

RUN 10225-08

144 H₂CO
300 PSIG
870°C

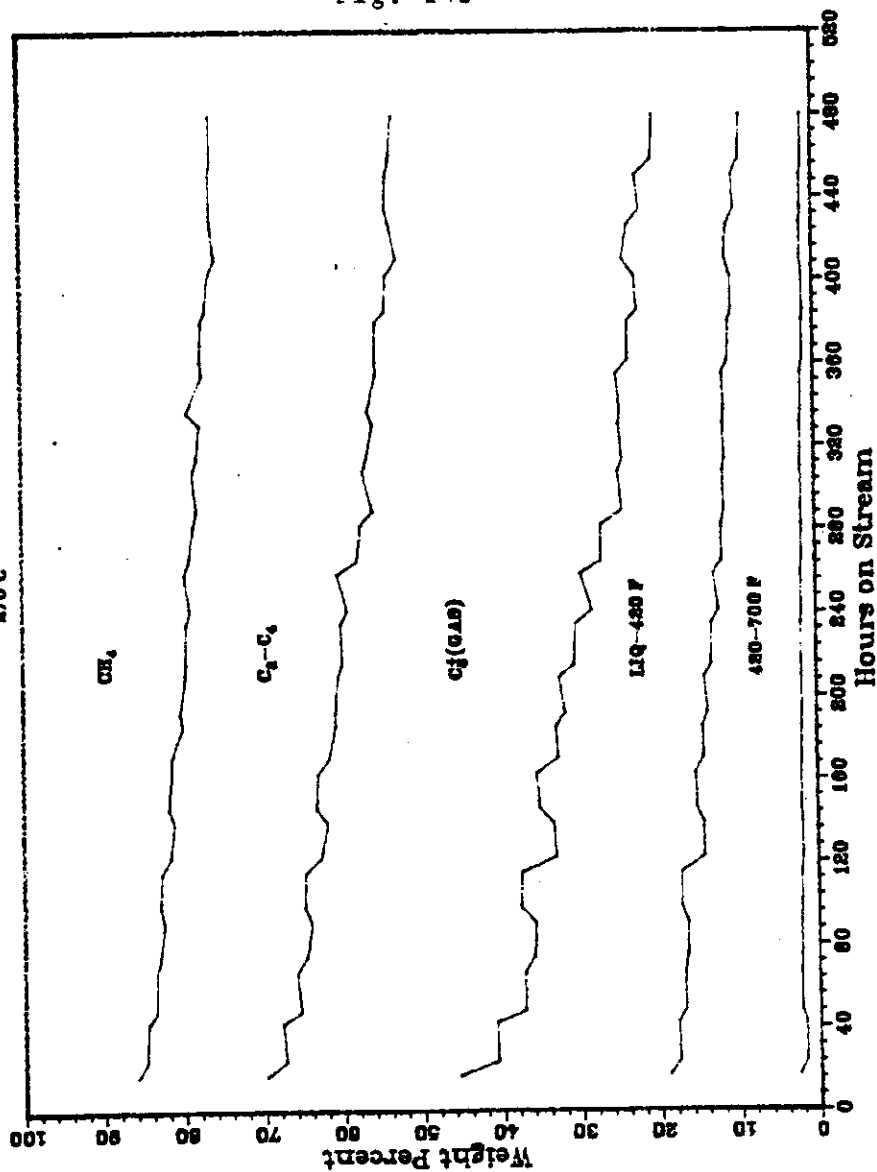


Fig. 143

RUN 10225-08

111 H₂CO
300 PSI
87°C

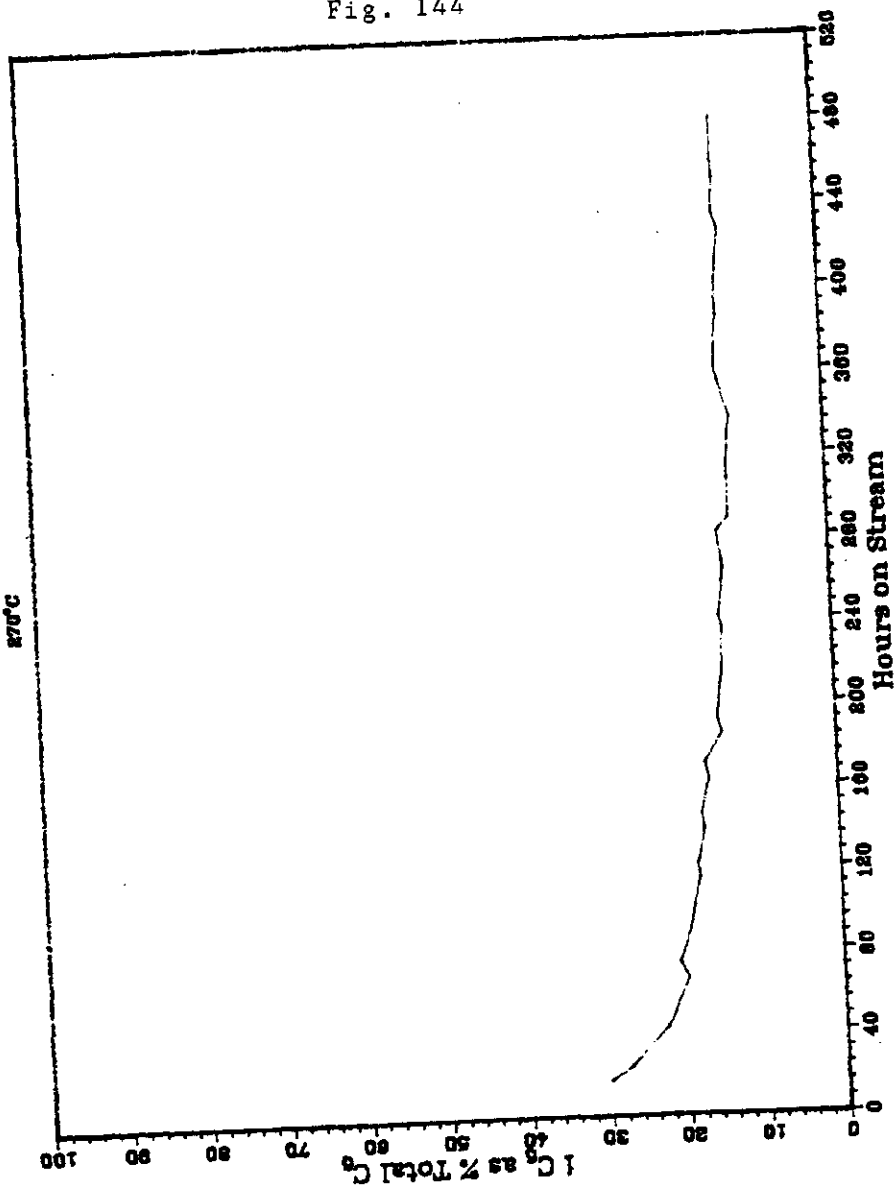
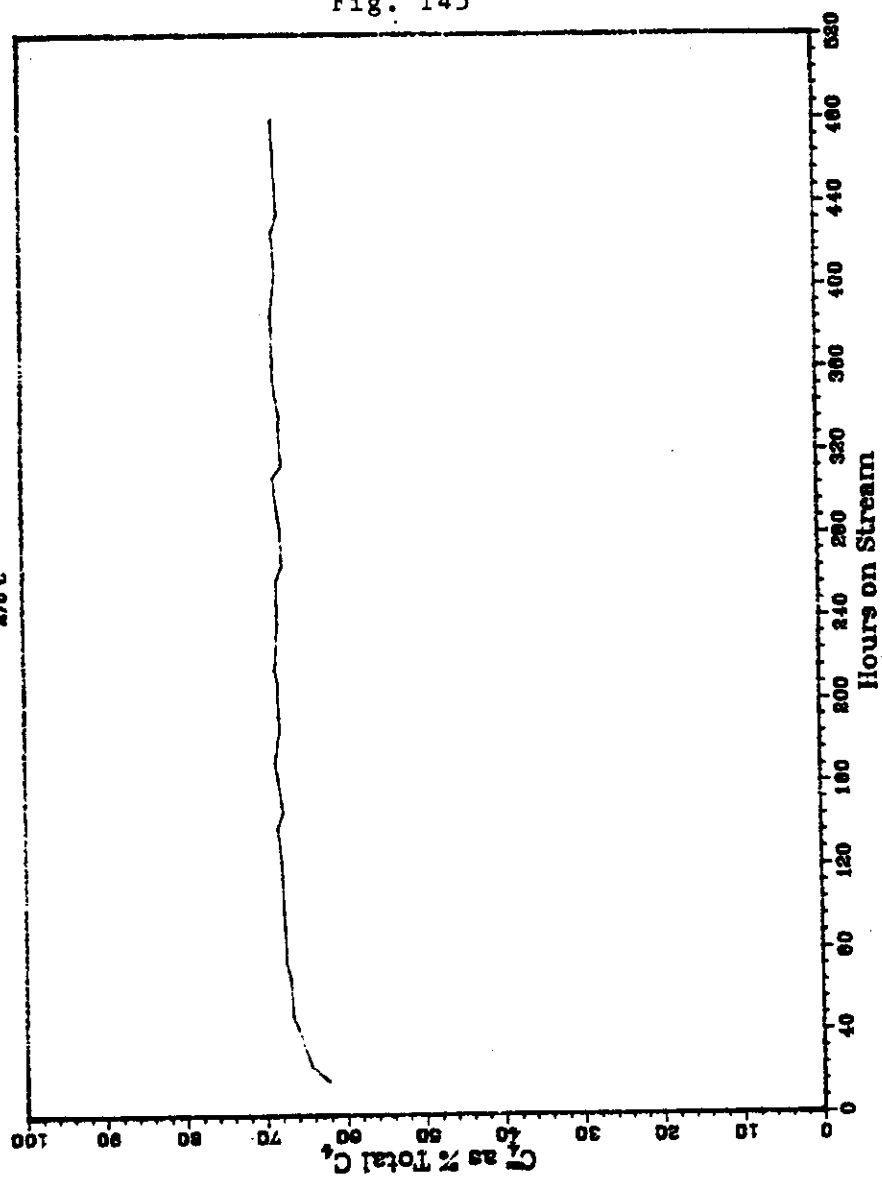


