



Jeremiah W. (Jay) Nixon, Governor • Mark N. Templeton, Director

DEPARTMENT OF NATURAL RESOURCES

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SEP - 8 2009

Mr. Jeff Deaton
Design and Development Engineer
Husky Corporation
2325 Husky Way
Pacific, MO 63069

APPROVAL LETTER 2009-3

Dear Mr. Deaton:

This letter is to inform you, Husky Corporation and Costco, of the Missouri Department of Natural Resources site specific approval of the Gilbarco Advantage Dispenser Field modified with the Gilbarco Hyper Reach Retractor Kit, for use exclusively at the Costco #382 St. Peters facility – a Missouri Stage II vapor recovery required gasoline dispensing facility.

Husky Corporation and Costco requested the approval of the use of the Gilbarco Hyper Reach Retractor Kit for Balanced Vapor Recovery (K96570-04) with the Gilbarco Advantage B78 dispenser, Goodyear Maxxim Premier whip hose (4.5 foot) and Goodyear Maxxim Premier LX hose (8 foot) at the Costco #382 St. Peters facility in January 2006. The request was made to allow dispensers to fuel either side of a vehicle as Costco stations allow only one-way traffic. Costco has found that the one-way traffic provides for more efficiency and greater safety. An initial TRC meeting was held in May 2006, and a second TRC was held in September 2007.

The site requested as a test facility (Costco #382 at 101 Major Street in St. Peters, Missouri) is a Research and Development site for testing the Husky vapor recovery canister system. This system bypasses the normal PV vent to allow the capture of vapors during night closing periods and the recovery of the vapors during the daytime periods of vacuum. There is continuous monitoring at the site for evaluation of the canister system. This monitoring also allows for evaluation of leaks and excess pressure during the retractor system testing and newly modified components (Husky 5900 breakaway, Husky 5827 Flo-Equalizer, Husky VLX nozzle and Goodyear Maxxim Premier LX hose) as well as the Gilbarco B78

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dispensers modified with the Gilbarco Hyper Reach Retractor Kit for Balanced Vapor Recovery (K96570-04).

On December 18, 2005, pumps 1 and 2 at the Costco #382 St. Peters facility were modified with the Gilbarco Hyper Reach Kit (K96570-04) using 4 foot whip hoses. The kit requires rearrangement of some of the vapor piping as well as installation of the retractor (pulleys, weight, cable and guides). This configuration was observed by Bud Pratt on January 27, 2006. Since pumps 1 and 2 were handicap pumps set low into the island and more likely to have hoses touching the island, it was decided to have the kits installed on pumps 3 and 4 in May 2006, for observation. A meeting was set for June 21, 2006, to observe the installed kits and to meet to further discuss MOPETP approval for these kits intended for limited use.

In July 2007, the whip hoses were replaced with 4.5 foot Goodyear Maxxim Premier whip hoses and the Husky 5900 breakaway, the Husky 5827 Flo-Equalizer, the Goodyear Maxxim Premier LX 8 foot hose, and the Husky VLX nozzle were installed at pumps 1 through 4. It was decided that testing could take place on July 18, 2007, for the Husky VLX nozzles with Goodyear LX hoses, Husky 5900 STBs, and Husky 5827 Flo-Equalizers that had been installed on Pumps 1-4 that had the retractor system installed. This testing would be specifically for approval of the Husky VLX nozzle and Goodyear Maxxim Premier LX hose and would not result in approval of the retractor system.

At the TRC meeting in September 2007, it was decided that all dispensers at the site should have the retractor kits installed but pumps 5 through 12 would have the Goodyear Maxxim Premier LX 8 foot hose and Husky VLX nozzles and so would not need the Flo-Equalizers.

The evaluation and meetings on the possible approval and testing of the extended reach hose systems with longer whip hoses were extensive due to many concerns regarding prior issues with retractor systems expressed by Bud Pratt, Bill Ruppel and Ari Yarovinskiy. The issues cited were addressed in the testing plan and included:

1. The retractors themselves caused wear on the hose where it was connected to the pulley.
2. The springs in the retractors weaken with time allowing the hose to touch the ground.
3. The retractor hose clamp pulley was often used to hide tears in the hose.
4. The extended hoses were more likely to have increased backpressure.
5. The extended hoses were more likely to cause liquid retention.
6. The nozzle may not fit properly into the fillport when used on the "wrong" side with the extended hose set-up.

Initial evaluation of the retractor kits involved visual observation as well as informal evaluation of emissions from the vehicle fillport/nozzle faceplate. During the visual inspections in May 2007, it was determined that since the system ran at a vacuum during operational periods, there were no emissions from the fillport/nozzle even when the hose was stretched around the vehicle. This had been a previous concern with approval of retractor systems. Quantitative testing to evaluate these emissions was removed from the testing requirements. Visual inspections of the retractors and hoses on pumps 1 – 4 indicated no problems with wear or operation. The Hyper Reach retractor kit uses weights rather than springs, thus avoiding problems associated with stretching springs. The hoses at the handicap dispenser (pumps 1 and 2) did have a tendency to touch the island but did not appear to be worn or need to be replaced. Testing at pumps 1 – 4 on July 18, 2007, was performed specifically for the approval of the Husky VLX nozzles and Goodyear LX hoses. However, the results of the tests also confirmed that there were no problems for the full retractor system in relation to backpressure, leak decay or liquid retention in the hoses.

