

Reclamation Strategy

I. Introduction

Monsanto has for many years been the primary supplier of fire resistant hydraulic fluids to the aluminum and steel making industries. These fluids were based on polychlorinated biphenyls (PCB) and polychlorinated terphenyls (PCT) compounds which provided excellent fire resistance and hydraulic performance at a reasonable price. By nature of most die-casting and foundry operations, large quantities of hydraulic fluid has gone directly into the plant effluent through system leakage, thereby causing both an economic loss and an environmental problem. Because of recent environmental pressures on PCB/PCT compounds in water, users must now stop using these fluids. They are considering 1) replacing the fluid with a phosphate ester base fluid or 2) recycling the PCB/PCT fluid and "topping up" with P/E fluid.

Recycle of hydraulic fluid involves collecting the used fluid and reclaiming through a process that brings it back to, or close to, new fluid specifications, particularly with respect to fire resistance.

There are presently 4.5 M gallons of PCB/PCT pydraul in customer's machines and collection systems. Without reclamation and only system "top-up" with a P/E fluid, most of the existing fluids will have leaked into the environment within two (2) years. Reclamation provides the user with a fluid he can continue to use and at the same time, keep the fluid out of the environment.

Some users are reclaiming now. Example, G.M.'s Central Foundry at Bedford, Indiana began reclaiming to reduce their total fluid cost and are now at a 60% recycle rate. As PCB/PCT water pollution pressures began to increase, they saw the benefits of reclamation in keeping the fluids out of the effluent.

Presently there are no high quality reclaim programs available that will certify fire resistance minimums on the reclaimed fluid.

II. The Market Situation

A. What is the market?

The market consists of aluminum die-casting shops and steel foundrys where fire resistant hydraulic fluids are used. As mentioned, there is about 4.5 M gallons of PCB/PCT fluid in customers machines and collection systems. In addition, the reclamation market includes those users who are now using phosphate ester based fluids.

B. Market History:

Most die-casting and foundry hydraulic systems are prone to leakage of the fluid into the plant effluent and into the watershed. In addition, there are system failures and spills which can contribute substantially to the total fluid lost. Practically all new fluid sales to a user is to "make-up" for that portion of fluid that leaks from the system.

Historically, little hydraulic fluid has been reclaimed because of the user's primary interest in aluminum or steel making, no water pollution pressures, or a lack of reputable and qualified reclaim companies.

Typically, most reclaim companies are small and poorly managed operations that started by reclaiming dry cleaning fluids. These companies seldom have technical capability or a lab to insure the reclaimed fluid meets performance and fire resistance requirements. They also are sources of pollution because of the tendency to sewer most reclaiming process losses.

Some users have established their own reclaiming system. Cost to do this is typically high because of low volume. However, the user seldom assigns all cost incurred in an effort to justify the operation. The reasons to reclaim internally are usually 1) to reduce total fluid cost, 2) non-availability of a good, outside reclamation service. Presently, no fluid manufacturer (Stauffer, Houghton or Monsanto) offers a reclamation service.

C. Present Market Situation:

Hydraulic fluid reclamation is a relatively new market with the service being provided on a local basis.

G.M.'s Central Foundry at Bedford, Indiana is probably the biggest user that is reclaiming. Of their total annual fluid usage (180,000 gallons), 60% is reclaimed fluid. Their present plans are to boost this to 80% by changing to Monsanto's P/E fluid and modifying their collection system. Findett Service Co. of St. Charles, Mo. has been their reclaimer.

A survey of the present market is shown below. This list includes those who are presently reclaiming and those who plan to do so within the next year.

