Date: September 27, 2001, Revised February 6, 2006.

To: To Whom It May Concern

From: Don Mukai, P.E. Bravo Engineering

Subject: Dispenser Containment Water Testing Procedures for Shallow Pans (B-2000) and Deep Sumps (B-8000) per California SBS 989 requirements. (Revised)

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According to California SBS (989) all secondary containment boxes are subject to a 36 month testing in accordance to section 2637.a.(2). The section states secondary containment testing systems installed on or after January 1, 2001 shall be tested upon installation, 6 months after installation, and every 36 months thereafter. Prior to January 1, 2001 shall be tested by January 1, 2003 and every 36 months thereafter. 2637.a.(2) Secondary containment systems shall be tested to test criteria no less stringent than those used at installation. Additionally, secondary containment systems shall be tested in accordance with manufacturer's guidelines or standards.

Per SBS 989 Bravo's triennial testing procedures are as follows:

1. Testing you must follow all C.C.R. California Code Regulations with in section 2637 and all local regulatory procedures prior to testing Bravo dispenser containment pans and sumps.

2. Next, per Bravo's standard maintenance installation instructions as stated on page 7 of the B2000, shallow pan, installation instructions and page 6 of the B-8000, deep sump, follow a routine maintenance. This includes cleaning the interior of the secondary containment including debris, water, fuel and any other fluids. Ensure that all fittings/seals are tight before water testing dispenser containment.

3. Visually inspect box for obvious problems such as loose hose clamps, compression nuts or missing components before proceeding to test.

4. SHALLOW PAN: Place weight on the float approximately 1 pound or greater while the tester prepares for a water leakage test. See figure 7-A of installation instructions. Note: mark level of water test with grease marker as stated on installation instructions B2000 page 6 step 10 for the shallow pan for field installed fittings which states fill the box up to 1" above penetrations.

5. DEEP SUMP: The initial installation test procedures for Bravo deep dispenser sumps states on pg. 4 first paragraphs shall be filled 2" above the penetration fittings as stated in installation instructions for the deep dispenser sumps.

   Exceptions under LG-160 allows for flexibility where secondary containment test performed there after are not feasible. Water testing above the penetration fitting is not feasible because of product liability of other manufacturer's products that may be damaged by water testing.

   Bravo will not require water testing above the penetration fitting after initial installation if there are other manufacturer's products below the penetration fitting. Rather, Bravo will require dispenser containment sumps with fully operational fail-safe sensors be water tested for integrity 4" from the bottom of the sump/under-dispenser box plus an additional volume necessary to accommodate leak sensor activation and product pump shut-down reaction time.

6. Verify that the water level will not cover electrical threaded connections before water testing. If the water will exceed threaded connections to the dispenser conduit seal-off one must ensure no water will enter through that point. This assumes that the conduit threaded connections are not liquid tight. Visual testing only allowed on initial installation to pass NO drips leaks are allowed. If outside of sump can not be observed a minimum 5 hour test must be observe with a level drop no greater than 1/8". Alternative testing can be used such as electronic level probe, which can use its accuracy to reduce test time.

7. E.g Data collection time Typical 12" x 32" Box and fail rate of .05 GPH

Failure, if rate exceeds	**Resolution/accuracy**	**Data Time**
0.0030 in 6 minutes	Better than .0005"	6 minutes
0.0070 in 15 minutes	.001 to .002"	15 minutes
0.0150 in 30 minutes	.002 to .003"	30 minutes

8. After the completion of the water test, certify if the test has passed based on the schedule above. If you experience problems contact Bravo for assistance (323) 888-4133.

9. Remove water and properly dispose of and manually dry float cup area. Next, remove weight off the float, if applicable, and make sure the chain is properly adjusted as indicated on installation maintenance instructions. This includes verification of float trip function and proper lead seal crimping to prevent future tampering. To adjust chain, refer to Bravo Installation Instructions page 7 of B2000 Shallow Box and page 6 of the B-8000 Deep Box.

10. NOTE: If Local Jurisdictions have high requirements than these please use their test protocols.

Thank You,

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