NACHISEAN 22-cr-00673-LAK Document 368 Filed 12/12/23 Page 1 of 187 1487 UNITED STATES DISTRICT COURT 1 SOUTHERN DISTRICT OF NEW YORK 2 -----X 3 UNITED STATES OF AMERICA, 4 22 CR 673 (LAK) v. 5 SAMUEL BANKMAN-FRIED, 6 Defendant. Trial -----x 7 New York, N.Y. 8 October 17, 2023 9:40 a.m. 9 10 Before: 11 HON. LEWIS A. KAPLAN, 12 District Judge 13 APPEARANCES 14 DAMIAN WILLIAMS 15 United States Attorney for the Southern District of New York BY: DANIELLE R. SASSOON 16 NICOLAS ROOS 17 DANIELLE KUDLA SAMUEL RAYMOND 18 THANE REHN Assistant United States Attorneys 19 COHEN & GRESSER, LLP 20 Attorneys for Defendant BY: MARK S. COHEN 21 CHRISTIAN R. EVERDELL SRI K. KUEHNLENZ 22 DAVID F. LISNER 23 Also Present: Luke Booth, FBI 24 Kristin Allain, FBI Arjun Ahuja, USAO Paralegal Specialist Grant Bianco, USAO Paralegal Specialist 25

	NACE SEAN 22-cr-00673-LAK Documents 1368 Filed 12/12/23 Page 2 of 187 1491
1	Pages 1488-1490 SEALED by order of the Court)
2	(In open court; jury not present)
3	THE COURT: Good morning, everyone.
4	Let's get the jury and let's get the witness.
5	MR. ROOS: Judge, while we're waiting for folks,
6	there's a few admissibility disputes between the parties on
7	some expert exhibits that would come in tomorrow. I was hoping
8	we could raise them with the Court sometime today. It doesn't
9	have to be—any time before the end of the day. It's up to
10	your Honor.
11	THE COURT: I'll try to keep that in mind.
12	(Continued on next page)
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

	NACE: BEAN 22-cr-00673-LAK Document 368 Field 12/12/23 Page 3 of 187 1492
1	(Jury present)
2	THE COURT: Good morning, folks. I hope you had a
3	nice evening.
4	Mr. Singh, you're still under oath.
5	The record will reflect the jurors and the defendant
6	all are present, as they have been throughout.
7	Cross-examination, Mr. Cohen.
8	MR. COHEN: Thank you, your Honor.
9	NISHAD SINGH, resumed.
10	CROSS EXAMINATION
11	BY MR. COHEN:
12	Q. Good morning, Mr. Singh.
13	A. Good morning.
14	Q. I'd like to ask you, if I ask you a question that you can
15	answer yes or no, please do so.
16	A. Sounds good.
17	Q. Do you recall yesterday you testified about FTX's business
18	spending?
19	A. Yes.
20	Q. Things like sponsorships and venture investments, correct?
21	A. Yes.
22	Q. And I believe you testified at page 1313 that you thought
23	the spend was too large or didn't make sense. Do you recall
24	that, sir?
25	A. I don't recall exactly what I said. In many instances I
ļ	SOUTHEDN DISTDICT DEDODTEDS D C

	NACHABEAN 22-cr-00673-LAK Documienty 3368 대해 ed st 2/12/23 Page 4 of 187 1493
1	thought it was too large or didn't make sense, not in all.
2	Q. Okay. Fair to say that in certain instances you disagreed
3	with the business rationale for the spend?
4	A. Right.
5	Q. You thought that spending on such items was too large.
6	A. Right.
7	Q. And is it fair to say that at certain times Sam had a
8	different business judgment as to that spend?
9	A. Frequently.
10	Q. And Sam ran the business side of FTX, correct?
11	A. Yes.
12	Q. Now did FTX have a marketing group?
13	A. It had a lot of employees that worked on marketing in some
14	capacity.
15	Q. And from time to time those employees would make
16	recommendations to Sam about marketing initiatives, correct?
17	MR. ROOS: Objection, hearsay.
18	MR. COHEN: I'll rephrase, your Honor.
19	THE COURT: Yes, please.
20	Q. Do you know if from time to time the marketing group would
21	make recommendations to Sam?
22	MR. ROOS: Objection. Hearsay.
23	THE COURT: Overruled.
24	The question is whether you know one way or the other.
25	A. Yes, I read in Slack—
Į	

	NACHASTEAN 22-cr-00673-LAK Documents 368 (Filed \$12/12/23 Page 5 of 187 1494
1	THE COURT: No, no, no. The answer was yes. Just
2	stop there.
3	Q. Let's talk for a moment about sponsorships. Was it your
4	view, Mr. Singh, that FTX shouldn't have any corporate
5	sponsorships?
6	A. I'm not sure that I had a view that extreme. I don't think
7	I had a very precise view on what should happen.
8	MR. COHEN: If we could pull up Government Exhibit 343
9	in evidence, please.
10	Q. This is a document entitled List of Sponsorships. Do you
11	recall going over this with us yesterday, Mr. Singh?
12	A. Yes.
13	Q. Okay. And counsel directed you to line 3.
14	MR. COHEN: Brian, could we have line 3.
15	Q. And that was the sponsorship for the Miami-Dade FTX Arena.
16	Do you see that, Mr. Singh?
17	A. Yes.
18	Q. And you told us yesterday about the spend of 135 million on
19	that sponsorship, correct?
20	A. Yes.
21	MR. COHEN: Okay. Now why don't we—Brian, if we
22	might expand this and cover some things that weren't covered
23	yesterday.
24	Let's take a look at the—Brian, move it a little bit
25	more to my right.
I	

	NACHABEAN 22-cr-00673-LAK Documents 368 Filed 12/12/23 Page 6 of 187 1495
1	Okay. Other way. Other way. Okay. That's good.
2	BY MR. COHEN:
3	Q. All right. If you can look at the heading that I'm
4	circling, Mr. Singh, Deal Start Date and Duration, do you see
5	that, sir?
6	A. I do.
7	Q. Is it fair to say that for the Miami-Dade FTX Arena, the
8	duration of the sponsorship was 19 years?
9	A. Yes, that's what this suggests.
10	Q. Okay. With a start date of March 22, 2021.
11	A. That's what the spreadsheet says.
12	MR. COHEN: Okay. If we could continue, Brian, moving
13	along on that same row, to the right.
14	If you go to the column entitled Outlay, and Brian,
15	bring that all the way over, please.
16	Q. And that shows, Mr. Singh, the outlay per year of this
17	\$135 million commitment, correct?
18	MR. ROOS: Objection, foundation.
19	Q. Do you see that, sir?
20	THE COURT: Well, just a minute. We're not performing
21	eye examinations here.
22	MR. COHEN: Sorry, Judge.
23	THE COURT: I mean, it says what it says.
24	MR. COHEN: Okay.
25	Q. Now, Mr. Singh, this sponsorship of the FTX Arena was aimed

	NACHASTEAN 22-cr-00673-LAK Documents 268 (Filed \$12/12/23 Page 7 of 187 1496
1	at promoting FTX's brand and awareness, correct?
2	MR. ROOS: Objection, foundation.
3	THE COURT: Sustained.
4	Q. Did you have a view about whether or not it was a useful
5	thing to promote FTX's brand?
6	MR. ROOS: Objection.
7	THE COURT: Ground?
8	MR. ROOS: Relevance.
9	MR. COHEN: This was—
10	THE COURT: Pardon me?
11	MR. COHEN: I'm sorry. I didn't mean to interrupt
12	your Honor.
13	THE COURT: Go ahead. I'm looking to you for a
14	response.
15	MR. COHEN: Oh. This was covered yesterday, and this
16	is relevant because yesterday we were told that this was
17	excessive spend with no purpose.
18	THE COURT: Overruled.
19	BY MR. COHEN:
20	Q. You can answer my question, Mr. Singh.
21	A. Do you mind repeating it.
22	MR. COHEN: Let's read it back.
23	THE COURT: The question was: "Did you have a view
24	about whether or not it was a useful thing to promote FTX's
25	brand?" That's the question. Please answer it.
Į	

	NACHASTEAN 22-cr-00673-LAK Documents 1368 대한 12/12/23 Page 8 of 187 1497
1	A. I understood that it had business benefits and costs. The
2	specific, you know—if I specifically thought any given
3	transaction was useful depended on the details of that
4	transaction.
5	Q. And the business benefits and costs were for Sam to weigh,
6	correct?
7	A. Yes.
8	MR. COHEN: All right. We can take that down, Brian.
9	Q. Now you also mentioned yesterday—you covered a topic of
10	venture spending. Do you recall that, Mr. Singh?
11	A. Yes.
12	Q. And one of the topics you covered was a company called K5.
13	Do you recall that?
14	A. I do.
15	Q. And that was a company run by, among others, Michael Kives,
16	correct?
17	A. Oh, forgive my pronunciation yesterday. Yes.
18	MR. COHEN: Can we pull up Government Exhibit 42,
19	please.
20	Q. Do you recall going over this with counsel yesterday?
21	A. Yes.
22	Q. And if you look at the second line from the top,
23	Mr. Bankman-Fried stated that "Mr. Kives is probably the most
24	connected person I've ever met. In attendance at the dinner at
25	his house were:" and then it lists a number of people who you

	NACHABEAN 22-cr-00673-LAK Documents 268 또해 ed \$12/12/23 Page 9 of 187 1498
1	identified. Do you recall that?
2	A. I do.
3	Q. Okay. Did you—based on your working at FTX, did you have
4	a view about whether there was a value in having connection
5	with celebrities and entrepreneurs?
6	A. Yes, I believed that it could be valuable for the business.
7	Q. Depending on the circumstances, correct?
8	A. Right. Depending on the circumstances.
9	Q. And I believe you testified that you discussed with
10	Mr. Bankman-Fried that someone like Mr. Kives could be a
11	one-stop shop for such relationships, correct?
12	A. I discussed that in that Sam told me that, that it could be
13	a one-stop shop for relationships.
14	Q. And this would eliminate the need to have multiple brokers
15	trying to develop such relationships, correct?
16	A. I don't remember exactly what words Sam used, but he, in
17	this document, says something to that effect, and I recall
18	something to that effect being said in person to me.
19	Q. Did you agree with that, sir?
20	A. I didn't know. I didn't know who the other brokers were or
21	the quality of the relationships Michael Kives had with these
22	people.
23	Q. So you had no view on whether it was better to have one
24 25	person or multiple brokers.
25	A. There was a cost of juggling multiple, but all else equal,

NCUSEAN22-cr-00673-LAK Docuration 19368 File \$2/12/23 Page 10 of 187 1499 1 having more connections is better. 2 MR. COHEN: Now we can take that down, Brian. 3 Ο. Based on your interaction with Mr. Bankman-Fried, did you 4 have any understanding about whether or not the relationship 5 with K5 involved something more than being in a broker relationship? 6 7 MR. ROOS: Objection, foundation. 8 THE COURT: Mr. Cohen, what do you say to that? 9 MR. COHEN: I asked his understanding, your Honor. 10 THE COURT: Yes, I understand. Why is his 11 understanding on that appropriate? 12 Because, your Honor, again, yesterday we MR. COHEN: 13 were told these were all reckless and frivolous investments, 14 and I'm entitled to show that there was way more to it than we 15 were told yesterday, so that's the relevance. 16 I'll allow it for a moment, anyway. THE COURT: 17 MR. COHEN: Okay. All I need is a moment, your Honor. 18 Can we read the question back, please. 19 THE COURT: Please read it back. 20 (Record read) 21 I know at least one other project that did not itself seem Α. 22 like it was just exercising K5's ability as a broker. 23 Ο. What was that project, Mr. Singh? 24 Sam investing in a tequila brand run by a famous celebrity. Α. 25 Okay. You also mentioned that in addition to the Kives Q.

	NGHS 문과전2-cr-00673-LAK Docuration 0368 Fine 52/12/23 Page 11 of 187 1500
1	relationship there were other venture investments that FTX
2	spent on. Do you recall that, sir?
3	A. Yes.
4	Q. Okay. And you mentioned I believe a mining company,
5	correct?
6	A. Bitcoin mining company.
7	Q. Bitcoin mining. And the judge explained to all of us that
8	wasn't an in-the-ground mining company, correct?
9	A. And I tried my best and likely failed to clarify further.
10	Q. Now did you participate, Mr. Singh—let me back up.
11	Have you ever heard the term "due diligence"?
12	A. Yes.
13	Q. What does it mean to you?
14	A. The process of analyzing the internals of a company to
15	understand how it functions.
16	Q. And is that done prior to investing in a company?
17	A. In general.
18	Q. Okay. Did you participate in any of the due diligence
19	relating to the venture investments you described yesterday?
20	A. Give me a moment. I'm trying to think about if there is
21	even a single one.
22	I did for Anthropic.
23	Q. And just to remind the jury, Anthropic was the AI company,
24	correct?
25	A. Yes.
I	

	NC 변화를 적자된 2-cr-00673-LAK Docuration 19368 두 부분 12/12/23 Page 12 of 187 1501
1	Q. And you participated in the due diligence in determining
2	whether to make the investment, correct?
3	A. Not quite. The investment was first made, the large one,
4	from Sam, and I was really proud of it, and I also wanted to
5	make an investment, or view it as a donation, and so I
6	separately went and talked with the Anthropic folks.
7	Q. So you asked to make a personal investment in the Anthropic
8	company, correct?
9	A. No. Initially I thought it would be further investment or
10	donation from Alameda.
11	Q. Didn't you just say you wanted to personally invest?
12	A. I wanted to be personally involved.
13	Q. Okay. Mr. Singh, can we try my question. Did you
14	personally—did you—were you interested in personally
15	investing in Anthropic?
16	A. Before—
17	Q. At any time.
18	A. Yeah, at any time, yes, at one point I was.
19	Q. Now you also testified yesterday about spending on Bahamas
20	properties. Do you recall that, sir?
21	A. I do.
22	MR. COHEN: Can we call up GX 3, please.
23	Q. Do you recall providing testimony about GX 3, which was the
24	list of the properties purchased in the Bahamas? Do you recall
25	that, sir?
I	

	NCELLS @ ANZIZ-cr-00673-LAK Docurflein 193868 두 분 해 문제 2012/23 Page 13 of 187 1502
1	A. I do.
2	Q. Okay. Just quickly, before I forget, No. 2, it says Albany
3	Lot 44, Conch Shack. Do you see that, sir?
4	A. Yes.
5	Q. What was that?
6	A. This was a house that was conveyed or—that was conveyed to
7	Constance Wang or just one that she lived in.
8	MR. COHEN: Okay. And we can take this down.
9	Q. I believe you testified that you and Mr. Bankman-Fried and
10	others, eight in total, wanted to live together in the Bahamas,
11	correct?
12	A. I forget if it was exactly eight, but yes, a group of us
13	wanted to live together.
14	Q. Fair enough. You and your girlfriend?
15	A. Yes.
16	Q. Mr. Bankman-Fried?
17	A. Yes.
18	Q. Mr. Yedidia and his girlfriend?
19	A. Yes.
20	Q. Others. Correct?
21	A. Yes.
22	Q. So you told us that you looked for—you looked for housing
23	and you saw a place that was less expensive than the penthouse
24	that was ultimately purchased. Do you recall that, sir?
25	A. A few places, yes.
I	

	NC 변화를 주시켰고-cr-00673-LAK Docuration 19368 Filter 5: 12/23 Page 14 of 187 1503
1	Q. Few places. And when Mr. Bankman-Fried indicated he was
2	interested in the Orchid 6 penthouse, you had a substantial
3	disagreement. You told us that yesterday.
4	A. I had a disagreement.
5	Q. You didn't say substantial disagreement yesterday?
6	A. I forget exactly what I said yesterday.
7	Q. Didn't you tell us yesterday that you thought it was really
8	expensive and super ostentatious?
9	A. Yes.
10	Q. Okay. But Mr. Bankman-Fried went ahead, went ahead with
11	the purchase anyway, correct?
12	A. Right.
13	Q. And then you moved into the apartment.
14	A. I did.
15	Q. You and your girlfriend lived in one of the master bedroom
16	suites, didn't you?
17	A. The nicest room in the house.
18	Q. And you lived there until you left the Bahamas in November
19	of 2022, correct?
20	A. Correct.
21	Q. Okay. And prior—you told us this yesterday. Prior to
22	November 2022, you were a billionaire.
23	A. So I believed.
24	Q. Okay. Mr. Bankman-Fried was a billionaire.
25	A. So I believed.
I	

	NGELSE ANZ 2-cr-00673-LAK Docuration 12368 Fitter \$2/12/23 Page 15 of 187 1504
1	Q. The other members in the apartment were worth at least
2	millions of dollars, correct?
3	A. So I believed.
4	Q. Would you regard it as really expensive for a group of
5	billionaires and millionaires to live in a \$30 million
6	apartment?
7	A. The expense would be the same no matter the wealth of the
8	people living in it.
9	Q. So your view is it was really expensive.
10	A. In absolute terms, yes.
11	Q. What about relative to the wealth of the people living in
12	the apartment?
13	A. I don't really know what's reasonable for billionaires to
14	do. I don't know other billionaires.
15	Q. So you have no view.
16	A. I felt confused about it.
17	Q. Okay. But not confused enough to move out.
18	A. Oh, I considered moving out many times.
19	Q. But you didn't.
20	A. I didn't.
21	Q. Okay. Now I want to move to a different topic, Mr. Singh.
22	Bear with me a moment.
23	Do you recall yesterday that you told us that you were
24	asked what your role was in the fraud against FTX's customers
25	that you committed with the defendant? Do you recall being

	NCELLS # 2/12/23 Page 16 of 187 1505
1	asked that question, sir?
2	A. Or something to its effect, yes.
3	Q. Okay. Fair enough.
4	And you told us that "In September of 2022, I learned
5	of the hole and even after that, implicitly and explicitly, I
6	greenlit transactions that I knew must have been digging the
7	hole deeper and therefore coming from customer funds." Do you
8	recall giving that testimony yesterday?
9	A. Or something to that effect, yes.
10	Q. Okay. So you also testified yesterday that you first
11	learned that customer funds were being deposited, FTX customer
12	funds were being deposited in Alameda bank accounts as early as
13	2019. Do you recall that, sir?
14	A. Yes.
15	Q. And you gave us an example from 2019 and 2020, correct?
16	A. Sorry. I don't remember which examples I gave, but-
17	Q. That's fine. So I take it you didn't think that was wrong.
18	A. Not at the time.
19	Q. Okay. And then you told us yesterday that—and we'll get
20	to this more in a bit—you told us about a sequence in June,
21	beginning in June 2022, where you were asked to look into
22	certain balances of Alameda. Do you recall that, sir?
23	A. I do.
24	Q. Okay. We'll get to that in a minute.
25	But you also told us that when you first learned about
I	

NCE AND 2-cr-00673-LAK Docuration 1368 File \$2/12/23 Page 17 of 187 1506 the situation in June, "I thought Alameda had positive balances 1 2 on FTX, that it was borrowing in lots in some places but that 3 overall they had the money." Do you recall giving us that 4 testimony? 5 MR. ROOS: Objection. I think Mr. Cohen is just rereading his testimony from yesterday. 6 7 I'm setting up the question, your Honor. MR. COHEN: This is cross-examination. 8 9 THE COURT: Mr. Cohen, I understand what's happening 10 in this courtroom, and I don't need that. If you're reading 11 from the transcript, read from the transcript and identify by 12 page and line what you're reading from. 13 MR. COHEN: I thought I was. Okay. I will, your 14 Honor. 15 THE COURT: Well, let's proceed that way. 16 Let's go to the transcript. For counsel MR. COHEN: 17 and the Court's benefit, this is page 1404. You don't have to 18 show it to the witness, but for counsel and the Court, lines 5 19 through 11. 20 BY MR. COHEN: 21 "Q. What do you mean?" Ο. 22 "The June exercise, I thought Alameda had positive 23 balances on FTX, that it was borrowing lots in some places but 24 that overall, they had more money than they didn't. This 25 suggested an entirely different reality. I was hoping that I

	NGLIS 문과전2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 18 of 187 1507
1	didn't really understand what Gary—what Gary meant by
2	borrowing, but if I did, this was absolutely devastating."
3	Do you see that, sir? Did you hear that, sir? I'm
4	sorry.
5	A. I hear that.
6	Q. And you gave that testimony yesterday.
7	A. I believe so.
8	Q. All right. So as of June—this is the date that you gave
9	the testimony in—your concern was whether or not Alameda had
10	assets to cover the borrowing.
11	A. I had other concerns as well.
12	Q. In the passage I just read, that was what you told us.
13	MR. ROOS: Speaks for itself.
14	THE COURT: Sustained.
15	Q. Now what were your other concerns in June?
16	A. The exercise showed that there were specific accounts that
17	were extremely negative, like the main account. To be in that
18	position suggested a use of "Allow Negative" that didn't meet
19	the spirit that I expected these privileges to be used in.
20	Q. Okay. And so prior to June of 2022 was it your view that
21	as long as the balances were offset by sufficient assets, the
22	borrowing was appropriate?
23	A. That was not my view.
24	Q. What was your view?
25	A. On what specifically?
Į	

	NCELSE AN 22-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 19 of 187 1508
1	Q. Prior to June—I understand your testimony about June, and
2	we'll come back to that—did you have a view about whether or
3	not Alameda could borrow provided that the borrowing was
4	supported by assets?
5	A. There were many circumstances in which I thought that would
6	not be appropriate.
7	Q. You didn't think—you didn't think there were circumstances
8	in which it would be appropriate.
9	MR. ROOS: Objection, vague and asked and answered.
10	THE COURT: Sustained.
11	Q. Mr. Singh, do you recall yesterday you told us you had many
12	meetings with the government?
13	A. Yes.
14	Q. And I think you said you had about 20 such meetings.
15	A. That sounds right.
16	Q. And in those meetings the prosecutors would ask you
17	questions?
18	A. They would.
19	Q. And you would try to answer them the best you could?
20	A. Correct.
21	Q. Okay. Do you recall meeting with them in-well, let me do
22	it this way. Is it fair to say that your first meeting with
23	the prosecutors was in November of 2022?
24	A. I believe that's right.
25	Q. November 21st?

	NCELSE ANZ 2-cr-00673-LAK Documenter 268 Filter \$2/12/23 Page 20 of 187 1509
1	A. I don't remember the exact date. Sorry. But I believe
2	that's right.
3	Q. Is it fair to say that you had meetings in November,
4	December, and January—November and December of 2022?
5	A. Yes.
6	Q. And then you had meetings with them again in January,
7	February, and March of the following year?
8	A. Yes.
9	Q. And then you had additional meetings in May and August?
10	A. Sorry. I forget all the exact dates.
11	Q. And you had meetings in September and October.
12	A. Yes.
13	Q. Including a meeting this past week.
14	A. Yes.
15	Q. Do you recall having a meeting with the prosecutors on
16	January 4th of 2023?
17	A. Sorry. I don't remember the specific dates of our
18	meetings.
19	Q. A January meeting.
20	A. I remember meeting in January.
21	Q. Okay. Do you recall telling the prosecutors that to you,
22	the idea of borrowing from anywhere, as long as you were good
23	for it, didn't feel wrong?
24	A. I don't remember saying that.
25	MR. COHEN: Can we call up 3501-021 just for the

	NCELLS 문과전2-cr-00673-LAK Docurâtent 2368 두itercts 12/12/23 Page 21 of 187 1510
1	witness, please. Page 14.
2	Okay. If you can go to the last paragraph at the
3	bottom, Brian.
4	And go to the last two sentences.
5	Q. Mr. Singh, read those to yourself and tell us whether or
6	not they refresh your recollection that you told that to the
7	prosecutors.
8	A. I don't—
9	MR. ROOS: Objection to the form.
10	THE COURT: What's the form objection?
11	MR. ROOS: To "telling it to the prosecutors" in the
12	underlying question.
13	THE COURT: I'm sorry, what?
14	MR. ROOS: Just the formulation of the "do you recall
15	telling that to the prosecutors."
16	THE COURT: Sustained as to form.
17	MR. COHEN: Let me see if we can address the Court's,
18	counsel's issue.
19	BY MR. COHEN:
20	Q. Mr. Singh, read that to yourself, and does that refresh
21	your recollection about what you said to the prosecutors?
22	A. Yes, but not about the exact topic we're talking about.
23	Q. So it doesn't refresh you about the topic we just
24	discussed.
25	A. About borrowing in general? No. This refreshes me on

	NCLLS @ ANZ - cr-00673-LAK Docuration (368- Files \$2/12/23 Page 22 of 187 1511
1	something specific I thought about bank accounts.
2	MR. COHEN: Okay. Then let's take that down.
3	Q. When you considered the assets that would be posted as
4	security for the loans, did the nature—did you take into
5	account the nature of the assets?
6	MR. ROOS: Objection, vague and foundation.
7	THE COURT: Sustained.
8	MR. COHEN: Sure.
9	Q. Coming back to-we were talking about what your thinking
10	was prior to June of 2022. Do you recall that, sir?
11	A. I do.
12	Q. Okay. In the period prior to 2022 did you take—in
13	thinking about what was going on at Alameda and whether
14	anything was wrong, did you take into account the nature of the
15	assets that Alameda was posting as collateral?
16	MR. ROOS: Objection, foundation.
17	THE COURT: Sustained.
18	Q. Now your view changed at some point? Or let me ask you a
19	better question. When did you first believe you had done
20	anything wrong?
21	A. I knew that I'd done something wrong when I helped doctor
22	the Serum staking fees revenue.
23	Q. When was that, sir?
24	A. That was December 30th or 31st of 2021.
25	Q. Okay. And coming into the period prior to June, other than

	NCLLS 문화전2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 23 of 187 1512
1	the staking fees you just talked about, is there anything else
2	you thought you had done wrong?
3	A. I'm not sure.
4	Q. And then you told us yesterday your view changed in
5	September 2022; is that correct?
6	A. Sorry. On what specifically?
7	Q. About what you had done wrong.
8	MR. ROOS: Objection, vague.
9	THE COURT: Yes. I don't understand, Mr. Cohen. I
10	thought the witness just said that he first believed that he
11	did something wrong in December—I'm mistaken. Excuse me. You
12	go ahead.
13	You can re-put the question.
14	MR. COHEN: Okay.
15	BY MR. COHEN:
16	Q. I want to understand, to the Court's comment, what you
17	thought in September 2022 was wrong with your conduct.
18	A. My conduct before that point or after that point?
19	Q. Take it in steps. Let's do before first.
20	A. Before that point, I knew that in June, I had observed
21	Alameda borrowing in large amounts in a way that didn't meet
22	the expectations I had and what I'd been told about how Alameda
23	would use things like "Allow Negative." Even in June, when I
24	suspected there was wrongdoing there, I took cues from the
25	people around me and didn't pursue it further.

	erstood not only had there been an but that the money wasn't there at
2 enormous amount of borrowing	but that the money wasn't there at
	but that the money wash t there at
3 all.	
4 Q. Okay. So, all right. We	e're going to come back to June,
5 we're going to come back to a	September. I don't want to do them
6 in bits and pieces. Just le	t me cover another topic quickly.
7 Do you recall that	yesterday counsel asked you
8 questions about your compense	ation while you worked for FTX?
9 A. Yes.	
10 Q. And I believe you told u	s that you made a salary of about
11 200,000?	
12 A. Yes.	
13 Q. And that you'd receive c	ash bonuses around 1 to 2 million;
14 is that correct?	
15 A. I think that's right.	
16 Q. Now you also received lo	ans from FTX, correct?
17 A. Many.	
18 Q. And you touched on a loa:	n yesterday, but I'd like to go
19 over it with you in a bit mo:	re detail, sir. Let me just give
20 you the foundation.	
21 Is it fair to say the	nat at a certain point you borrowed
22 477 million from FTX?	
23 A. In a sense.	
24 Q. In a sense. And this wa	s to purchase options?
25 A. Yes.	

