EXHIBIT 9 (PUBLIC)

RESTRICTED - ATTORNEYS' EYES ONLY

UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF VIRGINIA ALEXANDRIA DIVISION

RAI STRATEGIC HOLDINGS, INC. and R.J. REYNOLDS VAPOR COMPANY,

Plaintiffs and Counterclaim Defendants,

Civil Action No. 1:20-cv-393

v.

ALTRIA CLIENT SERVICES LLC; PHILIP MORRIS USA INC.; and PHILIP MORRIS PRODUCTS S.A.,

Defendants and Counterclaim Plaintiffs.

<u>SECOND AMENDED AND SUPPLEMENTAL OPENING EXPERT REPORT OF JOHN</u>
<u>ABRAHAM RELATING TO US PATENT NOS. 10,104,911 AND 10,555,556</u>



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I reserve the right to amend or supplement my opinions should RJR identify additional purported alternatives or provide any evidence or explanation supporting its alleged design arounds.

XII. RJR HAS NOT IDENTIFIED ANY ACCEPTABLE, NON-INFRINGING ALTERNATIVES TO THE INVENTIONS CLAIMED IN THE '556 PATENT

370. I understand that RJR asserts that the '556 Patent "can be designed around at least by not using both 'a first capillary material' and 'a second capillary material,' or by changing the configuration of the 'first capillary material' and the 'second capillary material' in the cartridge." RJR's Resp. to Interr. No. 4 (Nov. 9, 2020) at 7. I disagree. The benefits of the '556 Patent discussed above are achieved through the use of two capillary material and RJR does not identify any specific ways how these same benefits can be achieved without using a "first capillary material" and a "second capillary material" or how any changes would not result in other drawbacks. Similarly, RJR provides no detail about what "changing the configuration of the 'first capillary material' and the 'second capillary material' in the cartridge" entails or how these changes can be made to retain the benefits of the '556 Patent without other drawbacks. Such configuration changes will likely require significantly re-engineering the product, which RJR does not account for.

XIII. COST SAVINGS ASSOCIATED WITH THE '556 PATENT

371. The technology claimed in the '556 Patent allows RJR to save costs with respect to two components: (1) the combination of the heater and capillary materials and (2) the e-liquid.

A. Reducing Materials Used

372. Using the technology claimed in the '556 Patent, a cartridge for an e-vapor product can be manufactured at reduced costs because e-liquid is transported from the tank to the heater through two capillary materials, which eliminates the need to use (and the cost associated with using) a piece of gauze (or a similar material) sufficiently large to hold all of the liquid. I



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understand that this approach also significantly reduces e-liquid waste as compared to prior art approaches because when the liquid is entirely held in gauze (or a similar material).

373. RJR realizes cost savings by using the technology claimed in the '556 Patent in the VUSE Vibe compared to a product (such as the VUSE Solo) that is manufactured using a prior art approach.

3/4.	The VUSE Vibe
	The VUSE Solo
375.	It is therefore appropriate to compare the cost of the
	in the Vibe (which are part of the infringing functionality) to the
cost of the	in the Solo (which are arranged in the prior art
configuration	n described in the '556 Patent) to measure the cost savings provided by '556 Patent.

B. Reducing Wasted E-Liquid

- 376. I understand that one additional benefit of the '556 Patent technology is that it "avoids waste of aerosol-generating substrate liquid." '556 Patent at 1:52-57. In prior art systems where the liquid aerosol-generating substrate is "held in the capillary material and delivered to the wick," there will be "some residual liquid" that "remain[s] in the capillary material after usage, leading to wastage." *Id.* at 1:44-48.
- 377. I understand that testing done by Philip Morris compared a "Reference" design using the prior art approach of holding all of the liquid in "capillary material" (e.g., design 1 shown below) to designs where two capillary materials are used, along with liquid within a liquid tank as described by the '556 Patent. For example, as shown below



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(e.g.,).
PMP_EDVA00005605; see also PMP_EDVA00005555-5608; Brifcani Dep. Tr. at 80:12	2-25;
81:5-17; 171:8-172:8; 195:22-196:7.	

- 378. I believe it is reasonable to conclude that the VIBE's use of the claimed invention reduces liquid waste Adopting the prior art approach with the Vuse VIBE to overcome issues with orientation, *see, e.g.*, RJREDVA_001655369 at RJREDVA_001655431-1655435, would similarly result in of liquid volume wastage. This is based on a Zoom conversation I had with Noori Moyad on February 24, 2021, my review of the Vuse VIBE tanks, and Philip Morris' findings described above.
- 379. In addition to the use of the two capillary materials in the manner claimed in the '556 Patent, the Vuse VIBE incorporates various other patented features that would reduce liquid



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