

Table A
A Listing of Runs

A chronological listing of experimental runs made during this contract with references to detailed data sources in the Quarterly Reports. The catalyst preparation and preliminary data will be found in the referenced Quarterly Report and detailed data will be found in the following Quarterly.

<u>RUN</u>	<u>REFERENCE</u>	<u>CATALYST</u>	<u>REPORT</u>	<u>PAGE</u>
1	12185-01	Co/UCC-103 + UCC-101	1Q	12
2	12200-01	X3/K/UCC-103 + UCC-101	1Q	12
3	12185-02	Co/X7/UCC-103 + UCC-101	1Q	12
4	12185-03	Co/UCC-103	1Q	12
5	12200-02	Co/UCC-103	1Q	12
6	12200-03	Co/UCC-103	1Q	12
7	12185-04	Co/UCC-103	1Q	12
8	12200-04	Co/Th/X4/UCC-103 + S115	1Q	12
9	12200-05	X3/K/UCC-103+101	1Q	12
10	12185-06	Co/Th/X4/UCC-103	2Q	A3
11	12200-06	Co/UCC-103	2Q	A3
12	12185-07	Co/Th/X4/UCC-103 + UCC-101	2Q	A3
13	12200-07	Co/Th/X4/UCC-103	2Q	A3
14	12200-08	Co/Th/X4/UCC-103	2Q	A3
15	12185-08	Co/X9/X10/X4/UCC-103	2Q	A3
16	12200-09	Co/X9/X10/X4/UCC-103	2Q	A3
17	12200-10	Fe/K/UCC-103	2Q	A3
18	12200-11	Fe/K/UCC-103	2Q	A3
19	12185-09	Co/X9/X10/X4/UCC-103	2Q	A4
20	12185-11	Co/X9/X10/UCC-103	2Q	A4
21	12200-12	Co/X9/X10/X4/UCC-103 + UCC-112	2Q	A4
22	12185-12	Co/X9/X10/X4/UCC-103	2Q	A4
23	12200-13	Co/X9/X10/X4/UCC-103	2Q	A4
24	12185-13	Co/X9/X10/UCC-113	2Q	A4
25	12200-14	Co/X9/X10/X4/UCC-103	2Q	A4
26	12185-14	Co/X9/X10/UCC-103	3Q	A3
27	12200-15	Co/X9/X10/UCC-113	3Q	A3
28	12200-17	Co/X9/X10/X4/UCC-103	3Q	A3
29	12200-18	Co/X9/X10/UCC-103	3Q	A3
30	12185-16	Co/X9/X10/X3/UCC-103	3Q	A3
31	12185-17	Co/X9/X10/UCC-103	3Q	A3
32	12200-19	Co/X11/UCC-103	3Q	A3
33	12185-18	Co/X9/X10/X4/X3/UCC-103	3Q	A3
34	12200-20	Co/X11/UCCC-114	4Q	A4
35	12185-20	Co/X11/UCC-115	4Q	A4
36	12200-21	Co/X11/UCC-103	4Q	A4
37	12185-21	Co/X11/UCC-103	4Q	A4
38	12200-22	Co/X11/UCC-103	4Q	A4
39	11617-04	Co/X11/X12/UCC-103	4Q	A4
40	12185-19	Co/X11/X3/UCC-103	4Q	A4
41	11617-03	Co/X11/UCC-103	4Q	A5
42	11617-05	Co/X11/UCC-103	4Q	A5
43	12570-01	Co/X11/UCC-103	4Q	A5
44	12561-01	Co/X9/X10/TC-103*	5Q	A3
45	12570-02	Co/X11/TC-123	5Q	A3
46	12561-02	Co/X11/TC-133	5Q	A3
47	11617-06	Co/X9/X10/TC-103	5Q	A3

48	11617-07	Co/X11/X12/TC-123	5Q	A3
49	12561-04	Co/X11/gamma-alumina	6Q	A4
50	11617-08	Co/X11/TC-121	6Q	A4
51	12570-03	Co/X9/X11/TC-123	6Q	A4
52	12561-03	Quartz chips	6Q	A4
53	12561-05	Co/X11/TC123 + K/Ni/Mo/alumina	6Q	A4
54	11617-09	Co/X11/X13/TC-123	6Q	A4
55	12570-04	Co/X9/X11/TC-123	6Q	A5
56	12561-06	Co/X9/X11/TC-123	6Q	A5
57	11617-10	Co/X11/TC-123	7Q	A3
58	12561-07	Co/X9/X11/TC-124	7Q	A3
59	12561-08	Co/X11/TC-123	7Q	A3
60	12570-05	Co/X9/X11/TC-123	7Q	A3
61	11617-11	Co/X9/X11/TC-124	7Q	A3
62	12561-09	Co/X11/TC-201	8Q	A3
63	11617-12	Co/X11/X9/TC-123	8Q	A3
64	12561-10	Co/X11/TC-211	8Q	A3
65	12561-11	Co/TC-123	8Q	A3
66	12570-06	Co/X11/TC-12365	8Q	A3
67	11617-13	Co/X11/X9/TC-123	8Q	A3
68	12570-07	Co/X11/X9/TC-123	9Q	A3
69	12561-12	Co/X11/X9/TC-123	9Q	A3
70	12570-08	Co/X11/X9/TC-123	9Q	A3
71	12561-13	Co/X14/TC-123	9Q	A3
72	12561-14	Co/X11/X9/TC-123	9Q	A3
73	11617-14	Co/X11/X9/TC-123	9Q	A3
74	12570-09	Co/X15/TC-123	10Q	A3
75	12570-10	Co/X11/X9/TC-123	10Q	A3
76	12561-15	Co/X11/TC-123	10Q	A3
77	12561-16	Co/X11/TC-103	10Q	A3
78	12570-11	Co/X11/X9/TC-123	10Q	A3
79	12561-17	Co/X11/X9/TC-123	10Q	A3
80	12561-18	Co/X11/X16/TC-123	11Q	A3
81	11617-16	Co/X11/X9/TC-123	11Q	A3
82	12561-19	Co/X11/X9/TC-123	11Q	A3
83	11617-17	Co/X11/X9/TC-123	11Q	A3
84	12570-13	Co/X11/X9/TC-123	11Q	A3
85	12570-14	Co/X11/X9/TC-123	12Q	A3
86	12561-20	Co/X11/X9/TC-123	12Q	A3
87	11617-18	Co/X11/X9/TC-123	12Q	A3
88	12570-15	Co/X11/X9/TC-123	12Q	A3
89	12561-21	Co/X11/X9/TC-123	12Q	A3
90	12561-22	Co/X11/X9/TC-123	12Q	A3
91	13521-01	Co/X11/X9/TC-123	13Q	A3
92	12570-16	Co/X11/X9/TC-123	13Q	A3
93	13521-02	Co/X11/X9/TC-123	13Q	A3
94	11617-19	Co/X11/X9/TC-123 + TC-111	13Q	A3
95	12570-17	Co/X11/X9/TC-123	13Q	A3
96	13521-03	Co/X11/X9/TC-123	13Q	A3
97	13600-01	Co/X11/X9/TC-123	13Q	A3
98	13600-02	Co/X11/X9/TC-123	14Q	A3
99	13521-04	Co/X11/X9/TC-123	14Q	A3
100	13600-03	Co/X11/X9/TC-123	14Q	A3
101	13521-05	Co/X11/X9/TC-123	14Q	A3
102	13625-01	Co/X11/X9/gamma-alumina	14Q	A3
103	13521-06	Fe/TC-123	14Q	A3

Table B

Run Categorization By Main Run Purpose

<u>Run Category</u>	<u>Applicable Run Numbers</u>	<u>No. of Runs</u>
-Study F-T Components (Co, Fe, Rh, blanks)	2, 4, 9, 10, 17, 29, 36, 38, 52, 59, 68, 70, 73, 75, 81, 102, 103	17
-Study Zeolite Components (support & shape selective)	1, 8, 24, 34, 35, 45, 46, 48, 49, 50, 58, 62, 64, 66, 77, 94	16
-Study Promoters	3, 15, 21, 22, 28, 30, 32, 33, 39, 40, 41, 42, 43, 51, 54, 71, 74, 80	18
-Study Formulation Methods	11, 12, 13, 16, 19, 23, 25, 53, 56, 57, 60, 65, 84	13
-Study Calcination Methods	20, 31, 37, 44, 47, 55, 61, 67, 69, 72, 86	11
-Study Activation Methods	5, 6, 18, 87	4
-Study Process Variables	26, 27, 63, 79, 82, 89, 90, 92, 95, 97, 98, 100	12
-Study Catalyst Life	91, 93, 96, 99, 101	5
-Study Rejuvenation	7, 14, 76, 78, 83, 85, 88	7

Note: Ten (10) runs were repeats of failed runs due to equipment failure, utility outages, or instrument failure which caused process condition excursions.

Table V-1

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 GHS

	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 PRODT	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
PRDT 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

Table V-1 (cont.)

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 V-1 (cont.)

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

Table V-1 (cont.)

SUB-GROUPING					
C1 -C4	28.74	30.76	30.80	30.58	30.74
C5 -420 F	52.28	48.46	48.63	48.26	48.36
420-700 F	17.11	18.21	18.02	18.26	18.03
700-END PT	1.87	2.57	2.54	2.90	2.87
C5+-END PT	71.26	69.24	69.20	69.42	69.26
ISO/NORMAL MOLE RATIO					
C4	0.1076	0.0946	0.1208	0.0877	0.0796
C5	0.0959	0.0925	0.0955	0.0874	0.0747
C6	0.2939	0.2288	0.2571	0.2259	0.2069
C4=	0.0737	0.0769	0.0892	0.0801	0.0796
PARAFFIN/OLEFIN RATIO					
C3	1.8217	1.8325	1.6005	1.7543	1.7784
C4	0.7067	0.7304	0.7480	0.7053	0.7379
C5	0.7769	0.7953	1.2135	0.7593	0.7884
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))			0.8063		0.8077
RATIO CH4/(1-A)**2			3.4298		3.6011
LIQ HC COLLECTION					
PHYS. APPEARANCE			CLDY		CLDY LT BL
DENSITY			0.723		0.751
N, REFRACTIVE INDEX			1.4244		1.4251
SIMULT'D DISTILATN					
10 WT % @ DEG F			257		258
16			287		293
50			414		421
84			603		615
90			654		670
RANGE(16-84 %)					
			316		322
WT % @ 420 F	55.00	51.50	51.50	49.50	49.50
WT % @ 700 F	95.56	94.00	94.00	93.07	93.07

Table V-1 (cont.)

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

	11677-11-12	677-11-13	677-11-14	677-11-15	677-11-1
	=====	=====	=====	=====	=====
FEED H2:CO:AR	49:50: 0	49:50: 0	49:50: 0	49:50: 0	49:50: 0
HRS ON STREAM	146.5	163.5	169.0	189.5	195.5
PRESSURE, PSIG	296	296	296	295	300
TEMP. C	260	261	260	261	261
FEED CC/MIN	630	630	630	630	630
HOURS FEEDING	7.00	24.00	5.75	26.00	5.00
EFFLNT GAS LITER	135.95	474.00	113.55	523.65	86.90
GM AQUEOUS LAYER	32.53	111.53	25.82	116.74	22.09
GM OIL	10.91	37.42	8.64	39.08	7.20
MATERIAL BALANCE					
GM ATOM CARBON %	95.66	98.25	99.93	100.00	86.66
GM ATOM HYDROGEN %	103.38	104.72	106.08	103.80	95.15
GM ATOM OXYGEN %	101.35	103.16	101.59	104.08	92.89
RATIO CHX/(H2O+CO2)	0.8489	0.8707	0.9553	0.8902	0.8256
RATIO X IN CHX	2.3369	2.3458	2.3313	2.3588	2.3486
USAGE H2/CO PRODT	1.8969	1.8827	1.8815	1.8721	1.8924
RATIO CO2/(H2O+CO2)	0.0823	0.0903	0.0951	0.0977	0.0837
K SHIFT IN EFFLNT	0.04	0.05	0.05	0.05	0.04
CONVERSION					
ON CO %	36.67	37.20	38.91	36.72	37.51
ON H2 %	71.84	72.41	72.73	72.17	73.16
ON CO+H2 %	54.66	55.09	56.06	54.49	55.88
PRDT SELECTIVITY, WT %					
CH4	13.21	13.70	12.53	14.12	14.06
C2 HC'S	2.91	3.09	2.86	3.04	2.94
C3H8	4.28	4.22	4.74	4.52	4.16
C3H6=	2.45	2.01	2.55	2.08	1.93
C4H10	3.66	3.40	4.00	3.64	3.35
C4H8=	4.56	4.26	4.83	4.28	4.12
C5H12	3.65	3.61	4.01	3.82	3.00
C5H10=	4.28	4.17	4.45	4.37	4.15
C6H14	3.57	3.83	3.94	3.92	3.81
C6H12= & CYCLO'S	3.54	3.53	3.79	3.53	3.49
C7+ IN GAS	10.93	12.73	14.86	12.73	12.02
LIQ HC'S	42.95	41.45	37.45	39.96	42.96
TOTAL	100.00	100.00	100.00	100.00	100.00

Table V-1(cont.)

SUB-GROUPING					
C1 -C4	31.07	30.68	31.50	31.67	30.58
C5 -420 F	46.60	47.77	49.39	47.95	50.74
420-700 F	19.03	18.36	16.16	17.24	15.73
700-END PT	3.30	3.19	2.94	3.14	2.95
C5+-END PT	68.93	69.32	68.50	68.33	69.42
ISO/NORMAL MOLE RATIO					
C4	0.1049	0.0713	0.1029	0.0738	0.0753
C5	0.0869	0.0701	0.0822	0.0680	0.0872
C6	0.2292	0.2112	0.2118	0.1957	0.2307
C4=	0.0907	0.0810	0.0925	0.0806	0.0809
PARAFFIN/OLEFIN RATIO					
C3	1.6679	2.0071	1.7758	2.0699	2.0553
C4	0.7752	0.7692	0.8008	0.8222	0.7852
C5	0.8302	0.8411	0.8763	0.8507	0.7010
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))		0.8118		0.8099	
RATIO CH4/(1-A)**2		3.8681		3.9069	
LIQ HC COLLECTION					
PHYS. APPEARANCE		CLR LT BL		LT BL	
DENSITY		0.745		0.757	
N, REFRACTIVE INDEX		1.4251		1.4251	
SIMULT'D DISTILATN					
10 WT % @ DEG F		260		261	
16		299		295	
50		423		421	
84		624		623	
90		675		676	
RANGE(16-84 %)		325		328	
WT % @ 420 F	48.00	48.00	49.00	49.00	56.50
WT % @ 700 F	92.31	92.31	92.15	92.15	93.13

Table V-1 (cont.)

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

11677-11-17 677-11-18 677-11-19 677-11-21
 =====

FEED H2:CO:AR	49:50: 0	49:50: 0	49:50: 0	49:50: 0
HRS ON STREAM	212.5	219.5	236.5	261.5
PRESSURE, PSIG	297	293	300	298
TEMP., C	260	260	261	261
FEED CC/MIN	630	630	630	630
HOURS FEEDING	22.00	7.00	24.00	25.00
EFFLNT GAS LITER	430.85	134.10	469.95	497.10
GM AQUEOUS LAYER	97.20	31.56	108.20	113.02
GM OIL	31.69	9.89	33.91	36.31
MATERIAL BALANCE				
GM ATOM CARBON %	96.43	96.06	97.17	98.09
GM ATOM HYDROGEN %	100.43	103.54	101.81	103.02
GM ATOM OXYGEN %	101.52	99.19	101.95	102.79
RATIO CHX/(H2O+CO2)	0.8602	0.9147	0.8705	0.8730
RATIO X IN CHX	2.3575	2.3418	2.3487	2.3609
USAGE H2/CO PRODT	1.8735	1.9003	1.8870	1.8941
RATIO CO2/(H2O+CO2)	0.0945	0.0868	0.0892	0.0887
K SHIFT IN EFFLNT	0.05	0.04	0.04	0.04
CONVERSION				
ON CO %	36.05	38.32	36.44	36.28
ON H2 %	71.86	72.73	72.34	72.02
ON CO+H2 %	54.03	55.90	54.52	54.31
PRODT SELECTIVITY, WT %				
CH4	14.47	13.44	13.31	14.24
C2 HC'S	3.09	2.87	3.04	3.08
C3H8	4.07	4.44	4.95	4.56
C3H6=	1.84	2.23	2.45	2.24
C4H10	3.24	3.51	3.85	3.68
C4H8=	3.95	4.32	4.94	4.45
C5H12	3.09	3.70	4.07	3.82
C5H10=	3.82	4.31	4.80	4.25
C6H14	3.85	3.82	4.06	3.80
C6H12= & CYCLO'S	3.59	3.29	3.49	2.94
C7+ IN GAS	14.55	17.06	12.32	13.40
LIQ HC'S	40.45	37.00	38.72	39.54
TOTAL	100.00	100.00	100.00	100.00

Table V-1 (cont.)

SUB-GROUPING				
C1 -C4	30.65	30.81	32.55	32.26
C5 -420 F	51.75	50.31	47.71	47.38
420-700 F	14.82	16.12	16.86	16.60
700-END PT	2.78	2.76	2.88	3.76
C5+-END PT	69.35	69.19	67.45	67.74
ISO/NORMAL MOLE RATIO				
C4	0.0712	0.0731	0.0750	0.0707
C5	0.0801	0.1167	0.1211	0.1213
C6	0.1691	0.1762	0.1738	0.1637
C4=	0.0830	0.0808	0.0807	0.0813
PARAFFIN/OLEFIN RATIO				
C3	2.1129	1.9022	1.9268	1.9471
C4	0.7919	0.7828	0.7538	0.7989
C5	0.7859	0.8340	0.8239	0.8734
SCHULZ-FLORY DISTRBTN				
ALPHA (EXP(SLOPE))	0.8029		0.8058	0.8147
RATIO CH4/(1-A)**2	3.7229		3.5306	4.1456
LIQ HC COLLECTION				
PHYS. APPEARANCE	OIL/SLD		BLUE	OIL/SLD
DENSITY	0.756		0.748	0.741
N, REFRACTIVE INDEX	1.4254		1.4248	1.4250
SIMULT'D DISTILATN				
10 WT % @ DEG F	263		259	257
16	283		297	299
50	394		421	425
84	601		619	639
90	660		673	695
RANGE(16-84 %)	318		322	340
WT % @ 420 F	56.50	49.00	49.00	48.50
WT % @ 700 F	93.13	92.55	92.55	90.50

Table V-1 (cont.)