	NCLLS @ ANZ - Cr-00673-LAK Docuration (3368 Filter \$2/12/23 Page 25 of 187 1514
1	Q. Shares in FTX?
2	A. Yes.
3	Q. Okay. And it was to buy more equity in FTX, correct?
4	A. To buy my first equity in FTX.
5	Q. Okay. And you said that one of the reasons you were
6	looking to do this was you wanted to donate the money to
7	charity.
8	A. Right.
9	Q. Did you end up doing that?
10	A. No.
11	Q. Okay. And you said that there were taxes used with regard
12	to how it was to be structured, correct?
13	A. The reason I believe—
14	Q. I'm sorry. Let me ask a better question, sir. The "this"
15	being how the loans would be structured.
16	A. The reason it was structured this way was so that there was
17	a smaller outlay of cash from Alameda, with the tradeoff being
18	that I took on a large debt.
19	Q. Okay. And you just answer this yes or no, sir. You
20	consulted with attorneys about how to structure this loan,
21	correct?
22	A. Yes.
23	Q. Okay. I believe you mentioned Dan Friedberg; is that
24	correct?
25	THE COURT: Well, Mr. Cohen, it's not clear whether
l	1

	NGHS 문과연2-cr-00673-LAK Docuration 0368 Fitted \$2/12/23 Page 26 of 187 1515
1	you're asking whether he did that in connection with this or
2	whether he ever consulted Dan Friedberg about anything.
3	MR. COHEN: I meant in this, your Honor.
4	MR. ROOS: Objection. Misstates testimony then.
5	Q. Who were the lawyers you consulted with about this
6	\$477 million loan?
7	A. Can Sun; Joe Bankman; two of Sam's personal tax lawyers,
8	David Forst, Sean McElroy, and others.
9	Q. Where did David Forst and Sean McElroy work, if you know?
10	A. I don't know. I think Fenwick & West but I'm not sure.
11	Q. Fenwick & West was an outside law firm?
12	A. Yes.
13	Q. And Can, C-A-N, Sun was the general counsel of FTX,
14	correct?
15	A. Yes.
16	Q. Now documentation was prepared for that loan, correct?
17	A. Yes.
18	Q. And you signed that documentation.
19	A. Yes.
20	Q. Now you also—did you also receive a loan for \$10 million?
21	A. I did.
22	Q. And that was for funds you wanted to provide to your
23	parents, correct?
24	A. Family and friends.
25	Q. Okay. Family and friends. And that loan was in 2021,
I	SOUTHERN DISTRICT REPORTERS, P.C.

(212) 805-0300

	NCELSE ANZ 2-cr-00673-LAK Docuration 19368 Fiteds \$2/12/23 Page 27 of 187 1516
1	correct?
2	A. Yes, I believe early 2021.
3	Q. And that was money you borrowed from FTX in order to pay to
4	family members.
5	A. Not quite.
6	Q. Was it money you borrowed from FTX?
7	A. No.
8	Q. You didn't borrow it.
9	A. I did borrow it.
10	Q. Okay. So—
11	A. Sorry. To be clear—
12	Q. Let me try, Mr. Singh. Did you borrow \$10 million from
13	FTX?
14	A. No.
15	Q. No. How did it get to you?
16	A. Sam gave it to me.
17	Q. Sam gave it to you from—through FTX?
18	A. I don't think so.
19	Q. Okay. And those were funds that were used to pay for your
20	family-related expenses.
21	A. They were gifts to family and friends, and some amount was
22	donated.
23	Q. Okay. Why don't we now move to another topic, Mr. Singh.
24	And let's talk about June, June of 2022.
25	Well, I think we have to go back a little bit. Do you
ļ	

	NCELLS EAN 212-cr-00673-LAK Docurâtem 2368 Fiterets \$2/12/23 Page 28 of 187 1517
1	recall giving testimony yesterday about a bug in the fiat@
2	account system?
3	A. I do.
4	Q. And without getting too technical, the effect of this bug
5	was to make it look like Alameda's balances were more negative
6	than they really were, or that—let me rephrase—that Alameda
7	owed more money to FTX than it really did?
8	A. The effect of the bug was that the fiat@ftx.com's stated
9	balance was more negative than the—than what it should have
10	actually been, and Alameda was consuming this balance and
11	treating it as something that they were on the hook for, as I
12	understood, and so Alameda overestimated how much they should
13	have had in bank accounts to back customer deposits.
14	Q. So the net of it was Alameda overestimated the amount it
15	owed to—back to FTX.
16	A. Yes.
17	Q. And I believe you told us yesterday that you first became
18	aware of the bug in 2021.
19	A. I think either November or December of '21.
20	Q. And tell us again how you first learned of it.
21	A. It was in the Bahamas office. It was late at night. Gary
22	and Adam sat a few desks away from me, and I overheard them
23	talking about the bug.
24	Q. Okay. And what did you overhear?
25	A. I think Gary was explaining that it existed. Adam was
I	

	NCELSE 4N2/2-cr-00673-LAK Docuration 19368 두호 12/12/23 Page 29 of 187 1518
1	worried. Gary assured that the direction of the bug was safe,
2	that Alameda overestimated, not underestimated how much it
3	should keep in banks.
4	Q. Okay. Did they discuss—did they go over how big the bug
5	was at that time?
6	A. I can't remember if they did. I remember asking for
7	details, and at some point I had an understanding of the size-
8	Q. I'm just asking about the conversation with Gary and Adam.
9	We'll get to the rest in a bit. Can you try—can we try again,
10	Mr. Singh.
11	A. I can't remember if they said the size of the bug.
12	Q. Okay. And you mentioned that Gary said it was in a safe
13	direction. What did you understand that to mean?
14	A. That Alameda believed because of the bug that they should
15	be custodying more, not less cash than they actually needed to
16	for customers.
17	Q. So it was safe from the FTX point of view.
18	A. Yes.
19	Q. Okay. Do you remember how, if at all, Mr. Wang and
20	Mr. Yedidia reacted to this?
21	A. Adam was worried.
22	Q. I'm sorry?
23	A. Adam Yedidia was worried about it. After Gary gave his
24	explanation, he seemed relaxed.
25	Q. Isn't it true that Gary joked about the bug?

	NCLLS EAN 212-cr-00673-LAK Docurâtent (3868- Fitter \$2/12/23 Page 30 of 187 1519
1	A. Yes. I think that's right.
2	Q. He thought it was funny, correct?
3	MR. ROOS: Objection.
4	THE COURT: Sustained.
5	Q. He seemed relaxed about it, you said.
6	MR. ROOS: Objection.
7	THE COURT: Sustained.
8	He said Adam seemed relaxed.
9	MR. COHEN: I don't think that was the testimony, your
10	Honor, but I'll ask again.
11	Q. What was Gary's reaction?
12	MR. ROOS: Objection. It was either asked and
13	answered or it's speculation.
14	THE COURT: Sustained.
15	And you're right, Mr. Cohen, he did say Gary.
16	MR. COHEN: So then I don't need to go back since it's
17	already in the record.
18	THE COURT: You don't need to go back.
19	MR. COHEN: Then I won't. Okay.
20	(Continued on next page)
21	
22	
23	
24	
25	
I	

	NCELSE 4N22-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 31 of 187 1520
1	Q. Did you have any reaction at the time, Mr. Singh, of this
2	conversation?
3	A. I did.
4	Q. What was your reaction?
5	A. I shared Adam's worry. After Gary explained that it was
6	safe, I asked Gary if Alameda is in fact tracking this number.
7	Gary said he's pretty sure but that it wouldn't hurt for me to
8	confirm. I asked Caroline if they were. Caroline said they
9	were.
10	Q. Let's move forward then to June of 2022 now, sir.
11	I believe you told us you had a communication with
12	Caroline Ellison about Alameda's net asset value being close to
13	zero.
14	Do you recall telling us about that yesterday?
15	A. Sorry. I don't.
16	Q. Do you recall speaking with Caroline Ellison at all in June
17	of 2022?
18	A. Yes.
19	Q. By speak, just to be clear, I mean either orally or over
20	Signal or Slack or so forth.
21	A. That's how I interpreted it, yes.
22	Q. What was the gist of the conversation about the state of
23	Alameda's net asset value?
24	MR. ROOS: Objection. Hearsay.
25	THE COURT: Why isn't it, Mr. Cohen?

	NCELISE AN22-cr-00673-LAK Docurations 368 Filter \$2/12/23 Page 32 of 187 1521
1	MR. COHEN: It goes to the effect on the listener,
2	your Honor.
3	THE COURT: That's relevant why?
4	MR. COHEN: Because we are talking about the state of
5	mind of one of the coconspirators or the alleged
6	coconspirators.
7	THE COURT: Mr. Roos.
8	MR. ROOS: Maybe I guess we will see where the answer
9	takes us.
10	THE COURT: Overruled.
11	MR. COHEN: Can we have the question read back?
12	THE COURT: Sure.
13	(Record read)
14	A. The conversation I remember was the one in which Caroline
15	sent the spreadsheet that we talked about yesterday. I don't
16	recall parts of this conversation referencing that Alameda's
17	NAV was zero.
18	Q. Do you recall anything with Ms. Ellison about what the
19	state of Alameda was in terms of its solvency?
20	A. In June?
21	Q. Um-hum.
22	A. No.
23	Q. Let's move forward because I think you covered a number of
24	different sequences with respect to June and I want to make
25	sure I understand them, sir.

	NC 비행용 4 M22-cr-00673-LAK Docurfie 매 5 368 두 바ャック \$ 2/12/23 Page 33 of 187 1522
1	Can you please tell us, as best you can, who you spoke
2	with about this bug in June.
3	A. You would like me to list the people?
4	Q. I would like you to list the sequence, to the extent you
5	can.
6	A. Sure. Tell me if I'm if my answer
7	Q. Do your best, sir.
8	A. Caroline sent a spreadsheet, I think a Google Sheet, that
9	contained a list of accounts labeled as if they were from
10	Alameda's pointer system, so Alameda's nomenclature and the
11	total value held in each. These were accounts that Alameda
12	owned on FTX, things like the fiat account and their trading
13	account. They showed some extremely large negative number when
14	considered together.
15	Q. If I could stop you for a moment, sir. Who did she send
16	that to, the Google Sheet that you referred to?
17	A. I know that she sent it to me, Sam, and Gary. I don't know
18	if she also sent it to other people.
19	Q. Was this on one Signal communication?
20	A. I don't remember.
21	Q. Are you sure she sent it to you, Sam, and Gary?
22	MR. ROOS: Objection.
23	THE COURT: Overruled.
24	A. I am sure that the four of us got on a Google Meet and
25	worked on like investigating it. I am not sure that she only

	NO HIME AN 22-cr-00673-LAK Docuration 0368 Fitter \$2/12/23 Page 34 of 187 1523
1	sent it to the four of us.
2	Q. Let's continue with the sequence, sir.
3	A. Sure. Sam sees the spreadsheet and said something to the
4	effect of, this can't be right. There has got to be a bug.
5	Let's look into it.
6	Q. This was in a different Signal or the same Signal?
7	A. I can't recall. Sorry.
8	Q. Keep going.
9	A. I asked Gary how I could help. Gary told me that I could
10	try my best to identify the accounts in the FTX database that
11	either belonged to Alameda explicitly or morally, morally
12	meaning that in the end there were things that Sam was
13	responsible for.
14	I took a stab. My stab was ignored. Gary took a
15	stab. I added a column to add notes for which elements of
16	Gary's list which items Gary had pulled that I thought
17	weren't actually belonging to Alameda. And then I recall Gary
18	pointed out the bug. He calculated the bug.
19	Q. If I can stop you for a moment, sir.
20	These conversations you have just been going through
21	for us, were they all over Signal or Slack, or any of them in
22	person?
23	A. A number of it was over Google Meet, like done orally.
24	Q. Were there any that were in person?
25	A. I think Gary was next to me in the office, but I don't
ļ	SOUTHERN DISTRICT REPORTERS, P.C.

	NGELSE AN 22-cr-00673-LAK Docuration 15268 Fitted \$2/12/23 Page 35 of 187 1524
1	recall for sure. Sam may have been. I don't think Caroline
2	was next to me.
3	Q. So you don't recall Caroline being there in person?
4	A. Not for this.
5	Q. You are not sure if Sam was there in person?
6	A. Correct.
7	Q. Keep going.
8	A. Gary identified the bug and calculated its effect size,
9	which was around \$8 billion. Caroline posted a screenshot of
10	the graph that she had created that showed two things. One was
11	Alameda's unexpected balance breaks over time or unexplained
12	balance breaks, which I understood to mean something like
13	unexplained changes in the balances that they were fetching,
14	things that they couldn't reconcile against records of trades
15	or withdrawals.
16	And then she posted the effect size, I think, that
17	either Gary or I had given her of the bug over time. These
18	charts showed two lines that were largely parallel, implying
19	that this bug explained at least a large portion of what was
20	unexplained in Alameda's observed balance breaks.
21	Q. If I could stop you there for a moment, Mr. Singh.
22	You used a couple of phrases I just want to go over.
23	You used a phrase called balance break. What did you mean by
24	that?
25	A. Balances in a trading system change over time. There are

	NCELVE AN 22-cr-00673-LAK Docuration 19368 Fiteo \$2/12/23 Page 36 of 187 1525
1	also transactions that can explain those changes. If you infer
2	just from the transactions that you received what balances
3	would result from them and you compare them against the actual
4	balances that you are retrieving and fetching live, sometimes
5	there is a difference because you might be missing records or
6	you might be misinterpreting records. That difference is a
7	break.
8	Q. In this situation was the break the size of the bug, the
9	effect of the bug?
10	A. I don't think it was exactly. I recall that this chart
11	Caroline showed suggested that a large fraction of it was
12	explained by the bug.
13	Q. Do you recall, when you first spoke you overheard Gary
14	and Adam Yedidia at the end of 2021 talk about the bug, whether
15	the topic of a break came up?
16	A. I don't recall.
17	Q. Now, when you learned that the break was \$8 billion, were
18	you surprised?
19	A. Yes.
20	Q. Were you surprised that it had not been tracked?
21	A. I was surprised no, not exactly.
22	Q. Didn't you just tell us that Gary assured you it was being
23	tracked by Ms. Ellison and others?
24	A. Gary believed that it was being tracked. Caroline assured
25	me that it was being tracked.

	NCELSE ANZ2-cr-00673-LAK Docurfient 368 Fiter \$2/12/23 Page 37 of 187 1526
1	Q. So Gary's belief was incorrect?
2	MR. ROOS: Objection.
3	THE COURT: I think the witness can handle that
4	question.
5	A. No. Gary wasn't incorrect.
6	Q. What about Caroline?
7	A. Caroline wasn't incorrect.
8	Q. So it hadn't been tracked?
9	MR. ROOS: Objection. Vague.
10	THE COURT: Sustained.
11	Q. Let me go back to your answer because I want to make it a
12	little more focused. When you answered about what was being
13	tracked, were you referring to the balances in the fiat@
14	account or the effect of the bug or, I guess, both?
15	A. Just the balances in the fiat account.
16	Q. Based on your interaction with the work you did in June,
17	did you have a view about whether those balances had been
18	tracked prior to June?
19	MR. ROOS: Objection.
20	THE COURT: Sustained. Form at least.
21	Q. The topic of the break come up?
22	A. Sorry. When?
23	Q. About whether the break had been tracked since the end of
24	the prior year that had come on.
25	MR. ROOS: Objection. When?

	NCELSE AN 22-cr-00673-LAK Docuration 19368 File 182/12/23 Page 38 of 187 1527
1	MR. COHEN: Since 2021.
2	THE COURT: I don't understand what counsel means by
3	the break at this point.
4	MR. COHEN: The bug. The size of the bug.
5	A. Sorry. Your question could you repeat the question?
6	Q. Sure.
7	Let me ask it this way. Mr. Singh, did you ever track
8	the bug, size of the bug or its effect, prior to June 2022?
9	A. Not prior to June 2022 that I recall.
10	Q. Based on your interactions with others at Alameda and FTX,
11	do you think anyone else did?
12	MR. ROOS: Objection.
13	THE COURT: Sustained.
14	If I understand what you said, Mr. Singh, Gary told
15	you that he thought the size of the overstatement was being
16	tracked. Caroline subsequently assured you that that was so.
17	Is that right so far?
18	THE WITNESS: That's not quite right.
19	THE COURT: Then correct me, please.
20	THE WITNESS: Gary assured me that the full balance,
21	not separately the size of the error, was being tracked. Gary
22	assured me that the fiat@FTX.com balance, which included the
23	bug, was being tracked. Caroline assured me it was. I don't
24	think anybody told me that the size of the bug was being
25	tracked over time.

	NCELESE ANZ2-cr-00673-LAK Documation 19368 Fitter \$2/12/23 Page 39 of 187 1528
1	THE COURT: I said the size of the overstatement, not
2	the size of the bug, Mr. Singh.
3	The bug was an error in the computer code, right?
4	THE WITNESS: Correct.
5	THE COURT: And it had an effect, right?
6	THE WITNESS: Correct.
7	THE COURT: The effect was to overstate the amount
8	owed by Alameda to FTX, correct?
9	THE WITNESS: Correct.
10	THE COURT: Please, Mr. Cohen, take it from there.
11	MR. COHEN: Can we have just the last exchange with
12	his Honor read back, please?
13	THE COURT: Yup. I think his Honor may have asked
14	that question. I just want to hear it again.
15	(Record read)
16	MR. COHEN: I think his Honor has covered it.
17	Q. Very quickly, Mr. Singh, the fiat account was tracked, not
18	the amount of the bug?
19	A. Not the size of the error as a result of the bug.
20	Q. I am going to ask you to complete the sequence, but before
21	you do that, you used a phrase called morally responsible for
22	certain amounts. What did you mean by that?
23	A. There are some accounts in the FTX system that are
24	explicitly under Alameda's name, things like
25	info@AlamedaResearch.com. There are other accounts, like
I	

	NCELSE AN 22-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 40 of 187 1529
1	Project Serum accounts, that on their face don't belong to
2	Alameda Research but that I understood, in the end, Sam
3	beneficially owned. Those accounts would be morally but not
4	explicitly owned by Alameda or Sam, so those were to be
5	included inside of this calculation.
6	Q. Meaning in the event that they were needed, you understood
7	that Sam would make use of those assets for Alameda?
8	A. Really just that they fell under the large umbrella of
9	things that Sam controlled, which was not just Alameda.
10	Q. But you considered it in connection with considering the
11	assets of Alameda?
12	A. I was told to pull those balances.
13	Q. And you pulled them?
14	A. Gary ended up pulling them.
15	Q. Why don't we complete the sequence, sir.
16	MR. ROOS: Objection.
17	THE COURT: I think it's a little hard to start in the
18	middle of the ocean at this point. Try to pin it down.
19	Q. You told us, Mr. Singh, about communications you had with
20	Gary, Sam, and Caroline over communications about addressing
21	the impact of the bug. Can you tell us what happened next.
22	A. Gary identified I think I may have said this. Forgive
23	me if I'm repeating myself. Gary had identified the bug. He
24	identified its effect size as of the current date then, so as
25	of the date we were doing the exercise. Caroline demonstrated

NCHMBAN22-cr-00673-LAK Docurseng368 Einects \$2/12/23 Page 41 of 187 1530 1 that this bug explained a lot of what had been unexplained in 2 Alameda's observed balance breaks. 3 I believe I asked -- said I thought this was fixed in 4 November. I don't remember if I got a response, but it's a 5 silly question. It hadn't been fixed. I don't recall 6 everything that happened after that. 7 The next thing I do recall is sensing from others a 8 palpable sense of relief and even celebration. Sam made a joke 9 or sort of like comment on how it was amazing that such a large 10 balance break could be explained just by a single thing, a 11 single bug. 12 We have now talked -- everything you just told us about the Q. 13 bug took place in June and July of 2022. 14 I think everything I just described now was on a single Α. 15 day, like a single -- in a single hour over Google Meet or 16 something. 17 It's a series of communications over Google Meet? Ο. 18 One Google Meet, one long discussion over Google Meet. Α. 19 With potentially some in-person communications as well? Q. 20 Α. Yeah. 21 Do you believe you are clear on the sequence of what Ο. 22 happened? 23 I don't think I remember everything about it. Α. 24 But on what you just told us, you believe you are clear on Q. that, correct? 25

	NCELSE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 42 of 187 1531
1	A. I'm stating the sequence the best to the best of my
2	ability.
3	Q. Now, we talked about the 20 interviews you've had with the
4	prosecutors, correct, sir?
5	A. Correct.
6	Q. Do you recall speaking with them in January of this past
7	year, January 4?
8	A. I don't recall the specific date, but I do think I met with
9	them in January.
10	Q. And at that point you had already had many meetings with
11	them, correct?
12	A. Yeah. I had had more than one.
13	Q. Does it refresh you that you had more than five?
14	A. I would believe it.
15	Q. Fair enough. And you had gone over the topic of what
16	happened in June with them, correct?
17	A. I think so.
18	Q. Isn't it fair to say that you told the prosecutors that you
19	had a surprising amount of haziness when trying to recall
20	events in June and July of 2022?
21	A. I don't remember saying those exact words, but I did
22	acknowledge that there was a lot that I there was a lot that
23	I didn't remember the details around from that time.
24	Q. In particular as to June and July of 2022.
25	A. I don't know if I said specifically those dates or months.

	NCELESE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 43 of 187 1532
1	MR. COHEN: Why don't we call up for the witness only
2	3501-021, page 17.
3	Brian, if you could go to the second-to-last paragraph
4	and call it out, pull it up.
5	Q. Mr. Singh, take a moment and read this to yourself. The
6	question is whether it refreshes your recollection as to what
7	you told the prosecutors about your haziness in the meeting
8	with them on January 4, 2023.
9	A. Sorry. Could you repeat the ask again?
10	Q. Sure. This is whether or not it refreshes your
11	recollection as to what you told prosecutors about your
12	surprising amount of haziness in 2020 in June and July of 2022.
13	Yes or no, does it refresh your recollection?
14	A. I still don't remember having said it specifically about
15	June or July of 2022, but I could believe that I did.
16	MR. COHEN: We can take that down.
17	THE COURT: The question was, does it refresh your
18	recollection, not whether you could believe that you did.
19	THE WITNESS: Fair point. The transcript or, I guess,
20	the notes themselves don't actually refresh my recollection. I
21	do separately remember
22	THE COURT: You've answered the question.
23	Could we move on.
24	MR. COHEN: Yes, your Honor.
25	Q. Let's continue with what happened in June.

	NCEUSE AN 22-cr-00673-LAK Docuration 19368 File of \$2/12/23 Page 44 of 187 1533
1	Do you recall telling us, Mr. Singh, that after the
2	discussions we have already covered there was a discussion
3	about fixing the bug?
4	A. Forgive me. I missed I think part of your sentence, but I
5	do remember there being discussions about fixing the bug.
6	Q. Just to remind us, what were those conversations about?
7	MR. ROOS: Objection.
8	THE COURT: I imagine they were about fixing the bug.
9	Isn't that what the point was?
10	MR. COHEN: It did occur to me, your Honor.
11	THE COURT: Good.
12	Q. Who was tasked with fixing the bug?
13	A. I wasn't involved in the project, so I don't know who was
14	tasked with it. I do know that Gary and Adam worked on it.
15	Q. Was a document created to document what had happened with
16	the bug fix?
17	A. Adam wrote one.
18	Q. Did you ever hear the term a postmortem document?
19	A. Yes.
20	Q. What did that refer to in this context?
21	A. A document describing an error or like a bug and the
22	sequence of steps taken to address it and lessons to take.
23	Q. And did you have occasion to review the postmortem relating
24	to the bug that Adam prepared?
25	A. I don't think that I read it in its entirety. I did talk

	NCELESE ANZ2-cr-00673-LAK Docurfiento 368 Fiteror \$2/12/23 Page 45 of 187 1534
1	with Adam about it.
2	Q. Did you think that the fix had been done properly?
3	A. Yes.
4	Q. And the postmortem referred to the fix of the \$8 billion
5	bug, correct?
6	A. And other considerations around it.
7	Q. Such as?
8	A. There were identifying the exact size of the bug, had some
9	complicated elements. Adam walked through a lot of the
10	considerations that he and Gary had sort of thought through.
11	Beyond talking about the fix for the bug, it talked about the
12	mechanical process that they took to ensure it wouldn't happen
13	again and ensure a safe migration.
14	Q. So the technical issues that had been involved in fixing
15	the bug and making sure it wouldn't happen again?
16	A. Yes.
17	Q. Did you think this was an appropriate thing for Gary and
18	Adam to be doing?
19	MR. ROOS: Objection.
20	THE COURT: Sustained.
21	Q. Did you have a view about whether or not this memorandum
22	should have been prepared?
23	MR. ROOS: Objection.
24	THE COURT: Sustained.
25	Q. Let's move on, Mr. Singh.
I	

	NCELSE AN 22-cr-00673-LAK Documation 19368 Filter 5:2/12/23 Page 46 of 187 1535
1	You mentioned yesterday that there came a time when
2	there was an attempt to split out the balance of the fiat@
3	account from Alameda and FTX.
4	Do you recall that, sir?
5	A. I do.
6	Q. And when in relation to the bug fix was this?
7	A. I believe it was after.
8	Q. Was it after the memo we just discussed?
9	A. I believe so, but I am not 100 percent certain.
10	Q. Can you describe for us what steps were taken to split out
11	the balances.
12	MR. ROOS: Foundation.
13	THE COURT: Sustained.
14	Q. Were you involved with this at all, Mr. Singh?
15	A. No.
16	Q. Did you come to learn of it?
17	A. I came to learn that the exercise had been done.
18	Q. Did you learn the outcome of the exercise?
19	A. Some parts of it, yes.
20	Q. Tell us what you learned.
21	A. I learned that there had been an account, a new subaccount
22	called FTX fiat old made under the info@AlamedaResearch.com
23	main account, and that it now reflected the amounts owed by
24	Alameda to FTX and that fiat@FTX.com now reflected the amounts
25	that FTX owed to FTX.
I	

	NCELLYE ANZ2-cr-00673-LAK Docuration 19368 Fitted \$2/12/23 Page 47 of 187 1536
1	Q. Are you done with your answer?
2	A. I am.
3	Q. Did you have an understanding of the purpose of the FTX
4	underscore fiat underscore old account?
5	A. I inferred it.
6	Q. What did you infer?
7	MR. ROOS: Objection.
8	THE COURT: Ground.
9	MR. ROOS: Foundation, relevance.
10	THE COURT: What's the relevance?
11	MR. COHEN: The relevance is we heard about this
12	sequence yesterday in a way designed to suggest it was done in
13	secret and designed to keep this account from everyone.
14	MR. ROOS: Withdrawn.
15	MR. COHEN: I'm entitled to explore it.
16	THE COURT: The objection is withdrawn.
17	MR. COHEN: Can we have the question back, please.
18	THE COURT: Yes, of course.
19	(Record read)
20	A. I inferred that it was made and separated from fiat@FTX.com
21	to track the correct amount that Alameda owed FTX in customer
22	fiat deposits.
23	Q. To track it, correct?
24	A. Correct.
25	Q. Then there came a time when that account was moved again,
	SOUTHERN DISTRICT REPORTERS P C

	NGELSE ANZ2-cr-00673-LAK Docurations 368 Filter \$2/12/23 Page 48 of 187 1537
1	correct?
2	A. Yes.
3	Q. And I believe you told us about I am going to pronounce
4	this incorrectly I'm sure the Seoyun account.
5	Do you recall that, sir?
6	A. I do.
7	Q. Do you have any involvement with that?
8	A. I moved the subaccount to this Seoyun account.
9	Q. You were the person who moved the account from FTX old to
10	Seoyun?
11	A. I either moved it or I asked Andrea to move it. Either
12	way, I directed it.
13	Q. For record purposes Andrea is Andrea Lincoln?
14	A. Correct.
15	Q. Who worked with Adam and Gary, correct?
16	A. Right.
17	Q. What was your purpose for moving it?
18	A. I was told to.
19	Q. Who told you?
20	A. Sam told me to move it and a trader told me where I should
21	move it to, such that it was still tracked.
22	Q. I believe you referred yesterday to the trader was
23	Terence Choo, is that correct?
24	A. I think it was Terence Choo, but there is some chance it
25	was Caroline Ellison.
Į	

	NCELSE AN 22-cr-00673-LAK Documente 19368 Fine 182/12/23 Page 49 of 187 1538
1	Q. Both Caroline and Terence worked for Alameda, correct?
2	A. Correct.
3	Q. In the trading group at Alameda.
4	A. That's my understanding.
5	Q. They advised you where to move the account, correct?
6	A. They did.
7	Q. Did you know why withdrawn.
8	Did the topic of why this account, as opposed to
9	another one, came up?
10	A. In that I specified the parameters that I viewed as
11	important. I specified that it shouldn't be under one of the
12	accounts that was in consideration for how much Alameda was
13	charged line-of-interest fees on. And I asked what is another
14	account that you guys are tracking that isn't in that set.
15	Q. And they provided you with the account?
16	A. Yes.
17	MR. COHEN: Your Honor, this might be a good time for
18	our morning break.
19	THE COURT: OK. 11:15, folks.
20	(Recess)
21	THE COURT: The record will reflect that the defendant
22	and the jurors all are present, as they have been throughout.
23	The witness is reminded he is still under oath.
24	Mr. Cohen, you may proceed when you are ready.
25	MR. COHEN: Thank you, your Honor.