<u>Company</u>	<u>Annual Usage</u>	<u>Recycle</u>	<u>Comments</u>
Central Foundry	140,000 Gal.	60%	Findett Svc. Co. going to 80% reclaim
Chevrolet (Massena, N.Y.)	100,000 "	50%	Internally, going to 90% reclaim
Johnson Motors	100,000 "	<1%	Outside company
Republic Steel	40,000 "	None	
Carter Carb.	15,000 "	33%	Findett Service Co.
Inland Steel	20,000 "	<1%	Outside Company
Cast Forge	10,000 "	None	

This list represents an initial market of 236,000 gallons using a recycle rate of 50% on those planning to reclaim. The future market includes those users using phosphate ester as well as PCB/PCT fluids. The present synthetic fire resistant hydraulic fluid market is 3.0 M gallons/year, assuming an average recycle rate of 50% and that half of the potential customers will reclaim, the total reclaim market potential is estimated at 0.75 M gallons/year. At an average price of \$1.50/gallon (1/2 of new fluid price) the total \$ market is \$1.125 M.

In addition, the water-glycol market accounts for 3.5 M - 4.0 M gallons/year. Phosphate ester fluids cannot compete directly because of price. However, since water-glycol cannot be economically reclaimed, a total package of phosphate ester fluid and reclamation can capture a part of this market. Approximately .4 M gallons of this market could be realized. Based on 75% recycle, .3 M gallons would be reclaimed fluid.

III. Principal Factor Affecting the Growth of the Reclamation Market:

- A) Future water pollution limits imposed by State and Federal agencies on PCB/PCT compounds and phenolics (from phosphate ester products).
- B) Increased awareness by the user of economic advantages of reclamation as good reclaim services become available.

IV. Long Range Objectives

- A) Establish a Monsanto total fluid program that will consist of 1) new fluid supply, 2) certified reclamation service and 3) water pollution technical service. This program shall be profitable and provide a total service to our customers.
- B) Maintain a high quality standard for our reclaimed fluid with respect to operational and fire resistance qualities.
- C) Establish an image of a company concerned about our customer's water pollution problems.

- D) Expand reclamation program to include other fluids in the metalworking industry such as die-lubes, etc.
- E) Achieve at least 50% share of the domestic industrial hydraulic fluid reclamation market by 1976.

V. General Strategy

Program:

Establish a pilot program on reclamation by contracting a single reclamation company to process PCB/PCT and P/E fluids for a few selected customers. Monsanto Specialty Products Marketing will sell the reclaim service with new P/E fluid. The customer will ship to the reclaimer who will process the used fluid and certify it meets previously agreed upon performance and fire resistance specifications. After the reclaimer ships the reclaimed fluid back to customer, he bills Monsanto for processing. Monsanto then bills the customer (processing + profit). Title of the fluid always remains with the customer, Monsanto and reclaimer only perform a service. Because of the volume Monsanto can generate through a number of customers, a lower processing cost can be realized by working with a single reclaimer. Better control of processed fluid quality can also be maintained.

Reclaimer:

Findett Service Company, St. Charles, Missouri.

- A) Very competent, technically and businesswise.
- B) Has worked with Monsanto products for 9 years.
- C) Located next to Monsanto's fire test lab in St. Charles, Mo.
- D) Has excellent analytical capabilities.
- E) Excellent relationship established between Findett and Monsanto Fluids Research Group.
- F) Presently reclaiming Central Foundry and Carter Carburetor. Willing to turn over to Monsanto Marketing.
- G) Findett and Monsanto in agreement on program and processing cost.

Marketing:

Monsanto Specialty Products sales to contact selected customers to interest them in the reclamation program. These customers are presently reclaiming or are planning to reclaim. They are:

- 1) Central Foundry
- 2) Chevrolet, Massena, N.Y.
- 3) Carter Carburetor
- 4) Johnson Motors
- 5) Inland Steel
- 6) Republic Steel
- 7) Cast Forge

In the beginning, we will concentrate on these selected customers. If successful, then expand to other hydraulic fluid users.

Product Characteristics:

The reclamation service offered will provide the customer with a Monsanto reclaimed fluid that is certified to meet performance and fire resistance specifications agreed upon by customer, Findett and Monsanto.

Technical Services:

To be provided by Monsanto and Findett. Enviro-Chem will be utilized when necessary to help solve associated water pollution problems.

Analytical Services:

Used and reclaimed fluids will be analyzed by Findett for acceptability to agreed upon performance specifications. Samples will be tested by Monsanto in the fire test laboratory to assure conformance to fire resistance specifications.