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

11677-11-22 677-11-23

=====

FEED H2:CO:AR	49:50: 0	49:50: 0
HRS ON STREAM	267.5	284.5
PRESSURE, PSIG	294	295
TEMP. C	261	261

FEED CC/MIN	630	630
HOURS FEEDING	6.00	23.00
EFFLNT GAS LITER	111.85	451.30
GM AQUEOUS LAYER	25.93	99.39
GM OIL	8.59	32.93

MATERIAL BALANCE		
GM ATOM CARBON %	95.49	97.84
GM ATOM HYDROGEN %	100.59	103.23
GM ATOM OXYGEN %	96.87	99.62
RATIO CHX/(H2O+CO2)	0.9611	0.9500
RATIO X IN CHX	2.3200	2.3492
USAGE H2/CO PRODT	1.8964	1.8985
RATIO CO2/(H2O+CO2)	0.0882	0.0914
K SHIFT IN EFFLNT	0.04	0.05

CONVERSION		
ON CO %	38.81	37.84
ON H2 %	73.47	71.98
ON CO+H2 %	56.31	55.09

PRDT SELECTIVITY, WT %		
CH4	12.11	13.50
C2 HC'S	2.77	2.86
C3H8	4.61	4.71
C3H6=	2.24	2.23
C4H10	3.64	3.76
C4H8=	4.53	4.52
C5H12	3.84	3.98
C5H10=	4.72	4.50
C6H14	4.19	4.17
C6H12= & CYCLO'S	3.57	3.31
C7+ IN GAS	16.59	15.14
LIQ HC'S	37.20	37.31

TOTAL	100.00	100.00
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Table V-1

SUB-GROUPING		
C1 -C4	29.89	31.59
C5 -420 F	51.33	49.56
420-700 F	16.06	16.11
700-END PT	2.73	2.74
C5+-END PT	70.11	68.41
ISO/NORMAL MOLE RATIO		
C4	0.0709	0.0689
C5	0.1142	0.1115
C6	0.1648	0.1688
C4=	0.0835	0.0814
PARAFFIN/OLEFIN RATIO		
C3	1.9637	2.0155
C4	0.7759	0.8041
C5	0.7925	0.8598
SCHULZ-FLORY DISTRBTN		
ALPHA (EXP(SLOPE))		0.8041
RATIO CH4/(1-A)**2		3.5196
LIQ HC COLLECTION		
PHYS. APPEARANCE		BLUE
DENSITY		0.753
N, REFRACTIVE INDEX		1.4241
SIMULT'D DISTILATN		
10 WT % @ DEG F		258
16		295
50		421
84		614
90		672
RANGE(16-84 %)		319
WT % @ 420 F	49.50	49.50
WT % @ 700 F	92.67	92.67

Table V-2

RESULT OF SYNGAS OPERATION

RUN NO. 12200-06
 CATALYST CO-U103 12006-55 80 CC 36.06 GM (45.47 G AFTER RUN +9.41G)
 FEED H₂:CO OF 50:50 @400 CC/MM OR 300 GHSV

RUN & SAMPLE NO.	12200-06-01	200-06-02	200-06-03	200-06-04	200-06-05
	=====	=====	=====	=====	=====
FEED H ₂ :CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	22.0	47.0	71.0	94.5	118.5
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	261	261	261	261	260
FEED CC/MIN	400	400	400	400	400
HOURS FEEDING	22.00	25.00	24.00	23.50	24.00
EFFLNT GAS LITER	191.50	185.55	183.10	189.25	214.60
GM AQUEOUS LAYER	28.47	63.19	67.20	65.49	64.08
GM OIL	12.08	36.17	49.00	49.72	43.97
MATERIAL BALANCE					
GM ATOM CARBON %	91.47	84.85	92.02	93.92	93.69
GM ATOM HYDROGEN %	83.91	82.90	90.26	92.63	93.51
GM ATOM OXYGEN %	99.70	95.43	96.44	95.60	95.79
RATIO CH _x /(H ₂ O+CO ₂)	0.8447	0.7864	0.9078	0.9632	0.9515
RATIO X IN CH _x	2.8007	2.4131	2.3169	2.3112	2.3660
USAGE H ₂ /CO PRODT	0.9606	1.3003	1.4147	1.4679	1.5101
FEED H ₂ /CO FRM EFFLNT	0.9173	0.9770	0.9808	0.9862	0.9980
RESIDUAL H ₂ /CO RATIO	0.5495	0.2432	0.2159	0.2523	0.3282
RATIO CO ₂ /(H ₂ O+CO ₂)	0.6995	0.4027	0.3178	0.2833	0.2744
K SHIFT IN EFFLNT	1.2790	0.1639	0.1006	0.0997	0.1241
SPECIFIC ACTIVITY SA	12.5050	13.0794	12.3531	8.7423	5.5424
CONVERSION					
ON CO %	89.46	69.42	63.81	60.37	56.68
ON H ₂ %	93.68	92.39	92.03	89.86	85.75
ON CO+H ₂ %	91.48	80.77	77.78	75.01	71.20
PRDT SELECTIVITY, WT %					
CH ₄	32.13	15.02	10.09	9.78	12.47
C ₂ HC'S	4.05	1.97	1.49	1.41	1.71
C ₃ H ₈	6.71	2.52	1.65	1.70	2.18
C ₃ H ₆ =	0.76	1.95	1.76	1.65	1.42
C ₄ H ₁₀	6.85	2.46	1.86	1.71	2.15
C ₄ H ₈ =	2.08	3.26	2.84	2.50	2.31
C ₅ H ₁₂	8.37	3.76	2.47	2.34	2.84
C ₅ H ₁₀ =	1.65	2.12	1.65	1.48	1.48
C ₆ H ₁₄	8.81	4.45	3.03	2.70	3.24
C ₆ H ₁₂ = & CYCLO'S	0.58	1.21	1.07	1.16	1.31
C ₇ + IN GAS	11.26	9.19	5.82	5.39	6.36
LIQ HC'S	16.75	52.08	66.27	68.19	62.53
TOTAL	100.00	100.00	100.00	100.00	100.00

Table V-2 (cont.)

B-GROUPING					
C1 -C4	52.58	27.19	19.70	18.75	22.24
C5 -420 F	43.52	48.44	39.35	37.74	39.05
420-700 F	2.80	22.60	31.01	30.55	28.39
700-END PT	1.11	1.77	9.94	12.96	10.32
C5+END PT	47.42	72.81	80.30	81.25	77.76
SO/NORMAL MOLE RATIO					
C4	0.0321	0.0113	0.0695	0.0122	0.0166
C5	0.1483	0.0617	0.0535	0.0550	0.0633
C6	0.3815	0.1431	0.1507	0.1039	0.1176
C4=	0.2132	0.0568	0.0584	0.0471	0.0607
ARAFFIN/OLEFIN RATIO					
C3	8.3698	1.2358	0.8958	0.9865	1.4682
C4	3.1793	0.7279	0.6313	0.6613	0.8999
C5	4.9340	1.7236	1.4525	1.5407	1.8674
CHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.6845	0.7879	0.8653	0.8732	0.8616
RATIO CH4/(1-A)**2	3.2282	3.3395	5.5626	6.0800	6.5085
IQ HC COLLECTION					
PHYS. APPEARANCE	CLD OIL	CLD OIL	CLD OIL	CLD OIL	CLD OIL
DENSITY	0.7287	0.7761	0.7942	0.7946	0.8108
N, REFRACTIVE INDEX	1.4110	1.4200	1.4274	1.4289	1.4274
SIMULT'D DISTILATN					
10 WT % @ DEG F	210	253	261	275	273
16	244	270	302	307	303
50	339	414	485	500	484
84	453	573	691	727	706
90	490	618	748	788	766
RANGE(16-84 %)	209	303	389	420	403
WT % @ 420 F	76.70	53.20	38.20	36.20	38.10
WT % @ 700 F	93.40	96.60	85.00	81.00	83.50

RESULT OF SYNGAS OPERATION

RUN NO. 12200-06
 CATALYST CO-U103 12006-55 80 CC 36.06 GM (45.47 G AFTER RUN +9.41 G)
 FEED H2:CO OF 50:50 @400 CC/MM OR 300 GHSV

RUN & SAMPLE NO. 12200-06-06 200-06-07

	=====	=====
FEED H2:CO:AR	50:50: 0	50:50: 0
HRS ON STREAM	142.5	165.5
PRESSURE, PSIG	300	300
TEMP. C	261	261
FEED CC/MIN	400	400
HOURS FEEDING	24.00	23.00
EFFLNT GAS LITER	230.60	223.90
GM AQUEOUS LAYER	64.22	61.18
GM OIL	37.24	36.41
MATERIAL BALANCE		
GM ATOM CARBON %	93.95	94.30
GM ATOM HYDROGEN %	93.35	95.43
GM ATOM OXYGEN %	98.65	97.70
RATIO CHX/(H2O+CO2)	0.8913	0.9204
RATIO X IN CHX	2.4173	2.4376
USAGE H2/CO PRODT	1.5555	1.5688
FEED H2/CO FRM EFFLNT	0.9936	1.0121
RESIDUAL H2/CO RATIO	0.3459	0.3677
RATIO CO2/(H2O+CO2)	0.2703	0.2639
K SHIFT IN EFFLNT	0.1281	0.1318
SPECIFIC ACTIVITY SA	4.3789	4.0024
CONVERSION		
ON CO %	53.55	53.64
ON H2 %	83.83	83.16
ON CO+H2 %	68.64	68.49
PRDT SELECTIVITY, WT %		
CH4	14.97	16.07
C2 HC'S	2.09	2.11
C3H8	2.69	2.69
C3H6=	1.50	1.32
C4H10	2.59	2.56
C4H8=	2.45	2.20
C5H12	3.43	3.32
C5H10=	1.61	1.45
C6H14	3.82	3.66
C6H12= & CYCLO'S	1.37	1.21
C7+ IN GAS	7.15	7.04
LIQ HC'S	56.35	56.36
TOTAL	100.00	100.00

Table V-2 (cont.)

SUB-GROUPING		
C1 -C4	26.28	26.95
C5 -420 F	39.35	39.85
420-700 F	25.02	25.14
700-END PT	9.35	8.06
C5+-END PT	73.72	73.05
ISO/NORMAL MOLE RATIO		
C4	0.0171	0.0229
C5	0.0618	0.0721
C6	0.1249	0.1256
C4=	0.0691	0.0830
PARAFFIN/OLEFIN RATIO		
C3	1.7122	1.9454
C4	1.0178	1.1198
C5	2.0749	2.2226
SCHULZ-FLORY DISTRBTN		
ALPHA (EXP(SLOPE))	0.8523	0.8479
RATIO CH4/(1-A)**2	6.8602	6.9509
LIQ HC COLLECTION		
PHYS. APPEARANCE	CLD OIL	CLD OIL
DENSITY (* 40 C)	0.7480*	0.7471*
N, REFRACTIVE INDEX	1.4276*	1.4210*
SIMULT'D DISTILATN		
10 WT % @ DEG F	273	262
16	303	301
50	482	472
84	706	685
90	767	746
RANGE(16-84 %)	403	384
WT % @ 420 F	39.00	41.10
WT % @ 700 F	83.40	85.70

Table V-3

RESULT OF SYNGAS OPERATION

RUN NO. 12185-08
 CATALYST CO/X9/X10/X4-U103 12251-1 250 CC 103.9 G (TO 145.7 G +41.8G)
 FEED H2:CO OF 50:50 @1260 CC/MN OR 300 GHSV

RUN & SAMPLE NO.	12185-08-01	185-08-02	185-08-03	185-08-04	185-08-05
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	21.0	45.0	69.0	93.0	117.0
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	264	262	261	261	261
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	21.00	24.00	24.00	24.00	24.00
EFFLNT GAS LITER	632.80	808.90	828.80	842.20	857.90
GM AQUEOUS LAYER	186.73	213.68	214.38	211.29	208.33
GM OIL	66.09	98.39	103.17	98.78	97.64
MATERIAL BALANCE					
GM ATOM CARBON %	84.40	93.11	94.44	94.69	95.88
GM ATOM HYDROGEN %	88.87	96.64	97.89	97.86	98.44
GM ATOM OXYGEN %	93.25	97.66	98.63	98.66	98.89
RATIO CHX/(H2O+CO2)	0.7802	0.8840	0.8924	0.8964	0.9200
RATIO X IN CHX	2.3784	2.3571	2.3565	2.3668	2.3692
USAGE H2/CO PRODT	1.8386	1.8392	1.8627	1.8691	1.8685
FEED H2/CO FRM EFFLNT	1.0530	1.0379	1.0365	1.0334	1.0267
RESIDUAL H2/CO RATIO	0.3976	0.4235	0.4294	0.4351	0.4371
RATIO CO2/(H2O+CO2)	0.1738	0.1465	0.1360	0.1343	0.1293
K SHIFT IN EFFLNT	0.0836	0.0727	0.0676	0.0675	0.0649
SPECIFIC ACTIVITY SA	2.5586	2.4148	2.4038	2.3120	2.2590
CONVERSION					
ON CO %	45.48	43.40	42.36	41.72	41.19
ON H2 %	79.42	76.90	76.12	75.46	74.96
ON CO+H2 %	62.89	60.47	59.54	58.87	58.30
PRDT SELECTIVITY, WT %					
CH4	12.59	11.24	11.10	11.49	11.56
C2 HC'S	2.75	2.48	2.46	2.67	2.62
C3H8	3.47	3.19	3.17	3.41	3.59
C3H6=	2.77	2.50	2.37	2.53	2.42
C4H10	3.33	3.12	3.09	3.29	3.45
C4H8=	3.67	3.21	3.11	3.22	3.23
C5H12	4.11	3.86	3.74	4.06	4.18
C5H10=	1.78	1.52	1.46	1.56	1.57
C6H14	4.41	4.07	3.98	4.08	4.19
C6H12= & CYCLO'S	2.08	1.93	1.77	1.76	1.82
C7+ IN GAS	14.31	10.04	8.41	8.44	8.90
LIQ HC'S	44.73	52.85	55.33	53.49	52.45
TOTAL	100.00	100.00	100.00	100.00	100.00

SUB-GROUPING					
C1 -C4	28.58	25.73	25.30	26.61	26.88
C5 -420 F	45.92	43.09	41.78	42.63	43.22
420-700 F	22.10	25.10	24.90	24.02	23.45
700-END PT	3.40	6.08	8.02	6.74	6.45
C5+-END PT	71.42	74.27	74.70	73.39	73.12
ISO/NORMAL MOLE RATIO					
C4	0.0209	0.0179	0.0202	0.0182	0.0194
C5	0.0812	0.0767	0.0762	0.0725	0.0720
C6	0.1028	0.0918	0.1010	0.0882	0.0867
C4=	0.1045	0.1037	0.1024	0.1042	0.1069
PARAFFIN/OLEFIN RATIO					
C3	1.1951	1.2180	1.2778	1.2852	1.4176
C4	0.8754	0.9365	0.9592	0.9865	1.0313
C5	2.2400	2.4724	2.4944	2.5282	2.5864
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8076	0.8316	0.8401	0.8304	0.8274
RATIO CH4/(1-A)**2	3.4022	3.9659	4.3386	3.9959	3.8789
ALPHA FRM CORRELATION					
ALPHA (EXPTL/CORR)	0.8555	0.8525	0.8519	0.8513	0.8511
	0.9440	0.9755	0.9861	0.9755	0.9722
WtCH4 FRM CORRELATION					
WtCH4 (EXPTL/CORR)	13.4718	13.9789	13.9601	14.1610	14.2300
	0.9349	0.8042	0.7950	0.8116	0.8122
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLR OIL	CLD OIL	OIL WAX	OIL WAX	OIL WAX
DENSITY (* 40 C)	0.7425*	0.7458*	0.7463*	0.7453*	0.7452*
N, REFRACTIVE INDEX	1.4189*	1.4200*	1.4204*	1.4195*	1.4197*
SIMULT'D DISTILATN					
10 WT % @ DEG F	260	263	262	261	260
16	301	303	303	302	302
50	454	465	470	454	453
84	640	666	687	667	665
90	681	711	745	728	727
RANGE(16-84 %)					
	339	363	384	365	363
WT % @ 420 F					
	43.00	41.00	40.50	42.50	43.00
WT % @ 700 F					
	92.40	88.50	85.50	87.40	87.70

Table V-3 (cont.)

RESULT OF SYNGAS OPERATION

RUN NO. 12185-08
 CATALYST CO/X9/X10/X4-U103 12251-1 250 CC 103.9 G (TO 145.7 G +41.8 G)
 FEED H2:CO OF 50:50 @1260 CC/MN OR 300 GHSV

RUN & SAMPLE NO.	12185-08-06	185-08-07	185-08-08	185-08-09	185-08-10
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	139.5	166.2	190.2	213.2	237.2
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	261	260	260	260	261
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	22.50	26.75	24.00	23.00	24.00
EFFLNT GAS LITER	816.43	984.84	887.13	856.55	894.05
GM AQUEOUS LAYER	194.62	230.13	208.58	196.49	204.25
GM OIL	88.71	99.41	86.39	87.12	84.12
MATERIAL BALANCE					
GM ATOM CARBON %	95.61	95.34	94.40	95.84	95.40
GM ATOM HYDROGEN %	97.44	98.88	97.67	99.02	98.11
GM ATOM OXYGEN %	99.81	98.92	99.56	99.08	99.53
RATIO CHX/(H2O+CO2)	0.8881	0.9029	0.8609	0.9111	0.8875
RATIO X IN CHX	2.3763	2.3784	2.3797	2.3732	2.3941
USAGE H2/CO PRODT	1.8950	1.9122	1.9614	1.9239	1.9189
FEED H2/CO FRM EFFLNT	1.0191	1.0372	1.0347	1.0331	1.0285
RESIDUAL H2/CO RATIO	0.4378	0.4629	0.4602	0.4655	0.4603
RATIO CO2/(H2O+CO2)	0.1286	0.1192	0.1134	0.1123	0.1231
K SHIFT IN EFFLNT	0.0646	0.0627	0.0589	0.0589	0.0646
SPECIFIC ACTIVITY SA	2.1539	2.0700	1.9887	2.0080	1.9409
CONVERSION					
ON CO %	39.89	39.62	38.27	38.92	38.95
ON H2 %	74.18	73.05	72.54	72.48	72.68
ON CO+H2 %	57.20	56.64	55.70	55.97	56.05
PRDT SELECTIVITY, WT %					
CH4	12.08	12.04	11.94	11.68	12.61
C2 HC'S	2.20	2.74	2.83	2.67	2.95
C3H8	3.71	3.71	3.82	3.77	4.08
C3H6=	2.37	2.39	2.54	2.27	2.45
C4H10	3.55	3.60	3.74	3.64	3.79
C4H8=	3.30	3.32	3.50	3.27	3.24
C5H12	4.19	4.20	4.41	4.21	4.48
C5H10=	1.59	1.62	1.90	1.59	1.70
C6H14	4.12	4.45	4.29	4.30	4.68
C6H12= & CYCLO'S	1.81	1.86	1.80	1.73	1.89
C7+ IN GAS	9.13	10.38	8.91	9.98	10.25
LIQ HC'S	52.81	49.69	50.31	50.91	47.87
TOTAL	100.00	100.00	100.00	100.00	100.00

Table V-3 (cont.)

SUB-GROUPING					
C1 -C4	28.56	27.80	28.37	27.29	29.13
C5 -420 F	41.07	43.13	42.45	44.20	44.54
420-700 F	23.92	22.36	22.39	22.96	22.26
700-END PT	6.44	6.71	6.79	5.55	4.07
C5+END PT	71.44	72.20	71.63	72.71	70.87
ISO/NORMAL MOLE RATIO					
C4	0.0167	0.0180	0.0189	0.0192	0.0188
C5	0.0725	0.0693	0.0690	0.0670	0.0623
C6	0.0920	0.0874	0.0392	0.0911	0.0948
C4=	0.1120	0.1118	0.1147	0.1130	0.1141
PARAFFIN/OLEFIN RATIO					
C3	1.4920	1.4821	1.4321	1.5833	1.5905
C4	1.0355	1.0489	1.0291	1.0725	1.1268
C5	2.2107	2.5155	2.2573	2.5759	2.5611
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8294	0.8278	0.8283	0.8222	0.8102
RATIO CH4/(1-A)**2	4.1484	4.0593	4.0511	3.6933	3.5017
ALPHA FRM CORRELATION	0.8510	0.8483	0.8486	0.8480	0.8485
ALPHA (EXPTL/CORR)	0.9798	0.9758	0.9761	0.9695	0.9548
WTCH4 FRM CORRELATION	14.2527	14.8704	14.7811	14.9539	15.0091
WTCH4 (EXPTL/CORR)	0.8845	0.8099	0.8077	0.7808	0.8404
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY (* 40 C)	0.7451*	0.7459*	0.7453*	0.7440*	0.7424*
N, REFRACTIVE INDEX	1.4194*	1.4201*	1.4199*	1.4191*	1.4184*
SIMULT'D DISTILATN					
10 WT % @ DEG F	261	262	260	259	259
16	303	303	303	303	302
50	454	457	456	451	443
84	666	677	677	647	624
90	725	740	739	709	685
RANGE(16-84 %)	363	374	374	344	322
WT % @ 420 F	42.50	41.50	42.00	44.00	45.00
WT % @ 700 F	87.80	86.50	86.50	89.10	91.50

Table V-3 (cont.)

RESULT OF SYNGAS OPERATION

RUN NO. 12185-08
 CATALYST CO/X9/X10/X4-U103 12251-1 250 CC 103.9 G (TO 145.7 G +41.8 G)
 FEED H2:CO OF 50:50 @1260 CC/MN OR 300 GHSV

RUN & SAMPLE NO.	12185-08-11	185-08-12	185-08-13	185-08-14	185-08-15
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	261.2	285.2	309.2	335.0	357.0
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	261	261	261	261	261
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	24.00	24.00	24.00	25.75	22.00
EFFLNT GAS LITER	901.55	913.75	914.90	979.80	842.45
GM AQUEOUS LAYER	202.57	200.22	200.82	213.02	182.96
GM OIL	88.64	88.22	85.76	95.69	80.74
MATERIAL BALANCE					
GM ATOM CARBON %	96.76	97.03	97.11	97.74	97.74
GM ATOM HYDROGEN %	99.56	99.84	100.53	100.29	100.54
GM ATOM OXYGEN %	99.39	99.50	99.52	99.26	99.61
RATIO CHX/(H2O+CO2)	0.9279	0.9312	0.9336	0.9576	0.9478
RATIO X IN CHX	2.3834	2.3880	2.3917	2.3836	2.3924
USAGE H2/CO PRODT	1.8943	1.8969	1.8862	1.8722	1.8904
FEED H2/CO FRM EFFLNT	1.0289	1.0290	1.0351	1.0261	1.0287
RESIDUAL H2/CO RATIO	0.4660	0.4753	0.4810	0.4739	0.4755
RATIO CO2/(H2O+CO2)	0.1202	0.1193	0.1232	0.1213	0.1183
K SHIFT IN EFFLNT	0.0637	0.0644	0.0676	0.0654	0.0638
SPECIFIC ACTIVITY SA	1.9381	1.8521	1.8514	1.8971	1.8616
CONVERSION					
ON CO %	39.41	38.95	39.44	39.49	39.10
ON H2 %	72.56	71.80	71.86	72.05	71.85
ON CO+H2 %	56.22	55.61	55.93	55.98	55.71
PRDT SELECTIVITY, WT %					
CH4	12.11	12.28	12.48	12.01	12.47
C2 HC'S	2.80	2.98	2.98	2.83	2.86
C3H8	3.95	4.05	4.18	4.18	4.19
C3H6=	2.32	2.23	2.23	2.16	2.15
C4H10	3.72	3.73	3.81	3.82	3.83
C4H8=	3.20	3.08	3.16	3.13	3.11
C5H12	4.42	4.39	4.52	4.51	4.51
C5H10=	1.71	1.75	1.82	1.84	1.85
C6H14	4.64	4.55	4.62	4.61	4.66
C6H12= & CYCLO'S	1.90	1.70	1.87	1.72	1.83
C7+ IN GAS	10.44	10.34	11.24	10.82	10.39
LIQ HC'S	48.80	48.93	47.08	48.38	48.15
TOTAL	100.00	100.00	100.00	100.00	100.00

Table V-3 (cont.)

