State of California
AIR RESOURCES BOARD

Executive Order G-70-156

Certification of RECoVAULT Incorporated
Ecovault Aboveground Tank Filling & Dispensing
Vacuum Assist Vapor Recovery System

WHEREAS, the Air Resources Board (the "Board") has established, pursuant to California Health and Safety Code Sections 39600, 39601, and 41954, certification procedures for systems designed to control gasoline vapor emissions displaced during the filling of service station storage tanks ("Phase I vapor recovery systems") and for systems designed to control gasoline vapor emissions from motor vehicle fueling operations ("Phase II vapor recovery systems") in its "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations", amended December 4, 1981, (the "Certification Procedures"), and incorporated by reference in Title 17, California Code of Regulations Section 94001;

WHEREAS, the Board has established, pursuant to California Health and Safety Code Sections 39600, 39601, and 41954, test procedures to determine compliance of Phase I and Phase II vapor recovery systems with emission standards in its "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations", amended September 1, 1982 (the "Test Procedures"), incorporated by reference in Title 17, California Code of Regulations Section 94000;

WHEREAS, RECoVAULT Incorporated has applied for certification of the Ecovault aboveground storage tank system for balance Phase I vapor recovery and vacuum assisted Phase II vapor recovery on single and split compartment tanks between 4,000 to 10,000 gallons total capacity which may utilize a remote dispensing unit;

WHEREAS, Section VIII-A of the Certification Procedures provides that the Executive Officer shall issue an order of certification if he or she determines that a vapor recovery system conforms to all of the requirements set forth in Sections I through VII;

WHEREAS, Executive Order G-70-70-AC contains the certification orders for Healy vacuum assist Phase II vapor recovery systems;

WHEREAS, Executive Order G-70-140-A contains the certification orders for above ground tank configurations using the Healy vacuum assist Phase II vapor recovery system; and

WHEREAS, on April 15, 1994, the Air Resources Board Executive Officer pursuant to California Health and Safety Code sections 39515 and 39516, delegated to the Chief, Compliance Division full authority to approve and

grant Executive Orders certifying integral Phase I and Phase II aboveground systems in accordance with California Health and Safety Code section 41954; and

WHEREAS, I, James J. Morgester, Chief of the Compliance Division of the Air Resources Board find that the RECoVAULT Incorporated Ecovault aboveground storage tank system, when used with Air Resources Board Certified Phase I and Phase II vapor recovery components, conforms with all the requirements set forth in Sections I through VII of the Certification Procedures;

NOW, THEREFORE, IT IS HEREBY ORDERED that this certification applies to the RECoVAULT Incorporated Ecovault aboveground storage tank systems in either single tank or split tank configurations between 4,000 and 10,000 gallons total capacity which are consistent with the design and geometry shown in Exhibits 1 and 2, attached.

IT IS FURTHER ORDERED that the minimum compartment size in split tank configurations shall be greater than or equal to 1000 gallons capacity, and that split compartment or multiple tank installations shall be consistent with Exhibits 2 and 3 of Executive Order G-70-140-A.

IT IS FURTHER ORDERED that the inner tank shall be completely encased in a vault of six inch thick concrete that is constructed in a manner that allows for an insulating annular air space between the inner tank and the concrete vault.

IT IS FURTHER ORDERED that the use of Air Resources Board certified Phase I and Phase II vapor recovery components shall be a condition of the certification. Certified vapor recovery components installed by RECoVAULT Incorporated on the Ecovault aboveground storage tank vapor recovery systems, as tested, are identified in Exhibit 1, attached. In the alternative, Air Resources Board certified Phase I components from Exhibits 1 through 3 of Executive Order G-70-97-A, Exhibits 1 and 2 of Executive Order G-70-102-A, or Exhibits 1 and 2 of Executive Order G-70-142-A may be used and Air Resources Board certified Phase II components, which are approved for use with the Healy vacuum assist system, from Executive Orders in the G-70 series may be used.