	NCELISE ANZ2-cr-00673-LAK Docurfieintg 368 두 item \$2/12/23 Page 50 of 187 1539
1	Q. New topic, Mr. Singh.
2	I want to go back. Counsel covered with you some
3	questions about certain of the code base features.
4	Do you recall your testimony about that yesterday?
5	A. Forgive me. I don't know what you mean by counsel.
6	Q. I mean Mr. Roos. I'm sorry.
7	A. I recall talking about code changes.
8	Q. Let me start with allow negative. My first question is a
9	when question. When did you first learn about the
10	allow-negative feature?
11	A. July 2019.
12	Q. How did you learn about that?
13	A. I was told to write it. I did.
14	Q. So you were the person who put it together?
15	A. In some sense, I wrote the code, but I was sort of given
16	pretty clear and explicit instructions from others.
17	Q. When you wrote it in 2019, what was the purpose of the
18	code?
19	A. It was to facilitate FTX admins moving FTT from designated
20	accounts or making trades in FTT from designated accounts and
21	to modernize an existing set of features that would allow
22	accounting-oriented accounts to go negative.
23	Q. Was this at all in connection with market-making functions?
24	A. I am not sure.
25	Q. Did there come a time that you came to believe that the

	NCELESE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 51 of 187 1540
1	allow-negative feature was used in connection with
2	market-making functions?
3	A. Yes.
4	Q. When was that, sir?
5	A. I don't know precisely.
6	Q. Approximately is fine.
7	A. 2020.
8	Q. How did you learn of that?
9	A. I remember a conversation I had with Gary Wang in which I
10	was thinking about making some changes to some code related to
11	OTC trades, and I noticed that Alameda was the only provider
12	Q. Could I interrupt you for a moment, sir. Can you tell the
13	jury what OTC trades are.
14	A. Over the counter. I don't think that does a great job
15	describing it. If I may.
16	Q. Does it mean not on the exchange?
17	A. No.
18	Q. Tell us what you are thinking.
19	A. It means not on an order book. So a customer could
20	basically request just say I want to buy one Bitcoin. Tell
21	me how many dollars that takes. They get back an answer. They
22	have some time before they have to accept before they can
23	before that sort of quote expires. They can say I accept and
24	it happens. This is different from submitting an order on an
25	order book.
I	

	NCELISE ANZ2-cr-00673-LAK Docuration 0368 Filted \$2/12/23 Page 52 of 187 1541
1	Q. Please continue.
2	MR. ROOS: Objection. Calls for a narrative.
3	THE COURT: Sustained. Ask a more specific question,
4	please.
5	MR. COHEN: Sure.
6	Q. You were describing for us how you came to the
7	understanding of a connection, if any, between allow negative
8	and market making.
9	A. As a part.
10	MR. ROOS: Objection. I don't think there was a
11	question. He was just describing what the witness was
12	testifying to.
13	THE COURT: Yes. I agree.
14	Q. Could you tell us the basis for coming to the view, if you
15	did, that there was a connection between the allow-negative
16	code and market making?
17	A. I am describing only one instance. There may have been
18	others. Is that OK?
19	Q. Yup.
20	A. I was thinking about making some change, I can't recall
21	what, to the code related to these OTC trades. I noticed that
22	the balances of the provider, Alameda, weren't checked when
23	accepting an OTC trade, meaning that if Alameda didn't have
24	funds that would otherwise be necessary for making the trade,
25	it could go through anyway.

	NCELSE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 53 of 187 1542
1	I asked Gary about this. This is a reflection of
2	allow negative. And he described to me the type of situation
3	where this seems like the right thing for the exchange to do.
4	Q. Which was what?
5	A. I don't know if he gave this precise example, but one comes
6	to mind.
7	THE COURT: Could we stick to what actually happened
8	instead of what you think now.
9	THE WITNESS: Fair enough.
10	A. He gave an example. I can't remember the exact example.
11	It seemed valid to me.
12	Q. Let me ask you this, Mr. Singh. As a result of the
13	allow-negative feature, was Alameda allowed to sell tokens it
14	didn't have at the time?
15	A. In some ways. But I have since discovered that that was
16	allow negative was actually not the section of code proximately
17	responsible for that.
18	Q. But at the time, meaning 2019 and 2020, that's what you
19	believed?
20	THE COURT: Sorry. What is what he believed?
21	MR. COHEN: That the allow negative allowed Alameda to
22	sell coins it did not yet own.
23	A. I don't know that I thought about it in 2019 and 2020. I
24	expect that I was told that or thought about it in 2021 and
25	certainly at least in one instance in 2022.
I	

	NCELESE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 54 of 187 1543
1	Q. In 2019, 2020, when you were working on the code, did you
2	have a view about whether it permitted Alameda to purchase
3	newly issued tokens?
4	MR. ROOS: Objection.
5	THE COURT: Sustained.
6	Q. Did you ever have a view about let me back up.
7	Did you participate, Mr. Singh let me back up.
8	Do you have an understanding of what it is to issue a
9	token?
10	A. I have some understanding.
11	Q. Why don't you tell us that.
12	A. I am not sure I know that I am talking about what you are.
13	Can you specify a little more what you mean?
14	Q. Sure. Do exchanges sometimes issue tokens?
15	A. Can you specify even further?
16	Q. For example, Binance issued BNB. Are you familiar with
17	that?
18	A. Yes.
19	Q. And if Binance was issuing BNB or some similar token and a
20	customer on Alameda wanted to buy at the issuance, would they
21	be able to?
22	MR. ROOS: Objection. Foundation.
23	THE COURT: Yes. I think you have to lay a foundation
24	for that.
24 25	Q. Based on your experience as the author of the
ļ	

	NCELVE AN 22-cr-00673-LAK Documation 15868 Filter 52/12/23 Page 55 of 187 1544
1	allow-negative feature in the code, are you familiar with
2	whether those features had anything to do with Alameda's
3	ability to buy newly issued tokens?
4	A. At the time I wrote the feature, I don't think I had
5	anything relating to buying tokens.
6	Q. I meant selling tokens.
7	A. Even that. That was not the purpose that I was told it was
8	made for.
9	Q. We talked yesterday about stablecoins.
10	Do you recall that, sir?
11	A. Yes.
12	Q. In your experience as the author of the allow-negative
13	feature, did it have any impact on Alameda's ability to
14	purchase stablecoins?
15	A. No.
16	Q. Did it have any impact on stablecoins at all?
17	MR. ROOS: Objection. Vague.
18	THE COURT: Overruled.
19	A. The feature changed nothing about Alameda's interaction
20	with stablecoins.
21	Q. Did it have any effect at all?
22	MR. ROOS: Objection.
23	THE COURT: Asked and answered.
24	Q. Let me ask you this, Mr. Singh. It is going to take me a
25	moment to pronounce this. Have you ever heard of a term called
ļ	

	NCELESE ANZ2-cr-00673-LAK Docuration 19368 Filter 52/12/23 Page 56 of 187 1545
1	auto de-leveraging event?
2	A. Yes.
3	Q. What's that?
4	A. It may take me a moment to explain. Is that OK?
5	Q. That's fine.
6	A. In the context of FTX, some liquidations were performed off
7	market, which is to say an account that didn't have sufficient
8	collateral to support its positions would enter liquidation.
9	And, if it was getting close enough to being under water, those
10	positions would be closed out or traded against designated
11	backstop liquidity providers, as opposed to selling those
12	positions in the market so it can be done more quickly.
13	Those backstop liquidity providers could continue to
14	absorb these trades, as in act as the counterparty to these
15	liquidations, so long as they met a few conditions.
16	If those conditions weren't met for any backstop
17	liquidity providers for a given liquidation instance, then FTX
18	enacted auto de-leveraging. This is not code I wrote, so I'm
19	not super familiar, but my understanding of what this is is
20	that it's essentially like picking other users that have not
21	explicitly opted in being backstop liquidity providers to
22	perform the same role for the sake of that liquidation.
23	(Continued on next page)
24	
25	
l	

	NCELLS @ ANZ2-cr-00673-LAK Docuration 19368 두ited \$2/12/23 Page 57 of 187 1546
1	BY MR. COHEN:
2	Q. Let me see if I can just break this down.
3	You said that this situation arose when an account was
4	in danger or at risk of being closed out. Can you explain what
5	you mean by that.
6	A. Accounts were liquidated, under some circumstances; some
7	liquidations could result in ADL events.
8	Q. Okay. And by closed out, is this what we were talking
9	about—well, let me rephrase.
10	This means a customer has a position in an account and
11	a certain amount of collateral and the value of the position
12	starts to fall sufficiently that the—that that—actually, I
13	forgot to ask you one more thing.
14	Have you ever heard the term "risk engine"?
15	A. Yeah.
16	Q. Okay. Did FTX have a risk engine?
17	A. Yeah.
18	Q. How did that—what was that?
19	A. A lot of things that went into it, I suppose. Do you mind
20	clarifying some more.
21	Q. Did the risk engine have anything to do with closing out
22	positions?
23	A. Right. Liquidations were a part of the risk engine.
24	Q. Okay. And so if the risk engine, which was basically
25	computer run, noticed that an account was going below its
ļ	SUITHERN DISTRICT REDORTERS D C

	NCELLS @ ANZ2-cr-00673-LAK Documenter 268 - Filteret \$2/12/23 Page 58 of 187 1547
1	collateral limit, it would step in and liquidate that account,
2	correct?
3	A. That's almost right. If it noticed that it had
4	insufficient collateral to support its positions. There was
5	not a collateral limit at play.
6	Q. So it would go into the customer's account and sell the
7	positions to get it back in balance, correct?
8	A. That's not exactly how I'd put it.
9	Q. How would you put it, sir?
10	A. That the liquidation engine would sell, or buy, close out
11	their positions, because the customer could be long or short.
12	Q. Okay. And then you referenced something called a backstop
13	liquidity provider. What was that?
14	A. Designated accounts were used as the counterparties for
15	some of the trades that were required to close out these
16	positions.
17	Q. And was Alameda a backstop liquidity provider?
18	A. It was.
19	Q. Were other entities backstop liquidity providers?
20	A. Over time there were many.
21	Q. So if the engine was closing out an individual customer's
22	account and there weren't sufficient assets, the backstop
23	liquidity provider would step in, correct?
24	A. It didn't depend on if there were insufficient assets. The
25	customer would be getting liquidated because they had
I	

	NCLLS EAN22-cr-00673-LAK Docurfle nt 3368 Fiter \$2/12/23 Page 59 of 187 1548
1	insufficient assets.
2	Q. And if that were the case, then the backstop liquidity
3	provider would step in.
4	A. Right, under some further conditions.
5	Q. Okay. And what would happen if the backstop liquidity
6	providers didn't themselves have sufficient collateral?
7	A. If none of them did—this would be one criterion for
8	eligibility of a backstop to match against this liquidation.
9	If there were no such eligible backstop liquidity providers,
10	then the system would perform ADLs, or auto-deleveraging fills.
11	Q. What did that mean?
12	A. It meant—this area I'm a little uncertain about because I
13	didn't write the code, but I believe it's that it selected
14	other customers to perform the same role that the backstop
15	liquidity providers would have, and serve as counterparties to
16	the liquidation trade.
17	Q. Okay. So if customer A had an account that was going into
18	liquidity—liquidation and that account had insufficient
19	assets, the next stage would be the backstop liquidity
20	providers, correct?
21	A. Sorry. Could you repeat that.
22	Q. Sure. If the-I want to see if we can make this a little
23	bit more concrete for the jury.
24	So if customer A had an account that was being
25	liquidated and had insufficient assets, I believe you told us

	NCLLS @ ANZ2-cr-00673-LAK Docuration 19368 File 182/12/23 Page 60 of 187 1549
1	the next step would be to take it the level of the backstop
2	liquidity providers.
3	A. It's getting liquidated because it has insufficient assets.
4	Q. Correct.
5	A. So in getting liquidated, it may go and get—it may enter a
6	mode in which it will be liquidated against backstop liquidity
7	providers.
8	Q. Correct. And then I think you told us that if they, the
9	backstop liquidity providers, had insufficient assets, we'd
10	have an auto-deleveraging event?
11	A. There were multiple conditions that could lead to a
12	backstop being ineligible. One of them is that they had
13	insufficient assets. If that—if those conditions are met for
14	all backstop liquidity providers, then the system would enact
15	ADLs.
16	Q. And that would mean the in—the account would be covered by
17	the assets of other customers on the exchange.
18	A. Not quite.
19	Q. Okay. Tell us quite.
20	A. There is not an exchange of value. There's a very small
21	exchange of value in a liquidation trade. It's not that—it's
22	not that the liquidating account is underwater and therefore
23	needs to get topped up by other customers. It's that—it's
24	that they have positions on that are risky that need to be
25	handed off to other customers. Those other customers, be them
I	

	NCELLS EAN 22-cr-00673-LAK Docurfiente 3368 Fiteds \$2/12/23 Page 61 of 187 1550
1	backstop liquidity providers or those selected by ADL, receive
2	the positions at slightly better than market value, being that
3	in that moment they actually make some money. It's not that
4	they're giving up their collateral for it, but they are taking
5	on risk that they did not themselves put on.
6	Q. Right. So using our example now, customer B or customer C
7	or so forth, in your words, are having positions handed off to
8	them.
9	A. Yes.
10	Q. And they're going to get them at a favorable price, but
11	they themselves are now at risk, correct?
12	A. Right. But it may turn favorable quickly.
13	Q. Let me call your attention to July of 2020. Did FTX
14	experience an auto-deleveraging event?
15	A. I recall it—I recall one around early August, so it's
16	possible that this one was in July.
17	Q. Okay. Why don't you tell us what happened.
18	MR. ROOS: Objection, foundation.
19	THE COURT: Sustained.
20	Q. Okay. What do you recall about the auto-deleveraging event
21	that took place in July or August of 2020?
22	A. I recall that it happened that there were ADL fills for
23	what I think was the first time in FTX's existence, meaning
24	that the—forgive me, I'm using the abbreviation, or the
25	acronym—the ADL system had kicked in, which meant that there

	NC 변화 문화 전 2-cr-00673-LAK Docuration 19368 Fitter \$2/12/23 Page 62 of 187 1551
1	were no-there was a point at which there was a liquidation and
2	there were no eligible backstop providers.
3	Q. So it went to the next level, to the customer level.
4	A. Right.
5	Q. Correct. Were you aware if FTX had any response to this?
6	A. Yes.
7	Q. What was it, sir?
8	A. I don't remember everything about it, but I can describe
9	some things that I talked about with Sam and Gary-
10	Q. Just describe what you remember.
11	A. It was undesirable for customers to take on these positions
12	without opting in, basically being ADL recipients, all else
13	equal. All else equal, this probably—this sort of universe of
14	FTX customers and FTX itself would have preferred that it go to
15	the designated backstop providers. Gary dug into why it was
16	the case that there were no eligible providers. Gary
17	determined that it was because, among other things, Alameda was
18	not eligible and that Alameda was not eligible because its free
19	collateral was zero and that the reason that its free
20	collateral was zero was not because it had a bunch of positions
21	but because it had tons and tons of open orders out-open
22	orders for the purpose of providing liquidity on the hundreds
23	of markets or so. Those exhaust collateral.
24	Q. You said that having this auto-deleveraging event was
25	undesirable. What did you mean by that?

	NCELLS @ ANZ2-cr-00673-LAK Docurfiente 3368 두 분해 56 월 2/12/23 Page 63 of 187 1552
1	A. It's my opinion. I don't know if I can sort of claim that
2	there's a higher level truth to it being undesirable or not.
3	Q. Well, you just said it. I'm just trying to get at what you
4	meant by it.
5	A. Yeah, forgive me. I was clarifying. My opinion, and the
6	opinion espoused by Sam and Gary at the time, was that having
7	random customers take on the-these positions and have them
8	handed off to them is worse than having designated customers
9	take them on.
10	Q. Okay. To your knowledge, Mr. Singh, was anything done in
11	response to the auto-deleveraging event?
12	A. Yes.
13	Q. What was that?
14	A. So Gary inferred that it was because—a cause was that
15	Alameda was putting out a ton of orders and therefore had low
16	collateral, had zero free collateral, but free for the-for the
17	purposes of placing more orders or accepting trades, not free
18	in the sense if they were to be liquidated, because there's an
19	assumption that orders can be canceled upon liquidation, which
20	would have just them getting a lot of collateral back.
21	THE COURT: You used the term pre collateral or free
22	collateral. Would you explain that.
23	THE WITNESS: Free collateral.
24	THE COURT: First of all, was it pre collateral or
25	free collateral?
I	

1 THE WITNESS: Free collateral. Free meaning available. 3 THE COURT: Okay. 4 A. Customers—to clarify that, customers in FTX deposited collateral. Collateral would be exhausted or, you know, made not free by putting on positions or by having open orders ou on markets that, you know, were liable if traded against to create positions. 9 The latter thing, open orders, were primarily	
3 THE COURT: Okay. 4 A. Customers—to clarify that, customers in FTX deposited 5 collateral. Collateral would be exhausted or, you know, made 6 not free by putting on positions or by having open orders or 7 on markets that, you know, were liable if traded against to 8 create positions.	
A. Customers—to clarify that, customers in FTX deposited collateral. Collateral would be exhausted or, you know, mad not free by putting on positions or by having open orders ou on markets that, you know, were liable if traded against to create positions.	
5 collateral. Collateral would be exhausted or, you know, mac 6 not free by putting on positions or by having open orders ou 7 on markets that, you know, were liable if traded against to 8 create positions.	
6 not free by putting on positions or by having open orders ou 7 on markets that, you know, were liable if traded against to 8 create positions.	
7 on markets that, you know, were liable if traded against to 8 create positions.	е
8 create positions.	t
9 The latter thing, open orders, were primarily	
10 responsible, as Gary told me, for Alameda having zero free	
11 collateral at the time of the liquidation that caused the AI	Ls.
12 I believe you asked me what happened.	
13 Q. I did. And were any steps taken with respect to the coo	е
14 base upon that determination?	
15 A. Yes.	
16 Q. What was that?	
17 A. I think at first I added some alerts in the section of t	he
18 code that would basically emit if Alameda had or others had	
19 zero free collateral, and if that was actually the cause, su	ch
20 that in the next instance if this happened, we had some more	
21 debugging visibility. We did, and it showed zero free	
22 collateral. It was talked about—but I don't remember if it	
23 actually happened—increasing Alameda's line of credit, beca	use
24 increasing it increases their free collateral. Lines of cre	al : +
25 directly increased collateral and therefore free collateral.	αιτ

	NCELLS EAN 22-cr-00673-LAK Docuration 19368 Fiteds \$2/12/23 Page 65 of 187 1554
1	Q. And—I'm sorry. Finish your answer if you're not done.
2	A. Ultimately, Sam asked me why would it depend at all on free
3	collateral if Alameda is just going to exhaust it all in open
4	orders, and we know that the open orders aren't themselves
5	risky, but not consuming collateral in the same way that having
6	to position does, then why don't we, for Alameda, just remove
7	the condition that we attend to its free collateral when
8	determining if it's an eligible backstop provider for a
9	liquidation.
10	Q. And was that condition removed?
11	A. Yes.
12	Q. That meant in an auto-deleveraging situation Alameda could
13	again step in and be another source of capital.
14	A. It meant—correct. Specifically, the difference is that if
15	the sole cause of Alameda being an ineligible backstop provider
16	was that it didn't have enough free collateral, that was no
17	longer considered.
18	Q. And in your view, Mr. Singh, would that be helpful to
19	customers?
20	A. Yes.
21	Q. Why?
22	A. In my view at the time, it would be helpful to customers.
23	Q. Why?
24	A. Because it would prevent the undesirable ADL as opposed to
25	backstop fills.
I	

	NCELLS EAN22-cr-00673-LAK Docurâtento 368- Fitterots 32/12/23 Page 66 of 187 1555
1	Q. Did you ever hear the term "code commits"?
2	A. Yes.
3	Q. What does that mean to you?
4	A. A code commit is a package change of code submitted to a
5	code base.
6	Q. Did you ever author code commits?
7	A. All the time.
8	Q. Okay. And were they—were these like notes you made for
9	other developers to see?
10	A. There were elements of the code commits that were.
11	MR. COHEN: If we could call up for the
12	witness—witness only—DX 1102.
13	Pursuant to Defense Exhibit S-3002, it's been
14	stipulated that this document—
15	THE COURT: I'm sorry. DX 3002?
16	MR. COHEN: Yes, that's the stipulation as to the
17	authenticity of this document.
18	BY MR. COHEN:
19	Q. Mr. Singh, can you take a moment and take a look at what's
20	been marked as Defense Exhibit 1102.
21	A. I see it. And forgive me. This isn't what you asked,
22	but—
23	THE COURT: Just a minute.
24	THE WITNESS: Yes.
25	THE COURT: You stick to answering the questions that
ļ	1

NCUSEAN22-cr-00673-LAK Docuration 19368 File \$2/12/23 Page 67 of 187 1556 1 are asked, okay? 2 THE WITNESS: Okay. 3 MR. COHEN: I think we've worked it out, your Honor. 4 THE COURT: What have you worked out? 5 MR. ROOS: I was just asking Mr. Cohen if it's just this page. I couldn't tell. And assuming it's just this page, 6 7 no objection. 8 Well, first of all, is 3002 being offered? THE COURT: 9 3002 is the stipulation, your Honor. MR. COHEN: 10 THE COURT: Yes, but has it been offered? MR. COHEN: We offer 3002. 11 12 THE COURT: Received. (Defendant's Exhibit S-3002 received in evidence) 13 14 THE COURT: Now what about this 1102? 15 MR. COHEN: Your Honor-16 THE COURT: Let's get the first question answered. Is 17 it a one-page document? 18 MR. COHEN: It is not. 19 It is not. THE COURT: 20 MR. COHEN: It is not. We would like to offer page 1 21 and page 18, pursuant to the stipulation. 22 MR. ROOS: No objection to 1. And if we could just 23 see 18. 24 No objection, to those two pages. 25 THE COURT: Pages 1 and 18 of Defendant's 1102 are

	NCELSE ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 68 of 187 1557
1	received.
2	(Defendant's Exhibit 1102 (pages 1 and 18 only)
3	received in evidence)
4	MR. COHEN: Can we publish those to the jury, your
5	Honor.
6	THE COURT: You may.
7	MR. COHEN: Brian, could you call them up, please.
8	BY MR. COHEN:
9	Q. All right. Let's start with page 1, Mr. Singh. Is this an
10	example of a code commit, the top of page 1?
11	A. Yes, this is one representation of a code commit.
12	Q. So if you look at the
13	MR. COHEN: Brian, if you could call out the top
14	paragraph.
15	Q. Okay. So this one, for example, is author Gary Wang, date
16	May 23rd, "add borrow column to balances." What's your
17	understanding of what this means?
18	A. Forgive me. What do you mean by "this"?
19	Q. My question is simply: Is this an example of a type of
20	code commit?
21	THE COURT: Asked and answered.
22	Q. Okay. Let's go to page 18.
23	Okay. If we could go to the top, the top box. We've
24	been talking about the period of August 2020 and the
25	auto-deleveraging event, and there's a line that says, "Author:
l	1

	NG원용용 AN22-cr-00673-LAK Docuration 19368 두 분해 환자 12/23 Page 69 of 187 1558
1	Nishadsingh1." Is that you, sir?
2	A. That's me.
3	Q. And there's an entry that says "address ADLs (#977)." Do
4	you see that, sir?
5	A. I see it.
6	Q. What did that refer to?
7	A. A little easier if—I could be more confident if I read the
8	corresponding code, but I assume this is one of the two changes
9	I discussed so far—there were others—about making ADLs less
10	likely.
11	Q. Okay. And continuing on the page.
12	MR. COHEN: If we go down to the next box. Go down
13	further. Okay. Call that out.
14	Q. This is another code commit written by you, sir?
15	A. Yes.
16	Q. Okay. And it says, "be extra careful not to liquidate PMM,
17	clean up messages." Do you see that, sir?
18	A. I do.
19	Q. Okay. What's a PMM?
20	A. The primary market maker, which meant Alameda.
21	Q. Okay. Because at the time it was the main market maker for
22	FTX, correct?
23	A. PMM is also how the code referred to that.
24	Q. And what did you mean by "be extra careful not to
25	liquidate"?

	NCELSE 4N22-cr-00673-LAK Docurations 368 Filter \$2/12/23 Page 70 of 187 1559
1	A. I think answering this requires me continuing the story of
2	what happened in response to ADLs.
3	Q. Go ahead.
4	MR. ROOS: Objection.
5	THE COURT: What's the objection?
6	MR. ROOS: Calls for a narrative.
7	THE COURT: Yes. We have to take a very short break
8	in any case.
9	MR. COHEN: Oh, okay.
10	THE COURT: I think ten minutes ought to be enough.
11	THE DEPUTY CLERK: Would the jury please come this
12	way.
13	(Continued on next page)
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

	NCELSE ANZ - cr-00673-LAK Documenter 19368 Fitted: \$2/12/23 Page 71 of 187 1560
1	(Jury not present)
2	THE COURT: Be seated, folks.
3	So you have something to take care of that was
4	discussed earlier today. This is the time.
5	MR. COHEN: Okay. Thank you, your Honor.
6	(Recess)
7	(In open court; jury not present)
8	THE COURT: Mr. Roos, the point you wanted to take up
9	at some point, the evidence issues, how long do we need for
10	that?
11	MR. ROOS: Ten minutes.
12	THE COURT: All right. We'll do it after we send the
13	jury to lunch.
14	MR. ROOS: Okay.
15	THE COURT: Okay. Let's go.
16	(Continued on next page)
17	
18	
19	
20	
21	
22	
23	
24	
25	

	NCELSE ANZ2-cr-00673-LAK DocumBeinte 3868 Fiteds \$2/12/23 Page 72 of 187 1561
1	(Jury present)
2	THE COURT: The record will reflect that the defendant
3	and the jurors all are present, as they have been throughout.
4	You may continue, Mr. Cohen.
5	MR. COHEN: Thank you, your Honor.
6	If we could bring up the exhibit we were just looking
7	at.
8	BY MR. COHEN:
9	Q. And these are more general questions, Mr. Singh.
10	As a general matter, who at FTX was able to access
11	these codes, these codes we were looking at? The code commits.
12	Excuse me.
13	MR. ROOS: Objection, foundation.
14	THE COURT: Yes. You need one.
15	MR. COHEN: Hmm?
16	THE COURT: Foundation.
17	MR. COHEN: Sure.
18	Q. Based on your experience as head of engineering at FTX, did
19	you have an understanding of who might access the code commits
20	we were just looking at?
21	A. They were available to the whole company in Slack, if
22	nothing else. There were Slack logs of all the messages.
23	Q. Okay. Let me ask you another general question. From the
24	FTX side, based on your experience as the head of engineering,
25	who could have access; who could observe Alameda's accounts on
I	

	NCELLS EAN 22-cr-00673-LAK Docuration 19368 Filter 5:2/12/23 Page 73 of 187 1562
1	FTX?
2	MR. ROOS: Objection, same foundation.
3	THE COURT: Yes, sustained.
4	Q. Mr. Singh, based on your experience as the head of
5	engineering, did you have an understanding about accessing
6	customer accounts on the exchange, viewing customer accounts on
7	the exchange?
8	MR. ROOS: Same objection.
9	THE COURT: Yes. Look, this isn't a matter of
10	opinion. He either knows or he doesn't know.
11	MR. COHEN: Yeah.
12	Q. Did you know, Mr. Singh, whether you could see the Alameda
13	accounts on the FTX exchange?
14	A. Whether I personally could?
15	Q. Yes.
16	A. Yes, I could.
17	Q. How were you able to do that?
18	A. The way any other FTX staff member could, using the admin
19	portal.
	Q. Okay. And the admin portal was a portal on FTX?
21	A. Yes.
22	Q. So for an FTX person to look at customer accounts and
23	balances, so forth.
24	A. That was not the purpose.
25	Q. What was the purpose?