SUB-GROUPING					
C1 -C4	28.09	28.34	28.84	28.12	28.61
C5 -420 F	45.31	45.09	45.59	45.27	45.53
420-700 F	22.01	21.77	20.86	20.81	20.80
700-END PT	4.59	4.79	4.71	5.81	5.06
C5+END PT	71.91	71.66	71.16	71.88	71.39
ISO/NORMAL MOLE RATIO					
C4	0.0179	0.0210	0.0194	0.0212	0.0196
C5	0.0632	0.0670	0.0707	0.0688	0.0667
C6	0.0842	0.0858	0.0963	0.0888	0.0886
C4=	0.1160	0.1164	0.1178	0.1160	0.1166
PARAFFIN/OLEFIN RATIO					
C3	1.6250	1.7366	1.7871	1.8475	1.8590
C4	1.1219	1.1713	1.1630	1.1772	1.1892
C5	2.5178	2.4323	2.4197	2.3878	2.3701
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8144	0.8158	0.8137	0.8189	0.8136
RATIO CH4/(1-A)**2	3.5131	3.6187	3.5943	3.6620	3.5901
ALPHA FRM CORRELATION	0.8479	0.8470	0.8464	0.8471	0.8470
ALPHA (EXPTL/CORR)	0.9604	0.9632	0.9614	0.9667	0.9607
W%CH4 FRM CORRELATION	15.1978	15.4967	15.6742	15.4511	15.5015
W%CH4 (EXPTL/CORR)	0.7965	0.7922	0.7960	0.7770	0.8043
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY (* 40 C)	0.7431*	0.7430*	0.7430*	0.7440*	0.7429*
N, REFRACTIVE INDEX	1.4174*	1.4174*	1.4174*	1.4179*	1.4172*
SIMULT'D DISTILATN					
10 WT % @ DEG F	259	263	264	262	261
16	302	301	301	301	300
50	444	448	448	449	447
84	638	639	640	660	642
90	691	698	701	723	705
RANGE(16-84 %)	336	338	339	359	342
WT % @ 420 F	45.50	45.70	45.70	45.00	46.30
WT % @ 700 F	90.60	90.20	90.00	88.00	89.50

Table V-3 (cont.)

RESULT OF SYNGAS OPERATION

RUN NO. 12185-08
 CATALYST CO/X9/X10/X4-U103 12251-1 250 CC 103.9 G (TO 145.7 G +41.8 G)
 FEED H2:CO OF 33.4:66.7 @1260 CC/MN OR 300 GHSV

RUN & SAMPLE NO.	12185-08-16	185-08-17	185-08-18	185-08-19
	=====	=====	=====	=====
FEED H2:CO:AR	33:66: 0	33:66: 0	33:66: 0	33:66: 0
HRS ON STREAM	382.0	406.0	429.5	453.0
PRESSURE, PSIG	300	300	300	300
TEMP. C	260	261	261	261
FEED CC/MIN	1260	1260	1260	1260
HOURS FEEDING	20.50	24.00	23.50	23.50
EFFLNT GAS LITER	1017.85	1162.55	1139.30	1164.05
GM AQUEOUS LAYER	104.30	120.16	114.85	115.71
GM OIL	57.94	64.59	53.24	60.91
MATERIAL BALANCE				
GM ATOM CARBON %	95.00	91.45	89.89	92.69
GM ATOM HYDROGEN %	98.46	97.67	95.38	99.67
GM ATOM OXYGEN %	96.18	93.00	92.27	93.92
RATIO CHX/(H2O+CO2)	0.9326	0.9097	0.8588	0.9276
RATIO X IN CHX	2.2993	2.3094	2.3351	2.3182
USAGE H2/CO PRODT	1.8723	1.8923	1.9452	1.8759
FEED H2/CO FRM EFFLNT	0.5198	0.5356	0.5321	0.5393
RESIDUAL H2/CO RATIO	0.1971	0.2123	0.2181	0.2216
RATIO CO2/(H2O+CO2)	0.1135	0.1138	0.1128	0.1165
K SHIFT IN EFFLNT	0.0252	0.0273	0.0277	0.0292
SPECIFIC ACTIVITY SA	3.4225	2.8890	2.6069	2.7007
CONVERSION				
ON CO %	19.26	19.25	18.18	19.20
ON H2 %	69.38	68.00	66.46	66.80
ON CO+H2 %	36.40	36.25	34.95	35.88
PRDT SELECTIVITY, WT %				
CH4	9.86	10.29	11.73	10.88
C2 HC'S	1.59	1.69	1.93	1.72
C3H8	1.62	1.72	1.93	1.82
C3H6=	2.91	2.93	3.20	3.00
C4H10	1.61	1.64	1.78	1.70
C4H8=	3.54	3.78	3.99	3.75
C5H12	2.10	2.26	2.42	2.28
C5H10=	2.24	2.23	2.37	2.24
C6H14	2.39	2.51	2.80	2.58
C6H12= & CYCLO'S	2.44	2.80	2.87	2.65
C7+ IN GAS	11.33	10.23	12.29	12.26
LIQ HC'S	58.37	57.91	52.70	55.14
TOTAL	100.00	100.00	100.00	100.00

Table V-3 (cont.)

SUB-GROUPING				
C1 -C4	21.13	22.06	24.56	22.87
C5 -420 F	39.35	39.32	39.60	39.64
420-700 F	27.96	27.50	25.35	26.80
700-END PT	11.56	11.12	10.49	10.70
C5+-END PT	78.87	77.94	75.44	77.13
ISO/NORMAL MOLE RATIO				
C4	0.0279	0.0277	0.0000	0.0000
C5	0.0754	0.0694	0.0640	0.0733
C6	0.1048	0.1133	0.1082	0.0983
C4=	0.0596	0.0649	0.0646	0.0473
PARAFFIN/OLEFIN RATIO				
C3	0.5320	0.5615	0.5754	0.5789
C4	0.4391	0.4192	0.4319	0.4371
C5	0.9137	0.9867	0.9946	0.9905
SCHULZ-FLORY DISTRBTN				
ALPHA (EXP(SLOPE))	0.8554	0.8521	0.8453	0.8486
RATIO CH4/(1-A)**2	4.7143	4.7039	4.8993	4.7509
ALPHA FRM CORRELATION	0.8899	0.8863	0.8849	0.8842
ALPHA (EXPTL/CORR)	0.9612	0.9615	0.9552	0.9598
WZCH4 FRM CORRELATION	1.9662	3.3114	3.7231	3.9630
WZCH4 (EXPTL/CORR)	5.0157	3.1077	3.1508	2.7464
LIQ HC COLLECTION				
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY (* 40 C)	0.7577*	0.7578*	0.7582*	0.7572*
N, REFRACTIVE INDEX	1.4260*	1.4260*	1.4263*	1.4255*
SIMULT'D DISTILATN				
10 WT % @ DEG F	303	301	306	306
16	342	341	345	345
50	512	509	514	513
84	729	726	732	730
90	793	790	798	794
RANGE(16-84 %)	387	385	387	385
WT % @ 420 F	32.30	33.30	32.00	32.00
WT % @ 700 F	80.20	80.80	80.10	80.60

Table V-4

FILE: 1220019A TSS4Q1 A1

RESULT OF SYNGAS OPERATION

RUN NO. 12200-19
 CATALYST CO/X11-U103 250 CC 104.3 G AFTER RUN:153.9 G (+49.6 G)
 FEED H₂:CO OF 50:50 @1260 CC/MN OR 300 GHSV (CAT#12006-64)

RUN & SAMPLE NO.	12200-19-01	200-19-02	200-19-04	200-19-07	200-19-09
FEED H ₂ :CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	19.5	43.5	91.5	163.0	211.0
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	241	243	241	242	261
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	19.50	24.00	24.00	21.50	24.00
EFFLNT GAS LITER	642.50	1078.55	1142.30	1025.60	922.15
GM AQUEOUS LAYER	171.63	154.42	140.32	126.86	174.59
GM OIL	28.85	123.79	112.82	95.05	129.37
MATERIAL BALANCE					
GM ATOM CARBON %	66.65	104.75	107.31	102.89	103.17
GM ATOM HYDROGEN %	78.63	101.98	99.98	101.41	99.21
GM ATOM OXYGEN %	88.20	99.94	101.66	99.00	99.79
RATIO CHX/(H ₂ O+CO ₂)	0.3884	1.1743	1.2289	1.1571	1.0991
RATIO X IN CHX	2.3043	2.2236	2.2226	2.2279	2.2775
USAGE H ₂ /CO PRDCT	3.0781	1.7591	1.7944	1.8520	1.6149
FEED H ₂ /CO FRM EFFLNT	1.1797	0.9736	0.9317	0.9856	0.9617
RESIDUAL H ₂ /CO RATIO	0.5866	0.5821	0.5693	0.6312	0.4815
RATIO CO ₂ /(H ₂ O+CO ₂)	0.0618	0.0869	0.0574	0.0512	0.1823
K SHIFT IN EFFLNT	0.0386	0.0554	0.0347	0.0341	0.1073
SPECIFIC ACTIVITY SA	2.1516	3.0419	3.0719	2.4235	2.0702
CONVERSION					
ON CO %	23.81	33.26	29.58	29.03	42.37
ON H ₂ %	62.11	60.09	56.97	54.55	71.14
ON CO+H ₂ %	44.54	46.50	42.79	41.70	56.47
PRDCT SELECTIVITY, WT %					
CH ₄	9.91	5.43	5.34	5.65	7.95
C ₂ HC'S	1.94	1.11	1.19	1.21	1.85
C ₃ H ₈	2.30	1.27	1.33	1.31	1.92
C ₃ H ₆ =	3.80	2.38	2.70	2.58	2.41
C ₄ H ₁₀	2.39	1.38	1.50	1.50	1.77
C ₄ H ₈ =	4.36	2.63	2.98	2.90	3.04
C ₅ H ₁₂	2.78	1.61	1.74	1.74	2.29
C ₅ H ₁₀ =	3.54	2.36	2.36	2.55	2.56
C ₆ H ₁₄	3.17	1.75	1.93	1.92	2.43
C ₆ H ₁₂ = & CYCLO'S	2.48	1.55	1.82	1.69	1.69
C ₇ + IN GAS	14.85	6.80	7.17	7.24	7.47
LIQ HC'S	42.48	71.73	59.94	69.70	64.61
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	24.70	14.20	15.04	15.15	18.95
C5 -420 F	44.51	28.56	31.18	31.25	36.73
420-700 F	26.76	28.33	27.76	27.81	25.10
700-END PT	4.02	28.91	26.02	25.79	18.22

Table V-4 (continued)

FILE: 1220019A TSS4Q1 A1

CS+-END PT	75.30	85.80	84.96	84.85	81.05
ISO/NORMAL MOLE RATIO					
C4	0.0239	0.0322	0.0328	0.0352	0.0239
C5	0.0888	0.0896	0.0901	0.0903	0.0900
C6	0.0906	0.0859	0.0807	0.0775	0.1140
C4=	0.0000	0.0000	0.0000	0.0000	0.0000
PARAFFIN/OLEFIN RATIO					
C3	0.5770	0.5108	0.4700	0.4847	0.7617
C4	0.5300	0.5054	0.4867	0.5009	0.5616
C5	0.7625	0.6636	0.7188	0.6636	0.8688
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8113	0.8852	0.8755	0.8769	0.8582
RATIO CH4/(1-A)**2	2.7842	4.1216	3.4426	3.7244	3.9554
ALPHA FRM CORRELATION	0.8379	0.8381	0.8393	0.8342	0.8463
ALPHA (EXPTL/CORR)	0.9683	1.0562	1.0431	1.0511	1.0140
W%CH4 FRM CORRELATION	13.9666	14.3384	13.5150	15.3183	15.6910
W%CH4 (EXPTL/CORR)	0.7098	0.3787	0.3949	0.3687	0.5066
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLD OIL	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY (* 40 C)	0.789	0.785	0.789	0.797	0.810
N, REFRACTIVE INDEX	1.4209*	N/A	N/A	N/A	N/A
SIMULT'D DISTILATN					
10 WT % @ DEG F	294	339	337	337	293
16	334	399	379	379	336
50	483	635	596	596	538
84	641	934	915	912	830
90	683	1017	999	996	923
RANGE(16-84 %)	307	535	536	533	494
WT % @ 420 F	36.50	20.20	23.10	23.10	31.40
WT % @ 700 F	91.70	59.70	62.80	63.00	71.80

Table V-4 (cont.)

FILE: 1220019B TSS3Q1 A1

RESULT OF SYNGAS OPERATION

RUN NO.	12200-19				
CATALYST	CO/X11-U103 250 CC 104.3 G AFTER USE:153.9 G (+49.6 G)				
FEED	H2:CO OF 50:50 @ 1260 CC/MN OR 300 GHSV (CAT#12006-64.)				
RUN & SAMPLE NO.	12200-19-10	200-19-16	200-19-17	200-19-18	200-19-19
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	235.0	279.0	403.0	427.0	476.0
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	264	263	263	272	267
FEED CC/MIN	1260	1260	1260	1260	1260
HOURS FEEDING	24.00	24.00	24.00	24.00	49.00
EFFLNT GAS LITER	908.85	930.75	931.10	772.85	1972.35
GM AQUEOUS LAYER	169.54	175.73	176.82	176.69	370.70
GM OIL	139.07	117.66	141.81	98.32	186.55
MATERIAL BALANCE					
GM ATOM CARBON %	104.72	100.96	105.70	89.98	102.42
GM ATOM HYDROGEN %	101.25	99.51	104.79	91.46	101.12
GM ATOM OXYGEN %	97.71	98.33	98.47	91.27	103.48
RATIO CHX/(H2O+CO2)	1.2099	1.0787	1.2151	0.9647	0.9709
RATIO X IN CHX	2.2674	2.3058	2.2897	2.4017	2.4142
USAGE H2/CO PRDNT	1.5616	1.6825	1.6240	1.5986	1.6712
FEED H2/CO FRM EFFLNT	0.9669	0.9856	0.9914	1.0165	0.9874
RESIDUAL H2/CO RATIO	0.4882	0.5014	0.5009	0.4608	0.4927
RATIO CO2/(H2O+CO2)	0.1882	0.1598	0.1592	0.2371	0.2057
K SHIFT IN EFFLNT	0.1132	0.0954	0.0948	0.1433	0.1276
SPECIFIC ACTIVITY SA	1.8631	1.6635	1.8239	1.5200	1.4227
CONVERSION					
ON CO %	44.60	41.00	43.67	48.84	41.97
ON H2 %	72.03	69.99	71.54	76.81	71.04
ON CO+H2 %	58.08	55.39	57.55	62.94	56.42
PRDNT SELECTIVITY, WT %					
CH4	7.61	9.51	8.63	14.21	15.04
C2 HC'S	1.70	1.89	1.87	2.76	2.80
C3H8	1.81	2.10	1.90	3.00	3.02
C3H6=	2.27	2.47	2.17	2.27	2.37
C4H10	1.67	1.91	1.77	2.48	2.56
C4H8=	2.82	3.12	2.86	3.36	3.34
C5H12	2.08	2.35	2.09	2.96	3.11
C5H10=	2.55	2.28	2.02	2.07	1.94
C6H14	2.25	2.65	2.42	3.34	3.31
C6H12= & CYCLO'S	1.51	1.70	1.58	1.79	1.68
C7- IN GAS	9.26	9.03	7.69	10.03	13.07
LIQ HC'S	64.48	60.99	65.00	51.74	47.77
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	17.87	21.00	19.20	28.07	29.13
C5 -420 F	36.61	37.59	36.73	40.06	44.70
420-700 F	26.82	25.19	27.17	22.66	19.49
700-END PT	18.70	16.22	16.90	9.21	6.69

Table V-4 (continued)

FILE: 1220019B TSS3Q1 A1

CS+-END PT	82.13	79.00	80.80	71.93	70.87
ISO/NORMAL MOLE RATIO					
C4	0.0194	0.0200	0.0202	0.0225	0.0199
C5	0.0979	0.0997	0.1039	0.1171	0.1033
C6	0.1238	0.1127	0.1162	0.1732	0.1489
C4=	0.0000	0.0000	0.0000	0.0000	0.0000
PARAFFIN/OLEFIN RATIO					
C3	0.7623	0.8138	0.8368	1.2612	1.2144
C4	0.5710	0.5912	0.5991	0.7138	0.7374
C5	0.7926	1.0054	1.0090	1.3872	1.5643
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8705	0.8589	0.8654	0.8435	0.8245
RATIO CH4/(1-A)**2	4.5394	4.7775	4.7653	5.8023	4.8833
ALPHA FRM CORRELATION	0.8455	0.8443	0.8443	0.8479	0.8449
ALPHA (EXPTL/CORR)	1.0296	1.0173	1.0250	0.9949	0.9759
W%CH4 FRM CORRELATION	16.5747	16.7535	16.7399	17.4703	17.3840
W%CH4 (EXPTL/CORR)	0.4592	0.5678	0.5155	0.8131	0.8652
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY	N/A	N/A	N/A	N/A	N/A
N, REFRACTIVE INDEX	N/A	N/A	N/A	N/A	N/A
SIMULT'D DISTILATN					
10 WT % @ DEG F	297	295	295	282	275
16	339	337	337	310	296
50	542	533	531	482	445
84	814	805	799	738	680
90	877	885	878	803	749
RANGE(16-84 %)	475	468	462	428	384
WT % @ 420 F	29.40	32.10	32.20	38.40	45.20
WT % @ 700 F	71.00	73.40	74.00	82.20	86.00

Table V-5

FILE: 1257001A TSS4Q1 A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-01
 CATALYST CO/X11-U103 80 CC 32.0 G AFTER USE:48.7 G (+16.7 G)
 FEED H2:CO OF 50:50 @400 CC/MN OR 300 GHSV (CAT#12524-7)

RUN & SAMPLE NO.	12570-01-01	570-01-02	570-01-03	570-01-04	570-01-05
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	21.0	45.0	68.0	93.5	117.5
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	242	242	243	243	243
FEED CC/MIN	400	400	400	400	400
HOURS FEEDING	21.00	24.00	23.00	25.50	24.00
EFFLNT GAS LITER	252.00	274.00	293.00	332.00	315.80
GM AQUEOUS LAYER	52.67	45.54	45.24	48.68	44.88
GM OIL	9.41	36.11	35.52	34.56	32.82
MATERIAL BALANCE					
GM ATOM CARBON %	75.96	86.36	94.58	92.58	94.33
GM ATOM HYDROGEN %	79.24	87.48	94.20	91.99	92.31
GM ATOM OXYGEN %	94.98	82.82	90.47	90.26	90.97
RATIO CHX/(H2O+CO2)	0.4214	1.1412	1.1574	1.0923	1.1360
RATIO X IN CHX	2.3451	2.2116	2.2172	2.2166	2.2188
USAGE H2/CO PRODT	2.7840	1.7948	1.7890	1.8628	1.8286
FEED H2/CO FRM EFFLNT	1.0432	1.0129	0.9960	0.9937	0.9786
RESIDUAL H2/CO RATIO	0.5546	0.5859	0.5863	0.5990	0.5888
RATIO CO2/(H2O+CO2)	0.0848	0.0765	0.0762	0.0614	0.0647
K SHIFT IN EFFLNT	0.0514	0.0485	0.0484	0.0392	0.0407
SPECIFIC ACTIVITY SA	2.1224	3.5364	3.2778	2.8371	2.8876
CONVERSION					
ON CO %	21.92	35.33	34.07	31.23	31.44
ON H2 %	58.49	62.59	61.19	58.55	58.75
ON CO+H2 %	40.59	49.05	47.60	44.85	44.95
PRDT SELECTIVITY, WT %					
CH4	12.14	4.74	5.01	5.08	5.13
C2 HC'S	1.93	1.00	1.13	1.03	1.43
C3H8	2.56	1.18	1.26	1.29	1.31
C3H6=	3.72	2.25	2.50	2.76	2.78
C4H10	2.62	1.25	1.36	1.40	1.40
C4H8=	4.59	2.62	2.91	3.11	3.13
C5H12	2.79	1.38	1.53	1.56	1.58
C5H10=	3.33	1.91	2.15	2.42	2.47
C6H14	3.81	1.87	2.08	2.26	2.25
C6H12= & CYCLO'S	1.97	1.10	1.34	1.63	1.61
C7+ IN GAS	14.97	5.86	6.11	7.07	7.64
LIQ HC'S	45.56	74.84	72.62	70.39	69.27
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	27.57	13.04	14.17	14.67	15.18
C5 -420 F	41.91	28.74	49.52	50.14	29.54
420-700 F	26.65	31.58	29.05	28.15	25.21
700-END PT	3.87	26.64	7.26	7.04	30.06

Table V-5 (continued)

FILE: 1257001A TSS4Q1 A1.