IT IS FURTHER ORDERED that the threaded stem normally used with the Bobtail truck bulk delivery nozzle be replaced with an OPW 633-B coupler in conjunction with an OPW 633-BA series coupler/adaptor(s) (or an equivalent arrangement that prevents gasoline leakage) to connect the Bobtail truck bulk delivery nozzle with the storage tank fill adaptor (or coaxial fill adaptor) during transfer of gasoline from the delivery truck to the storage tank.

IT IS FURTHER ORDERED that the components and piping configuration used to connect the cargo truck bulk delivery line and vapor return line to the storage tank fill line and vapor recovery line shall be consistent with Air Resources Board Executive Order G-70-102-A and that the liquid leak rate

upon disconnecting the delivery line shall be no more than 10 ml per disconnect computed from the average of three disconnect operations.

IT IS FURTHER ORDERED that during bulk deliveries the cargo truck pumping system shall be operated at a steady flow rate. Using the pump to clear fuel from the delivery line is prohibited if vapor is pumped through the gasoline storage tank since this practice may result in significant vapor growth and additional venting from the storage tank vent line.

IT IS FURTHER ORDERED that the submersible turbine pump shall be equipped with a built-in siphon which is connected to the vapor return line condensate trap as shown in Exhibit 1. The condensate trap shall be located at the lowest point in the vapor return line. The vertical rise of the condensate return line shall not exceed 15 feet.

IT IS FURTHER ORDERED that the general exterior of the storage tanks shall be painted white. The jet pump assembly shall be shaded from sunlight by an enclosure with a white finish on the exterior.

IT IS FURTHER ORDERED that any exposed piping supplying gasoline to the jet pump or discharging gasoline vapors and liquid from the jet pump shall be insulated with the equivalent of 2 inches of material with a K value (i.e. thermal conductivity) of 0.30 Btu Inch / Hour Sq.Ft. Deg. F or less. Piping which connects the tank to the dispenser may be located below grade.

IT IS FURTHER ORDERED that an ARB Certified PV valve shall be installed on the tank vent and that the pressure relief setting of such valve shall be between 2.5 and 3.5 inches water column gauge.

IT IS FURTHER ORDERED that the tank vent line shall extend to a height which is at least 12 feet above grade.

IT IS FURTHER ORDERED that prior to using any RECoVault Incorporated Ecovault above ground tank for storage of gasoline the complete vapor recovery system shall be leak checked at either 150 percent of the maximum working pressure of the system (P/V vent setting), or 5 inches of water column gauge pressure, whichever is greater, and verified to be vapor tight. Thereafter, the complete system shall be leak checked annually, in accordance with the Test Procedures.

IT IS FURTHER ORDERED that the certified Healy Phase II vapor recovery system shall, at a minimum, comply with the manufacturer's recommended operation, installation, and maintenance procedures.

IT IS FURTHER ORDERED that the Healy Phase II vapor recovery system nozzle, jet pump, control valve and multi-jet pump shall be 100 percent performance checked at the factory including checks of proper operation in all aspects of performance.

IT IS FURTHER ORDERED that compliance with the rules and regulations of the local air pollution control district with jurisdiction over the location of the installed equipment shall be a condition of this certification.

IT IS FURTHER ORDERED that the tank and associated piping and other equipment not specifically certified as Phase I equipment in Exhibits 1 through 3 of Executive Order G-70-97-A, or Exhibits 1 and 2 of Executive Order G-70-142-A, nor specifically certified as Phase II equipment in the G-70 series Executive Orders shall comply with the rules and regulations of the local fire officials with jurisdiction over the location of the installed equipment.

IT IS FURTHER ORDERED that compliance with all applicable certification requirements and rules and regulations of the Division of Measurement Standards, the Office of the State Fire Marshal, and the Division of Occupational Safety and Health of the Department of Industrial Relations shall be a condition of this certification.

