PLAINTIFF'S EXHIBIT

DOW-690

DOW

Industrial Hygiene

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INFORMATION EXCHANGE

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FOREWORD

The attached booklet is a collection of Successful Exposure Reduction Applications (SERA) information collected by a portion of the Industrial Hygiene Network in the U.S. and Canada. The intent of this project is to provide a ready reference of Dow technology in reducing employee exposures.

This is the fourth edition. If you did not get a copy of the other issues, contact any committee member listed below.

Since it is the intent of the committee to continue this project on an on-going basis, please contact one of the committee members if you know of an exposure reduction that would be a good candidate to appear in the SERA publication.

SERA COMMITTEE MEMBERS:

Stan Dombrowski, Chairman	U.S. Area	(517) 636-2989
Sidney Goode	Oyster Creek Division	(713) 238-9697
Bill Ledford	Louisiana Division	(504) 389-1809
Gary Meir	Eastern/Central Div.	(216) 826-6291
Oliver McDonald	Dowell Inc.	(918) 592-0771
Dick Olson	Sarnia Division	(519) 339-3233
Rick Olson	Michigan Division	(517) 636-5641
John Summerlin	Texas Division	(713) 238-1281
Helen Tobol	Western Division	(415) 432-5303

S1001579

12/3/81

PORTABLE COLD CLEANER

PROBLEM

Vapors of 1,1,1-Trichloroethane generated in cold cleaning operations should be kept at levels less than the Threshold Limit Value of 350 ppm. Control of the vapors also reduces waste of solvent and metal corrosion when the vapors contact hot metal surfaces.

SOLUTION

A small cold cleaning unit called "Cycleen" and distributed by Hotsy Pacific, 13327 Pierce Road, Saratoga, CA 95070 (408) 867-2099 (approximate cost $220) is now commercially available. The unit sits on top of a 55 gallon drum of solvent and pumps solvent through a hand held brush until the solvent is too soiled for cleaning.

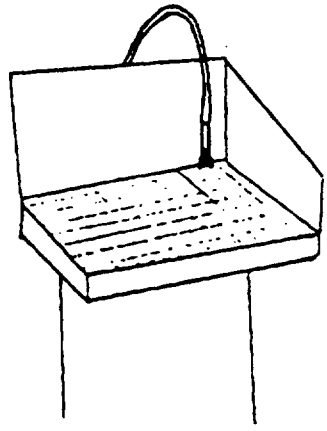
SUCCESS

Breathing zone measurements for 1,1,1 trichloroethane indicate concentrations less than 75 ppm even while using poor cleaning practices.

CONTACTS

A. W. Schaffer - Manager Dowell Industrial Hygiene Department (918) 592-0769.

DIAGRAM



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ST0075500

CONTROL OF EXPOSURES DURING ETHYLENE OXIDE SAMPLING

PROBLEM

High peak exposures during sampling of ethylene oxide occurred when the line was purged prior to sampling. Peak concentrations up to 163 ppm EO were monitored for a brief period.

SOLUTION

A recirculating sample line with a septum-bottle, syringe sampling system was installed. The flow-through sample line eliminates the need for purging and the septum bottle contains the EO sample vapors.

SUCCESS

	Maximum Peak Concentration (PPM)	
	Before	After
Ethylene Oxide	163	8

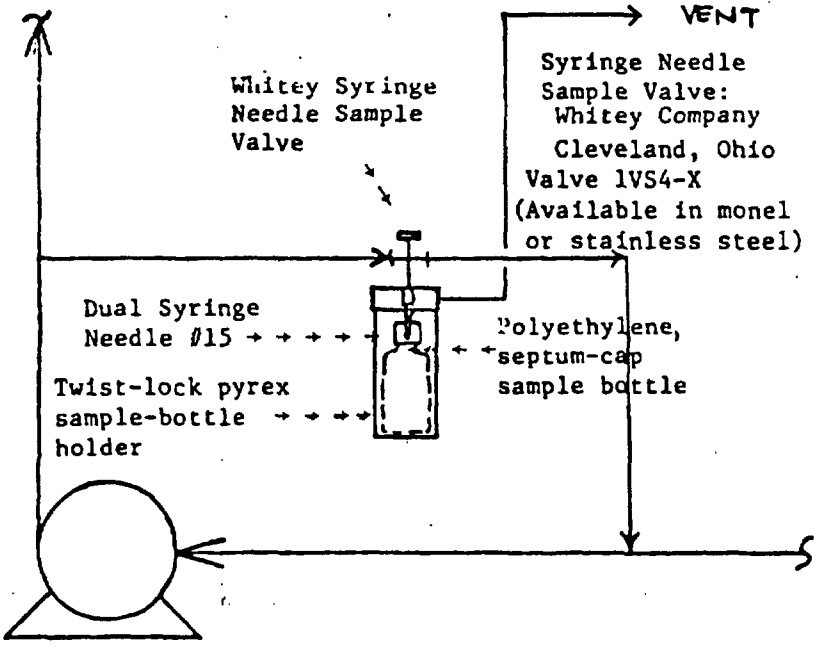
CONTACTS

Bill Gary, Propylene Oxide Purification, 713/238-7701 (Designer of Septum-Sampling System)

Donna Hicks, Environmental Health Services, 713/238-1281

George H. Flores, Environmental Health Services, 713/238-2942

DIAGRAM



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ASBESTOS SUBSTITUTE FOR TURBINE INSULATION

Problem:

The removal of asbestos insulation pads during maintenance on the gas turbine at the Chlor-Alkali Plant was a potential source of airborne asbestos fibers.