C5+-END PT	72.43	86.96	85.83	85.33	84.82
ISO/NORMAL MOLE RATIO					
C4	0.0235	0.0274	0.0223	0.0234	0.0196
C5	0.0680	0.0668	0.0739	0.0723	0.0647
C6	0.3230	0.2728	0.2769	0.2775	0.2732
C4=	0.0607	0.0555	0.0563	0.0584	0.0545
PARAFFIN/OLEFIN RATIO					
C3	0.6581	0.5021	0.4828	0.4463	0.4509
C4	0.5497	0.4600	0.4505	0.4349	0.4318
C5	0.8143	0.7013	0.6893	0.6263	0.6219
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8192	0.8927	0.7605	0.7749	0.8769
RATIO CH4/(1-A)**2	3.7137	4.1138	0.8736	1.0024	3.3856
ALPHA FRM CORRELATION	0.8405	0.8379			0.8376
ALPHA (EXPTL/CORR)	0.9746	1.0654			1.0470
W%CH4 FRM CORRELATION	13.3631	14.1919			14.5097
W%CH4 (EXPTL/CORR)	0.9086	0.3338			0.3534
LIQ HC COLLECTION					
PHYS. APPEARANCE	CLD OIL	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N. REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	303	342			345
16	344	382			398
50	488	600			644
84	647	863			955
90	690	933			1033
RANGE(16-84 %)	303	481			557
WT % @ 420 F	33.00	22.20	50.00	50.00	20.20
WT % @ 700 F	91.50	64.40	90.00	90.00	56.60

Table V-5(continued)

FILE: 1257001B TSS4Q1 A1

C5+-END PT	83.40	84.41	84.70	83.99	76.36
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0193	0.0227	0.0000	0.0176
C5	0.0786	0.0763	0.0665	0.0598	0.0949
C6	0.2729	0.2829	0.2818	0.2643	0.4808
C4=	0.0557	0.0564	0.0535	0.0543	0.0915
PARAFFIN/OLEFIN RATIO					
C3	0.4209	0.4240	0.4437	0.4427	1.0229
C4	0.4093	0.4165	0.4364	0.0400	0.6389
C5	0.5942	0.6167	0.6141	0.6236	1.1240
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.7587	0.7164	0.7586	0.8721	0.8557
RATIO CH4/(1-A)**2	0.9518	0.6385	0.8765	3.5950	5.2453
ALPHA FRM CORRELATION				0.8364	0.8454
ALPHA (EXPTL/CORR)				1.0428	1.0122
W%CH4 FRM CORRELATION				14.8856	16.1995
W%CH4 (EXPTL/CORR)				0.3950	0.6740
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N. REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F				342	300
16				382	341
50				620	540
84				940	801
90				1026	883
RANGE(16-84 %)				558	460
WT % @ 420 F	50.00	50.00	50.00	22.20	31.20
WT % @ 700 F	90.00	90.00	90.00	60.30	73.40

Table V-5 (cont.)

RESULT OF SYNGAS OPERATION

RUN NO.	12570-01				
CATALYST	CO/X11-U103 80 CC 32.0 G AFTER USE:48.7 G (+16.7 G)				
FEED	H2:CO OF 50:50 @400 CC/MN OR 300 GHSV (CAT#12524-7)				
RUN & SAMPLE NO.	12570-01-06	570-01-07	570-01-08	570-01-09	570-01-10
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	140.0	165.0	187.0	211.0	235.0
PRESSURE, PSIG	300	300	300	300	300
TEMP. C	243	243	243	243	262
FEED CC/MIN	400	400	400	400	400
HOURS FEEDING	22.50	25.00	22.00	24.00	24.00
EFFLNT GAS LITER	299.00	333.00	293.00	320.00	270.00
GM AQUEOUS LAYER	38.17	46.85	40.91	45.91	51.78
GM OIL	25.55	31.75	31.21	27.97	32.97
MATERIAL BALANCE					
GM ATOM CARBON %	90.18	92.31	94.77	91.10	92.96
GM ATOM HYDROGEN %	87.49	91.32	94.17	90.41	91.42
GM ATOM OXYGEN %	88.47	90.79	90.49	91.31	91.48
RATIO CHX/(H2O+CO2)	1.0764	1.0626	1.1759	0.9913	1.0466
RATIO X IN CHX	2.2238	2.2181	2.2198	2.2264	2.3388
USAGE H2/CO PRODT	1.8959	1.9185	1.8332	1.9749	1.6597
FEED H2/CO FRM EFFLNT	0.9702	0.9893	0.9937	0.9925	0.9834
RESIDUAL H2/CO RATIO	0.6093	0.6045	0.6077	0.6036	0.4906
RATIO CO2/(H2O+CO2)	0.0539	0.0479	0.0528	0.0490	0.1830
K SHIFT IN EFFLNT	0.0347	0.0304	0.0339	0.0311	0.1099
SPECIFIC ACTIVITY SA	2.4388	2.6022	2.8169	2.4462	1.9462
CONVERSION					
ON CO %	28.05	29.28	31.50	28.36	42.15
ON H2 %	54.82	56.79	58.11	56.43	71.14
ON CO+H2 %	41.23	42.96	44.76	42.34	56.52
PRDT SELECTIVITY, WT %					
CH4	5.54	5.14	5.11	5.88	10.92
C2 HC'S	1.35	1.26	1.49	1.60	2.18
C3H8	1.41	1.34	1.32	1.50	2.51
C3H6=	3.21	3.02	2.85	3.24	2.34
C4H10	1.51	1.46	1.41	0.15	2.27
C4H8=	3.57	3.38	3.12	3.63	3.42
C5H12	1.71	1.61	1.56	1.79	2.59
C5H10=	2.80	2.53	2.47	2.80	2.24
C6H14	2.38	2.02	2.17	2.49	3.91
C6H12= & CYCLO'S	1.75	1.23	1.55	1.86	1.57
C7+ IN GAS	7.79	7.22	6.37	7.79	8.00
LIQ HC'S	66.98	69.79	70.58	67.26	58.05
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	16.60	15.59	15.30	16.01	23.64
C5 -420 F	49.91	49.51	49.41	31.67	36.42
420-700 F	26.79	27.92	28.23	25.62	24.50
700-END PT	6.70	6.98	7.06	26.70	15.44

Table V-5 (cont.)

FILE: 1257001C TSS4Q1 A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-01
 CATALYST CO/X11-U103 80 CC 32.0 G AFTER USE:48.7 G (+16.7 G)
 FEED H2:CO OF 50:50 @400 CC/MN OR 300 GHSV (CAT#12524-7)

RUN & SAMPLE NO.	12570-01-11	570-01-12	570-01-13	570-01-14
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	338.0	357.0	381.5	405.5
PRESSURE, PSIG	300	300	300	300
TEMP. C	262	261	261	261
FEED CC/MIN	400	400	400	400
HOURS FEEDING	103.00	19.00	24.50	24.00
EFFLNT GAS LITER	1163.90	217.00	286.50	280.80
GM AQUEOUS LAYER	219.68	43.27	54.54	54.10
GM OIL	144.66	22.94	34.25	31.12
MATERIAL BALANCE				
GM ATOM CARBON %	91.26	89.17	94.37	91.93
GM ATOM HYDROGEN %	89.29	89.52	94.49	91.73
GM ATOM OXYGEN %	89.90	91.17	91.50	92.14
RATIO CHX/(H2O+CO2)	1.0454	0.9358	1.0938	0.9929
RATIO X IN CHX	2.3199	2.3253	2.2957	2.3204
USAGE H2/CO PRODT	1.7536	1.8636	1.7596	1.8356
FEED H2/CO FRM EFFLNT	0.9784	1.0039	1.0013	0.9978
RESIDUAL H2/CO RATIO	0.4881	0.5014	0.5108	0.5033
RATIO CO2/(H2O+CO2)	0.1378	0.1202	0.1199	0.1162
K SHIFT IN EFFLNT	0.0780	0.0685	0.0696	0.0661
SPECIFIC ACTIVITY SA	1.7390	1.6646	1.7703	1.6528
CONVERSION				
ON CO %	38.74	36.89	39.28	37.12
ON H2 %	69.44	68.48	69.02	68.29
ON CO+H2 %	53.92	52.72	54.16	52.69
PRDT SELECTIVITY, WT %				
CH4	10.06	10.39	8.76	10.05
C2 HC'S	1.95	2.13	1.71	1.91
C3H8	2.16	2.29	2.32	2.21
C3H6=	2.49	2.78	2.75	2.68
C4H10	1.95	2.12	2.18	2.12
C4H8=	3.25	3.59	3.71	3.52
C5H12	2.01	2.42	2.52	2.44
C5H10=	2.11	2.44	2.55	2.49
C6H14	3.18	3.74	3.89	3.78
C6H12= & CYCLO'S	1.32	1.63	1.71	1.65
C7+ IN GAS	6.07	8.02	8.74	7.25
LIQ HC'S	63.45	58.43	59.17	59.90
TOTAL	100.00	100.00	100.00	100.00
SUB-GROUPING				
C1 -C4	21.86	23.31	21.42	22.48
C5 -420 F	32.89	47.48	48.99	36.36
420-700 F	26.33	23.37	23.67	24.20
700-END PT	18.91	5.84	5.92	16.95

Table V-5 (continued)

FILE: 1257001C TSS4Q1 A1

C5+-END PT	78.14	76.69	78.58	77.52
ISO/NORMAL MOLE RATIO				
C4	0.0155	0.0192	0.0177	0.0217
C5	0.0000	0.0857	0.0804	0.0820
C6	0.4909	0.4511	0.4533	0.4555
C4=	0.0791	0.0802	0.0789	0.0812
PARAFFIN/OLEFIN RATIO				
C3	0.8288	0.7865	0.8045	0.7876
C4	0.5790	0.5689	0.5663	0.5807
C5	0.9267	0.9658	0.9641	0.9521
SCHULZ-FLORY DISTRBTN				
ALPHA (EXP(SLOPE))	0.8643	0.7952	0.8064	0.8530
RATIO CH4/(1-A)**2	5.4649	2.4771	2.3365	4.6554
ALPHA FRM CORRELATION	0.8456			0.8442
ALPHA (EXPTL/CORR)	1.0221			1.0105
W%CH4 FRM CORRELATION	16.1244			16.3597
W%CH4 (EXPTL/CORR)	0.6242			0.6145
LIQ HC COLLECTION				
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY				
N. REFRACTIVE INDEX				
SIMULT'D DISTILATN				
10 WT % @ DEG F	315			299
16	347			341
50	545			540
84	832			824
90	904			906
RANGE(16-84 %)	485			483
WT % @ 420 F	28.70	50.00	50.00	31.30
WT % @ 700 F	70.20	90.00	90.00	71.70

Table V-6

FILE: 1257002A SQ4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-01	570-02-02	570-02-03	570-02-04	570-02-05
FEED H2:CO:AR	50:50:0	50:50:0	50:50:0	50:50:0	50:50:0
HRS ON STREAM	19.25	45.25	67.25	91.25	116.25
PRESSURE, PSIG	300.00	300.00	300.00	300.00	300.00
TEMP. C	242.00	241.00	241.00	241.00	241.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	19.25	26.00	22.00	24.00	25.00
EFFLNT GAS LITER	191.90	322.30	279.00	303.00	312.20
GM AQUEOUS LAYER	52.46	53.36	43.72	48.23	51.47
GM OIL	6.61	44.41	38.12	39.61	39.61
MATERIAL BALANCE					
GM ATOM CARBON %	62.47	94.59	95.97	94.77	93.25
GM ATOM HYDROGEN %	70.58	92.45	93.33	92.18	91.62
GM ATOM OXYGEN %	87.12	91.43	91.64	91.59	91.26
RATIO CHX/(H2O+CO2)	0.2877	1.1173	1.1661	1.1214	1.0743
RATIO X IN CHX	2.2874	2.1782	2.1796	2.1863	2.1886
USAGE H2/CO PRODT	3.5325	1.8061	1.7906	1.8311	1.8703
FEED H2/CO FRM EFFLNT	1.1299	0.9774	0.9725	0.9726	0.9825
RESIDUAL H2/CO RATIO	0.5383	0.5534	0.5616	0.5562	0.5574
RATIO CO2/(H2O+CO2)	0.0690	0.0709	0.0655	0.0609	0.0579
K SHIFT IN EFFLNT	0.0399	0.0422	0.0394	0.0361	0.0343
SPECIFIC ACTIVITY SA	1.6779	3.3151	3.2483	3.1958	3.1022
CONVERSION					
ON CO %	19.76	33.84	33.44	32.67	32.38
ON H2 %	61.77	62.54	61.56	61.50	61.64
ON CO+H2 %	42.04	48.03	47.30	46.88	46.88
PRDT SELECTIVITY, WT %					
CH4	9.74	3.55	3.55	3.76	3.76
C2 HC'S	1.48	0.04	0.00	0.59	0.73
C3H8	1.53	0.58	0.60	0.62	0.66
C3H6=	3.60	1.59	1.59	1.66	1.72
C4H10	1.78	0.71	0.71	0.76	0.81
C4H8=	4.60	1.85	1.91	1.93	2.12
C5H12	2.30	0.84	0.90	0.92	1.02
C5H10=	3.75	1.59	1.62	1.66	1.81
C6H14	3.59	1.31	1.44	1.52	1.61
C6H12= & CYCLO'S	2.90	1.21	1.20	1.23	1.21
C7+ IN GAS	15.92	5.86	5.20	5.27	5.76
LIQ HC'S	48.80	80.88	81.29	80.07	78.78
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	22.75	8.32	8.35	9.33	9.80
C5 -420 F	47.63	27.05			28.12
420-700 F	25.57	32.92			31.20
700-END PT	4.05	31.71			30.88

Table V-6 (continued)

FILE: 1257002A SQ4

A1

C5+-END PT	77.25	91.68	91.65	90.67	90.20
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0000	0.0000	0.0000	0.0000
C5	0.0368	0.0000	0.0435	0.0273	0.0455
C6	0.2751	0.1853	0.2594	0.2449	0.2398
C4=	0.0305	0.0210	0.0288	0.0223	0.0316
PARAFFIN/OLEFIN RATIO					
C3	0.4059	0.3453	0.3623	0.3569	0.3651
C4	0.3735	0.3714	0.3592	0.3791	0.3677
C5	0.5968	0.5151	0.5432	0.5416	0.5498
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8049	0.9113	0.8375	0.8359	0.9026
RATIO CH4/(1-A)**2	2.5592	4.5105	1.3434	1.3944	3.9689
ALPHA FRM CORRELATION	0.8420	0.8407			0.8404
ALPHA (EXPTL/CORR)	0.9559	1.0840			1.0741
W%CH4 FRM CORRELATION	12.9128	13.0873			13.1959
W%CH4 (EXPTL/CORR)	0.7546	0.2709			0.2851
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	309.00	341.00			338.00
16	338.00	406.00			380.00
50	458.00	631.00			615.00
84	613.00	875.00			887.00
90	676.00	940.00			953.00
RANGE(16-84 %)	275.00	469.00			507.00
WT % @ 420 F	39.30	20.10			21.20
WT % @ 700 F	91.80	60.80			60.80

Table V-6 (cont.)

FILE: 1257002B 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE: 56.0 G (+18.6 G)
 FEED H₂:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-06	570-02-07	570-02-08	570-02-09	570-02-10
FEED H ₂ :CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	140.25	164.25	188.25	212.25	235.25
PRESSURE, PSIG	300.00	300.00	300.00	300.00	300.00
TEMP. C	241.00	241.00	241.00	241.00	241.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	24.00	24.00	24.00	24.00	23.00
EFFLNT GAS LITER	300.00	302.70	302.80	308.30	316.10
GM AQUEOUS LAYER	50.00	49.30	46.33	42.70	47.32
GM OIL	38.71	37.23	40.25	44.63	38.55
MATERIAL BALANCE					
GM ATOM CARBON %	93.63	93.49	94.08	98.16	100.39
GM ATOM HYDROGEN %	92.46	92.01	92.38	94.74	98.00
GM ATOM OXYGEN %	91.43	91.68	89.59	88.95	97.00
RATIO CHX/(H ₂ O+CO ₂)	1.0822	1.0679	1.1792	1.3933	1.1262
RATIO X IN CHX	2.1825	2.1884	2.1796	2.1768	2.1815
USAGE H ₂ /CO PRODT	1.8708	1.8678	1.8064	1.6909	1.8363
FEED H ₂ /CO FRM EFFLNT	0.9874	0.9841	0.9819	0.9651	0.9762
RESIDUAL H ₂ /CO RATIO	0.5600	0.5637	0.5775	0.5797	0.5789
RATIO CO ₂ /(H ₂ O+CO ₂)	0.0545	0.0606	0.0552	0.0597	0.0565
K SHIFT IN EFFLNT	0.0323	0.0364	0.0338	0.0368	0.0347
SPECIFIC ACTIVITY SA	3.1407	3.0815	3.0128	3.2664	2.8993
CONVERSION					
ON CO %	32.61	32.24	32.91	34.68	31.60
ON H ₂ %	61.78	61.19	60.54	60.77	59.44
ON CO+H ₂ %	47.10	46.60	46.60	47.49	45.35
PRDT SELECTIVITY, WT %					
CH ₄	3.64	3.85	3.41	3.13	3.65
C ₂ HC'S	0.24	0.61	0.22	0.62	0.27
C ₃ H ₈	0.65	0.72	0.62	0.58	0.66
C ₃ H ₆ =	1.71	1.91	1.77	1.64	1.86
C ₄ H ₁₀	0.80	0.87	0.77	0.72	0.82
C ₄ H ₈ =	2.08	2.21	2.12	1.99	2.21
C ₅ H ₁₂	1.00	1.10	0.96	0.90	1.02
C ₅ H ₁₀ =	1.76	1.88	1.72	1.60	1.82
C ₆ H ₁₄	1.62	1.68	1.53	1.43	1.56
C ₆ H ₁₂ = & CYCLO'S	1.34	1.32	1.27	1.21	1.30
C ₇ + IN GAS	6.10	6.38	4.80	4.98	5.75
LIQ HC'S	79.07	77.48	80.82	81.20	79.08
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C ₁ -C ₄	9.12	10.17	8.90	8.67	9.47
C ₅ -420 F			23.45		
420-700 F			30.06		
700-END PT			37.58		

Table V-6(continued)

FILE: 1257002B 5Q4

A1

C5+-END PT	90.88	89.83	91.10	91.33	90.53
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0000	0.0000	0.0000	0.0000
C5	0.0422	0.0258	0.0226	0.0338	0.0384
C6	0.2443	0.2016	0.2565	0.2453	0.2309
C4=	0.0285	0.0205	0.0191	0.0234	0.0272
PARAFFIN/OLEFIN RATIO					
C3	0.3653	0.3593	0.3341	0.3364	0.3385
C4	0.3715	0.3783	0.3499	0.3465	0.3589
C5	0.5547	0.5682	0.5403	0.5439	0.5448
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8465	0.8233	0.9056	0.8312	0.8202
RATIO CH4/(1-A)**2	1.5435	1.2335	3.8286	1.0975	1.1294
ALPHA FRM CORRELATION			0.8386		
ALPHA (EXPTL/CORR)			1.0799		
W%CH4 FRM CORRELATION			13.7296		
W%CH4 (EXPTL/CORR)			0.2483		
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F			374.00		
16			415.00		
50			671.00		
84			963.00		
90			0.00		
RANGE(16-84 %)			548.00		
WT % @ 420 F			16.30		
WT % @ 700 F			53.50		

Table V-6 (cont.)

FILE: 1257002C SQ4

A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-02				
CATALYST	CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)				
FEED	H2:CO OF 60:40 @ 400 CC/MN OR 00 GHSV (CAT#12524-18)				
RUN & SAMPLE NO.	12570-02-11	570-02-12	570-02-13	570-02-14	570-02-15
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	259.25	282.75	307.25	331.25	403.75
PRESSURE, PSIG	300.00	300.00	300.00	300.00	300.00
TEMP. C	241.00	241.00	241.00	241.00	242.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	24.00	20.00	24.50	24.00	72.50
EFFLNT GAS LITER	301.40	207.74	234.00	238.90	718.90
GM AQUEOUS LAYER	48.77	50.15	65.42	65.38	199.26
GM OIL	37.86	36.61	50.97	43.04	131.75
MATERIAL BALANCE					
GM ATOM CARBON %	92.37	96.34	95.87	93.24	93.20
GM ATOM HYDROGEN %	92.00	91.34	92.69	90.62	90.85
GM ATOM OXYGEN %	90.14	91.33	88.73	92.12	92.27
RATIO CHX/(H2O+CO2)	1.0855	1.1264	1.1729	1.0265	1.0217
RATIO X IN CHX	2.1809	2.2675	2.2371	2.2526	2.2651
USAGE H2/CO PRODT	1.8881	1.8738	1.8599	1.9714	1.9821
FEED H2/CO FRM EFFLNT	0.9960	1.4222	1.4502	1.4579	1.4623
RESIDUAL H2/CO RATIO	0.5779	0.9942	0.9977	0.9763	0.9714
RATIO CO2/(H2O+CO2)	0.0464	0.0579	0.0456	0.0446	0.0443
K SHIFT IN EFFLNT	0.0281	0.0611	0.0477	0.0456	0.0450
SPECIFIC ACTIVITY SA	2.8883	2.3125	2.5927	2.3703	2.2618
CONVERSION					
ON CO %	31.91	48.66	52.48	48.40	48.57
ON H2 %	60.50	64.11	67.31	65.44	65.83
ON CO+H2 %	46.17	57.73	61.26	58.51	58.82
PRDT SELECTIVITY, WT %					
CH4	3.39	7.30	5.72	6.48	7.13
C2 HC'S	0.71	1.06	0.96	1.15	1.17
C3H8	0.62	1.72	1.48	1.58	1.54
C3H6=	1.92	1.27	1.22	1.37	1.33
C4H10	0.76	1.79	1.49	1.69	1.66
C4H8=	2.28	1.66	1.48	1.77	1.77
C5H12	0.93	1.99	1.71	1.92	1.92
C5H10=	1.82	1.18	1.07	1.31	1.30
C6H14	1.40	2.63	2.32	2.68	2.68
C6H12= & CYCLO'S	0.98	0.61	0.61	0.70	0.77
C7+ IN GAS	5.64	6.11	5.72	5.83	4.56
LIQ HC'S	79.54	72.69	76.22	73.51	74.18
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	9.68	14.79	12.35	14.05	14.60
C5 -420 F	26.05	28.80	29.87		
420-700 F	29.67	26.61	29.42		
700-END PT	34.60	29.80	28.35		

Table V-6 (continued)

FILE: 1257002C 5Q4

A1

C5+-END PT	90.32	85.21	87.65	85.95	85.40
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0142	0.0150	0.0142	0.0139
C5	0.0414	0.0513	0.0561	0.0556	0.0483
C6	0.2604	0.2183	0.2217	0.2308	0.2404
C4=	0.0212	0.0626	0.0620	0.0620	0.0580
PARAFFIN/OLEFIN RATIO					
C3	0.3077	1.2890	1.1559	1.1017	1.0983
C4	0.3243	1.0399	0.9708	0.9230	0.9059
C5	0.4931	1.6426	1.5461	1.4274	1.4322
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8970	0.8868	0.8920	0.8213	0.8335
RATIO CH4/(1-A)**2	3.1923	5.6968	4.9108	2.0284	2.5718
ALPHA FRM CORRELATION	0.8386	0.8122	0.8120		
ALPHA (EXPTL/CORR)	1.0696	1.0919	1.0986		
W%CH4 FRM CORRELATION	13.7397	21.9415	21.9940		
W%CH4 (EXPTL/CORR)	0.2466	0.3326	0.2602		
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N. REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	345.00	335.00	334.00		
16	409.00	377.00	373.00		
50	647.00	620.00	596.00		
84	949.00	936.00	902.00		
90	0.00	0.00	985.00		
RANGE(16-84 %)	540.00	559.00	529.00		
WT % @ 420 F	19.20	22.40	24.20		
WT % @ 700 F	56.50	59.00	62.80		

Table V-6 (cont.)