	NCELLS EAN 22-cr-00673-LAK DocumBeinne 3368 Fine 26 12/23 Page 74 of 187 1563
1	A. Customer support reasons might require looking at a
2	customer's
3	Q. Understood, understood, understood. But in addition to
4	that, it allowed the FTX side to look at the customer accounts.
5	A. Yes.
6	Q. Okay. Let's move to another topic, Mr. Singh.
7	Did you ever hear of an entity called FTX US
8	Derivatives?
9	A. Yes.
10	Q. What was that?
11	A. A company that used to be named LedgerX, I believe.
12	Q. And what business was LedgerX in?
13	A. It operated crypto options.
14	Q. And let me back up. Do you know who ran LedgerX?
15	A. Zach Dexter in the period that I was aware of.
16	Q. And just to set a foundation, what period was that?
17	A. 2021 and 2022.
18	Q. Did there come a time that FTX acquired LedgerX, if you
19	know?
20	A. Yes.
21	Q. About when was that?
22	A. Also sometime in '21 or '22.
23	THE COURT: Before or after Zach Dexter was running
24	it?
25	THE WITNESS: I believe after.
I	

	N C 비용 문화 2/12/23 Page 75 of 187 1564
1	Q. And did Mr. Dexter continue to run the company even after
2	it was acquired, or run what used to be LedgerX?
3	A. That's my belief, but I have no firsthand knowledge.
4	Q. Okay. Now Mr. Dexter, he was not a founder of FTX,
5	correct?
6	A. He wasn't.
7	Q. He was not a founder of Alameda, correct?
8	A. Correct.
9	Q. Okay. What did FTX US Derivatives's trading platform deal
10	in, if you know?
11	A. Forgive me. Are you referencing the potential integration
12	into FTX.US or what Zach Dexter's existing company did?
13	Q. Integration.
14	A. The integration would support futures to be offered to US
15	customers, pending approval.
16	Q. And you said pending approval. What did you mean by that,
17	sir?
18	A. There was some regulatory process they were engaging in to
19	get approval to list these futures.
20	Q. Do you know what entity they were seeking to get approval
21	from?
22	A. At least the CFTC and maybe others.
23	Q. And I believe you told us yesterday that the CFTC was the
24	commodities trading commission, I think was how you put it.
25	A. Yeah. Forgive me. I don't remember—I don't know exactly

	NCELLS @ ANZ2-cr-00673-LAK Docuration (2368- Filter \$2/12/23 Page 76 of 187 1565
1	what it is, but—
2	Q. Did you, Mr. Singh, have any involvement with this process
3	of trying to get approval?
4	A. I believe I described yesterday the only part that I
5	participated in.
6	Q. What was that?
7	A. It was Zach Dexter—it was me fulfilling Zach Dexter's
8	request to show Alameda's historical collateral and collateral
9	needs in their main account.
10	Q. And for this application for approval, did the topic of how
11	liquidations were handled at FTX come up?
12	MR. ROOS: Objection, foundation.
13	THE COURT: Sustained.
14	Q. Did you know, sir, based on your interactions with
15	Mr. Dexter, what topics came up in connection with the
16	application for approval?
17	MR. ROOS: Same, and calls for hearsay answer.
18	THE COURT: Sustained.
19	Q. Did you have occasion, Mr. Singh, to review any materials
20	in connection with the application?
21	A. There was at least one point in September of 2022 when Zach
22	Dexter sent me an excerpt from the application.
23	Q. What did that excerpt refer to?
24	MR. ROOS: Objection.
25	THE COURT: Ground.
25	THE COURT: Ground.

	NC 변화를 AN22-cr-00673-LAK Docuration 19368 Filter 52/12/23 Page 77 of 187 1566
1	MR. ROOS: Hearsay.
2	Q. What was the topic of the
3	A. Special privileges for Alameda.
4	Q. And did you review that, sir?
5	A. I responded to it, yes.
6	Q. And you responded to Mr. Dexter.
7	A. Yes.
8	Q. What was the nature of the response?
9	MR. ROOS: Objection, hearsay.
10	THE COURT: Why not, Mr. Cohen?
11	MR. COHEN: It's for the effect on the listener, your
12	Honor.
13	THE COURT: On Mr. Dexter?
14	MR. COHEN: No. Excuse me. It's for Mr. Singh's
15	state of mind.
16	MR. ROOS: Relevance.
17	THE COURT: Sustained.
18	MR. COHEN: Hmm?
19	THE COURT: Sustained.
20	MR. COHEN: I'm sorry. Okay.
21	THE COURT: 401 and 403.
22	BY MR. COHEN:
23	Q. Oh, let me go back. I meant to ask you: You testified
24	yesterday about Alameda's line of credit. Do you recall that,
25	sir?
25	sir?

	NC 문화 문화 전 2-cr-00673-LAK Documente 10368 Fitter 12/12/23 Page 78 of 187 1567
1	A. Yes.
2	Q. And I think you told us that the line of credit at some
3	point was set to \$65 billion, correct?
4	A. I believe that was its value at the time of the collapse.
5	Q. Did you have any experience in understanding the amount
6	of-amount that was actually drawn down on the letter of
7	credit?
8	A. I calculated how much the main account was drawing on.
9	Q. When did you do that, sir?
10	A. I believe it was early September.
11	Q. Okay. That was my question. Prior to that point, prior to
12	September, were you involved with any calculations of the
13	actual drawdowns on the letter of credit?
14	A. In a way.
15	Q. What do you mean by that?
16	A. There was an exercise I believe sometime in 2021 to write
17	code that would charge Alameda on one definition of its used
18	line of credit. I made modifications to it after Gary wrote
19	it.
20	Q. What modifications did you make?
21	A. I can't remember all of them. One of them was including
22	more forms of collateral that Sam had proposed.
23	Q. Okay. Yes or no: In connection with that modification you
24	worked on, did you come to learn about the usage of the line of
25	credit prior to September 2022?
I	

	NG 팀 출 문 사 22-cr-00673-LAK Docuration 19368 두 부분했는 \$2/12/23 Page 79 of 187 1568
1	A. In the sense that it matched the definition used by this
2	line of interest processor.
3	Q. Did you come to learn the number, the value, the balances
4	used?
5	A. I remember—I remember one of the—indirectly.
6	Q. What do you mean by that?
7	A. I remember the revenue associated with this, with these
8	fees, and I knew the rate that Alameda was charged on its used
9	line of credit. Dividing one by the other suggests what the
10	used line of credit was.
11	Q. And what was it?
12	A. I recall at some point it being \$2 billion because they
13	were charged one basis point.
14	Q. Okay.
15	A. And the daily revenue from them was \$200,000.
16	Q. And approximately when did you do that analysis?
17	A. Would have been mid or late '21.
18	Q. New topic, Mr. Singh. You testified about an adjustment
19	involving something called EcoSerum. Do you recall that, sir?
20	A. Are you referring to the Serum staking fees?
21	Q. Yes.
22	A. I recall that.
23	Q. Okay. And rather than me trying to summarize it, why don't
24	you tell us what you testified to about that.
25	MR. ROOS: Objection.

	NCELSE ANZ - cr-00673-LAK Docuration 0368 Fited \$2/12/23 Page 80 of 187 1569
1	THE COURT: Sustained.
2	Q. Okay. Mr. Singh, didn't you tell us yesterday that you
3	were asked to look at the staking fees, for Serum?
4	MR. ROOS: Objection. Misstates his testimony.
5	THE COURT: Sustained.
6	Q. Okay. Mr. Singh, let me back up.
7	What are staking services, Mr. Singh?
8	A. I can describe what Serum staking was in the context of
9	FTX.
10	Q. That would be fine.
11	A. Serum was a token. It was available on FTX in both locked
12	and unlocked forms. FTX supported staking facility in which
13	customers could designate their Serum balances as staked, which
14	would make them unsellable but would, on an hourly or daily
15	cadence-that changed over time-reward them with some
16	interest, also paid out in either Serum or locked Serum. This
17	mirrored a lot of staking behaviors of other coins on—in
18	various other contexts.
19	Q. Did FTX charge a-receive any payment for these services?
20	A. Only in the sense that I doctored them.
21	Q. Well, in your experience you said this was—this took place
22	on other exchanges as well. In your experience did other
23	exchanges receive payment for providing staking services?
24	MR. ROOS: Objection, foundation.
25	THE COURT: Sustained.
ļ	1

	NCELLS EAN 22-cr-00673-LAK Documenter 19368 Finted \$2/12/23 Page 81 of 187 1570
1	MR. COHEN: He just said it.
2	Q. Okay. Mr. Singh, did you have experience with other
3	exchanges and their—whether or not they charged for staking
4	services?
5	A. I had experience with some elements of other exchanges. I
6	do not have experience with other exchanges' staking services.
7	Q. Now I believe you testified that Mr. Bankman-Fried directed
8	you to backdate the Serum staking services document, correct?
9	A. No.
10	Q. Okay. Tell us.
11	A. Forgive me. Tell us what?
12	Q. You said no, so I don't want to get your testimony
13	incorrect. What was your testimony, Mr. Singh?
14	A. Sam instructed me to backdate the payments. I didn't know
15	anything about the document.
16	Q. But that ultimately did not take place, correct?
17	A. Sorry. What didn't take place?
18	Q. You ended up not doing the backdated transaction, correct?
19	A. No, I did. I backdated them.
20	Q. Okay. But you said you're not aware of the document,
21	correct?
22	A. I'm not a—there was a document shown yesterday relating to
23	an agreement between EcoSerum and FTX. That was not a document
24	that I had seen until after the collapse of FTX.
25	Q. Let's turn to a new topic, Mr. Singh.
ļ	

	NCLLS @ ANZ2-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 82 of 187 1571
1	I believe you testified yesterday that there came a
2	time that you got involved in political spending, correct?
3	A. Yes.
4	Q. Okay. About when was that?
5	A. In 2018, I became really excited about Prop 12 in
6	California.
7	Q. And as a result of that, did you make any donations?
8	A. I did in that I believe I deducted from my floating balance
9	at Alameda so Alameda would pay—like, would donate it.
10	Q. Okay. And turning to later in time, 2021 or so, did there
11	come a time that you started to make donations in much larger
12	amounts?
13	A. Yes.
14	Q. Okay. And I believe you told us that the process was
15	that—well, is it fair to say that you wanted to make donations
16	but you didn't want to be in the weeds with respect to the
17	process?
18	A. For some of them.
19	Q. Okay. Which ones?
20	A. I—it's hard for me to enumerate them all.
21	Q. Okay. Is it fair to say that in terms of your political
22	donations, you worked with various political consultants?
23	A. Sam and Gabe and Barbara.
24	Q. Did you also work with someone named Michael Sadowsky?
25	A. Yes.

	NCELLS EAN22-cr-00673-LAK DocumBeinte 3368 Finter \$2/12/23 Page 83 of 187 1572
1	Q. And Keenan Lantz?
2	A. Yes.
3	Q. Okay. And Gabe was Mr. Bankman-Fried's brother?
4	A. Yes.
5	Q. And he was a friend of yours from high school.
6	A. Dear friend.
7	Q. Right. And you worked with him in terms of
8	political—political spending, correct?
9	A. Yes.
10	Q. You said you engaged him as a consultant, correct?
11	A. I don't think I said that, but I did.
12	Q. You did. In fact, you signed a—or you entered into a
13	written consulting agreement with him, correct?
14	A. Yes.
15	Q. And Mr. Sadowsky was also an experienced political
16	consultant, correct?
17	A. I don't know his experience.
18	Q. Okay. Well, did you believe he was in that field?
19	A. Yes.
20	Q. Okay. What about Mr. Lantz?
21	A. I don't—I don't know if I knew anything about Keenan
22	Lantz's background.
23	Q. Okay. And the process was, at least with respect where the
24	consultants were involved, that they would make recommendations
25	to you about where to make donations and you would decide
ļ	

	NCELSE ANZ2-cr-00673-LAK Docurfieintg 368 Fiteds \$2/12/23 Page 84 of 187 1573
1	whether you wanted to make them, correct?
2	A. There were many different processes.
3	Q. All right. Well, why don't you go through each one if
4	there was more than one.
5	A. It will take some time.
6	Q. Why don't you just go through them by topic.
7	THE COURT: I'm sorry. By topic?
8	MR. COHEN: Yeah. I don't want to have to have the
9	witness give a long narrative.
10	MR. ROOS: Objection.
11	THE COURT: Ask a question.
12	MR. COHEN: I will. Okay.
13	BY MR. COHEN:
14	Q. Were there times, sir, when you would receive a
15	communication from Mr. Sadowsky about a contribution he
16	suggested you make?
17	A. I can't remember if it was Sadowsky or Gabe, but there were
18	times when I did receive communications from them about
19	donations they'd want me to make.
20	Q. And then you would tell them whether you wanted to make
21	them or not, correct?
22	A. In some cases.
23	Q. Okay. Well, why don't we take a look at—one moment.
24	Why don't we take a look at GX 477, please, in
25	evidence.
I	

	NG원호율AN22-cr-00673-LAK Docuration 19368 두ited \$2/12/23 Page 85 of 187 1574
1	Do you recall this document, sir?
2	A. I do.
3	Q. Okay. This is a chain between you and Mr. Sadowsky,
4	correct?
5	A. It is.
6	Q. And the blue section at the top is your writing, correct,
7	or your comment?
8	A. Yes.
9	Q. So you were saying to Mr. Sadowsky that you were averse to
10	"explicitly woke stuff." What did you mean by that?
11	A. I preferred not to be giving to causes that were explicitly
12	far on the left.
13	Q. Okay. But then you go on to say, "but if it's especially
14	good or if it's hard to interact productively with Democrats
15	without that, I understand." Do you see that, sir?
16	A. I do.
17	Q. Okay. And if we could scroll down to the next page.
18	And in the gray is Mr. Sadowsky's responses, right?
19	A. Right.
20	Q. Okay. And the bottom of the page, he says, so—at the
21	bottom, second from the bottom here, "So if you're not
22	comfortable about it, you should think about that a lot." "You
23	should think about how comfortable you're going to be with it."
24	Do you see that, sir?
25	A. I do.

	NC 변화 문화 2/12/23 Page 86 of 187 1575
1	Q. Mr. Sadowsky was telling you that if you weren't
2	comfortable with that donation, you didn't have to make it.
3	A. I'm not sure if that's what he was saying.
4	Q. Are you saying that Mr. Sadowsky was telling you to make
5	donations you didn't want to make?
6	A. I think when he says it here, it may be in reference to me
7	being the centralized face of their spending and not
8	specifically this donation.
9	Q. Okay. And in reference to that, if you didn't want to be
10	the central face of the spending, you didn't have to, correct?
11	A. Not clear to me he's saying I didn't have to.
12	Q. Okay. In your view, did you feel that you were required to
13	be the face of the political spending?
14	A. Not required.
15	Q. Okay. All right. So you told us also about a chat you
16	were on called Donation Processing. Do you recall that, sir?
17	A. I do.
	Q. And that was a chat involving someone named Ryan Salame?
19	<pre>A. Yes. Q. And again, who was he?</pre>
20	Q. And again, who was he?
21	A. He went by many titles, among them CEO of FTX digital
22	markets.
23	Q. Okay. And prior to that he had been at Alameda, correct?
24 25	A. Maybe concurrent with that.
25	Q. And I believe you said that this was a Signal chat called

	N @ 비용 문화 2/12/23 Page 87 of 187 1576
1	Donation Processing, correct?
2	A. Correct.
3	Q. And the way it would work is Mr. Salame would prepare a
4	wire transfer, correct, to a political candidate?
5	A. That was part of what was coordinated in that thread, yes.
6	Q. And in that thread it would be presented to you for you to
7	approve or not, correct?
8	A. I would be pinged to click OK in my email.
9	Q. And if you didn't click OK, it wouldn't be sent.
10	A. In some sense.
11	Q. In some sense. So you're saying that donations were made
12	without you clicking yes.
13	A. Many of them were.
14	Q. Okay. And the ones in the queue, in the donation
15	processing queue.
16	A. Yes.
17	Q. Okay. So you're saying that when Mr. Salame pinged you to
18	okay the donation, that was unnecessary?
19	THE COURT: That's not what he said. They pinged him
20	with wire transfers.
21	THE WITNESS: Right.
22	Q. So are you saying that wire transfers would go out of your
23	account without you responding to the pings you received from
24	Mr. Salame?
25	A. I think ones of some sizes would, and not all donations

	NCELLS EAN 22-cr-00673-LAK Docuration 19368 Finted \$2/12/23 Page 88 of 187 1577
1	using my name were done in this manner anyway.
2	Q. Well, on the ones in the donation—in the Donation
3	Processing chat, that's what I'm asking about now.
4	A. There were ones discussed in that chat that did not go
5	through my PrimePlus bank account and did not require me to
6	click OK.
7	Q. Now the funds that you received to make political
8	donations, they were loans to you, correct?
9	A. In a loose sense, some of them were loans.
10	Q. Well, didn't you feel that you were obligated to pay them
11	back, sir?
12	A. That is a loose sense in which I felt that they were-might
13	have been loans.
14	Q. Well, you were either obligated to pay them back or you
15	weren't, right?
16	A. I don't think it's that simple.
17	Q. Okay. So when you saw transfers into your account for
18	political donations, didn't you view them as loans to you that
19	you were on the hook for?
20	A. I viewed them as things I was on the hook for.
21	Q. And to take it out of colloquialism, "on the hook for"
22	means you had to pay them back.
23	A. I expected and wanted to pay them back. "Had to" relies on
24	affirmative mutual understanding that may not have existed in
25	some cases.

	NCELSE ANZ2-cr-00673-LAK DocumBeintg 368 Fineds \$2/12/23 Page 89 of 187 1578
1	Q. So you did have to pay them back or you didn't have to pay
2	them back?
3	A. I am not sure what the donor, or what, like, the loanee
4	thought, or what the person lending to me, the lender, thought.
5	Q. So if I'm understanding you correctly, you didn't think you
6	were on the hook for the loans.
7	A. I expect—I wanted to pay them back. That is distinct from
8	there being any understanding or discussion about that.
9	MR. COHEN: Okay. Can we call up 3501-28, please.
10	MR. ROOS: Objection.
11	THE COURT: Sustained.
12	Q. Mr. Singh, during the time you worked for FTX did you file
13	tax returns?
14	A. Yes.
15	Q. And did you have an accountant who prepared them for you?
16	A. Robert Lee.
17	Q. And did you provide your accountant with information about
18	the political donations you made?
19	A. Some of them, yes.
20	Q. Because you wanted to take account of them in payment of
21	your taxes, correct?
22	A. Or make them just known to the people thinking about my
23	finances, yes.
24	Q. Okay. Now let me back up and ask a foundation question.
25	You mentioned yesterday a person named Jayesh Peswani.
I	

	NCELLS EAN 22-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 90 of 187 1579
1	Do you recall that?
2	A. Yes.
3	Q. And just to remind the jury, who was he?
4	A. The head of finance at FTX.
5	Q. Okay. And I think you mentioned yesterday that you
6	asked—sometime in 2021 you asked Mr. Peswani for a list of
7	Alameda's loans to you.
8	A. I think I asked for that in October of 2022.
9	Q. And what was your reason for asking?
10	A. I expected it to list a lot of transfers to me.
11	Q. Okay. You expected it to list transfers to you because you
12	wanted to understand what you were responsible for, correct?
13	A. I wanted to confirm it matched what had flown through my
14	bank account.
15	Q. So you just wanted to know what was going through your bank
16	account; you didn't really think you were responsible for it.
17	A. It was my desire and expectation to repay some of the
18	transfers that had gone through my account. I didn't know if
19	there was separate accounting of it, and I never talked about
20	those expectations, or asked for something that could document
21	that.
22	(Continued on next page)
23	
24	
25	
I	

	NCELSE ANZ 2-cr-00673-LAK Docurfient 3368 Fited \$2/12/23 Page 91 of 187 1580
1	Q. So you were unclear, you're telling us, about whether or
2	not you had a responsibility to pay the loans back?
3	A. Yes. To clarify, I am not sure they were loans, the
4	transfers.
5	Q. Isn't it true, Mr. Singh, that you thought that the money
6	going into your account were donations that you were obligated
7	to repay?
8	A. Obligated is complicated and might rely on mutual
9	understanding.
10	Q. That you were on the hook for those funds?
11	MR. ROOS: Objection. Asked and answered.
12	THE COURT: We have done this already, Mr. Cohen.
13	MR. COHEN: Let's call up 3501-103, please.
14	MR. ROOS: Objection, foundation. 611/612.
15	Q. Do you recall in one of your many interviews being
16	interviewed by the government attorneys on February 24 of this
17	year?
18	A. I don't remember exact dates.
19	Q. You recall being interviewed in February?
20	A. Yes.
21	Q. And you recall telling the prosecutors that you thought of
22	the money going to you to make donations as money that you were
23	obligated to pay and that you were on the hook for those funds?
24	A. I don't remember the exact words I used.
25	Q. Was that the substance of what you told them?

	NCELSE AN242-cr-00673-LAK Docuration 19368 Filter \$2/12/23 Page 92 of 187 1581
1	A. That's similar.
2	Q. That you were on the hook for them?
3	A. That I believed that I was on the hook and I wanted to
4	repay them.
5	Q. Now, didn't you also believe, sir, that when you received
6	these transfers that you wanted to have them booked as loans?
7	A. Sorry. Could you repeat the question?
8	Q. Sure. When you received what you called I'm trying to
9	use your language transfers to make political donations, you
10	thought of them as loans and tried to get them booked as loans.
11	A. I expected that they would be booked as loans.
12	Q. And you tried to get them booked as loans, correct?
13	A. In a sense.
14	Q. Do you recall speaking with the government in January?
15	A. Yes.
16	Q. January 19?
17	A. Um-hum.
18	Q. You recall telling the prosecutors that when you did see
19	the transfers into your account, you thought of them as loans
20	and tried to get the transfers booked as loans.
21	A. I don't remember exactly what I said. It seems believable.
22	Q. Sorry?
23	A. Seems believable.
24	MR. COHEN: Your Honor, this might be a good time to
25	take our lunch break.
I	

NCEXE AV22-cr-00673-LAK Document 368 Filed 12/12/23 Page 93 of 187 1582 THE COURT: Give me an idea of how much more you have. 1 2 MR. COHEN: I will certainly finish today, and 3 probably about an hour, hour and a half. 4 THE COURT: We will take the lunch break, members of 5 the jury. The lawyers and I have a little business to do, so 6 we will make it a little longer today. I'll see you back at 7 let's say five to 2. 8 (Jury not present) 9 THE COURT: Mr. Roos, what's on your mind? 10 MR. ROOS: Thank you, your Honor. If it's OK, I'll 11 approach and give you a binder that has the witness materials for tomorrow. 12 13 THE COURT: Thank you. 14 MR. ROOS: Your Honor, I have just handed up to you 15 the government exhibits that we intend to use tomorrow with 16 Professor Peter Easton, who is the government's expert witness 17 relating to accounting and financial calculations and tracing. 18 We conferred with defense, and they helpfully identified their 19 areas of objections so we could work this out before we are in 20 front of the jury. I will just go sort of in order of the 21 issues as I understand them. 22 THE COURT: We will try. 23 MR. ROOS: The first issue, as I understand it, is 24 that one of the exhibits, which compares the balance of 25 customer funds on the FTX database to the balance of funds

NCHMEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 94 of 187 1583 within FTX's wallets, hot wallets we have heard about in the 1 2 case, it compares those two lines and it's Government Exhibit 3 1051, if your Honor wants to take a look. 4 As I understand the objection, your Honor, it's a Rule 5 16 objection, which is that, in the defense view, it's outside the scope of the --6 7 THE COURT: I'm sorry. Back up. It's a Rule 16 objection, and then I lost you because 8 9 you looked down. 10 MR. ROOS: My apologies. 11 It's a Rule 16 objection, as I understand it, to the 12 timing of the disclosure relating to the opinion that's 13 reflected in the exhibit. 14 THE COURT: What's the objection, Mr. Cohen? 15 MR. LISNER: Your Honor, I'll address on behalf of the 16 defense, David Lisner. 17 This graph purports to show it's not just assets, 18 crypto assets, between what's shown in the site and what's 19 shown in wallets. 20 Professor Easton's expert disclosure, as far as I 21 could tell, and me and Mr. Roos have not yet had a chance to 22 compare language, but I don't see any place where an opinion 23 about the balance of crypto assets between wallets and the 24 database is reflected in his disclosure, and he is not offered 25 as a crypto expert. As I understand, tallying up the amount of

NCENEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 95 of 187 1584 1 crypto assets in a wallet is not necessarily as simple as a 2 bank account. 3 For that reason, we think this is outside of the 4 disclosure. 5 THE COURT: I thought it was about timing. MR. LISNER: That's the words Mr. Roos used. 6 7 The words I would have used is, Professor Easton's 8 Rule 16 disclosure does not provide an opinion or describe an 9 opinion regarding the balance of crypto assets. The closest I 10 could find is opinion 9, which describes Alameda's balances, 11 but this exhibit expressly excludes Alameda's balances and that's in a footnote. 12 13 MR. ROOS: Few things, your Honor. 14 THE COURT: It would have been helpful if somebody had 15 told me that we were going to discuss this, because I have not 16 looked at that Rule 16 disclosure in at least two months. I 17 have no idea what it says today. 18 MR. LISNER: Apologies, your Honor. We received this 19 and all other exhibits and backup for Professor Easton Saturday 20 night at 11 p.m. This is the quickest we are able to address 21 this. 22 MR. ROOS: Just to be clear on that, we produced the 23 initial draft of this slide, and I think this is the answer to 24 the disclosure question, we produced it on September 8, when we 25 produced our exhibits.

NCHMEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 96 of 187 1585

And the question under Rule 16(g), in analyzing whether or not there is an appropriate disclosure, is whether or not there is a prejudice to the defense.

4 I would direct your Honor to two cases as you are 5 considering this issue. The first is the Second Circuit's 6 decision in *Tin Yat Chin*. I have a copy. I don't have a copy 7 for everyone, but I can hand up my copy to the Court. I will 8 give the cite. It's 476 F.3d 144. There the circuit, Judge 9 Rakoff writing for the circuit, considered whether the 10 government's disclosure of an expert, not just a slide, but an 11 expert, one day before his testimony was unduly late and prejudicial, and the Court concluded that the district court's 12 13 decision to give an extra day, so a one-day continuance, was 14 sufficient. Here they have had this exhibit for about six 15 weeks now, so that's more than enough time to prepare. There 16 is no evidence of prejudice.

The second case I would point to is a district court decision by Judge Caproni. The case is *Rosario*. It has a Westlaw cite of 2014 WL 6076364. There she held that the production of the slides in that case for the witness provided sufficient disclosure to meet Rule 16's requirements.

22 THE COURT: Is there an opinion he is going to give 23 about this?

24 MR. ROOS: His opinion is going to be that the amount 25 in FTX's cryptocurrency wallets, there was a difference between

NCENEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 97 of 187 1586 1 what was in there and what was reflected in FTX's database for 2 customer deposits, so the black line meaning this is what the 3 database said they had in customer deposits. What FTX was 4 actually keeping in cryptocurrency balances was considerably 5 smaller. THE COURT: Mr. Lisner, where is the prejudice to the 6 7 defense? 8 MR. LISNER: The prejudice is, your Honor, while we 9 may have had a version of this slide, it's based on tens of 10 thousands, maybe hundreds of thousands of database entries that 11 we received Saturday night. But, more importantly --12 THE COURT: Did they or did they not produce this to 13 you on or about September 8? 14 MR. LISNER: I don't currently have a recollection of 15 this particular slide. We may have, but we did not receive the 16 data. 17 May I add one other point, your Honor? 18 THE COURT: I'm sorry. I don't understand the 19 distinction you're drawing. 20 MR. ROOS: Here is the version. 21 THE COURT: Please hand it up. 22 I am asking Mr. Lisner what the distinction is between 23 the graph and the data. 24 MR. LISNER: The distinction, your Honor, is that the 25 graph is driven by an enormous amount of numbers, and we just

NCENEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 98 of 187 1587 1 received the numbers the other day. So what this graph was 2 based on we didn't previously have. The other point I would add, and I'll rest after this, 3 4 your Honor, is I believe from Mr. Roos jumping to case law 5 about late disclosure, I take that as an admission that it was not fairly captured by Professor Easton's expert disclosure. 6 7 THE COURT: You will take it as an admission, and I will think about it. 8 9 MR. LISNER: Understood. 10 THE COURT: This graph, Mr. Roos, that you handed me, 11 which is marked Government Exhibit 1051, does not actually look 12 to me like the one in the book. 13 MR. ROOS: The difference, your Honor, is the temporal 14 If your Honor sees the black-and-white version I period. 15 printed out for you, which is draft, it goes back to 2019, the 16 ultimate exhibit is just 2021, 2022, so it sort of elongates 17 it, but it's otherwise the same analysis. 18 THE COURT: Same data? 19 MR. ROOS: Same data. 20 THE COURT: For the overlap period. 21 MR. ROOS: Correct. 22 THE COURT: I will consider that. 23 Next issue. 24 MR. ROOS: The second issue, as I understand it, is 25 that the defense is objecting to admitting certain of the

NCHMEAN22-cr-00673-LAK Document 368 Filed 12/12/23 Page 99 of 187 1588 government's exhibits, a majority of them, I think. No objection to using them as demonstratives.

1

2

I'll tell you that the government's plan is that there are exhibits in the binder before your Honor that are the results of the financial analysis. They come in two forms: Balance data over time, either bank accounts or data from the FTX transaction database, and the other form of analysis is financial tracing, so money flowing through accounts.

Those exhibits the government is offering into 9 10 evidence, and they are all within the 1000 series. The 11 government also intends to use certain demonstratives, such as, 12 you know, a portion of a document to ask the witness whether or 13 not he has analyzed the source of the funds for the investment 14 that is reflected on the document, and for those we are not 15 proposing to offer those demonstratives, which are in the 3000 16 series, into evidence.

I think the dispute, just to narrow it for the Court, is whether or not the 1000 series exhibits can be offered into evidence, and the government's view, informed, I think, again by the case law, is that both under the rules relating to experts, so a 703 chart, and the rules relating to summary charts, under 1006, that these are admissible into evidence. THE COURT: Thank you.

