PROTOFLIGHT ENVIRONMENTS

FOR

WILD GEESE FUEL TANK ASSEMBLY

ATK P/N 80480-1

80480-1 was subjected to the following protoflight tests:

Test Sequence	Test Description
1	Preliminary Inspection of Product
2	Pre-Proof Volumetric Capacity, Ambient Proof Pressure, Visual Inspection, and Post-Proof Volumetric Capacity
3	Differential Pressure Test & Mass Flow Rate Test
4	External Leakage Test
5	Tank Assembly Bubble Point Test
6	Sine and Random Vibration Test (Wet & Dry) & Visual Inspection
7	Negative Pressure Capability Test
8	Tank Assembly Bubble Point Test
9	External Leakage Test
10	Radiographic Inspection
11	Dye Penetrant Inspection
12	Mass Measurement & Final Visual Inspection
13	Cleanliness Verification & Packaging
14	Data Review

Sine Vibration (Dry)

Protoflight Sine Vibration Levels (Dry)

AXIS	FREQUENCY (HZ)	ACCELERATION (G) (0-PEAK)	SWEEP RATE
All Axes	10–24 24-130	0.5 in. DA 12.5 g	4 oct/min

Tank is pressurized to 150-160 psig.

Sine Vibration (Wet)

Protoflight Sine Vibration Levels (Wet)

AXIS	FREQUENCY (HZ)	ACCELERATION (G) (0-PEAK)	SWEEP RATE
X-axis	10–24 24-45 45-90 90-130	0.5 in. DA 15 g 20 g 12.5 g	4 oct/min
Y- and Z-axis	10-24 24-130	.5 in. DA 12.5 g	4 oct/min

Tank is filled with 110.24, +1/-0 lbs of distilled, deionized water and pressurized to 150-160 psig.

Random Vibration (Wet and Dry)

Protoflight Random Vibration Levels Dry and Wet

Axis	Frequency (HZ)	Levels	DURATION
All Axes	20-80 80-600 600-2000 Overall G-rms	+6dB/Octave $0.2G^2$/Hz -6dB/Octave 13.9	60 seconds per axis.

1.) The 13.9 G-rms random vibration spectra may be split into two bands, if necessary, to meet vibration shaker equipment limitations.

2.) For the wet test, the tank is loaded with 110.24, +1/-0 lbs of distilled, deionized water and pressurized to 150-160 psig.

<u>Negative Pressure Capability Test</u>

Tank evacuated to 0.2 torr, +0.1/-0 and held for 5 minutes, +15/-0 seconds.