FILE: 1257002D 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-16	570-02-17	570-02-18	570-02-19	570-02-20
FEED H2:CO:AR	60:40: 0	60:40: 0	64:36: 0	64:36: 0	64:36: 0
HRS ON STREAM	429.75	475.25	499.25	522.50	549.00
PRESSURE, PSIG	300.00	300.00	300.00	300.00	300.00
TEMP. C	240.00	240.00	240.00	240.00	240.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	26.00	45.50	22.00	22.75	26.50
EFFLNT GAS LITER	258.30	461.90	212.30	216.70	249.70
GM AQUEOUS LAYER	70.42	120.61	61.20	63.66	74.94
GM OIL	49.55	83.06	38.24	35.49	43.67
MATERIAL BALANCE					
GM ATOM CARBON %	94.33	93.94	98.91	92.06	93.37
GM ATOM HYDROGEN %	92.05	91.35	92.79	88.65	89.39
GM ATOM OXYGEN %	90.85	90.99	92.40	92.42	92.44
RATIO CHX/(H2O+CO2)	1.0839	1.0725	1.1365	0.9924	1.0192
RATIO X IN CHX	2.2420	2.2456	2.3420	2.3673	2.3532
USAGE H2/CO PRODT	1.9438	1.9576	1.9362	2.0542	2.0318
FEED H2/CO FRM EFFLNT	1.4637	1.4587	1.6678	1.7119	1.7021
RESIDUAL H2/CO RATIO	0.9957	0.9982	1.3133	1.3105	1.3012
RATIO CO2/(H2O+CO2)	0.0368	0.0354	0.0444	0.0445	0.0424
K SHIFT IN EFFLNT	0.0380	0.0366	0.0610	0.0611	0.0576
SPECIFIC ACTIVITY SA	2.5240	2.3634	3.2404	1.9570	2.0406
CONVERSION					
ON CO %	49.36	48.00	56.91	53.97	54.88
ON H2 %	65.55	64.41	66.07	64.77	65.51
ON CO+H2 %	58.98	57.74	62.64	60.79	61.58
PRDT SELECTIVITY, WT %					
CH4	5.95	6.13	11.16	12.09	11.45
C2 HC'S	0.96	1.11	1.42	1.56	1.44
C3H8	1.51	1.55	2.25	2.47	2.33
C3H6=	1.42	1.48	0.82	0.93	0.88
C4H10	1.61	1.63	2.43	2.65	2.51
C4H8=	1.81	1.84	1.22	1.40	1.30
C5H12	1.82	1.84	2.70	2.98	2.82
C5H10=	1.21	1.23	0.73	0.84	0.81
C6H14	2.55	2.64	3.60	4.01	3.82
C6H12= & CYCLO'S	0.79	0.83	5.12	0.72	0.54
C7+ IN GAS	5.31	5.55	5.76	6.26	6.59
LIQ HC'S	75.06	74.17	62.79	64.09	65.51
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	13.26	13.74	19.31	21.10	19.91
C5 -420 F		29.23			
420-700 F		27.96			
700-END PT		29.07			

Table V-6(continued)

FILE: 1257002D 5Q4

A1

C5+-END PT	86.74	86.26	80.69	78.90	80.09
ISO/NORMAL MOLE RATIO					
C4	0.0138	0.0143	0.0196	0.0189	0.0176
C5	0.0410	0.0397	0.0537	0.0528	0.0529
C6	0.2404	0.2351	0.1886	0.1922	0.2003
C4=	0.0584	0.0565	0.1021	0.0990	0.0931
PARAFFIN/OLEFIN RATIO					
C3	1.0135	0.9995	2.6066	2.5428	2.5342
C4	0.8580	0.8558	1.9175	1.8260	1.8684
C5	1.4599	1.4525	3.6093	3.4518	3.4003
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8152	0.8869	1.0793	0.8722	0.8666
RATIO CH4/(1-A)**2	1.7419	4.7885	17.7392	7.4099	6.4362
ALPHA FRM CORRELATION		0.8120			
ALPHA (EXPTL/CORR)		1.0922			
W%CH4 FRM CORRELATION		21.7567			
W%CH4 (EXPTL/CORR)		0.2817			
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		337.00			
16		378.00			
50		616.00			
84		917.00			
90		0.00			
RANGE(16-84 %)		539.00			
WT % @ 420 F		23.10			
WT % @ 700 F		60.80			

Table V-6 (cont.)

FILE: 1257002E 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 64:36 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-21	570-02-22	570-02-23	57002.24	570-02-25
FEED H2:CO:AR	64:36:0	64:36:0	64:36:0	64:36:0	64:36:0
HRS ON STREAM	571.75	595.75	619.75	643.75	668.25
PRESSURE, PSIG	300.00	500.00	500.00	500.00	500.00
TEMP., C	240.00	239.00	239.00	239.00	239.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	22.75	24.00	24.00	24.00	24.50
EFFLNT GAS LITER	211.20	177.60	178.80	185.20	192.60
GM AQUEOUS LAYER	62.81	74.80	80.65	78.04	77.83
GM OIL	39.06	53.44	52.43	54.36	52.73
MATERIAL BALANCE					
GM ATOM CARBON %	93.88	95.16	93.40	96.46	94.82
GM ATOM HYDROGEN %	89.03	88.56	90.04	91.54	90.07
GM ATOM OXYGEN %	90.76	89.14	92.60	91.71	91.16
RATIO CHX/(H2O+CO2)	1.0659	1.1150	1.0143	1.0880	1.0693
RATIO X IN CHX	2.3536	2.2712	2.2697	2.2661	2.2726
USAGE H2/CO PRODT	1.9890	1.9276	2.0276	1.9722	1.9921
FEED H2/CO FRM EFFLNT	1.6859	1.6545	1.7137	1.6870	1.6888
RESIDUAL H2/CO RATIO	1.3013	1.1778	1.1902	1.2097	1.2112
RATIO CO2/(H2O+CO2)	0.0449	0.0400	0.0312	0.0293	0.0284
K SHIFT IN EFFLNT	0.0612	0.0490	0.0383	0.0365	0.0354
SPECIFIC ACTIVITY SA	2.1138	1.8529	1.7454	1.7614	1.6732
CONVERSION					
ON CO %	55.93	63.57	62.51	62.60	61.16
ON H2 %	65.99	74.07	73.96	73.18	72.14
ON CO+H2 %	62.24	70.11	69.74	69.24	68.05
PRDT SELECTIVITY, WT %					
CH4	11.49	7.18	7.14	6.88	7.22
C2 HC'S	1.47	1.06	1.12	1.12	1.12
C3H8	2.34	1.83	1.79	1.86	1.94
C3H6=	0.90	0.97	1.01	1.11	1.13
C4H10	2.45	1.95	1.84	1.89	1.97
C4H8=	1.29	1.32	1.33	1.41	1.47
C5H12	2.70	2.12	2.00	2.06	2.12
C5H10=	0.77	0.81	0.81	0.86	0.88
C6H14	3.53	2.80	2.55	2.68	2.70
C6H12= & CYCLO'S	0.50	0.65	0.61	0.54	0.56
C7+ IN GAS	5.93	4.31	3.92	3.80	3.95
LIQ HC'S	66.64	74.99	75.86	75.79	74.93
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	19.94	14.32	14.24	14.26	14.86
C5 -420 F	31.48	29.51	28.33		
420-700 F	26.39	26.10	27.84		
700-END PT	22.19	30.07	29.59		

Table V-6(continued)

FILE: 1257002E 5Q4

A1

C5+-END PT	80.06	85.68	85.76	85.74	85.14
ISO/NORMAL MOLE RATIO					
C4	0.0186	0.0156	0.0155	0.0167	0.0154
C5	0.0560	0.0384	0.0400	0.0400	0.0365
C6	0.2007	0.1719	0.1821	0.1751	0.1795
C4=	0.0962	0.0672	0.0673	0.0681	0.0679
PARAFFIN/OLEFIN RATIO					
C3	2.4813	1.7936	1.6948	1.6041	1.6314
C4	1.8388	1.4234	1.3364	1.2937	1.2892
C5	3.4248	2.5423	2.4113	2.3280	2.3481
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8762	0.8882	0.8886	0.8047	0.7980
RATIO CH4/(1-A)**2	7.5026	5.7439	5.7600	1.8035	1.7700
ALPHA FRM CORRELATION	0.7991	0.8040	0.8035		
ALPHA (EXPTL/CORR)	1.0965	1.1046	1.1059		
W%CH4 FRM CORRELATION	25.7637	24.0113	24.1699		
W%CH4 (EXPTL/CORR)	0.4462	0.2992	0.2955		
LIQ HC COLLECTION					
PHYS. APPEARANCE					
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	333.00	298.00	330.00		
16	370.00	363.00	373.00		
50	569.00	618.00	614.00		
84	869.00	931.00	925.00		
90	953.00	0.00	0.00		
RANGE(16-84 %)	499.00	568.00	552.00		
WT % @ 420 F	27.10	25.10	24.30		
WT % @ 700 F	66.70	59.90	61.00		

Table V-6 (cont.)

FILE: 1257002F 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-02				
CATALYST	CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)				
FEED	H2:CO OF 64:36 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)				
RUN & SAMPLE NO.	12570-02-27	570-02-28	570-02-29	570-02-30	570-02-31
	=====	=====	=====	=====	=====
FEED H2:CO:AR	64:36: 0	64:36: 0	64:36: 0	64:36: 0	64:36: 0
HRS ON STREAM	740.75	763.75	787.75	811.75	835.75
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	239.00	239.00	239.00	239.00	239.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	20.75	23.00	24.00	24.00	24.00
EFFLNT GAS LITER	169.30	181.60	197.60	200.00	200.90
GM AQUEOUS LAYER	67.64	73.19	75.37	74.42	73.41
GM OIL	42.56	55.61	56.01	54.40	57.81
MATERIAL BALANCE					
GM ATOM CARBON %	93.73	99.41	98.99	98.25	100.94
GM ATOM HYDROGEN %	90.36	92.87	92.82	92.16	93.45
GM ATOM OXYGEN %	94.17	91.35	92.16	91.94	91.37
RATIO CHX/(H2O+CO2)	0.9919	1.1528	1.1311	1.1226	1.1886
RATIO X IN CHX	2.2826	2.2533	2.2628	2.2652	2.2557
ULAGE H2/CO PRDCT	2.0588	1.9294	1.9513	1.9600	1.9140
FEED H2/CO FRM EFFLNT	1.7139	1.6609	1.6669	1.6676	1.6457
RESIDUAL H2/CO RATIO	1.2145	1.2126	1.2248	1.2273	1.2283
RATIO CO2/(H2O+CO2)	0.0294	0.0255	0.0246	0.0240	0.0225
K SHIFT IN EFFLNT	0.0368	0.0317	0.0309	0.0302	0.0283
SPECIFIC ACTIVITY SA	1.5064	1.7449	1.6212	1.5749	1.5881
CONVERSION					
ON CO %	59.15	62.54	60.86	60.09	60.88
ON H2 %	71.05	72.65	71.24	70.62	70.80
ON CO+H2 %	66.67	68.85	67.35	66.67	67.05
PRDCT SELECTIVITY, WT %					
CH4	7.78	6.37	6.74	6.91	6.48
C2 HC'S	1.13	0.87	1.03	1.03	0.94
C3H8	1.93	1.59	1.68	1.71	1.59
C3H6=	1.05	0.90	0.96	0.98	0.94
C4H10	1.93	1.64	1.75	1.75	1.63
C4H8=	1.32	1.16	1.20	1.26	1.18
C5H12	2.08	1.84	1.96	1.95	1.78
C5H10=	0.77	0.71	0.77	0.76	0.70
C6H14	2.80	2.46	2.56	2.61	2.36
C6H12= & CYCLO'S	0.49	0.47	0.50	0.50	0.47
C7+ IN GAS	3.86	3.70	2.96	3.36	3.28
LIQ HC'S	74.86	78.29	77.90	77.17	78.64
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	15.13	12.53	13.36	13.64	12.77
C5 -420 F	24.38				27.62
420-700 F	29.05				24.93
700-END PT	31.44				34.68

Table V-6

FILE: 1257002F 5Q4

A1

CS+-END PT	84.87	87.47	86.64	86.36	87.23
ISO/NORMAL MOLE RATIO					
C4	0.0181	0.0183	0.0174	0.0203	0.0198
C5	0.0427	0.0411	0.0410	0.0365	0.0373
C6	0.1714	0.1719	0.1790	0.1723	0.1636
C4=	0.0736	0.0731	0.0481	0.0660	0.0670
PARAFFIN/OLEFIN RATIO					
C3	1.7493	1.6747	1.6769	1.6688	1.6230
C4	1.4039	1.3596	1.4021	1.3417	1.3349
C5	2.6167	2.5065	2.4865	2.4772	2.4661
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8960	0.8262	0.8237	0.8211	0.8880
RATIO CH4/(1-A)**2	7.1875	2.1084	2.1690	2.1605	5.1678
ALPHA FRM CORRELATION	0.8025				0.8020
ALPHA (EXPTL/CORR)	1.1164				1.1073
W%CH4 FRM CORRELATION	24.4746				24.6452
W%CH4 (EXPTL/CORR)	0.3178				0.2630
LIQ HC COLLECTION					
PHYS. APPEARANCE					
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	369.00				293.00
16	410.00				359.00
50	640.00				643.00
84	939.00				984.00
90	0.00				0.00
RANGE(16-84 %)	529.00				625.00
WT % @ 420 F	19.20				24.20
WT % @ 700 F	58.00				55.90

Table V-6 (cont.)

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 64:36 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-32	570-02-33	570-02-34	570-02-35	570-02-36
FEED H2:CO:AR	64:36: 0	64:36: 0	64:36: 0	65:35: 0	65:35: 0
HRS ON STREAM	853.75	876.75	902.25	924.25	949.25
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	239.00	239.00	239.00	239.00	239.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	18.00	23.00	25.50	17.50	25.00
EFFLNT GAS LITER	155.30	195.50	217.40	143.70	209.00
GM AQUEOUS LAYER	47.52	65.27	77.21	53.86	76.17
GM OIL	33.38	54.23	58.59	37.50	51.22
MATERIAL BALANCE					
GM ATOM CARBON %	91.60	101.27	100.22	96.54	94.75
GM ATOM HYDROGEN %	84.27	91.22	92.32	90.87	89.88
GM ATOM OXYGEN %	86.10	89.18	92.12	90.75	90.88
RATIO CHX/(H2O+CO2)	1.1249	1.2553	1.1612	1.1104	1.0744
RATIO X IN CHX	2.2958	2.2689	2.2674	2.3052	2.3142
USAGE H2/CO PRODT	1.9790	1.8727	1.9391	1.9925	2.0256
FEED H2/CO FRM EFFLNT	1.6354	1.6013	1.6376	1.7481	1.7617
RESIDUAL H2/CO RATIO	1.2123	1.1954	1.1978	1.3566	1.3635
RATIO CO2/(H2O+CO2)	0.0218	0.0255	0.0221	0.0225	0.0221
K SHIFT IN EFFLNT	0.0271	0.0313	0.0270	0.0313	0.0308
SPECIFIC ACTIVITY SA	1.3670	1.6496	1.5569	1.4113	1.3637
CONVERSION					
ON CO %	55.18	59.93	59.33	61.57	60.14
ON H2 %	66.78	70.09	70.25	70.18	69.15
ON CO+H2 %	62.38	66.18	66.11	67.04	65.89
PRDT SELECTIVITY, WT %					
CH4	8.42	7.15	7.06	9.01	9.39
C2 HC'S	1.11	0.93	0.96	1.08	1.19
C3H8	2.11	1.74	1.74	1.97	2.07
C3H6=	1.12	0.93	0.98	0.81	0.88
C4H10	2.10	1.75	1.74	2.00	2.08
C4H8=	1.47	1.25	1.21	1.05	1.16
C5H12	2.25	1.84	1.85	2.13	2.20
C5H10=	0.78	0.67	0.70	0.59	0.62
C6H14	2.97	2.37	2.55	2.90	2.83
C6H12= & CYCLO'S	0.53	0.45	0.44	0.41	0.42
C7+ IN GAS	3.70	2.94	3.31	3.81	3.14
LIQ HC'S	73.43	77.98	77.46	74.24	74.01
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	16.33	13.75	13.69	15.92	16.78
C5 -420 F			24.50	26.24	
420-700 F			25.41	25.09	
700-END PT			36.41	32.74	

Table V-6(continued)

FILE: 1257002G 5Q4 A1

C5+-END PT	83.67	86.25	86.31	84.08	83.22
ISO/NORMAL MOLE RATIO					
C4	0.0215	0.0190	0.0192	0.0200	0.0199
C5	0.0391	0.0368	0.0378	0.0375	0.0392
C6	0.1664	0.1780	0.1678	0.1506	0.1533
C4=	0.0759	0.0785	0.0689	0.0786	0.0806
PARAFFIN/OLEFIN RATIO					
C3	1.8007	1.7755	1.6856	2.3375	2.2372
C4	1.3742	1.3478	1.3958	1.8389	1.7276
C5	2.8132	2.6679	2.5693	3.4918	3.4400
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8011	0.7930	0.8961	0.8900	0.8062
RATIO CH4/(1-A)**2	2.1286	1.6680	6.5397	7.4489	2.5010
ALPHA FRM CORRELATION			0.8032	0.7971	
ALPHA (EXPTL/CORR)			1.1156	1.1165	
W%CH4 FRM CORRELATION			24.2661	26.1474	
W%CH4 (EXPTL/CORR)			0.2910	0.3445	
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F			336.00	335.00	
16			380.00	378.00	
50			665.00	646.00	
84			0.00	985.00	
90			0.00	0.00	
RANGE(16-84 %)			590.00	607.00	
WT % @ 420 F			20.20	22.10	
WT % @ 700 F			53.00	55.90	

Table V-6 (cont.)

FILE: 1257002H 5Q4

A1 .