After pumps 5 through 12 were retrofitted with the Hyper Reach retractor kit in November 2007, leaking was indicated by the continuous monitoring data and the installation contractor was contacted to make repairs and stop the leaks. After the leaks were fixed and the system was operating properly, testing was scheduled for November 13, 2007. When Bud Pratt arrived at the site for testing, he was informed there were problems with the retractors not operating properly at five of the eight pumps. It appeared there had been parts missing from the Gilbarco Hyper Reach Retractor Kit (K96570-04) and these were replaced by lesser quality components (particularly the cable material was not the same quality as that installed from the full kits on pumps 1-4). Also, it appeared that the brackets or guides for the cable were often rubbing on the cable and appeared necessary to bend them to a proper angle to minimize the rubbing action. The decision was made to fix the retractor brackets and allow the testing of the liquid retention, backpressure and leak decay to continue since these would not be affected by the operation of the retractors. The complete proper kits would need to be installed and the system checked again at least one month after the installation of the proper kits before approval of the system, assuming the other tests passed. The system passed the liquid retention, backpressure, and leak decay tests. Two nozzles (at pump 6 and pump 10) were locked out due to electronic problems with the dispenser but were unlocked for testing. There were no signs of liquid retention at any hose tested. Backpressures were within range for all fueling points. The leak decay test passed.

Dispensers 5 through 8 were fitted with the complete Gilbarco Hyper Reach Retractor Kits (K96570-04) in December 2008. Final photos and documentation requested were provided in February 2009. Mr. Bud Pratt performed the final inspection of the retractors on February 22, 2009. No problems were observed during this observation.

Table 1

Components comprising the Retractor system approved for site specific use at the Costco #382 St. Peters facility located at 101 Major Street, St. Peters, MO 63376.

Component	MOPETP Approval	CARB Approval
Gilbarco Hyper Reach Retractor Kit for Balanced Vapor Recovery (K96570-04)	Site specific approval 2009-3	EO G-70-52-AM (generic extended hose approval)
Gilbarco Advantage B78	99-06	91-06
Goodyear Maxxim Premier Whip Hose (4.5 foot)	98-05	G-70-36-AD and G-70-125-AA
Husky 5900 Single Service Breakaway	Site specific approval 2009-3	CARB approval pending for Husky 5900 Single Service Breakaway
Husky 5827 Flo-Equalizer (required only if the dispensing flow is greater than 10 gpm)	2009-5 & 2007-1	96-13
Goodyear Maxxim Premier LX Hose (8 foot)	2007-1	07-03
Husky VLX Nozzle	2007-1	07-02 (Husky V and VLX modifications)

Approval Conditions

Because of the problems seen with the Gilbarco Hyper Reach Retractor Kit (K96570-04) installation, the system is approved only for the Costco #382 St. Peters facility. Because this was a test site and had continuous monitoring and close inspections, the problems with the retractor kits were detected and addressed quickly. At a typical operating site, these problems may have gone unattended until the six-month inspection. The problems that were observed have been addressed at the facility, and the system appears to be working properly at this facility. Changes to the retractor system shall not be required since such changes would also require changes to the internal vapor piping of the dispensers that might cause problems and require further testing.

The Gilbarco Advantage Dispenser Field modified with the Gilbarco Hyper Reach Retractor Kit (hereafter referenced as "system") is approved with the following requirements/conditions:

1. The system may be installed exclusively at the Costco #382 St. Peters facility located at 101 Major Street, St. Peters, MO 63376
2. The system must consist of the components listed in Table 1.

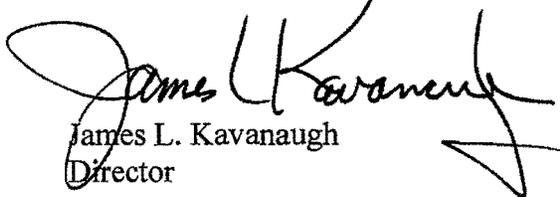
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3. All components must be installed and maintained according to the installation and maintenance instructions of the manufacturer (see Attachment A), the respective CARB executive order or letter, and the MOPETP approval.
4. All replacement parts for the Gilbarco Hyper Reach Retractor Kit (K96570-04) must be as designated in the instruction and maintenance document per Attachment A. The hose clamps and cable MUST be as required in the kit and all brackets must be installed such that the cable is not being rubbed. The cable required in the kit is N23533-03 (#6 solid braid nylon dyed black 3/16" diameter) with minimum yield strength of 130 ft lbs, minimum tensile strength of 750 lb and average tensile strength of 850 lb.
5. The total length of the hose from hose outlet to nozzle shall not exceed 14 feet including the breakaway and Flo-Equalizer (if needed). Since all nozzles shall be the VLX with new casting and the hoses shall be the Goodyear Maxxim Premier (4.5 foot whip hose and 8 foot LX hose), the Flo-Equalizer should not be needed if the system is adjusted so that dispensing flow at each nozzle is less than or equal to 10 gallons per minute.
6. Hoses must not touch the ground or island with the exception of the low installed handicap dispenser (pumps 1 & 2).
7. All requirements and conditions of the CARB 08-04 are adopted by reference.

Thank you for your cooperation in the MOPETP process. If you should have any questions about this approval, please contact Mr. Bob Randolph at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, by email at bob.randolph@dnr.mo.gov or by telephone at (573) 751-4817.

Sincerely

AIR POLLUTION CONTROL PROGRAM


James L. Kavanaugh
Director

JLK:brt

Enclosure

c: Vapor Recovery