VI. Competitor Confinement Strategy

Because of economics and water pollution pressures, reclamation will become more widespread. Presently there are no fluid manufacturers with reclaim programs. It is apparent, because of the size of the market, that only 2 or 3 sizable operations can exist. By being the first to establish a program that will handle the customer's reclamation needs in a reputable and efficient manner, we will be able to achieve a strong position in the market.

VII. Pricing Strategy

Present reclaim prices vary from \$1.00/gallon to \$2.00/gallon including freight. The range is due to volume, drums or bulk, condition of the used fluid, and quality of reclaimed fluid.

Based on the cost-volume relationship agreed upon by Findett and Monsanto, average cost to Monsanto is 74¢/gallon (no freight) up to an annual volume of 300,000 gallons.

Since Monsanto is offering a high quality, certified reclaimed fluid, a price of \$1.50/gallon (less freight) is reasonable. This price would be for tank truck quantities with processing requirements similar to those of Central Foundry. The price will be adjusted upward depending on additional processing required and drum quantities.

VIII. Strategy Alternatives

There are several alternatives to the proposal above. These are:

- 1) Buy Findett and be 100% in reclaim business. This route would require a capital investment by Monsanto. This may be desirable after the program has been established.
- 2) Establish business with several reclaimers rather than one. This may be desirable after program is established if it becomes apparent that cost-volume advantages with one reclaimer does not offset shipping charges or competitive local prices. The proposed contract between Monsanto and Findett is not an exclusive arrangement. In the beginning of the program it will be easier to control quality of product by using one reclaimer, particularly one who is known to be reputable and competent.
- 3) Continue as we are without a reclamation program. Profit from reclamation will not be realized by Monsanto. There is also the chance that Findett will be contracted to reclaim for Monsanto's competition. Also, since our new fluid volume will decrease at customers who are reclaiming, there will be no way to make up this loss except through reclamation.

As an example of entering the reclamation market consider the following effects on projected sales and profit:

Forecasted 1973	volume of new pydraul	-	1.23 $\bar{M}$ gallons
"	sales of new pydraul	-	\$3.7 $\bar{M}$
"	gross profit on		
	new pydraul	-	\$1.2 $\bar{M}$
Assume	reclaim rate of 50%		
	of new fluid	-	0.66 $\bar{M}$ gallons
"	reclaim sales @\$1.50	-	\$1.0 $\bar{M}$
"	gross profit on		
	reclaim fluid		
	(@40%)	-	\$0.4 $\bar{M}$

1973:

<u>Product</u>	<u>With Reclamation</u>		<u>Without Reclamation</u>	
	<u>Sales \$</u>	<u>Gross Profit \$</u>	<u>Sales</u>	<u>Gross Profit \$</u>
New Pydraul	3.70 M	1.2 M	3.55 M	1.15 M
R/C Pydraul	.25 M	.1 M	0	0
Totals	3.95 M	1.3 M	3.55 M	1.15 M

1976:

New Pydraul	3.78 M	1.13 M	3.34 M	1.0 M
R/C Pydraul	.72 M	.29 M	0	0
Totals	4.50 M	1.42 M	3.34 M	1.0 M

Action Plans

<u>Responsibility</u>	<u>Action Plans</u>	<u>Target or Review Date</u>
Business Group Director	Approval to implement plan as described in this strategy.	3/24/72
Business Group Director & Findett	Formally sign proposed contract with reclaimer.	3/21/72
Development	Develop procedure for handling of fluid, invoices, shipping documents, etc. between Monsanto, Findett & customer	Completed
Product Group, Field Sales & Findett	Convert Central Foundry and Carter Carburetor to the new program.	5/1/72
Development and Product Groups	Transfer to Marketing	5/15/72
Product Group, Field Sales	Introduce reclaim program to the five (5) target accounts.	6/1/72
	1) Chevrolet, Massena, N.Y. 2) Johnson Motors 3) Republic Steel 4) Inland Steel 5) Cast Forge	
Product Group	Evaluate this program and make recommendations for expansion or termination.	11/1/72