Fig. 144

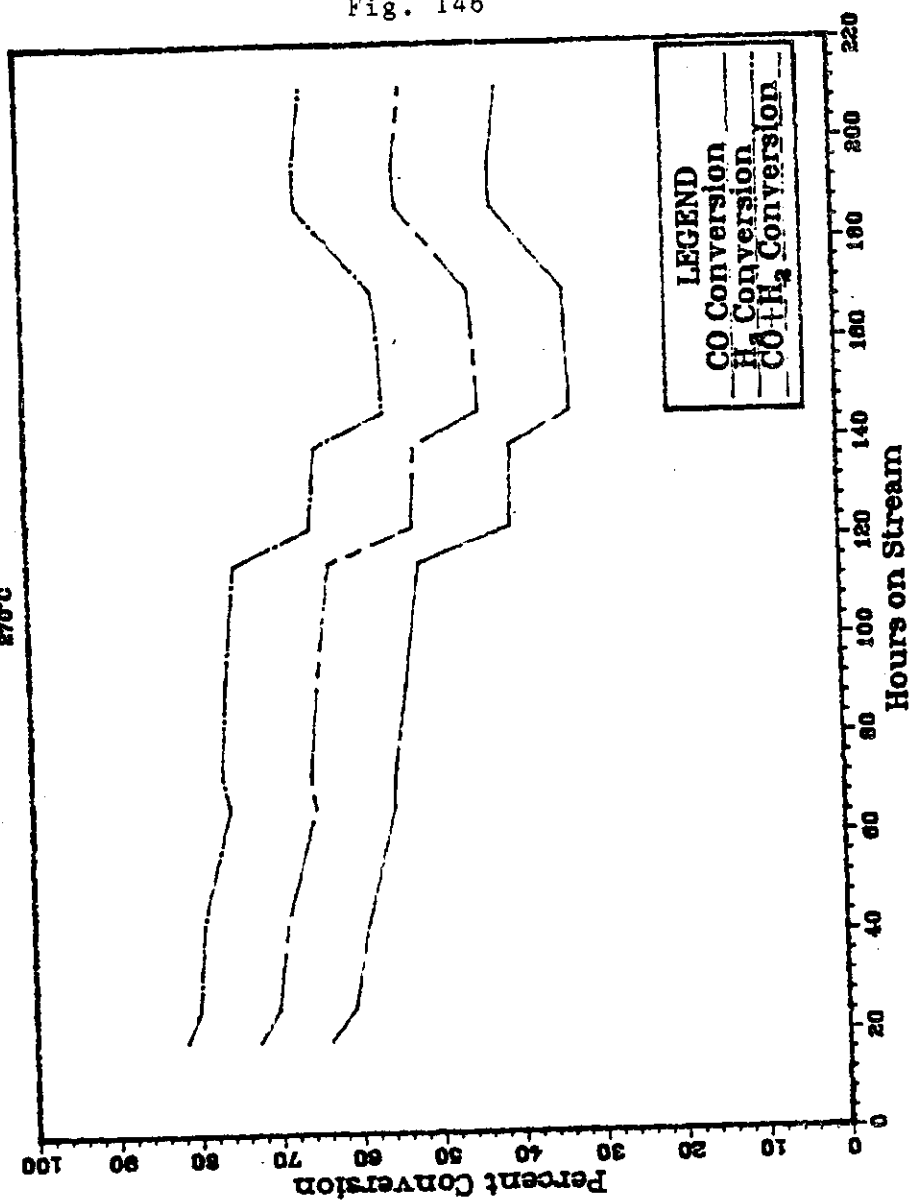
RUN 10225-08

111 H₂CO
300 TMSD
270°C



RUN 7112-22

111 H₂CO
300 PSIG
270°C



RUN 3112-22

1:1 H₂:CO
300 PSIG
270°C

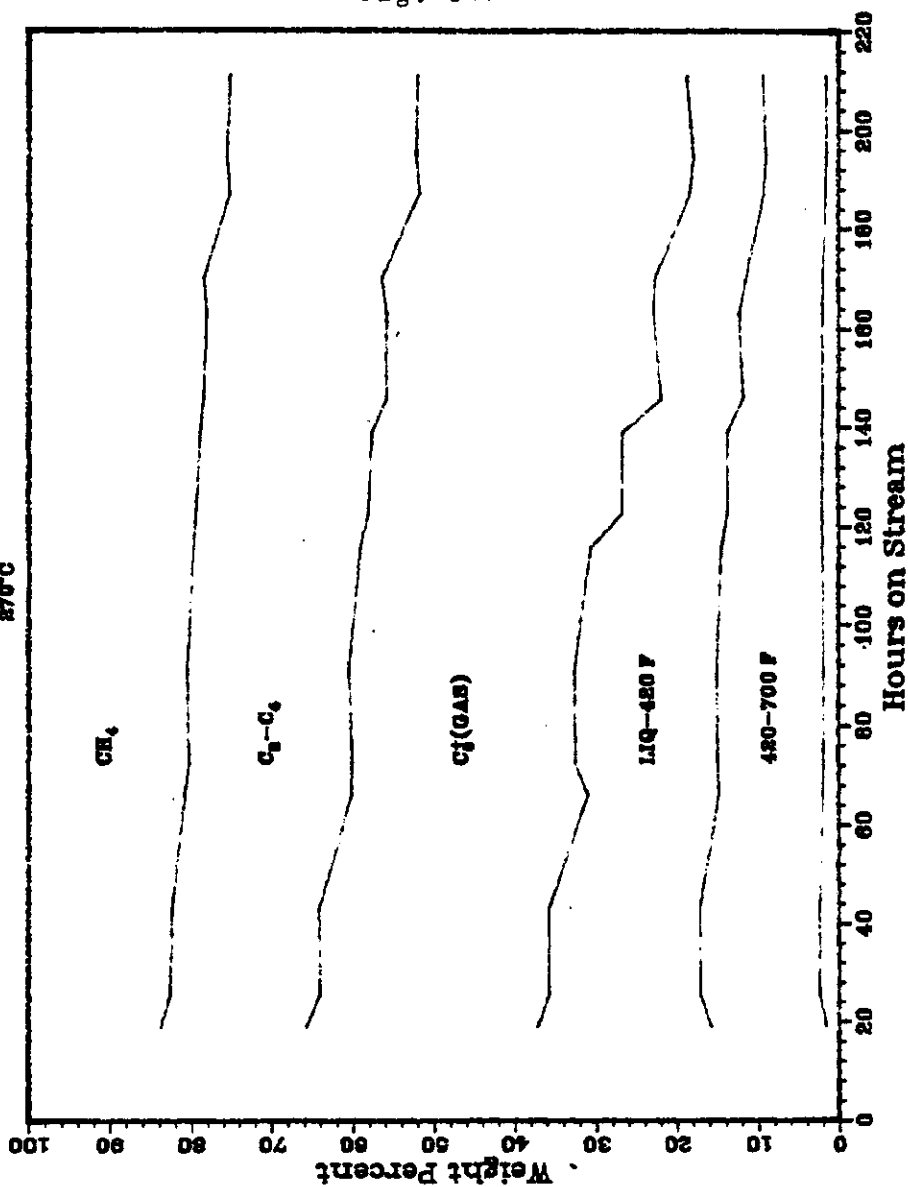


Fig. 147

RUN 2112-22

1:1 H₂:CO
300 psig
270°C

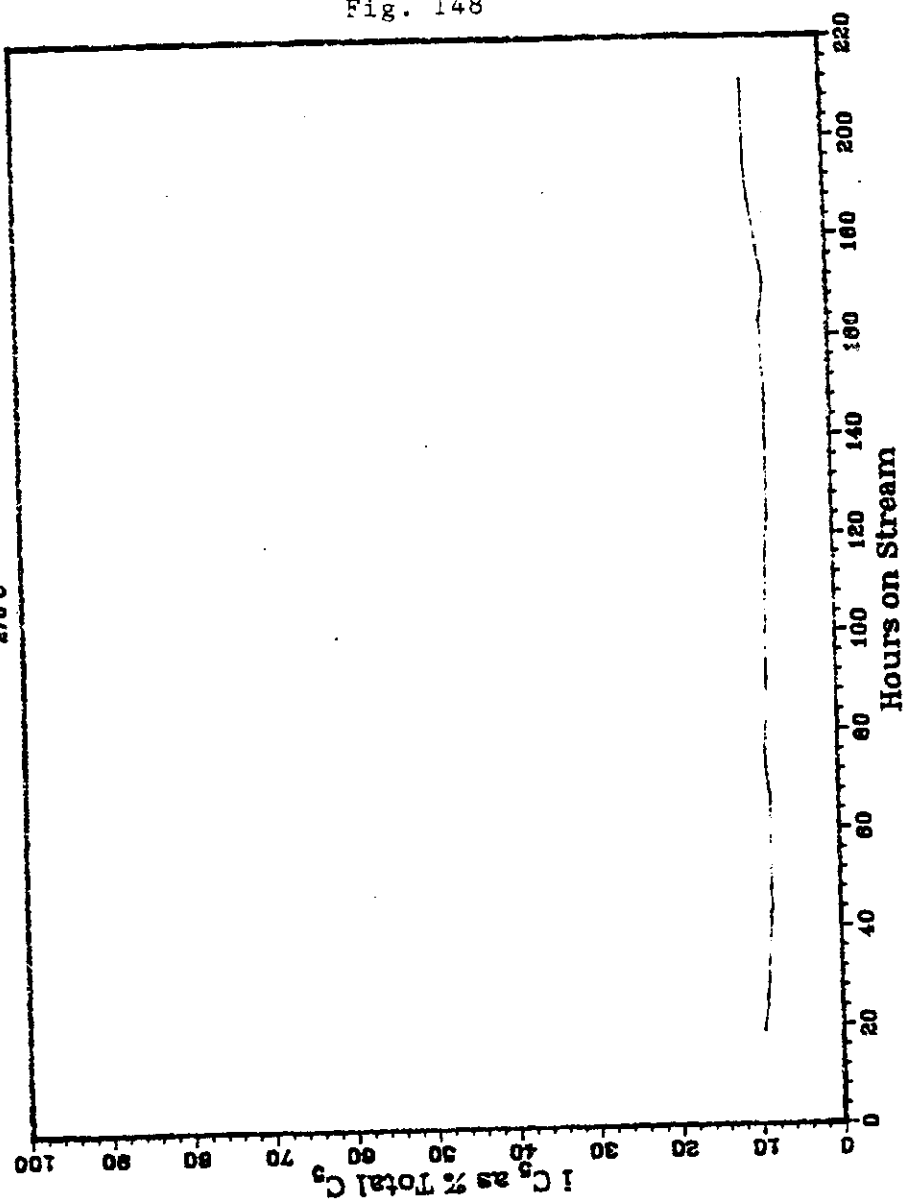


Fig. 148

RUN 0112-22

111 H₂CO
300 PSIG
870°C

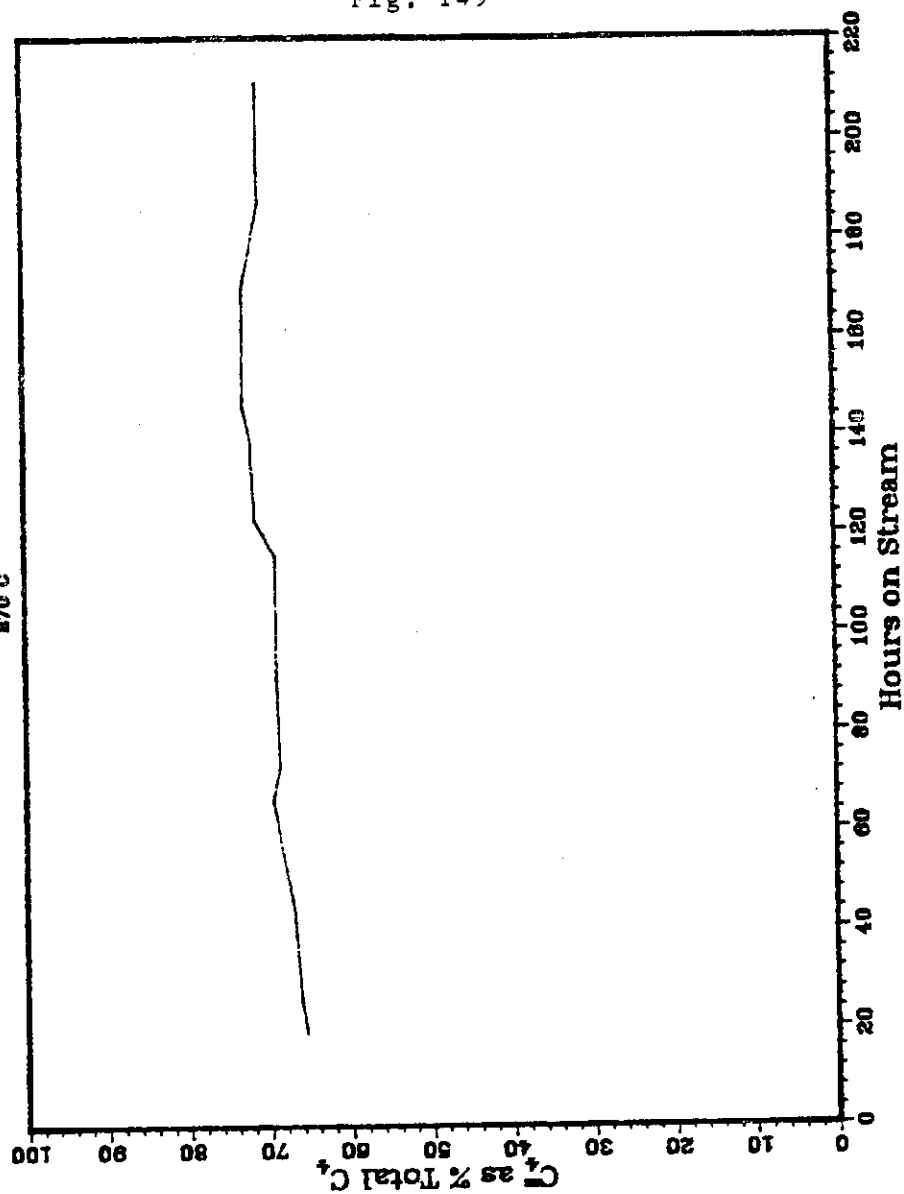


Fig. 149

Fig. 150

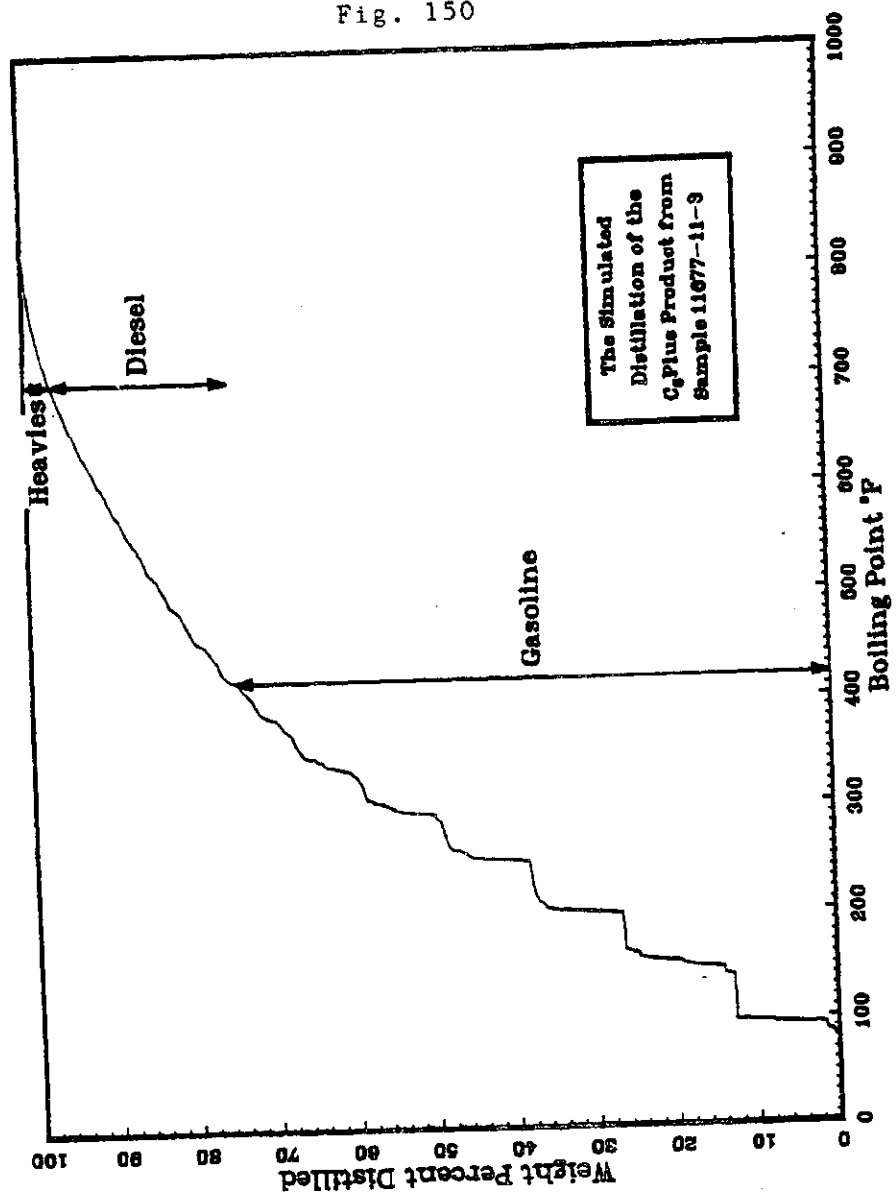


Fig. 151

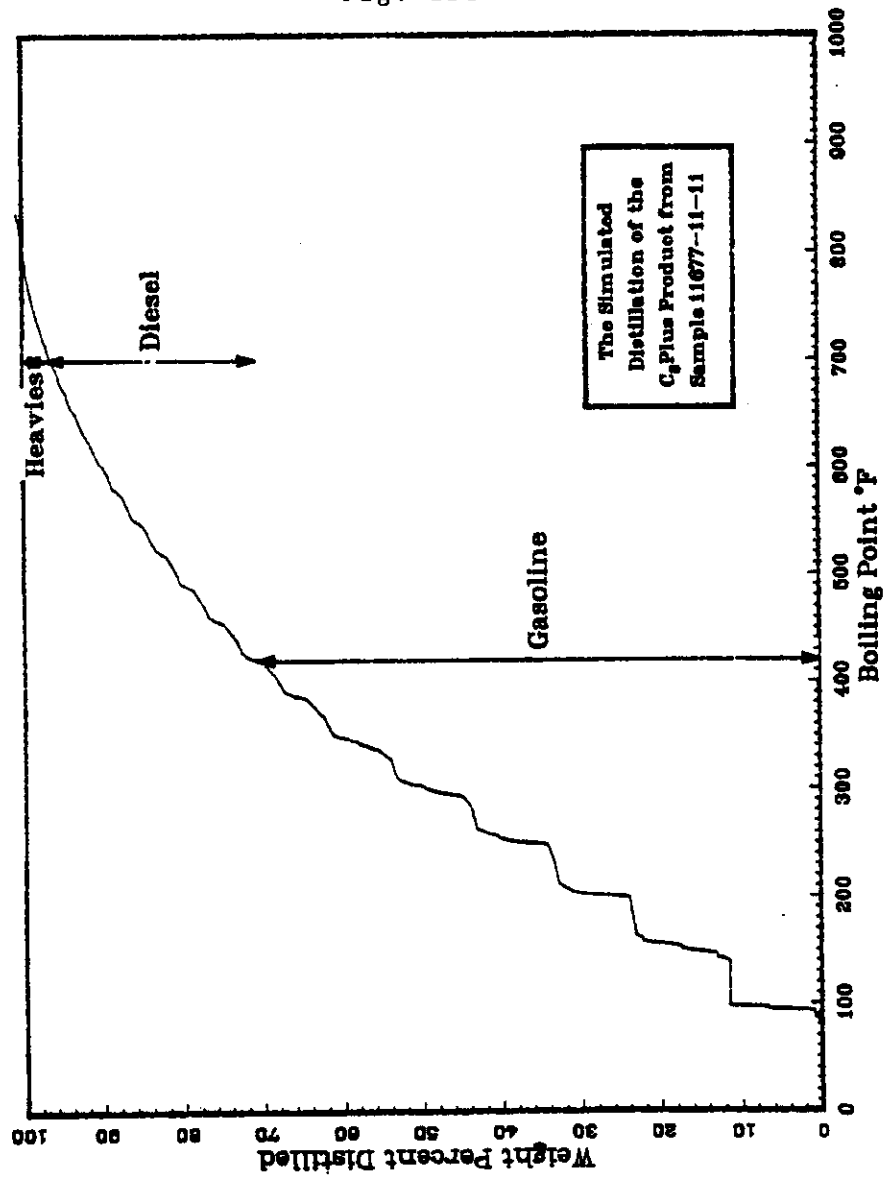


Fig. 152

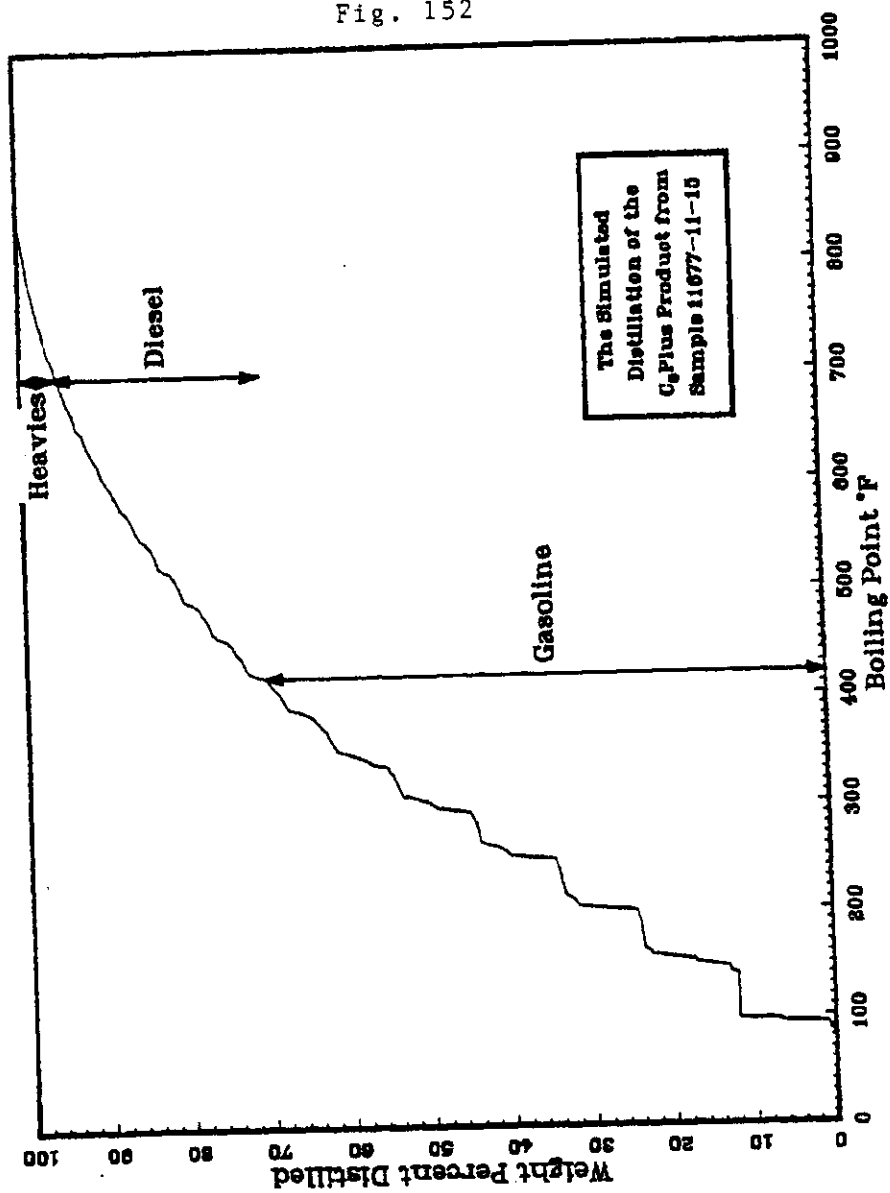


Fig. 153

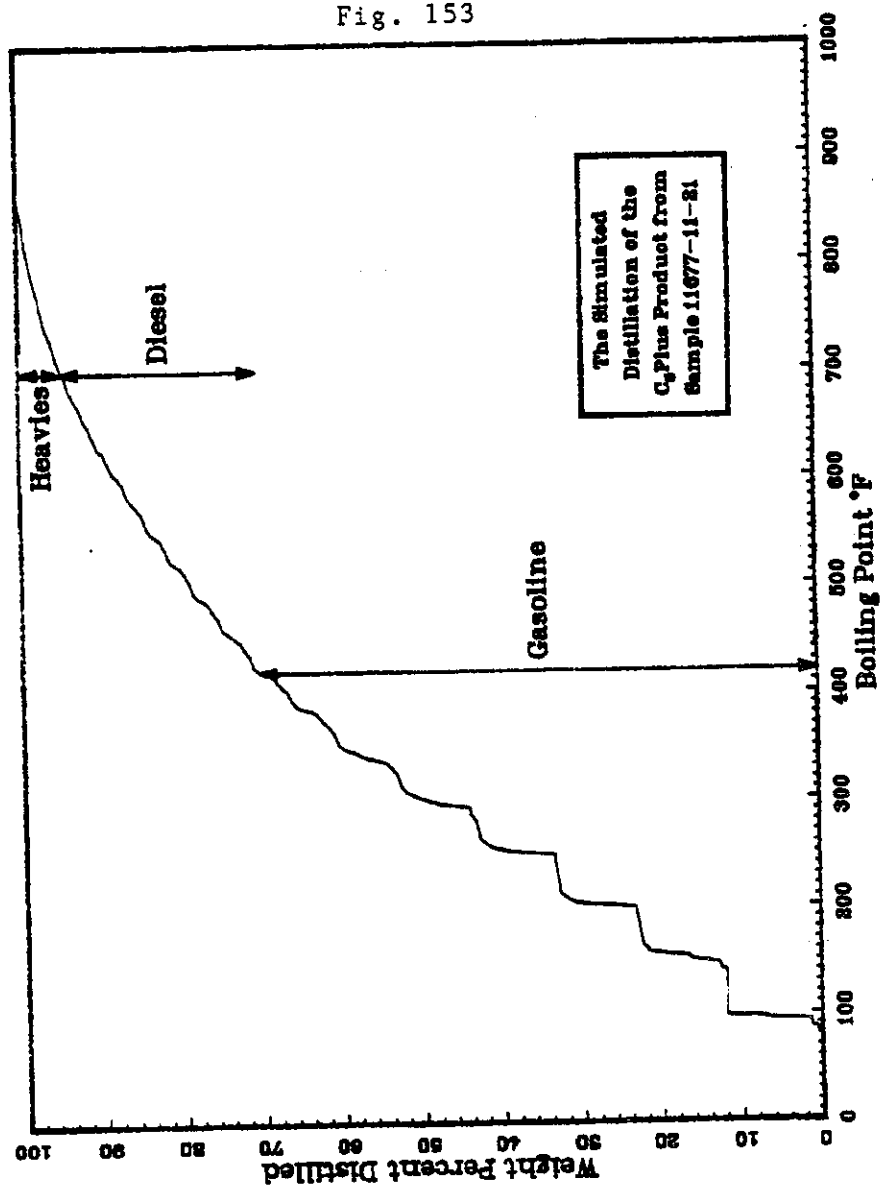


Fig. 154

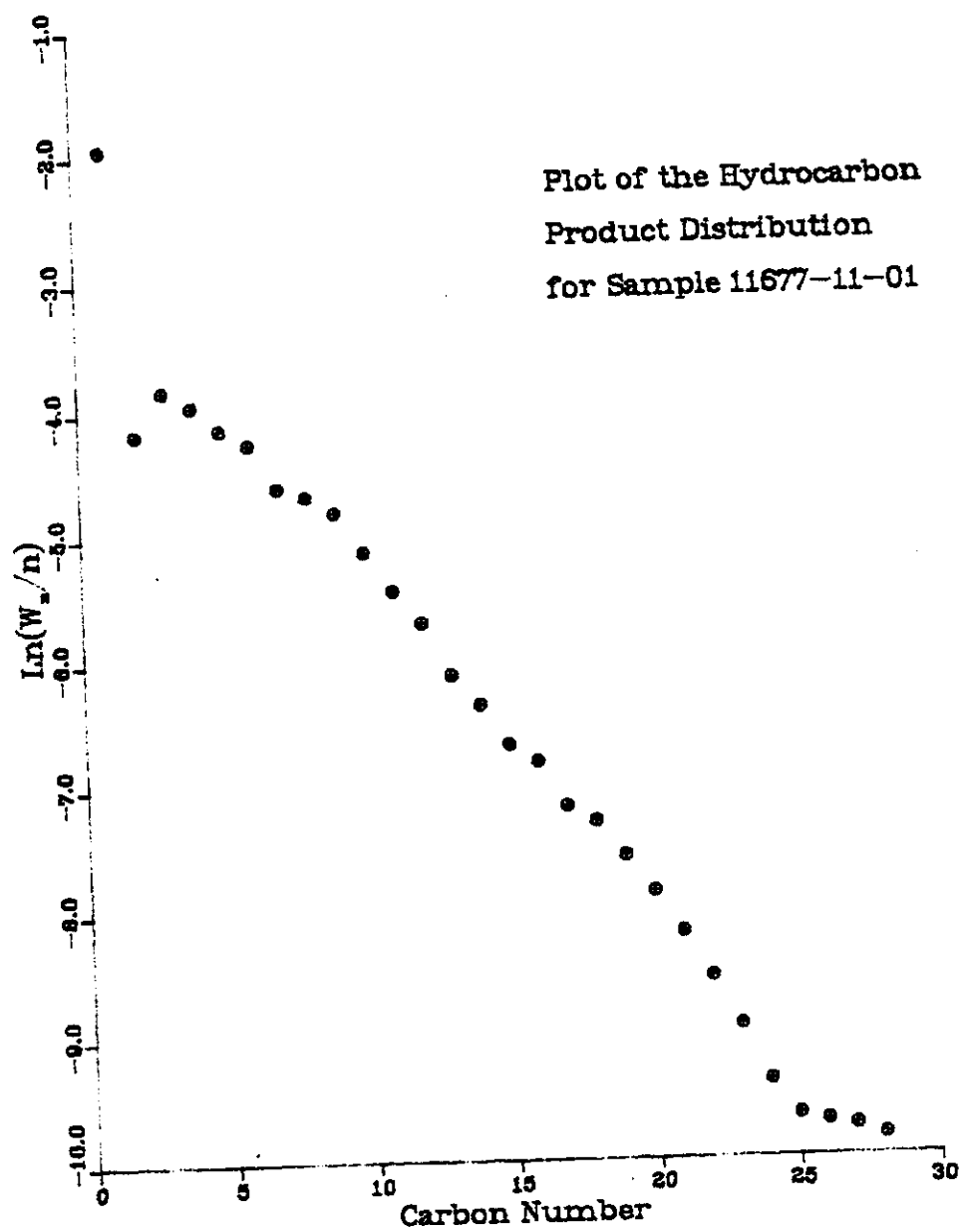


Fig. 155

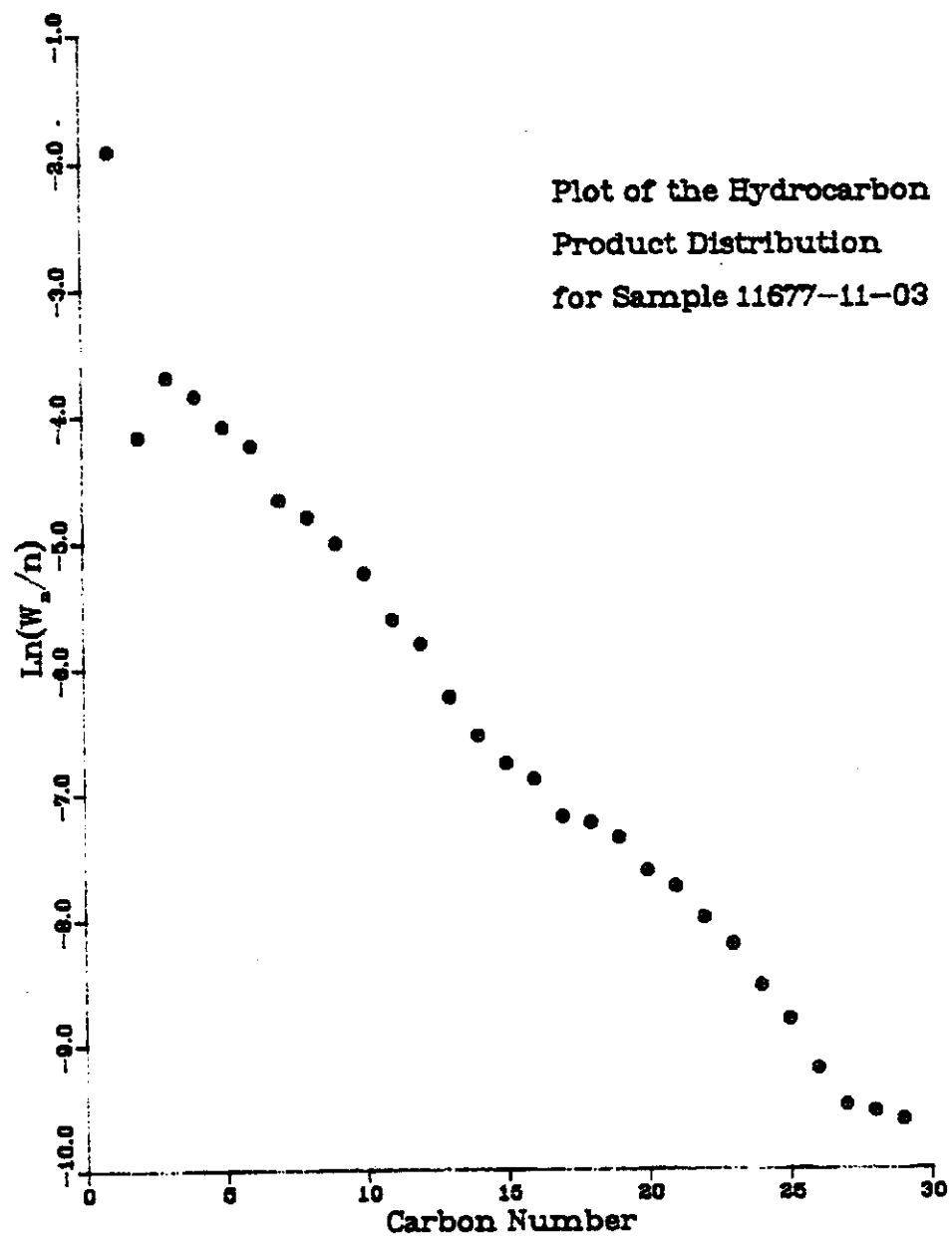


Fig. 156

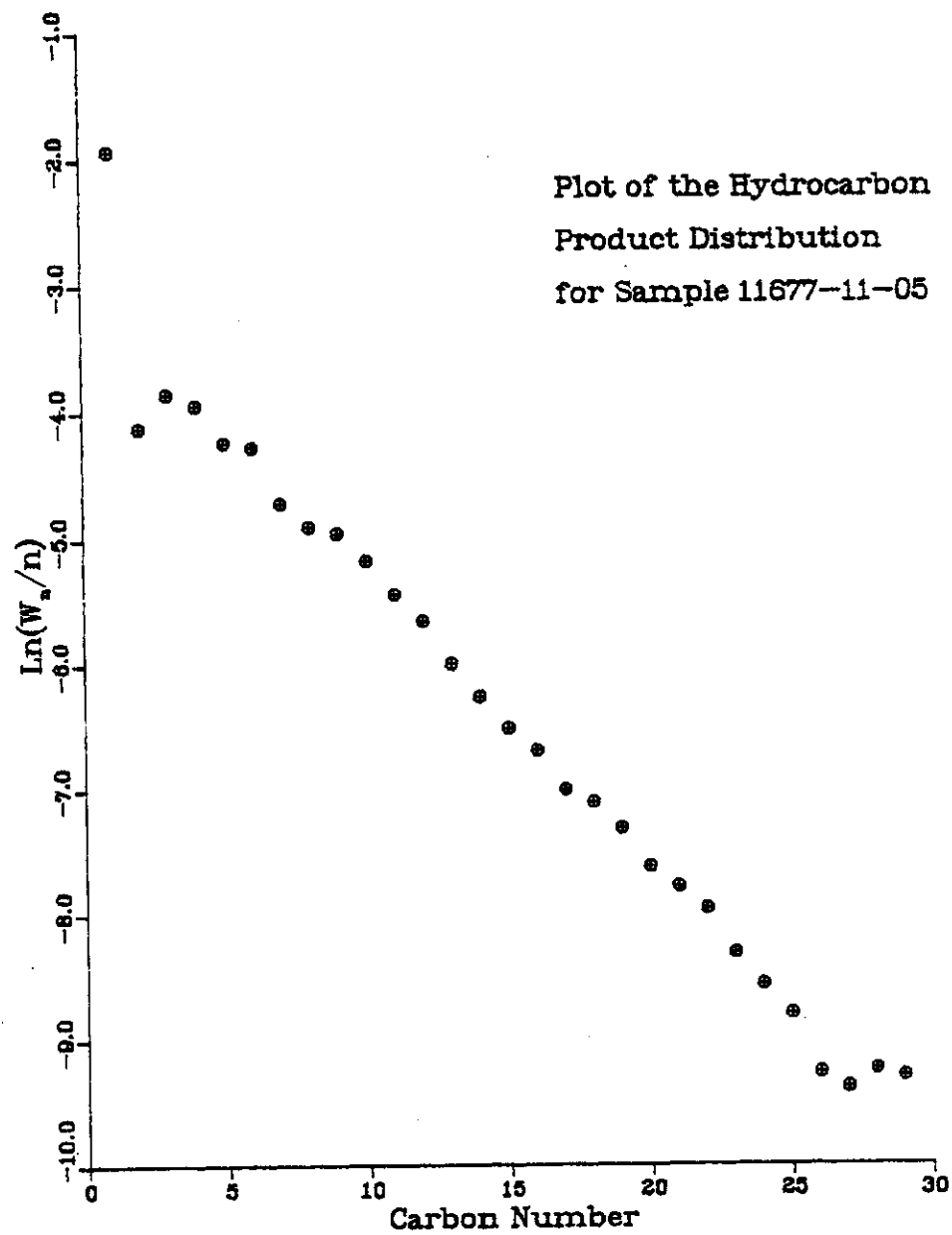


Fig. 157