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 65:35 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-37	570-02-38	570-02-39	570-02-40	570-02-41
FEED H2:CO:AR	65:35: 0	65:35: 0	65:35: 0	65:35: 0	65:35: 0
HRS ON STREAM	1068.25	1093.25	1118.25	1142.75	1166.25
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	239.00	239.00	239.00	239.00	239.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	119.00	25.00	25.00	25.50	23.50
EFFLNT GAS LITER	949.30	221.50	231.50	204.50	201.30
GM AQUEOUS LAYER	352.83	74.40	72.37	72.34	68.83
GM OIL	260.44	52.99	53.52	52.15	50.44
MATERIAL BALANCE					
GM ATOM CARBON %	95.56	98.82	105.14	92.97	99.59
GM ATOM HYDROGEN %	88.91	92.33	95.09	86.52	91.81
GM ATOM OXYGEN %	87.76	91.92	92.92	85.77	89.75
RATIO CHX/(H2O+CO2)	1.1548	1.1356	1.2457	1.1488	1.1967
RATIO X IN CHX	2.2906	2.3063	2.3051	2.2993	2.3017
USAGE H2/CO PRODT	1.9606	1.9792	1.9014	1.9565	1.9342
FEED H2/CO FRM EFFLNT	1.7278	1.7351	1.6796	1.7282	1.7121
RESIDUAL H2/CO RATIO	1.3487	1.3765	1.3466	1.3577	1.3618
RATIO CO2/(H2O+CO2)	0.0198	0.0208	0.0231	0.0208	0.0213
K SHIFT IN EFFLNT	0.0272	0.0292	0.0319	0.0288	0.0297
SPECIFIC ACTIVITY SA	1.4793	1.2894	1.3911	1.3766	1.4485
CONVERSION					
ON CO %	61.96	59.51	60.02	60.86	61.20
ON H2 %	70.31	67.88	67.94	69.25	69.14
ON CO+H2 %	67.25	64.82	64.99	66.17	66.21
PRDT SELECTIVITY, WT %					
CH4	8.24	9.06	9.08	8.69	8.85
C2 HC'S	1.10	1.14	1.19	1.21	1.19
C3H8	1.84	2.00	2.07	1.92	2.07
C3H6=	0.85	0.99	0.92	0.86	0.88
C4H10	1.87	2.02	2.20	1.97	2.21
C4H8=	1.13	1.25	1.27	1.17	1.30
C5H12	2.01	2.10	2.51	2.17	2.54
C5H10=	0.58	0.58	0.69	0.60	0.69
C6H14	2.65	2.81	3.05	2.64	2.29
C6H12= & CYCLO'S	0.32	0.34	0.26	0.27	0.07
C7+ IN GAS	3.47	3.64	7.01	4.19	5.55
LIQ HC'S	75.95	74.07	69.74	74.30	72.36
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	15.03	16.46	16.73	15.83	16.49
C5 -420 F		25.84		27.77	
420-700 F		27.33		27.42	
700-END PT		30.37		28.98	

Table V-6 (continued)

FILE: 1257002H 5Q4

A1

C5+-END PT	84.97	83.54	83.27	84.17	83.51
ISO/NORMAL MOLE RATIO					
C4	0.0197	0.0201	0.0199	0.0198	0.0193
C5	0.0410	0.0414	0.0392	0.0378	0.0396
C6	0.1524	0.1508	0.1566	0.1518	0.2156
C4=	0.0748	0.0813	0.0722	0.0760	0.0780
PARAFFIN/OLEFIN RATIO					
C3	2.0639	1.9249	2.1549	2.1220	2.2363
C4	1.5971	1.5521	1.6684	1.6242	1.6367
C5	3.3939	3.5478	3.5388	3.5081	3.5644
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8060	0.8913	0.8124	0.8912	0.7378
RATIO CH4/(1-A)**2	2.1892	7.6674	2.5787	7.3405	1.2877
ALPHA FRM CORRELATION		0.7964		0.7971	
ALPHA (EXPTL/CORR)		1.1191		1.1180	
W%CH4 FRM CORRELATION		26.3669		26.1598	
W%CH4 (EXPTL/CORR)		0.3434		0.3324	
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		336.00		334.00	
16		378.00		373.00	
50		622.00		613.00	
84		939.00		923.00	
90		0.00		0.00	
RANGE(16-84 %)		561.00		550.00	
WT % @ 420 F		22.10		24.10	
WT % @ 700 F		59.00		61.00	

Table V-6 (cont.)

FILE: 12570021 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AAFter USE:56.0 G (+18.6 G)
 FEED H2:CO OF 65:35 @ 400 OR 833 CC/MN (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-42	570-02-43	570-02-44	570-02-45	570-02-46
FEED H2:CO:AR	65:35: 0	65:35: 0	65:35: 0	64:36: 0	64:36: 0
HRS ON STREAM	1186.75	1211.75	1236.75	1255.75	1303.75
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	239.00	239.00	239.00	240.00	240.00
FEED CC/MIN	400.00	400.00	400.00	833.00	833.00
HOURS FEEDING	20.50	25.00	25.50	19.00	48.00
EFFLNT GAS LITER	180.10	224.80	233.90	567.60	1470.90
GM AQUEOUS LAYER	58.93	73.16	75.61	60.60	124.22
GM OIL	44.61	52.43	54.02	38.96	90.01
MATERIAL BALANCE					
GM ATOM CARBON %	98.24	98.45	101.08	98.73	99.52
GM ATOM HYDROGEN %	91.74	92.30	93.55	81.88	80.12
GM ATOM OXYGEN %	89.32	91.40	93.65	98.86	96.17
RATIO CHX/(H2O+CO2)	1.1815	1.1406	1.1463	0.9952	1.1467
RATIO X IN CHX	2.3082	2.3208	2.3273	2.2998	2.3000
USAGE H2/CO PRODT	1.9492	1.9818	1.9793	2.1371	2.0049
FEED H2/CO FRM EFFLNT	1.7342	1.7411	1.7188	1.4744	1.4312
RESIDUAL H2/CO RATIO	1.4098	1.3932	1.3484	1.2219	1.2254
RATIO CO2/(H2O+CO2)	0.0206	0.0212	0.0218	0.0056	0.0065
K SHIFT IN EFFLNT	0.0296	0.0301	0.0301	0.0069	0.0081
SPECIFIC ACTIVITY SA	1.3324	1.3036	1.3453	0.9887	0.9438
CONVERSION					
ON CO %	60.15	59.11	58.71	27.59	26.41
ON H2 %	67.61	67.28	67.60	39.99	36.99
ON CO+H2 %	64.88	64.30	64.33	34.98	32.64
PRDT SELECTIVITY, WT %					
CH4	9.15	9.77	10.16	8.99	8.95
C2 HC'S	1.24	1.22	1.21	1.11	1.40
C3H8	1.97	2.12	2.14	1.98	1.98
C3H6=	0.88	0.93	0.93	1.80	2.02
C4H10	2.05	2.20	2.17	2.07	2.11
C4H8=	1.20	1.28	1.26	1.93	2.16
C5H12	2.20	2.39	2.32	2.20	2.37
C5H10=	0.61	0.65	0.63	1.09	1.36
C6H14	2.03	2.19	2.32	2.20	3.10
C6H12= & CYCLO'S	0.15	0.20	0.21	0.42	0.88
C7+ IN GAS	2.92	3.05	3.33	4.86	6.05
LIQ HC'S	75.60	74.01	73.31	71.35	67.64
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	16.49	17.52	17.88	17.89	18.62
C5 -420 F				23.75	28.02
420-700 F				29.11	27.46
700-END PT				29.25	25.91

Table V-6 (continued)

FILE: 12570021 5Q4

A1

C5+-END PT	83.51	82.48	82.12	82.11	81.38
ISO/NORMAL MOLE RATIO					
C4	0.0214	0.0208	0.0216	0.0000	0.0000
C5	0.0366	0.0386	0.0380	0.0306	0.0194
C6	0.2164	0.2153	0.1897	0.1589	0.1479
C4=	0.0790	0.0741	0.0796	0.0333	0.0460
PARAFFIN/OLEFIN RATIO					
C3	2.1391	2.1666	2.2031	1.0520	0.9342
C4	1.6508	1.6551	1.6630	1.0358	0.9410
C5	3.4882	3.5789	3.5696	1.9655	1.6959
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.7222	0.7281	0.7380	0.8915	0.8803
RATIO CH4/(1-A)**2	1.1854	1.3220	1.4804	7.6301	6.2470
ALPHA FRM CORRELATION				0.8022	0.8020
ALPHA (EXPTL/CORR)				1.1113	1.0976
W%CH4 FRM CORRELATION				24.8126	24.8556
W%CH4 (EXPTL/CORR)				0.3623	0.3601
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F				372.00	348.00
16				409.00	406.00
50				636.00	613.00
84				916.00	903.00
90				999.00	983.00
RANGE(16-84 %)				507.00	497.00
WT % @ 420 F				18.20	21.10
WT % @ 700 F				59.00	61.70

Table V-6 (cont.)

FILE: 1257002J 5Q4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 64:36 @ 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-47	570-02-48	570-02-49	570-02-50	570-02-51
FEED H2:CO:AR	64:36: 0	64:36: 0	64:36: 0	64:36: 0	64:36: 0
HRS ON STREAM	1329.75	1353.25	1400.25	1424.25	1447.75
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	240.00	221.00	222.00	221.00	221.00
FEED CC/MIN	833.00	400.00	400.00	400.00	400.00
HOURS FEEDING	26.00	23.50	47.00	24.00	23.50
EFFLNT GAS LITER	798.90	371.70	775.20	397.10	391.00
GM AQUEOUS LAYER	65.80	29.48	53.33	25.68	25.89
GM OIL	49.57	23.16	45.29	23.66	22.28
MATERIAL BALANCE					
GM ATOM CARBON %	99.90	96.83	99.20	98.95	97.44
GM ATOM HYDROGEN %	80.13	90.76	91.85	92.18	92.50
GM ATOM OXYGEN %	95.98	92.15	93.65	92.02	92.29
RATIO CHX/(H2O+CO2)	1.1754	1.2027	1.2592	1.3402	1.2463
RATIO X IN CHX	2.2973	2.2615	2.2699	2.2628	2.2757
USAGE H2/CO PRODT	1.9831	1.9570	1.9224	1.8732	1.9342
FEED H2/CO FRM EFFLNT	1.4259	1.6663	1.6460	1.6561	1.6878
RESIDUAL H2/CO RATIO	1.2254	1.5490	1.5426	1.5731	1.5975
RATIO CO2/(H2O+CO2)	0.0064	0.0021	0.0029	0.0020	0.0025
K SHIFT IN EFFLNT	0.0079	0.0033	0.0045	0.0032	0.0040
SPECIFIC ACTIVITY SA	0.9557	1.1104	1.0020	1.0565	0.9785
CONVERSION					
ON CO %	26.46	28.76	27.23	27.65	26.80
ON H2 %	36.79	33.77	31.80	31.28	30.72
ON CO+H2 %	32.53	31.89	30.08	29.91	29.26
PRDT SELECTIVITY, WT %					
CH4	8.99	7.33	7.86	7.40	8.12
C2 HC'S	0.82	0.70	0.76	0.68	0.48
C3H8	2.00	1.71	1.70	1.68	1.73
C3H6=	1.97	2.68	2.64	2.68	0.60
C4H10	2.07	1.84	1.86	1.84	1.90
C4H8=	2.01	2.59	2.52	2.52	2.40
C5H12	2.32	2.02	1.85	1.90	1.97
C5H10=	1.27	1.53	1.45	1.53	1.50
C6H14	3.26	2.65	2.34	2.50	2.67
C6H12= & CYCLO'S	0.80	1.03	0.97	0.96	1.01
C7+ IN GAS	6.10	6.13	5.73	5.32	6.08
LIQ HC'S	68.38	69.78	70.33	71.01	71.53
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	17.87	16.85	17.33	16.78	15.23
C5 -420 F		23.90			
420-700 F		24.98			
700-END PT		34.26			

Table V-6 (continued)

FILE: 1257002J 5Q4

A1

C5+-END PT	82.13	83.15	82.67	83.22	84.77
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0000	0.0000	0.0000	0.0000
C5	0.0000	0.0390	0.0000	0.0000	0.0000
C6	0.1227	0.1424	0.1318	0.1391	0.1223
C4=	0.0000	0.0000	0.0000	0.0000	0.0000
PARAFFIN/OLEFIN RATIO					
C3	0.9678	0.6082	0.6127	0.5976	2.7430
C4	0.9913	0.6861	0.7110	0.7053	0.7633
C5	1.7770	1.2777	1.2406	1.2104	1.2729
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.7893	0.8897	0.7120	0.7239	0.8917
RATIO CH4/(1-A)**2	2.0250	6.0321	0.9470	0.9704	6.9173
ALPHA FRM CORRELATION		0.7918			
ALPHA (EXPTL/CORR)		1.1237			
W%CH4 FRM CORRELATION		23.5523			
W%CH4 (EXPTL/CORR)		0.3113			
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		375.00			
16		439.00			
50		688.00			
84		982.00			
90		0.00			
RANGE(16-84 %)		543.00			
WT % @ 420 F		15.20			
WT % @ 700 F		50.90			

Table V-6 (cont.)

FILE: 1257002K SQ4

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-02
 CATALYST CO/X11-TC123 80 CC 37.4 G AFTER USE:56.0 G (+18.6 G)
 FEED H2:CO OF 64:36 400 CC/MN OR 300 GHSV (CAT#12524-18)

RUN & SAMPLE NO.	12570-02-52	570-02-53	570-02-54
FEED H2:CO:AR	64:36: 0	64:36: 0	64:36: 0
HRS ON STREAM	1472.25	1496.25	1568.25
PRESSURE, PSIG	500.00	300.00	300.00
TEMP. C	221.00	238.00	238.00
FEED CC/MIN	400.00	400.00	400.00
HOURS FEEDING	24.50	20.00	72.00
EFFLNT GAS LITER	400.00	252.90	976.00
GM AQUEOUS LAYER	26.80	41.52	141.56
GM OIL	22.66	26.62	80.83
MATERIAL BALANCE			
GM ATOM CARBON %	95.40	96.11	95.55
GM ATOM HYDROGEN %	91.25	91.97	92.09
GM ATOM OXYGEN %	90.27	91.68	94.09
RATIO CHX/(H2O+CO2)	1.2474	1.1237	1.0427
RATIO X IN CHX	2.2743	2.3930	2.4189
USAGE H2/LJ PRODT	1.9327	2.0417	2.1162
FEED H2/CO FRM EFFLNT	1.7005	1.7012	1.7133
RESIDUAL H2/CO RATIO	1.6139	1.4500	1.4661
RATIO CO2/(H2O+CO2)	0.0026	0.0165	0.0175
K SHIFT IN EFFLNT	0.0042	0.0243	0.0261
SPECIFIC ACTIVITY SA	0.9795	1.3082	1.1038
CONVERSION			
ON CO %	27.15	42.45	38.03
ON H2 %	30.86	50.95	46.98
ON CO+H2 %	29.49	47.81	43.68
PRDT SELECTIVITY, WT %			
CH4	8.10	13.43	14.68
C2 HC'S	0.60	1.63	1.60
C3H8	1.71	2.53	2.83
C3H6=	2.56	1.00	1.24
C4H10	1.87	2.57	2.85
C4H8=	2.50	1.30	0.85
C5H12	1.85	2.95	3.38
C5H10=	1.42	0.75	0.50
C6H14	2.56	3.97	4.61
C6H12= & CYCLO'S	0.99	0.50	0.32
C7+ IN GAS	5.48	4.83	5.99
LIQ HC'S	70.36	64.55	61.14
TOTAL	100.00	100.00	100.00
SUB-GROUPING			
C1 -C4	17.33	22.46	24.05
C5 -420 F	24.34	31.38	32.35
420-700 F	26.67	26.79	26.41
700-END PT	31.66	19.36	17.18

Table V-6 (continued)

FILE: 1257002K 5Q4

A1

C5--END PT	82.67	77.54	75.95
ISO/NORMAL MOLE RATIO			
C4	0.0000	0.0297	0.0000
C5	0.0000	0.0457	0.0000
C6	0.1292	0.1705	0.0966
C4=	0.0000	0.0998	0.0000
PARAFFIN/OLEFIN RATIO			
C3	0.6388	2.4101	2.1804
C4	0.7212	1.9040	3.2292
C5	1.2628	3.8368	6.5546
SCHULZ-FLORY DISTRBTN			
ALPHA (EXP(SLOPE))	0.8873	0.8697	0.8654
RATIO CH4/(1-A)**2	6.3806	7.9088	8.1030
ALPHA FRM CORRELATION	0.7898	0.7940	0.7934
ALPHA (EXPTL/CORR)	1.1235	1.0954	1.0907
W%CH4 FRM CORRELATION	24.1734	26.9069	27.0730
W%CH4 (EXPTL/CORR)	0.3350	0.4991	0.5421
LIQ HC COLLECTION			
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX
DENSITY			
N, REFRACTIVE INDEX			
SIMULT'D DISTILATN			
10 WT % @ DEG F	375.00	323.00	332.00
16	414.00	345.00	360.00
50	661.00	551.00	543.00
84	965.00	842.00	818.00
90	0.00	929.00	901.00
RANGE(16-84 %)	551.00	497.00	458.00
WT % @ 420 F	17.10	28.40	28.70
WT % @ 700 F	55.00	70.00	71.90

Table V-7

FILE: 1257003A T6Q1

A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-03				
CATALYST	CO/X9/X11-TC123 80 CC 41.3 G AFTER USE:60.2 G (+18.9 G)				
FEED	H2:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-27)				
RUN & SAMPLE NO.	12570-03-02	570-03-03	570-03-04	570-03-05	570-03-06
FEED H2:CO:AR	50:50: 0	50:50: 0	50:50: 0	50:50: 0	50:50: 0
HRS ON STREAM	21.50	45.50	69.50	93.50	118.5
PRESSURE, PSIG	300.00	300.00	298.60	300.00	293.00
TEMP. C	239.00	239.00	239.00	239.00	239.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	17.00	24.00	24.00	24.00	24.00
EFFLNT GAS LITER	180.65	306.95	304.45	310.00	324.74
GM AQUEOUS LAYER	44.58	48.61	48.29	48.09	48.12
GM OIL	8.68	38.04	39.09	37.68	42.58
MATERIAL BALANCE					
GM ATOM CARBON %	66.83	94.20	94.46	94.61	100.47
GM ATOM HYDROGEN %	75.30	91.82	92.26	91.49	97.71
GM ATOM OXYGEN %	87.28	92.54	91.52	92.84	95.24
RATIO CHX/(H2O+CO2)	0.3754	1.0627	1.1129	1.0678	1.2010
RATIO X IN CHX	2.2781	2.1959	2.1885	2.1921	2.1831
USAGE H2/CO PRODT	3.2557	1.8648	1.8497	1.8808	1.8052
FEED H2/CO FRM EFFLNT	1.1268	0.9747	0.9767	0.9671	0.9725
RESIDUAL H2/CO RATIO	0.5691	0.5612	0.5607	0.5579	0.5733
RATIO CO2/(H2O+CO2)	0.0483	0.0646	0.0559	0.0563	0.0510
K SHIFT IN EFFLNT	0.0289	0.0387	0.0332	0.0333	0.0308
SPECIFIC ACTIVITY SA	1.7570	3.0447	3.1785	3.0559	3.1750
CONVERSION					
ON CO %	20.76	31.72	32.27	30.93	32.41
ON H2 %	59.98	60.69	61.12	60.16	60.15
ON CO+H2 %	41.53	46.02	46.53	45.30	46.09
PRDT SELECTIVITY, WT %					
CH4	8.48	4.00	3.54	3.72	3.25
C2 HC'S	1.09	0.60	0.64	0.62	0.64
C3H8	1.65	0.77	0.79	0.86	0.79
C3H6=	3.30	1.79	1.79	1.95	1.81
C4H10	2.09	0.89	0.90	0.97	0.88
C4H8=	4.67	2.34	2.51	2.65	2.39
C5H12	2.33	1.13	1.15	1.21	1.13
C5H10=	3.27	1.51	1.70	0.18	1.42
C6H14	3.80	1.82	1.86	1.81	1.74
C6H12= & CYCLO'S	2.14	1.31	1.24	1.43	1.25
C7+ IN GAS	8.39	3.73	3.95	4.17	3.75
LIQ HC'S	58.80	80.11	79.92	80.43	80.95
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	21.27	10.40	10.18	10.78	9.76
C5 -420 F	35.80	21.75			
420-700 F	34.28	32.37			
700-END PT	8.64	35.49			

Table V- χ (continued)

FILE: 1257003A T6Q1

A1

CS+-END PT	78.73	89.60	89.82	89.22	90.24
ISO/NORMAL MOLE RATIO					
C4	0.1332	0.0000	0.0000	0.0000	0.0000
C5	0.0483	0.0562	0.0259	0.0000	0.0347
C6	0.3475	0.3428	0.1900	0.1523	0.2072
C4=	0.0534	0.0445	0.0266	0.0261	0.0155
PARAFFIN/OLEFIN RATIO					
C3	0.4766	0.4112	0.4178	0.4201	0.4157
C4	0.4314	0.3678	0.3474	0.3533	0.3537
C5	0.6933	0.7311	0.6584	6.4536	0.7770
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8429	0.9084			
RATIO CH ₄ /(1-A)**2	3.4366	4.7664			
ALPHA FRM CORRELATION	0.8395	0.8401			
ALPHA (EXPTL/CORR)	1.0041	1.0812			
W%CH ₄ FRM CORRELATION	13.0182	12.8053			
W%CH ₄ (EXPTL/CORR)	0.6512	0.3124			
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N. REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	343.00	381.00			
16	380.00	422.00			
50	515.00	664.00			
84	690.00	945.00			
90	753.00	1034.00			
RANGE(16-84 %)	310.00	523.00			
WT % @ 420 F	27.00	15.30			
WT % @ 700 F	85.30	55.70			

Table V-7 (cont.)

