466:47, 1466:11,				1440:10, 1475:21,	1445:42, 1446:5,
149:29			1415:25, 1415:46,	1476:23, 1476:27,	
Table Tabl	1393:45, 1396:21,	Nugent [2] - 1403:36,	1418:12, 1418:45,		
Number 30 - 1388:28 1390:26 1391:16 1390:26 1391:16 1390:26 1391:16 1390:26 1391:18 1393:13 1451:16 1451:38 1451:16 1451:38 1451:16 1451:38 1385:41 1386:32 1465:41 1466:41	1492:29	1466:5			· · · · · · · · · · · · · · · · · · ·
1391.28, 1391.16, 1391.18, 1393.13, 1451.16, 1451.38, 1452.14, 1460.42, 1385.41, 1386.32, 1463.9, 1464.47, 1480.37, 1480.32, 1492.14, 1490.34, 1471.12, 1471.12, 1471.22, 1471.12, 1471.12, 1471.12, 1471.12, 1471.12, 1472.29, 1432.21, 1486.27, 1486.27, 1486.27, 1486.27, 1486.38, 1492.28, 1492.32 noted [10] - 1415.47, 1422.29, 1438.18, 1422.29, 1436.40, 1422.20, 1436.40, 1422.20, 1436.40, 1422.20, 1436.40, 1436.40, 1436.40, 1436.40, 1436.40, 1436.40, 1436.38, 1436.40, 1436.40, 1436.38, 1436.40, 1436.40, 1436.38, 1436.40, 1436.40, 1436.38, 1436.40, 1436.40, 1436.38, 1436.40, 1436.40, 1436.39, 1436.40		number [30] - 1389:28,			· ·
1437:23	· ·		· · · · · · · · · · · · · · · · · · ·		
1397.23					
1393.5, 1393.7, 1395.7, 1497.13				1	
North [4] - 1480:7, 1426:2, 1439:26, 1439:26, 1430:19, 1454:13, 1389:21, 1389:33, 1472:27, 1472:39, 1480:36 1447:13, 1447:14, 1458:23, 1469:12, 1390:27, 1390:46, 1473:12, 1477:20, 1479:24, 1449:11, 1478:30, 1478:36, 1493:6, 1493:7, 1496:8, 1492:28, 1492:32 1498:3, 1498:27, 1426:29, 1436:40, 1440:38, 1443:38, 1447:47, 1450:24, 1455:20			1		
1480:31, 1480:32, 1439:27, 1445:26, 1447:14, 1450:32, 1471:42, 1471:47, 1450:22, 1435:18, 1436:40, 1440:38, 1447:47, 1450:24, 1455:20 1480:31, 1480:32, 1439:27, 1445:26, 1447:14, 1480:3, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:36, 1478:37, 1479:37, 1479:40, 1480:14, 1479:28, 1492:32					1470:12, 1470:39,
1480:36 1447:13, 1447:14, 1455:44, 1460:3, 1427:24, 1449:11, 1478:30, 1478:36, 1478:36, 1471:12, 1471:22, 1471:47, 1422:8, 1492:32 noted [10] - 1415:47, 1422:29, 1434:45, 1435:18, 1436:40, 1440:38, 1447:47, 1450:24, 1455:20 1478:23, 1447:14, 1456:34, 1460:3, 1478:30, 1478:30, 1478:36, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:30, 1478:31, 1498:31, 1498:6, 1493:7, 1496:8, 1492:28, 1492:32 noted [10] - 1415:47, 1400:37, 1400:37, 1400:37, 1400:37, 1400:37, 1400:37, 1400:37, 1400:38, 1443:38, 1440:38, 1443:38, 1447:47, 1450:24, 1400:38, 1443:38, 1447:47, 1450:24, 1400:38, 1448:38, 1447:47, 1450:24, 1455:20 1447:47:14, 1460:12, 1490:46, 1390:27, 1390:46, 1390:27, 1470:40, 1470:37, 1470:37, 1490:37, 1490:37, 1490:37, 1490:37, 1490:37, 1490:41, 1480:45, 1480:37, 1480:37, 1480:38, 1480:40, 1480:45, 1480:40, 1480:45, 1480:40, 1480:40, 1470:44, 1466:11, 1480:44, 1466:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:44, 1460:11, 1480:40, 1480:40, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1480:40, 1470:41, 1470:40, 1470:41, 1470:40, 1470:41, 1470:40, 1470:41, 1470:40, 1470:41, 1470:40, 1470:41, 1470:41, 1470:40, 1470:41, 1470:40, 1470:41, 1470:41, 1470:40, 1470:41, 1470:41, 1470:41, 1470:41,					
note [9] - 1391:12, 1455:44, 1460:3, 1469:17 1392:27, 1393:10, 1478:6, 1478:20, 1427:24, 1449:11, 1478:30, 1478:36, 0ccasionally [1] - 1473:40 1393:28, 1393:34, 1478:37, 1479:37, 1471:42, 1471:47, 1493:6, 1493:7, 1496:8, 1498:3, 1498:27, 1498:3, 1498:27, 1498:3, 1498:27, 1498:3, 1498:27, 1476:42 1469:17 1393:28, 1393:34, 1478:37, 1479:37, 1479:40, 1480:14, 1480:37, 1480:38, 1480:37, 1480:38, 1480:37, 1480:38, 1480:37, 1480:38, 1480:37, 1480:38, 1480:37, 1480:38, 1480:45, 1480:41, 1480:45, 1480:41, 1480:45, 1480:41, 1480:45, 1480:41, 1480:45, 1480:41, 1480:45, 1480:40, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1490:2, 1497:36, 1490:2, 1497:36, 1490:2, 1497:36, 1490:2, 1497:36, 1490:2, 1497:36, 1490:2, 1497:36, 1490:2, 1490:36, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490:3, 1490:21, 1490			1458:23, 1469:12,	1390:27, 1390:46,	
1427:24, 1449:11, 1476:30, 1476:36, 1471:12, 1471:22, 1486:20, 1486:33, 1471:42, 1471:47, 1493:6, 1493:7, 1496:8, 1492:28, 1492:32 1498:3, 1498:27, 1422:29, 1434:45, 1501:24, 1507:33 1422:29, 1434:45, 1420:15, 1491:15, 1440:38, 1443:38, 1492:42, 1503:20 1447:47, 1450:24, 1455:20 1476:42, 1393:39, 1395:27, 1395:34, 1396:5, 1396:15, 1398:2, 1396:15, 1398:2, 1480:45, 1480:41, 1476:42 1463:14, 1466:11 0ccur [15] - 1400:37, 0fficer [1] - 1437:9 0fficers [2] - 1394:21, 1496:2, 1497:36, 1499:42, 1503:20 1447:39, 1449:29, 1447:47, 1450:24, 1457:8, 1465:38, 1455:20 0fficial [1] - 1494:26 0fficial [1] - 1494:26 0ften [3] - 1403:7, 1459:5, 1505:2, 1506:24,					
1471:12, 1471:22, 1496:35, 1496:35, 1493:6, 1493:7, 1496:8, 1492:28, 1492:32		1478:30, 1478:36,	• • •		
14/1:42, 14/7:47, 1493.6, 1493.7, 1496.8, 1495.6, 1493.7, 1496.8, 1491.21, 1496.8, 1491.21, 1496.8, 1496.45, 1482:11, 1496.45, 1482:11, 1496.45, 1482:11, 1486:45, 1486:11 1486:45, 1486:11 1486:45, 1482:11, 1483:16, 1487:17, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1491:23, 1492:21, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:2, 1497:36, 1496:3, 1496:3	1471:12, 1471:22,				
1492:28, 1492:32 1498:3, 1498:27, 1498:3, 1498:27, 1476:42 1476:42 1463:14, 1466:11 1483:16, 1487:17, 1422:29, 1434:45, 1435:18, 1436:40, 1420:15, 1491:15, 1441:8, 1446:25, 0fficer [1] - 1437:9 1491:23, 1492:21, 1440:38, 1443:38, 1492:42, 1503:20 1447:39, 1449:29, 1498:21, 1498:11, 1447:47, 1450:24, 1457:8, 1465:38, 0fficial [1] - 1494:26 1498:16, 1502:21, 1455:20 1473:47, 1480:40, 1487:32 1483:16, 1487:17,					
noted [10] - 1415:47, 1501:24, 1507:35 numbers [5] - 1416:44, 1422:29, 1434:45, numbers [5] - 1416:44, occur [15] - 1400:37, officer [1] - 1437:9 1491:23, 1492:21, 1440:38, 1443:38, 1420:15, 1491:15, 1441:8, 1446:25, 1447:39, 1449:29, 1394:29 1498:1, 1498:11, 1447:47, 1450:24, 1455:20 1418:9 1457:8, 1465:38, 0fficial [1] - 1494:26 1498:16, 1502:21, 1455:20 1473:47, 1480:40, 1487:32 1491:23, 1492:21,					· · · · · · · · · · · · · · · · · · ·
1422:29, 1434:45, 1436:40, 1440:38, 1443:48, 1440:38, 1443:38, 1447:47, 1450:24, 1455:20					
1440:38, 1443:38, 1447:47, 1450:24, 1455:20 1492:42, 1503:20 1492:42, 1503:20 1492:42, 1503:20 1447:39, 1449:29, 1457:8, 1465:38, 1465:45, 1468:40, 1473:47, 1480:40, 1498:1, 1498:11, 1498:16, 1502:21, 1503:34, 1504:23, 1505:2, 1506:24,					
1447:47, 1450:24, 1455:20 numerous [1] - 1418:9 1457:8, 1465:38, 1465:45, 1468:40, 1473:47, 1480:40, 1487:32 official [1] - 1494:26 1498:16, 1502:21, 1503:34, 1504:23, 1505:2, 1506:24,				• •	· · · · · · · · · · · · · · · · · · ·
1455:20 1465:45, 1468:40, often [3] - 1403:7, 1459:5, 1503:34, 1504:23, 1473:47, 1480:40, 1487:32 1505:2, 1506:24,	· · · · ·		1		
1473:47, 1480:40, 1487:32 1505:2, 1506:24,				often [3] - 1403:7, 1459:5,	
10/03/2021 (15)1616				1487:32	1505:2, 1506:24,
	└──.10/03/2	2021 (15)———			

		1		
1506:44, 1507:9,	1461:26	1418:38, 1421:15,	1447:16, 1447:43,	1447:18, 1447:19,
1507:22, 1507:37,	opportunity [14] -	1422:36, 1423:25,	1448:10, 1448:15,	1447:26, 1451:35,
1508:10, 1508:15	1388:14, 1410:40,	1431:2, 1431:4,	1449:11, 1450:7,	1452:16, 1482:23,
one's [1] - 1429:22	1430:19, 1438:32,	1432:29, 1438:15,	1452:27, 1452:35,	1482:29, 1482:30,
