UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PRIME TIME TOYS LLC,	)	
PRIME TIME TOYS LTD.,	)	
and EASEBON SERVICES LTD,	)	
Petitioners	)	
v.	)	IPR2023-01339
	)	IPR2023-01348
	)	IPR 2023-01461
SPIN MASTER, INC.,	)	
Patent Owner.	)	

MAUREEN T.F. REITMAN, SC.D., P.E. NAE, FSPE

October 29, 2024

9:32 a.m. Eastern Daylight Time

Reported by: Lori J. Goodin, RPR, CRR, RSA,
California CSR #13959

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1 REMOTE DEPOSITION of
2 MAUREEN T.F. REITMAN, SC.D., P.E. NAE, FSPE,
3 Witness in the above-titled action, held on
4 Tuesday, October 29, 2024, commencing at
5 approximately 9:32 a.m. before Lori J. Goodin,
6 RPR, CRR, RSA, California CSR #13959, Registered
7 Professional Reporter, Certified Realtime
8 Reporter, Realtime Systems Administrator, and
9 Certified Shorthand Reporter, and Notary Public
10 of the State of Florida, State of California,
11 State of Maryland, District of Columbia, State of
12 Delaware and Commonwealth of Pennsylvania.
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1 REMOTE APPEARANCES:

2

3 ON BEHALF OF THE PETITIONERS AND THE WITNESS:

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11 FOR PATENT OWNER:

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19

20 Also Present: Thomas Hart, Amster Rothstein

21 Ebenstein law clerk

22

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2

3 WITNESS: MAUREEN T.F. REITMAN, SC.D., P.E. NAE,

4 FSPE

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2 INDEX TO EXHIBITS

3 MAUREEN T.F. REITMAN, SC.D., P.E. NAE, FSPE

4 PRIME TIME TOYS V SPIN MASTER

5 OCTOBER 29, 2024

6 Lori J. Goodin, RPR, CRR, RSA

7 California CSR #13959

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9 PREVIOUSLY MARKED EXHIBITS

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1 OCTOBER 29, 2024, 9:32 A.M. EST
2 PROCEEDINGS
3 * * *
4 Whereupon,
5 MAUREEN REITMAN, SC.D., P.E., NAE, FSPE,
6 a witness called for examination, having been
7 first duly sworn, was examined and testified as
8 follows:
9 * * *
10 MR. DARBY: So, for the record, this
11 deposition is addressing three inter partes
12 review proceedings, Case Number IPR2023-01339
13 regarding U.S. Patent Number 8,640,683.
14 IPR2023-01348, regarding U.S. Patent
15 Number 8,371,282.
16 And IPR2023-01461, U.S. Patent
17 Number 8,596,255.
18 Just to note for the record, we will
19 refer to the three, '683, '282, and '255,
20 patents collectively as the "Spin Master
21 patents."
22 This is Kenneth Darby, speaking for

1 Hasbro and exclusive licensee, acting on
2 behalf of Spin Master, the patent owner. The
3 witness is Dr. Reitman.
4 Dr. Reitman, before we get going,
5 I'm going to cover a series of ground rules
6 and just some other preliminaries; okay?
7 MR. COMACK: And, Kenneth, I would
8 just like to state my appearance so we have a
9 clear record.
10 MR. DARBY: Sure.
11 MR. COMACK: Brian Comack, Amster
12 Rothstein & Ebenstein, here on behalf of the
13 PTT petitioners, representing Dr. Reitman as
14 well.
15 EXAMINATION
16 BY MR. DARBY:
17 Q. Okay. So, just getting back to the
18 preliminaries here, I'm just going to cover a
19 couple of ground rules.
20 So, Dr. Reitman, because this is a
21 remote deposition conducted using video
22 conference equipment, there might be a slight

1 delay in our communications.
2 So, let's just both remember to
3 speak slowly and just be extra careful not to
4 interrupt one another.
5 Is that fair?
6 A. Yes.
7 Q. If I ask you a question today and
8 you don't understand it, please just ask me to
9 rephrase or to clarify my question, okay?
10 A. Yes, I will, to the extent that I
11 recognize that I don't understand it.
12 Q. And, if you don't indicate that you
13 don't understand my question and you answer it,
14 it is fair to assume that you understood it.
15 Is that reasonable enough?
16 A. Not quite. That will be my
17 intention. If I later recognize that I didn't
18 understand the question, I will do my best to
19 clarify.
20 So, as long as I understand -- as
21 long as I recognize that I don't understand, I
22 will alert you.

1 Q. That is fair.
2 So, even though we are remote, you
3 understand that you are under oath providing
4 testimony, just like you would be if you were in
5 front of a judge or a jury, right?
6 A. Yes, I understand that.
7 Q. And is there any reason that you
8 cannot give true and accurate testimony today?
9 A. No, I don't believe so.
10 Q. So, we will try to take a break
11 every hour or so, and I will try to keep an eye
12 on the clock.
13 But, if you need a break before --
14 before I offer one, please just let me know. We
15 can take a break at any time, okay?
16 A. Yes, thank you.
17 Q. And all that I ask is that if there
18 is a question pending, you just answer the
19 pending question before we go to take a break.
20 Is that fair?
21 A. Yes, I understand that.
22 Q. And when we come back from any

1 breaks, I will always ask if you had any
2 discussions with any person during the break
3 regarding any aspect of your deposition or your
4 testimony with regard to these proceedings.
5 Those kinds of discussions during
6 your cross-examination are prohibited.
7 Do you understand that?
8 A. Yes. I do.
9 Q. If at any point you all are having
10 technical difficulties on that end, we can pause
11 and just get that worked out.
12 Likewise, if I am having technical
13 difficulties, I will let you know, and we can
14 just take a pause and figure everything out.
15 Okay?
16 A. Yes.
17 Q. Just to confirm, there are people in
18 the room with you, correct?
19 A. Yes.
20 Q. And who is in the room with you
21 right now?
22 A. Mr. Comack, as well as his

1 colleague.
2 MR. COMACK: This is Thomas Hart. I
3 neglected to introduce him. He is an
4 associate at our firm who is just here to
5 observe.
6 BY MR. DARBY:
7 Q. Okay. And nobody else is in the
8 room; is that right?
9 A. That is correct.
10 Q. Okay. And you understand that you
11 cannot communicate with these folks during the
12 cross-examination, except as counsel representing
13 you today is speaking on the record, correct?
14 A. I think that is what you had said
15 before. So, yes, I understand that the
16 communications related to this testimony will
17 occur on the record until this testimony is done.
18 Q. Okay. And no nonverbal
19 communication either during your examination.
20 Are you aware of that and willing to
21 abide by that?
22 A. I am willing to abide by that, yes.

1 Q. Okay. So, regarding the exhibits at
2 issue in these three IPRs, we sent over unmarked
3 paper copies to counsel yesterday.
4 Do you have those before you? It
5 looks like you might.
6 A. I received three binders from
7 counsel, but I have not looked at it at that
8 point.
9 MR. COMACK: Kenneth, I will
10 represent that those three binders are the
11 package of binders that you sent us.
12 MR. DARBY: Perfect. Thank you.
13 BY MR. DARBY:
14 Q. Okay. I'm just going to ask you to
15 use those paper copies today. Those are copies
16 of your declarations.
17 We will go through them here in a
18 bit.
19 A. Okay.
20 Q. So, Dr. Reitman, just to confirm --
21 these three IPRs -- this isn't the first time
22 that you have provided testimony regarding the

1 Spin Master patent, correct?
2 MR. COMACK: Objection as to form.
3 THE WITNESS: This is the first time
4 that I provided testimony in the context of
5 the IPR.
6 But, I have analyzed these patents,
7 these patents for other purposes and provided
8 testimony in another matter.
9 BY MR. DARBY:
10 Q. Okay. And that other matter was an
11 ITC investigation regarding the '683 and the '282
12 patents; is that correct?
13 A. Yes, that is how I think of it.
14 Q. So, just for the record, that ITC
15 investigation number is -- it is Case Number
16 337-TA-1325.
17 And, Dr. Reitman, you provided
18 multiple expert reports in this ITC
19 investigation; is that correct?
20 A. The IPR investigation? There is
21 three.
22 Q. Excuse me. I am referring to the

1 ITC investigation.
2 A. I have not reviewed ITC work for
3 this deposition. But, yes, I did provide reports
4 in the ITC matter for that analysis and scope.
5 Q. Okay. And you were deposed in the
6 ITC investigation, correct?
7 A. Yes, that is my recollection.
8 Q. And you gave live testimony to Judge
9 McNamara in the ITC investigation as well; is
10 that correct?
11 A. Yes, in the ITC matter, I was live
12 before Judge McNamara.
13 Q. Okay. And I think you answered
14 this, but just to confirm, did you review any of
15 your prior ITC testimony when you prepared your
16 testimony for these IPRs?
17 A. No, I have not reviewed ITC
18 testimony for -- in preparation for this
19 deposition.
20 Q. What about while you were preparing
21 your declarations for the IPRs?
22 A. No. I don't recall reviewing the

1 testimony in preparation for writing the
2 declarations either.
3 Q. Okay. And, so, since you didn't
4 review that testimony, there is no reason -- you
5 don't have any reason to believe that anything
6 you said in the ITC investigation is incorrect or
7 needs to be retracted or anything like that,
8 correct?
9 MR. COMACK: Objection as to form.
10 THE WITNESS: Excuse me.
11 For the ITC matter, I believe that
12 the testimony I gave was truthful and
13 accurate for the scope of the work that I was
14 doing and the nature of the questions I was
15 asked.
16 It is a slightly different
17 assignment here. But, for the ITC matter and
18 the ITC responses, I stand by my work.
19 BY MR. DARBY:
20 Q. You mentioned that the assignment
21 here is slightly different.
22 How would you describe the

1 differences between the assignment here in the
2 IPRs and the assignment in the ITC investigation?
3 A. I really don't remember all of the
4 things that I was asked to do for the ITC work.
5 But, it was a much larger scope of
6 work in the context of information that was
7 evolving and was being handled under different
8 approaches through different legal activity.
9 So, my science role was always based
10 in my scientific foundation. But, I received
11 different questions with different limitations
12 and assumptions associated with them broadly.
13 For this matter, I have outlined my
14 scope in my declarations, and I have outlined the
15 basis for that in the declaration.
16 It is pretty much focused at the
17 questions of the SAPs in the three patents and
18 whether or not the Spitballs are SAPs and whether
19 or not a chemist before 2010 would know how to
20 modify SAPs to change properties or geometries to
21 achieve certain goals.
22 Q. You mentioned achieving certain

1 goals.
2 What goals in particular did you
3 have in mind?
4 A. This would be outlined more
5 explicitly in my declaration.
6 But, my analysis was again directed
7 at the specific attributes of SAPs in the
8 asserted claims.
9 And, so, as you can see in the
10 declaration, I referred to things like size,
11 shape, softness, swell capacity, elasticity,
12 strength, and so on.
13 Q. Okay. So, I think this is as good a
14 time as any to pivot to the declarations.
15 So, you should have the three
16 binders before you. Each of them marked as
17 Exhibit 2017[sic].
18 (Whereupon, previously marked
19 Exhibit 1017,
20 first referral.)
21 BY MR. DARBY:
22 Q. So, one of them is Exhibit 2017(sic)

1 from IPR 2023-01348, regarding the '282 patent.
2 There is another that is marked
3 Exhibit 1017 from IPR 2023-01339 regarding the
4 '683 patent.
5 And there is a third that is marked
6 Exhibit 1017 from IPR 2023-01461 regarding the
7 '255 patent.
8 A. I believe that in the beginning of
9 your statement, you referred to Exhibit 2017.
10 All three of mine are marked 1017.
11 So, just to be clear, the ones here
12 are Exhibit 1017, but otherwise as you described.
13 Q. Okay. Thank you for that
14 correction. I was incorrect, and you are right.
15 It is Exhibit 1017. Thank you.
16 Okay. And so, do you recognize
17 these three binders as including the documents
18 that are your three declarations in these three
19 IPRs?
20 A. So, the cursory review indicates
21 that these binders do include my declarations
22 with the reference appendices for the '282 and

1 for the '683.
2 I understand that there was a
3 clerical error in filing the '255, such that the
4 appendices were not initially attached.
5 And I believe that the appendices
6 have subsequently been incorporated in some way.
7 Those appendices are not here. But, they are the
8 same content as are in the other two declarations
9 in the binders that are here.
10 Q. Excellent.
11 So, for shorthand, we can just refer
12 to the declarations individually as the '282
13 declaration, the '683 declaration, and the '255
14 declaration?
15 And when we refer to them
16 collectively, we can just say, you know, the
17 declarations or the three declarations; is that
18 fair enough?
19 A. I think that works. Yes.
20 Q. Okay. So to make sure we stay on
21 the same paging forward, I'm going to use the
22 '282 declaration as the main document today.

