

# NEVADA SMALL BUSINESS DEVELOPMENT CENTER BUSINESS ENVIRONMENTAL PROGRAM

CS-FY9501011

## AIR ASSISTED AIRLESS PAINT SPRAY SYSTEM AT MARATHON EQUIPMENT

Waste Reduction Case Study

### PROJECT

Marathon Equipment Company, a 80 employee firm located in Yerington, Nevada, received grant funding from the Nevada Division of Environmental Protection (NDEP) to switch from airless paint spray system to an air assisted airless high volume spray system.

### BACKGROUND

Marathon Equipment is a manufacturer of stationary compactors and balers. Prior to the installation of the air assisted airless system, Marathon Equipment was using an airless system in their painting operations. Airless spray painting systems atomize paint by forcing it through a small tip orifice at high fluid pressures (1,500 to 3,000 psi). Typically, transfer efficiencies in the airless systems are lower than that of the High Volume Low Pressure systems. The advantage of the airless system is the capability to paint large areas quickly; however, a fine finish cannot be accomplished due to the fact that the paint spray is not finely divided. The air assisted airless system combines the features of the conventional spray systems and the airless spray systems. In the air assisted airless system, an airless fluid spray nozzle is used to atomize the coating at high pressures (400 to 800 psi). A low pressure air stream is injected after the nozzle to improve atomization. The air assisted air less system delivers less bounceback, lower overspray, better film control and significantly higher transfer efficiency over the conventional spray guns.

Marathon purchased model AA200HS air assisted airless high volume system manufactured by Graco Inc. This air assisted airless high volume system delivers paint at a maximum pressure of 3000 psi and an air pressure of 12 psi; the high fluid pressure in this system enables the use of high solids content paint.

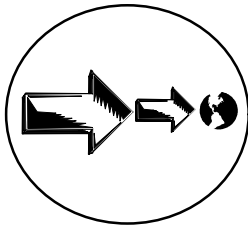
### WASTE MANAGEMENT

Most of the waste lacquer thinners used in paint equipment wash up are considered hazardous waste due to hazardous constituents listed in Federal and State regulations or because of the flashpoint (i.e., flashpoint below 140°F). Typically, lacquer thinners contain hazardous constituents such as xylene, MEK, acetone and other F listed solvents (40 CFR 261.31). Under the State and Federal regulations, solvents used in degreasing operations containing more than 10% cumulative of the F listed solvents are considered hazardous when they are spent.

Marathon was generating about 25 gallons of waste paint and thinner per month. The waste was sprayed on the interior walls of the new baler containers built. The new system has reduced the waste generation to 15 gallons and this is still sprayed on the interior walls of their containers.

### COST SAVINGS

With the new air assisted airless system on-line, Marathon has reduced the paint and thinner waste to 15 gallons per month from 25 gallons per month. Prior to the purchase of the system, Marathon on an average, used 770 gallons of paint per month at a cost of \$12 per gallon. The higher efficiency air assisted airless system has reduced their paint consumption to 520 gallons per month. This means that 250 gallons of paint per month was being wasted by the old



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equipment through overspray losses or inefficient coating. The paint purchase saving is approximately \$3,000 per month or \$36,000 per year.

The initial costs associated with switching to the new paint system was \$2,760. NDEP provided half the amount in grant money. With a total savings of \$3,000 per month, it took Marathon less than a month to break even on the equipment costs. Every month since Marathon is saving \$3,000 in avoided material purchase costs. Congratulations to Marathon Equipment Company; Bruce Rowley, Safety Director Marathon Equipment can be reached at (702) 463-4030.

**COMMENTS**

Transfer efficiency is dependent on various parameters, some of which are in the control of the operator. Generally, the high efficiency guns are designed to operate at optimum flow rates. Excessive air pressures and flow rates will reduce the efficiency. Proper maintenance of guns is important to maintain a proper paint spray. Operator training is critical for proper use of the HVLP guns.

Not only are purchase costs and waste generation reduced, but the more efficient paint application with HVLP guns also reduces air pollution. Installation of HVLP guns can also increase the life of the paint booth filters by nearly 25%. While HVLP guns provide higher spray efficiency than traditional atomizing, additional efficiency improvements are possible with the use of systems like air assisted and heated air assisted HVLP system. For further information on air assisted or heated air assisted HVLP systems contact the Business Environmental Program, 1-800-882-3233.

**SUPPLIERS OF ALTERNATIVE PAINTS AND PAINT RELATED ACCESSORIES**

**Reno Area**

- B&T Spray Company (415) 467-0170 (*Graco*)
- Barretts Paint Supply (702) 329-2756
- Fuller Color Center (702) 329-4478
- ReNeva (702) 331-2886
- Reno Paint Mart (702) 826-2900
- Sierra Filtration (702) 348-7010

**Las Vegas Area**

- B&L Auto Paint (702) 457-8882
- Charleston Auto (702) 642-0616
- Sherwin William (702) 367-1622
- Allied Auto Parts (702) 323-2756

*Note: The above listing of vendors and manufacturers is provided for informational purposes only. This list is provided as a service to Nevada businesses in order to assist them with waste minimization. This listing of businesses is not to be construed as an actual or implied endorsement of their products or services. Additionally, other businesses which provide similar products and services may not be listed; this omission is not to be construed as an actual or implied denouncement of those businesses.*