24 Mr. Lisner, first of all, is it correct that we don't 25 have an issue about the 3000 series?

MC ds BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 100 of 187 1589

MR. LISNER: No. We do have one issue. I think we
 have two categories of issues. I can describe them for you.
 THE COURT: Yes.

MR. LISNER: In the 3000 series these are slides that, as Mr. Roos pointed out, the government intends to use as demonstratives. We have no problem with that, but a number of them include call-outs or pictures of documents not in evidence. If the government purports to publish excerpts of documents not in evidence, that's our concern.

For a lot of the documents I think we could work something out with the government, and I'm happy to speak with Mr. Roos over the lunch break, but the principle is, they shouldn't be allowed to publish documents not in evidence under the guise of demonstrative.

15 THE COURT: The expert is entitled, if memory serves, 16 under Rule 703, to explain the basis for his opinions, and the 17 opinion need not be based entirely on material in evidence, as 18 long as the non-evidentiary material is evidence of a sort that 19 experts in the field rely upon.

Now, obviously, there is a potential there at an extreme for abuse, and I appreciate that, but I'm not understanding why I should assume, as a categorical matter, that anything that's non-evidentiary that the expert refers to in justifying the opinion shouldn't be placed in front of the jury.

MCalseBA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 101 of 187 1590

MR. LISNER: I think in 703, for material that is 1 2 inadmissible for which the expert relies, there is a balancing 3 test of whether it's sufficiently probative, which we take your 4 point. It could be published, but not all of these documents appear to be relevant to the analysis. There are news articles 5 6 which are hearsay. 7 And, again, I'm happy to speak with Mr. Roos over the 8 break --9 THE COURT: They are not hearsay to the extent that 10 they are offered to illustrate the basis for the expert's 11 opinion, but I certainly welcome your working on this further 12 with Mr. Roos, because the problem I'm having with your 13 argument about the 3000 series right now is that you are taking 14 the categorical position, implicitly anyway, that anything 15 that's not evidentiary that's called out in one of these 16 demonstratives is inherently, simply by virtue of being 17 non-evidentiary, unduly prejudicial and so forth, and that's 18 not the way that analysis works. 19 MR. LISNER: I understand, your Honor. I take the 20 point. Why don't we work out what we can and maybe whatever is 21 left, an appropriate limiting instruction perhaps. 22 THE COURT: That's fine. 23 MR. ROOS: For what it's worth, I think besides the 24 news articles, we intend to offer the exhibits that are cited 25 in there, which may just sort of moot the issue.

NZABABAR 2-cr-00673-LAK Document 368 Filed 12/12/23 Page 102 of 187 1591
THE COURT: Don't eat up my lunch with that. You eat
up your lunches.
What about the 1000 series, Mr. Lisner?

MR. LISNER: The 1000 series is for only part of them. 4 5 We are fine with admitting them as summary Exhibits 1000 up 6 through 1017. But from 1017 to 1050, these are a series of, I 7 guess I'll call them flow charts that purport to show or 8 describe the flow of funds became bank accounts for certain 9 transactions. For example, 1039 is the one I happen to have 10 open in my book. This appears to be expert conclusion and not 11 a 1006 summary or include expert conclusions and not be based 12 solely on the underlying bank records, and I think maybe with 13 more foundation we can get there.

The issue that we see is, Professor Easton is, according to his Rule 16 disclosure, is going to tell us everything was commingled between bank accounts, customer funds and FTX Alameda funds. And then these slides purport to separate it out, which funds are which. I don't know how Professor Easton continued to do that, but it sounds like an accounting conclusion and not a fair 1006 summary.

THE COURT: You invited my attention to 1039. You start off at the left side of the flow chart with \$11 million in customer funds from customer bank accounts, and the only other inflow reflected is a \$200,000 inflow over a couple-day period both going into North Dimension.

MC d Ste BA 22-cr-00673-LAK Document 368 Filed 12/12/23 Page 103 of 187 1592 1 I can understand conceptually what you are talking 2 about, but if 99 percent of it is from one source and 1 percent 3 of it from the other, what difference does it make? It's 4 immaterial. Isn't it? 5 MR. LISNER: It may be, but sitting here, I don't know that. So that's why I have to --6 7 THE COURT: All you have to do is ask yourself what 8 200,000, as a percentage of 11.2 million, is, and then you know 9 the answer. 10 MR. LISNER: That may be true, but the backup data for 11 this, again, is a spreadsheet that drives this. We received it 12 in 3500 material. And that spreadsheet says, in the absence of 13 time stamps and similar sized inflows, we performed a 14 conservative LIFO analysis. It sounds like there was an 15 analysis applied to the numbers to get to this chart, and 16 that's what the issue is for us. 17 THE COURT: We all know what a LIFO analysis is, don't 18 So does the witness. Last in, first out. we. 19 MR. LISNER: Yes, your Honor. 20 THE COURT: Standard accounting, right? 21 MR. LISNER: Yes. 22 Professor Easton is being offered as an accounting 23 expert. 24 THE COURT: Does that take care of that group? 25 MR. LISNER: That's everything on that group. That's

	₩24398842.cr-00673-LAK Document 368 Filed 12/12/23 Page 104 of 187 1593
1	all of our objections.
2	THE COURT: We did make some progress here. I hope
3	you can get to the goal line in time for your dessert.
4	See you later.
5	(Luncheon recess)
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

	₩24434884842-cr-00673-LAK Document 368 Filed 12/12/23 Page 105 of 187 1594
1	AFTERNOON SESSION
2	2:00 p.m.
3	THE COURT: Let's get the witness and the jury.
4	(Jury present)
5	THE COURT: The record will reflect that the jurors
6	and the defendant all are present, as they have been
7	throughout.
8	I hope everybody had a pleasant lunch break.
9	The witness is still under oath.
10	You may proceed, Mr. Cohen.
11	MR. COHEN: Thank you, your Honor.
12	BY MR. COHEN:
13	Q. Mr. Singh, let me call your attention to September of 2022,
14	OK, sir?
15	A. OK.
16	Q. We talked about it briefly this morning. I want to come
17	back to it.
18	I believe you told us that, in or about September, you
19	received a message from Mr. Bankman-Fried about whether or not
20	to close Alameda?
21	A. I received a message that had a link to a Google Doc that
22	described arguments for doing so.
23	Q. And this was the Google Doc you described as being headed
24	we came, we saw, we researched?
25	A. I think that was the title.

	₩2at\$#BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 106 of 187 1595
1	Q. And this was to you and to Gary, is that correct?
2	A. I know for certain it was to the two of us. I don't know
3	if it was also shared with others.
4	Q. And I believe you testified yesterday that one of the
5	topics it addressed was public relations about the relationship
6	between Alameda and FTX.
7	Do you recall that, sir?
8	A. I do.
9	Q. And another topic was I think what you described as the
10	leadership of Alameda, correct?
11	A. Yes.
12	Q. Do you recall whether any other topics were discussed in
13	that document?
14	A. Give me a moment.
15	Q. Sure.
16	THE COURT: Isn't the document in evidence?
17	MR. ROOS: Yes.
18	MR. COHEN: Why don't we just call it up then.
19	GX-18.
20	Thank you, your Honor.
21	Q. This is much easier. Why don't we take a look at GX-18.
22	Yesterday you went through it for us in the middle of the page,
23	the reasons. You see that, sir?
24	A. Yes.
25	Q. And we talked just a moment ago about the PR hit relating

	₩27789897822-cr-00673-LAK Document 368 Filed 12/12/23 Page 107 of 187 1596
1	to Alameda and FTX and then current Alameda leadership.
2	Do you see that, sir?
3	A. Yes.
4	MR. COHEN: Brian, if you could reduce that, please.
5	Go to the next page.
6	Come back to the first page.
7	I found it.
8	If you could call out the box, the reasons again.
9	Look at entry number 2.
10	Q. The current leadership of Alameda is good, but not good
11	enough to be able to trust with such a big operation. Then
12	continuing to A. The fact that we didn't
13	MR. COHEN: Can you highlight A, please, Brian.
14	Q. The fact that we didn't hedge as much as we should have
15	alone cost more in EV than all the money Alameda has ever made
16	or will ever make. That's the kind of critical mistake we're
17	likely to make if I'm not actually running the show there.
18	Mr. Singh did you have an understanding of what EV
19	was?
20	A. Expected value.
21	Q. Do you recall anything else that was discussed about
22	hedging in this chat or around this chat?
23	MR. ROOS: Objection. Hearsay.
24	THE COURT: Sustained.
25	Q. Continuing down to 5 the topic was: Alameda is making some
I	

	ሚታያቀይች 22-cr-00673-LAK Document 368 Filed 12/12/23 Page 108 of 187 1597
1	money trading, but not enough to justify its existence.
2	Do you recall discussing that, sir?
3	A. I remember a comment from Gary giving his thoughts on this
4	point in the chat.
5	Q. What do you remember?
6	MR. ROOS: Objection. Hearsay.
7	MR. COHEN: It goes to state of mind, your Honor.
8	THE COURT: Whose state of mind?
9	MR. COHEN: The coconspirators.
10	THE COURT: Mr. Roos, what do you say to that?
11	MR. ROOS: I'll withdraw this objection for now.
12	THE COURT: All right.
13	MR. COHEN: Could we have the question read back?
14	THE COURT: What do you remember was the question.
15	A. I remember Gary saying in the chat something to the effect
16	of, I think Alameda is making 300 or \$400 million a year. Sam,
17	are you sure that the PR hit is worth more than that.
18	MR. COHEN: We can take this down.
19	Q. I believe you testified that after this was sent this
20	GX-18 was sent across, you came to your own view about whether
21	Alameda should be shut down, correct?
22	A. I had an idea. I don't think I had an overall view on
23	whether it should or shouldn't happen.
24	Q. I believe you testified that your idea was that Alameda
25	ought to be taken down off the FTX exchange, is that correct?
I	

A. Not necessarily that it ought to. It just struck me as
sort of like a less costly solution that maintained many of the
same advantages.
Q. Then you had a number of chats with various people about
the issue about whether or not Alameda should be should
be go out of business, correct?
A. There was one Signal chat after this in hashtag
organization in which some of that was discussed.
Q. Who was on that chat, sir?
A. Myself, Sam, Caroline, Gary.
Q. Were there separate chats just between you, Gary, and
Caroline?
A. Those existed in Signal. I don't remember if we used them
to talk about this.
Q. So you don't remember one way or the other?
A. I don't remember one way or the other.
Q. I think you also told us that there was some in-person
meetings about the topic of closing down Alameda.
Do you recall that?
A. Yes.
Q. Who was at those meetings?
A. There was one meeting that I called immediately after
posting in hashtag organization and getting some responses.
Myself, Gary, Caroline attended.
Q. Mr. Bankman-Fried did not attend?

	₩2439987422-cr-00673-LAK Document 368 Filed 12/12/23 Page 110 of 187 1599
1	A. He did not attend.
2	Q. Whether it was at that meeting or otherwise, you told us
3	about an exchange where you inquired about whether the borrows
4	could be paid back.
5	Do you recall that, sir?
6	A. It didn't come up in that meeting. It was the elephant in
7	the room in that meeting.
8	Q. Did it come up afterwards?
9	A. With Sam.
10	Q. Did it come up in your conversation with Ms. Ellison and
11	Mr. Wang?
12	A. No, not the in-person one.
13	Q. What about on the chats?
14	A. Not that I recall, except for the chat with the four of us.
15	Q. What do you remember from that?
16	A. From the chat with the four of us, you mean?
17	Q. Yes.
18	A. I don't remember more than what's in my direct, but I could
19	restate a lot of it.
20	Q. No need.
21	I think you told us that you asked whether or not
22	returning Alameda's borrows was possible, and Ms. Ellison
23	responded that it was not possible.
24	Do you recall testifying to that, sir?
25	A. I don't think those are my exact words.
I	

	₩2439683422-cr-00673-LAK Document 368 Filed 12/12/23 Page 111 of 187 1600
1	Q. What were your exact words?
2	A. I enumerated the main things that I thought would be
3	required to close Alameda down at FTX. One of them, I believe
4	my phrasing was, close out all Alameda accounts. Caroline
5	responded: That's impossible. I asked which part of it. She
6	clarified the part about closing out accounts.
7	Q. Your understanding was, it was not possible because there
8	were not sufficient assets to pay back the borrows, correct?
9	A. At first I was confused. That became my understanding over
10	the course of the day.
11	Q. And this was based on what Ms. Ellison had said?
12	A. Ms. Ellison, Gary, and Sam.
13	Q. Now, did you do any verification of your own about this
14	topic, any work of your own on this?
15	A. No.
16	Q. Let me move forward. I believe you testified that you had
17	a conversation with Mr. Bankman-Fried on the balcony of the
18	Orchid penthouse.
19	Do you recall that, sir?
20	A. I do.
21	Q. Before we get into it, let me just ask this question.
22	you told us about Mr. Bankman-Fried's demeanor
23	yesterday. What was your demeanor, your state of mind?
24	A. I was very nervous. I was awaiting an explanation and
25	eventually an apology. I was pacing.

	₩2439987822-cr-00673-LAK Document 368 Filed 12/12/23 Page 112 of 187 1601
1	Q. Were you anxious?
2	A. Yes.
3	Q. Were you stressed?
4	A. Yes.
5	Q. I think you told us that later in November you regarded
6	yourself as suicidal.
7	A. And for a few months after.
8	Q. At that time as well?
9	A. Yes.
10	Q. You testified yesterday that
11	MR. COHEN: Counsel, it's page 1406, line 12.
12	Q. First, how did the conversation begin? I said: Caroline
13	is really freaked out about the NAV situation and so am I.
14	Do you recall that, sir?
15	Later on in the passage you were asked: What, if
16	anything, did the defendant say in response?
17	MR. ROOS: Objection.
18	THE COURT: Start again, Mr. Cohen.
19	MR. COHEN: I'm trying to short-circuit this, Judge.
20	THE COURT: I appreciate that. But you start with a
21	question and then you interpolate another question.
22	MR. COHEN: Maybe I should go slower then.
23	Q. Mr. Singh, do you recall speaking with Mr. Bankman-Fried
24	about Caroline Ellison freaking out?
25	A. Yes.

	₩243988342 - cr-00673-LAK Document 368 Filed 12/12/23 Page 113 of 187 1602
1	Q. And she was freaking out over the point you had just made
2	about the ability to pay back the borrows, correct?
3	MR. ROOS: Objection.
4	THE COURT: Sustained.
5	Q. What was she freaking out about?
6	MR. ROOS: Same objection.
7	THE COURT: Sustained.
8	Q. Do you recall in that conversation that according to
9	you, Mr. Bankman-Fried said, page 1406 to 1407: I am not sure
10	what there is to worry about. NAV is fantastic by almost any
11	measure. It was super positive, even if you don't include FTX
12	and FTX US equity.
13	Do you recall that, sir?
14	A. Yes.
15	Q. And you told us you did not react positively to that,
16	correct?
17	A. I asked further questions.
18	Q. Did you talk about any other topics in the meeting at the
19	balcony?
20	MR. ROOS: Objection.
21	THE COURT: What's the objection?
22	MR. ROOS: Hearsay. He can answer yes or no.
23	THE COURT: Yes. You can answer yes or no and stopped
24	when you have answered yes or no.
25	Q. Yes or no, did you talk in the balcony meeting about the

	₩277898978282-cr-00673-LAK Document 368 Filed 12/12/23 Page 114 of 187 1603
1	topic of FTX's marketing expenses?
2	A. Talked about expenses.
3	Q. Did you express the view that FTX going forward ought to
4	keep expenses down?
5	A. Something to that effect, I did.
6	Q. Because you thought it was important going forward that FTX
7	spend as little as possible until customers were repaid,
8	correct?
9	A. I specifically was concerned about frivolous spending that
10	may not pan out to be useful.
11	Q. So you wanted certainly frivolous spending to not be done,
12	is that correct?
13	A. Correct.
14	Q. Other business spending to be as limited as possible.
15	A. I don't think I said exactly that.
16	Q. What did you say, sir?
17	A. I think I just asked if Sam would now sort of take
18	seriously the act of cutting down on the expenses and curbing
19	future ones.
20	Q. Now, you had mentioned yesterday that around this time you
21	considered resigning from FTX, correct?
22	A. Correct.
23	Q. I meant to ask you, prior to September 2022, had you ever
24	considered resigning?
25	A. Yes.

	MC 2018 Page 115 of 187 1604
1	Q. When was that?
2	A. Once in 2018, once before moving to Hong Kong, a few times
3	after distressing conversations with Sam or Gary.
4	Q. So this is over the four-year period from 2018 to 2022?
5	A. Yes.
6	Q. Mr. Singh, did you ever purchase an apartment in Orcas
7	Island, Washington?
8	A. I did.
9	Q. When did you do that?
10	A. I did that in October of 2022.
11	Q. And Orcas Island is in Washington State or off Washington
12	State?
13	A. Right.
14	Q. This was an apartment you purchased with friends?
15	A. It was a house that I alone purchased, though I intended it
16	to be used by me and friends.
17	Q. And the purchase price was \$3.7 million?
18	A. Correct.
19	Q. And you borrowed that purchase price from the FTX exchange,
20	correct?
21	A. Correct.
22	Q. And you did this after the September meeting with
23	Mr. Bankman-Fried you've been telling us about, correct?
24	A. I did.
25	Q. And in fact the closing for the apartment took place on
l	

	₩2##3#BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 116 of 187 1605
1	November 1, didn't it, sir?
2	A. I don't remember the exact date.
3	Q. Isn't it fair to say that you wired the funds sometime
4	after October 2022?
5	A. Or late October, yes.
6	Q. Now, coming into that meeting did you expect FTX to go
7	forward as a company, the September meeting on the balcony?
8	A. Would you mind clarifying what you mean by go forward?
9	Q. Well, did you expect that FTX would last as a business
10	going forward?
11	A. Certainly for some amount of time, yes.
12	Q. Didn't you expect it to last as a business for years?
13	A. I am not sure what I expected.
14	Q. Well, do you recall speaking with the prosecutors on
15	January 19 of this year?
16	A. I don't remember the specific dates in my meetings with
17	them.
18	Q. Do you recall saying to them that in September you believed
19	that FTX would last for years despite the awful situation?
20	A. I don't remember saying that.
21	MR. COHEN: Can we call up 3501-028.
22	If we can turn to page 8, third paragraph. Call that
23	out, Brian.
24	Q. Read this to yourself, Mr. Singh, and I ask you, yes or no,
25	if it refreshes your recollection that you told the prosecutors
I	

	₩ Cate BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 117 of 187 1606
1	that you believed FTX would last for years despite the awful
2	situation.
3	It's the next paragraph below, Mr. Singh.
4	THE COURT: I'm sorry. 3501-28 what?
5	MR. COHEN: It's the paragraph we have just pulled up.
6	I apologize. Page 8. Same page. Just the one below, your
7	Honor.
8	A. This does refresh my memory.
9	Q. What's your memory, sir?
10	A. That I did tell prosecutors I thought FTX might last for
11	years, not that it would.
12	Q. Let's move forward, sir.
13	Let's now go to November 2022.
14	MR. COHEN: Pull up GX-480A, please.
15	Q. This is a chat between you and Mr. Bankman-Fried that you
16	reviewed yesterday.
17	Do you recall that, sir?
18	A. I do.
19	Q. And it's from November 6 of 2022.
20	A. Yes.
21	Q. The blue is you and the gray is Mr. Bankman-Fried?
22	A. Yes.
23	Q. In the first entry you say that one thing that seriously
24	helped me is if I didn't have debts. I think most of them are
25	loans, 500 million for me exercising, more for U.S.

	₩2#3#BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 118 of 187 1607
1	investments. I hope we can unwind these but not sure.
2	Sir, this refers to the loans you have told us about
3	earlier in your testimony, correct, that you took from FTX?
4	A. This refers to the 477 million on paper loan used for
5	exercising and other loans made through me, Sam, and Gary to
6	capitalize FTX US for it to make investments.
7	Q. And here you're seeking to have them unwound, correct?
8	A. I am hoping they could be unwound. I am not sure.
9	Q. Now, you are telling Mr. Bankman-Fried that it would help
10	you not to have any debts, correct?
11	A. Right.
12	Q. By having the loans unwound.
13	A. Right.
14	Q. Then going to the third paragraph up here: Maybe 80
15	million extra or so are donations, personal, etc., that went
16	through my bank account and are in my name, so 120 million
17	pretax or something. I'm not sure that's the exact number.
18	Is that a reference to the political donations we
19	talked about before the break?
20	A. It's a reference to that and more.
21	Q. What's the more?
22	A. Borrows from my FTX account against my FTT collateral.
23	Q. Anything else?
24	A. The 10 million that Sam gave me a few years earlier.
25	Q. You are telling Mr. Bankman-Fried here that you don't want

	₩2##3#BA22-cr-00673-LAK Document 368 Filed 12/12/23 Page 119 of 187 1608
1	to be responsible for that, correct?
2	A. Right.
3	MR. COHEN: Can we continue down, Brian, to the gray.
4	Q. Mr. Bankman-Fried says: Will think about this. What does
5	trade mean? Excuse me. I think about this. You say thanks.
6	What does trade mean? And you explain. Sell FTT or SRM
7	earlier in 2022. Is that correct?
8	A. Yes.
9	Q. SRM, we covered, is Serum?
10	A. Serum tokens.
11	Q. Your idea here was to set up a backdated trade so that you
12	would not be responsible for these amounts you had borrowed,
13	correct?
14	A. Correct.
15	Q. And that ended up not happening, correct?
16	A. Correct. I didn't go through with it.
17	MR. COHEN: We can take that down.
18	Q. Mr. Roos asked you a series of questions about your
19	cooperation with the government.
20	Do you recall that, sir?
21	A. I do.
22	Q. I think we have established that you had at least 20
23	meetings with the prosecutors, correct?
24	A. I can't remember if we said at least.
25	THE COURT: I think we have covered that two or three

	₩2439687422-cr-00673-LAK Document 368 Filed 12/12/23 Page 120 of 187 1609
1	times today.
2	Q. Just to put this in sequence, you entered into a
3	cooperation agreement with the government, correct?
4	A. I did.
5	Q. That was on February 28?
6	A. I don't remember the exact date. That sounds about right.
7	Q. Prior to that, you had a number of meetings with the
8	government.
9	A. Yes.
10	Q. So you had meetings in November, December, and January with
11	the government?
12	THE COURT: Mr. Cohen, we did all that before lunch.
13	MR. COHEN: There is a piece we have not done yet,
14	your Honor.
15	THE COURT: Let's get to it, please.
16	MR. COHEN: OK.
17	Q. In the meetings before you had the cooperation agreement,
18	you entered into a different agreement called a proffer
19	agreement, correct?
20	A. I did.
21	MR. COHEN: We would like to offer 3501-11.
22	MR. ROOS: No objection.
23	THE COURT: Received.
24	(Defendant's Exhibit 3501-11 received in evidence)
25	MR. COHEN: Go to the second page, Brian.

	₩ 24398884828-cr-00673-LAK Document 368 Filed 12/12/23 Page 121 of 187 1610
1	Q. This was signed by you and your attorneys and the lawyers
2	for the government?
3	A. I can't remember if all the signatures here are
4	exclusively are within that group, but at least I know that
5	some of them are.
6	Q. Do you recognize your own signature?
7	A. I do.
8	MR. COHEN: Let's go back to the first page. If we
9	could call out the second paragraph, number 1.
10	Q. It says in bold: This is not a cooperation agreement.
11	Do you see that, sir?
12	A. I do.
13	Q. The government had not yet decided whether they would offer
14	you a cooperation agreement at this point, correct?
15	A. I don't know what was in their heads. I had not yet been
16	offered a cooperation agreement.
17	MR. COHEN: You can pull that back down, Brian.
18	If we can pull out paragraph 3.
19	Q. These proffer agreements would cover your interviews during
20	this period with the government before a cooperation agreement
21	was reached.
22	A. Correct.
23	Q. Maybe we don't have to go through line by line.
24	Is it your understanding, sir, that the government
25	could use the information it received in these interviews to
ļ	

	₩2439683422-cr-00673-LAK Document 368 Filed 12/12/23 Page 122 of 187 1611
1	pursue leads against you?
2	A. Yes.
3	Q. Even if you never got a cooperation agreement?
4	A. That's my understanding.
5	Q. Is it your understanding that if you made false statements
6	in these interviews, you could be separately prosecuted for
7	them?
8	A. Yes.
9	Q. Regardless of whether you got a cooperation agreement?
10	A. That's my understanding.
11	Q. Now, is it fair to say, Mr. Singh, that you were
12	interviewed by the government on January 19 of this year?
13	A. I don't remember the exact dates, sorry.
14	Q. That's OK.
15	Do you recall the government asking you about the
16	purchase of the Orcas Island house?
17	A. I remember discussing it with them.
18	Q. Isn't it true that you told them that you thought that
19	there were points along the way when you had a pit in your
20	stomach and felt things were wrong, but the purchase of the
21	house was not one of those times?
22	A. I don't remember if those were my exact words.
23	Q. Words to that effect?
24	A. I don't remember.
25	MR. COHEN: Why don't we pull up 3501-28 at page 9.
I	

	-00673-LAK Document 368 Filed 12/12/23 Page 123 of 187 1612
1 I	f we can go to page 9 just for the witness, bottom of
2 9. Go bac	k. I think we might have to go to page 10.
3 G	o back to 9. I'm sorry, Brian. Top of 9. I got it.
4 P	oull out the paragraph at the top of 9.
5 Q. Read t	he first paragraph to yourself. My question is
6 simply whe	ther it refreshes your recollection of you telling
7 the prosec	utors there are points along the way when you had a
8 pit in you	r stomach and felt things were wrong, but the
9 purchase o	of the home was not one of those times.
10 A. Sorry.	I don't see an exhibit in front of me.
11 T	THE COURT: We are now getting into the area of
12 essentiall	y reading a document that's not in evidence. I know
13 what you a	re trying to do, but it's not working, so try a
14 different	way.
15 A. My scr	een is blank.
16 Q. Your s	creen is blank.
17 M	IR. COHEN: Can we put his screen back up and then we
18 will move	on. Top of page 9.
19 (Continued on next page)
20	
21	
22	
23	
24	
25	

	N2at5beBA22-cr-00673-LAK Document 368- Filed 의 오/12/23 Page 124 of 187 1613
1	THE COURT: Please put a question.
2	MR. COHEN: Okay. Is it back up? I'm sorry.
3	THE COURT: Yes.
4	BY MR. COHEN:
5	Q. Again, Mr. Singh, yes or no: Does the passage at the top
6	of that page, page 9, refresh your recollection about whether
7	you told the prosecutors there were points along the way when
8	you had a pit in your stomach and felt things were wrong but
9	the purchase of the home was not one of those times?
10	A. Not really.
11	Q. Okay. Do you recall in that same meeting being asked about
12	the political donations
13	MR. ROOS: Can we take down the document.
14	MR. COHEN: Yes, please.
15	Q. Do you recall being asked in the same meeting about whether
16	or not the political donations you made were loans to you?
17	MR. ROOS: Objection to what meeting.
18	Q. The meeting with the government on January 19th.
19	A. I don't remember what was discussed at each meeting
20	exactly.
21	Q. Do you remember telling the government in January, whether
22	you remember the date, that you did not feel like you—let me
23	back up—there were points along the way when you had a pit in
24	your stomach and felt things were wrong but you did not feel
25	like that when you treated the transfers from Alameda as loans
Į	

	NCatsleBA 22-cr-00673-LAK Document 368- Filed st 2/12/23 Page 125 of 187 1614
1	without questioning further?
2	A. Still not sure I said that.
3	Q. You're not sure whether you ever told the government that
4	the transfers from Alameda were not loans to you?
5	A. Sorry. Do you mind repeating the question.
6	Q. Yeah. Did you ever deny to the government that the
7	transfers from Alameda were loans to you?
8	A. I don't know if I—I characterized them and described how I
9	viewed them. I don't know that I—I can't remember what
10	exactly I said.
11	Q. Did there come a time in January where you understood the
12	government was frustrated with your proffer?
13	MR. ROOS: Objection.
14	THE COURT: Sustained.
15	Q. Did there come a time when you met with the government and
16	you went over the topic of the Orcas Island house again?
17	A. I can't remember if we went over it multiple times or not.
18	Q. Okay. After the time we've just been discussing.
19	MR. ROOS: Objection.
20	THE COURT: What's the objection?
21	MR. ROOS: Vague.
22	THE COURT: Rephrase.
23	Q. You just told us about a meeting in January with the
24	prosecutors—you didn't remember the date—where you talked
25	about the Orcas Island house, correct?
ļ	

	N 2 4 5 1 2 2 - cr-00673-LAK Docum 양 10 8 - Filed 12 / 12 / 23 Page 126 of 187 1615
1	MR. ROOS: Objection. I think he said he couldn't
2	recall that, could not recall that.
3	THE COURT: Answer the question, Mr. Singh. if you
4	can.
5	A. I recall speaking with the prosecutors at some point, at
6	least one point, about my purchase of the Orcas Island home,
7	even after I knew that it was drawing on customer funds.
8	Q. Do you recall telling the prosecutors, as of January 24th,
9	that you viewed the spending as egregious and unnecessary?
10	A. Which spending?
11	MR. ROOS: Objection.
12	Q. On the Orcas Island house.
13	THE COURT: Well, rephrase the question, please.
14	Q. After the—do you recall having a meeting with the
15	prosecutors in January, on January 24th, on or about
16	January 24th, in which you told them that the spending on the
17	Orcas Island house was egregious and unnecessary?
18	A. My spending on it was egregious, unnecessary, and selfish.
19	Q. Okay. Did you tell them that your spending on the
20	political donations was egregious and unnecessary?
21	A. I don't recall what I said, but I agree with those
22	descriptions.
23	Q. And you previously denied that that was the case.
24	A. Not that I recall.
25	Q. Okay. Now Mr. Roos showed you your plea agreement—excuse
I	SOUTHERN DISTRICT REPORTERS, P.C.