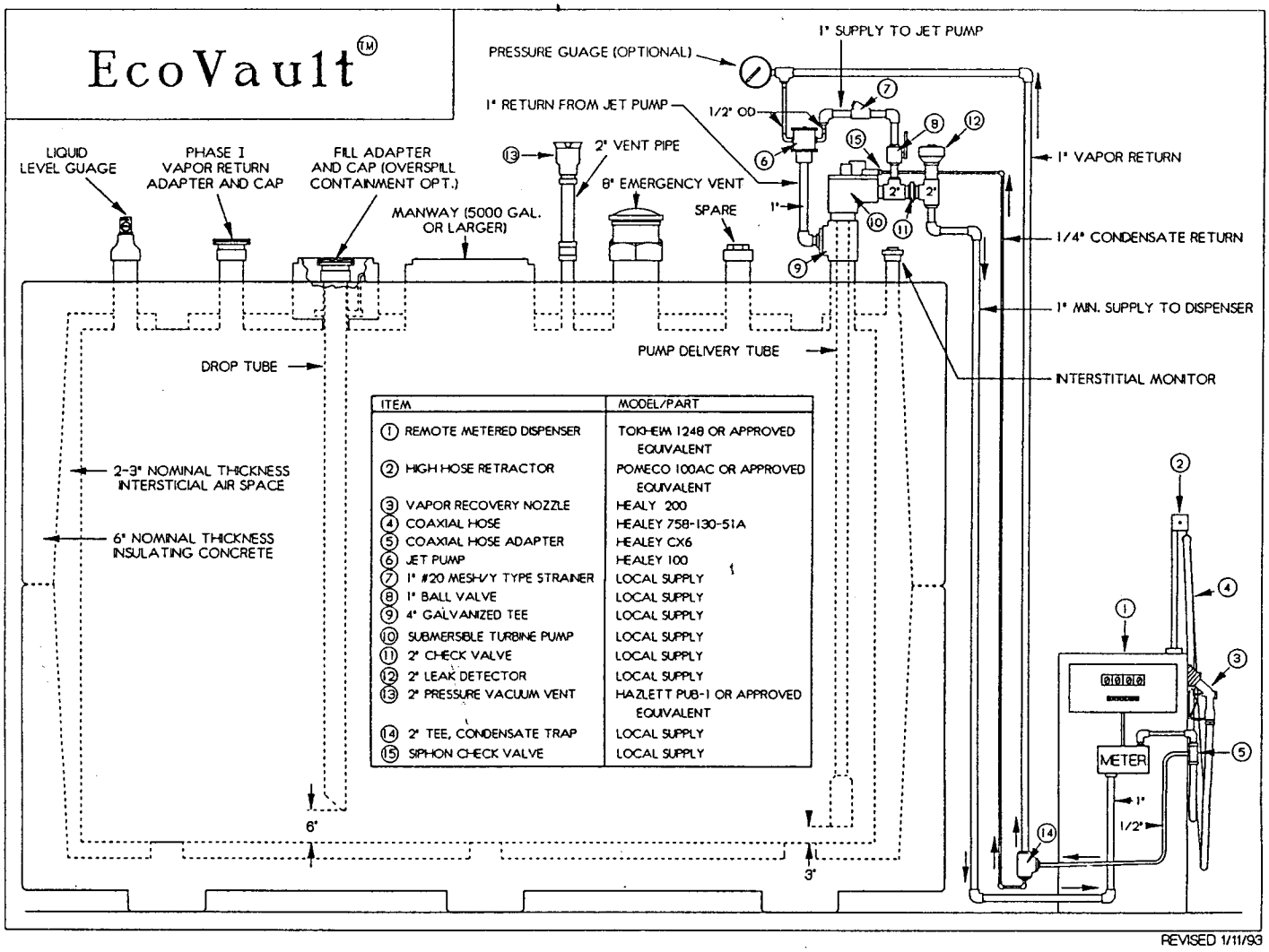
IT IS FURTHER ORDERED that any alteration of the equipment, parts, design, or operation of the configurations certified hereby, is prohibited, and deemed inconsistent with this certification, unless such alteration has been approved by the undersigned or the Executive Officer's designee.

IT IS FURTHER ORDERED that this Executive Order shall supersede Executive Order G-70-149 dated February 9, 1993.

Executed this 23RD day of MAY 1994, at Sacramento, California.

