

DESIGN, CONSTRUCTION, AND OPERATION OF A DISTILLATION LABORATORY FOR THE SYNTHETIC LIQUID FUELS PROGRAM

by

J. Feldman,^{1/} P. Pantazoplos,^{2/} G. Pantazoplos,^{2/} and M. Orchin^{1/}

CONTENTS

	<u>Page</u>
Introduction.....	1
General.....	1
Column set-up.....	1
Reflux rate controls.....	2
Panel board.....	3
Vacuum control unit.....	3
Temperature records.....	3
Timers.....	4
Auxiliary vacuum system.....	4
Column operation.....	4

ILLUSTRATIONS

<u>Fig.</u>		<u>Follows</u> <u>page</u>
1.	Support frame and services for columns in distillation laboratory.....	2
2.	Arrangement for services and control connections for laboratory still in distillation unit.....	2
3.	Micro-still services diagram.....	2
4.	Diagram for reflux rate control through differential pressure.....	2
5.	Panel board.....	2
6.	Manostated reduced pressure system.....	2
7.	Wiring diagram for mercury manostat control.....	2
8.	Wiring diagram for ethylene glycol manostat control.....	2
9.	Potentiometer thermocouple junctions for distillation laboratory.....	2
10.	Wiring diagram for alarm and control system for temperature and time.....	2
11.	Distillate valve control system.....	4
12.	Auxiliary vacuum system.....	4
13.	Arrangement of columns in the laboratory.....	4
14.	Arrangement of columns in the laboratory.....	4

^{1/} Organic chemist, Synthetic Liquid Fuels Branch, Bureau of Mines, Bruceton, Pa.

^{2/} Scientific aide, Synthetic Liquid Fuels Branch, Bureau of Mines, Bruceton, Pa.