(212) 805-0300

	N2:
1	me—your cooperation agreement.
2	MR. COHEN: Let's call that back up, 3501-002.
3	Q. If you start at the—right here, that lists out the counts
4	you pled guilty to, correct?
5	A. Right. That's—that describes the first count and—
6	Q. We don't need to go through them all.
7	MR. COHEN: If we can go to the next page.
8	And pull out Count Six, Brian.
9	Q. Is it fair to say that one of the counts you pled guilty
10	to, Mr. Singh, was a conspiracy to violate the Federal Election
11	Campaign Act?
12	A. Yes.
13	MR. COHEN: I have nothing further, your Honor.
14	THE COURT: Thank you.
15	Redirect.
16	MR. ROOS: I'm sorry, your Honor. Could we have one
17	moment with your Honor at the sidebar.
18	THE COURT: You may.
19	(Continued on next page)
20	
21	
22	
23	
24	
25	
I	

1 (At the sidebar) 2 MR. ROOS: The last question was: "Did you conspire 3 to violate the Federal Campaign Election Act?" "A. Yes." I 4 intend to ask: "Who did you conspire with?" I just want to 5 put that out there, in light of the prior rulings. I think 6 they've opened the door. With any limiting instruction		₩2456B1422-cr-00673-LAK Document 368 Filed 12/12/23 Page 128 of 187 1617
to violate the Federal Campaign Election Act?" "A. Yes." I intend to ask: "Who did you conspire with?" I just want to put that out there, in light of the prior rulings. I think they've opened the door. With any limiting instruction. MR. COHEN: We would ask for a limiting instruction. MR. COHEN: I'll give a limiting instruction. MR. ROOS: Okay. (Continued on next page) (Continued on next page) (Continued on next page) (Continued on a next page) (C	1	(At the sidebar)
<pre>intend to ask: "Who did you conspire with?" I just want to put that out there, in light of the prior rulings. I think they've opened the door. With any limiting instruction</pre>	2	MR. ROOS: The last question was: "Did you conspire
5 put that out there, in light of the prior rulings. I think 6 they've opened the door. With any limiting instruction— 7 MR. COHEN: We would ask for a limiting instruction. 8 THE COURT: I'll give a limiting instruction. 9 MR. ROOS: Okay. 10 (Continued on next page) 11	3	to violate the Federal Campaign Election Act?" "A. Yes." I
they've opened the door. With any limiting instruction- MR. COHEN: We would ask for a limiting instruction. THE COURT: I'll give a limiting instruction. MR. ROOS: Okay. (Continued on next page) (Continued on next page)	4	intend to ask: "Who did you conspire with?" I just want to
 MR. COHEN: We would ask for a limiting instruction. THE COURT: I'll give a limiting instruction. MR. ROOS: Okay. (Continued on next page) (Continued on next page) 	5	put that out there, in light of the prior rulings. I think
8 THE COURT: I'll give a limiting instruction. 9 MR. ROOS: Okay. 10 (Continued on next page) 11	6	they've opened the door. With any limiting instruction
9 MR. ROOS: Okay. 10 (Continued on next page) 11 12 13 14 15 16 17 18 19 20 21 22 23	7	MR. COHEN: We would ask for a limiting instruction.
10 (Continued on next page) 11 12 13 14 15 16 17 18 19 20 21 22 23	8	THE COURT: I'll give a limiting instruction.
11 12 13 14 15 16 17 18 19 20 21 22 23	9	MR. ROOS: Okay.
12 13 14 15 16 17 18 19 20 21 22 23	10	(Continued on next page)
13 14 15 16 17 18 19 20 21 22 23	11	
14 15 16 17 18 19 20 21 22 23	12	
15 16 17 18 19 20 21 22 23	13	
16 17 18 19 20 21 22 23	14	
17 18 19 20 21 22 23	15	
18 19 20 21 22 23	16	
19 20 21 22 23	17	
20 21 22 23	18	
21 22 23	19	
22 23	20	
23	21	
	22	
24	23	
	24	
25	25	

	₩245458874.22.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.
1	(In open court)
2	REDIRECT EXAMINATION
3	BY MR. ROOS:
4	Q. Mr. Singh, the last question Mr. Cohen asked you was
5	whether you pleaded guilty to conspiring to violate the Federal
6	Campaign Election Act. Do you recall that question?
7	A. I do.
8	Q. Who did you conspire with?
9	THE COURT: Excuse me. Members of the jury, you're
10	about to hear the answer to that question, and I remind you
11	that regardless of the answer to that question,
12	Mr. Bankman-Fried, for reasons that do not concern you, is not
13	charged in this case with any violation or conspiracy to
14	violate the federal election campaign laws.
15	Now you may answer the question.
16	A. Sam Bankman-Fried and Ryan Salame.
17	Q. You were asked earlier today if some notes—a few times
18	today—if some notes refreshed your recollection. Do you
19	remember those questions?
20	A. Some of them, yes.
21	Q. Did you take those notes that you were shown?
22	A. No.
23	Q. At your meetings with prosecutors, did you observe anyone
24	taking notes?
25	A. Yes, sometimes.

	₩2454884822-cr-00673-LAK Document 368-FRed 12422/23 Page 130 of 187 1619
1	Q. Did anyone ever ask you to review the notes?
2	A. Never.
3	Q. Prior to today had you ever seen them?
4	A. I've never seen those notes until today.
5	Q. Were you ever asked to review them for accuracy?
6	A. No.
7	Q. And have you ever read the entirety of the notes?
8	A. I don't think, except for today, I've ever read any amount
9	of the notes.
10	Q. You were asked at the end there about a property you
11	bought, a home. What happened to that property?
12	A. I forfeited it.
13	Q. What do you mean?
14	A. It was totally
15	MR. COHEN: Objection.
16	THE COURT: What's the objection?
17	MR. COHEN: Beyond the scope.
18	MR. ROOS: He opened the door.
19	THE COURT: Overruled.
20	Q. Go ahead.
21	A. I bought it at a time when I understood that I was putting
22	myself ahead of customers by doing so. I was embarrassed and
23	ashamed. Forfeiting it seemed like one of the ways to right
24	that one small wrong, at least a little. So the wrong wasn't
25	small but the righting was small.
24	that one small wrong, at least a little. So the wrong wasn't

	₩24658B1A122-cr-00673-LAK Document 368- FRed 1124122/23 Page 131 of 187 1620
1	Q. You were asked some questions about auto-deleveraging
2	event. Do you remember those questions this morning?
3	A. I do.
4	Q. And you were shown some computer code. Do you remember
5	that?
6	A. I was shown code—commit snippets.
7	Q. Thank you. You were shown a code commit.
8	A. Yes.
9	Q. When was that from?
10	A. When was which part from?
11	Q. The code commit about auto-deleveraging.
12	A. August 2020.
13	Q. Now do you recall testifying yesterday about Alameda having
14	a negative balance in September 2022?
15	A. Yes.
16	Q. And how big was the negative balance?
17	A. Gary told me Alameda was borrowing \$13 billion in September
18	2022.
19	Q. And when Alameda was borrowing \$13 billion in September
20	2022, was that the result of auto-deleveraging?
21	A. I fail to see the relationship between them. No.
22	Q. You were asked about earlier today a loan for 700-for
23	\$477 million. Do you remember those questions?
24	A. I do.
25	Q. What was the purpose of the loan?

1621 N2458BA 2-cr-00673-LAK Document 368- Filed 12/2/23 Page 132 of 187 1 The purpose of the loan was nominally for me to exercise my Α. 2 shares. I had money sufficient to do so otherwise. This 3 particular loan was a part of a structure that Sam proposed 4 with the goal of having Alameda lay out less cash than it would 5 if I just exercised the original options I had. 6 To be clear, did \$477 million ever go to you? Ο. 7 It was really only on paper. No. Α. 8 You were also asked earlier today-0. 9 THE COURT: Before you go on, you used the phrase 10 "exercise my shares." Please explain to the jury what you 11 meant by that. 12 THE WITNESS: Sorry. Exercise my options. 13 Before the event in which I got the large \$477 million 14 loan, I already had a large amount of options with a very low 15 strike price. Sam's proposal was to redo them to strike them 16 at a much higher price, such that it would cost me more to 17 exercise them but that this way there wouldn't be tax that 18 ultimately Alameda would have to pay by letting me sell more 19 FTT. 20 THE COURT: Now explain what you meant by "strike," 21 please. 22 THE WITNESS: Options are contracts that give you the 23 right to get equity if you pay some amount. That amount is the 24 strike price. So in my case, I think my original options had a 25 strike price of \$2.60 something cents, meaning that in order to

	₩2abbeB1A22-cr-00673-LAK Document 368- Filed 112#122/23 Page 133 of 187 1622
1	get one share of equity, it would be \$2.60 some cents to get a
2	share of equity. They were restriked to be like some \$10.86, I
3	think, meaning that I'd have to pay more to get the equity,
4	\$10.86 I think for each share. So exercising after them being
5	restricken would cost me more than exercising them in the state
6	that they were granted to me.
7	THE COURT: Proceed, counselor.
8	MR. ROOS: Thank you, your Honor.
9	BY MR. ROOS:
10	Q. Mr. Singh, you were asked earlier today about some
11	political donations and you said they were loans "in loose
12	sense." What do you mean by "loose sense"?
13	A. These were amounts that I discovered had been transferred
14	to me often after the fact. It is the case that I intended to
15	repay them all until September, when I realized I no longer
16	could. That's the only sense in which they are loans. There
17	wasn't paperwork, there wasn't a discussion of the transfers to
18	me that I was a part of, and when I—I requested loan sheets,
19	like lists of loans that Alameda had given, when asked from
20	Jayesh, from Caroline, and from Can Sun, did not—they did not
21	include many of these transfers as obligations I had to pay
22	back. So they weren't—they weren't really loans.
23	Q. Now you were asked a few questions a few moments ago by
24	Mr. Cohen about times you considered resigning. Do you
25	remember those questions?

	M2451=B1A122-cr-00673-LAK Document 368- FRed 112≉122/23 Page 134 of 187 1623
1	A. I do.
2	Q. And you testified that you thought about resigning from FTX
3	a few times; is that right?
4	A. Yes.
5	Q. How, if at all, was your contemplated resignation in the
6	fall of 2022 different?
7	A. Oh, it was extremely different. In the fall of '22, I
8	want—the reason I wanted to resign was because I knew that I
9	was becoming party and participating in something heinously
10	criminal; that to keep running the business without divulging
11	to others that there was a hole, I would be betraying customers
12	that deposited their money into the hole, betraying my other
13	employees. The scale of wrongdoing was enormous. In previous
14	cases where I considered resigning, my considerations were
15	really just focused on me—things like if working in finance
16	and trying to make money was better than working directly at a
17	philanthropy, things like that.
18	MR. ROOS: No further questions.
19	THE COURT: Thank you.
20	Any recross?
21	MR. COHEN: No, your Honor.
22	THE COURT: All right. Thank you. You're excused,
23	sir.
24	(Witness excused)
25	THE COURT: Next witness.
I	

	₩274548934.222-cr-00673-LAK DocumBent 3668 -Filedir142¢12/23 Page 135 of 187 1624
1	MS. KUDLA: The government calls Agent Richard Busick.
2	THE DEPUTY CLERK: Please step around and raise your
3	right hand.
4	(Witness sworn)
5	THE DEPUTY CLERK: Thank you. Please be seated.
6	And can you please state your name and spell your last
7	name for the record.
8	THE WITNESS: My name is Richard Busick, B-U-S-I-C-K.
9	THE COURT: You may proceed, Ms. Kudla.
10	MS. KUDLA: Thank you, your Honor.
11	RICHARD BUSICK,
12	called as a witness by the Government,
13	having been duly sworn, testified as follows:
14	DIRECT EXAMINATION
15	BY MS. KUDLA:
16	Q. Agent Busick, where do you currently work?
17	A. I'm a special agent with the Federal Bureau of
18	Investigation, also known as the FBI.
19	Q. And how long have you been a special agent?
20	A. For over 21 years.
21	Q. And are you assigned to a particular unit at the FBI?
22	A. Yes, I'm a member of the Cellular Analysis Survey Team,
23	also known as CAST.
24	Q. And how long have you been a member of the CAST unit?
25	A. I've been a member of the CAST unit for approximately two
l	

	₩244548BA22-cr-00673-LAK DocumBernst 36% -Filedir1e2¢12/23 Page 136 of 187 1625
1	years.
2	Q. Broadly speaking, what are your responsibilities and duties
3	within that unit?
4	A. As a member of the CAST unit, we—we locate cellphones and
5	mobile devices in the context of investigations and also to
6	assist in locating people in realtime. We do this by utilizing
7	the business records provided by the service providers, such as
8	AT&T, T-Mobile, and Verizon, and by analyzing those records, we
9	can determine which cell sites within the network a phone
10	connected to at particular times, and then we can use that
11	information to determine the approximate location of that phone
12	at those times.
13	Q. And Agent Busick, have you received training related to the
14	high-level cell site analysis you've just described?
15	A. Yes, I have.
16	Q. What types of training have you received?
17	A. There's a pretty extensive training pipeline to become a
18	member of the CAST unit. Begins, as you might expect, with a
19	basic course called Basic Historical Cell Site Analysis, where
20	we learn the basics of what I just described, using the
21	business records to determine the approximate locations of
22	phones based on the data kept by those service providers when
23	those phones connect to the network.
24	Q. And after the basic level of courses, have you received any
25	advanced coursework?
ļ	

	N2#abbeB1A1222-cr-00673-LAK Documentat B68 -Filedir1e2¢12/23 Page 137 of 187 1626
1	A. Yes, following the basic course, I attended an advanced
2	historical cell site course, where we delved into a bit more
3	detail and got a lot of practical and hands-on experience,
4	actually determining the locations of phones based on cellular
5	records, producing maps and written reports, and just
6	conducting general analysis, as well as developing an
7	increased—an improved understanding of each of the providers'
8	cellular networks and how they operate.
9	Q. And Agent Busick, as part of that training, does it ever
10	require any completion of exams?
11	A. Yes, it does, and as it—as that training progressed, there
12	were regular examinations that we were required to successfully
13	complete.
14	Q. And are you required to conduct any ongoing training
15	requirements, Agent Busick?
16	A. Yes, I am. So in order to become a member of the CAST
17	unit, you have to complete a four-week certification course,
18	which I did in fact complete. And that course involved more
19	in-depth instruction and meeting with the representatives of
20	each of the major service providers, so we met with custodians
21	of records and cellular network engineers from AT&T, Verizon,
22	and T-Mobile, to discuss in greater detail how their own
23	networks operate, the types of records they maintain, and so
24	forth. We had a lot of practical and hands-on experience in
25	conducting historical cell site analysis. We received 40 hours
ļ	

	M246548B1A1222-cr-00673-LAK DocumBente B688 -Filedir142⊄12/23 Page 138 of 187 1627
1	of instruction in radio frequency theory from the Florida
2	Institute of Technology, where we learned, again, in greater
3	detail about cellular network architecture, how cellphones
4	work, and so forth, and we also received instruction and got
5	hands-on practical experience conducting cellular network
6	surveys or drive tests, where we can use some technology to
7	actually determine the precise coverage areas of particular
8	cell sites of interest.
9	Q. And approximately how many times have you performed a cell
10	site analysis?
11	A. Well over a thousand times.
12	Q. And have you ever testified in court before as an expert in
13	cell site analysis?
14	A. Yes, I have, approximately 18 times.
15	Q. And is that in both state and federal courts?
16	A. Yes, it is.
17	MS. KUDLA: Your Honor, at this time the government
18	offers Special Agent-
19	THE COURT: Not necessary. Go ahead.
20	Q. Special Agent Busick, were you asked to perform a cell site
21	analysis in connection with a particular cellphone?
22	A. Yes, I was.
23	Q. And at a general level, what were you asked to do?
24	A. At a general level, I was given a set of records for a
25	particular phone—in this case it was an AT&T phone—and I was

	N 2 성 2 - cr-00673-LAK Document 36% 두iled 12/23 Page 139 of 187 1628
1	asked to determine initially whether the records indicated that
2	the phone was located or using cellular architecture within
3	Manhattan during a particular time frame; and then later on, I
4	was given more specific time frames and particular locations
5	and asked to determine whether those records were consistent
6	with that phone being located in—at or in the vicinity of
7	those locations at those times.
8	MS. KUDLA: Mr. Bianco, can we please now show for the
9	witness what is marked for identification as Government
10	Exhibit 1080.
11	Q. And Agent Busick, do you recognize this?
12	A. Yes, that's the cover page to my report.
13	Q. And does this report summarize your analysis?
14	A. Yes, it does.
15	Q. Now did you prepare Government Exhibit 1080 after examining
16	AT&T cellphone records?
17	A. Yes, I did.
18	MS. KUDLA: And at this time, your Honor, the
19	government offers, pursuant to stipulation 2004, a stipulation
20	as to business record authenticities, and pursuant to that
21	stipulation, the government also offers Government Exhibits
22	1118 and 1122 as authentic copies of records from AT&T?
23	THE COURT: Government Exhibits 2004, 1118, and 1122
24	are received.
25	(Government's Exhibits 2004, 1118, and 1122 received
ļ	

	M241548B12422-cr-00673-LAK DocumPerns 368 -Filedir12¢12/23 Page 140 of 187 1629
1	in evidence)
2	MS. KUDLA: Your Honor, may we publish Government
3	Exhibit 1118?
4	THE COURT: Yes.
5	BY MS. KUDLA:
6	Q. Agent Busick, what is—now that the jury can see this, what
7	is Government Exhibit 1118?
8	A. This is a page from the cellular records from AT&T for
9	cellphone 650-906-9179, which I used for my analysis in this
10	case.
11	Q. And did you review more than one file type for your
12	analysis?
13	A. Yes. AT&T provides the files in two formats. It provides
14	a pdf file, which makes for easy viewing and reference; and
15	they also provide the identical records in a text file, which
16	is actually the file that we upload into the software that we
17	use for mapping, but contains the same information as the pdf.
18	Q. And Agent Busick, which file type are we looking at here?
19	A. So this here is the pdf file.
20	Q. And is Government Exhibit 1122 the text file?
21	A. I believe it is, yes.
22	Q. Now, Agent Busick, did you prepare Government Exhibit 1080
23	after examining the AT&T records that we see in Government
24	Exhibit 1118?
25	A. Yes, I did.

	₩27452=B1A222-cr-00673-LAK Documente 368 -Filed 122/122/23 Page 141 of 187 1630
1	Q. Agent Busick, how many—approximately how many pages of
2	data are captured by Government Exhibit 1118?
3	MS. KUDLA: And we could take—Mr. Bianco, could we go
4	to the last page of this document.
5	I think it's 14,941.
6	A. That is about right.
7	Q. Okay. And is it fair to say, Agent Busick, that there are
8	thousands of rows of data in this exhibit?
9	A. Yes, there are.
10	Q. Now does Government Exhibit 1080 accurately summarize
11	certain portions of these records?
12	A. Yes, it does.
13	MS. KUDLA: Your Honor, the government offers
14	Government Exhibit 1080 pursuant to Rule 10006.
15	THE COURT: 1006.
16	MS. KUDLA: 1006.
17	THE COURT: But it's received. You just got carried
18	away with the pages.
19	MS. KUDLA: Fair enough.
20	(Government's Exhibit 1080 received in evidence)
21	BY MS. KUDLA:
22	Q. Agent Busick, we'll turn back to your summary in a minute.
23	MS. KUDLA: And we can take down Government
24	Exhibit 1118 at this time.
25	Q. First, I'd like to just discuss the basic concept involved
I	

NCASEBAN2-cr-00673-LAK Document 368 Filedrig/12/23 Page 142 of 187 1631 in cell site analysis. At its most basic level, how does a cellphone make or receive a phone call?

1

2

The important thing to understand about a cellphone is that 3 Α. 4 it's basically a radio. It's-a good way to think about a 5 cellphone and how it works would be to think about a pair of 6 walkie-talkies that you may have played with as a child, or 7 maybe your kids have played with, or if you have one and you 8 give one to a friend, and you're within a short distance from 9 each other, usually line of sight, you press the button and you 10 can talk back and forth between those walkie-talkies. A 11 cellphone is working on the same principle, that rather than 12 talking directly to another cellphone, it's sending a signal 13 out which is being received by a cell site that's been 14 established by a service provider for the purpose of connecting 15 with nearby cellphones.

16 Q. Agent Busick, I think that was my next question. What is a 17 cell site?

18 So a cell site is nothing more than a particular location Α. 19 where the service provider placed antennas for the purpose of 20 connecting with nearby cellphones. You might think of a cell 21 tower, you may think of, on the standalone towers, that 22 triangular structure on the top with the antenna that we see 23 everywhere on the sides of highways and so forth. That's one 24 example. Although it doesn't have to be on a tower. It may be 25 on the sides of buildings, could be on lampposts or other poles

NCASEBAN2-cr-00673-LAK Document BGB Filedrie 2/12/23 Page 143 of 187 1632
on the street or even inside of buildings. The important thing
is it's just a particular location where the service provider
has placed those antennas.

And how do cellphones interact with the cell site? 4 Ο. So while your phone is off, before it's even connected to 5 Α. 6 the network, it's scanning the signals from nearby cell sites 7 looking for the cell site that provides it with the best 8 signal, so that when you make or receive a call, you have a 9 good quality connection and can make that call. So it's 10 constantly scanning the network, looking for that best signal, 11 as well as identifying itself to the network as to where it's 12 located in the network, so if somebody calls your phone, the 13 service provider can appropriately route it to your call, so 14 that by the time you pick up your phone and punch in a number 15 and press send to make a call, your phone already knows which 16 cell site is providing that best signal, and when you press 17 send, your phone is communicating with that nearby cell site 18 and then it's being routed throughout the network to wherever 19 its ultimate destination is, whether that's on the other side 20 of the street, across the country, or around the world. 21 Now you've mentioned the term "service provider." Who 0.

22 operates cell sites?

A. So each cell site—each service provider operates their own
network of cell sites. So AT&T operates a network of AT&T cell
sites, T-Mobile operates T-Mobile cell sites, and Verizon

	NCadsbeBAN22-cr-00673-LAK Documbernt 3668 -Filedir12¢12/23 Page 144 of 187 1633
1	operates Verizon cell sites. So if you—
2	Q. On that point, do service providers maintain data about
3	certain cellphone interactions with cell sites?
4	A. Yes, they do.
5	Q. And what type of cellphone interactions are captured?
6	A. So in this case, where we're looking at an AT&T phone, AT&T
7	maintains records for every connection between that phone and
8	the network, to include when a call is made or received, when a
9	text message is sent or received, or when that phone is
10	utilizing data connection, data services. This might include
11	using the internet, any types of apps, anything that's using
12	cellular data to connect to the network.
13	Q. Now generally, what determines which cell site a cellphone
14	will connect to?

15 So the cell site is looking for that best signal. All Α. 16 things being equal, the best signal we would expect to be from 17 the nearest cell site. The closer you are to an antenna 18 broadcasting a signal, the better that signal and the stronger 19 that signal is going to be. There are other factors that do determine which cell site a phone will connect to, especially 20 21 in a very dense cellular environment like New York City, where 22 there are a lot of cell sites everywhere, but distance is that 23 most important factor.

Q. Speaking of density, how would you describe the density ofthe cell sites in New York City?

NCAUSEBAN2-cr-00673-LAK Document 36% Filedrig/12/23 Page 145 of 187 1634
A. Extremely dense, especially within Manhattan itself. Due
to the volume, not just the density of population but the
volume of AT&T customers, it's extremely dense. There are cell
sites virtually everywhere. There's usually more than one on a
block.

MS. KUDLA: And Mr. Bianco, can we please publishGovernment Exhibit 1080, slide 3, please.

8 Q. Agent Busick, what is shown in slide 3?

So this is an illustration of the AT&T network in the 9 Α. 10 greater Manhattan area. Each of those blue dots represents the 11 specific location of an AT&T cell site, and you can see Manhattan located in the center of the screen. Those dots are 12 13 basically on top of each other to the point where we can't 14 really discern the exact location of individual dots, again, 15 owing to that density of usage in Manhattan. And you can see 16 that as we leave Manhattan and we get further outside of the 17 city, especially, say, if we travel west into New Jersey 18 towards the left and upper left portion of the screen, where 19 that population density and usage density is less, those cell 20 sites are located a bit further apart because less architecture 21 is needed to support the same-to support the customers in 22 those areas.

Q. Focusing for a moment on the density of cell sites in the New York City metropolitan region, how does that assist, if at all, with your ability to identify a cellphone location?

ModelseBA22-cr-00673-LAK Document 368 Filed 12/23 Page 146 of 187 1635 1 So each cell site is designed by the network or by the Α. 2 service provider to provide coverage to a specific coverage 3 area within its immediate vicinity. Now the further apart 4 those cell sites are located, the larger those coverage areas 5 are going to be, and so what we're-what I'm doing when I'm 6 conducting my analysis is looking at which cell site a phone 7 connected to and, based on an approximation of the coverage 8 area, determining an approximate location of where that phone 9 So therefore, the larger the coverage area, the less would be. 10 precise we can be about locating the phone. If cell sites are 11 miles apart, that's going to be a much larger area. Now in 12 somewhere like Manhattan and other parts of New York City where 13 those cell sites are located very close together, that coverage 14 area is going to be a bit more precise because the distance 15 between cell sites is much less. 16 Now, Agent Busick, you had mentioned cellphones typically Q. 17 connect to the strongest and clearest signals. What are some, 18 if any, reasons that they may not do so? 19 So there are several factors that might affect which cell Α. 20 site is actually providing that best signal that the phone 21 connects to. One of those is geography or terrain. In New 22 York City we could think of things like large buildings. An 23 example I like to use is that if we were standing outside the 24 front door of, say, the Empire State Building and just on the

25 other side of the Empire State Building on the same block was a

	₩2458881422-cr-00673-LAK Documenters 368 Filed 12/12/23 Page 147 of 187 1636
1	cell site that was the closest one to us, but between us and
2	that cell site was the Empire State Building, however, on the
3	same side of the building I'm on, say, three blocks away is
4	another cell site that I can actually see with my own eyes and
5	there's no obstructions, even though that one is slightly
6	further away, I might actually receive a better signal from
7	that one because there's just nothing obstructing it. So
8	that's one of theone of the typical factors that could affect
9	where that better signal is going to come from. The important
10	thing to know is that the phone has to be within the designated
11	coverage area of that particular cell site. So if I'm in
12	Manhattan near the Empire State Building, I'm not going to
13	connect to a cell site down by the World Trade Center because
14	there's hundreds, at least, if not thousands of cell sites
15	between those two areas. So I'm going to need to be in the
16	general vicinity of the cell site that I'm connecting to.
17	MS. KUDLA: At this time, Mr. Bianco, can you please
18	turn to slide 4.
19	Q. Agent Busick, are you familiar with the term "sectors"?
20	A. Yes, I am.
21	Q. And using slide 4, can you describe to the jury what a
22	sector is.
23	A. So many times, many cell sites are set up with what we call
24	sectors. So what we're looking at on the screen here would be
25	a bird's-eye view on the right of what I call a typical

ModelseBA22-cr-00673-LAK Documente 368 Filed 12/23 Page 148 of 187 1637 1 cellphone tower. Like I mentioned earlier, think of that 2 standalone, you know, steel structure with a triangular-shaped 3 thing on top with the antennas on it. This is looking directly 4 over that. And you can see on each side of that triangle there 5 are some things that are sticking out of it. Those are the 6 actual antennas which are broadcasting signals. So what the 7 networks will often do in order to provide better coverage and increased capacity within-from particular cell sites is 8 9 they'll sectorize those, those sites, and what that means is, 10 you can see on the top of this there's antennas that are facing 11 the top of the screen, which is labeled as north. Those would 12 be sector 1, and that's broadcasting a signal that's going to 13 be radiating out in roughly this direction, within the red area 14 depicted.