James J. Morgester, Chief
Compliance Division

Exhibit 1
Executive Order G-70-156
Certification of RECoVAULT Incorporated
Ecovault Vapor Recovery System



ITEM	MODEL/PART
1 REMOTE METERED DISPENSER	TOKHEIM 1248 OR APPROVED EQUIVALENT
2 HIGH HOSE RETRACTOR	POMECO 100AC OR APPROVED EQUIVALENT
3 VAPOR RECOVERY NOZZLE	HEALY 200
4 COAXIAL HOSE	HEALEY 758-130-51A
5 COAXIAL HOSE ADAPTER	HEALEY CX6
6 JET PUMP	HEALEY 100
7 1" #20 MESH/Y TYPE STRAINER	LOCAL SUPPLY
8 1" BALL VALVE	LOCAL SUPPLY
9 4" GALVANIZED TEE	LOCAL SUPPLY
10 SUBMERSIBLE TURBINE PUMP	LOCAL SUPPLY
11 2" CHECK VALVE	LOCAL SUPPLY
12 2" LEAK DETECTOR	LOCAL SUPPLY
13 2" PRESSURE VACUUM VENT	HAZLETT PUB-1 OR APPROVED EQUIVALENT
14 2" TEE, CONDENSATE TRAP	LOCAL SUPPLY
15 SIPHON CHECK VALVE	LOCAL SUPPLY

Notes:

See Executive Order G-70-97-A (Exhibits 1, 2, & 3) and Executive Order G-70-142-A (Exhibits 1 & 2) for a listing of ARB certified Phase I two-point and coaxial vapor recovery equipment.

See the G-70 series Executive Orders for ARB certified Phase II vapor recovery equipment, which are approved for use with the Healy vacuum assist system.

See ARB approval letters #92-28, #92-21, #92-20 or contact the Air Resources Compliance Division for listings of ARB Certified PV valves.