ones [10] - 1416:35,	1452:29, 1457:8,	1439:19, 1453:20,	1455:5, 1458:39,	1483:25, 1483:31,
1419:39, 1419:43,	1457:46, 1461:23,	1454:1, 1454:2, 1454:34, 1458:45,	1459:36, 1459:47, 1460:9, 1463:19,	1483:36, 1485:42, 1486:30, 1486:34,
1419:44, 1447:47, 1449:39, 1451:17,	1464:25, 1464:47, 1465:33, 1485:8,	1459:44, 1471:4,	1469:15, 1472:1,	1486:45, 1488:31,
1464:2, 1480:16	1485:10, 1499:11	1494:17, 1498:7,	1472:39, 1478:20,	1489:15, 1489:36,
ongoing [4] - 1486:39,	opposed [1] - 1480:2	1498:24, 1506:30	1484:6, 1484:40,	1490:22, 1494:26
1486:40, 1487:41,	option [1] - 1507:21	pages [5] - 1395:21,	1485:46, 1486:4,	perceived [1] - 1403:35
1490:43	options [1] - 1423:43	1395:22, 1432:30,	1494:11, 1502:3,	percentage [1] - 1417:11
online [5] - 1419:5,	oral [1] - 1478:10	1472:21, 1503:34	1503:26, 1505:9, 1507:2	perch [3] - 1433:29,
1419:11, 1446:19,	orally [1] - 1472:6	panel [4] - 1404:6,	particularly [15] - 1405:37,	1439:18, 1453:4
1453:34, 1483:46	orange [1] - 1459:45	1407:40, 1440:40,	1413:10, 1435:31,	perfect [2] - 1412:23,
onsite [3] - 1418:15,	Order [1] - 1390:6	1440:43	1442:10, 1442:43,	1424:36
1456:42, 1462:41	order [6] - 1390:42,	panels [3] - 1414:1,	1453:16, 1461:43,	perfectly [2] - 1451:6,
open [1] - 1401:45	1436:23, 1441:28,	1414:14, 1436:22	1461:47, 1472:21,	1452:34
opening [4] - 1421:16,	1453:37, 1475:10,	paragraph [19] - 1394:24,	1474:25, 1488:8,	performance [3] -
1470:13, 1471:5, 1471:8	1506:11	1394:28, 1396:32,	1493:27, 1504:37, 1505:30, 1508:12	1478:26, 1478:34,
operate [7] - 1387:40,	orders [1] - 1433:6	1397:10, 1431:5, 1435:38, 1457:40,	parties [2] - 1504:11,	1486:21
1426:45, 1476:24,	organisation[1] - 1474:5	1468:14, 1468:32,	1509:3	performed [1] - 1473:38
1476:36, 1476:45, 1490:12, 1508:15	organisational [1] -	1474:28, 1474:40,	partly [1] - 1439:5	performing [2] - 1446:14, 1446:22
operated [3] - 1412:38,	1391:35	1475:19, 1479:2,	parts [1] - 1482:13	perhaps [6] - 1388:9,
1438:2, 1508:17	originally [1] - 1445:36 otherwise [2] - 1408:22,	1479:9, 1495:40,	party [3] - 1495:18,	1389:1, 1389:37,
operates [2] - 1419:20,	1478:35	1498:17, 1499:21,	1495:32, 1496:16	1485:6, 1489:34,
1424:13	ought [15] - 1386:36,	1505:40, 1506:31	pass [1] - 1508:13	1507:25
operating [9] - 1400:3,	1387:11, 1387:14,	paragraphs [2] - 1468:14,	passages [1] - 1509:13	perimeter [4] - 1434:24,
1404:22, 1407:21,	1387:34, 1387:45,	1501:9	passed [1] - 1463:13	1507:40, 1507:46,
1453:23, 1477:12,	1388:5, 1388:10,	parameters [1] - 1420:14	past [2] - 1449:24,	1507:47
1482:27, 1496:6,	1389:3, 1395:2, 1401:5,	paraphrasing [1] -	1496:40	period [31] - 1385:31,
1496:19, 1508:20	1428:42, 1429:11,	1411:40	pause [2] - 1418:38,	1385:45, 1387:12,
Operating [1] - 1494:36	1479:4, 1479:11,	pardon [1] - 1426:41	1454:3	1388:35, 1394:43,
operation [6] - 1393:30,	1485:12	part [23] - 1387:18,	peak [6] - 1395:38,	1395:1, 1395:4,
1405:29, 1466:28,	outbye [6] - 1391:25,	1389:18, 1393:19,	1396:10, 1438:20,	1398:20, 1402:6,
1487:36, 1490:5, 1506:4	1415:38, 1416:5,	1395:18, 1398:29,	1460:10, 1460:14,	1415:24, 1421:17,
operational [1] - 1415:1	1416:10, 1444:26,	1404:13, 1408:6,	1488:11	1421:31, 1426:17,
operations [9] - 1386:25,	1448:1	1408:33, 1413:43, 1418:23, 1422:38,	peaked [1] - 1395:47	1428:13, 1431:23, 1437:41, 1440:34,
1398:20, 1404:18,	outcomes [1] - 1411:34	1430:29, 1431:30,	peaking [1] - 1410:1 peaks [1] - 1396:20	1442:10, 1446:39,
1405:33, 1406:7, 1414:25, 1501:46,	output [1] - 1508:17	1432:33, 1433:45,	pending [1] - 1506:33	1451:30, 1455:7,
1506:5, 1506:7	outset [4] - 1428:6, 1428:43, 1439:6, 1453:8	1434:46, 1436:20,	people [16] - 1399:14,	1458:14, 1461:31,
Operator [7] - 1394:18,	overall [3] - 1432:47,	1439:11, 1439:20,	1403:1, 1408:12,	1462:5, 1463:5,
1435:27, 1435:37,	1474:47, 1479:2	1445:44, 1473:9,	1414:34, 1415:10,	1467:35, 1467:44,
1437:40, 1493:37,	overview [1] - 1422:16	1498:29, 1506:7	1425:33, 1440:1,	1486:9, 1486:10,
1494:16, 1496:5	overwhelming [1] -	partially [1] - 1444:10	1446:34, 1455:11,	1486:22, 1507:8
operator [18] - 1389:37,	1506:38	particular [73] - 1386:1,	1456:21, 1456:22,	periods [3] - 1434:4,
1409:14, 1417:18,	own [8] - 1397:32, 1399:5,	1391:1, 1391:23,	1483:36, 1490:12,	1436:17, 1506:6
1426:1, 1429:45,	1410:29, 1410:33,	1397:13, 1397:36,	1490:33, 1496:1,	permanently [1] - 1490:21
1431:21, 1432:7,	1414:21, 1495:27,	1397:38, 1398:3,	1506:38	person [7] - 1418:45,
1445:24, 1453:5,	1501:42	1398:10, 1398:16,	people's [1] - 1490:32	1421:39, 1427:46,
1453:20, 1459:27,	oxidate [1] - 1407:30	1399:30, 1399:39,	per [54] - 1391:24,	1436:35, 1437:10,
1469:25, 1482:22,	oxidation [1] - 1406:44	1400:1, 1400:28, 1400:46, 1402:22,	1393:36, 1395:39,	1458:41, 1469:39
1489:43, 1490:23,	oxidisation [1] - 1468:34	1403:8, 1405:38,	1395:47, 1396:10,	personal [1] - 1398:39
1494:23, 1494:39, 1498:23	oxidise[1] - 1407:30	1408:5, 1408:6,	1396:20, 1396:21,	personally [2] - 1450:44, 1466:16
operator's [1] - 1490:20	oxygen [6] - 1406:45,	1409:29, 1411:27,	1396:22, 1405:44, 1406:39, 1406:43,	personnel [2] - 1469:7,
operators [2] - 1459:11,	1406:46, 1407:27,	1411:29, 1418:3,	1409:9, 1409:10,	1508:45
•	1447:18, 1507:20,	1419:3, 1419:4, 1419:8,	1409:24, 1417:2,	perspective [3] - 1427:18,
1460:47	1507:25	1419:18, 1420:4,	1417:10, 1422:1,	1440:12, 1469:41
1460:47 Opinion [8] - 1464:43.		1420:45, 1424:4,	1425:9, 1425:28,	pertain [1] - 1481:31
opinion [8] - 1464:43,	D		1 ''	•
	Р	1425:18, 1427:10,	1432:20, 1432:46,	phase [1] - 1456:5
opinion [8] - 1464:43, 1478:16, 1478:18,	P	1425:18, 1427:10, 1434:16, 1435:7,	1432:20, 1432:46, 1433:6, 1434:24,	•
opinion [8] - 1464:43, 1478:16, 1478:18, 1478:20, 1479:3, 1489:37, 1490:40	P page [25] - 1389:37,	1434:16, 1435:7, 1437:8, 1437:13,		•
opinion [8] - 1464:43, 1478:16, 1478:18, 1478:20, 1479:3,	-	1434:16, 1435:7, 1437:8, 1437:13, 1437:45, 1440:18,	1433:6, 1434:24,	phenomenon [3] - 1439:5,
opinion [8] - 1464:43, 1478:16, 1478:18, 1478:20, 1479:3, 1489:37, 1490:40 opinions [2] - 1462:28,	page [25] - 1389:37,	1434:16, 1435:7, 1437:8, 1437:13,	1433:6, 1434:24, 1441:9, 1441:10,	phenomenon [3] - 1439:5, 1439:14, 1483:6

phrase [1] - 1487:28	1406:14, 1408:11,	1483:41, 1490:10	1482:45	1425:2, 1430:11,
pick [3] - 1422:25,	1413:39, 1414:31,	post [2] - 1501:6, 1502:11	pressures [1] - 1507:28	1430:13, 1433:13,
1427:41, 1441:44	1428:16, 1431:31,	potential [9] - 1405:24,	presumably [2] - 1397:46,	1436:36, 1436:45,
picked [6] - 1388:41,	1432:41, 1436:20,	1418:1, 1422:46,	1488:30	1437:13, 1455:5,
1427:45, 1456:24,	1436:28, 1453:44,	1429:17, 1450:27,	presume [2] - 1388:8,	1455:15, 1456:41,
1456:30, 1458:45,	1479:23	1450:38, 1468:33,	1463:44	1458:40, 1459:23,
1458:47	plans [3] - 1404:11,	1487:30, 1503:11	presuming [1] - 1471:42	1462:4, 1462:5, 1473:7,
picking [1] - 1457:26	1431:8, 1499:16	potentially [3] - 1490:38,	presupposes [1] -	1473:18, 1474:8,
picks [1] - 1391:43	plant [4] - 1385:47,	1505:43, 1507:27	1386:38	1483:7, 1483:29,
picture [2] - 1411:42,	1422:7, 1443:27,	power [5] - 1400:12,	pretending [1] - 1412:10	1486:3, 1486:31, 1492:9
1415:1	1443:30	1416:27, 1441:11,	pretty [7] - 1398:24,	processes [19] - 1393:25,
piece [2] - 1427:8, 1452:27	play [6] - 1413:19, 1483:4,	1506:46	1398:25, 1416:36,	1398:17, 1399:20,