1 And I will give you a chance to
2 compare the relevant portions of the '282
3 declaration to the '683 and the '255
4 declarations.
5 I think as you are probably -- you
6 know as well as I do that the three declarations
7 are quite similar.
8 And so, we will go through using the
9 '282 as the -- as the main document. And then I
10 will pause and give you an opportunity to compare
11 with the other two.
12 Is that fair?
13 A. I think it is a reasonable approach
14 to use the '282 as sort of the main guide. And
15 then recognizing that there may be differences
16 for certain points or topics, we can crosscheck.
17 Yes, I am comfortable with that approach.
18 Q. Okay. And did you review these
19 three IPR declarations in preparation for today's
20 deposition?
21 A. Yes, I did.
22 Q. And are you prepared to answer

1 questions about these three IPR declarations
2 today?
3 A. Yes, I am. As long as, of course,
4 they are within the scope of the declarations.
5 Q. Fair enough.
6 And, in your preparation for today's
7 deposition, did you identify any errors or any
8 statements in your declarations that you would
9 like to correct or retract?
10 A. No, I do not believe so. Although,
11 I did already identified to you my understanding
12 that the appendices were not filed simultaneously
13 for the '255.
14 Q. Did you personally draft these
15 declarations?
16 A. Yes. These are my writings.
17 However, the process involves pulling together
18 information. I did leverage a team as is my
19 custom to assemble, for example, references.
20 But, everything that is here, it is
21 my analysis and my words. Unless, of course, it
22 is a citation to something that is disclosed.

1 But, yes, these are my declarations.
2 Q. You mentioned leveraging a team to
3 prepare the declarations.
4 Does that include a team of folks
5 that are not counsel for the petitioners in this
6 case? Are you referring to somebody else?
7 A. My reference was to account for the
8 fact that I have a project team with a project
9 manager who helps me assemble information. And I
10 have an assistant who facilitates, for example,
11 editorial review, such that the final document
12 has been reviewed with the intent of avoiding
13 any, for example, typographical errors and so on.
14 Q. So, you mentioned having someone
15 that helps to assemble information.
16 For example, are you talking about
17 some of the appendices that are attached to the
18 '282 and the '683 declarations?
19 A. Yes, for example, after identifying
20 the literature and identifying the portions of
21 the literature that I am interested in, I
22 typically will ask my team to organize the file,

1 make sure that we have copies of the records in a
2 way that we can communicate with counsel.
3 Q. Approximately how many hours did you
4 spend preparing for -- or, excuse me, preparing
5 the declarations?
6 A. I'm not sure. It has been a little
7 while. I don't recall.
8 Q. Okay. Using the '282 declaration as
9 the key document, can you turn to Paragraphs 6
10 through 9, and take a moment to refresh your
11 recollection on those paragraphs?
12 You could just let me know when you
13 are done.
14 A. Paragraph 6 through 9 fall under the
15 heading of "Background and Qualifications."
16 So, I am at that location in the
17 '282 declaration.
18 Q. And do you agree that Paragraphs 6
19 through 9 of the '282 declaration are the same or
20 substantially the same as Paragraphs 6 through 9
21 in the '683 declaration, and Paragraphs 6 through
22 9 in the '255 declaration?

1 A. Yes, they should be basically the
2 same because they are my background and
3 qualifications at the time of the writing of
4 these declarations, which was basically the same
5 time.
6 Q. Okay. These paragraphs indicate
7 that you are currently employed by Exponent, an
8 engineering and consulting firm.
9 Is that correct?
10 A. Yes, I am a full-time employee of
11 Exponent.
12 Q. And what is the title of the
13 position you currently hold at Exponent?
14 A. I hold two titles. I am a Principal
15 Engineer, and I am a Group Vice President for
16 several of our business units.
17 Q. And what are the responsibilities of
18 a Principal Engineer at Exponent?
19 A. That is a title that we use to
20 describe a certain level of seniority for
21 consulting.
22 So, my consulting work is done as a

1 principal-level engineer in the firm.
2 Q. And what are your responsibilities
3 as the Group Vice President for various business
4 units?
5 A. That is a management and leadership
6 title, and describes the category of work where I
7 am responsible for helping to set strategic
8 direction, facilitate operations for the
9 different business units, and to help to invest
10 in our technologies and our people.
11 Q. And how long have you been employed
12 at Exponent?
13 A. I started working at Exponent in
14 2002. So, that would be about 22 years.
15 Q. And where were you employed before
16 Exponent?
17 A. My full-time employment prior to
18 Exponent was with the 3M Company.
19 Q. And, what was your approximate start
20 and end date with 3M?
21 A. I began my employment with 3M in
22 1993, and I ended my employment with 3M somewhere

1 in the 2001/2002 time frame.
2 Q. And where were you employed before
3 3M?
4 A. I was a graduate student at MIT
5 prior to beginning full-time employment at 3M.
6 Q. So, you have been employed
7 professionally at 3M and at Exponent.
8 Anywhere else?
9 A. Is your question in regards to
10 employment in a technical capacity?
11 Q. Yes.
12 A. I have also been employed by ICI,
13 Imperial Chemicals in the UK. And I have been
14 employed by AlliedSignal United Oil Products in
15 the United States.
16 I believe those are the other
17 industrial employers. I have held research
18 positions during my academic career at MIT as
19 well.
20 Q. Do you have the approximate start
21 and end dates for your work at, is it Imperial
22 Chemicals, and there was another one, Allied Oil

1 Products?
2 A. ICI was a fellowship in 1990. And
3 AlliedSignal was a research position in 1987, I
4 believe.
5 Q. And what was your title and
6 responsibilities at ICI?
7 A. I am not sure that I would recall
8 that with accuracy. But, as I said, I had a
9 fellowship to do work at ICI's facility. And, my
10 responsibilities included at least organizing and
11 executing a research program related to the
12 modeling and testing of composite material
13 behavior.
14 Q. And what degrees did you hold at
15 that time while you were working at ICI?
16 A. I held a bachelor of science degree
17 in materials science and engineering with an
18 emphasis in polymers and composites.
19 Q. And what was your title and
20 responsibilities at AlliedSignal?
21 A. Again, I don't recall the details of
22 that, but it was a summer position in the context

1 of a co-op program, I believe.
2 My responsibilities were in the
3 analytical laboratories and included at least the
4 operation and analysis of data and samples with
5 specific surface and porosity characteristics, as
6 well as the development of test methods and
7 characterization of samples where surface energy
8 and wetting behavior and interaction with fluids
9 were important.
10 Q. And what about your work at 3M, what
11 was your role and responsibilities there?
12 A. Again, I am not sure I could
13 remember all of the details.
14 Broadly speaking, I held several
15 positions and had several titles over the time
16 period of my employment.
17 Broadly speaking, I started in a
18 technology group as a researcher, I think, senior
19 scientist. And, I established a program related
20 to coding systems and characterization of the
21 interaction of fluids with different solvents,
22 many -- or with different solids, many of which

1 could corrode.
2 I also performed research related to
3 specialty materials to modify attributes within a
4 performance space to basically take a base
5 material and shift its properties in one
6 direction or another in order to achieve certain
7 performance goals.
8 I did formulation work. I did
9 transfer to manufacturing and field complaint
10 support work. I also interacted with various
11 other parts of the organization to support new
12 technology development, technology transfer and
13 product line extensions.
14 Later I transferred to a specific
15 project division where I had responsibility for
16 the materials laboratory where we were developing
17 different classes of materials for different
18 applications and modifying existing materials to
19 add or alter certain performance characteristics
20 for specific applications.
21 I also had management
22 responsibilities, especially later in my tenure

1 at 3M, where I was helping to attract, develop,
2 and support staff working in the product division
3 and the larger organization in terms of
4 maximizing opportunity for innovation.
5 Q. Okay. That is a lot. I am going to
6 try to break some of that down into smaller, more
7 digestible bites, and then we can talk about
8 them.
9 So, for example, I want to talk
10 about the work you performed relating to
11 specialty materials and modifying attributes
12 within a performance base.
13 Do you recall what kind of materials
14 you were working with at that time?
15 A. That captures most of the work that
16 I did on most of the product lines.
17 So, for example, formulation work
18 related to adhesives, coatings, gels,
19 encapsulants, molded products, extruded products.
20 I worked with many different
21 chemistries and many different manufacturing
22 techniques. And they had many different product

1 applications.
2 Q. That is fair.
3 Is there a difference between
4 modifying the attributes of a base material and
5 formulation work? You mentioned those two things
6 separately.
7 But, I'm asking you now if they are
8 the same or related.
9 A. They are related. Those terms can
10 be used somewhat interchangeably, although what I
11 was also trying to convey is that sometimes you
12 are chemically modifying the molecule.
13 Sometimes you are physically
14 modifying the mixture. More often -- well, and
15 also you can do both.
16 So, the tools of a chemist are to
17 use the molecular attributes in combination with
18 the physical chemistry of mixtures to achieve
19 performance.
20 Q. What does chemically modifying the
21 molecule entail?
22 A. It would depend on the molecule.

1 And it would depend on what you are trying to
2 achieve.
3 But, one example of that would be,
4 for example, grafting or oxidizing or
5 crosslinking.
6 So, in each of those cases, you are
7 taking a starting molecule or combination of
8 molecules, and you are building or breaking
9 chemical bonds to achieve certain goals.
10 Q. Can you explain what grafting is?
11 A. I am using the term as a description
12 of a type of polymer modification where there is
13 a main chain, and to the side you are grafting on
14 a second chain.
15 So, it is a way of building a
16 copolymer, typically, where instead of having
17 alternating monomers, you would have an
18 organization of the monomers, such that there was
19 a main chain and a grafted side chain.
20 There is more to it. That is a
21 simplified description, but grafting is a way of
22 attaching something to another structure.

1 Q. And what is oxidizing?
2 A. I was using that term in this
3 context to describe a chemical change, usually
4 affected by the presence of oxygen, where you are
5 either incorporating oxygen into the backbone or
6 affecting a scission or other type of reaction.
7 These types of reactions can be
8 useful for modifying surface properties,
9 reactivity, and other sorts of macro level
10 properties.
11 Q. And what is crosslinking?
12 A. I have used that term to describe
13 the process of creating a three-dimensional
14 network of the molecules.
15 So, typically we think of polymers
16 as linear or essentially linear molecules of
17 substantial length.
18 One way to modify their properties
19 is to attach adjacent molecules at multiple
20 points. Crosslinking is that process of
21 attaching the molecules at different points to
22 create a network.

1 The crosslinked density can be
2 modified. The nature of crosslinks depends on
3 the chemistry.
4 But, the crosslinking is directly
5 related to physical properties as well as
6 solubility properties, for example, whether or
7 not something will dissolve.
8 Q. And when one is making an attempt to
9 modify the chemistry of the molecule, how do you
10 know whether to try grafting, oxidizing, or
11 crosslinking?
12 A. So, all of this would be in the
13 context of what is your target set of performance
14 attributes.
15 So, there is a relationship between
16 chemistry structure and properties.
17 Different chemistries are -- can be
18 more amenable to one approach or another. So,
19 again, it would depend on the type of chemistry
20 in addition to the type of properties you were
21 after.
22 But, once you were given a set of

1 goals or a starting chemistry, generally, you
2 would then make the choice based on how quickly
3 you could translate the original properties to
4 the new properties.
5 Q. It sounds like when you are
6 attempting to modify the attributes of something,
7 you need the base chemistry and you need the
8 target attributes. And then you can figure out
9 what is required from there?
10 A. There is usually a lot more to it
11 from a practical point of view, and you don't
12 necessarily need a full chemical description for
13 certain types of modifications.
14 And, of course, as I mentioned
15 earlier, you can also do modifications through
16 physical combinations as well.
17 But, for a particular system or a
18 particular example, if you were then given
19 comparative properties, you could make the
20 changes, especially if you had access to
21 characterization tools to confirm the necessary
22 components of the chemistry in order to make the

1 changes.
2 Q. And what do you mean by
3 characterization tools?
4 A. I was using that as a broad term for
5 tools or instruments that can be used to
6 characterize aspects of materials.
7 So, in some cases it is useful to
8 know the category of polymer. In other cases, it
9 may be required to know other attributes in more
10 detail. And depending on which attributes you
11 needed to confirm, you would select a particular
12 instrument.
13 Q. You mentioned this idea of having
14 target attributes that you are trying to reach.
15 Where do those come from?
16 A. What do you mean?
17 Q. So, in a scenario where you are
18 attempting to change the attributes of a
19 particular material to reach certain target
20 attributes, who provides the target attributes?
21 MR. COMACK: Objection as to form.
22 THE WITNESS: It would depend on the

1 nature of the project.
2 But, for example, in a product
3 development team, the product development
4 lead would typically help shape the
5 specifications.
6 And to the extent that there is a
7 materials or chemistry question, then the
8 chemist would take the normal steps to
9 identify the material or material candidates.
10 BY MR. DARBY:
11 Q. So, as the chemist, someone
12 typically provides the target attributes for
13 purposes of the materials selection or the
14 formulation.
15 Is that accurate?
16 MR. COMACK: Objection as to form.
17 THE WITNESS: So, I don't think it
18 is fair to say typically. In a particular
19 team setting where you have a product goal,
20 then the specification process will be
21 defined by that product development process.
22 If the targets are based on product

1 performance, then the individual or the team
2 setting that performance -- that will set the
3 specs.
4 And the person in the chemistry or
5 materials role will then translate that to
6 the necessary materials information to
7 provide candidates.
8 BY MR. DARBY:
9 Q. So, during your time at 3M, I
10 understand that you were listed as a named
11 inventor on a European patent application.
12 Is that accurate?
13 A. I believe that is true, yes.
14 Q. Okay. And do you recall the subject
15 matter of that European patent?
16 MR. COMACK: Objection as to form.
17 THE WITNESS: I am understanding you
18 to be referring to the patent identified in
19 my CV, which is Appendix A to the
20 declarations; is that correct?
21 BY MR. DARBY:
22 Q. That is correct, EP 083428.

