AP42 Section:	9.12.1
Background Chapter	4
Reference:	22
Title:	Bottle Wash Soaker Area Ethanol Emissions Source Test Report Performed for Coors Brewing Company, Acurex Environmental Corporation, Anaheim, CA, July 12, 1993.

Section 4 Reference COORS 12
AP-42 Reference ___

Emission Test Report Review Checklist--Short Form

Reviewer: BRIAN SHRAGER
Review Date: SEPT. 14, 1994

A. Background Information

1. Facility name: COORS
   Location: GOLDEN, CO
2. Source category: MALT BEVERAGES
3. Test date: APRIL 28, 1993
4. Test sponsor: COORS
5. Testing contractor: ACUREX
6. Purpose of test: To verify ethanol emission levels reported to the State APCD.
7. Pollutants measured (include test method and indicate if valid): BAAQMD Method ST-32, Determination of Ethanol Emissions
   ETHANOL
8. Process overview: Attach a process description and a block diagram. Identify processes tested with letters from the beginning of the alphabet (A, B, C, etc...) and APC systems with letters from the end of the alphabet (V, W, X, etc...). Also identify test locations with Arabic numerals (1,2,3, ...). Using the ID symbols from the diagram, complete the table below.

Test ID	Process	Process ID	Emissions tested		APCD (controlled emissions only)
			Uncontrolled	Controlled	
1	Bottle Soaker Area	A	✓		ID: Type: Model #:
					ID: Type: Model #:
					ID: Type: Model #:
					ID: Type: Model #:

B. Process Information

1. Provide a brief narrative description of the process and attach process flow diagram. (Note: If the process description provided in the test report is adequate, attach a copy here.)

SECTION 3

TEST MATRIX AND SAMPLING LOCATION

3.1 Bottle Soaker Area and Sampling Location Description

The bottle soaker unit prepares returned beer bottles for refill. The bottles are conveyed to the entrance of the soaker unit, where beer remaining in the bottles is first dumped into a sump under the floor. The bottles are then transported to the large, partially enclosed, cleaning bath containing caustic solution. From the cleaning bath, the bottles are transferred to a packaging unit, where they are stored in boxes for subsequent transportation and processing.

The bottle soaker unit is located in a non-enclosed portion of the transload/bottlewash area; process emissions are vented through two exhaust ducts identified as the overhead soaker area (OSA) exhaust and the northeast soaker area (NESA) exhaust. The OSA exhaust duct removes process emissions from the caustic cleaning bath via a series of exhaust plenums located above the bath area. The NESA exhaust duct removes process emissions from the soaker unit entrance area.

Ethanol samples were collected simultaneously from each of the two rectangular exhaust ducts. The exhaust flow rate in each duct was determined according to EPA Method 2 by measuring the velocity head at specific duct traverse point locations. The velocity measurement locations for the OSA and NESA exhaust ducts are illustrated in Figure 3-1. The access ports for conducting the velocity measurement conformed with EPA Method 1 requirements.

3.2 Test Matrix

The test matrix, summarized in Table 3-1, identifies the sampling procedures employed, and the number of test and QA samples collected. Several ethanol samples were collected at each location to ensure representative results; these samples were collected simultaneously. An additional confirmatory ethanol sample was collected one day after the soaker area test series was completed to assess daily process variability, if any. Coors recorded the bottle throughput rate during each of the ethanol sampling events. This information was combined with emission measurement data to develop an ethanol emission factor and estimate annual soaker unit ethanol emission rates.

D. Emission Data/Mass Flux Rates/Emission Factors

Test ID	Parameter	Units	Values reported			
			Run 1	Run 2	Run 3	Run 4
1	Stack temperature	Deg F				
BOTTLE SOAKE AREA (OVERHEAD SOAKER AREA)	Moisture	%				
	Oxygen	%				
	Volumetric flow, actual	acfm				
	Volumetric flow, standard	dslpm	484921	482897	477633	
	Isokinetic variation	%	NA	NA	NA	
Production rate: 1 case equals 24 bottles Based on # of bottles washed		cases/hr	2500	3125	3207	
	Pollutant concentrations:					
	Ethanol	mg/L	0.0080	0.0070	0.0108	
	Pollutant mass flux rates:					
	Ethanol	lb/hr	0.512	0.446	0.681	
	Emission factors:					Average
	Ethanol	lb/case	0.000205	0.000143	0.000212	0.000187

Test ID	Parameter	Units	Values reported			
			Run 1	Run 2	Run 3	Run 4
2	Stack temperature	Deg F				
BOTTLE SOAKE AREA (NORTH EAST SOAKER AREA)	Moisture	%				
	Oxygen	%				
	Volumetric flow, actual	acfm				
	Volumetric flow, standard	dslpm	123756	139349	131199	
	Isokinetic variation	%	NA	NA	NA	
Production rate: 1 case equals 24 bottles Based on # of bottles washed		cases/hr	2500	3125	3207	
	Pollutant concentrations:					
	Ethanol	mg/L	0.0018	0.0023	0.0034	
	Pollutant mass flux rates:					
	Ethanol	lb/hr	0.029	0.042	0.059	
	Emission factors:					Average
	Ethanol	lb/case	0.000012	0.000014	0.000018	0.000015

TOTAL EMISSION RATES AND EMISSION FACTORS FOR BOTTLE SOAKER

	Ethanol	lb/hr	0.541	0.489	0.740	0.000
	Ethanol	lb/case	0.000217	0.000156	0.000231	0.000201