pipeline [1] - 1410:39	1487:30, 1488:5,	PowerPoint [1] - 1402:31	1418:32, 1437:22,	1400:2, 1400:23,
pitch [1] - 1438:26	1488:12, 1509:2	powers [1] - 1473:36	1478:39	1401:20, 1402:40,
pixels [1] - 1405:22	pleasant [1] - 1400:18	practice [2] - 1469:39,	prevent [9] - 1386:34,	1407:10, 1407:14,
place [31] - 1386:17,	plenty [1] - 1403:23	1469:46	1387:13, 1392:10,	1410:30, 1411:28,
1386:34, 1386:42,	plus [1] - 1481:16	practices [5] - 1394:31,	1456:16, 1474:37,	1411:29, 1418:28,
1387:43, 1388:13,	poignant [1] - 1509:6	1404:22, 1449:4,	1488:22, 1492:43,	1433:26, 1440:2,
1389:9, 1393:25,	point [41] - 1385:10,	1457:33, 1487:28	1504:37, 1506:38	1455:2, 1457:42, 1457:47
1400:23, 1410:19,	1385:20, 1387:12,	pre [16] - 1391:39,	Preventative [1] - 1458:35	produce [2] - 1476:45,
1416:23, 1418:28,	1396:26, 1398:45,	1392:39, 1393:14,	preventative [6] - 1386:18,	1506:20
1420:35, 1434:18,	1399:21, 1414:36,	1393:20, 1407:3,	1388:12, 1390:19,	
1440:28, 1448:11,	1416:21, 1416:26,	1417:47, 1432:3,	1392:15, 1393:4,	produced [1] - 1417:42
1465:15, 1468:41,	1417:25, 1418:42,	1442:20, 1442:30,	1481:29	producing [3] - 1498:9, 1506:7, 1506:17
1469:39, 1472:25,	1419:19, 1419:23,	1443:4, 1474:30,	preventing [1] - 1388:2	production [46] - 1386:21,
1474:3, 1475:25,	1419:36, 1423:31,	1474:32, 1475:13,	previous [10] - 1392:25,	1386:37, 1420:7,
1476:21, 1476:46,	1425:17, 1425:32,	1482:33, 1484:7,	1392:35, 1393:5,	1427:8, 1427:11,
1488:34, 1490:44,	1427:41, 1427:44,	1488:27	1405:29, 1418:2,	1441:24, 1441:30,
1492:47, 1497:16,	1429:12, 1433:22,	pre-drain [3] - 1442:20,	1458:22, 1465:34,	1456:5, 1468:16,
1497:47, 1500:23,	1433:31, 1434:16,	1442:30, 1443:4	1465:40, 1486:46,	1468:25, 1468:41,
1501:34, 1502:4	1437:46, 1440:19, 1445:20, 1446:23,	pre-drainage [9] -	1488:29	1469:8, 1471:33,
placed [1] - 1449:45	1447:43, 1449:41,	1393:14, 1393:20,	previously [7] - 1403:37,	1471:34, 1471:38,
placing [1] - 1423:17	1455:42, 1457:17,	1407:3, 1432:3, 1474:30, 1474:32,	1411:12, 1445:33,	1472:25, 1472:34,
plan [49] - 1388:2, 1388:3,	1461:21, 1463:45,	1474.30, 1474.32, 1475:13, 1482:33,	1453:33, 1461:25,	1472:46, 1473:5,
1423:26, 1423:33,	1485:40, 1485:46,	1475.15, 1462.55,	1463:31, 1472:25	1475:2, 1475:10,
1423:46, 1424:22,	1486:19, 1490:9,	pre-drainage/recovery/	primarily [1] - 1430:7	1475:14, 1475:25,
1424:26, 1425:5, 1425:7, 1426:22,	1493:34, 1494:38,	dilution [2] - 1391:39,	principal [1] - 1468:21	1475:32, 1475:33,
1426:28, 1426:29,	1498:8	1392:39	private [3] - 1508:41,	1475:37, 1475:44,
1426:33, 1426:34,	pointed [3] - 1420:41,	pre-start [1] - 1417:47	1509:2, 1509:18	1476:17, 1476:25,
1426:44, 1427:1,	1426:34, 1476:22	preceded [1] - 1410:37	proactively [1] - 1499:43 probability [1] - 1505:29	1476:37, 1477:2,
1427:9, 1427:16,	pointing [2] - 1404:27,	preceding [1] - 1478:28	• • • • • • • • • • • • • • • • • • • •	1477:13, 1483:8,
1427:21, 1427:32,	1445:18	precise [4] - 1394:40,	probed [1] - 1499:29	1488:17, 1488:31,
1432:33, 1433:19,	points [7] - 1417:11,	1422:21, 1451:45,	problem [21] - 1498:41 problem [21] - 1387:8,	1490:28, 1494:33,
1433:22, 1433:30,	1421:26, 1423:25,	1460:34	1408:6, 1410:17,	1498:9, 1498:18,
1433:40, 1434:40,	1425:21, 1429:26,	precisely [5] - 1393:5,	1411:11, 1412:16,	1504:41, 1505:41,
1435:11, 1435:41,	1462:22, 1490:4	1431:16, 1437:28,	1415:16, 1427:32,	1505:42, 1506:37,
1436:34, 1438:10,	pop [1] - 1404:33	1441:28, 1457:47	1447:5, 1447:6, 1447:7,	1506:41
1438:19, 1439:24,	portion [2] - 1493:21,	precision [1] - 1415:30	1470:17, 1474:43,	productivity [2] - 1433:30
1439:26, 1440:28,	1493:38	predict [1] - 1441:1	1474:45, 1475:20,	1433:40
1440:38, 1441:23,	pose [1] - 1393:41	prediction [1] - 1415:11	1475:45, 1476:3,	professional [3] -
1448:17, 1464:34,	posed [2] - 1425:5, 1504:1	preferable [1] - 1476:21	1476:11, 1476:12,	1400:23, 1401:21,
1475:15, 1480:6,	position [13] - 1387:4,	preparation [2] - 1434:46,	1476:28, 1481:22,	1425:44
1486:24, 1497:24,	1387:6, 1433:47,	1459:38	1501:32	proffer [1] - 1463:36
1500:39, 1500:44,	1435:24, 1463:17,	prepare [1] - 1477:40	problems [5] - 1393:41,	proffering [2] - 1463:37,
1501:32, 1501:34,	1463:25, 1468:1,	prepared [1] - 1412:44	1408:4, 1432:25,	1463:39
1502:4, 1503:12,	1476:23, 1476:36,	present [8] - 1393:35,	1458:32, 1478:12	program [2] - 1474:32,
1503:16	1477:43, 1479:43,	1406:25, 1430:17,	Procedure [1] - 1494:36	1475:1
planned [11] - 1397:15,	1504:15, 1504:45	1462:40, 1463:3,	procedure [3] - 1496:7,	programmed [1] - 1434:15
1397:16, 1425:27,	positioning [2] - 1390:27,	1463:6, 1475:46,	1496:19	progress [1] - 1404:45
1425:35, 1427:27,	1481:18	1508:44	proceedings [1] - 1502:33	progressing [3] - 1431:8,
1428:23, 1454:37,	positions [1] - 1484:37	presentation [1] - 1402:31	process [34] - 1399:26,	1481:31, 1499:16
1504:2, 1504:35,	positive [3] - 1403:46,	presented [1] - 1403:32	1401:14, 1406:15,	project [3] - 1421:46,
1505:17, 1505:24	1403:47, 1456:29	presenting [1] - 1402:31	1408:34, 1411:35,	1433:16, 1443:14
planner [1] - 1426:9	possible [7] - 1406:34,	presently [1] - 1393:40	1413:39, 1414:31,	projections [1] - 1433:5
P		F. 555 [1] 1000.70		1400:4E
planning [14] - 1399:9,	1421:26, 1473:12,	pressure [4] - 1440·10	1420:8, 1423:38.	proper [1] - 1409:15
	1421:26, 1473:12, 1482:30, 1482:31,	pressure [4] - 1440:19, 1441:31, 1441:38,	1420:8, 1423:38, 1424:7, 1424:36,	properly [3] - 1425:39,

1447:20, 1462:44 1446:35, 1448:11, 1465:43 1391:30, 1392:26, redundancy [4] - 1386:44, range [2] - 1393:35, proposal [2] - 1448:22, 1450:16, 1452:26, 1392:27, 1392:33, 1446:46, 1457:17, 1472.28 1474:3, 1477:1, 1416.19 1423:23, 1455:21, 1485:6 1490:32, 1490:44, 1463:47, 1464:45, redundant [1] - 1387:22 proposals [2] - 1401:47, ranging [1] - 1474:13 1498.16 1497:30, 1497:47, rapidly [1] - 1508:29 1466:9, 1470:32, refer [4] - 1404:14, 1498:1. 1498:17. 1472:22. 1472:32. propose [2] - 1481:21, 1447:13, 1468:14, rash [1] - 1486:11 1481:25 1500:23, 1503:4 rates [1] - 1483:8 1472:39, 1481:28, 1468:32 proposed [17] - 1411:22, putting [4] - 1411:40, rather [2] - 1387:10. 1491:16, 1491:41, reference [14] - 1392:47, 1423:46, 1497:16, 1492:2, 1492:25, 1425:26, 1436:2, 1472:24 1397:12, 1420:13, 1436:3, 1451:26, 1507:39 1492:40, 1493:35, 1438:16, 1439:27, rating [2] - 1405:8, 1405:9 1470:43, 1481:38, 1500:11 1459:44, 1468:19, rationale [3] - 1450:2, Q receiving [1] - 1454:47 1489:47, 1492:22, 1468:37, 1471:43, 1450:5, 1450:12 recent [3] - 1421:18, 1493:45, 1495:14, 1474:43, 1475:13, Ray [1] - 1414:36 1466:8, 1481:27 1497:29, 1500:23, 1484:36, 1497:9, re [1] - 1456:17 QLD[1] - 1384:37 recently [2] - 1496:20, 1503:12, 1503:16, 1500:44 re-occurrence [1] qualified [2] - 1433:5, 1496:26 1503:20. 