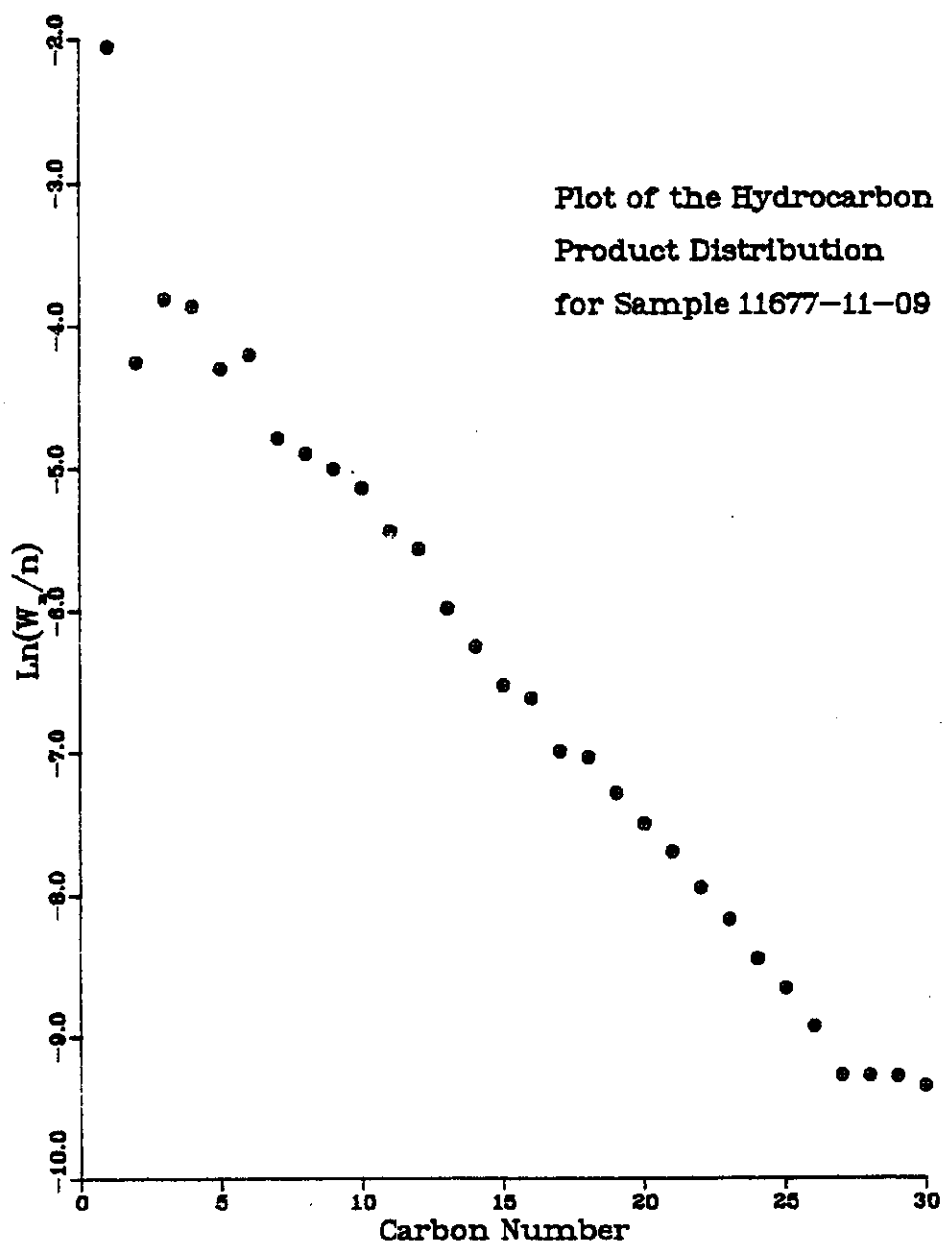


Fig. 158

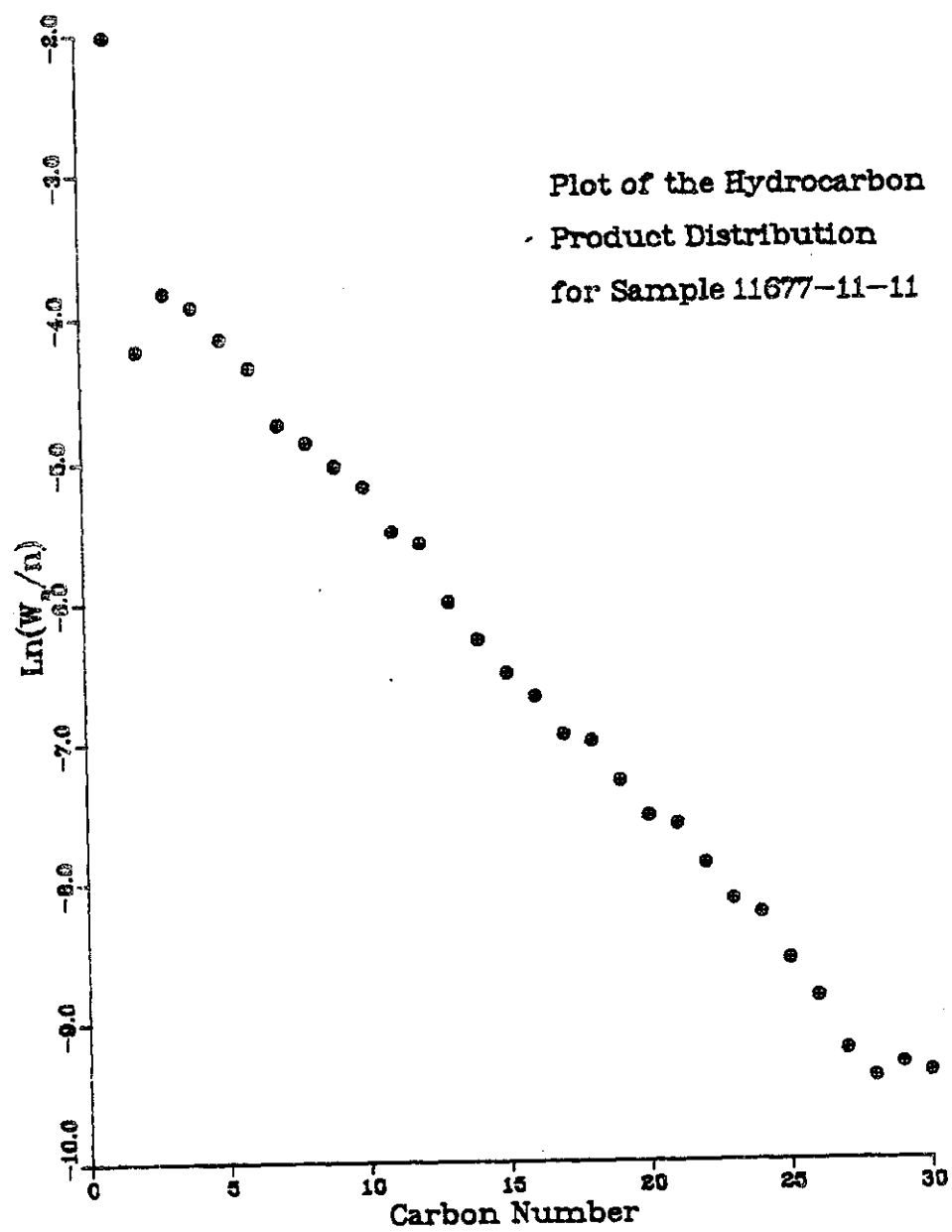


Fig. 159

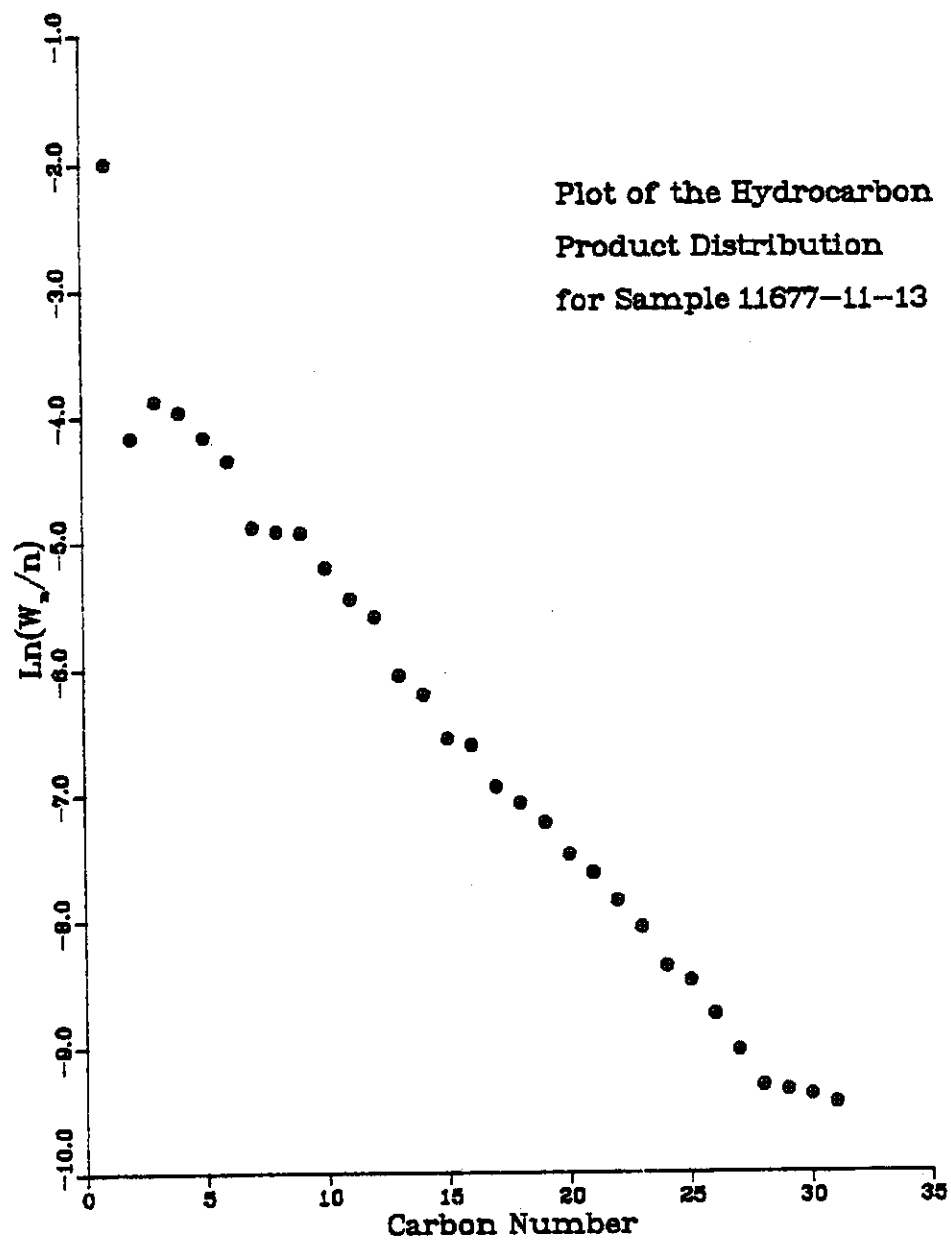


Fig. 160

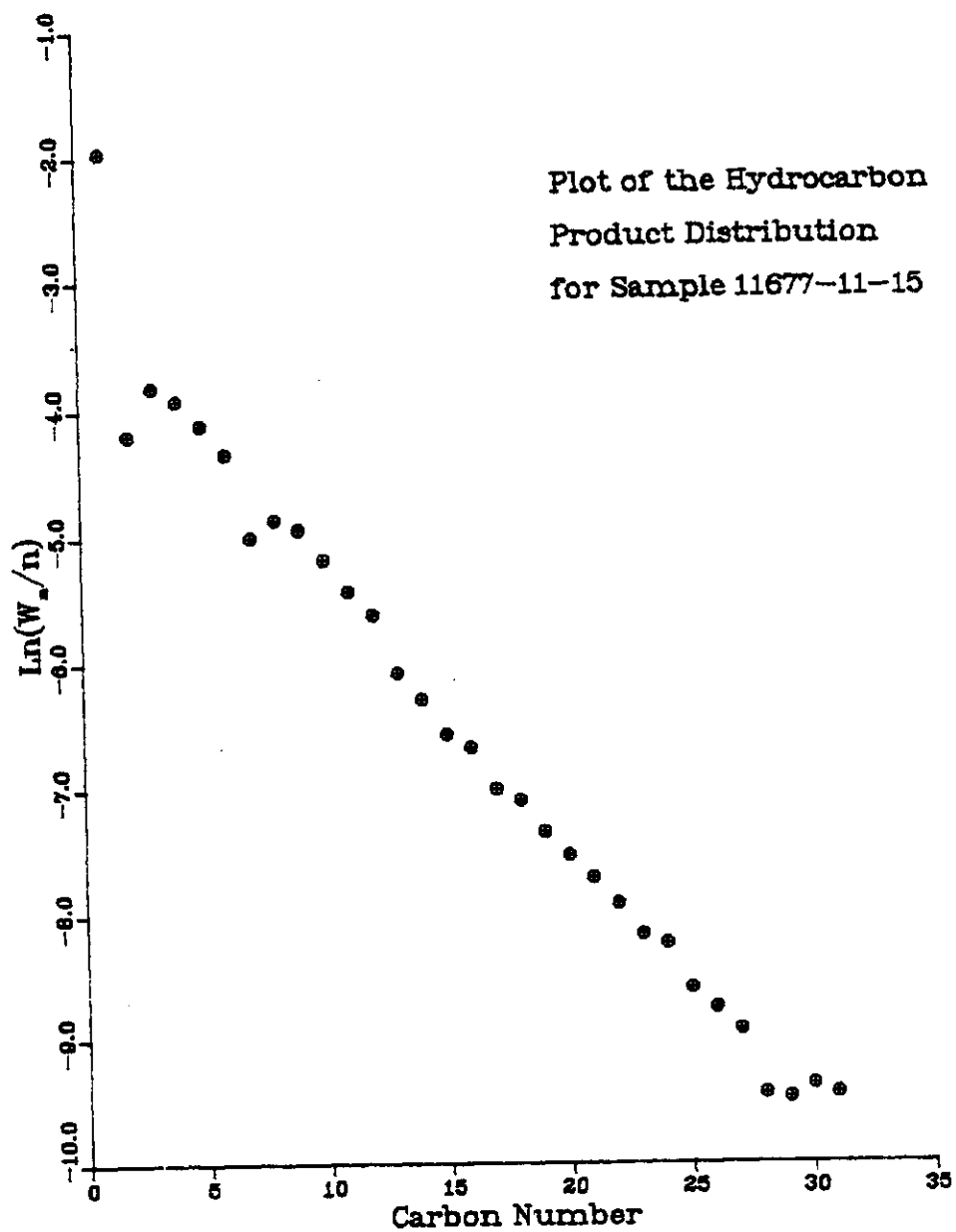


Fig. 161

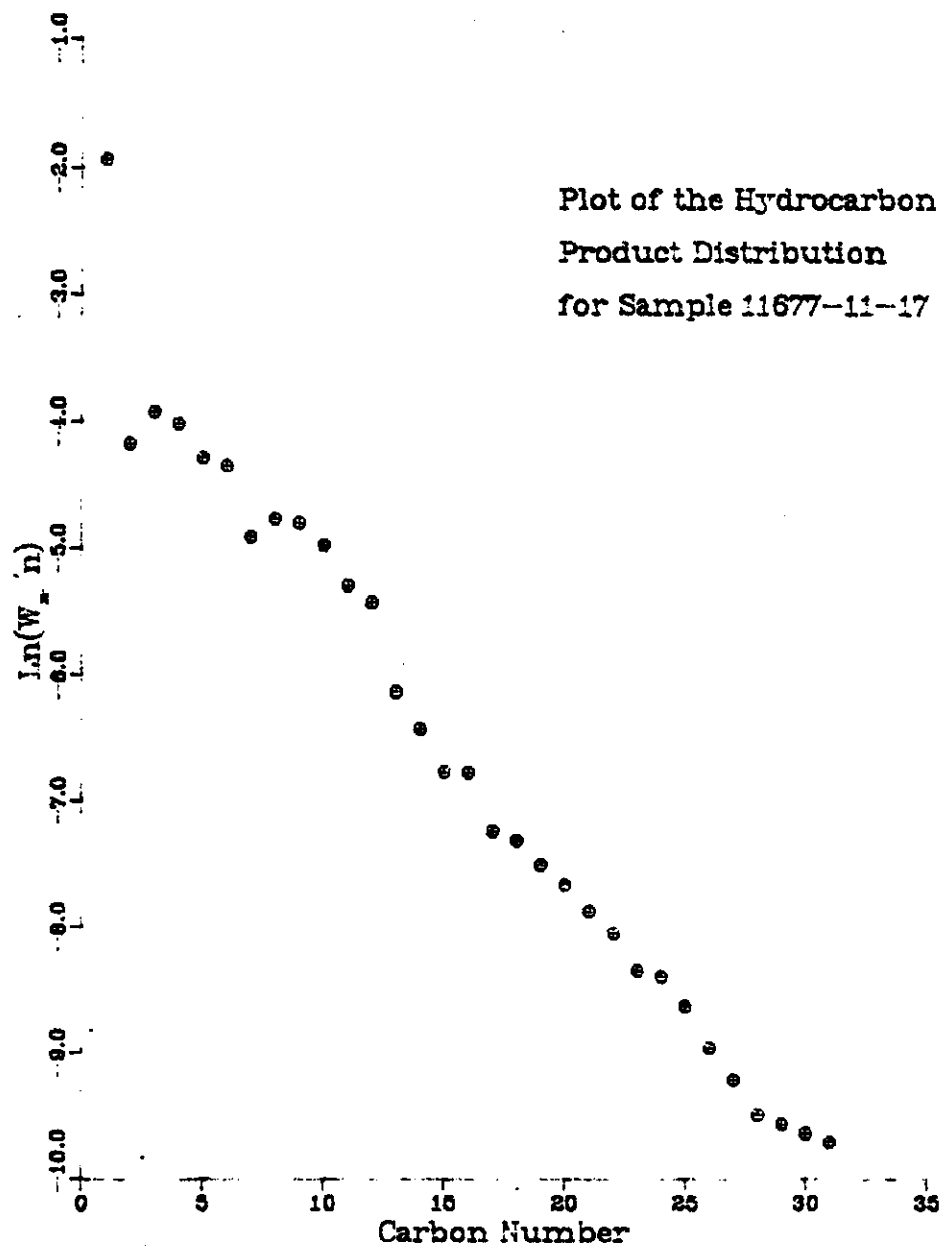


Fig. 162

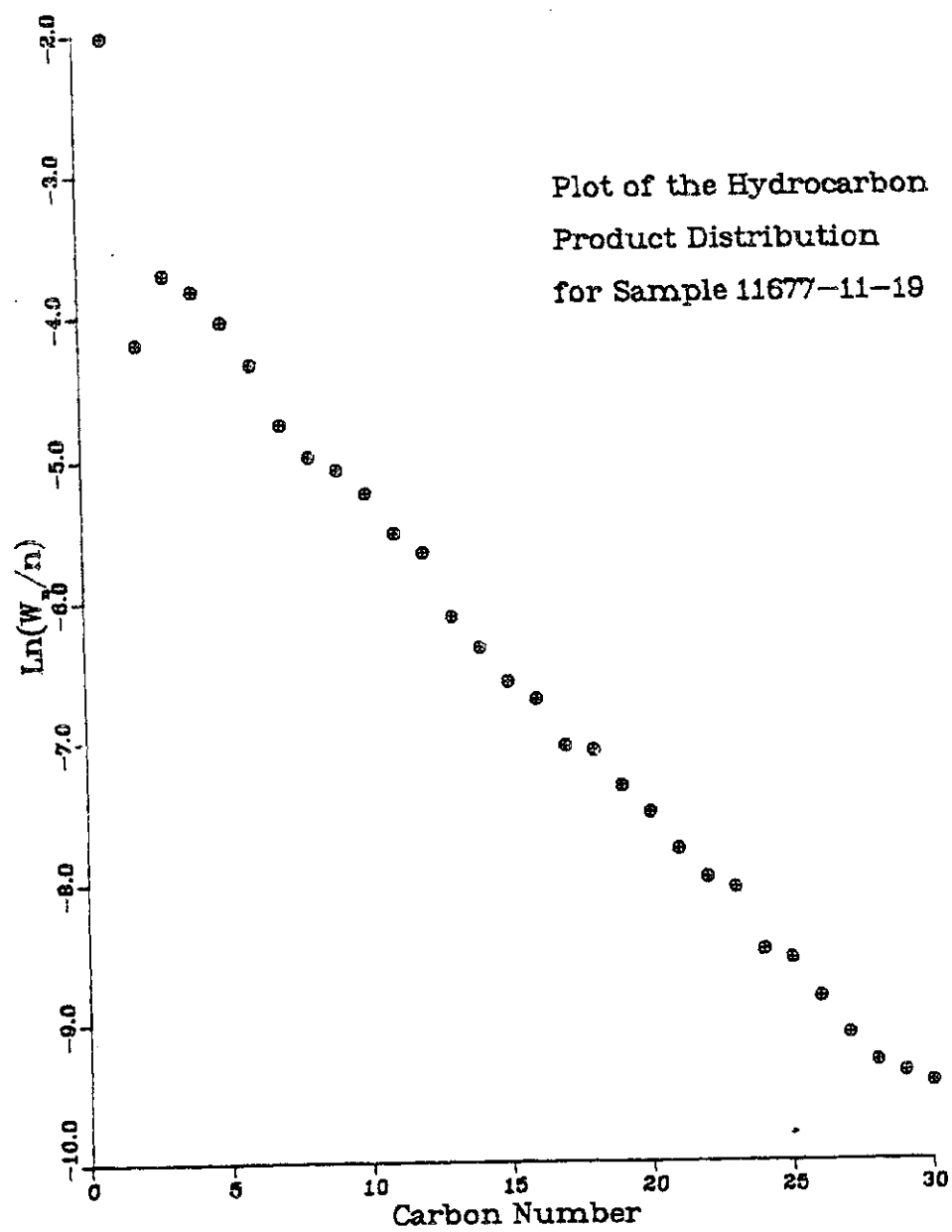


Fig. 163

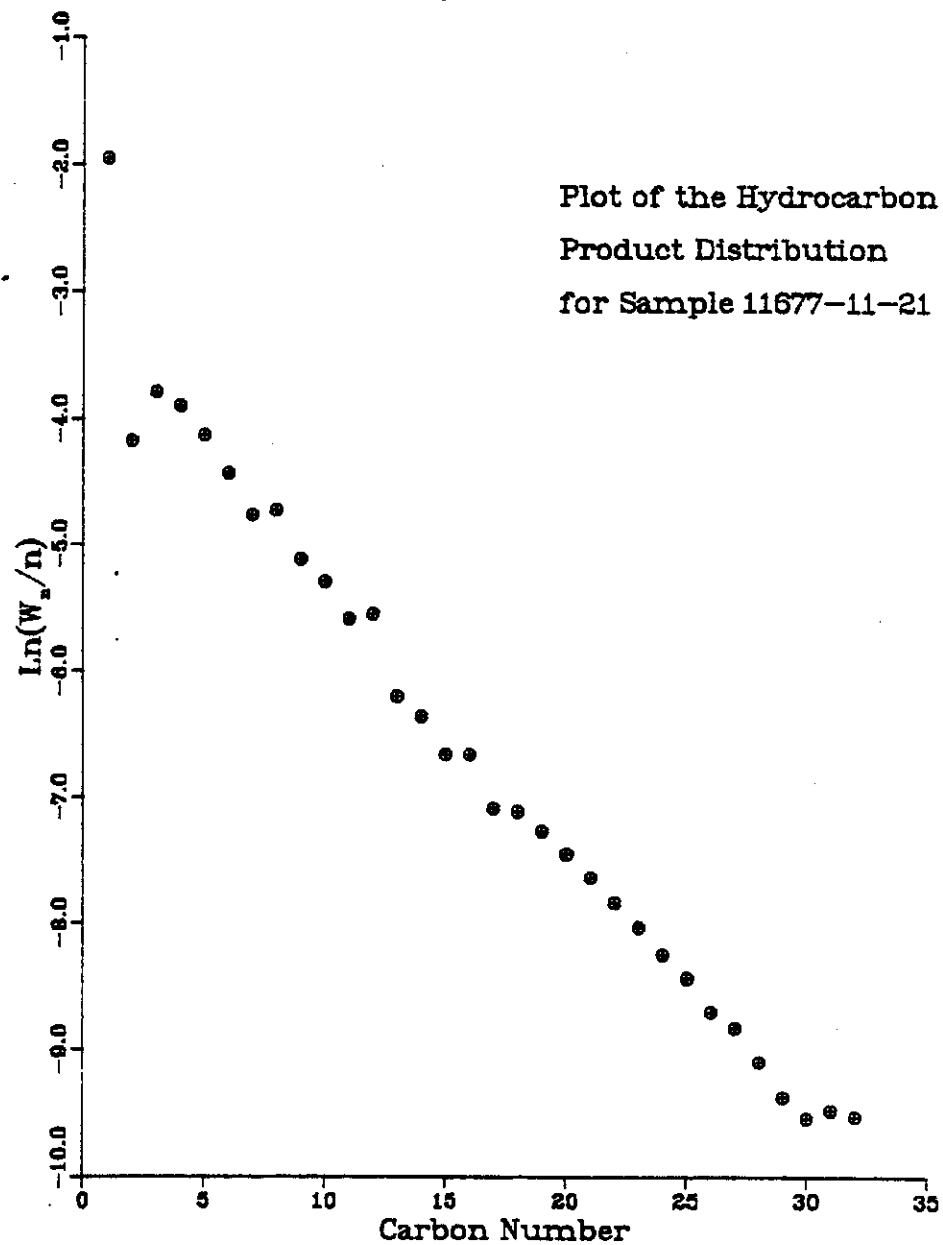


Fig. 164

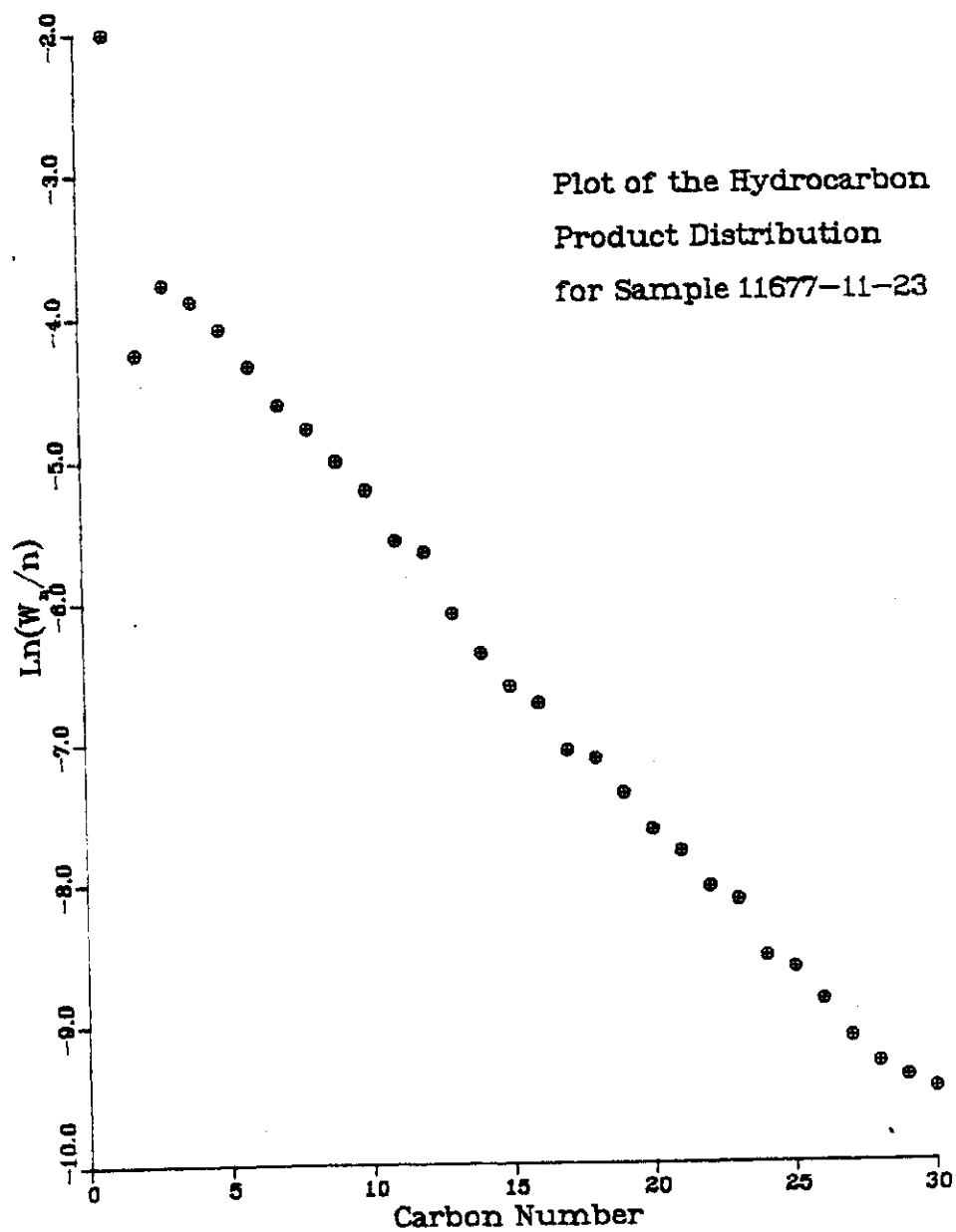


TABLE 28

RESULT OF SYNGAS OPERATION

RUN NO.	11677-11				
CATALYST	CO/TH/X4+UCC-103+UCC-101 #11684-57 250 CC 111.4 GM				
FEED	H2:CO:ARGON OF 49:50: 0 @ 1260 & 630 CC/MN OR 302 & 151 GHSV				
	11677-11-01	677-11-02	677-11-03	677-11-04	677-11-05
	=====	=====	=====	=====	=====
FEED H2:CO:AR	49:50: 0	49:50: 0	49:50: 0	49:50: 0	49:50: 0
HRS ON STREAM	19.5	27.0	43.5	50.5	68.7
PRESSURE, PSIG	304	302	297	295	299
