23 January 1967

25X1A To: [redacted]

Subject: NOTES FOR RECORD - ANALYSIS OF SMUDGE FROM BW-3 SUIT CONTROLLER DIAPHRAGM

Dear Bruce,

A number of months ago, (April and May, 1965), there was considerable concern over a black graphite-like contaminant in the suit airflow components. This deposit was generally thought to be a "smoke smudge" associated with engine fuel vapor in our vent air, a supposition that we fell in with, having just dealt with the cockpit smoke incidents. We were misled at the time by too hastily scanning a Firewel laboratory memo dealing with "Analysis of PFI Vapor Within the F6642-202-02 Regulator, F6642-201-02 Controller and Suit". The latter turned out to be not a lab analysis showing the contaminant to be fuel, but merely a theoretical treatise on what could happen to these components if fuel were present.

25X1A 25X1A During [redacted] November 3, 1966 session at BW-3 with [redacted] 25X1A [redacted] mentioned that we are still experiencing the smudging; however, except for making periodic replacements of the affected rubber parts, they have dropped any specific concern about its being a problem. He obtained from them a representative sample part 25X1A just removed from [redacted] suit, and brought it back to [redacted] for analysis. This diaphragm was said by [redacted] to have been used for 25X1A "three or four flights on 134 and several, not more than six, on 121".

We now have on hand from [redacted] the spectrographic analysis of the black contaminant from this part. Its composition was found to be as follows, in percentages which I understand to be approximate: 25X1A

23% Potassium	37% Sodium
20% Silicon	1.6% Strontium
12% Calcium	1.2% Titanium
11% Aluminum	.2% Zinc
10% Barium	.04% Zinconium
8% Magnesium	

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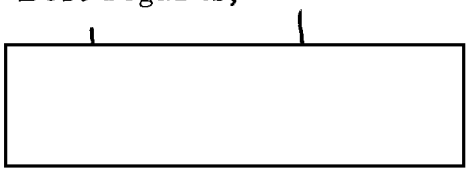
By their interpretation the contaminant appears to be typical of the western United States dirts, possibly excepting the fairly high barium content. It was definitely made up of metallic elements, in oxide or other mineral forms, and was specifically not related to the hydrocarbon family. It was found to be relatively non-conductive, a further similarity to dirt. Physically this "dirt" was not in normal chunk form, but appeared to them to be homogenized or creamy, possibly from the 65,000 rpm beating given it by our turbines.

Best regards,

25X1A



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