

EXHIBIT 5

CONFIDENTIAL

Page 1

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

KATHLEEN MOLLER

Plaintiff

CIVIL ACTION

V.

NO. 24-0228-WBV-DPC

MARTIAN SALES, INC., ET AL.

Defendants

CONFIDENTIAL

REMOTE VIDEO-RECORDED EXPERT DEPOSITION OF
MARILYN A. HUESTIS, PHD

Tuesday, January 20, 2026
9:32 AM Eastern Standard Time

Job No. MDLG7824902

Reported by: Denise Dobner Vickery, CRR, RMR

CONFIDENTIAL

Page 186

1 contributed to it.

2 BY MR. COWGILL:

3 Q. So kratom was a contributing factor
4 in this death?

5 MS. CONGER: Object to form.
6 Calls for a legal conclusion and
7 mischaracterizes testimony.

8 THE WITNESS: Along with all
9 the other substances, and it's impossible
10 when you have the different drugs to know
11 the contribution of each one.

12 BY MR. COWGILL:

13 Q. Yeah. So like Papsun says, you
14 know, we have to consider kratom within the whole
15 picture including all the substances and that it
16 may, in fact, be contributory?

17 MS. CONGER: Object to form.

18 THE WITNESS: Along with all
19 the other substances.

20 BY MR. COWGILL:

21 Q. All right. And you see here Papsun
22 also states:

23 "The question is really not if
24 kratom can result in toxicity, but rather at what

CONFIDENTIAL

Page 189

1 A. Yes.

2 Q. Here let me pull it up. Sorry.

3 Got this here.

4 The caffeine presumptive positive?

5 A. Yes.

6 Q. And I apologize while you look away.

7 I'll try to give you heads-up on the scrolling

8 when I can.

9 So the -- are you familiar with
10 caffeine toxidrome? What that presentation would
11 look like?

12 A. Somewhat, yes.

13 Q. Can you describe it?

14 A. So caffeine is a stimulant and in
15 low doses, like most people take it, it's just,
16 you know, makes people feel better, more alert, a
17 little -- very little tachycardia but a little bit
18 may be present. People become dependent on
19 caffeine very much.

20 I participated in a study looking at
21 caffeine withdrawal when I was at NIDA. In higher
22 concentrations, people can become much more
23 jittery. They can become anxious. Their heart
24 rate goes up. Blood pressure may go up, and too

CONFIDENTIAL

Page 190

1 much caffeine at very high doses can result in
2 death.

3 Q. How common is death caused by
4 caffeine?

5 A. Not very common.

6 Q. And the facts of this case -- I'll
7 go back to your report here. I'm going to scroll
8 a little bit.

9 Factual Background section here.

10 Is there any indication that
11 Ms. Moller was suffering from caffeine toxidrome
12 preceding her death?

13 A. We don't know because there -- there
14 was not -- I mean, she was feeling nauseous and
15 vomiting, but we don't know about jitteriness or
16 things like that. That wasn't observed right
17 before. But they did find the caffeine pills that
18 she had been taking, which is why having a
19 quantitative level would have been helpful because
20 it's clearly a stimulant.

21 Q. And let's -- let's talk about the
22 vomiting actually.

23 So the -- have you had the chance to
24 review Kathleen Moller's deposition?

CONFIDENTIAL

Page 219

1 telling you about.

2 Q. Okay. You referred to a doubling,
3 is that when the PMR is equal to 2 or higher?

4 A. Yes.

5 Q. And in the Osawa report, what was
6 the PMR for mitragynine?

7 A. I believe based on the central blood
8 to peripheral blood, the ratio they had was 1.37.
9 That was the -- that was the mean value.

10 Q. Is that essentially more or less a
11 37 percent increase?

12 A. Yes.

13 Q. And so that's -- that's lower than
14 what you found in THC?

15 A. A little, yes. But it also,
16 remember, that's the mean. So they had a whole
17 range associated, which I cannot remember the
18 range. But it was not anything like
19 amitriptyline, which might be 5 or 6 or 10.

20 Q. Okay. So some substances have
21 significantly higher PMR, postmortem
22 redistribution?

23 A. Yes.

24 Q. And so you referred to central and

CONFIDENTIAL

Page 221

1 autopsy, and what they'll do is they'll screen the
2 heart. Because they don't get huge amounts of
3 blood, and they don't know how much they're going
4 to need. So they will screen for any substance in
5 heart blood. And then if they get a positive
6 value, then they will quantify in the femoral
7 blood that is more reliable and has less subject
8 to postmortem redistribution.

9 Q. Okay. And that's what was
10 quantified here was the femoral blood?

11 A. Yes.

12 Q. And so I think we talked about PMR
13 of 2 essentially being a doubling or close to it.

14 So is a PMR of 1 effectively
15 virtually no PMR; antemortem and postmortem would
16 be the same?

17 A. Yeah, of 1.0.

18 Q. 1.0, right.

19 And so Osawa is positing roughly
20 1.37.

21 A. As a mean, but the range was
22 obviously larger. Meaning that in some cases it
23 might be less than 1.37, and in other cases it
24 could be a lot more.

CONFIDENTIAL

Page 230

1 careful.

2 You said mitragynine concentrations
3 could increase after death, right?

4 That's not definitive. We don't
5 know for sure that they can or do.

6 A. No. We know they can, but you saw
7 the range went from not increasing to up to 6 and
8 a half times higher. So we don't know in any one
9 specific case where it fell, but it certainly can.

10 So it teaches you to be conservative
11 in your interpretation.

12 Q. Have you reviewed the opinion of
13 Dr. Boyer in this case?

14 A. No.

15 Q. Are you aware that Dr. Boyer is
16 another defense expert?

17 A. I wasn't aware that he was in this
18 case.

19 Q. All right. Do you know Dr. Boyer?

20 A. I do.

21 Q. Dr. Boyer opined that based upon
22 Osawa, the PMR for kratom is threefold.

23 Do you have any concern with that
24 assertion?

CONFIDENTIAL

Page 231

1 MS. CONGER: Object to form.

2 THE WITNESS: I wouldn't

3 interpret it that way.

4 Did he refer to the paper or
5 to the abstract?

6 MR. COWGILL: I believe his
7 reference was to the paper, but I'll
8 double-check that.

9 We've been going for another
10 hour. Do you-all want another break or
11 do you want to keep going?

12 MS. CONGER: Yeah. Let's take
13 a quick break.

14 MR. COWGILL: All right.
15 Let's go ahead and take five minutes.

16 THE VIDEOGRAPHER: This ends
17 Media No. 4. We're off the record. The
18 time is 2:46.

19 (A recess was taken.)

20 THE VIDEOGRAPHER: We're back
21 on the record. The time is 2:51.

22 BY MR. COWGILL:

23 Q. All right, Dr. Huestis. We're back
24 on the record after a brief break. I want to pull