TEMP. C	272	270	269	271	271
FEED CC/MIN	1260	1260	1260	855	692
HOURS FEEDING	19.50	7.50	24.00	7.00	25.17
EFFLNT GAS LITER	680.45	259.90	897.50	165.00	466.02
GM AQUEOUS LAYER	175.10	64.51	206.42	44.81	132.49
GM OIL	48.38	17.60	56.32	17.64	52.16
MATERIAL BALANCE					
GM ATOM CARBON %	90.79	88.36	93.17	100.38	98.11
GM ATOM HYDROGEN %	95.07	92.06	95.82	100.51	99.82
GM ATOM OXYGEN %	96.62	94.31	98.38	105.86	104.17
RATIO CHX/(H2O+CO2)	0.8432	0.8327	0.8533	0.8742	0.8616
RATIO X IN CHX	2.3612	2.3710	2.3751	2.3721	2.3646
USAGE H2/CO PRDCT	1.8397	1.8518	1.8720	1.6146	1.6235
RATIO CO2/(H2O+CO2)	0.1056	0.1018	0.0970	0.2003	0.1934
K SHIFT IN EFFLNT	0.05	0.05	0.04	0.08	0.08
CONVERSION					
ON CO %	38.87	37.59	36.22	46.66	47.07
ON H2 %	76.35	75.16	73.32	82.23	82.65
ON CO+H2 %	57.74	56.46	54.73	64.17	64.73