FILE: 1257003B T6Q1

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-03
 CATALYST CO/X9/X11-TC123 80 CC 41.3 G AFTER USE:60.2 G (+18.9 G)
 FEED H2:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-27)

RUN & SAMPLE NO.	12570-03-07	570-03-08	570-03-09	570-03-10	570-03-11
FEED H2:CO:AR	50:50:0	50:50:0	50:50:0	50:50:0	50:50:0
HRS ON STREAM	166.50	190.50	214.50	238.50	267.50
PRESSURE, PSIG	300.00	297.00	299.00	300.00	300.00
TEMP. °C	238.00	260.00	259.00	259.00	259.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	48.00	24.00	24.00	24.00	24.00
EFFLNT GAS LITER	628.56	266.85	262.95	265.10	286.99
GM AQUEOUS LAYER	93.91	51.70	54.72	55.95	54.87
GM OIL	71.19	40.54	40.25	38.88	38.44
MATERIAL BALANCE					
GM ATOM CARBON %	94.37	85.17	93.53	92.64	98.69
GM ATOM HYDROGEN %	91.90	80.14	92.09	92.53	94.36
GM ATOM OXYGEN %	92.09	91.95	91.20	91.37	96.73
RATIO CHX/(H2O+CO2)	1.0902	0.7859	1.0731	1.0397	1.0614
RATIO X IN CHX	2.1861	2.2788	2.2565	2.2574	2.2595
USAGE H2/CO PRODT	1.8854	1.7754	1.6970	1.7437	1.7209
FEED H2/CO FRM EFFLNT	0.9738	0.9410	0.9846	0.9987	0.9561
RESIDUAL H2/CO RATIO	0.5749	0.4727	0.4764	0.4877	0.4708
RATIO CO2/(H2O+CO2)	0.0472	0.1802	0.1445	0.1314	0.1369
K SHIFT IN EFFLNT	0.0285	0.1039	0.0804	0.0738	0.0747
SPECIFIC ACTIVITY SA	2.9688	1.4817	1.8516	1.7266	1.7046
CONVERSION					
ON CO %	30.44	35.94	41.64	40.69	38.82
ON H2 %	58.94	67.82	71.76	71.03	69.87
ON CO+H2 %	44.50	51.40	56.58	55.85	54.00
PRDT SELECTIVITY, WT %					
CH4	3.51	10.59	6.77	6.85	7.01
C2 HC'S	0.57	2.15	1.38	1.42	1.49
C3H8	0.90	2.52	1.58	1.57	1.62
C3H6=	2.03	3.16	2.18	2.21	2.29
C4H10	1.02	2.43	1.58	1.55	1.58
C4H8=	2.77	4.02	3.36	3.35	3.50
C5H12	1.28	3.15	2.02	2.03	2.04
C5H10=	3.37	2.26	1.58	1.53	2.27
C6H14	2.17	5.27	3.19	3.27	3.55
C6H12= & CYCLO'S	1.34	3.08	1.90	2.00	2.20
C7+ IN GAS	4.30	8.56	5.20	5.59	5.55
LIQ HC'S	76.74	52.80	69.27	68.63	66.90
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	10.80	24.88	16.84	16.95	17.49
C5 -420 F	24.35	4.08	32.59		
420-700 F	26.24	38.88	29.37		
700-END PT	38.60	32.16	21.20		

TableV-7 (continued)

FILE: 1257003B T6Q1

A1

C5+-END PT	89.20	75.12	83.16	83.05	82.51
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0195	0.0192	0.0158	0.0000
C5	0.0000	0.0471	0.0464	0.0468	0.0000
C6	0.2075	0.3706	0.3237	0.2901	0.2358
C4=	0.0280	0.0719	0.0504	0.0499	0.0483
PARAFFIN/OLEFIN RATIO					
C3	0.4225	0.7590	0.6920	0.6786	0.6726
C4	0.3569	0.5841	0.4542	0.4460	0.4368
C5	0.3704	1.3526	1.2441	1.2920	0.8749
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8940	0.8650	0.8686		
RATIO CH4/(1-A)**2	3.1202	5.8137	3.9212		
ALPHA FRM CORRELATION	0.8390	0.8473	0.8470		
ALPHA (EXPTL/CORR)	1.0655	1.0209	1.0256		
W%CH4 FRM CORRELATION	12.9241	15.1865	15.0740		
W%CH4 (EXPTL/CORR)	0.2714	0.6975	0.4490		
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N. REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	381.00	333.00	306.00		
16	421.00	373.00	348.00		
50	703.00	573.00	568.00		
84	1015.00	882.00	852.00		
90	1093.00	970.00	940.00		
RANGE(16-84 %)	594.00	509.00	504.00		
WT % @ 420 F	15.50	26.00	27.00		
WT % @ 700 F	49.70	66.50	69.40		

Table V-7 (cont.)

FILE: 1257003C T6Q1

A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-03				
CATALYST	CO/X9/X11-TC123 90 CC 41.3 G AFTER USE;60.2 G (+18.9 G)				
FEED	H2:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-27)				
RUN & SAMPLE NO.	12570-03-12	570-03-13	570-03-14	570-03-15	570-03-16
FEED H2:CO:AR	50X50: 0	50:50: 0	50:50: 0	60:40: 0	60:40: 0
HRS ON STREAM	287.50	310.50	334.50	358.50	383.50
PRESSURE, PSIG	298.00	298.00	299.50	500.00	500.00
TEMP. C	259.00	259.00	259.00	259.00	260.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	25.00	47.00	24.00	23.00	25.00
EFFLNT GAS LITER	278.76	535.54	271.90	163.63	155.70
GM AQUEOUS LAYER	58.80	111.28	54.72	67.98	83.99
GM OIL	42.59	78.40	39.89	50.23	57.13
MATERIAL BALANCE					
GM ATOM CARBON %	95.70	97.54	96.84	100.15	92.67
GM ATOM HYDROGEN %	93.46	93.97	92.57	90.94	90.48
GM ATOM OXYGEN %	92.91	94.69	93.32	92.91	90.46
RATIO CHX/(H2O+CO2)	1.0869	1.0886	1.1127	1.1369	1.0399
RATIO X IN CHX	2.2493	2.2475	2.2545	2.3668	2.3164
USAGE H2/CO PRDCT	1.7388	1.7471	1.7289	1.6292	1.7829
FEED H2/CO FRM EFFLNT	0.9766	0.9634	0.9559	1.3622	1.4646
RESIDUAL H2/CO RATIO	0.4571	0.4457	0.4458	0.7420	0.7318
RATIO CO2/(H2O+CO2)	0.1214	0.1170	0.1211	0.1875	0.1259
K SHIFT IN EFFLNT	0.0632	0.0591	0.0614	0.1713	0.1054
SPECIFIC ACTIVITY SA	1.8967	1.9090	1.9100	1.4234	1.3426
CONVERSION					
ON CO %	40.53	39.78	39.76	69.90	69.71
ON H2 %	72.17	72.14	71.91	83.60	84.87
ON CO+H2 %	56.16	55.66	55.47	77.80	78.72
PRDCT SELECTIVITY, WT %					
CH4	6.48	6.41	6.76	11.89	9.50
C2 HC'S	1.29	1.33	1.30	1.91	1.63
C3H8	1.48	1.50	1.53	2.74	2.15
C3H6=	2.18	2.26	2.27	1.22	1.15
C4H10	1.50	1.54	1.56	2.36	1.86
C4H8=	3.26	3.46	3.41	2.41	2.14
C5H12	2.09	2.14	2.11	2.94	2.31
C5H10=	1.66	2.42	2.33	0.86	0.78
C6H14	3.28	3.58	3.43	3.98	3.29
C6H12= & CYCLO'S	2.16	2.22	2.04	1.25	1.15
C7+ IN GAS	5.38	5.61	5.39	4.54	4.07
LIQ HC'S	69.25	67.54	67.87	63.91	69.97
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	16.19	16.49	16.83	22.52	18.43
C5 -420 F				30.83	32.24
420-700 F				22.43	28.41
700-END PT				24.22	20.92

Table V-7(continued)

FILE: 1257003C T6Q1	A1				
CS+-END PT	83.81	83.51	83.17	77.48	81.57
ISO/NORMAL MOLE RATIO					
C4	0.0166	0.0140	0.0152	0.0262	0.0234
C5	0.0464	0.0454	0.0464	0.0666	0.0617
C6	0.2936	0.3661	0.3746	0.2971	0.3106
C4=	0.0482	0.0470	0.0483	0.0848	0.0765
PARAFFIN/OLEFIN RATIO					
C3	0.6457	0.6344	0.6432	2.1473	1.7838
C4	0.4427	0.4293	0.4411	0.9478	0.8397
C5	1.2204	0.8620	0.8780	3.3076	2.8613
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))				0.8678	0.8661
RATIO CH4/(1-A)**2				6.8032	5.2997
ALPHA FRM CORRELATION				0.8254	0.8260
ALPHA (EXPTL/CORR)				1.0514	1.0486
WYCH4 FRM CORRELATION				21.7723	21.7921
WYCH4 (EXPTL/CORR)				0.5460	0.4360
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F				302.00	301.00
16				346.00	344.00
50				596.00	546.00
84				919.00	874.00
90				1004.00	978.00
RANGE(16-84 %)				573.00	530.00
WT % @ 420 F				27.00	29.50
WT % @ 700 F				62.10	70.10

Table V-7 (cont.)

FILE: 1257003D T6Q1 A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-03			
CATALYST	CO/X9/X11-TC123	80 CC	41.3 G	AFTER USE: 60.2 G (+18.9 G)
FEED	H2:CO OF 50:50	@ 400 CC/MN	OR 300 GHSV	(CAT#12524-27)
RUN & SAMPLE NO.	12570-03-17	570-03-18	570-03-19	570-03-20
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	407.50	429.00	456.00	478.50
PRESSURE, PSIG	500.00	500.00	500.00	500.00
TEMP. C	260.00	260.00	260.00	260.00
FEED CC/MIN	400.00	400.00	400.00	400.00
HOURS FEEDING	24.00	21.50	26.00	22.50
EFFLNT GAS LITER	151.50	139.50	172.20	151.90
GM AQUEOUS LAYER	81.48	70.57	87.81	76.75
GM OIL	54.56	54.47	57.46	51.06
MATERIAL BALANCE				
GM ATOM CARBON %	92.82	98.49	92.28	94.38
GM ATOM HYDROGEN %	91.42	94.18	90.66	92.36
GM ATOM OXYGEN %	90.99	89.14	90.86	91.80
RATIO CHX/(H2O+CO2)	1.0326	1.1758	1.0264	1.0475
RATIO X IN CHX	2.3289	2.2925	2.3136	2.3068
USAGE H2/CO PRODT	1.7970	1.7449	1.8613	1.8559
FEED H2/CO FRM EFFLNT	1.4774	1.4343	1.4736	1.4680
RESIDUAL H2/CO RATIO	0.7444	0.7346	0.7306	0.7292
RATIO CO2/(H2O+CO2)	0.1240	0.1079	0.0968	0.0925
K SHIFT IN EFFLNT	0.1054	0.0888	0.0783	0.0743
SPECIFIC ACTIVITY SA	1.3289	1.3074	1.1577	1.1398
CONVERSION				
ON CO %	69.63	69.26	65.71	65.58
ON H2 %	84.70	84.26	83.00	82.90
ON CO+H2 %	78.62	78.10	76.01	75.88
PRDT SELECTIVITY, WT %				
CH4	10.12	8.47	9.46	9.20
C2 HC'S	1.73	1.48	1.56	1.60
C3H8	2.31	1.89	2.05	2.01
C3H6=	1.17	1.98	1.28	1.25
C4H10	1.94	1.65	1.82	1.77
C4H8=	2.20	2.00	2.16	2.25
C5H12	2.30	2.05	2.24	2.18
C5H10=	0.75	1.26	1.38	1.66
C6H14	3.14	2.85	2.99	2.56
C6H12= & CYCLO'S	1.10	1.09	1.15	1.10
C7+ IN GAS	3.79	3.61	3.52	3.94
LIQ HC'S	69.46	71.67	70.39	70.46
TOTAL	100.00	100.00	100.00	100.00
SUB-GROUPING				
C1 -C4	19.46	17.47	18.33	18.09
C5 -420 F		29.49		29.41
420-700 F		27.23		26.78
700-END PT		25.80		25.72

Table V-(continued)

FILE: 1257003D T6Q1

A1

CS--END PT	80.54	82.53	81.67	81.91
ISO/NORMAL MOLE RATIO				
C4	0.0251	0.0246	0.0257	0.0243
C5	0.0628	0.0604	0.0568	0.0589
C6	0.2367	0.2254	0.2311	0.0809
C4=	0.0787	0.0746	0.0208	0.0750
PARAFFIN/OLEFIN RATIO				
C3	1.8763	0.9070	1.5299	1.5369
C4	0.8507	0.7959	0.8137	0.7611
C5	2.9852	1.5852	1.5786	1.2796
SCHULZ-FLORY DISTRBTN				
ALPHA (EXP(SLOPE))		0.8757		0.8772
RATIO CH4/(1-A)**2		5.4785		6.1008
ALPHA FRM CORRELATION		0.8258		0.8262
ALPHA (EXPTL/CORR)		1.0604		1.0618
W%CH4 FRM CORRELATION		21.8482		21.7368
W%CH4 (EXPTL/CORR)		0.3875		0.4233
LIQ HC COLLECTION				
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY				
N, REFRACTIVE INDEX				
SIMULT'D DISTILATN				
10 WT % @ DEG F		304.00		304.00
16		348.00		349.00
50		592.00		595.00
84		917.00		909.00
90		1010.00		997.00
RANGE(16-84 %)		569.00		560.00
WT % @ 420 F		26.00		25.50
WT % @ 700 F		64.00		63.50

Table V-8

FILE: 12S7004A T6Q2 A1

RESULT OF SYNGAS OPERATION

RUN NO. 12S70-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 50:50 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12S70-04-01	570-04-02	570-04-03	570-04-04	570-04-05
	=====	=====	=====	=====	=====
FEED H2:CO:AR	50:50:0	50:50:0	60:40:0	60:40:0	60:40:0
HRS ON STREAM	24.50	48.50	71.50	96.00	118.50
PRESSURE, PSIG	300.00	300.00	500.00	500.00	500.00
TEMP. C	235.00	237.00	257.00	261.00	261.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	24.50	24.00	23.00	24.50	22.50
EFFLNT GAS LITER	318.80	368.20	169.70	175.95	171.70
GM AQUEOUS LAYER	59.72	45.04	68.15	81.82	73.18
GM OIL	11.43	35.62	51.64	51.57	48.54
MATERIAL BALANCE					
GM ATOM CARBON %	77.39	104.75	100.69	100.34	102.15
GM ATOM HYDROGEN %	83.18	100.11	91.48	94.66	94.92
GM ATOM OXYGEN %	95.28	101.74	92.71	96.52	97.42
RATIO CHX/(H2O+CO2)	0.4151	1.1209	1.1556	1.0679	1.0865
RATIO X IN CHX	2.2475	2.1860	2.3193	2.3296	2.3332
USAGE H2/CO PRODT	3.1660	1.8432	1.6567	1.7378	1.7435
FEED H2/CO FRM EFFLNT	1.0747	0.9557	1.3628	1.4151	1.3940
RESIDUAL H2/CO RATIO	0.6205	0.6106	0.7644	0.7320	0.7332
RATIO CO2/(H2O+CO2)	0.0366	0.0560	0.1602	0.1418	0.1360
K SHIFT IN EFFLNT	0.0235	0.0362	0.1458	0.1209	0.1154
SPECIFIC ACTIVITY SA	1.7020	2.6790	1.3733	1.2219	1.1174
CONVERSION					
ON CO %	17.84	28.00	67.06	67.91	65.40
ON H2 %	52.57	54.00	81.52	83.40	81.80
ON CO+H2 %	35.83	40.70	75.40	76.99	74.95
PRDT SELECTIVITY, WT %					
CH4	6.83	3.46	9.34	9.99	10.02
C2 HC'S	1.20	0.75	1.85	1.99	1.92
C3H8	1.83	0.97	2.70	3.00	2.98
C3H6=	3.46	2.08	1.20	1.19	1.25
C4H10	2.05	1.11	2.24	2.43	2.44
C4H8=	4.78	2.82	2.33	2.42	2.48
C5H12	2.86	1.44	2.69	2.91	2.93
C5H10=	3.38	2.45	1.39	1.95	1.95
C6H14	4.87	2.04	3.51	3.47	3.56
C6H12= & CYCLO'S	2.90	1.70	1.21	4.06	1.34
C7+ IN GAS	13.70	5.48	4.75	4.89	5.09
LIQ HC'S	52.14	75.70	66.79	61.68	64.04
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	20.14	11.19	19.66	21.03	21.09
C5 -420 F		27.57	30.38	36.10	
420-700 F		28.88	22.18	24.30	
700-END PT		32.36	27.79	18.57	

Table V-8(continued)

FILE: 1257004A T6Q2

A1

CS+-END PT	79.86	88.81	80.34	78.97	78.91
ISO/NORMAL MOLE RATIO					
C4	0.0000	0.0000	0.0221	0.0231	0.0244
C5	0.0391	0.0338	0.0563	0.0544	0.0523
C6	0.2248	0.0706	0.2161	0.0875	0.0797
C4=	0.0363	0.0253	0.0743	0.0792	0.0764
PARAFFIN/OLEFIN RATIO					
C3	0.5054	0.4466	2.1413	2.3998	2.2685
C4	0.4149	0.3792	0.9280	0.9700	0.9476
C5	0.8230	0.5689	1.8851	1.4482	1.4605
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))		0.8937	0.8720	0.8549	
RATIO CH4/(1-A)**2		3.0630	5.6997	4.7451	
ALPHA FRM CORRELATION		0.8362	0.8240	0.8259	
ALPHA (EXPTL/CORR)		1.0689	1.0582	1.0351	
W%CH4 FRM CORRELATION		13.5859	21.7639	22.0215	
W%CH4 (EXPTL/CORR)		0.2546	0.4290	0.4537	
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		341.00	303.00	297.00	
16		406.00	349.00	340.00	
50		647.00	626.00	544.00	
84		927.00	934.00	846.00	
90		1018.00	1013.00	936.00	
RANGE(16-84 %)		521.00	585.00	506.00	
WT % @ 420 F		19.10	25.20	30.50	
WT % @ 700 F		57.25	58.40	69.90	

Table V-8 (cont.)

FILE: 1257004B T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTERUSE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-06	570-04-07	570-04-08	570-04-09	570-04-10
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	141.50	166.33	191.00	214.50	240.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	260.00	261.00	261.00	261.00	262.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	23.00	24.83	24.67	23.50	25.50
EFFLNT GAS LITER	167.80	199.10	191.80	181.90	197.30
GM AQUEOUS LAYER	76.80	80.77	81.80	77.77	71.82
GM OIL	53.51	55.92	54.31	50.26	53.12
MATERIAL BALANCE					
GM ATOM CARBON %	100.56	105.75	102.37	101.53	100.94
GM ATOM HYDROGEN %	95.61	97.67	96.38	95.93	89.58
GM ATOM OXYGEN %	95.07	98.80	97.49	98.15	91.55
RATIO CHX/(H2O+CO2)	1.1006	1.1281	1.0897	1.0610	1.1960
RATIO X IN CHX	2.3039	2.3251	2.3197	2.3570	2.3260
USAGE H2/CO PRODT	1.7735	1.7383	1.7804	1.7743	1.6810
FEED H2/CO FRM EFFLNT	1.4261	1.3855	1.4122	1.4172	1.3312
RESIDUAL H2/CO RATIO	0.7542	0.7464	0.7524	0.7511	0.7227
RATIO CO2/(H2O+CO2)	0.1139	0.1280	0.1165	0.1326	0.1419
K SHIFT IN EFFLNT	0.0969	0.1095	0.0992	0.1148	0.1195
SPECIFIC ACTIVITY SA	1.1476	1.0459	1.0136	1.0798	1.0071
CONVERSION					
ON CO %	65.92	64.42	64.18	65.10	63.49
ON H2 %	81.98	80.83	80.92	81.50	80.18
ON CO+H2 %	75.36	73.95	73.98	74.72	73.02
PRDCT SELECTIVITY, WT %					
CH4	8.66	9.64	9.40	11.06	9.66
C2 HC'S	1.74	1.90	1.90	2.15	1.84
C3H8	2.55	2.83	2.76	3.21	2.85
C3H6=	1.14	1.23	1.22	1.16	1.28
C4H10	2.11	2.35	2.30	2.54	2.37
C4H8=	2.24	2.45	2.41	2.39	2.40
C5H12	2.50	2.79	2.74	2.95	2.96
C5H10=	1.78	1.95	1.93	1.45	1.36
C6H14	3.06	3.52	3.43	3.68	4.03
C6H12= & CYCLO'S	1.19	1.40	1.33	0.74	1.31
C7+ IN GAS	4.63	5.04	5.15	4.61	5.84
LIQ HC'S	68.40	64.91	65.43	64.05	64.11
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	18.44	20.39	19.99	22.52	20.39
C5 -420 F			35.09		
420-700 F			27.45		
700-END PT			17.47		

Table V-8(continued)

FILE: 1257004B T6Q2

A1

C5+-END PT	81.56	79.61	80.01	77.48	79.61
ISO/NORMAL MOLE RATIO					
C4	0.0229	0.0251	0.0231	0.0264	0.0280
C5	0.0495	0.0522	0.0515	0.0551	0.0591
C6	0.0764	0.0748	0.0786	0.2367	0.2112
C4=	0.0743	0.0756	0.0764	0.0862	0.0796
PARAFFIN/OLEFIN RATIO					
C3	2.1240	2.2037	2.1653	2.6366	2.1310
C4	0.9123	0.9278	0.9232	1.0280	0.9525
C5	1.3675	1.3956	1.3750	1.9751	2.1208
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))			0.8623		
RATIO CH4/(1-A)**2			4.9579		
ALPHA FRM CORRELATION			0.8246		
ALPHA (EXPTL/CORR)			1.0457		
W%CH4 FRM CORRELATION			22.4386		
W%CH4 (EXPTL/CORR)			0.4189		
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F			294.00		
16			335.00		
50			541.00		
84			811.00		
90			899.00		
RANGE(16-84 %)			476.00		
WT % @ 420 F			31.34		
WT % @ 700 F			73.30		

Table V-8 (cont.)