1 A. The title is "Tackified
2 Polydiorganosiloxane Polyurea Segmented
3 Copolymers, and a Process For Making Same," yes.
4 Q. Okay. Thank you for that. I was
5 not going to try the pronunciation.
6 So, was this project that led to the
7 patent, was this a formulation type of project?
8 A. There were a lot of things that led
9 to this patent. So, one aspect of this work
10 includes defining a formulation space. So, yes,
11 but there was more to it than that.
12 Q. And can you explain what you mean by
13 form -- by defining a formulation space?
14 A. So, I am confident I don't have a
15 full recollection of all of the activities
16 involved in this work.
17 But, one thing I do recall was
18 performing a series of structured experiments,
19 varying certain components in the copolymers to
20 measure differences in properties so that I could
21 get a response surface for the formulations.
22 As I said, there was more to it than

1 that, but I do remember setting up a design
2 experiment for that purpose and evaluating the
3 performance of the range of materials to assess
4 suitability for certain applications.
5 Q. And do you recall that the
6 applications were for adhesives?
7 A. One aspect of my work was related to
8 adhesion properties.
9 And so, one use of the product would
10 be as a -- one use of one type of formulation or
11 composition would be for a pressure-sensitive
12 adhesive.
13 But, as I said, there was more to
14 the work, most of which I probably don't remember
15 as I sit here.
16 Q. You mentioned the term "response
17 surface" previously.
18 Could you explain what that term
19 means?
20 A. I used that term because it is the
21 way that I think about the output of designed
22 experiments where we are systematically

1 evaluating different factors, like ratios of
2 ingredients or degree of crosslinking or other
3 sorts of things that we can manipulate in the
4 chemistry and formulation.
5 So, we have factors that we evaluate
6 the different levels. We get responses using
7 that data and statistical tools. We can create a
8 response surface which describes, basically, all
9 of the points that are available in that
10 formulation space, so that if you are seeking a
11 particular property you can go to the property,
12 and it will tell you which recipe you want.
13 Q. Looking at Paragraph 8 of your three
14 declarations, I see here a statement that says,
15 "I provide consulting engineering services in all
16 aspects of the field of polymer materials
17 science, including but not limited to," and then
18 there is a list of items here including "material
19 selection, polymer formulation, process
20 improvement, testing, product design,
21 development, failure analysis, and intellectual
22 property analysis."

1 Is that an accurate reflection of
2 Paragraph 8 in your declarations?
3 A. That sentence is present in
4 Paragraph 8, yes. And it is intended to broadly
5 describe the work that I do.
6 Obviously, there is all sorts of
7 different types of projects, but my intent was to
8 capture examples.
9 If there is a question that you have
10 related to a particular element that may not be
11 explicitly there, I would be happy to answer
12 that.
13 Q. Sure.
14 Are there any other areas of
15 materials science that you have pertinent
16 experience in that are not listed here in
17 Paragraph 8?
18 A. So, I have done a lot of work in
19 materials science, and I regularly do work that
20 connects chemistry structure, processing, and
21 properties.
22 I tend to focus my work on polymeric

1 systems, rather than other material classes.
2 Although, my work does incorporate the other
3 material classes, particularly when it comes to
4 formulation or composite systems.
5 So, I believe I have described the
6 space explicitly.
7 This paragraph contains some
8 examples that are specific to certain polymers
9 that I have worked with. I have worked with a
10 lot of other polymers as well.
11 This paragraph references my status
12 as a Fellow of the Society of Plastics Engineers.
13 I am also recently elected to the National
14 Academy of Engineering for my work in this space.
15 Q. Are there any areas of polymer
16 materials science in which you do not have
17 significant experience?
18 MR. COMACK: Objection as to form.
19 THE WITNESS: Broadly speaking, I
20 have deep and broad expertise in the field of
21 polymer material science, which includes
22 chemistry, structure, manufacturing, and

1 properties evaluation.
2 I think that is reflected throughout
3 my CV, for example. No example of an area in
4 which I have no experience comes to mind
5 under that umbrella.
6 BY MR. DARBY:
7 Q. We touched on this before, but here
8 in Paragraph 8 you identify material selection
9 and polymer formulation.
10 Just to be clear, can you explain
11 what you mean by materials selection?
12 A. Well, there can be nuances to that
13 depending on the nature of the project or the
14 program.
15 What I am intending to convey is
16 that it is common for me to be part of a team in
17 which a material is needed to make a product
18 item, and the selection process for the material
19 or materials of construction is something that I
20 would lead or engage in.
21 Typically, a materials selection
22 process is at least initially directed at

1 commercially available materials, which are
2 analyzed and essentially sorted based on whatever
3 combination of properties are relevant for that
4 particular project or product.
5 That contrasts with the formulation
6 aspect which could be the development of new
7 compositions or modified compositions using
8 commercially available resources.
9 Although I suppose actually in the
10 work that I have done in formulation, you are not
11 limited to commercially available things because
12 in the innovation space we are trying new paths
13 using traditional tools.
14 Q. So here you note a number of
15 different polymers that you have experience with.
16 I understand it is a nonexhaustive
17 list. But, you list, for example, superabsorbent
18 polymers, hydrogels, oleogels, and other
19 crosslinked polymer systems for the update of
20 fluids.
21 Could you explain what hydrogels
22 are?

1 A. Hydrogels are -- that is a term --
2 actually, it is superabsorbent polymers and
3 hydrogels are sometimes used interchangeably as
4 terms.
5 But, hydrogels imply that you have a
6 gel structure, so that is a network, a
7 three-dimensional structure, that it has a
8 affinity for water.
9 So, hydrogels will absorb water.
10 They are polar systems, and they can be useful in
11 many different applications.
12 A lot of research related to
13 hydrogels is in the life sciences, but the same
14 technology is used in other industries as well.
15 Q. So, you said that hydrogels and
16 superabsorbent polymers can be used
17 interchangeably.
18 Do you mean them to be
19 interchangeable in the context of your work for
20 these IPRs?
21 MR. COMACK: Objection as to form.
22 THE WITNESS: Different authors will

1 use terms in different ways depending on the
2 context.
3 My purpose here was simply to
4 identify that different materials have
5 different characteristics.
6 In the case of super absorbency,
7 when we focus on water-absorbing materials,
8 those are often also hydrogels.
9 There are also gels that are
10 designed to absorb fluids such as oils. That
11 is part of why I specified oleogels.
12 The point being that polymers,
13 depending on their chemistry, will interact
14 with fluids.
15 And if the polymers are crosslinked,
16 that imposes a constraint on the interactions
17 that have practical consequences in terms of
18 creating swollen or softened or absorbent
19 materials.
20 BY MR. DARBY:
21 Q. And what are some of the other
22 crosslinked polymer systems for the uptake of

1 fluids that come to mind?
2 A. As I sit here, I certainly don't
3 have an exhaustive list.
4 It is convenient to think about sort
5 of waters -- aqueous systems as one category and
6 oil-based systems as another category.
7 But, the reality is, there are lots
8 of types of fluids. And if you are trying to
9 absorb one in particular, then you would evaluate
10 that chemistry. You would think about the
11 polymers that would have the types of energetic
12 interactions that would be desired.
13 Then you would think about how to
14 build the topology of that molecule or network in
15 order to achieve the degree of absorption you
16 wanted for that particular fluid.
17 Q. Are you familiar with superporous
18 hydrogels?
19 A. Are you referring to something
20 specific?
21 Q. That specific term, are you familiar
22 with that term?

1 MR. COMACK: Objection as to form.
2 THE WITNESS: I am familiar with
3 gels and hydrogels with porosity.
4 I don't know that there is a
5 specific term of standard definition for what
6 you have said.
7 But, I believe in my declaration, I
8 have referenced the technologies that are
9 used to also introduce porosity into gel
10 structures to incorporate physical or
11 pressure-driven flow in combination with the
12 diffusion-based uptake of fluids that are
13 more characteristic of the hydrogels or other
14 absorbent polymers in general.
15 MR. DARBY: We have been going for
16 about an hour. Why don't we go ahead and
17 take a break here. We can go off the record
18 and negotiate how long it ought to be.
19 (Recess taken -- 10:38 a.m.)
20 (After recess -- 10:52 a.m.)
21 BY MR. DARBY:
22 Q. Dr. Reitman, welcome back.

1 Just to confirm, you didn't have any
2 conversations with anyone regarding your
3 testimony or the substance of these IPRs during
4 the break, right?
5 A. That is correct.
6 Q. Regarding your specific experience
7 identified in Paragraph 8 of your declarations,
8 here as we have discussed, you mentioned
9 materials selection and you mentioned hydrogels.
10 Have you worked on any particular
11 projects for materials selection involving
12 hydrogels?
13 A. Possibly, but as I sit here not --
14 no recent example comes to mind.
15 As I indicated, this category of
16 materials is of great interest in the life
17 sciences, and I do a portion of my work related
18 to medical devices and other life sciences
19 products.
20 Q. What about polymer formulation, have
21 you been involved in a project that you can
22 recall involving hydrogels and polymer

1 formulations?
2 A. Not recently where I have been
3 personally formulating. It is common for me to
4 look at formulations as part of my research and
5 analysis.
6 But, as I sit here, no recent
7 example comes to mind.
8 Q. What about for superabsorbent
9 polymers?
10 Do you recall a project involving
11 materials selection and superabsorbent polymers?
12 A. Beyond the work that we have already
13 referenced today, you mean?
14 Q. Feel free to reintroduce something
15 we have already discussed.
16 A. So, I have addressed materials
17 questions related to superabsorbent polymers in
18 this project. I also have analyzed materials in
19 the ITC project that you brought up earlier.
20 I have also analyzed superabsorbent
21 materials, compositions, various aspects in other
22 projects, at least one of which that comes to

1 mind, although not all of the details come to
2 mind, was related to how polymerization
3 conditions would change physical properties that
4 were relevant to a downstream specification.
5 Q. And can you summarize your findings
6 with respect to how polymerization conditions
7 changed the physical properties of superabsorbent
8 polymers?
9 A. So, again, I am confident I do not
10 recall all of the details of the work. And at
11 least some of the details of the work would be
12 confidential to the clients that had retained me
13 to do the work.
14 But, broadly speaking, the work
15 demonstrated that the choice of polymerization
16 conditions would affect the polymer structures
17 that were prepared. And that polymer structure
18 was linked to physical performance, such as flow
19 and strength that was relevant to the downstream
20 specification.
21 Q. When you say "downstream
22 specification," are you referring to the set of

1 target attributes?
2 A. Basically, yes.
3 Q. And, broadly speaking, without
4 divulging any confidential information, can you
5 explain generally the kinds of techniques that
6 you used to discover the link between
7 polymerization and physical performance of
8 superabsorbent polymers in this project?
9 A. First, I'm not sure I can remember
10 everything. And, second, I am not sure I
11 understood your question. So let's start with
12 second.
13 Would you re-ask your question,
14 please?
15 Q. Can you explain the kinds of
16 techniques, for example, any sorts of
17 experimentation that you used to discover a link
18 between polymerization and the physical
19 performance of superabsorbent polymers?
20 A. So, I'm not sure I would call it a
21 discovery in that it was already known that
22 chemistry and structure would affect properties.