15 If we were to move clockwise around the cell site and 16 more towards the lower right portion of the screen, we can see 17 there are antennas on this side that's broadcasting signal out 18 in this direction. That would be sector 2. And if we were in 19 that general area of the—in relation to the tower, we'd expect 20 to be receiving signal from sector 2. And so on as we continue 21 around the tower.

Now why this is important or helpful is that within the records provided by AT&T and all the providers, they will indicate not just which particular cell site a phone connected to but if that site is sectorized and there are antennas

	₩2455883422-cr-00673-LAK DocumBent 368 -Filed 12/23 Page 149 of 187 1638
1	broadcasting a specific direction, it will indicate that as
2	well, which helps us to know approximately which direction from
3	the tower the phone was located at the time it made that
4	connection.
5	Q. So Agent Busick, you just referenced service provider
6	records. So let's turn back to the AT&T records to put this
7	all together.
8	MS. KUDLA: Mr. Bianco, can you please publish what's
9	in evidence now as Government Exhibit 1118. Let's turn to
10	page 22.
11	And can we highlight the top portion of this page,
12	including row 1.
13	Q. Okay. So Agent Busick, moving from left to right in row 1,
14	I'm going to have you briefly identify just a few of these
15	columns. In particular let's start with Conn. Date. What does
16	that refer to?
17	A. So that refers to the connection date or the date of this
18	particular connection between the phone and the network.
19	Q. And then the next row is connection time, Conn. Time. What
20	is that?
21	A. That's the time of day that the phone connected to the
22	network, given in military or 24-hour time, and it's also given
23	in what's called UTC, or Universal Coordinated Time.
24	Q. And why is Universal Coordinated Time typically used?
25	A. All the cellular providers typically use Universal

12451-122/23 Page 150 of 187 1639 1 Coordinated Time for consistency, because as a phone travels, 2 say, you know, throughout the country or around the world, 3 across time zones, it just keeps one consistent time zone that 4 all records are kept in, and in conducting an analysis, we just 5 need to convert UTC time to the local time to know what time 6 that phone connected relative to where we are. 7 THE COURT: And the UTC time relates to Eastern Time how? 8 9 THE WITNESS: So UTC time is either four or five hours 10 ahead of Eastern Time, depending on whether we're in Eastern 11 Standard or Eastern Daylight Time. Currently we're in Eastern 12 Daylight Time, which is generally the summertime months, and so 13 UTC time is four hours ahead of the current time. So in the 14 record that we're looking at here, this was actually 15 February 11th, so that would be Eastern Standard Time, which is 16 five hours behind UTC time, so we would subtract five hours 17 from the given time, which would give us 1803:47, which would 18 be 6:03 p.m. 19 THE COURT: Thank you. 20 BY MS. KUDLA: 21 Q. Now let's move to the right to Originating Number. Let's 22 look at that column for a moment. What is the originating 23 number? 24 So the originating number is the number that originated the Α. 25 particular call that we're looking at. So you can see just

	₩2454812.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.
1	above that line is a—something that says Voice Usage For and
2	this is our target number here, that 650-906-9179. If this was
3	an outgoing call made by that phone, we would expect to see
4	that number in the Originating Number column. Because this was
5	an incoming call, the number that is displayed there is the
6	number of the phone which called our target phone.
7	Q. And that leads us to the Terminating Number.
8	A. The Terminating Number is just the opposite. So here we
9	can see that that terminating number ends in 9179. That's
10	because it was an incoming call to our target phone. Again, if
11	it was an outgoing call placed by our target phone, we would
12	see the number there that our phone called.
13	Q. And then finally, let's look at the last column, Cell
14	Location. Can you describe what's in this row, or column.
15	A. The cell location provides information about the particular
16	cell site that the phone connected to at the beginning of this
17	call. So we see a long string of numbers there, separated by
18	colons. The first long number is the unique identifier within
19	the entirety of AT&T network of the particular antenna that
20	that phone connected to on the cell site that it connected to
21	at the time, and the next number is the number of the cell site
22	itself. So each cell site will often have numerous antennas
23	within that particular site so we get the identifiers for both
24	of those.
<u>ог</u>	

Next, we have the latitude and longitude—think GPS

SOUTHERN DISTRICT REPORTERS, P.C. (212) 805-0300

25

NCAUSEBIAN2-cr-00673-LAK Documbers B68 Filedrie2/12/23 Page 152 of 187 1641 coordinate—of the actual cell site itself, so that's the location of the antenna—not the phone but the antenna that the phone connected to at the time.

1

2

3

And then as we scroll over, the next column, which is really the last column that's important, which says 0, that gives us the azimuth or direction from the tower that that signal is being broadcast. So 0-degree azimuth would correspond to a signal being broadcast at 0 degrees or due north. If we think back to that previous slide, that was that red area towards the top of the page.

11 And Agent Busick, what do you do with the data that you've Q. 12 just described when performing your cell site analysis? 13 So I do a couple things. First of all, I take the text Α. 14 version of this file with the identical information, I upload 15 it into some mapping software we use, which assists us in 16 visualizing the data on a map, so I import that, and then 17 within, you know, the particular time frames of interest, I can 18 determine which connections were made and the approximate 19 location of the phone at that time based on that cell location 20 information. I also take this information here from this pdf 21 and I correlate it with a cell site list from AT&T, which is a 22 list that provides the information for all of the cell sites 23 within the AT&T network, and I verify that the cell site 24 identifiers here and the location that are provided are in fact 25 accurate and do accurately correspond to what is displayed on

	₩2451812.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2
1	the map itself.
2	MS. KUDLA: Mr. Bianco, we can take this down now.
3	THE COURT: Is this a good place for our break?
4	MS. KUDLA: Yes, your Honor.
5	THE COURT: Fifteen minutes, folks.
6	THE DEPUTY CLERK: Will the jury please come this way.
7	Please bring your notebooks.
8	(Recess)
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

	₩2745348BA222-cr-00673-LAK DocumBents 36% -Filedirte2¢12/23 Page 154 of 187 1643
1	MS. SASSOON: Your Honor, I think the parties would
2	like to discuss scheduling at the end of the today day so
3	either 4:30 or ending five minutes early, whatever.
4	THE COURT: I would love to discuss it too.
5	(Jury present)
6	THE COURT: The record will reflect that the defendant
7	and the jurors all are present, as they have been throughout.
8	You may continue, Ms. Kudla.
9	MS. KUDLA: Thank you, your Honor.
10	BY MS. KUDLA:
11	Q. Before the break, Agent Busick, we were looking at some
12	AT&T records. I would like to now focus on the analysis that
13	you performed in this case.
14	You had called out the number 650-906-9179, is that
15	correct?
16	A. That is correct.
17	Q. Who provided you with that number?
18	A. That number was provided to me by the government.
19	Q. And is that the number that you used to conduct your cell
20	phone analysis?
21	A. Yes, it was.
22	MS. KUDLA: At this point, your Honor, the government
23	offers Government Exhibit 342, pursuant to Government Exhibit
24	2003, a stipulation as to authenticity, and this is a true and
25	correct email.

	NC+13149B1A222-cr-00673-LAK DocumBents 3668 +Filedirte2¢12/23 Page 155 of 187 1644
1	THE COURT: Received.
2	(Government Exhibit 342 received in evidence)
3	MS. KUDLA: May we publish, your Honor?
4	THE COURT: You may.
5	MS. KUDLA: Mr. Bianco, can we please zoom in on the
6	bottom portion of page 1 and the top of page 2.
7	On September 4, 2022 at 8:42 a.m., pdavis51@gmail
8	wrote: Sam, my son Christopher is being engaged as a
9	consultant for an NFT entity that is considering your platform.
10	Grateful if you were to take a call to discuss. My son is
11	copied on this email. Thanks.
12	And the reply, on September 4, 2022, at 12:38 p.m.
13	from Sam Bankman-Fried, sam@ftx.com wrote: I'd be happy to.
14	Christopher, I'm 650-906-9179.
15	Q. Agent Busick, is the number that's highlighted on the
16	screen the same number that you analyzed?
17	A. Yes, it is.
18	MS. KUDLA: We can take that down now.
19	Q. Now, earlier you testified the type of analysis that you
20	conducted with respect to the location of this cell phone
21	number. Was there a particular time period you were asked to
22	analyze?
23	A. Yes. Generally speaking, I was asked to analyze a time
24	frame between roughly June of 2021 through November of 2022.
25	Q. What was the first thing that you were asked to do with

	₩244349874-22/23 Page 156 of 187 1645
1	respect to this time period?
2	A. I was initially asked to analyze the records to determine
3	if there were dates within those records in which the phone
4	utilized cell sites located within Manhattan.
5	MS. KUDLA: Mr. Bianco, at this time can we please
6	publish Government Exhibit 1080, slide 5.
7	Q. What's shown on slide 5, Agent Busick.
8	A. This is a list of the dates within that time frame in which
9	the phone number ending in 9179 utilized cell sites, AT&T cell
10	sites located in Manhattan, which would also be consistent with
11	the phone being located within Manhattan during those times.
12	Q. Were these dates determined use the cell site analysis that
13	you just described to the jury?
14	A. Yes, it was.
15	Q. You also testified earlier to a second portion of your
16	analysis.
17	Agent Busick, were you asked to determine approximate
18	vicinity, location of the cell phone during particular dates
19	and times during this time period?
20	A. Yes, I was.
21	Q. And is that analysis also contained in Government Exhibit
22	1080?
23	A. Yes, it is.
24	Q. Before we turn to that, let's orient the jury on some of
25	the items that they will see.
I	

	N 2 금방 2 - cr-00673-LAK Document 368 두i 2 년 1 2 / 12 / 23 Page 157 of 187 1646
1	MS. KUDLA: Mr. Bianco, can we please turn to slide 6
2	now at this time.
3	Q. Starting on the left of slide 6, can you please describe
4	what is shown in the three-sector illustration.
5	THE COURT: Is this slide 6 or slide 5?
6	MS. KUDLA: I apologize, your Honor. It's slide 5.
7	No. It is slide 6.
8	THE COURT: OK.
9	A. In the upper left, where it says three-sector illustration,
10	you'll see a map. On that map are blue dots which, again, are
11	those AT&T cell sites. Dots is a location of a AT&T cell site.
12	You can see how many there are just in that small area. You
13	can see a red wedge where the two arms of that wedge meet in
14	the center in one of those blue dots. It's a cell site that
15	was utilized for this particular connection. And we can see
16	that there is a shaded circle, which is facing roughly to the
17	upper right portion of the map that indicates the direction of
18	that sector or the direction that that signal was being
19	broadcast from that cell site during that connection.
20	Now
21	THE COURT: Go ahead.
22	THE WITNESS: I'm sorry, your Honor.
23	THE COURT: Go ahead.
24	A. Just to make it clear, the red circle doesn't denote the
25	extent of the coverage area. That's just a visual aid to help

Mode BA22 - cr-00673-LAK Document 368 - File d 12/23 Page 158 of 187 1647 1 illustrate which direction that signal is being broadcast, 2 especially when there is more than of these on a page. The 3 phone may be located within that circle, but it could be just 4 as likely located outside of that circle or arc area. 5 THE COURT: Just for the sake of clarity, in the binder you gave me, it's page 5. 6 7 MS. KUDLA: Your Honor, I believe you had an older 8 binder of Agent Busick last week, and we provided a more recent 9 copy today. 10 THE COURT: That's encouraging, but it's different. 11 Anyway, I have the same page. It's just numbered 12 differently. 13 MS. KUDLA: Your Honor, we discovered the problem. 14 There is a cover page. This is slide 5 in your binder. 15 Can we move down to the bottom portion. 16 Q. You described the three-sector illustration. 17 MS. KUDLA: Can we go to the omni directional antenna 18 illustration. 19 Sure. So we previously discussed a sectorized antenna, but Α. 20 there is also another type of antenna or cell site that service 21 providers use. That's called omni directional. That's where 22 there was just a single antenna broadcasting in 360 degrees. 23 Good way to think about this would be if we were to think about 24 a pole, a sectorized antenna would have say three flood lights 25 on the top, each one pointing out in a different direction

N24396BAN2-cr-00673-LAK Document 368 Filedright2/12/23 Page 159 of 187 1648
illuminating a different direction around that particular pole.
An omni directional site would be more like a table lamp
uncovered with just the bulb on there that was broadcasting in
360s. They are generally used to provide coverage to smaller
areas.

The differences is that we don't know which direction from the phone or from the cell site that the phone was located at the time that it made a connection, so we illustrate that with a circle.

However, like the illustration up above, the circle is not a hard boundary of the coverage area of that cell site. While an approximation, the phone could be located within the circle or it could be outside of the circle.

Q. Let's turn to the description on the right, the event box illustration. What are the items that we see here? A. The event box is the information from the records which corresponds to the display on the map, such as at the left. The event book we are looking at here actually corresponds to the three-sector illustration in the upper left.

So what it indicates up in the blue header band there, where it says CID, that's the unique identifier of the cell site, along with the sector that that phone connected to during that particular connection. And then down below is the information about what that connection was, so we see a date and time. The time has been converted into local time. This

	₩2745969742/23 Page 160 of 187 1649
1	is Eastern Daylight Time on August 12 of 2022 at 12:00 p.m.
2	This was an incoming call to the target phone, which is our
3	phone ending in 9179. It was a voice call. And the phone on
4	the other end of the line was 750-748-9222.
5	Q. For clarity, Agent Busick, in response to a couple of
6	questions today, what time zone did you use during your
7	analysis?
8	A. All of the maps that I prepared are in local time, in this
9	case that is eastern time. It will vary between Eastern
10	Standard or Daylight Time, depending on the time of the year,
11	but all times have been converted from the original records to
12	local time.
13	MS. KUDLA: Mr. Bianco, we can take Government Exhibit
14	1080 down now.
15	And at this time, your Honor, the government offers
16	Government Exhibits 221, 223, and 224, 281, and 282, 285
17	through 287, 290 through 293, and 302.
18	THE COURT: 297, did you say?
19	MS. KUDLA: No, your Honor. 290 to 293. And,
20	finally, 302. We offer those pursuant to government
21	stipulation 2003-A2 as true and correct emails.
22	THE COURT: Government Exhibits 221, 223, 224, 281,
23	282, 285 to 287 inclusive, 290 to 293 inclusive, and 302 all
24	are received.
25	(Government Exhibits 221, 223, 224, 281, 282, 285-287,
ļ	

 Q. Agent Busick, prior to your testimony today, have you reviewed Government Exhibit 293? A. Yes, I have. Q. And did you review similar appointment-type documents 		₩274896874822-cr-00673-LAK Documeente 86% -Filedirte2¢12/23 Page 161 of 187 1650
 Exhibit 293 at this time? THE COURT: Yes. MS. KUDLA: Can we zoom in on the top portion of this. Q. Agent Busick, prior to your testimony today, have you reviewed Government Exhibit 293? A. Yes, I have. Q. And did you review similar appointment-type documents marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	1	290-293, and 302 received in evidence)
4THE COURT: Yes.5MS. KUDLA: Can we zoom in on the top portion of this.6Q. Agent Busick, prior to your testimony today, have you7reviewed Government Exhibit 293?8A. Yes, I have.9Q. And did you review similar appointment-type documents10marked in Government Exhibits 281 through 282, 285 through 287,11290 through 293, and 292?12A. Yes, I have.13Q. Did you review these documents before or after you14conducted your initial cell site analysis?15A. I reviewed them afterwards.16Q. Let's focus for a moment on the middle portion of this17appointment of Government Exhibit 293, where it says start on18September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m.19Is any particular time zone listed there?20A. There is no time zone listed.21Q. Based on your review of Government Exhibit 293 and the22other exhibits that we have just listed, did you form an	2	MS. KUDLA: Your Honor, may we publish Government
5MS. KUDLA: Can we zoom in on the top portion of this.6Q. Agent Busick, prior to your testimony today, have you7reviewed Government Exhibit 293?8A. Yes, I have.9Q. And did you review similar appointment-type documents10marked in Government Exhibits 281 through 282, 285 through 287,11290 through 293, and 292?12A. Yes, I have.13Q. Did you review these documents before or after you14conducted your initial cell site analysis?15A. I reviewed them afterwards.16Q. Let's focus for a moment on the middle portion of this17appointment of Government Exhibit 293, where it says start on18September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m.19Is any particular time zone listed there?20A. There is no time zone listed.21Q. Based on your review of Government Exhibit 293 and the22other exhibits that we have just listed, did you form an	3	Exhibit 293 at this time?
 G. Agent Busick, prior to your testimony today, have you reviewed Government Exhibit 293? A. Yes, I have. Q. And did you review similar appointment-type documents marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	4	THE COURT: Yes.
 reviewed Government Exhibit 293? A. Yes, I have. Q. And did you review similar appointment-type documents marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	5	MS. KUDLA: Can we zoom in on the top portion of this.
 A. Yes, I have. Q. And did you review similar appointment-type documents marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	6	Q. Agent Busick, prior to your testimony today, have you
 9 Q. And did you review similar appointment-type documents marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	7	reviewed Government Exhibit 293?
 marked in Government Exhibits 281 through 282, 285 through 287, 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	8	A. Yes, I have.
 290 through 293, and 292? A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	9	Q. And did you review similar appointment-type documents
 A. Yes, I have. Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	10	marked in Government Exhibits 281 through 282, 285 through 287,
 Q. Did you review these documents before or after you conducted your initial cell site analysis? A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	11	290 through 293, and 292?
 14 conducted your initial cell site analysis? 15 A. I reviewed them afterwards. 16 Q. Let's focus for a moment on the middle portion of this 17 appointment of Government Exhibit 293, where it says start on 18 September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. 19 Is any particular time zone listed there? 20 A. There is no time zone listed. 21 Q. Based on your review of Government Exhibit 293 and the 22 other exhibits that we have just listed, did you form an 	12	A. Yes, I have.
 A. I reviewed them afterwards. Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	13	Q. Did you review these documents before or after you
 Q. Let's focus for a moment on the middle portion of this appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	14	conducted your initial cell site analysis?
 appointment of Government Exhibit 293, where it says start on September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. Is any particular time zone listed there? A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	15	A. I reviewed them afterwards.
18 September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m. 19 Is any particular time zone listed there? 20 A. There is no time zone listed. 21 Q. Based on your review of Government Exhibit 293 and the 22 other exhibits that we have just listed, did you form an	16	Q. Let's focus for a moment on the middle portion of this
 19 Is any particular time zone listed there? 20 A. There is no time zone listed. 21 Q. Based on your review of Government Exhibit 293 and the 22 other exhibits that we have just listed, did you form an 	17	appointment of Government Exhibit 293, where it says start on
 A. There is no time zone listed. Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an 	18	September 21, 2022, 11 p.m. and ends 9/22/2022 at 1 a.m.
Q. Based on your review of Government Exhibit 293 and the other exhibits that we have just listed, did you form an	19	Is any particular time zone listed there?
22 other exhibits that we have just listed, did you form an	20	A. There is no time zone listed.
	21	Q. Based on your review of Government Exhibit 293 and the
23 opinion about what time zone is listed in this appointment	22	other exhibits that we have just listed, did you form an
	23	opinion about what time zone is listed in this appointment
24 start/end time?	24	start/end time?
25 A. Yes.	25	A. Yes.

	N 26181681422/23 Page 162 of 187 1651
1	Q. What was that opinion?
2	MR. EVERDELL: Objection.
3	THE COURT: What's the objection?
4	MR. EVERDELL: Basis for the opinion.
5	THE COURT: I imagine we will hear that in a minute.
6	Q. What was the opinion, first?
7	A. Well, in this particular case and in this email we can see
8	up above in the subject line an invitation with a date and time
9	listed, which is September 21, 2022, from 7 p.m. to 9 p.m. EDT
10	or Eastern Daylight Time. That would be 11 p.m. to 1 a.m. from
11	the 21st to the 22nd in UTC time, which would indicate to me
12	that in this email here the start and end time are given in UTC
13	time.
14	Q. In your analysis, did you see similar examples in the other
15	exhibits that you reviewed?
16	A. I did, yes.
17	Q. And the UTC time as you described before, is that a common
18	unit for in the AT&T records? Is there any relationship to
19	what you see here?
20	A. UTC time is often a common reference time zone that can
21	account for travel between time zones and so forth, and local
22	time can be converted directly from UTC time.
23	MS. KUDLA: Mr. Bianco, can we please publish
24	Government Exhibit 281 on the left. We can take down 293 now
25	at this time. Publish 281 on the left and Government Exhibit

	₩27439493422-cr-00673-LAK Documente 368 -Filedir142¢12/23 Page 163 of 187 1652
1	1080, slide 7 on the right.
2	Your Honor, you are right, it will show slide 6 in
3	your presentation.
4	Let's zoom in right now on Government Exhibit 281. It
5	says: Appointment from eric.bai@Binance.com to, among others,
6	sam@ftx.com and cz@binance.com. The subject is Binance
7	investment, FTX sync-up. The start is June 8, 2021 at 2 p.m.
8	End time June 8, 2021 at 3 p.m.
9	Agent Busick, is 10 to 11 a.m. Eastern Daylight Time
10	equivalent to 2 to 3 p.m. UTC on June 8, 2021?
11	A. Yes.
12	Q. Now, is that the time period that you analyzed with respect
13	to the cell site analysis?
14	A. It is, yes.
15	MS. KUDLA: Can we now focus on Government Exhibit
16	180, slide 7, and zoom in on that.
17	Q. Briefly describe what we see in slide 7 to the jury.
18	A. This displays two particular cell sites utilized by the
19	9179 phone on June 8 of 2021. The first connection is the
20	lower on the lower center part of the screen at 10:13 a.m.
21	That's a data connection between a phone and the network when
22	cellular data was utilized. And then, at 10:59 a.m., in the
23	upper center portion of the screen we see a second connection,
24	again data connection, both of these connections utilizing cell
25	sites located within Manhattan.
I	

	₩2268987822-cr-00673-LAK Documente 368 두il@citre2#12/23 Page 164 of 187 1653
1	Q. Did you apply the same type of cell site location analysis
2	that you described to the jury for this analysis here?
3	A. Yes, I did.
4	Q. Is that consistent throughout?
5	A. Yes.
6	MS. KUDLA: We will try to speed it up a little bit.
7	Mr. Bianco, can you please publish Government Exhibit
8	282 on the left and slide 8 of Government Exhibit 1080 on the
9	right, and Government Exhibit 1471 also on the right.
10	And Government Exhibit 1471, your Honor, is in
11	evidence.
12	Let's zoom in on Government Exhibit 282. It's from
13	natalie@ftx.com to sam@alameda-research.com. Subject:
14	Invitation: Quick photoshoot for Forbes story at Equinox
15	Hotel, Friday, September 17, 2021, 8:30 a.m. to 8:45 a.m (HKT).
16	And then start and end, we can highlight those. That's
17	September 17, 2021, 12:30 a.m. to 12:45 a.m.
18	Q. Agent Busick, is 8:30 to 8:45 a.m. Eastern Daylight Time on
19	September 16, 2021 equivalent to the start and end times that
20	we see here?
21	A. Yes, it is.
22	MS. KUDLA: Let's take that down now.
23	Can we zoom in on Government Exhibit 1080, slide 8.
24	Q. What is the green dot that we see here?
25	A. The green marker in the upper center portion of the screen

	₩27439493422-cr-00673-LAK DocumBents 36% -Filedirte2¢12/23 Page 165 of 187 1654
1	denotes the location of the Equinox Hotel, 33 Hudson Yards, New
2	York, New York.
3	Q. Now, based on your analysis, what opinion did you form
4	about the location of the cell phone at approximately 8:27 p.m.
5	Eastern Daylight Time?
6	A. The records are consistent with the phone being located at
7	or in the vicinity of the Equinox Hotel during this time.
8	MS. KUDLA: Mr. Bianco, can we please zoom in on
9	Government Exhibit 1471.
10	At this time now, Mr. Bianco, can we please publish
11	Government Exhibit 285 on the left and Government Exhibit 1080,
12	slide 9 on the right.
13	Can we please zoom in on Government Exhibit 285. It's
14	from pauline@thesaltfund.com to sam@ftx.com, among others. The
15	subject: Updated invitation: SALT fund. And then the start
16	and end time, September 17, 2021, 2:30 p.m.; September 17,
17	2021, 3:30 p.m.
18	Agent Busick, is 10:30 to 11:30 a.m. Eastern Daylight
19	Time equivalent to the time shown here?
20	A. Yes, it is.
21	MS. KUDLA: Let's take that down now.
22	One thing that I forgot to mention. In Government
23	Exhibit 285, the location is shown as Bluestone Lane, 55 Hudson
24	Yards, 55 Hudson Yards, New York, New York.
25	Let's take that down and focus on Government Exhibit

	₩2743349874322-cr-00673-LAK DocumBents 3668 -Filedin2⊄12/23 Page 166 of 187 1655
1	1080, slide 9.
2	Q. First off, Agent Busick, what is the blue dot that we see
3	the little square dot?
4	A. That marker denotes the location of 55 Hudson Yards, New
5	York, New York.
6	Q. Based on your cell site analysis, what, if anything, did
7	you determine about the location of the phone between the time
8	period of 10:43 a.m. and 11:11 a.m. on September 17, 2021?
9	A. At 10:43 a.m., the phone utilized a cell site, the lower
10	center portion of the page, within the vicinity of Pennsylvania
11	Station. And at 11 a.m., there were two text messages to the
12	9179 phone, which would be consistent with the 9179 phone being
13	located at or in the vicinity of 55 Hudson Yards at that time.
14	MS. KUDLA: Mr. Bianco, can we now publish what's in
15	evidence as Government Exhibit 286 on the left and Government
16	Exhibit 1080, slide 10 on the right. Let's zoom in on
17	Government Exhibit 286.
18	Q. This is from Antony Lewis to, among others,
19	sambankman-fried@ftx.com. Subject: Temasek/FTX. The
20	location: 375 Park Avenue, 14th floor, New York, New York.
21	And the start and end time is listed here.
22	Agent Busick, is 6:30 to 7:30 p.m. east coast standard
23	time on November 16, 2021 equivalent to 11:30 p.m. to 12:30
24	a.m. UTC time?
25	A. Yes, it is.
ļ	I

12438481422-cr-00673-LAK Document 368 Filed 12/23 Page 167 of 187 1656 MS. KUDLA: Now let's turn to slide 10 of Government 1 Exhibit 1080. Let's zoom in on that. 2 3 Between 6 p.m. and 7:30 p.m. east coast standard time, Ο. 4 what, if anything, did you determine about the cell site 5 location during that time period? 6 So as we can see in the inset on the left, at 6:14 p.m., Α. 7 the phone utilized the cell site in the vicinity of Teterboro, 8 New Jersey, displayed up here where we circled on the screen, 9 and the records are consistent with that phone traveling into 10 Manhattan from that time. We can see, at 6:53 p.m., utilizing 11 a cell site just to the west of the Lincoln Tunnel. And then, 12 at 7:10 p.m., utilizing a cell site on the Manhattan side of 13 the Lincoln Tunnel. We last see it at 7:30 p.m., under the 14 dark blue flag there, which denotes 375 Park Avenue, New York, 15 New York. And then the zoomed-in map includes that 7:30 p.m. 16 interaction along with several other interactions between the 17 phone and the network, all of which would be consistent with 18 the phone being located at or in the vicinity of 375 Park 19 Avenue. 20 What period of time was the cell phone in the vicinity of Q. 21 375 Park Avenue, New York, New York? 22 From roughly 7:30 to 8:51 p.m. Α. 23 MS. KUDLA: Mr. Bianco, can we please publish now 24 Government Exhibit 287 on the left and Government Exhibit 1080, 25 slide 11 on the right.