PRDCT SELECTIVITY, WT %					
CH4	14.50	14.84	14.89	14.75	14.46
C2 HC'S	3.10	3.27	3.12	3.31	3.24
C3H8	4.14	4.35	4.74	4.47	4.38
C3H6=	2.39	2.55	2.76	2.01	1.97
C4H10	3.35	3.50	3.71	3.58	3.51
C4H8=	4.38	4.67	4.91	4.29	4.21
C5H12	3.47	3.53	3.61	3.71	3.64
C5H10=	4.52	4.64	4.82	3.68	3.61
C6H14	4.17	4.13	4.01	4.14	4.06
C6H12= & CYCLO'S	3.98	3.89	4.27	3.54	3.48
C7+ IN GAS	17.21	15.81	15.13	9.69	9.50
LIQ HC'S	34.78	34.84	34.02	42.82	43.95
TOTAL	100.00	100.00	100.00	100.00	100.00

SUB-GROUPING					
C1 -C4	31.86	33.17	34.13	32.41	31.77
C5 -420 F	52.83	49.64	49.09	48.61	48.74
420-700 F	14.29	14.98	14.63	16.87	17.31
700-END PT	1.02	2.21	2.15	2.12	2.17
C5+-END PT	68.14	66.83	65.87	67.59	68.23
ISO/NORMAL MOLE RATIO					
C4	0.1294	0.1219	0.0980	0.1337	0.1337
C5	0.1752	0.1605	0.1337	0.1359	0.1359