1 And, it was known sort of the
2 direction that the properties would be affected.
3 What I was looking for there, I
4 believe was a demonstration of those principals.
5 I -- I don't recall all of the details, and I am
6 very hesitant to disclose confidential
7 information.
8 Broadly speaking, in that particular
9 instance, I both analyzed work by others and data
10 from others, as well as executed experiments to
11 create and measure physical properties in order
12 to draw conclusions. That is my general
13 recollection.
14 Q. Okay. We can leave it there, so as
15 not to go down the road of unintentionally
16 divulging confidential information.
17 A. Thank you.
18 Q. You are welcome.
19 What about material -- or excuse me,
20 what about polymer formulation?
21 Can -- any projects come to mind
22 involving superabsorbent polymers and polymer

1 formulation?
2 A. No recent example comes to mind,
3 beyond the projects that we have already talked
4 about.
5 In formulation work, I do all of the
6 time with different categories of polymers. Most
7 of which are absorbent of fluids to some level
8 under some conditions.
9 But, no current example of
10 formulation for the intention of superabsorbent
11 properties comes to mind.
12 Q. Okay. Shifting gears, Dr. Reitman,
13 please turn to Paragraphs 14 through 16 of your
14 '282 declaration and just take a moment to
15 refresh your recollection on those paragraphs.
16 And you can let me know when you are
17 done.
18 A. This is Section VI, a person of
19 ordinary skill in the art section. And I believe
20 it is the same in each of the declarations.
21 Q. Excellent.
22 So, at Paragraph 14 and all through

1 the declarations, you make reference to this idea
2 of "having access to a chemist knowledgeable
3 regarding superabsorbent polymers"; is that
4 right?
5 A. That is the last phrase in that
6 paragraph, yes.
7 Q. And do you have an understanding of
8 what having access to a chemist means in this
9 context?
10 A. I'm not sure I am following your
11 question.
12 Q. What is your understanding of what
13 it means to have access to a chemist?
14 A. In this context, what I understood
15 that to mean is that the person of ordinary skill
16 was able to interact with a chemist in order to
17 ask questions, obtain samples, get materials, for
18 example.
19 And my intent is not to rewrite any
20 of the definitions in a legal sense, but just
21 simply to acknowledge that in the design team
22 there would be a resource for the designer that

1 would have the background of a chemist as it
2 relates to superabsorbent polymers.
3 Q. You mentioned obtaining samples,
4 getting materials.
5 Is there anything else that you can
6 think of that a chemist would provide in this
7 context?
8 MR. COMACK: Objection as to form.
9 THE WITNESS: Would you re-ask your
10 question, please? I think I missed something
11 in the beginning.
12 BY MR. DARBY:
13 Q. Sure.
14 Earlier you mentioned that having
15 access to a chemist in your view refers to being
16 able to obtain samples from the chemist?
17 Can you think of any other services
18 that the chemist would provide in this context?
19 MR. COMACK: Objection as to form.
20 THE WITNESS: I think I gave you
21 other examples. And really access to samples
22 is something that could be part of what that

1 means but is not necessarily required or
2 needed in all cases.
3 The point I was trying to make is
4 that the chemist is a resource such that when
5 the designer sets a target or a specification
6 or an example, the chemist can identify which
7 materials can provide those attributes.
8 And there may be additional work to
9 provide samples once you talk about which
10 materials there are.
11 But, what I'm trying to really
12 convey is that the access is related to the
13 knowledge, the understanding that is related
14 to the chemistry, structure, and property
15 relationships and the, sort of, normal ways
16 that a chemist would go about achieving
17 properties for a given material in light of a
18 specification.
19 BY MR. DARBY:
20 Q. And just to be clear, as we have
21 been discussing specification, you mean the
22 collection of target attributes of material

1 properties?
2 A. In this response, yes. That is how
3 I was using the term. I was not using it as, for
4 example, part of the structure of a patent. I
5 was talking in terms of what you are trying to
6 develop, what the required or desired properties
7 are for a particular application.
8 Q. And what is your understanding of
9 the education and professional experience level
10 of this chemist referenced in Paragraph 14 of
11 your declarations?
12 A. So, really what I am trying to say
13 here is what others have said. I personally do
14 not have an opinion related to a person of
15 ordinary skill. My role is as outlined in this
16 declaration.
17 I am providing opinions from the
18 perspective of a chemist that a person of
19 ordinary skill would have access to.
20 So, I have tried to summarize what
21 has been put forth by others in regards to those
22 definitions as a starting point for the analysis

1 that is really within the scope of my work.
2 Q. And do you recall being informed by
3 anyone else as to the education and professional
4 experience level of the chemist referenced in
5 Paragraph 14 of your declarations?
6 A. What do you mean?
7 Q. Did anybody tell you the experience
8 level and the professional -- excuse me -- let me
9 rephrase.
10 Did anyone inform you of the
11 education and professional experience level of
12 the chemist referenced in Paragraph 14 of your
13 declarations?
14 A. 14 and 15 and 16 are intended to go
15 together to identify that various entities in
16 this matter have put forth various definitions.
17 And as I describe in 16, you know,
18 my background allows me to describe what that
19 chemist prior to 2010 would have known to do, in
20 order to be available to or to collaborate with
21 the person of ordinary skill as described in
22 Paragraphs 14 and 15.

1 Q. So, when you were assuming the role
2 of this chemist, how did you know what level of
3 knowledge that person would have had?
4 A. So, I incorporated the information
5 from both Paragraphs 14 and 15 as instructive.
6 And, for example, in Paragraph 15,
7 there is a -- an articulated description of a
8 bachelor's degree in materials science,
9 chemistry, or equivalent, with -- or has at least
10 one year experience working with materials for
11 use in consumer products.
12 The Paragraph 14 description is a
13 chemist knowledgeable regarding superabsorbent
14 polymers.
15 So, I incorporated that in light of
16 the things that are in the declaration here, in
17 order to pull together an analysis for the
18 questions that were posed to me.
19 Q. So are you treating the chemist in
20 Paragraph 14 and the person with the bachelor's
21 in materials science, chemistry, or equivalent,
22 as being effectively the same level of knowledge

1 about superabsorbent polymers?
2 MR. COMACK: Objection as to form.
3 THE WITNESS: So, again, I have not
4 provided opinions as to what a person of
5 ordinary skill is.
6 But, I have recognized that this
7 technology is well known and well understood
8 by individuals with basic levels of training
9 in this field and that the principles that
10 are at play are fundamental to the work in
11 these fields.
12 So, I have not performed an analysis
13 to discriminate between the descriptions of
14 14 and 15, but simply said, I am aware that
15 there are these two descriptions.
16 I am looking at the technology that
17 is disclosed, prior to 2010, in order to
18 answer the questions that were posed to me.
19 BY MR. DARBY:
20 Q. Okay. Fair enough.
21 Just to be clear going forward, all
22 of my questions today are going to be asking you

1 from the perspective of the chemist or someone
2 with a material science background or equivalent,
3 and so my expectation is that you would answer
4 from that perspective.
5 Is that fair?
6 MR. COMACK: Before you answer. I
7 am just objecting as to the form of that
8 instruction.
9 THE WITNESS: I think I heard you
10 say that you are going to ask the question
11 from the perspective of a chemist being a
12 member of a team, which would include a
13 person with a bachelor's in materials
14 science, chemistry or equivalent, or has at
15 least one year experience working with
16 materials for use in consumer products.
17 And I can use that definition in my
18 responses, as long as you appreciate that I
19 have considered both of these, and again,
20 have not been identified as someone to define
21 who a person of ordinary skill in the art
22 actually is.

1 BY MR. DARBY:
2 Q. I'm going to try again, because I
3 may not have been clear.
4 I want to go to Paragraph 16. At
5 Paragraph 16, you say that you are providing your
6 analysis "from the perspective of the person that
7 the POSITA in this matter would either be 1)
8 working with, 2) having access to, or 3)
9 collaborating with under Petitioners/Mr. Delman's
10 definition and Patent Owner's definition,"
11 correct?
12 A. Yes.
13 Q. My only comment here is that I'm
14 going to be asking you questions today, and my
15 expectation is that you will be answering from
16 the same perspective as identified in
17 Paragraph 16; is that fair?
18 A. Oh, yes, if that is your question, I
19 did not understand that previously.
20 I do intend to answer you consistent
21 with my declaration, including Paragraph 16.
22 Q. Excellent. Thank you. Okay.

1 Moving on.
2 Dr. Reitman, please turn to
3 Paragraphs 18 through 20 of your '282 declaration
4 and take a moment to refresh your recollection on
5 those paragraphs.
6 And you can let me know when you are
7 done with that.
8 A. Yes. These are the paragraphs that
9 fall under Section VIII, the Technology
10 Background and State of the Art, and specifically
11 Section A on polymers and polymer gels.
12 Q. Okay. And do you agree that
13 Paragraphs 18 through 20 of your '282 declaration
14 are the same or substantially the same as
15 Paragraphs 18 through 20 of your '683 declaration
16 and Paragraphs 18 through 20 of your '255
17 declaration?
18 A. They should be, because they are
19 describing the same technology. And they appear
20 to be.
21 Q. So, I want to start by discussing
22 some of the technical terms that you used in your

1 description here on polymers and polymer gels.
2 And, my first question is, when you
3 say polymers and polymer gels here in
4 Paragraphs 18 through 20 of your three
5 declarations, are you including superabsorbent
6 polymers?
7 A. Superabsorbent polymers are networks
8 that form gels.
9 So, yes, they would be captured in
10 this description.
11 Q. Okay. Moving on to some of these
12 technical terms.
13 One of the terms you use here and
14 throughout the declarations is "strength".
15 What is strength in the context of
16 polymers and polymer gels?
17 A. Strength is the term we use to
18 describe a physical capability to withstand load
19 without a fracture or a failure.
20 On a macroscopic level, that usually
21 translates to the load per unit area that leads
22 to observable failure.

1 Q. Okay. And are there different types
2 of strength, like tensile strength, for example?
3 A. Yes. So, because strength is
4 related to a -- to the ability to withstand a
5 load without failure, it can also be described in
6 terms of the nature of that load.
7 So, you can have a tensile load or a
8 compressive load or a torsional load in a
9 generalized sense.
10 And so, you might describe the
11 strength in those ways. Often that relates to
12 how you are performing the test method in order
13 to allow for comparison between materials.
14 And especially, for polymeric
15 materials, those properties can be dependent on
16 testing conditions.
17 Q. Okay. So at times in the
18 declarations, you referred to tensile strength.
19 In other times in the declarations, you just
20 refer to strength.
21 Is there a distinction between those
22 two things?

1 A. Strength is a more generalized and
2 convenient term. To the extension -- to the
3 extent we are talking about swelling, it is an
4 outward or tensile force. There is a pressure
5 associated with that.
6 So, if you want to point me to
7 something in particular, I can certainly try to
8 clarify. But, I, generally, in this analysis use
9 the term "strength" to talk about resistance to
10 fracture or fragmentation.
11 Q. Okay. You also mention "the ability
12 to absorb compatible fluids."
13 What does that mean in the context
14 of polymers and polymer gels?
15 A. I'm not sure I'm following. What do
16 you mean, what does it mean?
17 Q. What is your understanding of that
18 term or phrase that you used in your declaration,
19 "the ability to absorb compatible fluids"?
20 Are you speaking to degree of
21 swelling, which is another phrase that you used?
22 I guess what I'm trying to

1 understand is, when you talk about swelling and
2 you use that term, are you talking about the
3 ability to absorb compatible fluids?
4 A. Generally, yes. In that what I'm
5 talking about in both is -- in the context of
6 this analysis is the chemical driving -- there is
7 a chemical driving force that leads to movement
8 of small molecules to avoid concentration
9 gradients. And that has a consequence in systems
10 where one of the components is a crosslinked
11 polymer network.
12 So, there is a compatibility aspect.
13 There is an absorption and diffusion aspect.
14 One concept -- consequence of
15 absorbing small molecules into the network is
16 that the network enlarges, the spacing between
17 the polymer chains increases in a way that
18 depends on the compatibility of the polymer and
19 the small molecule.
20 Q. Okay. So when you use terms like
21 "swelling, degree of swelling, swellability, the
22 extent of swelling," we are just talking about

1 absorbency.
2 Is that accurate?
3 MR. COMACK: Objection as to form.
4 THE WITNESS: Not quite in that -- I
5 think true absorbency has to do with the
6 physical uptake.
7 So, in the swelling behavior, we are
8 talking about a diffusion of small molecules
9 into the network which leads to rearrangement
10 and plasticization.
11 There are other forms of absorbency
12 in non-superabsorbent materials that are
13 related to, for example, capillary uptake,
14 the presence of pores, and other things like
15 that, which is outlined in my declaration and
16 in the referenced textbooks.
17 BY MR. DARBY:
18 Q. I will try again, and you can
19 correct me if I don't get this right.
20 But, is swelling a phenomenon that
21 can happen when a polymer absorbs compatible
22 fluids; is that accurate?

1 A. Yes, yes. Swelling can be observed,
2 volume change can be observed when a polymer
3 network absorbs a compatible fluid.
4 And I am actually trying to find --
5 you are looking at the information in
6 Paragraph 19, correct, with the references to
7 Callister?
8 Q. Yes. Paragraph 19. That is
9 correct.
10 A. It is further explained in
11 Paragraph 20. Again, Callister has much of this
12 information in it.
13 Q. What about the term "stiffness"?
14 What does that term mean in the context of
15 polymers and polymer gels?
16 A. Stiffness is a term that can be used
17 to describe resistance to deformation. So, when
18 a force is applied, what deformation will occur.
19 So, stiffness and softness are two
20 terms that qualitatively describe a material
21 response.
22 That term also can be described in

1 terms of a modulus. Again, each of these terms
2 can be quantified using different test methods,
3 and the conditions of the test method will affect
4 the specific response.
5 Q. So, you said stiffness and softness
6 are two terms that qualitatively describe a
7 material response.
8 Do you mean a material response in
9 the sense of resisting deformation?
10 MR. COMACK: Objection as to form.
11 THE WITNESS: I think that I
12 actually did say a response to a load.
13 So, when a load is applied, a
14 material will deform. The proportionality
15 between the loading and the deforming is the
16 stiffness, which can also be qualitatively
17 described as the softness, or other terms
18 that are used to basically describe that
19 deform -- the ease of deformation.
20 It -- what I was trying to do in
21 here, among other things, was to be clear
22 that there is a difference between stiffness

1 and strength, even though they both describe
2 responses of the material to apply loads
3 under various conditions.
4 BY MR. DARBY:
5 Q. So, it sounds like stiffness,
6 modulus, and softness relate to the polymer or
7 polymer gel's resistance to deformation, and that
8 is distinct from strength which relates to
9 failure.
10 Is that accurate?
11 A. I -- that generally captures it. I
12 think it is more specifically outlined in the
13 report with the reference.
14 But, yes. Strength is a capacity to
15 withstand loads. And stiffness is a descriptor
16 of deformation under loads. At least that is how
17 I think about it in the simplest terms.
18 Q. You also used the term "resistance
19 to plastic deformation."
20 Does that fall in the same category
21 as stiffness, modulus, and softness that we were
22 just discussing?

