NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
RESERVE WATER TANK ITEM 180 ---------- SV769592-29 (1)	2/1R	180FM03: External leakage, gas. CAUSE: Seal failure, tank corrosion.	END ITEM: Gas leakage to ambient. GFE INTERFACE: Excessive consumption of the primary oxygen supply. The SOP is automatically activated during EVA if the suit pressure drops below 3.35 psid. MISSION: Terminate EVA. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.	A. Design - The perimeter of the flexural bladder opening has the O-Ring molded on the bladder and the premolded Neoprene Latex "O-ring" bonded is in place to perform the sealing function. The sealing concept is the same as that of a standard face type O-seal, consisting of an elastomeric ring compressed and retained between smooth flat surfaces. Radial seals (silicon) and face seals (viton) are also utilized and their dimensions and rigidness of assembly provide squeeze under all tolerance conditions. The cavities, bores and O-seal areas of the structure are now coated with an improved corrosion inhibiting coating (8812P). B. Test - Component Acceptance: Acceptance Test per AI-E-131-2. The item is external leakage tested by pressurizing the item (gas side & H2O side) with 15.4 - 15.6 psig Nitrogen. The leakage as measured with a volumetric micrometer for 10 minutes shall be 0.5 scc/min N2 max. PDA: The primary oxygen tanks are charged with 2% GN2 and 98% GO2 to a pressure of 850-950 psig. The test port housing and water tank structure are "sniffed" for leakage with a helium leak detector. Leakage is defined as a level change in meter reading for 5 seconds minimum. Certification: The item's seals were successfully exposed to 10,000 fill/drain cycles and 2,700 hours of pressurized time during 8/84. C. Inspection - 1. Neoprene Latex Bladders: The sealing interfaces between the bladder covers and the water tank, the various bores and mating tubes, and the tank pressure transducer are 100% inspected to meet dimensional and surface finish requirements. 2. Flexural Bladders: Completed 4,000 Fill/Drain cycles during 3/88, 10/88, 1/89. This is two times the 15 year certification of 1,878 cycles.

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
	2/1R	RATIONALE:		The O-seals area of the bladder is 100% inspected for surface defects per the SV700855, SV700854 and SV79005 drawings. The seal area is also 100% inspected to meet dimensional and surface finish requirements. The corrosion inhibiting coating is qualified for each tank by testing panels that were prepared with that tank to meet the coating specification requirements. All surfaces coated are 100% visually inspected to be properly coated. D. Failure History - None. E. Ground Turnaround - Tested per SEMU-8-006, Gas Structural and Leakage. F. Operational Use - Crew Response Pre EVA: No response, single failure unlikely to be detected by crew or ground. EVA: When CWS data confirms an accelerated primary O2 use rate, terminate EVA. If CWS data confirms an accelerated primary O2 use rate coupled with loss of suit pressure regulation, abort EVA. Training Standard EMU training covers this failure mode. Operational Considerations Flight rules define go/no go criteria related to EMU suit pressure integrity. Consider periodic vacuum O2 recharge to recover EMU

329