C6	0.3460	0.3330	0.2529	0.4211	0.4211
C4=	0.0723	0.0763	0.0822	0.0791	0.0791
PARAFFIN/OLEFIN RATIO					
C3	1.6553	1.6284	1.6382	2.1212	2.1212
C4	0.7374	0.7224	0.7294	0.8060	0.8060
C5	0.7479	0.7396	0.7278	0.9806	0.9806
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.7730		0.7953		0.8001
RATIO CH4/(1-A)**2	2.8146		3.5528		3.6172
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLR OIL		CLR OIL		CLDY OIL
DENSITY	0.739		.746 .740		0.753
N, REFRACTIVE INDEX	1.4246		1.4257		1.4215
SIMULT'D DISTILATN					
10 WT % @ DEG F	257		258		242
16	285		290		260
50	396		418		392
84	564		617		584
90	609		664		640
RANGE(16-84 %)	279		327		324
WT % @ 420 F					
	56.00	50.67	50.67	55.67	55.67
WT % @ 700 F					
	97.08	93.67	93.67	95.06	95.06

TABLE 29

RESULT OF SYNGAS OPERATION

RUN NO. 11677-11

CATALYST CO/TH/X4+UCC-103+UCC-101 #11684-57 250 CC 111.4 GM

FEED H2:CO:ARGON OF 49:50: 0 @ 630 CC/MN OR 151 GHSV

	11677-11-06	677-11-08	677-11-09	677-11-10	677-11-11
	=====	=====	=====	=====	=====
FEED H2:CO:AR	49:50: 0	49:50: 0	49:50: 0	49:50: 0	49:50: 0
HRS ON STREAM	75.5	99.6	115.5	123.0	139.5
PRESSURE, PSIG	295	295	298	300	298
TEMP. C	262	262	262	260	260
FEED CC/MIN	630	630	630	630	630
HOURS FEEDING	6.83	6.75	22.67	7.50	24.00
EFFLNT GAS LITER	122.43	126.81	434.04	147.05	473.95
GM AQUEOUS LAYER	32.47	31.04	104.22	34.18	109.39
GM OIL	11.11	10.62	35.66	11.44	36.61
MATERIAL BALANCE					
GM ATOM CARBON %	95.01	95.85	97.22	97.96	98.29
GM ATOM HYDROGEN %	100.73	100.15	101.37	101.48	102.66
GM ATOM OXYGEN %	100.07	101.62	102.10	103.38	103.03
RATIO CHX/(H2O+CO2)	0.8704	0.8485	0.8701	0.8556	0.8725