1 A. Can you point me to that?
2 Q. Sure. It is in Paragraph 19. It is
3 the third sentence from the last sentence in that
4 paragraph.
5 A. Oh, yes.
6 So, in this paragraph, I am speaking
7 broadly about polymer networks. And, depending
8 on the specific polymer and formulation, as you
9 apply a load, you will get some amount of
10 deformation, which typically in the early stages,
11 lower amounts of deformation will be elastically
12 recoverable.
13 At higher levels of deformation,
14 again dependent on the particular molecule or the
15 particular system, it is not unusual to get
16 plastic deformation which means irreversible
17 deformation.
18 So, if you unloaded it, it would not
19 be in the original configuration because you have
20 residual deformation from the loading activity.
21 The elastic and the plastic
22 deformation, to the extent it occurs, they both

1 occur before a fracture.
2 So, again, it is trying to condense
3 a lot of polymer mechanics into a short
4 paragraph.
5 Q. In Paragraph 20 of your three
6 declarations, you mention that "The absorption
7 behavior of the polymers can also be sensitive to
8 environmental factors, such as time, temperature,
9 pH, and ions present."
10 Is that accurate?
11 A. Yes. That is also tied to
12 Footnote 8.
13 Q. In addition to absorption behavior,
14 would these environmental factors, listed in
15 Paragraph 20, also impact properties like size,
16 strength, modulus, and softness?
17 A. You might have to break that
18 question down to something that I can answer more
19 readily.
20 Would you try again, please?
21 Q. I will. Thank you.
22 The environmental factors listed in

1 Paragraph 20 are said in Paragraph 20 of your
2 declarations to impact absorption behavior.
3 My question is, would those
4 environmental factors also impact size, for
5 example, and the context of an absorbent polymer.
6 A. What do you mean by "size"?
7 Q. Size of a hydrated absorbent
8 polymer.
9 A. I think I -- these factors affect
10 the energetics of interaction between the small
11 molecule and the polymer network.
12 That changes how the small molecule
13 moves the polymer chains apart at the microscopic
14 level, which then changes the observed size of
15 the massive materials at the macroscopic level.
16 So, the degree -- the level of size
17 change, as a result of absorption, can be
18 affected by each of these factors in a way that
19 will depend on the particular system.
20 I think that answers your question.
21 Q. So, for example, if you had two
22 identical superabsorbent polymer particles, and

1 you hydrated one of them for, let's say,
2 60 minutes in tap water. And you hydrated
3 another one of them in distilled water for the
4 same amount of time.
5 How would that change the properties
6 of the superabsorbent polymers in your view?
7 MR. COMACK: Objection as to form.
8 THE WITNESS: It would depend on
9 which superabsorbent polymer you were talking
10 about.
11 So, the fluids are different
12 presumably by ion content. And then you
13 would have to decide if those ions at those
14 concentration make a difference for the
15 polymer system that you are talking about.
16 BY MR. DARBY:
17 Q. So, in order to understand how the
18 difference in the type of fluid would impact the
19 properties of the hydrated superabsorbent
20 polymer, you would need to know the chemical
21 composition of the superabsorbent polymer.
22 Is that accurate?

1 MR. COMACK: Objection as to form.
2 THE WITNESS: Will you state that
3 again, please?
4 BY MR. DARBY:
5 Q. I will.
6 So, in order to understand how the
7 difference with respect to the type of fluid
8 would impact the properties of the hydrated
9 superabsorbent polymer, you would need to know
10 the chemical composition of the superabsorbent
11 polymer; is that right?
12 MR. COMACK: Same objection.
13 THE WITNESS: If you were seeking a
14 quantitative measurement or had a specific
15 threshold then having the information about
16 the full system, generally is required.
17 However, the directionality of
18 change follows well-understood principles.
19 And so, again, depending on which pieces of
20 information you gave me as a chemist, prior
21 to 2010, I could tell you certain -- I could
22 tell you what to expect for certain things

1 but not necessarily for others.
2 BY MR. DARBY:
3 Q. So, in the example we are talking
4 about here with identical superabsorbent polymer
5 particles hydrated for the same amount of time in
6 two different types of fluid, tap water versus
7 distilled water, what information would you need
8 to know to understand qualitatively,
9 directionally, how that would change the material
10 properties?
11 A. So, there is a couple of different
12 levers that can be used. And so as I sit here, I
13 don't think I can give you a defined closed set.
14 But, for example, the -- you would
15 want to know information about equilibrium
16 conditions for the system in order to understand
17 the time dependent information you appear to be
18 asking for.
19 You would also want to know chemical
20 information about the polymer and the fluid in
21 order to assess how that changes the affinity and
22 the spacing.

1 So, directionally, as disclosed in
2 the declaration and the supporting references,
3 the physics -- the polymer physics principles are
4 understood. You would just have to give me the
5 pieces that relate to the physics for that
6 system.
7 Q. And you mentioned equilibrium
8 conditions.
9 Could you explain what you mean by
10 that?
11 A. Well, what I was referring to there
12 is that what you measure at a particular point in
13 time may be different than what you measure at a
14 different point in time, depending on the system
15 and the amount of time before the system has
16 reached a chemical equilibrium for those
17 particular components at those particular
18 environmental conditions.
19 Q. And as a chemist, how do you
20 determine the equilibrium conditions for a
21 particular polymer, superabsorbent polymer?
22 A. If I understand your question

1 correctly, basically you are asking me how do I
2 know when I have equilibrium. And often that is
3 a measurement or a comparative demonstration.
4 So, at equilibrium attributes have
5 steadied and therefore, measurements at different
6 points in time, depending on which rate you are
7 doing, will be the same.
8 So, in a practical sense, usually
9 the way you determine that is through
10 measurement. Because the principles are
11 understood, you can also model or calculate that.
12 Again, it would depend on the
13 system. And I think I have answered your
14 question, but I'm actually not sure.
15 Q. No, I think you have answered it.
16 Thank you.
17 So, I was planning to ask similar
18 questions with respect to some of the other
19 environmental factors you mentioned here like
20 time, temperature, but it sounds like your
21 answers might be the same, which is you would
22 need to know something about the chemical

1 composition of the superabsorbent polymer?
2 Is that accurate?
3 MR. COMACK: Objection as to form.
4 THE WITNESS: If you are trying to
5 describe diffusion behavior, which is an
6 essential part of superabsorbency, then you
7 would need to understand the factors that are
8 relevant to diffusion behavior, which will
9 include things like time and temperature, and
10 chemical gradients.
11 BY MR. DARBY:
12 Q. Okay. Switching gears.
13 Dr. Reitman, please turn to
14 Paragraphs 21 through 25 of your '282
15 declaration. Take a moment to refresh your
16 recollection on those paragraphs, and let me know
17 when you are done with that.
18 A. You appear to be referring to
19 Section B that is Superabsorbent Polymers or
20 (SAPs).
21 And in that Section 1, "SAPs form
22 gels by absorbing large amounts of a fluid." And

1 I expect that that is the same in all three of
2 the declarations, because, again, we are in the
3 technology background.
4 Q. Paragraph 21 of your three
5 declarations you explain that superabsorbent
6 polymers are a, quote, "large class developed to
7 provide the ability to absorb and hold liquids";
8 is that accurate?
9 A. Yes, that is part of the
10 introduction here.
11 Q. So, just keeping with your taxonomy
12 here, do you know how many species of
13 superabsorbent polymers are within that large
14 class?
15 A. I have not performed such an
16 analysis for this particular scope of work.
17 So my scope of work is focused on
18 the questions outlined here in terms of our
19 Spitballs SAPs, and would a chemist prior to 2010
20 know how to modify the properties of a SAP in
21 light of a given specification.
22 Q. Okay. And as part of that analysis,

1 you made the observation that superabsorbent
2 polymers are a large class.
3 Can you explain what you mean by a
4 large class?
5 A. One of my intents in this technology
6 background is to convey that there are many types
7 of SAPs chemically, and then I go on to explain
8 the other modifications that can be made even
9 within one chemical grouping.
10 My point, in the scope of this work,
11 is to convey that a chemist recognizes that the
12 chemical composition is one tool for identifying
13 a material with certain properties.
14 Other tools -- once you have a
15 particular chemistry, then you can modify other
16 attributes, for example, crosslinking is very
17 common to modify in order to achieve particular
18 properties.
19 Q. So, chemically, do you have any sort
20 of understanding of the number of different types
21 of superabsorbent polymers that there are, even
22 in terms of order of magnitude, hundreds,

1 thousands, tens of thousands?
2 Do you know that?
3 A. I haven't performed such an analysis
4 in the scope of this work.
5 I am aware as a chemist that there
6 are many different classifications or categories
7 or -- again, I am speaking from the term of the
8 perspective of a scientist here.
9 I think I have identified many types
10 of those chemistries in this declaration, but I
11 certainly have not identified an exhaustive list.
12 The references that I have also
13 included do describe many types of SAPs from a
14 chemical perspective as well as from other
15 descriptive perspectives such as crosslink
16 density, and so on.
17 Q. So, you know that there are many
18 different types of SAPs, but you don't know how
19 many there are.
20 Is that accurate?
21 A. As I sit here today, that was not
22 something I was asked to articulate, and I don't

1 think I could give you a number that was accurate
2 right now.
3 Q. So, if someone were interested in
4 understanding how many different types of
5 superabsorbent polymers there are, within the
6 large class that you identify in Paragraph 21,
7 how would you tell them to determine that?
8 A. Would you ask that again, please?
9 Q. Sure.
10 If someone were interested in
11 quantifying how many different types of SAPs
12 there are, superabsorbent polymers, how would you
13 instruct someone to make that determination?
14 A. So, that is not a question that was
15 posed to me in the context of my work here, so I
16 don't have a protocol for you.
17 I can tell you that modifying SAPs
18 is commonly done with well-understood tools and
19 that the types of modifications certainly can be
20 changes between chemical systems.
21 But then also can be changes within
22 that in terms of types of crosslink, or crosslink

1 density, other sorts of chemical modifications.
2 All of these things affecting the
3 interaction between the particular polymer system
4 and a given fluid.
5 Q. Is it your view that the different
6 types of superabsorbent polymers can offer
7 different combinations of mechanical properties?
8 A. That sounds like something that may
9 be stated in the declaration.
10 Certainly there are connections
11 between chemistry structure and mechanical
12 properties.
13 So, yes, changing the chemistry or
14 molecular structure of the polymer is expected to
15 change properties, the magnitude of which will
16 depend on the property and the conditions.
17 MR. DARBY: Okay. We have been
18 going for just about an hour. And I'm going
19 to switch gears here in a second. So maybe
20 we take a break here, another ten-minute
21 break.
22 THE WITNESS: Sounds good.

1 (Recess taken -- 11:46 a.m.)
2 (After recess -- 12:03 p.m.)
3 BY MR. DARBY:
4 Q. Dr. Reitman, welcome back. Just to
5 confirm, you didn't have any conversations with
6 anybody regarding the substance of your testimony
7 today or regarding these IPRs during the break,
8 right?
9 A. That is correct.
10 Q. Please turn to Paragraphs 26 through
11 27 of your '282 declaration. Take a moment to
12 refresh your recollection on those paragraphs,
13 and then you can let me know when you are done
14 with that.
15 A. These are the paragraphs under
16 Subsection 2 that says "SAPs can have different
17 chemical compositions." And they should be the
18 same paragraphs in the other two declarations.
19 Q. Okay. Paragraph 26 of your three
20 declarations, you identify four different
21 charged -- charge-based categories of
22 superabsorbent polymers: nonionic, ionic,

1 amphoteric, and zwitterionic, correct?
2 A. Yes, I do. Although, there is not a
3 footnote here, these categories are described
4 further in the references in the appendices.
5 Q. Okay. And also here in your
6 declarations, you explain that each of these four
7 charge-based categories have a range of polymers
8 with different structures and properties,
9 correct?
10 A. I am not seeing the words, but yes,
11 that is true -- oh, there at the bottom, yes.
12 Q. You identify polysaccharides here,
13 for example.
14 Which of the four charge-based
15 categories do polysaccharides fit into?
16 A. It would depend on which
17 polysaccharides and how they have been either
18 combined or chemically modified for having
19 charges.
20 So, the structures can be part of
21 grafted systems. They also can be modified on
22 the backbone.

1 And as I said, it would depend, and
2 some examples would be provided in the
3 appendices.
4 Q. Okay. So, if I understand
5 correctly, there are multiple different types of
6 polysaccharides, and the various types may fit
7 into one or more of the four different
8 charge-based categories that you identify in
9 Paragraph 26 of your three declarations.
10 Is that accurate?
11 A. So, a charge-based category is based
12 on the presence of different types of charges,
13 which will depend on the chemistry.
14 And, these based polymers can be
15 used in various modified forms which can affect
16 the charges that are present as a general matter.
17 There is a section on
18 polysaccharide-based SAPs in the Zohuriaan-Mehr
19 reference. I believe it is Page 6 of 17 in that
20 reference.
21 So, the descriptions of some of
22 these options are present.