1508:5 references [1] - 1474:31 1456:17 1496:37 proposing [2] - 1481:13, recognise [5] - 1404:42, referencing [2] - 1472:1, reach [2] - 1488:7, quantity [1] - 1454:27 1508:11 1429:16, 1432:1, 1501:37 1488:14 quarter [1] - 1429:34 1439:11, 1498:3 **proposition** [1] - 1409:2 referral [1] - 1425:16 reached [2] - 1445:43, quarters [1] - 1430:2 provide [5] - 1472:43, recognised [3] - 1414:30, referred [10] - 1416:15, 1480:36 Queensland [2] - 1467:37, 1439:14, 1474:41 1473:36, 1474:6, 1423:11, 1424:20, read [8] - 1396:32, 1401:9, 1468:2 1496:7, 1508:5 recognising [3] - 1407:46, 1424:44, 1459:6, 1404:11, 1449:29, QUEENSLAND[1] provided [15] - 1393:10, 1440:27, 1441:7 1471:5, 1472:16, 1465:16, 1471:11, 1384:11 1395:16, 1404:6, recognition [3] - 1413:32, 1473:11, 1493:26, 1474:46, 1494:40 queried [1] - 1499:28 1412:44, 1419:7, 1413:38, 1458:13 1502:46 reader [2] - 1418:32, queries [1] - 1481:10 1426:10, 1429:47, recollect [2] - 1411:45, referring [6] - 1424:33, 1434:29 questioned [1] - 1499:29 1438:41, 1463:23, 1463:14 1425:1, 1427:13, reading [9] - 1387:19, questioning [4] - 1491:14, 1473:13, 1491:36, recollection [2] - 1387:15, 1472:11, 1475:8, 1395:38, 1396:10, 1499:47, 1502:46, 1493:33, 1497:20, 1470:40 1493:27 1399:47, 1417:44, 1504.11 1498:43. 1508:21 refers [2] - 1411:27, recommendation [2] -1422:25, 1450:8, questions [28] - 1385:19, provides [4] - 1417:47, 1496:12. 1496:28 1494:43 1461:11, 1464:3 1387:45, 1388:10, 1421:42, 1465:24, recommendations [1] reflected [2] - 1433:4, readings [3] - 1449:28, 1388:45, 1389:4, 1493:40 1454:14. 1500:12 1498.16 1455:28 1389:11, 1389:14, providing [2] - 1399:15, recommendations" [1] reflection [1] - 1387:19 real [2] - 1488:19, 1488:27 1389:15, 1394:25, 1494:22 1458:35 regard [20] - 1391:2, real-time [1] - 1488:27 1397:20, 1412:29, **provision** [1] - 1494:3 record [14] - 1395:35, 1391:3, 1411:18, reality [7] - 1409:5, 1414:12, 1421:22, **public** [3] - 1508:39, 1402:14, 1402:37, 1428:15, 1428:17, 1412:2, 1415:47, 1438:22, 1464:38, 1509:11, 1509:16 1403:6. 1417:38. 1464:1. 1464:46. 1424:25, 1440:43, 1472:20, 1482:2, pull [1] - 1445:23 1421:14, 1429:43, 1466:9, 1466:11, 1448:25, 1462:3 1491:2, 1496:40, 1430:7, 1453:4, 1472:42, 1473:18, pulled [1] - 1410:8 really [15] - 1394:4, 1501:16, 1501:36, **pulling** [1] - 1433:1 1463:12, 1465:26, 1476:31, 1479:21, 1407:24, 1408:12, 1502:41, 1503:5, 1480:17, 1491:46, 1479:47, 1481:10, pumps [2] - 1439:33, 1408:46, 1410:6, 1504:29, 1505:2, 1443:30 1497:13 1481:17, 1481:36, 1415:2, 1441:2, 1505:33, 1505:39, 1485:2, 1485:45, recorded [7] - 1410:46, PUR [1] - 1506:27 1442:29, 1446:16, 1508:31 1504:38 1435:18, 1442:8, purchase [1] - 1439:32 1446:34, 1451:45, quickly [6] - 1409:34, 1461:30, 1492:28, regarded [3] - 1427:4, Purchase [1] - 1439:34 1463:17, 1464:37, 1437:13, 1437:22, 1500:12, 1509:12 1427:31, 1501:31 purpose [9] - 1408:6, 1470:1, 1470:13 1440:33, 1446:29, recording [2] - 1454:18, regarding [1] - 1472:7 1422:2, 1431:3, 1452:4, reason [8] - 1410:5, 1453:34 1460:10 regardless [1] - 1506:36 1469:3, 1472:26, 1439:13, 1446:24, quite [11] - 1403:42. records [1] - 1453:9 register [1] - 1454:6 1489:42, 1491:37, 1447:42, 1477:27, 1405:23, 1412:37, recovery [1] - 1393:24 regular [2] - 1399:1, 1509:2 1478:5, 1483:34, 1497:4 1430:36, 1431:42, purposes [6] - 1411:23, recurrence [1] - 1474:37 1506:6 reasonable [4] - 1425:43, 1452:40, 1466:28, recurring [1] - 1466:15 regularly [1] - 1408:28 1430:17, 1452:28, 1441:4, 1452:15, 1473:35, 1476:2, 1467:31, 1472:27, red [1] - 1471:21 regulate [1] - 1474:6 1457.41 1488:11, 1500:18 1504.22 redacted [2] - 1509:14, regulated [1] - 1458:47 reasonably [1] - 1440:33 quote [1] - 1495:1 pursuant [1] - 1479:38 regulation [16] - 1404:4. 1509.15 reasons [6] - 1406:23, pushed [2] - 1450:28, 1410:37, 1436:3. reduce [6] - 1418:19, 1404:5, 1449:46, R 1451:8 1441:8, 1442:24, 1434:1, 1477:10, 1460:42, 1482:21, 1477:23, 1498:9, 1486:29, 1486:40, put [31] - 1386:17, 1488:10 1386:34, 1388:13, 1501:26 1489:35, 1490:39, receipt [1] - 1492:45 raise [1] - 1490:28 1389:26, 1396:45, reduced [5] - 1425:27, 1490:46, 1493:38, receive [2] - 1430:28, raised [8] - 1387:35, 1476:19, 1476:42, 1493:39 1494:44 1407:35, 1409:2, 1397:15, 1423:20, 1464.27 1410:8. 1410:19. 1493:17, 1499:3 1495:12, 1495:13 received [30] - 1385:16, 1463:26. 1463:31. 1411:10, 1411:38, regulations [5] - 1433:42, 1385:26, 1386:45, reducing [3] - 1431:11, 1464:41, 1475:20, 1439:11, 1489:41, 1411:42, 1411:43, 1499:22, 1507:27 1506:35 1387:16, 1388:1, 1412:1. 1415:43. reduction [2] - 1421:26, 1490:11, 1495:37 raises [1] - 1508:24 1389:21, 1389:22, 1433:13, 1437:43, 1389:33, 1391:12, regulator [5] - 1433:41, 1486:20 raising [2] - 1465:35, -.10/03/2021 (15)-19

		1	ı	
1450:3, 1450:4,	1394:9, 1394:33	1489:43, 1492:32,	1447:33, 1452:14,	1470:32, 1470:33,
1496:24, 1496:29	remediate [1] - 1435:42	1492:33, 1495:24,	1452:17, 1459:13,	1470:43, 1471:6,
regulatory [3] - 1400:17,	remember [3] - 1407:31,	1495:45, 1504:19,	1474:36, 1487:27,	1471:14, 1471:19,
1427:18, 1490:24	1467:25, 1467:26	1507:4	1503:12	1471:39, 1471:40,
relate [4] - 1386:10,	reminded [1] - 1466:10	requirement [4] - 1394:14,	resulted [5] - 1437:17,	1471:43, 1472:1,
1391:19, 1436:3,	removal [2] - 1407:11,	1404:5, 1438:27,	1448:27, 1449:7,	1472:5, 1472:7,
1455:43		1504:17	· · · · · ·	1472:15, 1472:20,
	1452:17		1450:36, 1451:21	· · · · · · · · · · · · · · · · · · ·
related [12] - 1388:11,	remove [4] - 1406:43,	requires [2] - 1420:32,	results [2] - 1394:13,	1472:23, 1472:24,
1389:2, 1389:28,	1420:40, 1441:38,	1448:39	1481:2	1472:26, 1472:27,
1409:6, 1437:36,	1452:29	reread [1] - 1499:27	resumes [1] - 1508:40	1472:30, 1472:33,
1438:43, 1443:44,	removed [1] - 1445:28	reservoir [1] - 1498:41	reticulation [1] - 1439:36	1472:35, 1472:38,
1448:5, 1449:12,	removes [1] - 1420:34	reset [5] - 1430:8,	retreat [6] - 1446:15,	1472:40, 1472:45,
1459:36, 1472:37,	removing [1] - 1407:2	1430:13, 1430:17,	1446:16, 1453:21,	1473:3, 1473:4,
1488:18	reoccurring [1] - 1487:6	1499:7, 1499:10	1453:28, 1453:32,	1473:10, 1473:12,
relates [2] - 1456:46,	• • • • • • • • • • • • • • • • • • • •	resolution [2] - 1440:14,	1508:27	1473:16, 1473:20,
1498:26	repair [1] - 1448:35	1487:12	return [6] - 1423:17,	1473:21, 1473:36,
	repeat [1] - 1438:22			1473:37, 1474:1,
relating [2] - 1440:17,	repeated [10] - 1394:1,	resolved [1] - 1440:14	1423:19, 1454:38,	
1473:17	1394:10, 1394:43,	respect [18] - 1388:46,	1457:24, 1497:30,	1474:6, 1474:10,
relation [46] - 1386:15,	1395:3, 1426:38,	1392:15, 1392:25,	1507:40	1474:13, 1474:14,
1387:36, 1389:33,	1432:18, 1465:10,	1392:43, 1394:1,	returning [1] - 1506:39	1474:16, 1474:37,
1391:31, 1413:10,	1492:28, 1504:12,	1394:9, 1395:11,	reverse [4] - 1434:23,	1477:7, 1477:34,
1428:22, 1430:7,	1504:44	1395:45, 1398:30,	1486:25, 1487:14,	1478:5, 1485:47,
1441:22, 1442:35,		1417:22, 1436:41,	1498:1	1486:1, 1488:6,
1447:1, 1448:25,	repeatedly [1] - 1413:9	1450:35, 1471:7,		1489:27, 1489:46,
, ,	repeating [1] - 1432:8		reversing [1] - 1488:3	1490:28, 1490:32,
1452:1, 1454:46,	repetition [2] - 1389:6,	1484:21, 1484:25,	review [28] - 1387:29,	1493:28, 1495:3,
1463:9, 1463:18,	1410:20	1485:1, 1503:11,	1390:20, 1390:41,	
1464:15, 1469:17,	replacement [1] - 1506:12	1504:10	1391:19, 1395:18,	1495:31, 1495:34,
1474:41, 1474:44,	reply [1] - 1479:43	respectfully [2] - 1425:22,	1402:45, 1417:47,	1495:39, 1496:18,
1475:4, 1485:22,	report [13] - 1390:37,	1432:6	1418:14, 1423:39,	1496:23, 1496:33,
1491:14, 1491:41,	1395:13, 1435:5,	respective [1] - 1491:40	1424:7, 1433:47,	1502:7, 1502:11,
1492:8, 1492:41,		respectively[1] - 1429:5	1435:11, 1436:35,	1502:47, 1503:10,