RATIO X IN CHX	2.3152	2.3461	2.3306	2.3355	2.3384
USAGE H2/CO PRODT	1.8417	1.8412	1.8765	1.8643	1.8885
RATIO CO2/(H2O+CO2)	0.1004	0.1033	0.0901	0.0941	0.0873
K SHIFT IN EFFLNT	0.05	0.05	0.04	0.04	0.04
CONVERSION					
ON CO %	39.93	37.83	37.12	36.34	36.34
ON H2 %	76.40	74.31	73.64	72.66	72.36
ON CO+H2 %	58.41	56.18	55.47	54.53	54.45
PRDT SELECTIVITY, WT %					
CH4	12.26	13.78	12.87	13.19	13.32
C2 HC'S	2.87	3.04	2.85	2.93	2.92
C3H8	3.97	4.15	4.17	4.20	4.27
C3H6=	2.08	2.16	2.49	2.28	2.29
C4H10	3.20	3.29	3.68	3.36	3.44
C4H8=	4.37	4.34	4.75	4.60	4.50
C5H12	3.47	3.44	3.77	3.44	3.55
C5H10=	4.35	4.21	3.02	4.40	4.38
C6H14	4.06	3.86	3.75	3.87	3.64
C6H12= & CYCLO'S	4.49	3.80	4.70	3.80	3.71
C7+ IN GAS	12.71	11.07	11.56	12.01	12.59
LIQ HC'S	42.17	42.85	42.40	41.90	41.38
TOTAL	100.00	100.00	100.00	100.00	100.00