1 Q. So, for example, could it be true
2 that one polysaccharide is a ionic composition
3 and a different kind of polysaccharide is an
4 amphoteric composition -- charged composition?
5 A. Depending on the overall and
6 specific structure, I could imagine that that
7 would be true.
8 But as I sit here, I have not done
9 the exercise of categorizing such structures for
10 this declaration.
11 As I said, the references illustrate
12 that that knowledge is available. And to the
13 extent that the charge category is the route that
14 a chemist wanted to start with, there are many
15 options that are available to modify the end
16 properties as a result of charge selection and
17 other factors.
18 Q. Do you have an understanding at
19 least qualitatively or directionally as to how a
20 modification of the charge impacts the material
21 properties of a superabsorbent polymer?
22 A. The underlying principles, I

1 believe, are disclosed in the declaration.
2 The charge density and charge type
3 will affect diffusion behavior. And diffusion
4 behavior is what is underlying absorption
5 behavior, which is what underlies the
6 superabsorbent behavior for that type of polymer.
7 So, again, the absorption will also
8 depend on the particular fluid. But, I believe
9 that some of the references also contain tables
10 indicating how changing one or more attributes of
11 the network will change performance attributes,
12 such as uptake or softening.
13 Q. So, for example, if I have a
14 superabsorbent polymer, let's say it is a
15 polysaccharide, and it is in the nonionic charge
16 category.
17 How would that superabsorbent
18 polymer and its properties compare to a
19 polysaccharide in the ionic category?
20 MR. COMACK: Objection as to form.
21 THE WITNESS: So, again, we would
22 typically look specifically at the different

1 polymers because there are other things
2 besides just being a polysaccharide-type
3 molecule that will affect the uptake.
4 But, generally the energy and
5 interaction between the groups on the
6 backbone and the small molecule fluid is a
7 primary factor in the absorption behavior and
8 the ultimate absorbency.
9 BY MR. DARBY:
10 Q. What about for other material
11 properties beyond absorbency like strength and
12 softness?
13 MR. COMACK: Objection as to form.
14 THE WITNESS: So, fluid uptake which
15 is moderated by, which is described by
16 diffusion behavior which relates to the
17 energetics will then moderate the macroscopic
18 properties of the SAP.
19 So, I think you asked me about two
20 different properties. Maybe you can re-ask
21 the question.
22 BY MR. DARBY:

1 Q. If I understand correctly, it sounds
2 like you are saying fluid uptake impacts
3 properties such as strength and softness; is that
4 correct?
5 A. Not quite, which is why I asked you
6 to re-ask me the question.
7 So, fluid uptake, and I believe this
8 is described -- I know it is described in the
9 declaration, but it is at least partially
10 described in the paragraph that speaks to
11 plasticization.
12 Fluid uptake into the polymer will
13 alter the softness because it is a plasticizing
14 or softening effect.
15 How much it alters the softness will
16 depend on the polymer as well as how much fluid
17 and how the fluid interacts with the polymer.
18 Strength can also be affected but
19 the primary -- one -- a more significant factor
20 in strength relates to crosslink density, rather
21 than the fluid itself.
22 Then, again, all of this is

1 understood by a chemist prior to 2010, as I have
2 tried to outline in the report.
3 Q. So, going back to the distinction
4 between the different charge-based categories, is
5 it true that having different charge-based
6 categories will result in different properties
7 such as strength and softness?
8 A. Not necessarily.
9 So, it is possible to design to the
10 same targets with different materials. Again, it
11 would depend on the targeted properties and a few
12 other factors.
13 But, there are enough typical levers
14 in the material choice that you are not
15 necessarily limited to polymers having only one
16 type of charge description.
17 Q. So, charge description may be
18 impactful but it is not determinative; is that
19 accurate?
20 MR. COMACK: Objection as to form.
21 THE WITNESS: I think it is what I
22 said before, which is charge can affect

1 diffusion behavior for a polymer fluid pair.
2 And diffusion behavior affects the overall
3 composition. And the overall composition
4 affects the properties.
5 So, there might be multiple paths to
6 a set of properties and charge might play a
7 role in that.
8 But, other factors might be more
9 important for a given system or might be just
10 more readily manipulated for a given system.
11 BY MR. DARBY:
12 Q. In Paragraph 26 of your
13 declarations, you refer to a range of polymers
14 with different structures and properties.
15 I think we touched on this earlier,
16 but do you know how many different types of
17 polymers there are that can be superabsorbent
18 polymers?
19 A. I do think that we addressed this
20 before. That question is not a question that is
21 within the scope of my work, as I understand it,
22 for this project.

1 There are many types of chemistry
2 categories. There are many modifications that
3 can be made within those chemistry categories.
4 I have attempted to outline that
5 here, and that is further supported by the
6 appendices.
7 But, really this -- I am not here to
8 provide an opinion about how many in a
9 quantitative sense exist. Simply that a chemist
10 was aware of the fact that there is a wide range
11 of options. There are well-understood chemical
12 principles that help describe the behavior.
13 And that it was relatively routine
14 to modify final properties by making changes to
15 the chemistry or the structure in these
16 predictable ways.
17 Q. Okay. Please turn to Paragraphs 28
18 through 30 of your '282 declaration.
19 Take a moment to refresh yourself on
20 those, and then let me know when you are done
21 with that.
22 A. What paragraphs are you speaking of,

1 please?
2 Q. 28 through 30 of your '282
3 declaration.
4 A. So, this would be under Section 3,
5 "SAPs can have different crosslink
6 characteristics."
7 And, again, these paragraphs should
8 be the same between the three declarations,
9 because they describe the same technology
10 background.
11 Q. In each of your three declarations,
12 you suggest that for any given chemical
13 composition, the superabsorbent polymer would
14 also have a specific type of crosslinking, a
15 specific number of crosslinks, and a specific
16 density of crosslinking.
17 Is that accurate?
18 A. Yes. Those are descriptors for a
19 given system.
20 Q. So, just keeping track of some of
21 the variables or levers here, there are different
22 composition variables, like polymer type or

1 charge type, and then there are also different
2 crosslinking variables, like crosslink type,
3 crosslink number, or crosslink density.
4 Is that all correct?
5 A. Yes, these are some of the factors
6 that can be considered when thinking about how to
7 modify properties.
8 Q. Turning to Figure 4, which is below
9 Paragraph 30 in each of your three declarations.
10 This is one of the figures that you
11 discuss at the hearing before Judge McNamara.
12 Do you remember that?
13 A. No.
14 Q. Do you remember the figure?
15 A. Yes, it is taken from Buchholz.
16 Q. But you don't remember if you
17 discussed this figure in your testimony before
18 Judge McNamara?
19 A. As I sit here, I don't have a
20 recollection one way or another.
21 Q. Can you explain what the plot shown
22 in Figure 4 is?

1 A. It is labeled as the "Impact of" a
2 crosslinker -- "of crosslinker loading for mole
3 of monomer on the shear modulus of a SAP using
4 either (a) diacrylate or the triallylamine as
5 crosslinking agents."
6 As I indicated, it is from Page 174
7 of Buchholz. The graph shows that the two
8 different crosslinkers used at different levels
9 in the same initial polymer system will or can
10 lead to different shear modulus values.
11 Again, that value will depend on the
12 crosslinking amount in addition to the
13 crosslinking type.
14 Q. Just going back to our discussion of
15 terms earlier.
16 A higher-shear modulus on this plot
17 would mean that the superabsorbent polymer is
18 stiffer and harder, while a lower-shear modulus
19 on this chart would mean that the superabsorbent
20 polymer is softer.
21 Is that right?
22 A. Yes. Generally, a higher modulus

1 means something is stiffer or more resistant to
2 deformation.
3 This particular chart is shear
4 deformation which is a sliding motion.
5 Q. So, in addition to showing the
6 impact of different crosslinkers, isn't it true
7 that this plot also shows the impact of different
8 crosslink density?
9 A. Yes. That is what I had said
10 earlier.
11 Q. Apologies. I didn't catch that.
12 And can you explain the relationship
13 that this plot shows between modulus and
14 crosslink density?
15 A. That may also be depicted in another
16 figure.
17 But, for this figure, the higher the
18 crosslink density, which is related to how much
19 crosslinker is present, the higher the modulus or
20 the higher the stiffness.
21 So, a more tightly linked connected
22 network will tend to be stiffer.

1 Q. Is that generally true for
2 superabsorbent polymers in your experience?
3 A. That is generally true for
4 crosslinked polymers of all type.
5 And yes, it is also true for
6 superabsorbent polymers.
7 Q. Okay. Dr. Reitman, please turn to
8 Paragraphs 31 through 35 of your '282
9 declaration.
10 Take a moment to refresh yourself on
11 those, and let me know when you have done that.
12 A. This is Section 4, which is "SAP can
13 have different network characteristics."
14 And I believe, again, this will be
15 the same in all three declarations because it is
16 a description of the same technology background.
17 Q. Looking at Paragraph 31 of your
18 three declarations, you identify several factors
19 that impact the inherent material properties of a
20 superabsorbent polymer, including the molecular
21 weight of the polymer chain between crosslinks,
22 the entanglement of the chains, and the solvent

1 interaction.
2 Is that all accurate?
3 A. Those are several of the factors
4 that I identify in Paragraph 31, yes.
5 Q. And are these factors or variables
6 distinct from the variables we have already
7 discussed in terms of crosslink, type, number,
8 and density and chemical composition?
9 A. They are interrelated. So,
10 crosslink density is another way to describe the
11 molecular weight between crosslinks.
12 And solvent interactions are what we
13 have been talking about in terms of the chemical
14 affinity or the physics of the interaction or the
15 energy of the interaction between a particular
16 polymer or groups on a polymer compared to a
17 particular fluid.
18 So, the concepts are all related.
19 If you are asking a different question about
20 distinction, you may need to rephrase it to me.
21 MR. DARBY: Okay. Why don't we take
22 a lunch break here, if everybody is okay with

1 that. This is a pretty good stopping point
2 for me on my end.
3 (Recess taken -- 12:27 p.m.)
4 (After recess -- 1:41 p.m.)
5 BY MR. DARBY:
6 Q. Dr. Reitman, welcome back. Just to
7 confirm during the lunch break today, you didn't
8 have any conversations with anybody regarding the
9 substance of your testimony today or any of your
10 testimony in these IPRs, correct?
11 A. That's correct.
12 Q. If you could, please turn to
13 Paragraphs 55 through 66 of your '282
14 declaration.
15 Take a moment to refresh your
16 recollection on those paragraphs, and then you
17 can let me know when you are done with that.
18 A. Okay. So, that is a section
19 starting with Roman Numeral IX, "Spitballs were
20 SAPs."
21 I am at that section in the '282,
22 and I believe that the paragraphs are the same

1 substance in the other declarations.
2 Q. Okay. The paragraph numbers are
3 just a little bit different, so let's just
4 confirm.
5 I believe 55 through 66 of your '282
6 declaration corresponds to 51 through 62 of your
7 '683 declaration and 55 through 66 of your '255
8 declaration.
9 A. The '683, yes, that starts with 51.
10 And for the '255, it starts with 52. Is that
11 what you had said?
12 Q. No, I had that wrong. Sorry. Thank
13 you for checking.
14 '683, would you agree with me that
15 it is 52 through -- 52 through 61.
16 A. No. For the '683, the section --
17 the content under the header IX, "Spitballs were
18 SAPs" starts with Paragraph 51.
19 And for the paragraphs you are
20 talking about, I believe 62 is the last for that
21 one.
22 For the '255, Section IX, "Spitballs

1 were SAPs," starts at Paragraph 52, and the
2 section you were speaking about ends with
3 Paragraph 63.
4 And back where we were before the
5 '282, the section, "Spitballs were SAPs" starts
6 with Paragraph 55.
7 Q. Okay, great. Just to summarize,
8 '282, Paragraphs 55 through 66, which correspond
9 to '683, Paragraphs 51 through 62, which
10 corresponds to '255, Paragraphs 52 through 63?
11 A. Yes.
12 Q. And would you agree that those
13 paragraphs are all the same or substantially the
14 same between the declarations?
15 A. Yes, they should be.
16 Q. Okay. Regarding the polymers
17 described in the spitball reference, you have
18 taken the position that those polymers are
19 superabsorbent polymers, correct?
20 A. My analysis is outlined here, and
21 yes, it is my opinion that Spitballs are SAPs.
22 Q. And do you have a recollection of --

1 or an understanding of the chemical composition
2 of the polymers from the Spitballs reference?
3 MR. COMACK: Objection to form.
4 Sorry, go ahead.
5 THE WITNESS: As I sit here, I don't
6 recall that. My analysis for the purposes of
7 the IPR is outlined here, in terms of the
8 written disclosures from the ThinkGeek
9 documentation.
10 BY MR. DARBY:
11 Q. Would you agree that your analysis
12 in your declarations does not identify the
13 chemical composition of the polymers described in
14 the Spitballs' reference?
15 A. This Section IX does not include
16 specific chemical information, but instead looks
17 to the disclosures related to the polymers which
18 are sufficient to recognize these as
19 superabsorbent polymers.
20 Q. Does your analysis in Section IX of
21 your declarations identify the crosslinker of the
22 polymers and Spitballs?