1492:44, 1493:4,	1436:33, 1437:18,	respirable [1] - 1406:29	1440:2, 1443:46,	1503:27, 1503:37,
1493:23, 1493:24,	1449:35, 1458:8,	• • • • • • • • • • • • • • • • • • • •		1503:42, 1504:1,
1494:11, 1494:37,	1458:28, 1459:37,	respond [4] - 1399:22,	1454:12, 1457:43,	1507:14
	1462:4, 1502:34	1399:39, 1399:44,	1457:46, 1459:38,	risks [18] - 1425:5, 1428:
1496:44, 1497:15,	reported [12] - 1385:41,	1455:11	1464:47, 1473:36,	
1497:17, 1498:3,	1396:4, 1396:14,	responded [3] - 1486:13,	1474:8, 1477:40,	1428:2, 1468:15,
1498:20, 1498:43,	1396:27, 1396:37,	1487:1, 1504:6	1484:45, 1492:1,	1468:24, 1468:33,
1498:44, 1499:29,	1439:12, 1449:14,	responding [2] - 1400:46,	1492:8, 1495:18,	1469:9, 1477:18,
1499:33, 1500:22,	1451:17, 1460:3,	1436:29	1496:15	1477:19, 1477:31,
1500:47, 1501:16,		response [15] - 1401:47,	reviewed [11] - 1388:27,	1477:39, 1478:7,
1501:25, 1502:19,	1461:34, 1486:12,	•	1396:29, 1421:18,	1490:1, 1499:43,
1502:25	1502:12	1411:22, 1417:23,		1503:11, 1505:42,
	reporting [1] - 1390:32	1428:15, 1429:11,	1421:22, 1434:45,	1507:9
relationship [2] - 1402:5,	reports [7] - 1387:16,	1436:2, 1438:4,	1491:18, 1491:24,	River [1] - 1413:33
1402:7	1395:11, 1434:46,	1440:39, 1441:4,	1491:27, 1491:41,	
relationships [3] -	1459:7, 1481:37,	1464:22, 1465:14,	1493:31, 1496:22	road [3] - 1423:19,
1398:39, 1398:40,	1481:40, 1502:27	1465:19, 1465:29,	reviewing [5] - 1387:27,	1434:24, 1507:47
1418:46	representation [1] -	1489:45, 1499:2	1396:28, 1425:23,	roads [1] - 1423:17
relatively [5] - 1394:5,	1404:27	responses [7] - 1400:28,	1454:6, 1492:10	roadway [13] - 1403:19,
1419:33, 1419:34,		1403:12, 1408:4,	reviews [1] - 1418:8	1412:25, 1431:31,
1446:29, 1487:9	representatives[1] -			1445:17, 1445:42,
	1509:4	1408:7, 1421:22,	Rice [1] - 1419:37	1448:7, 1449:13,
release [3] - 1435:41,	represented [1] - 1433:7	1489:11, 1489:21	rise [1] - 1429:17	1449:15, 1449:19,
1508:13, 1508:16	representing [1] - 1482:11	responsibility [2] -	Risk [2] - 1494:35,	
releases [1] - 1508:20	request [3] - 1497:20,	1398:46, 1424:2	1503:36	1449:26, 1450:29,
releasing [2] - 1407:24,	1509:10, 1509:14	responsible [4] - 1398:4,	risk [95] - 1386:47,	1473:8, 1507:40
1488:24	requesting [1] - 1472:6	1398:11, 1414:20,	1404:17, 1406:14,	roadways [2] - 1448:15,
relevant [11] - 1417:32,		1481:14	1406:29, 1406:43,	1457:24
1418:14, 1430:17,	require [4] - 1386:16,	responsive [3] - 1406:18,	1407:26, 1408:11,	robust [2] - 1403:23,
1454:18, 1473:5,	1394:34, 1495:17,	•	1408:35, 1411:39,	1455:1
1479:8, 1491:42,	1504:41	1408:5, 1452:35		role [2] - 1415:1, 1490:40
	required [24] - 1387:13,	rest [3] - 1412:10,	1412:27, 1412:43,	roles [1] - 1408:12
1493:38, 1494:35,	1394:8, 1399:38,	1467:37, 1468:2	1413:7, 1413:8,	
1497:5, 1497:8	1412:43, 1412:45,	restoring [1] - 1500:33	1425:39, 1428:9,	roof [5] - 1390:21, 1405:9
·	1417:25, 1439:36,	result [18] - 1386:29,	1435:40, 1439:23,	1405:10, 1439:23,
rely [1] - 1507:3		1386:30, 1389:6,	1441:42, 1449:33,	1508:29
rely [1] - 1507:3	1448-35 1452-30			1
rely [1] - 1507:3	1448:35, 1452:30,	1303.10 1/23.1	1453:43. 1457:23.	room [6] - 1418:6,
rely [1] - 1507:3 remaining [2] - 1386:10, 1457:15	1462:24, 1463:18,	1393:19, 1423:1,	1453:43, 1457:23, 1468:20, 1469:1	room [6] - 1418:6, 1418:41, 1454:6,
rely [1] - 1507:3 remaining [2] - 1386:10, 1457:15 remains [3] - 1482:22,	1462:24, 1463:18, 1471:18, 1474:6,	1430:13, 1431:7,	1468:20, 1469:1,	1418:41, 1454:6,
rely [1] - 1507:3 remaining [2] - 1386:10, 1457:15	1462:24, 1463:18,			

		T		Т
roughly [1] - 1508:21	1508:2	1494:43, 1494:44,	1415:42, 1424:17,	set [23] - 1386:42, 1398:3,
row [1] - 1415:44	sealing [2] - 1473:7,	1495:37, 1496:5,	1425:25, 1428:41,	1398:25, 1399:14,
Roy [1] - 1415:10	1473:10	1498:28, 1502:20,	1436:1, 1439:1,	1414:8, 1425:23,
RSH.001.002.0304 [1] -	seals [1] - 1448:47	1508:22	1445:32, 1446:13,	1428:29, 1438:26,
1424:44	seam [30] - 1393:15,	Section [1] - 1495:6	1447:17, 1454:1	1438:34, 1441:23,
RSH.002.040.0001 [1] -	1393:20, 1405:43,	see [100] - 1389:32,	sensible [9] - 1414:15,	1443:44, 1445:13,
1494:16	1406:4, 1408:17,	1389:39, 1389:43,	1414:19, 1414:29,	1445:44, 1448:17,
RSH.002.040.0168 [1] -	1408:21, 1408:23,	1390:30, 1392:16,	1415:36, 1441:38,	1448:43, 1472:42,
1494:40	1408:27, 1408:33,	1392:36, 1393:4,	1451:6, 1452:34,	1476:46, 1477:22,
RSH.002.116.0001 [1] -	1408:40, 1413:16,	1394:19, 1394:24,	1457:36, 1458:23	1489:43, 1495:39,
1498:23	1442:21, 1442:30,	1394:36, 1395:12,	sensibly [1] - 1433:35	1497:24, 1499:37,
RSHQ [1] - 1472:39	1442:31, 1442:35,	1395:22, 1400:1,	sensor [63] - 1388:41,	1501:9
RSHQ's [1] - 1469:41	1442:42, 1443:4,	1400:37, 1400:42,	1389:29, 1390:7,	Set [1] - 1390:6
rule [1] - 1461:4	1443:8, 1443:34,	1401:21, 1402:4,	1390:21, 1390:27,	set-up [1] - 1398:25
rules [1] - 1460:47	1444:1, 1456:3,	1402:14, 1402:22,	1391:25, 1395:38,	setout [1] - 1444:19
run [4] - 1399:5, 1411:11,	1457:36, 1474:44,	1402:40, 1403:6,	1395:47, 1396:9,	sets [3] - 1394:20, 1496:5,
1430:23, 1433:35	1475:46, 1476:18,	1405:1, 1405:13,	1396:19, 1396:36,	1497:14
running [1] - 1398:30	1476:28, 1476:33,	1405:16, 1405:20,	1410:1, 1410:9,	setting [4] - 1447:25,
(in 1000.00	1481:22, 1503:21,	1405:23, 1405:30,	1412:27, 1415:26,	1451:6, 1483:24,
S	1508:15	1407:43, 1409:32,	1416:5, 1416:6, 1416:9,	1506:45
J	seamgas [2] - 1399:7,	1409:33, 1415:44,	1416:10, 1416:14,	settings [4] - 1387:41,
	1456:21	1416:4, 1416:33,	1416:23, 1417:5,	1437:44, 1450:4,
safe [3] - 1426:28,	seams [4] - 1405:40,	1417:29, 1417:44,	1420:4, 1444:22,	1488:22
1485:41, 1489:42	1405:47, 1474:32,	1418:6, 1418:39,	1444:26, 1444:44,	setup [2] - 1448:6,
safely [2] - 1433:32,	1498:42	1419:28, 1420:13,	1445:4, 1445:9,	1448:10
1434:39	Second [3] - 1494:25,	1421:1, 1421:16,	1445:35, 1445:37,	seven [2] - 1385:30,
safety [7] - 1430:8,	1494:34, 1494:39	1422:14, 1423:25,	1445:40, 1445:41,	1385:45
1430:12, 1430:17,	second [52] - 1386:36,	1426:4, 1430:2, 1430:3,	1448:1, 1448:2,	several [1] - 1487:6
1473:16, 1489:15,	1386:42, 1387:17,	1431:28, 1432:21,	1449:14, 1449:28,	SGE [2] - 1389:46,
1499:7, 1499:10	1387:30, 1387:33,	1432:31, 1433:19,	1449:34, 1449:35,	1438:20
Safety [1] - 1384:15	1387:40, 1387:42,	1433:29, 1434:6,	1449:45, 1450:5,	shaft [1] - 1508:4
satisfactory [1] - 1485:33	1388:4, 1389:1, 1397:4,	1435:45, 1436:39,	1450:8, 1450:15,	share [1] - 1507:17
satisfied [5] - 1428:36,	1404:18, 1404:22,	1437:35, 1437:42,	1450:16, 1450:22,	shearer [27] - 1392:2,
1431:7, 1485:39,	1408:34, 1412:43,	1438:16, 1438:40,	1451:8, 1452:11,	1392:16, 1392:44,
1499:15, 1502:5	1413:7, 1422:1, 1425:9,	1439:20, 1443:17,	1460:10, 1460:15,	1400:13, 1415:38,
satisfy [1] - 1403:2	1425:17, 1429:3,	1444:44, 1445:3,	1460:16, 1464:1,	1416:27, 1419:22,
Saul [1] - 1397:28	1432:20, 1432:46,	1445:35, 1445:43,	1470:27, 1472:29,	1419:24, 1420:2,
saw [18] - 1388:21,	1433:6, 1434:38,	1446:13, 1446:24,	1472:37, 1479:21,	1421:7, 1421:26,
1403:28, 1424:2,	1438:15, 1441:42,	1446:39, 1450:20,	1480:18, 1481:12,	1423:18, 1428:29,
1431:30, 1431:46,	1442:9, 1443:18,	1451:17, 1453:7,	1481:16, 1501:1,	1431:38, 1431:41,
1435:30, 1436:20,	1443:20, 1443:26,	1453:19, 1454:3,	1501:17, 1504:38,	1433:47, 1434:2,
1437:26, 1437:47,	1443:31, 1448:18,	1455:43, 1457:47,	1505:4	1434:15. 1437:45.