Solution:

Maintenance procedure on the gas turbine proved timely for installing an asbestos substitute, CERABLANKET®, a waterproof ceramic-fiber cover blanket made by Johns-Manville Company.

Success:

Installation of the CERABLANKET insulation pads has resulted in eliminating a potential asbestos exposure.

Contact:
Johns-Manville Company Product Information (303)-979-1000
LAD Industrial Hygiene: Terry Campbell (504)-389-8549
LAD Chlor-Alkali II: Bill Sharkey (504)-389-6122

12/18/81

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AUTOMATIC DE-BAGGER ELIMINATES DUST

Problem:

The adding of talc (non-asbestos form) to the system of the Chlorinated Polyethylene unit created potential overexposures.

Solution:

An automatic de-bagger from Taunton Engineering was installed to add the non-asbestos form talc.

Success:

Previous to the installation of the automatic de-bagger, employee breathing zone samples to talc ranged as high as 10 mg/m^3 total dust for an eight-hour TWA. The installation of the automatic de-bagger has eliminated contact with the talc when added to the system.

Source of De-bagger:

Tauton Engineering, 700 W. Water St., Taunton, Mass. 01780

Contact:

LAD Industrial Hygiene: Terry Campbell, (504)-389-8549
LAD Chlorinated Polyethylene: Jane Watkins (504)-389-8776

12/18/81

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REMOTE CONTROL C-CLAMP

PROBLEM

Marine Dock operators, disconnecting vinyl chloride ships, are required to manually remove load line flange bolts, thus increasing potential vinyl chloride exposure in the immediate work area. (Workers wear supplied air respirators.)

SOLUTION

A remote control 20-ton capacity hydraulic C-clamp system was employed to temporarily hold the flanges together. The operators then removed the bolts and moved upwind from the flange site to activate the clamp release and break the connection (different length hydraulic hoses may be assembled).

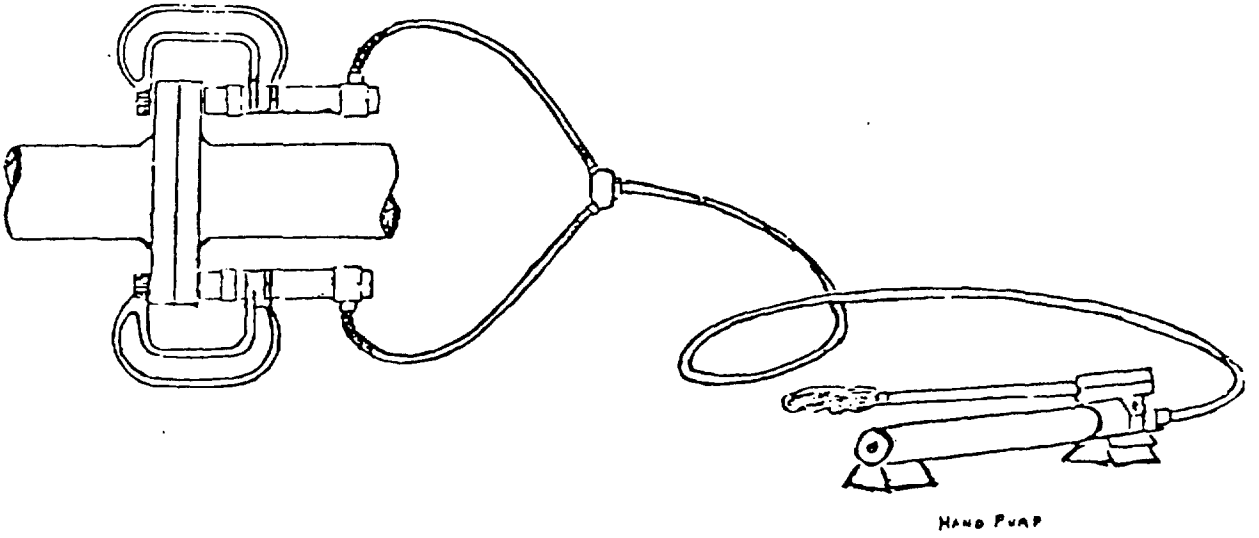
SUCCESS

Monitoring data indicates potential personnel exposure levels have been reduced approximately 50%.

CONTACT

LAD Industrial Hygiene: Dannie Kennedy (504) 389-6218.

