IA Checklist
T-89
DETERMINING THE LIQUID LIMIT OF SOILS

	Procedure	P	F	NA
1	**METHOD A:** All adjustment screws, retaining pins and screws be tight			
2	All surfaces in contact with the soil, contact between brass cup and cam, and point of impact of brass cup should be checked for wear.			
3	Height of drop of the brass cup should be adjusted to 10.0 +- 0.2 mm.			
4	The liquid limit should be conducted on a representative sample consisting of a 100 g of minus 0.425 mm (No. 40) material prepared as specified in R 58.			
5	The soil sample shall be place in the mixing dish and thoroughly mixed with 15 to 20 ml. of distilled or demineralized water by alternatively and repeatedly stirring, kneading, and chopping with a spatula. Once testing has begun, no additional dry soil should be added to the moistened soil. If too much moisture has been added to the sample, the sample shall either be discarded, or mixed and kneaded until natural evaporation lowers the closure point into acceptable range.			
6	When sufficient water had been thoroughly mixed with the soil to form a uniform mass. Mixture shall be placed in the cup above the spot where the cup rests on the base and shall be squeezed and spread with the spatula to level and at the same time trimmed to a depth of 10 mm at the point of maximum thickness. As few strokes of the spatula as possible shall be used. The excess soil shall be returned to the mixing dish and covered to retain the moisture in the sample.			
7	The soil in the cup of the device shall be divided by a firm stroke of the grooving tool along the diameter through the centerline of the cam follower so that a clean sharp groove of the proper dimensions will be formed. Turning the crank at the rate of approximately two revolutions per second until the two sides of the sample come in contact at the bottom of the groove along a distance of about 13 mm. The number of shocks required to close the groove this distance shall be recorded.			
8	A slice of soil approximately the width of the spatula, extending from edge to edge of the soil cake at right angles to the groove and including that portion of the groove in which the soil flowed together, shall be removed and place in a suitable container. The soil in the container shall be dried in accordance with T 265 to determine the moisture content, and the results recorded.			
9	The soil remaining in the cup shall be transferred to the mixing dish. The cup and grooving tool shall then be cleaned in preparation for the next trial. Repeat the foregoing operations, adding sufficient water to bring the soil to a more fluid condition. Obtain the first sample in the range of 25 to 35 blows, the second sample in the range of 20 to 30 blows, and the third sample in the range of 15 to 25 blows. The range of the three determinations shall be at least 10 blows.			
10	**METHOD B:** Same as above except for the following: For accuracy equal to that obtained by the standard three-point method, the accepted number of blows for groove closure shall be restricted to between 22 and 28 blows. The initial amount of water should be approximately 8 to 10 mL. After obtaining a preliminary closure in the acceptable blow range, immediately return the soil remaining in the cup to the mixing dish and, without adding any additional water, repeat as directed. If the second closure occurs in the acceptable range (22 to 28, inclusive) and the second closure is within two (2) blows of the first closure, secure a water content specimen.			