1443:22, 1450:20,	1453:42, 1464:25,	1458:12, 1458:36,	sensors [11] - 1409:45,	1440:22, 1441:11,
1450:21, 1470:21,	1464:32, 1464:44,	1458:45, 1466:44,	1415:31, 1415:45,	1444:44, 1482:26,
1474:11, 1474:12,	1470:33, 1480:7,	1468:16, 1469:26,	1416:1, 1416:4,	1484:37, 1488:24,
1474:20, 1476:3,	1493:23, 1493:25,	1469:32, 1470:42,	1416:41, 1444:43,	1498:10
1506:45	1493:27, 1493:43,	1470:45, 1471:26,	1445:5, 1445:34,	Sherwood [1] - 1448:44
SC [1] - 1384:26	1493:46, 1494:22,	1473:16, 1473:21,	1464:46, 1479:47	shield [9] - 1388:42,
scale [1] - 1454:22	1494:42, 1495:14,	1474:1, 1474:20,	sent [7] - 1469:35,	1389:29, 1392:2,
scheduled [4] - 1480:23,	1495:18, 1496:18,	1474:21, 1475:6,	1470:26, 1472:15,	1392:17, 1392:44,
1480:30, 1480:33	1496:22, 1496:24,	1477:8, 1479:5,	1483:36, 1493:4,	1395:38, 1395:47,
scheme [1] - 1449:23	1498:7, 1498:24,	1481:30, 1486:47,	1493:7, 1494:29	1396:9, 1396:19
scoured [1] - 1410:9	1508:27	1494:23, 1494:29,	sentences [1] - 1499:1	shift [2] - 1453:10,
scouring [2] - 1386:7,	secondary [4] - 1413:7,	1498:8, 1498:27,	separate [3] - 1412:28,	1508:44
1446:5	1472:36, 1473:18,	1503:5, 1503:40	1478:5, 1496:15	SHMS [1] - 1402:45
screen [5] - 1389:27,	1474:17	seeing [6] - 1412:9,	separately [1] - 1412:32	SHORT [1] - 1429:36
1389:32, 1394:18,	secondly [1] - 1505:7	1413:40, 1419:30,	September [1] - 1478:26	short [12] - 1416:36,
1417:28, 1503:4	seconds [13] - 1409:23,	1436:33, 1471:1, 1485:9	sequence [2] - 1424:43,	1422:5, 1423:27,
screenshot [2] - 1418:40,	1417:18, 1429:5,	seeking [1] - 1413:12	1450:36	1428:23, 1428:36,
1419:4	1460:11, 1460:15,	seemingly [1] - 1388:13	series [5] - 1400:2,	1426.25, 1426.36, 1432:10, 1432:25,
scroll [8] - 1453:20,	1460:28, 1460:35,	Self [1] - 1408:19	1424:18, 1437:42,	1432:10, 1432:23, 1439:15, 1455:29,
1453:47, 1458:44,	1460:44, 1461:4	sending [2] - 1424:46,	1455:21, 1458:38	1439.15, 1435.29, 1486:26, 1497:16,
1459:43, 1471:4,	section [20] - 1389:39,	1489:27	serious [2] - 1428:42,	1497:28
1493:39, 1494:17,	1390:20, 1394:19,	senior [7] - 1398:41,	1508:45	short-term [5] - 1422:5,
1493.39, 1494.17,	1394:20, 1394:36,	1398:47, 1401:45,	service [1] - 1457:15	1428:23, 1432:25,
seal [1] - 1473:8	1449:46, 1455:43,	1402:26, 1403:24,	services [3] - 1430:20,	
sealed [2] - 1507:47,	1479:47, 1493:39,	1455:11, 1493:44	1431:3, 1469:6	1486:26, 1497:28 shorthand [2] - 1424:20,
36ai6u [2] * 1301.41,	1493:40, 1494:26,	sense [11] - 1412:23,	,	31101 triailu [2] - 1424.20,
.10/03/2	· · ·	21		
10/03/2	.02 (0)			

1431:21	situation [14] - 1399:39,	1447:37, 1447:38,	1495:28	1417:32, 1417:47,
shortly [3] - 1464:44,	1403:30, 1403:39,	1448:28, 1452:9,	specific [25] - 1394:41,	1473:33, 1485:5,
1503:46, 1508:45	1437:45, 1447:39,	1452:18, 1452:26	1412:26, 1432:39,	1496:42, 1497:8
show [2] - 1402:37,	1450:37, 1477:26,	solutions [12] - 1399:31,	1437:2, 1437:36,	started [8] - 1467:44,
1497:46	1477:40, 1483:41,	1419:22, 1420:3,	1438:23, 1440:1,	1471:38, 1476:21,
showed [1] - 1474:15	1504:31, 1504:32,	1422:5, 1422:7,	1440:13, 1446:10,	1484:8, 1493:36,
showing [2] - 1404:44,	1504:34, 1504:44,	1432:25, 1448:40,	1446:24, 1447:6,	1493:43, 1494:33,
1405:8	1505:23	1451:7, 1451:24,	1447:7, 1447:42,	1500:7
shown [5] - 1402:40,	situations [1] - 1456:26	1451:26, 1451:29,	1465:47, 1467:26,	starting [3] - 1468:24,
1470:5, 1470:8,	six [7] - 1386:10, 1415:31,	1452:35	1469:22, 1471:43,	1468:25, 1488:27
1474:11, 1503:27	1415:46, 1440:45,	solving [1] - 1410:18	1475:38, 1475:40,	starts [1] - 1483:45
shut [4] - 1482:28,	1443:20, 1443:30,	someone [7] - 1387:45,	1476:32, 1476:33,	state [1] - 1430:42
1484:35, 1490:20,	1496:24	1405:29, 1410:8,	1490:12, 1501:42	statement [33] - 1395:6,
1490:38	skid [17] - 1386:19,	1410:36, 1414:35,	specifically [6] - 1411:45,	1396:31, 1396:46,
shut-off [1] - 1484:35	1386:30, 1386:35,	1453:15, 1503:41	1423:20, 1425:1,	1401:38, 1403:6,
shutdown [1] - 1386:11	1386:36, 1386:39,	sometimes [3] - 1420:45,	1439:25, 1441:47,	1411:18, 1411:27,
	1386:42, 1386:43,	1436:15, 1487:5	1463:28	1411:10, 1411:27,
shutting [2] - 1388:3,		· ·	specifics [1] - 1463:15	· ·
1447:42	1387:17, 1387:30,	somewhere [1] - 1416:19	speed [6] - 1407:21,	1417:21, 1424:45,
side [6] - 1412:19,	1387:33, 1387:40,	soon [1] - 1434:39	• • • • • • • • • • • • • • • • • • • •	1425:21, 1425:32,
1413:25, 1413:29,	1387:41, 1387:42,	SOP [7] - 1442:9, 1443:18,	1409:27, 1420:5, 1421:27, 1423:18,	1427:44, 1449:12,
1442:15, 1442:16,	1388:2, 1388:4,	1472:35, 1472:36,		1450:24, 1462:21,
1445:18	1446:46, 1457:13	1472:40, 1496:23,	1431:41	1462:22, 1462:27,
sign [3] - 1402:7, 1432:18,	Skids [1] - 1439:32	1496:33	spend [1] - 1422:47	1467:32, 1468:13,
1452:33	skids [2] - 1432:40,	sophisticated [3] -	spike [1] - 1409:29	1469:4, 1472:6,
significant [10] - 1428:42,	1439:34	1409:16, 1428:35,	spikes [4] - 1439:15,	1474:21, 1477:41,
1430:39, 1433:7,	skill [1] - 1472:42	1459:27	1461:31, 1462:1,	1484:20, 1485:31,
1442:8, 1477:10,	skipping [1] - 1403:19	Sorry [1] - 1445:27	1482:17	1490:28, 1498:17,
1486:20, 1488:24,	slanted [1] - 1413:35	sorry [25] - 1386:27,	split [1] - 1386:36	1499:21, 1501:9,
1495:5, 1503:23,	slate [3] - 1485:39,	1416:4, 1429:15,	spoken [1] - 1481:28	1505:40
1506:47	1485:43, 1486:14	1433:29, 1435:28,	spon [1] - 1471:19	statements [2] - 1491:37,
significantly [2] - 1476:41,	sled [5] - 1387:20,	1445:25, 1446:5,	spontaneous [21] -	1491:40
1477:24	1464:25, 1464:29,	1447:28, 1454:2,	1406:44, 1407:26,	statutorily [1] - 1412:42
similar [11] - 1387:37,	1464:44, 1500:36	1460:22, 1461:46,	1428:9, 1431:13,	statutory [3] - 1422:37,
1388:11, 1388:45,	sleds [4] - 1483:17,	1462:42, 1463:1,	1468:20, 1468:37,	1429:9, 1492:15
1389:3, 1403:38,	1485:2, 1485:4, 1485:7	1463:3, 1463:21,	1468:40, 1468:45,	stay [2] - 1450:42, 1487:35
1445:23, 1460:38,	slightly [1] - 1455:16	1464:4, 1464:6,	1469:1, 1469:10,	stays [1] - 1508:25
1477:24, 1477:32,	slow [3] - 1420:5, 1421:8,	1464:39, 1466:44,	1471:6, 1471:14,	step [2] - 1411:26, 1415:1
1477:35, 1487:7	1425:33	1470:1, 1473:32,	1471:39, 1481:25,	Stephen [2] - 1453:9,
similarly [2] - 1393:4,	slowed [1] - 1419:24	1475:29, 1483:18,	1481:32, 1481:40,	1453:10
1464:31	slowing [1] - 1423:18	1486:8, 1505:12	1490:29, 1499:23,	STEPHEN [1] - 1385:5
simple [3] - 1447:5,	slowly [3] - 1453:34,	sort [4] - 1386:34,	1503:36, 1504:1,	steps [10] - 1413:12,
1487:9, 1488:1	1453:47, 1508:17	1453:24, 1455:25,	1507:10	1417:18, 1426:43,
simplifying [1] - 1407:17	SLT [1] - 1402:31	1487:27	sprocket [1] - 1450:7	1428:37, 1432:39,
simplistic [2] - 1477:5,	smaller [1] - 1444:38	sorts [8] - 1397:43,	SSE [7] - 1397:2, 1398:46,	1442:8, 1459:21,
1477:17	smart [5] - 1408:12,	1399:10, 1403:12,	1421:18, 1421:23,	1477:10, 1497:15,
simply [4] - 1397:14,	1414:34, 1415:12,	1410:39, 1414:40,	1485:17, 1485:24,	1497:47
1408:5, 1470:17,	1419:20, 1431:37	1448:39, 1487:45,	1504:17	still [9] - 1396:18, 1421:2,
1505:22	smarts [1] - 1437:45	1490:8	staff [1] - 1430:13	1427:2, 1427:24,
single [6] - 1407:47,	SMITH [1] - 1385:5	sought [4] - 1437:27,	stage [8] - 1393:29,	1450:15, 1451:16,
1411:6, 1411:19,	Smith [26] - 1389:29,	1441:44, 1459:23,	1422:37, 1427:8,	1483:30, 1489:41,
1437:3, 1484:46,	1389:38, 1391:17,	1462:9	1446:16, 1453:38,	1504:45
1485:32	1394:19, 1397:20,	sound [1] - 1415:36	1465:6, 1469:38,	stimulated [3] - 1481:17,
singular [1] - 1389:7	1397:27, 1426:20,	source [2] - 1386:42,	1492:21	1485:26, 1505:8
sit [5] - 1399:5, 1401:19,	1429:42, 1453:9,	1407:32	staged [1] - 1431:9	stipulate [1] - 1494:3
1401:20, 1414:26,	1453:10, 1455:40,	sources [4] - 1398:33,	stages [2] - 1443:21,	stood [1] - 1423:2
1503:31	1462:21, 1467:8,	1401:3, 1449:24,	1446:14	stop [14] - 1420:6,
site [17] - 1398:41,	1469:26, 1470:22,	1449:25	stamp [1] - 1438:28	1420:29, 1433:36,
1402:27, 1414:20,	1479:43, 1482:11,	space [1] - 1416:36	stand [4] - 1423:16,	1433:47, 1441:19,
1417:45, 1418:35,	1482:12, 1485:16,	spaced [5] - 1413:25,	1467:36, 1468:3, 1468:9	1484:37, 1485:26,