	₩27439487822-cr-00673-LAK DocumBents 368 -Filedir192¢12/23 Page 168 of 187 1657
1	Now, this is from natalie@ftx to sam@ftx.com.
2	Subject: Updated invitation with the mayor at Thursday, March
3	3, 2022, 8:30 p.m. to 10 p.m. Eastern Standard Time. Location:
4	Osteria La Baia, 129 West 52nd Street. Start and end time
5	here.
6	Q. Is the start and end time that we see here on March 4, 2022
7	equivalent to 8:30 to 11 p.m. east coast standard time on March
8	3, 2022?
9	A. Yes.
10	MS. KUDLA: Now, let's turn to government Exhibit
11	1080, slide 11.
12	Q. What is the pink dot that we see here?
13	A. The pink marker in the center of the screen denotes 129
14	West 52nd Street, New York, New York.
15	Q. What was the time period of your analysis for here?
16	A. 8:37 p.m. to 9:56 p.m. on March 3, 2022.
17	Q. Based on your cell site analysis, what opinion did you form
18	about the location of the cell phone during this date and time
19	period?
20	A. The records are consistent with the phone being located at
21	or in the vicinity of 129 West 52nd Street during this period.
22	MS. KUDLA: Your Honor, pursuant to Government Exhibit
23	2001, a stipulation as to authenticity, the government offers
24	Government Exhibit 873.
25	THE COURT: Is 2001 in, Andy?
l	

	₩274398934222-cr-00673-LAK DocumBente 368 File dir122/123 Page 169 of 187 1658
1	MS. KUDLA: It is in evidence, your Honor.
2	THE COURT: It is?
3	MS. KUDLA: Yes.
4	May we publish Government Exhibit 873, page 12 of that
5	exhibit?
6	THE COURT: It's received, the whole exhibit.
7	(Government Exhibit 873 received in evidence)
8	MS. KUDLA: On March 4, 2022, at 12:04 p.m., SBF
9	retweeted from Ryne Miller: Fantastic dinner with at New York
10	City mayor. New York City is in great hands, hashtag Eric
11	Adams.
12	We can take that down.
13	Mr. Bianco, can we please publish what's in evidence
14	as Government Exhibit 302 on the left and Government Exhibit
15	1080, slide 12 on the right.
16	Let's first start with Government Exhibit 302, page 1,
17	and let's zoom in on the portion from the message from Ali
18	Baltrusaitis on July 1, 2022 at 11:32 a.m.
19	Ms. Baltrusaitis sends a message to Natalie Tien at
20	FTX writing: Hi, Natalie, happy almost 4th of July. Hope you
21	have some fun plans for the long weekend. Please find the
22	latest requests from 32 investment firms for the upcoming group
23	dinner on July 19. If there are any firms that FTX team would
24	like us to prioritize a seat for, please let us know.
25	We can take that down and zoom in now on the response
ļ	

<pre>5 of names. 6 We can take that down. 7 Can we zoom in now on the map and Government Exhibit 8 1080, slide 12.</pre>		N2243949B1A222-cr-00673-LAK DocumPante 3668 +Filedi±1€2/±12/23 Page 170 of 187 1659
the FTX group dinner July 19 in some decreasing order of priority: Standard investments, Coatue, D1 Capital, and a list of names. We can take that down. Can we zoom in now on the map and Government Exhibit 1080, slide 12. Q. Agent Busick, what is shown in slide 12 with respect to the cell phone location on July 19, 2022 between 6 p.m. to 9:30 p.m. east coast standard time? A. This slide depicts the cellular connections between the 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 p.m. time frame, located in the vicinity of 11 Madison Avenue 10 New York, New York, which is denoted by the maroon flag in 11 the center right portion of the screen. 12 MS. KUDLA: Mr. Bianco, we can take that down now. 13 Can we please publish Government Exhibit 290 on the 14 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	1	from Ramnik Arora.
4 priority: Standard investments, Coatue, D1 Capital, and a list of names. 6 We can take that down. 7 Can we zoom in now on the map and Government Exhibit 1080, slide 12. 9 Q. Agent Busick, what is shown in slide 12 with respect to the cell phone location on July 19, 2022 between 6 p.m. to 9:30 p.m. east coast standard time? A. This slide depicts the cellular connections between the 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 p.m. time frame, located in the vicinity of 11 Madison Avenue in New York, New York, which is denoted by the maroon flag in the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	2	Ramnikarora@ftx.com writes to Natalie Tien regarding
5 of names. 6 We can take that down. 7 Can we zoom in now on the map and Government Exhibit 8 1080, slide 12. 9 Q. Agent Busick, what is shown in slide 12 with respect to the 10 cell phone location on July 19, 2022 between 6 p.m. to 9:30 11 p.m. east coast standard time? 12 A. This slide depicts the cellular connections between the 13 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 14 p.m. time frame, located in the vicinity of 11 Madison Avenue 15 in New York, New York, which is denoted by the maroon flag in 16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FIX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight <	3	the FTX group dinner July 19 in some decreasing order of
6We can take that down.7Can we zoom in now on the map and Government Exhibit81080, slide 12.9Q. Agent Busick, what is shown in slide 12 with respect to the10cell phone location on July 19, 2022 between 6 p.m. to 9:3011p.m. east coast standard time?12A. This slide depicts the cellular connections between the139179 phone and the AT&T network during that 6:16 p.m. to 9:2814p.m. time frame, located in the vicinity of 11 Madison Avenue15in New York, New York, which is denoted by the maroon flag in16the center right portion of the screen.17MS. KUDLA: Mr. Bianco, we can take that down now.18Can we please publish Government Exhibit 290 on the19left and Government Exhibit 1080, slide 13 on the right.20Let's focus on Government Exhibit 290 first. This is21from jasmin.lee@iextrading.com to, among others, sam@ftx.22Subject: FTX/IEX. Location: 3 World Trade Center. Start,23August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m.24Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	4	priority: Standard investments, Coatue, D1 Capital, and a list
7Can we zoom in now on the map and Government Exhibit81080, slide 12.9Q. Agent Busick, what is shown in slide 12 with respect to the10cell phone location on July 19, 2022 between 6 p.m. to 9:3011p.m. east coast standard time?12A. This slide depicts the cellular connections between the139179 phone and the AT&T network during that 6:16 p.m. to 9:2814p.m. time frame, located in the vicinity of 11 Madison Avenue15in New York, New York, which is denoted by the maroon flag in16the center right portion of the screen.17MS. KUDLA: Mr. Bianco, we can take that down now.18Can we please publish Government Exhibit 290 on the19left and Government Exhibit 1080, slide 13 on the right.20Let's focus on Government Exhibit 290 first. This is21from jasmin.lee@iextrading.com to, among others, sam@ftx.22Subject: FTX/IEX. Location: 3 World Trade Center. Start,23August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m.24Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	5	of names.
 8 1080, slide 12. 9 Q. Agent Busick, what is shown in slide 12 with respect to the cell phone location on July 19, 2022 between 6 p.m. to 9:30 11 p.m. east coast standard time? 12 A. This slide depicts the cellular connections between the 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 14 p.m. time frame, located in the vicinity of 11 Madison Avenue in New York, New York, which is denoted by the maroon flag in the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. 12 Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	6	We can take that down.
 9 Q. Agent Busick, what is shown in slide 12 with respect to the cell phone location on July 19, 2022 between 6 p.m. to 9:30 11 p.m. east coast standard time? 12 A. This slide depicts the cellular connections between the 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 14 p.m. time frame, located in the vicinity of 11 Madison Avenue in New York, New York, which is denoted by the maroon flag in the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	7	Can we zoom in now on the map and Government Exhibit
<pre>10 cell phone location on July 19, 2022 between 6 p.m. to 9:30 11 p.m. east coast standard time? 12 A. This slide depicts the cellular connections between the 13 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 14 p.m. time frame, located in the vicinity of 11 Madison Avenue 15 in New York, New York, which is denoted by the maroon flag in 16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight</pre>	8	1080, slide 12.
<pre>11 p.m. east coast standard time? 12 A. This slide depicts the cellular connections between the 13 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 14 p.m. time frame, located in the vicinity of 11 Madison Avenue 15 in New York, New York, which is denoted by the maroon flag in 16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight</pre>	9	Q. Agent Busick, what is shown in slide 12 with respect to the
 A. This slide depicts the cellular connections between the 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 p.m. time frame, located in the vicinity of 11 Madison Avenue in New York, New York, which is denoted by the maroon flag in the center right portion of the screen. MS. KUDLA: Mr. Bianco, we can take that down now. Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	10	cell phone location on July 19, 2022 between 6 p.m. to 9:30
 9179 phone and the AT&T network during that 6:16 p.m. to 9:28 p.m. time frame, located in the vicinity of 11 Madison Avenue in New York, New York, which is denoted by the maroon flag in the center right portion of the screen. MS. KUDLA: Mr. Bianco, we can take that down now. Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	11	p.m. east coast standard time?
14 p.m. time frame, located in the vicinity of 11 Madison Avenue 15 in New York, New York, which is denoted by the maroon flag in 16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	12	A. This slide depicts the cellular connections between the
15 in New York, New York, which is denoted by the maroon flag in 16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	13	9179 phone and the AT&T network during that 6:16 p.m. to 9:28
16 the center right portion of the screen. 17 MS. KUDLA: Mr. Bianco, we can take that down now. 18 Can we please publish Government Exhibit 290 on the 19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	14	p.m. time frame, located in the vicinity of 11 Madison Avenue
MS. KUDLA: Mr. Bianco, we can take that down now. Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	15	in New York, New York, which is denoted by the maroon flag in
 Can we please publish Government Exhibit 290 on the left and Government Exhibit 1080, slide 13 on the right. Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	16	the center right portion of the screen.
19 left and Government Exhibit 1080, slide 13 on the right. 20 Let's focus on Government Exhibit 290 first. This is 21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	17	MS. KUDLA: Mr. Bianco, we can take that down now.
Let's focus on Government Exhibit 290 first. This is from jasmin.lee@iextrading.com to, among others, sam@ftx. Subject: FTX/IEX. Location: 3 World Trade Center. Start, August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	18	Can we please publish Government Exhibit 290 on the
21 from jasmin.lee@iextrading.com to, among others, sam@ftx. 22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	19	left and Government Exhibit 1080, slide 13 on the right.
22 Subject: FTX/IEX. Location: 3 World Trade Center. Start, 23 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. 24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	20	Let's focus on Government Exhibit 290 first. This is
 August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m. Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight 	21	from jasmin.lee@iextrading.com to, among others, sam@ftx.
24 Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight	22	Subject: FTX/IEX. Location: 3 World Trade Center. Start,
	23	August 17, 2022, 3:30 p.m.; end, August 13, 2022, 5:30 p.m.
25 Time the equivalent of the UTC time you see here?	24	Q. Agent Busick, is 11:30 a.m. to 1:30 p.m. Eastern Daylight
	25	Time the equivalent of the UTC time you see here?

	₩274896874822-cr-00673-LAK DocumBent 868 Filed 12/23 Page 171 of 187 1660
1	A. Yes, it is.
2	MS. KUDLA: Let's turn to the map in Government
3	Exhibit 1080, slide 13.
4	Q. What is the date and time that was analyzed here?
5	A. August 17, 2022 between 11:39 a.m. and 1:15 p.m.
6	Q. What's shown in the yellow dot?
7	A. This shows connections between the 9179 phone and the AT&T
8	network in the vicinity of 3 World Trade Center, New York, New
9	York, denoted by the bright yellow flag in the center of the
10	screen.
11	Q. What did your cell site analysis show?
12	A. The records are consistent with the phone being located at
13	or in the vicinity of 3 World Trade Center during this time
14	frame.
15	MS. KUDLA: Let's now turn to Government Exhibit 291
16	on the left and let's do Government Exhibit 1080, slide 14 on
17	the right.
18	Mr. Bianco, can we zoom in. Thank you.
19	This is from Mike McKay to, among others, sam@ftx.us.
20	Subject: SBF meeting with New York Governor Hochul. Location:
21	LTBD. Most likely, Capital Grille on East 42nd Street, but
22	waiting on the governor's schedule to confirm the location.
23	Start, September 16, 2022 at 9 p.m.; end, September 16, 2022 at
24	9:30 p.m.
25	Q. Agent Busick, is this 5 p.m. to 5:30 p.m. Eastern Daylight

	₩274896874222-cr-00673-LAK Documeente 3688 -Filedir1e2¢12/23 Page 172 of 187 1661
1	Time?
2	A. Yes, it is.
3	MS. KUDLA: Let's look at slide 14.
4	Q. Did you analyze the location of the phone on September 16,
5	2022 between 5 and 6 p.m. at that time?
6	A. Yes.
7	Q. What opinion did you form about the location of the cell
8	phone between that time period on that day?
9	A. Between 4:58 p.m. and 5:48 p.m., the phone utilized two
10	cell sites located within Manhattan, generally the east Midtown
11	area, which would be consistent with the phone being located in
12	the Midtown East area during this time.
13	MS. KUDLA: Can we now publish Government Exhibit 292
14	on the left and Government Exhibit 1080, slide 15 on the right.
15	And zoom in on Government Exhibit 292. This is from
16	natalie@ftx.com to sam@ftx.com. Subject: Updated invitation.
17	Meeting with President Clinton at Tuesday, September 20, 2022,
18	4 p.m. to 5 p.m. Eastern Daylight Time. Location: New York
19	Hilton Midtown, 1335 Sixth Avenue, New York, New York. Start
20	and end that we have here is September 20, 2022, 8 p.m. to 9
21	p.m.
22	Q. Agent Busick, is this 4 to 5 p.m. Eastern Daylight Time?
23	A. Yes, it is.
24	MS. KUDLA: Let's turn to Government Exhibit 1080,
25	slide 15 now, and zoom in on that.
I	

	₩2745349874-22/23 Page 173 of 187 1662
1	Q. Did you analyze the location of the cell phone during this
2	same time period for the date and time?
3	A. Yes, I did.
4	Q. And what is the purple dot that we see here?
5	A. The purple marker in the center of the screen denotes a
6	location of 1335 Sixth Avenue, New York, New York.
7	Q. What opinion did you form about the location of the cell
8	phone on September 20, 2022 between 3:16 and 5:02 p.m. Eastern
9	Daylight Time?
10	A. The records are consistent with the phone being located at
11	or in the vicinity of 1335 Sixth Avenue during that time frame.
12	MS. KUDLA: Mr. Bianco, can we please publish
13	Government Exhibit 221 on the left and Government Exhibit 1080,
14	slide 16 on the right.
15	Let's zoom in on Government Exhibit 221.
16	On September 20, 2022, at 12:20 p.m. Eastern Daylight
17	Time, ascaramucci@skybridge.com wrote: Connecting you here.
18	Sam, I am also joining Thomas at a Steelers game November 20.
19	Let us know if you want to come. Hope he will invest in our
20	latest FTX round.
21	On September 21, 2022 at 3:34 a.m., Sam Bankman-Fried
22	sends an email to Anthony Scaramucci and thomas9@tulinvest.com:
23	Thanks.
24	Let's take that down.
25	Q. Agent Busick, first of all, is 11:34:09 p.m. Eastern
1	

	₩22439488242.cr-00673-LAK Documeente 368 두iledir142¢12/23 Page 174 of 187 1663
1	Daylight Time on September 20, 2022 equivalent to 3:34 a.m. UTC
2	on 9/21/22?
3	A. Yes, it is.
4	MS. KUDLA: Let focus and zoom in on slide 16 in
5	Government Exhibit 1080.
6	Q. Did you analyze that time period and date with your cell
7	site analysis?
8	A. Yes, I did.
9	Q. What opinion did you form about the location of the cell
10	phone during that date and time period?
11	A. During that time period, specifically between 11:17 p.m.
12	and 11:48 p.m. on September 20, 2022, the phone was located
13	roughly in the midtown Manhattan area utilizing the cell sites
14	depicted.
15	MS. KUDLA: Let's please publish Government Exhibit
16	293 on the left and Government Exhibit 1080, slide 17 on the
17	right.
18	This is from natalie@ftx.com to sam@ftx.com. Subject:
19	Updated invitation. New York small group dinner with H.E.
20	Yasir Al Rumayyan, September 21, 7 p.m. to 9 p.m. Eastern
21	Daylight Time. The location is The Pierre A Taj Hotel, New
22	York, 2 East 61st Street. There is the start and end time
23	shown here.
24	Q. Agent Busick, is this consistent, the 11 p.m. to 1 a.m.
25	time period shown here, consistent with 7 to 9 p.m. Eastern
I	

	₩27439493422-cr-00673-LAK DocumPente 368 +File dir122/123 Page 175 of 187 1664
1	Daylight Time?
2	A. 7 to 9 p.m. on the 21st, yes, correct.
3	MS. KUDLA: Let's turn to slide 17 in Government
4	Exhibit 1080.
5	Q. Did you analyze this 7 to 9 p.m. Eastern Daylight Time
6	period on September 21, 2022?
7	A. Yes, I did.
8	Q. And what is the red dot that we see here?
9	A. The red marker roughly in the center of the screen denotes
10	the location of 2 East 61st Street, New York, New York.
11	Q. And what opinion did you form about the location of the
12	cell phone on this date and time period?
13	A. The records are consistent with the phone being located at
14	or in the vicinity of 2 East 61st Street, particularly between
15	7:42 and 9:42 p.m.
16	MS. KUDLA: Mr. Bianco just so everybody is aware,
17	we are nearing the end of the number of slides.
18	Let's please publish in evidence Government Exhibit
19	223 on the left and Government Exhibit 1080, slide 18 on the
20	right.
21	On September 21, 2022, at 7:16 p.m.,
22	okharif@bloomberg.net wrote: Hi, Sam. How are you? I saw the
23	CNBC story that you are trying to raise 1 billion. Could you
24	please confirm if this is true on background.
25	Let's focus now on the response from Sam Bankman-Fried
ļ	

	NC de BA 22 - cr-00673-LAK Documente 368 - File di 122/23 Page 176 of 187 1665
1	to Olga Kharif on September 22, 2022 at 3:34:47 a.m. On
2	background: Potentially true, though not a hundred percent
3	that we'll do it. If we did, it would likely be in the next
4	few months. Not yet confirmed who invested would be.
5	Q. Agent Busick, is 3:34 a.m. UTC equivalent to 3:34 p.m.
6	Eastern Daylight Time on September 21, 2022?
7	A. 11:34 p.m. on the 21st.
8	Q. Thank you.
9	MS. KUDLA: Let's turn to slide 18, Government Exhibit
10	1080.
11	Q. Based on your analysis, Agent Busick, was the cell phone
12	located in Manhattan on this date and during this time period?
13	A. Yes, it was. Utilizing the cell site depicted at the
14	center of the screen at 11:08 and 11:53 p.m. on September 21.
15	MS. KUDLA: So let's please publish Government Exhibit
16	224 on the left and Government Exhibit 1080, slide 19 on the
17	right, and let's focus on the middle message, September 22,
18	2022 at 8:02 a.m.
19	The message: We now have a meeting penciled in with
20	the Saudi Minister of Investment, Khalid Al Falih, at 5:10 to
21	5:30. Hopefully that works for Sam. His session at the event
22	with Alfred Chuang is scheduled for 3:50 to 4:05.
23	Let's focus on the response now. It's from Sam
24	Bankman-Fried a little bit higher, Mr. Bianco, the top
25	portion of the email Sam Bankman-Fried, on September 22,

	₩27487868848282-cr-00673-LAK DocumBents 3688 File dir122/123 Page 177 of 187 1666
1	2022, 3:33 to Anthony Scaramucci, among others: Follow-up from
2	dinner. Mr. Bankman-Fried replies: I'm flexible.
3	Let's turn to slide 19, Government Exhibit 1080 at
4	this point in time.
5	Q. Agent Busick, were you asked to analyze the location of the
6	cell phone between 3:30 p.m. and 5:30 p.m. on September 22,
7	2022?
8	A. Yes, I was.
9	Q. And what did your analysis show with respect to the
10	location of the phone during that time period?
11	A. The phone utilized the cell sites depicted at the center of
12	the screen located roughly the southeast corner of Central Park
13	in Manhattan between 3:28 and 5:28 p.m.
14	MS. KUDLA: We will turn to our last one at this point
15	in time.
16	The government offers, subject to connection,
17	Government Exhibit 527, and it's subject to connection through
18	a later witness.
19	MR. EVERDELL: Your Honor, we do object on hearsay
20	grounds, understanding this is subject to connection, but we
21	object on hearsay grounds.
22	THE COURT: Received subject to connection.
23	(Government Exhibit 527 received in evidence)
24	MS. KUDLA: Mr. Bianco, can we please publish
25	Government Exhibit 527 on the left and Government Exhibit 1080,
Į	

	₩24589874.222-cr-00673-LAK DocumPernst 36% -Filedir122/123 Page 178 of 187 1667
1	slide 20 on the right.
2	Mr. Bianco, on Government Exhibit 527 can we zoom in
3	at the bottom of page 2. It's from Curtis Ashton on September
4	24, 2022 at 11:15. There you go.
5	From Ashton Curtis to robertboroujerdi@thirdpoint.com.
6	Subject: FTX/Sam BF. Bob, I'm putting together a very small
7	investor lunch with Sam Bankman-Fried on October 14 from 12 to
8	2 p.m. in NYC.
9	We can take that down now.
10	Q. Agent Busick, were you asked to analyze the location of the
11	cell phone on October 14, 2022 between 12 and 2 p.m. Eastern
12	Daylight Time?
13	A. Yes, I was.
14	MS. KUDLA: Let's zoom in on Government Exhibit 1080,
15	slide 20.
16	Q. What opinion did you form about the location of the cell
17	phone on that date and time period?
18	A. The phone was located within Manhattan between 12:06 p.m.
19	p.m. and 1:26 p.m. on November 14. And more specifically,
20	between approximately 12:26 p.m. and 1:26 p.m., the phone was
21	located at or in the vicinity of 11 Madison Avenue in New York,
22	New York, depicted by the maroon flag in the lower center
23	portion of the screen.
24	MS. KUDLA: Your Honor, no further questions.
25	THE COURT: Is there any cross-examination?
I	

	NC de BA 22 - cr-00673-LAK Docum Bante Boles - File dole 2≉12/23 Page 179 of 187 1668
1	MR. EVERDELL: Just briefly, your Honor.
2	CROSS-EXAMINATION
3	BY MR. EVERDELL:
4	Q. Good afternoon, Special Agent Busick.
5	A. Good afternoon.
6	Q. Special Agent Busick, you were asked to create your cell
7	site analysis by the government, is that right?
8	A. That's correct.
9	Q. This is what you've been testifying to here today, right?
10	A. Correct.
11	Q. And the government specified which phone number they wanted
12	you to analyze, right?
13	A. They did.
14	Q. That was the 650-906-9179 number, right?
15	A. That's correct.
16	Q. I am just going to refer to that as the 9179 number for
17	convenience. Is that OK?
18	A. Of course.
19	Q. The government also provided you with the data that you
20	used to create your analysis?
21	A. They did, yes.
22	Q. They gave you the records from the phone company AT&T that
23	were related to that phone number, is that right?
24	A. That's correct.
25	Q. And those records included the cell site data that you used

che as d you
15
15
ł you
l you
l you
at you
the
e to
the
e more
nsity

	NC##348B1A222-cr-00673-LAK DocumPente B688 +Filed of 22≉12/23 Page 181 of 187 1670
1	A. Yes, correct.
2	Q. Might also depend on, you said, terrain, right?
3	A. Correct.
4	Q. If there were a big building, I think you mentioned, that
5	was potentially blocking a signal, the phone wouldn't
6	necessarily signal off of the closest tower next to it, right?
7	A. It's possible, correct.
8	Q. It might have to seek out a signal for a cell site that's
9	further away, right?
10	A. Slightly. But it would have to be within the coverage area
11	of whichever cell site it connected to.
12	Q. When we look at your analysis that you did, which was
13	GX-1080, it shows instances where that cell phone, the 9179
14	cell phone, was active near a particular cell tower, right?
15	A. Correct.
16	Q. But the phone records you used to create your analysis
17	don't contain any information about who was using that phone at
18	those times, correct?
19	A. That's correct.
20	Q. It just gives you information about where the device itself
21	may have been located, correct?
22	A. That's correct.
23	Q. So your analysis doesn't say anything about who is using
24	that cell phone at those dates and times on those pages we just
25	looked at, right?
I	

	NC d3968 BA22 - cr-00673-LAK Documenta 368 - Filed d2 \$\$12/23 Page 182 of 187 1671
1	A. Correct. I cannot determine that via the records.
2	MR. EVERDELL: I just want to take a look at one quick
3	example from the page.
4	If we go to slide 13. This is Government Exhibit 1080
5	in evidence. If we go to slide I believe it's 13.
6	Q. This is one that you discussed on your direct examination,
7	is that right?
8	A. Yes.
9	Q. And so this is a page that shows the 9179 cell phone or it
10	shows cell sites in the vicinity of 3 World Trade Center, is
11	that correct?
12	A. Correct.
13	Q. On August 17, 2022, correct?
14	A. That's correct.
15	Q. You testified that this seems to show the 9179 cell phone
16	interacting with the cell towers on the side here, right?
17	A. Yes.
18	Q. On that date it appears that it was an incoming call at
19	11:39, correct?
20	A. That is correct.
21	Q. So this shows that that cell phone was interacting with
22	these towers in the vicinity of 3 World Trade Center on that
23	date, right?
24	A. Yes.
25	Q. But, again, it does not say who is using the phone at that

	₩2##3%#81-12/23 Page 183 of 187 1672
1	time?
2	A. Correct.
3	Q. And it does not say what was discussed on any calls that
4	may be reflected in the records?
5	A. That's correct.
6	Q. That is true for all of the instances that you put in your
7	analysis on Government's 1080, correct?
8	A. It is, yes.
9	MR. EVERDELL: Nothing further, your Honor.
10	THE COURT: Thank you.
11	Anything else?
12	MS. KUDLA: No, your Honor.
13	THE COURT: I have one question. I think it's one
14	question.
15	The government provided you with the AT&T records for
16	the entire period, roughly June of '21 through November of '22,
17	is that right?
18	THE WITNESS: Yes. And the records did extend a bit
19	beyond that.
20	THE COURT: A bit beyond.
21	So the dates you looked at were the dates on which the
22	records indicated that the cell phone was connecting with
23	towers in Manhattan, is that right?
24	THE WITNESS: I first looked throughout the records to
25	determine when the records indicated that the phone was
I	

MC ds BA22-cr-00673-LAK Document 368 Filed 12/23 Page 184 of 187 1673 1 connecting with cell sites in Manhattan and then, in regards to 2 the specific dates and times, those were provided to me by the 3 government. 4 THE COURT: Did the dates and times that the 5 government provided you coincide with dates you had identified 6 from telephone company records that the phone had been used in 7 Manhattan? 8 THE WITNESS: Yes, that's correct. 9 THE COURT: I have no further questions. 10 Do counsel have any? 11 MS. KUDLA: None from the government, your Honor. 12 MR. EVERDELL: No, your Honor. 13 Thank you. You're excused, Agent Busick. THE COURT: 14 (Witness excused) 15 THE COURT: Folks, we are going to quit very early 16 tonight, 4:26. We will see you tomorrow at 9:30. 17 Counsel remain. 18 (Jury not present) 19 THE COURT: Scheduling. 20 MS. SASSOON: Yes, your Honor. 21 Tomorrow we are going to be calling Shamell Medrano, 22 Peter Easton, Cory Gaddis, Eliora Katz. 23 THE COURT: Slow down. You're outpacing me. 24 The third person was? 25 MS. SASSOON: Cory Gaddis, Eliora Katz. I will just

NZ4399BAN2-cr-00673-LAK Document B68 Filed 22#12/23 Page 185 of 187 1674 read through the witnesses that will take us through Thursday: Paige Owens, Bob Boroujerdi, and Can Sun.

Now, the government is not confident that that's going to take us to the end of the trial day on Thursday, but we have two to three people scheduled for the following Thursday, when trial picks up, who have travel booked from either out of state, and one witness, who is a customer victim, who was here in court last Friday, but we ended early, and he didn't get to testify, but he is not available this week.

What we would propose is, if the Court is amenable, if our witnesses don't take us through the day on Thursday, ending early, which will give the parties an opportunity to work on the jury instructions your Honor has asked for by the end of the day Thursday, and then we would complete our case the following Thursday morning.

The defense has rebuttal expert notice, if any, due to us three days before we rest, so this will also give them a little more time beyond having to give us that notice today if we were to rest this Thursday.

20

23

1

2

THE COURT: Thank you.

21 What's the state of play, Mr. Cohen, with you, bearing 22 in mind I am not holding you to anything?

MR. COHEN: Yes, your Honor.

We would agree with the schedule that the government proposed, subject to your Honor's approval. We are still

	N 2 - 1675 Page 186 of 187 1675 Page 186 of 187 1675
1	working through whether we are going to put a case on and, if
2	so, of what nature. But I continue to believe that if we do
3	put on a case, it won't be more than a week, week and a half at
4	the max.
5	THE COURT: That suggests to me we are done the first
6	week in November, worst case, right?
7	MR. COHEN: Yes. It might be sooner, your Honor.
8	THE COURT: I think I'm as informed as I can be about
9	now.
10	Thank you. I'll see you all in the morning.
11	(Adjourned to October 18, 2023, at 9:30 a.m.)
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

	Case 1:22-cr-00673-LAK Document 368 Filed 12/12/23 Page 187 of 187 1676
1	INDEX OF EXAMINATION
2	Examination of: Page
3	NISHAD SINGH
4 5	Cross By Mr. Cohen
6 7	Direct By Ms. Kudla
8	Exhibit No. Received
9	2004, 1118, and 1122
10	1080
11	342
12	221, 223, 224, 281, 282, 285-287,
13	873
14	527
15	DEFENDANT EXHIBITS
16	Exhibit No. Received
17	s-3002
18	1102 (pages 1 and 18 only)
19	3501-11
20	
21	
22	
23	
24	
25	