1 A. This section does not identify
2 chemical information but instead looks to the
3 written disclosures from the reference that
4 provide information sufficient for a chemist to
5 recognize that the polymers are, in fact,
6 superabsorbent polymers.
7 But, no, there is not -- I don't
8 believe there is crosslinker information in this
9 analysis.
10 Q. What about crosslink density
11 information?
12 A. There is information about there
13 being a crosslinked network and the density being
14 sufficient to impart certain properties or
15 characteristics.
16 But, there is not a quantitative
17 measure of crosslink density in this portion of
18 my analysis or this analysis for this project.
19 Q. Okay. Dr. Reitman, if you could
20 please turn to Paragraphs 4 through 5 of your
21 '282 declaration.
22 Take a moment to refresh your

1 recollection on those paragraphs.
2 A. You said 4 and 5?
3 Q. Yes.
4 A. I have reviewed those two
5 paragraphs.
6 Q. Actually, that is a little premature
7 for me. Apologies for that. I want to step back
8 to Spitballs.
9 So back to Section IX of the three
10 declarations, if we could. Sorry about that.
11 A. I am back to Section IX.
12 Q. And so you mentioned earlier that
13 your analysis in Section IX regarding Spitballs
14 doesn't include any specific chemical information
15 regarding the composition, correct?
16 A. Not quite.
17 What I said is that the specific
18 chemical structure is not here, nor is the
19 specific crosslinker here.
20 However, there is chemical
21 information that is conveyed in terms of water
22 affinity and the things that would be

1 recognizable characteristics of a superabsorbent
2 polymer.
3 Q. Okay. Fair enough.
4 If you were instructed as a chemist
5 in 2010 to make Spitballs stronger, what
6 adjustments would the chemist make in that
7 scenario?
8 A. I believe that this is outlined in
9 the declaration. But, in general, a gel can be
10 made stronger, for example, by increasing the
11 crosslink density.
12 Q. Are there any other ways that you
13 could make Spitballs stronger?
14 A. The -- there are ways to change the
15 effective strength which, for example, would
16 include changing the degree of hydration which
17 would change the molecular configuration during
18 use.
19 There may be other ways, but the --
20 probably the most common is to change the
21 crosslink density.
22 Q. How would you change the degree of

1 hydration?
2 A. You would just change the immersion
3 time. You could also change the fluid, but the,
4 the strength is -- can be, can be affected by the
5 overall polymer density and the confirmation of
6 the chains between crosslinks.
7 So, the degree of hydration can
8 affect that for most systems.
9 Q. By changing immersion time, do you
10 mean changing the amount of time that the
11 superabsorbent polymer resides in a liquid?
12 A. Generally, that is what I was
13 talking about, yes.
14 Q. You mentioned changing the fluid.
15 How would you change the fluid?
16 A. The overall system response to the
17 forces will be related to both the polymer and
18 the fluid.
19 So, if you changed characteristics
20 of the fluid, you can change the deformation and
21 strength characteristics of the system.
22 We have talked about some of the

1 characteristics of the fluid already in terms of
2 polarity of the system, ion concentration, pH,
3 things like that.
4 Q. Okay. And if someone asked a
5 chemist in 2010 to make Spitballs softer, what
6 adjustments would the chemist make in that
7 scenario?
8 A. You would use the same basic
9 principles to modify the network and the system.
10 So, you could reduce the crosslink
11 density, that would be a very common thing to do,
12 to soften the system.
13 There are probably other things that
14 could be done if you were staying within the same
15 chemistry.
16 But, again, you could shift the
17 specific chemical composition as well, and that
18 could then lead to a softer system depending on
19 what you selected.
20 Q. Okay. Now I'm going to take us to
21 Paragraphs 4 through 5 of all three
22 declarations -- '282, '683, and '255 -- which

1 should all be the same.
2 Can you just take a moment to
3 refresh yourself on those paragraphs?
4 A. Yes. I am back to Paragraphs 4 and
5 5, and they are the same across the declarations.
6 Q. You mentioned in Paragraph 4 of your
7 declarations that you have reviewed certain prior
8 art.
9 Specifically, which prior art did
10 you consider?
11 A. I attempted to disclose the
12 references I used as the appendices. So, I have
13 focused on information that was available to a
14 chemist prior to 2010.
15 Q. So, the specific documents that you
16 referenced are attached as the appendices in '683
17 and '282.
18 Is that accurate?
19 A. Yes. For these declarations, my
20 intent was to provide the references that I used
21 to represent the analysis as attachments or
22 appendices.

1 Q. In Paragraph 5 of your declarations,
2 you mentioned that you have had conversations
3 with Joel Delman regarding your opinions.
4 Is that correct?
5 A. Yes.
6 Q. And how many conversations have you
7 had with Mr. Delman?
8 A. I am not sure.
9 Q. Do you recall when your
10 conversations with Mr. Delman took place?
11 A. I don't have a full recollection of
12 the times that I have spoken with him.
13 But, I did speak to him in a time
14 frame when he was doing analysis. And then I
15 also spoke with him when we were physically
16 present in Washington, D.C.; it was about a year
17 and a half ago.
18 Q. Did you speak with Mr. Delman in
19 preparing your three IPR declarations?
20 A. I don't remember if there was a
21 conversation specific to the IPR. I only
22 remember that they were conversations specific to

1 what a chemist would know about superabsorbent
2 polymers and how to modify their properties
3 and about my assessment of Spitballs as
4 superabsorbent polymers.
5 Q. Did you discuss any other topics
6 with Mr. Delman?
7 A. Yes.
8 Q. Did you discuss any other technical
9 topics with Mr. Delman, during your meetings
10 regarding the Spin Master patents?
11 A. Outside of the context of the IPR
12 work, yes. I have spoken on other -- well, it is
13 really always the same topic. So, I would say
14 probably, no.
15 I mean, I spoke to him about what a
16 chemist would know and the ways that that
17 manifests practically as it relates to products
18 and product descriptions.
19 Q. Did Mr. Delman provide any
20 information to you regarding products or product
21 descriptions?
22 A. I'm not sure I understand your

1 question.
2 Q. Did Mr. Delman provide any target
3 attributes or material property requirements in
4 your discussions with him?
5 MR. COMACK: Objection as to form.
6 THE WITNESS: I don't remember the
7 details of the conversation, other than,
8 broadly, he was asking me about
9 superabsorbent polymers, and if I could
10 adjust properties if asked and what I had
11 determined based on assessing information
12 about certain physical items or descriptions
13 of physical items.
14 Although, I am possibly conflating
15 this with the discussions in the context of
16 my scope in the ITC matter, which is
17 different than my understanding of the scope
18 in the IPR matter.
19 BY MR. DARBY:
20 Q. So, just to confirm, you are not
21 sure if you spoke with Mr. Delman in connection
22 with these IPRs in your scope of work in

1 connection with these IPRs; is that accurate?
2 MR. COMACK: Objection as to form.
3 THE WITNESS: I am sure that I spoke
4 to him about what a chemist would know about
5 superabsorbent polymers and how to modify
6 them prior to 2010.
7 And I am sure I spoke with him about
8 Spitballs, in particular, what the packaging
9 and internet information would tell a chemist
10 about the nature of Spitballs.
11 But, again, I don't recall the
12 timing of our various discussions or the full
13 scope of those discussions to the extent that
14 they touched on something other than the IPR
15 work.
16 BY MR. DARBY:
17 Q. Do you recall discussing airsoft
18 with Mr. Delman?
19 A. What do you mean?
20 Q. Airsoft guns. Do you recall
21 discussing airsoft guns with Mr. Delman?
22 A. So, my scope was focused on the

1 polymers. So, no, I don't recall particularly
2 discussing a gun.
3 I recall talking to him about what
4 was possible to provide, based on the knowledge
5 and tools of a chemist prior to 2010, in terms of
6 these types of materials in light of the asserted
7 claims.
8 Q. So, you don't recall Mr. Delman
9 communicating to you the attributes or material
10 property requirements of airsoft ammunition?
11 MR. COMACK: Objection as to form.
12 THE WITNESS: I don't recall the
13 details of the conversation. But, my focus
14 was on answering questions about
15 superabsorbent polymers, what shapes they
16 could be made in, what sizes, and how their
17 mechanical properties, such as softness,
18 stiffness, fractures, could be tailored,
19 again, based on these skills and tools of a
20 chemist prior to 2010.
21 BY MR. DARBY:
22 Q. Have you read Mr. Delman's

1 declarations in connection with these three IPRs?
2 A. I don't think that I have.
3 MR. DARBY: Okay. Why don't we take
4 a quick break here. That might be all I
5 have.
6 (Recess taken -- 2:05 p.m.)
7 (After recess -- 2:18 p.m.)
8 MR. DARBY: Thanks, Dr. Reitman for
9 your time today. That is all of my
10 questioning, subject to any redirect by PTT's
11 counsel.
12 MR. COMACK: Yes, I will have some
13 redirect.
14 CROSS-EXAMINATION
15 BY MR. COMACK:
16 Q. I'm going to try to keep it as brief
17 as possible.
18 A. Okay.
19 Q. So, during the break, did you talk
20 to anyone about the testimony that you have
21 provided today?
22 A. No.

1 Q. Did you have any discussions with me
2 about questions that I may be asking you?
3 A. No.
4 Q. With anyone?
5 A. No.
6 Q. Okay. Dr. Reitman, you were asked
7 questions about the '282, '683 and '255 patents
8 by Mr. Darby.
9 Do you recall that?
10 A. Yes.
11 Q. Okay. Are you familiar with these
12 three patents?
13 A. Yes.
14 Q. Do the patents include any working
15 examples of ammunition made from superabsorbent
16 polymer?
17 A. No.
18 Q. Did the patents say what types of
19 superabsorbent polymer should be made to make the
20 ammunition?
21 A. No.
22 Q. Did the patents say what SAP

1 chemistry should be used to make the ammunition?
2 A. There is no specific chemical
3 description of SAPs in the patents.
4 Q. I see.
5 And Mr. Darby also asked you
6 questions about the crosslinkers, correct?
7 A. He asked me questions about
8 crosslinkers, yes.
9 Q. Do any of the three patents say what
10 type of crosslinkers should be used to make the
11 ammunition?
12 A. No. There is no chemical
13 information about crosslinkers.
14 Q. But the patents do discuss
15 crosslinkers; is that right?
16 A. Yes.
17 Q. Okay. I'm going to hand you a copy
18 of the '683 patent, which is Exhibit 1001 of the
19 '683 IPR.
20 (Whereupon, previously marked
21 Exhibit 1001,
22 first referral.)

1 MR. COMACK: Ken, I assume you have
2 a copy, you can access this one?
3 MR. DARBY: I do. Thank you.
4 BY MR. COMACK:
5 Q. And although I'm asking you
6 questions about the '683 patent, unless I tell
7 you otherwise, will you understand that my
8 questions apply to all three patents; namely, the
9 '683, the '282, and the 252 -- '255 patents?
10 A. I will. And if I have a question, I
11 will ask you.
12 Q. Thank you.
13 All right. Let's take a look at
14 Column 4 of the '683 patent.
15 A. Okay. I am on Column 4 of the '683
16 patent.
17 Q. Okay. And I'm going to read to you
18 the excerpt on Lines 19 to 26 of Column 4. Are
19 you ready?
20 A. Yes.
21 Q. Do you see the sentence that starts
22 with "consequently"?

1 A. Yes.
2 Q. That is where I am going to pick up
3 from.
4 So, quote, "Consequently, by using a
5 SAP with a higher crosslink density, a soft
6 projectile can be made to fly further and faster
7 without breaking apart and have a stronger
8 impact.
9 "In contrast, soft-projectiles made
10 from a SAP with a lower crosslink density will
11 break apart more easily and have a much softer
12 impact. Depending on the level of safety
13 required, different SAPs with different crosslink
14 densities may be used."
15 Did I read that correctly?
16 A. Yes.
17 Q. All right. Prior to 2010, could a
18 chemist develop a soft projectile made from SAP
19 ammunition with a higher crosslink density so
20 that it would break apart and -- so that it would
21 not break apart in water?
22 A. Yes. A chemist prior to 2010 could

1 tailor crosslink densities to tailor strength, so
2 to make something stronger and not break apart,
3 the chemist would increase the crosslink density.
4 Q. And would doing that be very
5 difficult or routine to do in 2010?
6 A. Prior to 2010, it would have been a
7 straightforward routine thing to do.
8 Q. And, prior to 2010, could the
9 chemist do this even though the '683 patent does
10 not identify what SAP to use?
11 A. Yes. The ability -- the knowledge
12 to increase crosslink density to increase
13 resistance to fracture increased strength was
14 well known and straightforward and did not
15 require having an example disclosed.
16 Q. Right. So, would the chemist be
17 able to do all of that, even though the '683
18 patent, or the three patents, if you will, do not
19 disclose what specific crosslinker to use?
20 A. Yes.
21 Q. And, could the chemist do that prior
22 to 2010, even though the three patents do not

1 disclose what polymer chemistry to use?
2 A. Yes.
3 Q. All right. Prior to 2010, could a
4 chemist develop a soft projectile made from SAP
5 with a lower crosslink density so that it would
6 break apart more easily and have a much softer
7 impact?
8 A. Yes. Prior to 2010, a chemist could
9 lower the crosslink density of a SAP to reduce
10 the strength, making it softer and making its
11 impact softer.
12 Q. And, would that have been very
13 difficult or routine for a chemist to do prior to
14 2010?
15 A. That type of modification would have
16 been straightforward and routine prior to 2010.
17 Q. Now, would the chemist be able to do
18 that modification, again prior to 2010, even
19 though the three patents do not identify what SAP
20 to use?
21 A. Yes. The chemist would have been
22 able to do that modification for any number of

1 SAPs and would have known how to make the changes
2 to make it softer by lowering crosslink density.
3 Q. And would the chemist be able to
4 make that modification, even though the three
5 patents do not disclose what crosslinker to use?
6 A. Yes.
7 Q. And would -- prior to 2010, would
8 the chemist be able to make those modifications,
9 even though the three patents do not disclose
10 what polymer chemistry to use?
11 A. Yes. The chemist, prior to 2010,
12 would know how to modify polymers in general,
13 using crosslink density to make them softer by
14 reducing the density or stronger and harder by
15 increasing the crosslink density.
16 Q. Okay. Staying in the patent, and we
17 are looking at the '683 patent, Column 4,
18 Lines 28 to 33, I'm going to read you another
19 excerpt which picks up at "Soft-projectiles made
20 from a SAP are preferably round."
21 Do you see that?
22 A. Yes.