1421:32, 1422:8,	1485:31, 1489:39,	1413:29, 1442:14,	standard [7] - 1390:36,	1489:26, 1504:41,
1422:33, 1463:4,	1491:12, 1502:15,	1442:16, 1443:39	1404:22, 1449:1,	1506:6, 1506:16,
1466:23, 1466:30,	1502:45, 1505:38,	speaking [4] - 1394:47,	1496:6, 1496:19,	1506:27, 1507:5, 1507:8
1466:33, 1479:4,	1508:33	1406:5, 1434:15,	1508:3, 1508:8	stoppage [2] - 1507:14,
1479:12, 1479:23,	so-called [1] - 1468:9	1464:15	Standard [1] - 1494:36	1507:22
1489:40, 1493:44	solution [12] - 1436:2,	specialisations[1] -	standards [1] - 1489:44	stoppages [1] - 1506:11
sits [1] - 1407:6	1446:41, 1446:45,	1397:42	standing [1] - 1428:9	stopped [6] - 1392:2,
sitting [1] - 1417:11	1447:6, 1447:7,	specialists [2] - 1495:18,	start [7] - 1397:30,	1392:44, 1419:25,
J	1 171.0, 1771.1,	, , , , , , , , , , , , , , , , , , , ,		
.10/03/2	021 (15)	22		
	· · · · · · /			

1427:8 1427:11 1424:4	suggested (4) 1/07:20	1/36:30 1/37:40	1/20:10 1/20:25	1446:9 1446:39
1427:8, 1427:11, 1434:4 stopping [8] - 1423:6,	suggested [1] - 1497:29 suggesting [7] - 1404:10,	1436:39, 1437:40, 1438:38, 1440:9,	1432:10, 1432:25, 1432:41, 1455:16,	1446:8, 1446:38, 1448:5, 1455:30,
1423:12, 1428:1,	1411:44, 1421:4,	1445:23, 1445:32,	1456:7, 1460:43,	1480:24, 1480:27,
1423.12, 1426.1, 1431:41, 1468:15,	1428:41, 1466:14,	1454:44, 1459:43	1486:26, 1497:16,	1491:13, 1491:32,
1468:25, 1490:28,	1466:33, 1476:15	tailgate [31] - 1386:46,	1497:17, 1497:25,	1494:12
1505:42	suggestion [2] - 1477:16,	1390:32, 1390:43,	1497:28, 1499:36	three-day [1] - 1446:38
stoppings [2] - 1484:36,	1485:26	1392:22, 1413:25,	terms [44] - 1386:24,	three-quarters [1] -
1507:29	suggestions [4] - 1402:1,	1415:37, 1415:38,	1400:45, 1401:3,	1430:2
story [1] - 1413:43	1403:12, 1498:11,	1416:5, 1416:9,	1407:36, 1413:24,	throughout [1] - 1426:16
straight [1] - 1413:34	1498:16	1416:14, 1433:47,	1416:46, 1416:47,	throw [1] - 1466:37
straightforward [1] -	suitable [3] - 1475:31,	1434:24, 1438:1,	1422:5, 1423:26,	throws [1] - 1465:9
1394:5	1489:47, 1490:1	1442:1, 1442:15,	1424:39, 1426:30,	thumb [2] - 1460:47,
strata [10] - 1403:30,	suitably [1] - 1496:37	1445:5, 1445:17,	1428:27, 1429:1,	1461:4
1405:8, 1437:45,	suite [3] - 1397:36,	1445:40, 1445:42,	1432:39, 1437:43,	THURSDAY [1] - 1509:24
1437:47, 1468:22,	1411:13, 1486:11	1449:15, 1449:26,	1438:22, 1440:47,	timely [4] - 1394:9,
1482:45, 1496:1,	summarised [2] - 1418:12,	1450:29, 1454:13,	1443:43, 1453:16,	1394:32, 1400:28,
1496:14, 1496:16,	1458:37	1476:43, 1481:11,	1453:22, 1459:22,	1400:46
1508:24	summary [3] - 1437:43,	1481:12, 1485:18,	1459:33, 1465:39,	timing [2] - 1415:30,
strategies [11] - 1458:31,	1453:21, 1485:34	1485:25, 1498:10,	1466:24, 1476:32,	1416:33
1474:37, 1475:4,	super [1] - 1390:38	1500:13	1477:7, 1477:18,	timings [1] - 1445:33
1475:8, 1475:9,	supplement [1] - 1443:26	tailgates [1] - 1457:22	1478:34, 1484:13,	tip [1] - 1472:29
1475:14, 1475:20,	support [1] - 1390:21	tailored [1] - 1447:7	1484:15, 1489:39,	TO [1] - 1509:24
1475:25, 1475:31,	suppose [4] - 1414:40,	talks [2] - 1408:3, 1505:41	1493:13, 1494:15,	today [12] - 1400:7,
1497:25, 1499:37	1421:40, 1437:28,	target [1] - 1508:18	1495:23, 1497:8,	1407:44, 1410:44,
strategy [4] - 1456:3,	1477:15	targeted [2] - 1402:22,	1499:47, 1504:19,	1431:47, 1458:7,
1456:7, 1476:18,	supposed [2] - 1506:46,	1436:24	1505:1, 1505:40,	1459:39, 1464:24,
1497:28	1507:6	targets [1] - 1433:40	1507:27, 1507:39,	1464:38, 1487:14,
stratigraphy [1] - 1406:1	surface [4] - 1446:47,	targets" [1] - 1433:30	1508:10, 1508:24	1488:21, 1503:31,
stream [13] - 1390:15,	1447:18, 1485:5,	TARP [2] - 1457:31,	Terry [1] - 1384:26	1505:2
1410:9, 1412:28,	1503:21	1458:47	testing [1] - 1414:40	together [10] - 1397:46,
1448:38, 1450:28,	surprise [1] - 1455:35	TARPs [1] - 1457:36	TG [1] - 1390:13	1399:30, 1402:6,
1451:7, 1451:9, 1452:9,	surprised [2] - 1461:11,	task [6] - 1424:3, 1435:11,	THE [29] - 1385:1,	1412:12, 1415:43,
1452:17, 1452:22,	1461:18	1435:15, 1458:38,	1397:23, 1426:20,	1423:46, 1446:34,
1454:17, 1454:22,	surprising [2] - 1408:45,	1458:41, 1503:41	1427:39, 1429:15,	1446:35, 1455:10,
1508:40	1455:33	tasks [4] - 1424:4, 1435:7,	1429:29, 1429:34,	1458:19
Street [1] - 1384:37	suspend [2] - 1386:24,	1440:1, 1457:43	1429:38, 1462:15,	tolerable [4] - 1504:13,
structures [2] - 1405:14,	1501:46	team [13] - 1390:32,	1466:41, 1466:46,	1504:16, 1504:20,
1477:47	sustainability [1] -	1397:41, 1397:46,	1467:4, 1469:45,	1504:33
studies [1] - 1489:25	1390:20	1398:30, 1398:47,	1470:5, 1470:16, 1479:42, 1479:45,	toleration [1] - 1504:19
subject [1] - 1494:25	switch [1] - 1485:7	1399:43, 1411:29,	1481:46, 1482:5,	tomorrow [1] - 1508:40
submitted [2] - 1495:19,	system [27] - 1389:47,	1423:38, 1427:16,	1485:16, 1485:29,	tonne [3] - 1398:33,
1496:23	1390:36, 1407:20,	1430:26, 1434:31,	1491:4, 1491:8,	1409:13, 1489:2
subsection [2] - 1493:41,	1409:28, 1412:25,	1452:39, 1455:2	1502:15, 1505:36,	took [21] - 1394:25,
1496:8	1417:7, 1417:17,	teams [2] - 1398:24,	1508:33, 1508:36,	1417:5, 1424:18,
subsequent [1] - 1392:28	1419:20, 1421:4,	1399:6	1508:38, 1509:24	1425:28, 1425:32,
subsequently [1] - 1395:17	1421:6, 1421:11,	tech [1] - 1431:3	themes [1] - 1391:43	1425:42, 1430:19,
	1422:16, 1428:24,	technical [10] - 1404:41, 1414:25, 1418:13,	themselves [3] - 1427:47,	1440:37, 1449:39,
subspecialised [1] -	1431:9, 1435:19,	1430:20, 1453:24,	1431:24, 1477:28	1452:3, 1455:38,
1495:45 substantial [2] - 1421:35,	1439:26, 1456:15,	1469:6, 1495:18,	theory [1] - 1414:15	1464:26, 1470:2, 1474:43, 1474:46,
1422:2	1460:20, 1460:25,	1495:27, 1495:40,	therefore [7] - 1398:7,	1477:10, 1487:5,
success [1] - 1443:40	1465:9, 1465:15, 1465:18, 1465:22,	1496:9	1412:16, 1413:33,	1477.10, 1487.5,
successful [1] - 1476:20	1465:41, 1466:37,	techniques [1] - 1399:32	1448:21, 1486:38,	1499:33, 1502:5
successfully [2] - 1443:7,	1472:41, 1499:17	technology [2] - 1419:29,	1490:11, 1497:14	tools [2] - 1399:32,
1476:41	systems [9] - 1402:40,	1419:33	thinking [3] - 1456:10,	1477:34
suddenly [1] - 1443:20	1407:14, 1410:19,	teetering [1] - 1487:32	1461:16, 1476:43	top [7] - 1453:27, 1458:13,
sufficient [5] - 1411:22,	1411:11, 1424:4,	temporarily [1] - 1490:20	third [11] - 1387:9,	1478:11, 1478:23,
1432:2, 1475:1, 1486:6,	1451:25, 1456:33,	temporary [4] - 1460:18,	1387:10, 1405:7,	1478:35, 1478:43,
1496:29	1482:28, 1488:34	1460:41, 1461:6	1405:15, 1434:40,	1498:28
suggest [14] - 1412:22,		tend [1] - 1460:47	1435:29, 1438:15,	top-left [1] - 1498:28
1425:13, 1425:22,	Т	tends [1] - 1400:47	1495:18, 1495:32,	topic [2] - 1459:33,
1432:6, 1446:9,	•	tense [1] - 1492:20	1496:16, 1498:8	1459:34
1447:14, 1452:15,		term [22] - 1390:20,	thorough [1] - 1493:12	topics [1] - 1402:23
1460:9, 1460:28,	T-piece [1] - 1452:27	1410:17, 1422:5,	three [18] - 1385:35,	touch [1] - 1420:19
1467:38, 1467:39,	table [16] - 1415:41,	1422:6, 1423:27,	1387:7, 1395:42,	touches [1] - 1436:24
1473:42, 1487:31,	1415:43, 1426:1,	1428:16, 1428:23,	1416:1, 1430:2,	tour [1] - 1418:2
1499:27	1429:44, 1430:3,	1428:27, 1428:37,	1432:47, 1434:37,	toward [1] - 1458:45
40.00.00	1431:20, 1435:27,		1438:39, 1443:25,	
10/03/2	021 (15)———	23	1	1