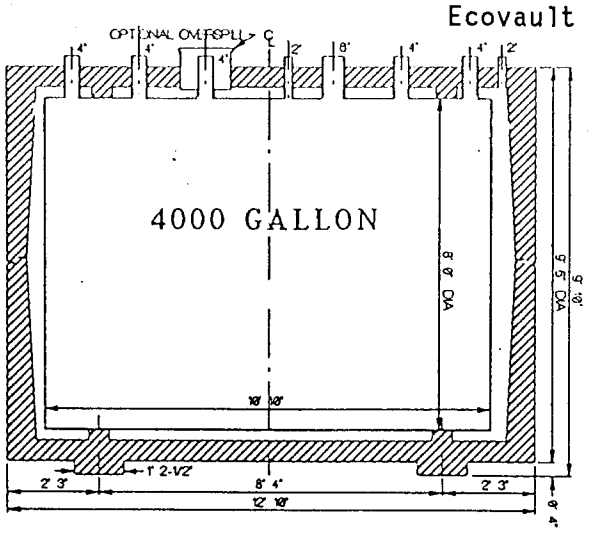
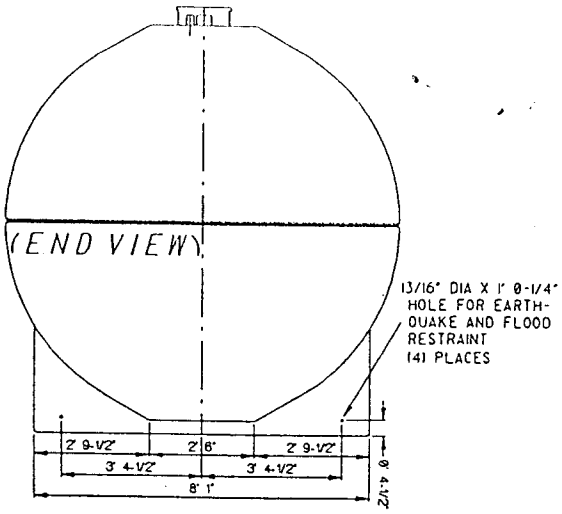
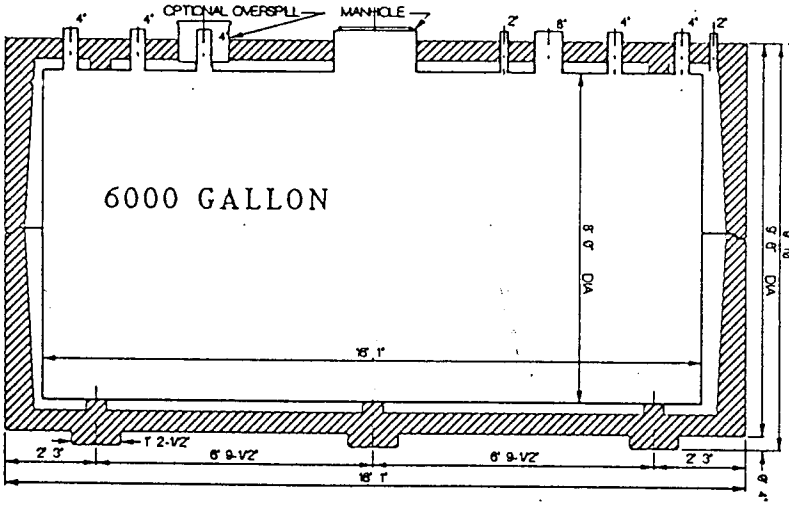
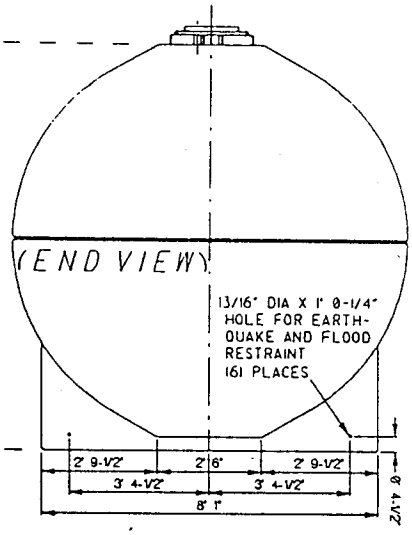
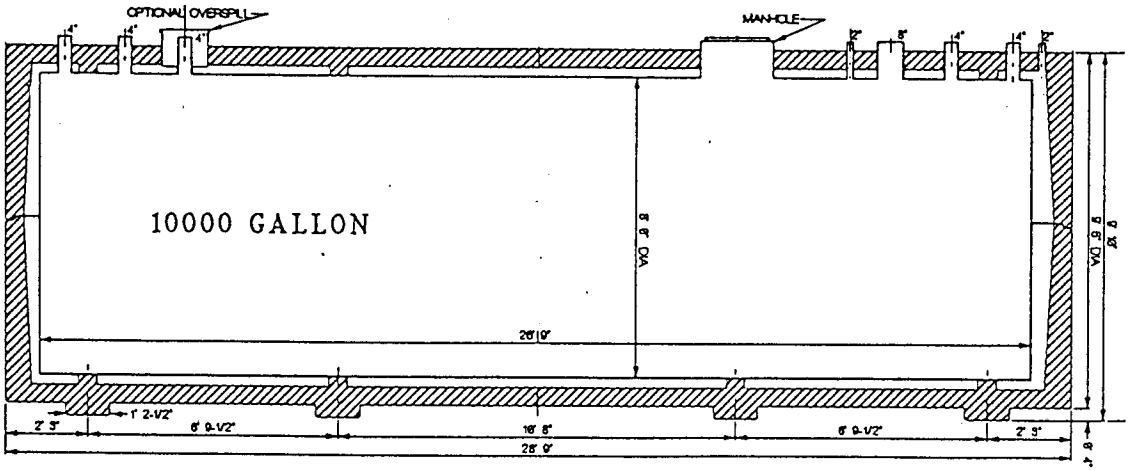
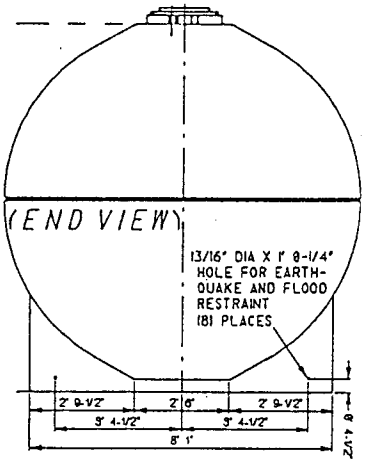



Exhibit 2
Executive Order G-70-156
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Ecovault Vapor Recovery System