1 Q. I'm just going to read that whole
2 little passage and those lines.
3 So, "Soft-projectiles made from a
4 SAP are preferably round, but maybe of other
5 shapes as well, including, for example, dart
6 shapes, cylinder shapes, bullet shapes, oval,
7 square, rectangular, or any other shape. "Round
8 is" preferable -- "is a preferable shape not only
9 because it has very good ballistic
10 characteristics but because SAPs are easily
11 formed in round shapes."
12 Did I read that correctly?
13 A. Yes.
14 Q. Now, do you understand that the same
15 teaching is also in the '282 and the '255
16 patents?
17 A. Yes.
18 Q. Now, prior to 2010, could a chemist
19 develop a soft projectile made from SAP with a
20 spherical shape?
21 A. Yes.
22 Q. Would that have been very difficult

1 or routine for the chemist to do prior to 2010?
2 A. To make a SAP in a spherical or
3 round shape would have been straightforward and
4 routine prior to 2010.
5 Q. And would the chemist be able to do
6 that even though the three patents do not
7 identify what SAP to use?
8 A. Yes.
9 Q. And would the chemist be able to do
10 that even though the three patents do not
11 identify what crosslinkers to use?
12 A. Yes.
13 Q. And could the chemist do that prior
14 to 2010, even though the three patents do not
15 identify what polymer chemistry to use?
16 A. Yes.
17 Q. Let's stay in the '683 patent,
18 staying in Column 4, Lines 34 to 40.
19 I'm going to read to you again, and
20 it is the sentence that starts with "Soft-
21 projectiles made from a SAP can be any size."
22 Do you see that?

1 A. Yes.
2 Q. I will read you the rest of it,
3 starting over.
4 So, "Soft-projectiles made from a
5 SAP can be any size. Preferably, however, the
6 soft-projectiles made from a SAP are between
7 about 3 millimeters (mm) and about 15 millimeters
8 in diameter when hydrated and more preferably
9 between about 5 millimeters and 8 millimeters in
10 diameter when hydrated."
11 Did I read that correctly?
12 A. Yes.
13 Q. Prior to 2010, could a chemist
14 develop a soft projectile made from SAP that was
15 spherical and was between about 3 millimeters and
16 about 50 millimeters in diameter when hydrated?
17 A. Yes.
18 Q. And would that have been very
19 difficult or routine to do prior to 2010?
20 A. That would have been straightforward
21 and routine prior to 2010.
22 Q. And would the chemist have been able

1 to do that, prior to 2010, even though the three
2 patents do not identify what SAP to use?
3 A. Yes.
4 Q. And, again, prior to 2010, would the
5 chemist have been able to do that even though the
6 three patents do not disclose what crosslinker to
7 use?
8 A. Yes.
9 Q. And prior to 2010, would the chemist
10 have been able to do that even though the three
11 patents do not disclose what polymer chemistry to
12 use?
13 A. Yes.
14 Q. Okay. Prior to 2010, could a
15 chemist develop a soft projectile made from SAP
16 that was spherical and was between about
17 5 millimeters and 8 millimeters in diameter when
18 hydrated?
19 A. Yes. That would have been something
20 straightforward to accomplish.
21 Q. Would that have been difficult or
22 routine?

1 A. It would have been routine prior to
2 2010.
3 Q. And, prior to 2010, could the
4 chemist do that even though the three patents do
5 not identify what SAP to use?
6 A. Yes.
7 Q. And would the chemist have been able
8 to do that prior to 2010, even though the three
9 patents do not disclose what crosslinker to use?
10 A. Yes.
11 Q. Prior to 2010, could the chemist do
12 that even though the three patents do not
13 disclose what polymer chemistry to use?
14 A. Yes.
15 Q. Do you recall that Mr. Darby also
16 asked you some questions about Spitballs?
17 A. Yes.
18 Q. I'm going to hand you what has been
19 marked as Petitioner's Exhibit 1002. They are
20 all three IPRs.
21 (Whereupon, previously marked
22 Exhibit 1002,

1 first referral.)
2 BY MR. COMACK:
3 Q. Have you seen this before?
4 A. Yes.
5 Q. Have you studied it?
6 A. I have reviewed it more than once,
7 so, yes.
8 Q. Let's go to Page 21 of Exhibit 1002.
9 I just got there myself. All right.
10 I'm going to read -- so, do you see
11 the heading "Grow 'Em and Check 'Em"?
12 A. Yes, it is in the upper middle of
13 the page.
14 Q. Right. And then you see two
15 paragraphs right below that?
16 A. Yes. Along with two images, and
17 then some bullet points.
18 Q. Right. So, I'm going to read from
19 the second paragraph that says -- it is right to
20 the left of the hand holding the Spitballs.
21 Do you see that paragraph?
22 A. Yes.

1 Q. Okay. It says, "Spitballs start off
2 as small, hard little spheres. Soak them in
3 water for about four hours or overnight for best
4 results, and they will absorb water and grow to
5 200 times their original size."
6 Did I read that correctly?
7 A. I don't know if I heard you say "up"
8 before two, but, yes, "grow up to 200 times their
9 original size."
10 Q. Got you, thank you. Thank you for
11 that correction.
12 Now, prior to 2010, if a chemist was
13 given this information in Exhibit 1002 that I
14 just read, could he or she develop a soft
15 projectile that would start off as a, as small,
16 hard, little spheres, absorb water, and grow up
17 to 200 times the original seize?
18 A. Yes.
19 Q. Would that have been very difficult
20 or routine for the chemist to do in 2010?
21 A. It would have been straightforward
22 and relied on routine information and actions

1 prior to 2010.
2 Q. And would the chemist have been able
3 to do that even though Exhibit 1002 does not
4 identify what SAP the Spitballs are made out of?
5 A. Yes.
6 Q. And would the chemist have been able
7 to do that in 2010, even though -- before 2010,
8 even though --
9 I'm going to read you my last
10 question, just so the record is clear?
11 Could the chemist be able to make
12 the soft projectile that would start off as
13 small, hard, little spheres, absorb water and
14 grow to 200 times their original size, even
15 though Exhibit 1002 does not identify what SAP
16 the Spitballs are made of?
17 And, again, I'm asking you prior to
18 2010.
19 A. Yes.
20 Q. And could the chemist, prior to
21 2010, do that even though Exhibit 1002 does not
22 name what crosslinker to use?

1 A. Yes.
2 Q. And could the chemist do that prior
3 to 2010 even though Exhibit 1002 doesn't specify
4 the polymer chemistry to use?
5 A. Yes.
6 Q. All right. Let's keep reading on
7 page -- I'm sorry, on Page 21 of Exhibit 1002.
8 Let me get my bearings.
9 Okay. So, staying on the same
10 paragraph I was just reading on, the last two
11 lines in the text on the left of the hand; do you
12 see that?
13 A. Yes.
14 Q. It says, "Spitballs are now ready
15 for war. They are slimy and squishy. If you
16 throw them gently, they will bounce. If you
17 throw them hard enough, they will explode into
18 mushy pieces."
19 Did I read that correctly?
20 A. Yes.
21 Q. Prior to 2010, if a chemist was
22 giving this information that I just read in

1 Exhibit 1002, could he or she develop a soft
2 projectile that if thrown gently would bounce,
3 and if thrown hard enough, would explode into
4 mushy pieces?
5 A. Yes.
6 Q. Would this be very difficult or
7 would it be routine for the chemist to do prior
8 to 2010?
9 A. Prior to 2010, this would have been
10 straightforward for a chemist and involve routine
11 actions.
12 Q. Okay. Let's keep reading on Page 21
13 of Exhibit 1002. And, now, we are going to go
14 down in the page a little bit. Okay.
15 So, if you go below the image of a
16 bowl of Spitballs; do you see that image?
17 A. Yes, I see that image.
18 Q. And there are six bullet points
19 right below that?
20 A. Yes, there is one to the right and
21 six bullet points.
22 Q. Oh, I'm sorry. Seven bullet points,

1 you are right.
2 So, the last bullet point says,
3 "Dimensions, Spitballs grow to about .6 inches in
4 diameter. The longer they absorb water, the
5 bigger they grow."
6 Did I read that correctly?
7 A. Yes.
8 Q. Now, prior to 2010, if a chemist was
9 given this information could he or she develop a
10 soft projectile that grows to about 0.6 inches in
11 diameter?
12 A. Yes.
13 Q. Would that be very difficult or
14 routine for the chemist to do prior to 2010?
15 A. It would be straightforward and
16 involve routine actions prior to 2010.
17 Q. Could the chemist do this even
18 though Exhibit 1002 does not identify what SAP
19 the Spitballs are made out of?
20 A. Yes.
21 Q. And could the chemist do this prior
22 to 2010 even though Exhibit 1002 does not

1 identify what crosslinker to use?
2 A. Yes.
3 Q. And could the chemist do this prior
4 to 2010 even though Exhibit 1002 does not
5 disclose what polymer chemistry to use?
6 A. Yes.
7 Q. Okay. Now, prior to 2010, if a
8 chemist was given this information, could he or
9 she develop a soft projectile that grows to about
10 6 millimeters in diameter?
11 A. Yes.
12 Q. And would that have been very
13 difficult or routine for the chemist to do in
14 2010?
15 A. Prior to 2010, that would have been
16 straightforward and have involved routine
17 actions.
18 Q. Prior to 2010, could the chemist do
19 this even though Exhibit 1002 does not identify
20 what SAP the Spitballs are made out of?
21 A. Yes.
22 Q. And even though it does not disclose

1 what crosslinker to use?
2 A. Yes. The chemist, prior to 2010,
3 could have done that even without that
4 disclosure.
5 Q. And before 2010, could a chemist
6 have done that even though Exhibit 1002 does not
7 discuss what polymer chemistry to use?
8 A. Yes.
9 MR. COMACK: So, subject to any
10 recrossing, Kenneth, I pass the witness to
11 you.
12 THE WITNESS: You are on mute.
13 MR. DARBY: I made it so far.
14 I don't have any questions on the
15 redirect -- no cross on the redirect, so I
16 think that concludes the deposition for
17 today.
18 (Whereupon, signature not having been waived,
19 the deposition suspended at 2:36 p.m.)
20 * * *
21
22

1 CERTIFICATE OF NOTARY

I, LORI J. GOODIN, RPR, CRR,

2 CA CSR # 13959 the Notary for this deposition, do hereby certify that the witness whose testimony

3 appears in the foregoing deposition was sworn by me; that I am neither counsel for, related to,

4 nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am

5 not a relative or employee of any attorney or counsel employed by the parties hereto, or

6 financially or otherwise interested in the outcome of this action.

7

8 Lori J. Goodin

LORI J. GOODIN, RPR, CLR, CRR
Notary Public in and for:

9

STATE OF FLORIDA, COUNTY OF SARASOTA

10 Notary Commission Number: GG987804

My Commission expires: May 12, 2028

11 STATE OF CALIFORNIA, CA CSR# 13959

12 My Commission expires: February 22, 2025

13

14 STATE OF MARYLAND, COUNTY OF ANNE ARUNDEL

15 My Commission expires: August 2, 2025

16 DISTRICT OF COLUMBIA, WASHINGTON DC

17 My Commission expires: June 1, 2026

18

19 STATE OF DELAWARE, COUNTY OF KENT

20 My Commission expires: September 9, 2025

21 COMMONWEALTH OF PENNSYLVANIA, COUNTY OF LEHIGH

22 My Commission expires: April 5, 2025

1 Maureen T.F. Reitman, SC.D., P.E., NAE, FSPE, c/o
2 AMSTER ROTHSTEIN & EBENSTEIN
3 405 Lexington Avenue, Floor 48
4 New York, New York 10174
5
6 Case: Prime Time Toys LLC, et al. v. Spin Master, Inc.
7 Date of deposition: October 29, 2024
8 Deponent: Maureen T.F. Reitman, SC.D., P.E., NAE, FSPE
9
10 Please be advised that the transcript in the above
11 referenced matter is now complete and ready for signature.
12 The deponent may come to this office to sign the transcript,
13 a copy may be purchased for the witness to review and sign,
14 or the deponent and/or counsel may waive the option of
15 signing. Please advise us of the option selected.
Please forward the errata sheet and the original signed
16 signature page to counsel noticing the deposition, noting the
applicable time period allowed for such by the governing
17 Rules of Procedure. If you have any questions, please do
not hesitate to call our office at (202)-232-0646.
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