towards [6] - 1434:1, 1466:3, 1468:3, 1449:2, 1450:39, up [69] - 1385:9, 1385:20, 1390:37, 1392:21, 1464:32, 1465:1, 1477:39, 1479:19, 1454:9, 1454:36, 1385:21, 1386:41, 1393:1, 1407:14, 1388:41, 1389:26, 1407:20, 1409:28, 1474:20, 1479:23, 1487:13, 1487:17, 1456:22, 1482:13, 1498:10 1496:40, 1499:1, 1489:28, 1490:13, 1389:32, 1391:6, 1412:25, 1417:7, town [1] - 1480:36 1500:27, 1501:13, 1493:15, 1494:18, 1391:29, 1391:43, 1417:17, 1423:18, 1497:36. 1498:36. 1423:19, 1425:16, TRA.500.002.0001 [1] -1503:23 1392:28, 1394:18, 1491:47 two-day [2] - 1414:4, 1498:42, 1500:11, 1395:10, 1398:25, 1425:25, 1425:34, tranche [8] - 1427:3, 1414:13 1500:28 1399:31, 1403:31, 1426:11, 1427:27, 1427:28, 1428:24, 1404:33, 1405:15, two-month [1] - 1394:43 underlay [2] - 1423:39, 1433:12, 1436:11, types [1] - 1495:38 1433:26 1414:43, 1415:41, 1431:31, 1434:9, 1441:20, 1448:44, typo [1] - 1425:12 underlying [6] - 1399:20, 1417:28, 1422:25, 1434:23, 1434:40, 1491:45, 1492:16, 1400:2, 1431:43, 1425:17, 1427:41, 1435:31 1436:42 1502:32 1432:2, 1432:19, 1427:45, 1429:44, 1436:46, 1437:4, transcript [2] - 1509:13, U 1457:42 1430:29, 1430:46, 1437:9, 1437:10, 1509:15 underneath [2] - 1399:6, 1432:20, 1432:31, 1437:31, 1437:37, trap [3] - 1403:34, 1412:9, ultimately [17] - 1403:46, 1419:3 1433:7, 1441:44, 1448:6, 1448:10, 1412:15 1411:21, 1413:28, 1442:36, 1445:4, 1448:17, 1448:26, understandable [2] travel [1] - 1450:9 1415:15, 1425:11, 1449:2, 1451:7, 1424:39, 1487:13 1445:23, 1448:43, treatment [3] - 1474:42, 1432:14, 1432:42, 1449:14, 1449:29, 1451:24, 1452:9, understood [8] - 1425:24, 1475:7, 1475:36 1433:31, 1442:34, 1451:6, 1451:29, 1452:17, 1452:31, 1426:4, 1433:25, trend [2] - 1409:39, 1442:42, 1446:41, 1454:26, 1457:22, 1450:5, 1452:25, 1454:2, 1455:42, 1492:27 1448:21, 1450:3, 1456:24, 1456:30, 1460:20, 1460:25, 1466:25, 1504:10, trends [1] - 1418:46 1450:4, 1451:29, 1457:26, 1458:45, 1481:11, 1481:18, 1506:41 trial [3] - 1390:31, 1452:1, 1483:35 1458:47, 1463:30, 1483:5, 1483:8, undertake [4] - 1393:20, 1390:37, 1443:34 **UMM** [3] - 1387:17, 1465:9, 1466:37, 1486:25, 1487:14, 1394:9, 1479:35, trialled [1] - 1443:39 1421:18, 1504:18 1467:44, 1469:25, 1488:3, 1488:40, 1495:31 trials [1] - 1413:24 unacceptable [8] -1489:20, 1496:15, 1475:5, 1475:35, undertaken [5] - 1386:20, trigger [3] - 1421:26, 1386:47, 1427:18, 1476:40, 1485:6. 1497:30, 1498:1, 1392:29, 1393:14, 1447:18, 1452:10 1485:47, 1486:1. 1486:19, 1492:32, 1507:28, 1508:2, 1393:47, 1496:18 triggers [1] - 1445:1 1489:28, 1502:7, 1508:3, 1508:6, 1508:8 undertook [2] - 1473:7, 1493:8, 1493:13, trip [2] - 1428:29, 1506:46 1502:10, 1504:25 venturi [4] - 1410:8, 1493:37, 1494:23, 1487:3 tripped [1] - 1416:27 uncommon [1] - 1436:12 1498:2, 1500:19, 1452:4, 1452:7, 1452:8 unexpected [1] - 1448:26 trips [1] - 1400:12 unconstrained [2] -1500:33, 1501:6, venturis [2] - 1390:43, unexpectedly [2] -Trost [2] - 1482:5, 1485:29 1475:2, 1477:13 1503:4, 1508:26, 1451.25 1413:44, 1446:40 TROST [5] - 1482:7, uncontrolled [1] - 1429:16 1508:29 verbal [1] - 1427:46 unfairly [1] - 1411:40 1482:9, 1482:11, under (35) - 1390:21. upcoming [1] - 1473:17 verbally [1] - 1387:26 unfolded [1] - 1505:17 1485:31, 1491:2 1400:3, 1401:19, update [4] - 1390:41, versus [2] - 1441:18, unhappy [1] - 1428:33 trouble [1] - 1485:3 1401:20, 1404:4, 1430:28. 1453:20. uni [9] - 1423:18, 1498:9. 1505:42 true [1] - 1495:32 1404:5, 1409:29, 1499:11 vertical [1] - 1442:37 1499:2, 1507:41, truly [1] - 1501:45 1409:34, 1417:6, updating [1] - 1390:36 via [2] - 1424:3, 1472:40 1508:10, 1508:11, **try** [8] - 1399:30, 1413:12, 1417:17, 1417:47, upgrade [2] - 1392:20, vicinity [1] - 1407:11 1508:12, 1508:18, 1428:37, 1431:41, 1418:7, 1426:28, 1439:33 video [3] - 1509:3, 1509:5, 1508:25 1445:29, 1458:31, 1429:4, 1430:18, upper [1] - 1406:38 1509:10 uni-di [9] - 1423:18, 1488:30, 1505:39 1433:16, 1437:22, utmost [1] - 1468:44 videorecorded [1] -1498:9, 1499:2, trying [7] - 1399:5, 1452:31, 1453:11, 1508:47 1507:41, 1508:10, 1403:34, 1406:10, 1459:10, 1460:16, V view [20] - 1386:36, 1508:11, 1508:12, 1407:3, 1442:43, 1460:18, 1460:42, 1443:19, 1449:46, 1508:18, 1508:25 1461:10, 1470:7 1461:7, 1483:45, 1450:42, 1455:16, units [1] - 1443:26 turn [3] - 1395:8, 1412:35, 1485:42, 1486:34, vac [1] - 1439:33 1462:23, 1463:36, unknowingly [1] - 1505:31 1441.15 1486:45, 1489:15, vacuum [2] - 1443:27, 1463:38, 1463:39, unless [1] - 1463:27 turned [1] - 1450:20 1489:35, 1489:36, 1443:30 1464:16, 1471:42, unmanageable [2] turning [2] - 1484:20, 1490:45, 1495:24, validate [2] - 1474:1, 1479:16, 1479:30, 1485:18, 1485:25 1490:42 1496:8, 1498:28 1474:2 1479:34, 1485:24, unnecessary [1] - 1394:16 tweaking [3] - 1420:14, under-manager [2] variables [4] - 1409:13, 1485:38, 1486:38, unquestionably [3] -1420:15, 1420:33 1412:2, 1489:2, 1489:26 1417:47, 1453:11 1490:19 1401:25, 1408:36, twin [1] - 1443:34 under-managers [1] various [12] - 1398:8, viewed [1] - 1491:22 1460:17 two [35] - 1386:12, 1459:10 1399:32, 1404:6, visit [9] - 1403:9, 1430:20, unreasonable [2] -1394:43, 1412:28, underestimated [2] -1411:27, 1414:1, 1454:5, 1480:6, 1486:8, 1461:6, 1461:8 1414:4, 1414:13, 1408:36, 1489:25 1418:42, 1444:43, 1486:14. 1486:23. unreported [1] - 1459:35 1415:36, 1415:37, 1458:31, 1462:22, underestimating [2] -1505:8, 1505:26 unsafe [3] - 1394:31, 1415:38, 1416:4, 1465:46, 1504:7, 1413:39, 1489:7 visits [1] - 1430:46 1394:44, 1395:5 1416:41, 1417:5, 1504:11 underground [27] -**VPS** [1] - 1439:33 unsuccessful [1] - 1443:5 1423:31, 1429:3, 1397:1, 1397:37, vastly [1] - 1409:23 unsurprising [1] - 1454:25 1432:30, 1432:47, 1398:8, 1398:46, vein [1] - 1461:29 W unusual [2] - 1467:37, 1440:11, 1445:5, 1403:44, 1408:14, vent [1] - 1390:38 1468:1 1450.9 1450.23 1408:37, 1422:15, Ventilation [3] - 1390:6, unwanted [1] - 1427:17 1455:30, 1463:44, 1424:45, 1446:32, 1390:13, 1392:9 wait [3] - 1505:17, **Up**[1] - 1390:6 1464:41, 1465:31, 1447:1, 1448:38, ventilation [62] - 1390:31, 1505:19, 1505:24 -.10/03/2021 (15)-24

walkway [1] - 1508:26 1408:47, 1436:34, yourself [3] - 1476:3, WAS [1] - 1509:24 1462:23, 1492:20, 1491:17, 1502:16 watching [1] - 1508:39 1493:25, 1501:33, 1505:47 ways [5] - 1408:35, Ζ worker [4] - 1422:17, 1412:11, 1432:10, 1438:43, 1452:2, 1449:1, 1451:6 zero [2] - 1416:19, 1452:29 wearing [1] - 1414:39 1482:30 Wednesday [1] - 1384:41 workers [10] - 1402:27, **zone** [1] - 1429:18 1406:24, 1406:28, week [12] - 1395:1, **zoom** [2] - 1405:21, 1407:5, 1482:12, 1480:8, 1480:9, 1405:22 1489:15, 1489:28, 1480:17, 1480:18, 1489:42, 1508:26, 1480:19, 1480:34, 1509:7 1480:35, 1487:13, Workings [1] - 1494:25 1493:35, 1501:47 workings [24] - 1404:18, weekly [4] - 1463:14, 1404:23, 1408:34, 1467:8, 1467:20, 1412:43, 1413:7, 1480:15 1439:15, 1441:42, weeks [9] - 1393:30, 1442:9, 1443:18, 1428:34, 1438:39, 1448:18, 1453:42, 1440:45, 1455:30, 1470:33, 1493:23, 1465:1. 1480:42. 1493:25, 1493:28, 1487:13, 1487:18 1493:43, 1493:46, weeks' [1] - 1397:5 1494:22, 1494:43, wells [11] - 1408:41, 1495:14, 1495:19, 1413:25, 1413:35, 1496:18, 1496:22, 1422:6, 1442:21, 1496:24 1442:38, 1443:39, works [1] - 1420:23 1444:3, 1446:19, workshop [2] - 1414:4, 1453:23, 1453:34 1414:43 whack [1] - 1425:38 world [1] - 1428:44 whereas [1] - 1455:15 worried [1] - 1478:39 whichever [1] - 1458:44 worry [1] - 1502:4 whilst [5] - 1427:1, 1427:8, worse [1] - 1477:36 1434:35, 1457:15, worthy [1] - 1397:3 1499.11 Wouter [2] - 1417:46, whole [9] - 1400:17, 1471:21 1407:2, 1411:7, WRAC [3] - 1470:42, 1411:13, 1417:45, 1471:16, 1471:18 1439:5. 1455:6. 1462:5. 1507:1 writing [1] - 1481:37 wrote [2] - 1397:9, wider [2] - 1413:29, 1442:16 1397:10 wider-spaced [1] -1413:29 Υ Williams [2] - 1408:44, 1414:36 year [1] - 1486:19 Williams' [1] - 1408:47 year's [1] - 1443:21 wings [1] - 1448:43 years [1] - 1402:15 wins [2] - 1450:3, 1450:4 yesterday [38] - 1385:9, Wipe [1] - 1486:14 1385:39, 1387:38, wiped [2] - 1485:38, 1388:21, 1388:27, 1485:43 1390:24, 1391:18, wires [1] - 1421:11 1394:25, 1397:31, wise [2] - 1415:13, 1400:7, 1403:28, 1416:23 1409:5, 1411:39, wished [1] - 1479:46 1422:29, 1424:18, withdrawal [1] - 1506:40 1425:4, 1426:18, WITHDREW [1] - 1508:36 1431:25, 1431:47, witness [4] - 1469:42, 1433:21, 1433:31, 1470:2, 1479:42, 1482:3 1440:37, 1455:20, WITNESS [2] - 1479:45, 1455:38, 1470:3, 1508:36 1470:5, 1470:8, 1471:5, Woods [1] - 1424:47 1471:8, 1472:6, wording [1] - 1455:43 1472:21, 1474:44, words [14] - 1396:45, 1476:2, 1487:29, 1398:31, 1399:19, 1491:13, 1493:22, 1400:1, 1400:2, 1401:4, 1493:25, 1505:3 -.10/03/2021 (15) 25