12/18/81



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NOISE REDUCTION AT CAUSTIC PLANT

PROBLEM:

V_2 is a process vessel which is used in the manufacture of bead caustic. The beads are produced at the top of the tank and free fall through a cool air stream. Approximately six feet above the outlet nozzle, a grating (1" squares) screens out any material that might plug up the airveying system. The beads are airveyed in a batch to a storage silo. During the airveying cycle, the product builds up in the V_2 cone, the airveying system shuts down, the outlet nozzle opens, and the blow tank fills.

Original equipment included a pair of electrically operated vibrators used to start the bead caustic flowing from V_2 and V_4 on a timed basis; they operated anywhere from 0-60 seconds every time the outlet valve on V_2 opened. As these were very noisy [107 dB(A)], another system of air jets was installed on the same timer, to be used instead of the vibrators. The jets worked well, but another process problem intervened. Without intermittent vibration, the grating would become plugged. If the grating was allowed to become more than 25% covered, even prolonged operation of the vibrators would not prevent it from becoming completely plugged over, in which case shutdown and wash out was required.

In short, there were now two problems: a) a process problem of the grating in V_2 plugging, and b) an industrial hygiene problem of high noise levels.

SOLUTION:

New pneumatic vibrators from Mason Industries Ltd. were installed on the V_2 cone at the grating level to deliver vibration energy closer to the area of concern in the process. The air jets are still employed in the bottom of V_2 to rid the vessel of any material buildup at the outlet. The old vibrators are still in place for emergency use.

SUCCESS:

Material buildup at the V_2 outlet and on the grating above the outlet is cleared more efficiently than before and noise levels generated with both the airveyor and the new vibrators on are 20+ dB(A) less than the levels measured with just the old vibrators on the vessel.

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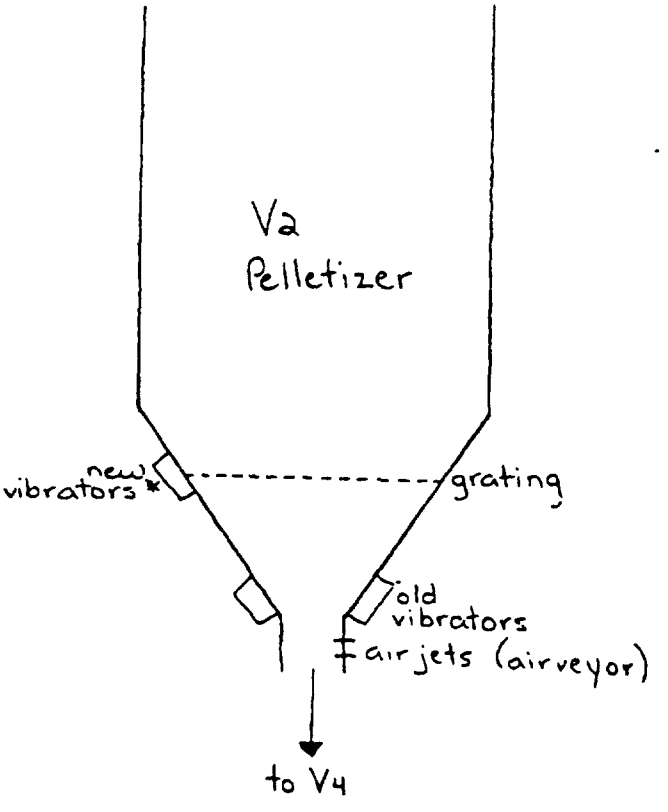
NOISE REDUCTION AT CAUSTIC PLANT - CONT'D

CONTACTS:

Caustic:	George Frank, Sarnia	(519) 339-3154/339-3048
Industrial Hygiene:	Alex Pollock, Sarnia	(519) 339-4501
	Faye Butler, Sarnia	(519) 339-4214

ST0075505



*vibration transmitted through 2 beams across grating

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SULFURIC ACID DRYING TRAIN AREA NOISE REDUCTION

PROBLEM

Area noise levels around the chlorine recycle system in the drying train area ranged from 97 to 111 dB(A). These levels caused the nearby main walkway past the control room building to have readings of 86 dB(A). Since plant personnel were often in the area of the chlorine recycle system, measures to reduce the noise levels were undertaken.

SOLUTION

A sound reducing enclosure and pipe insulation were installed on the chlorine recycle system in the drying train area. The control valve enclosure measured approximately 74" X 74" X 92" high, and was assembled from 4" thick Noisecap™ sound reducing panels, containing one personnel access door and sealed openings for 4 pipes. The pipe insulation was 4" thick with a 20G satin coat exterior face and a 22G perforated galvanized steel inside face. There is a 4" air space between the pipes and the insulation, which required support from vibration isolation mounts.

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SUCCESS

The project resulted in area noise levels reading 85 to 87 dB(A), an overall reduction range of 11 to 24 dB(A). Walkway noise levels were reduced to 81 dB(A), a 5 dB(A) drop.

CONTACT

Chlorine II: Jim Brunton, Sarnia, (519) 339-3306

Industrial Hygiene: Dave Bourque, Sarnia, (519) 339-3439
Faye Butler, Sarnia, (519) 339-4215

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