FILE: 1257004C T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE: 56.4 G (+15.9 G)
 FEED H₂:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-11	570-04-12	570-04-13	570-04-14	570-04-15
FEED H ₂ :CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	245.75	263.00	287.00	309.00	334.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	262.00	261.00	261.00	260.00	261.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	5.75	17.50	24.00	22.00	25.00
EFFLNT GAS LITER	40.60	127.30	178.10	164.20	184.50
GM AQUEOUS LAYER	18.86	58.41	80.27	73.31	83.95
GM OIL	13.84	40.79	59.27	55.05	60.66
MATERIAL BALANCE					
GM ATOM CARBON %	101.17	100.41	103.49	102.00	100.61
GM ATOM HYDROGEN %	94.81	94.23	96.35	95.58	95.04
GM ATOM OXYGEN %	93.52	94.93	95.78	95.07	94.86
RATIO CHX/(H ₂ O+CO ₂)	1.1424	1.1022	1.1439	1.1314	1.1080
RATIO X IN CHX	2.2962	2.2815	2.2774	2.2725	2.2795
USAGE H ₂ /CO PRODT	1.7457	1.7980	1.7795	1.8085	1.8241
FEED H ₂ /CO FRM EFFLNT	1.4057	1.4076	1.3965	1.4055	1.4170
RESIDUAL H ₂ /CO RATIO	0.7227	0.7100	0.7084	0.7200	0.7204
RATIO CO ₂ /(H ₂ O+CO ₂)	0.1156	0.0985	0.0961	0.0853	0.0856
K SHIFT IN EFFLNT	0.0944	0.0776	0.0753	0.0671	0.0674
SPECIFIC ACTIVITY SA	1.1172	1.0892	1.1056	1.0882	1.0265
CONVERSION					
ON CO %	66.76	64.12	64.24	62.98	63.12
ON H ₂ %	82.91	81.90	81.86	81.04	81.25
ON CO+H ₂ %	76.20	74.52	74.51	73.53	73.75
PRDT SELECTIVITY, WT %					
CH ₄	8.25	7.74	7.53	7.39	7.68
C ₂ HC'S	1.57	1.44	1.40	1.37	1.46
C ₃ H ₈	2.44	2.12	2.04	1.76	1.82
C ₃ H ₆ =	1.09	1.21	1.24	1.10	1.10
C ₄ H ₁₀	2.02	1.81	1.79	1.53	1.61
C ₄ H ₈ =	2.05	2.15	2.23	1.95	2.00
C ₅ H ₁₂	2.53	2.34	2.31	1.93	2.05
C ₅ H ₁₀ =	1.16	2.02	1.63	1.09	1.16
C ₆ H ₁₄	3.45	3.15	2.87	2.66	2.98
C ₆ H ₁₂ = & CYCLO'S	1.12	1.33	1.41	1.16	1.27
C ₇ + IN GAS	4.99	4.91	4.31	3.94	4.05
LIQ HC'S	69.35	69.76	71.25	74.14	72.82
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C ₁ -C ₄	17.41	16.47	16.22	15.09	15.67
C ₅ -420 F	33.35				30.51
420-700 F	27.32				25.85
700-END PT	21.91				27.96

Table v-8(continued)

FILE: 1257004C T6Q2

A1

C5+-END PT	82.59	83.53	83.78	84.91	84.33
ISO/NORMAL MOLE RATIO					
C4	0.0280	0.0234	0.0240	0.0232	0.0258
C5	0.0591	0.0532	0.0564	0.0527	0.0545
C6	0.2112	0.1505	0.0829	0.2097	0.2073
C4=	0.0796	0.0690	0.0714	0.0671	0.0696
PARAFFIN/OLEFIN RATIO					
C3	2.1310	1.6670	1.5683	1.5182	1.5763
C4	0.9525	0.8122	0.7734	0.7583	0.7772
C5	2.1208	1.1259	1.3754	1.7194	1.7202
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8711				0.8776
RATIO CH4/(1-A)**2	4.9639				5.1261
ALPHA FRM CORRELATION	0.8265				0.8267
ALPHA (EXPTL/CORR)	1.0539				1.0616
W%CH4 FRM CORRELATION	22.0559				21.7808
W%CH4 (EXPTL/CORR)	0.3741				0.3526
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	298.00				300.00
16	341.00				345.00
50	561.00				600.00
84	860.00				927.00
90	944.00				1011.00
RANGE(16-84 %)	519.00				582.00
WT % @ 420 F	29.00				26.10
WT % @ 700 F	68.40				61.60

Table V-8 (cont.)

FILE: 1257004D T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-16	570-04-17	570-04-18	570-04-19	570-04-20
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	359.00	382.50	407.00	430.50	455.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	261.00	266.00	257.00	260.00	262.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	25.00	23.50	24.50	23.50	24.50
EFFLNT GAS LITER	188.60	177.20	197.20	186.60	195.60
GM AQUEOUS LAYER	84.13	76.23	80.57	77.69	78.50
GM OIL	59.69	53.03	56.79	53.50	60.29
MATERIAL BALANCE					
GM ATOM CARBON %	100.12	103.33	99.63	101.33	106.50
GM ATOM HYDROGEN %	94.72	95.87	94.54	94.81	97.94
GM ATOM OXYGEN %	95.73	96.26	95.12	96.88	95.87
RATIO CHX/(H2O+CO2)	1.0827	1.1308	1.0891	1.0853	1.2066
RATIO X IN CHX	2.2844	2.3416	2.2722	2.2982	2.3008
USAGE H2/CO PRODT	1.8497	1.7414	1.9077	1.8587	1.7625
FEED H2/CO FRM EFFLNT	1.4190	1.3918	1.4234	1.4035	1.3794
RESIDUAL H2/CO RATIO	0.7216	0.7148	0.7524	0.7185	0.7303
RATIO CO2/(H2O+CO2)	0.0821	0.1294	0.0549	0.0804	0.0946
K SHIFT IN EFFLNT	0.0646	0.1063	0.0437	0.0628	0.0763
SPECIFIC ACTIVITY SA	0.9887	0.9012	1.0036	0.9842	0.9694
CONVERSION					
ON CO %	61.83	65.94	58.08	60.08	62.89
ON H2 %	80.59	82.51	77.84	79.56	80.35
ON CO+H2 %	72.83	75.58	69.69	71.46	73.01
PRODT SELECTIVITY, WT %					
CH4	7.98	10.85	7.44	8.73	8.79
C2 HC'S	1.42	1.86	1.31	1.52	1.62
C3H8	1.83	2.54	1.64	1.93	2.14
C3H6=	1.12	1.04	1.15	1.16	1.19
C4H10	1.60	2.05	1.52	1.67	1.81
C4H8=	1.99	2.12	1.92	2.03	2.25
C5H12	2.01	2.56	1.90	2.09	2.39
C5H10=	1.14	1.59	1.09	1.16	1.73
C6H14	2.64	3.23	2.57	2.92	2.66
C6H12= & CYCLO'S	1.13	1.54	1.14	1.27	1.17
C7+ IN GAS	3.75	5.61	3.84	4.56	4.25
LIQ HC'S	73.39	65.01	74.48	70.97	69.99
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	15.94	20.46	14.99	17.04	17.81
C5 -420 F			41.07		
420-700 F			21.08		
700-END PT			22.87		

Table V-8(continued)

FILE: 1257004D T6Q2

A1

C5+-END PT	84.06	79.54	85.01	82.96	82.19
ISO/NORMAL MOLE RATIO					
C4	0.0259	0.0305	0.0235	0.0250	0.0266
C5	0.0554	0.0628	0.0453	0.0513	0.0546
C6	0.2312	0.0983	0.1988	0.1744	0.0727
C4=	0.0689	0.0863	0.0612	0.0690	0.0774
PARAFFIN/OLEFIN RATIO					
C3	1.5524	2.3276	1.3607	1.5942	1.7113
C4	0.7766	0.9362	0.7659	0.7944	0.7761
C5	1.7227	1.5688	1.6939	1.7509	1.3398
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))			0.8588		
RATIO CH4/(1-A)**2			3.7292		
ALPHA FRM CORRELATION			0.8248		
ALPHA (EXPTL/CORR)			1.0412		
W%CH4 FRM CORRELATION			21.5236		
W%CH4 (EXPTL/CORR)			0.3455		
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F			138.00		
16			143.00		
50			509.00		
84			877.00		
90			963.00		
RANGE(16-84 %)			734.00		
WT % @ 420 F			41.00		
WT % @ 700 F			69.30		

Table V-8 (cont.)

FILE: 1257004E T6Q2 A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-21	570-04-22	570-04-23	570-04-24	570-04-25
FEED H2:CO:AR	60:40:0	60:40:0	60:40:0	60:40:0	60:40:0
HRS ON STREAM	478.50	503.00	527.50	551.00	575.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	259.00	260.00	259.00	260.00	260.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	23.50	24.50	24.50	23.50	24.00
EFFLNT GAS LITER	187.00	199.90	195.40	194.00	195.50
GM AQUEOUS LAYER	76.79	81.73	78.59	77.97	80.24
GM OIL	53.91	56.83	58.25	53.19	54.99
MATERIAL BALANCE					
GM ATOM CARBON %	101.18	104.05	102.37	103.19	103.72
GM ATOM HYDROGEN %	95.04	97.67	95.74	96.71	97.06
GM ATOM OXYGEN %	95.08	97.36	93.90	97.42	97.63
RATIO CHX/(H2O+CO2)	1.1199	1.1282	1.1697	1.1116	1.1165
RATIO X IN CHX	2.2811	2.2901	2.2805	2.2877	2.2917
USAGE H2/CO PRODT	1.8622	1.8512	1.8373	1.8738	1.8622
FEED H2/CO FRM EFFLNT	1.4089	1.4080	1.4028	1.4058	1.4038
RESIDUAL H2/CO RATIO	0.7371	0.7379	0.7460	0.7346	0.7228
RATIO CO2/(H2O+CO2)	0.0670	0.0713	0.0651	0.0656	0.0700
K SHIFT IN EFFLNT	0.0529	0.0567	0.0519	0.0516	0.0544
SPECIFIC ACTIVITY SA	0.9950	0.9536	0.9826	0.9093	0.9616
CONVERSION					
ON CO %	59.71	60.19	60.19	58.92	59.77
ON H2 %	78.92	79.13	78.83	78.53	79.28
ON CO+H2 %	70.95	71.27	71.07	70.38	71.17
PRDT SELECTIVITY, WT %					
CH4	7.82	8.20	7.74	8.19	8.43
C2 HC'S	1.41	1.44	1.43	1.40	1.44
C3H8	1.97	2.03	1.86	1.96	2.01
C3H6=	1.33	1.32	1.23	1.30	1.27
C4H10	1.77	1.82	1.66	1.76	1.79
C4H8=	2.30	2.35	2.10	2.27	2.27
C5H12	2.34	2.38	2.21	2.28	2.36
C5H10=	1.78	1.41	1.28	1.35	1.80
C6H14	2.59	3.40	2.98	3.21	2.88
C6H12= & CYCLO'S	1.18	1.40	1.29	1.43	1.50
C7+ IN GAS	4.33	4.64	4.15	5.12	4.82
LIQ HC'S	71.19	69.62	72.06	69.71	69.43
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	16.60	17.16	16.02	16.89	17.22
C5 -420 F		44.83			
420-700 F		18.24			
700-END PT		19.77			

Table V-8(continued)

FILE: 1257004E T6Q2

A1

C5+-END PT	83.40	82.84	83.98	83.11	82.78
ISO/NORMAL MOLE RATIO					
C4	0.0253	0.0253	0.0236	0.0260	0.0255
C5	0.0463	0.0532	0.0461	0.0457	0.0502
C6	0.0681	0.2048	0.2036	0.2026	0.0743
C4=	0.0638	0.0697	0.0641	0.0668	0.0681
PARAFFIN/OLEFIN RATIO					
C3	1.4154	1.4643	1.4449	1.4343	1.5063
C4	0.7457	0.7464	0.7623	0.7462	0.7623
C5	1.2789	1.6344	1.6699	1.6410	1.2767
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))		0.8452			
RATIO CH4/(1-A)**2		3.4197			
ALPHA FRM CORRELATION		0.8256			
ALPHA (EXPTL/CORR)		1.0237			
W%CH4 FRM CORRELATION		21.9168			
W%CH4 (EXPTL/CORR)		0.3741			
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		138.00			
16		144.00			
50		474.00			
84		875.00			
90		971.00			
RANGE(16-84 %)		731.00			
WT % @ 420 F		45.40			
WT % @ 700 F		71.60			

Table V-8 (cont.)

FILE: 1257004F T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-26	570-04-27	570-04-28	570-04-29	570-04-30
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	599.00	623.50	651.00	673.50	695.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	261.00	261.00	261.00	260.00	261.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	24.00	24.50	27.50	22.50	21.50
EFFLNT GAS LITER	199.00	198.00	224.40	184.60	181.30
GM AQUEOUS LAYER	79.60	81.00	91.68	73.80	71.18
GM OIL	51.48	54.48	61.21	48.46	46.84
MATERIAL BALANCE					
GM ATOM CARBON %	102.16	100.90	102.27	100.33	102.23
GM ATOM HYDROGEN %	95.48	94.93	96.34	94.91	96.27
GM ATOM OXYGEN %	98.18	96.31	97.38	96.17	98.01
RATIO CHX/(H2O+CO2)	1.0767	1.0894	1.0937	1.0816	1.0819
RATIO X IN CHX	2.3048	2.2931	2.3056	2.3023	2.3054
USAGE H2/CO PRDCT	1.8934	1.8971	1.8808	1.9021	1.9040
FEED H2/CO FRM EFFLNT	1.4018	1.4113	1.4130	1.4190	1.4125
RESIDUAL H2/CO RATIO	0.7169	0.7244	0.7293	0.7440	0.7406
RATIO CO2/(H2O+CO2)	0.0699	0.0630	0.0707	0.0647	0.0644
K SHIFT IN EFFLNT	0.0539	0.0487	0.0555	0.0515	0.0510
SPECIFIC ACTIVITY SA	0.8781	0.8711	0.8845	0.8757	0.8191
CONVERSION					
ON CO %	58.21	58.57	59.38	58.28	57.76
ON H2 %	78.63	78.74	79.03	78.13	77.85
ON CO+H2 %	70.13	70.37	70.89	69.92	69.52
PRDCT SELECTIVITY, WT %					
CH4	8.98	8.47	9.01	8.88	9.03
C2 HC'S	1.51	1.35	1.60	1.49	1.54
C3H8	2.16	1.98	2.10	2.08	2.10
C3H6=	1.42	1.29	1.22	1.31	1.33
C4H10	1.90	1.75	1.85	1.87	1.86
C4H8=	2.38	2.16	2.24	2.31	2.30
CSH12	2.46	2.22	2.38	2.35	2.31
CSH10=	1.41	1.30	1.37	1.36	1.33
C6H14	3.50	3.15	3.39	3.26	3.31
C6H12= & CYCLO'S	1.41	1.36	1.40	1.42	1.33
C7+ IN GAS	5.05	4.63	4.52	4.73	4.52
LIQ HC'S	67.83	70.35	68.92	68.95	69.04
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	18.34	17.00	18.02	17.93	18.17
C5 -420 F	39.00				28.95
420-700 F	20.35				23.71
700-END PT	22.32				29.17

Table V-8 (cont.)

FILE: 1257004F T6Q2

A1

C5+-END PT	81.66	83.00	81.98	82.07	81.83
ISO/NORMAL MOLE RATIO					
C4	0.0256	0.0244	0.0282	0.0269	0.0267
C5	0.0504	0.0465	0.0458	0.0454	0.0439
C6	0.1990	0.2060	0.2033	0.1261	0.1951
C4=	0.0697	0.0651	0.0704	0.0696	0.0712
PARAFFIN/OLEFIN RATIO					
C3	1.4534	1.4623	1.6421	1.5196	1.5076
C4	0.7696	0.7805	0.7970	0.7810	0.7805
C5	1.6977	1.6628	1.6856	1.6735	1.6937
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))	0.8539				0.8743
RATIO CH4/(1-A)**2	4.2100				5.7174
ALPHA FRM CORRELATION	0.8269				0.8254
ALPHA (EXPTL/CORR)	1.0326				1.0593
W%CH4 FRM CORRELATION	21.7081				22.1983
W%CH4 (EXPTL/CORR)	0.4138				0.4068
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F	144.00				319.00
16	156.00				373.00
50	538.00				635.00
84	895.00				961.00
90	985.00				1042.00
RANGE(16-84 %)	739.00				588.00
WT % @ 420 F	37.10				23.40
WT % @ 700 F	67.10				57.75

Table V-8 (cont.)

FILE: 1257004G T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-31	570-04-32	570-04-33	570-04-34	570-04-35
FEED H2:CO:AR	60:40:0	60:40:0	60:40:0	60:40:0	60:40:0
HRS ON STREAM	719.50	745.00	766.50	791.00	814.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	260.00	261.00	260.00	260.00	260.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	24.50	25.50	21.50	24.50	23.00
EFFLNT GAS LITER	204.90	215.00	183.50	208.60	194.30
GM AQUEOUS LAYER	80.66	83.78	70.97	80.00	73.47
GM OIL	53.83	53.77	49.86	52.05	48.83
MATERIAL BALANCE					
GM ATOM CARBON %	101.79	101.25	104.64	101.00	100.40
GM ATOM HYDROGEN %	95.99	95.77	98.75	95.87	94.52
GM ATOM OXYGEN %	97.13	97.34	97.62	96.91	95.80
RATIO CHX/(H2O+CO2)	1.0912	1.0764	1.1370	1.0808	1.0926
RATIO X IN CHX	2.3028	2.3122	2.2978	2.3092	2.2967
USAGE H2/CO PRDCT	1.9021	1.9075	1.8727	1.9164	1.8978
FEED H2/CO FRM EFFLNT	1.4145	1.4189	1.4156	1.4238	1.4122
RESIDUAL H2/CO RATIO	0.7438	0.7507	0.7664	0.7649	0.7649
RATIO CO2/(H2O+CO2)	0.0623	0.0658	0.0616	0.0606	0.0625
K SHIFT IN EFFLNT	0.0494	0.0528	0.0503	0.0493	0.0510
SPECIFIC ACTIVITY SA	0.8670	0.8087	0.8519	0.8095	0.8087
CONVERSION					
ON CO %	57.91	57.76	58.68	57.22	57.14
ON H2 %	77.87	77.65	77.63	77.02	76.78
ON CO+H2 %	69.60	69.43	69.79	68.85	68.64
PRDCT SELECTIVITY, WT %					
CH4	8.91	9.38	8.67	9.24	8.50
C2 HC'S	1.52	1.61	1.45	1.53	1.60
C3H8	2.05	2.18	1.99	2.10	2.08
C3H6=	1.31	1.34	1.25	1.32	1.30
C4H10	1.84	1.92	1.76	1.87	1.81
C4H8=	2.23	2.30	2.15	2.27	2.30
C5H12	2.27	2.53	2.29	2.48	2.41
C5H10=	1.31	1.39	1.30	1.38	1.36
C6H14	3.24	3.33	3.15	3.33	3.28
C6H12= & CYCLO'S	1.30	1.26	1.27	1.39	1.36
C7+ IN GAS	4.42	5.23	4.37	4.57	4.86
LIQ HC'S	69.59	67.53	70.35	68.53	69.14
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	17.86	18.73	17.28	18.32	17.59
C5 -420 F				29.66	
420-700 F				24.19	
700-END PT				27.83	

Table V-8 (cont.)

FILE: 12S7004G T6Q2

A1

C5+-END PT	82.14	81.27	82.72	81.68	82.41
ISO/NORMAL MOLE RATIO					
C4	0.0276	0.0270	0.0230	0.0256	0.0277
C5	0.0425	0.0483	0.0494	0.0460	0.0458
C6	0.1971	0.2002	0.2101	0.1958	0.2032
C4=	0.0736	0.0664	0.0679	0.0676	0.0709
PARAFFIN/OLEFIN RATIO					
C3	1.4955	1.5565	1.5174	1.5258	1.5330
C4	0.7958	0.8079	0.7912	0.7937	0.7614
C5	1.6848	1.7640	1.7084	1.7543	1.7283
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))				0.8729	
RATIO CH4/(1-A)**2				5.7208	
ALPHA FRM CORRELATION				0.8238	
ALPHA (EXPTL/CORR)				1.0596	
WYCH4 FRM CORRELATION				22.4600	
WYCH4 (EXPTL/CORR)				0.4112	
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F				.315.00	
16				372.00	
50				618.00	
84				946.00	
90				1028.00	
RANGE(16-84 %)				574.00	
WT % @ 420 F				24.10	
WT % @ 700 F				59.40	

Table V-8 (cont.)

FILE: 1257004H T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-36	570-04-37	570-04-38	570-04-39	570-04-40
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	837.00	865.00	910.50	934.00	958.00
PRESSURE, PSIG	500.00	500.00	500.00	500.00	500.00
TEMP. C	261.00	261.00	269.00	269.00	269.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	51.00	21.50	24.00	23.50	24.00
EFFLNT GAS LITER	440.80	186.10	198.10	201.20	205.50
GM AQUEOUS LAYER	164.24	70.08	74.42	73.06	72.15
GM OIL	108.94	44.65	44.09	40.37	41.52
MATERIAL BALANCE					
GM ATOM CARBON %	102.84	101.81	103.08	102.88	103.27
GM ATOM HYDROGEN %	96.32	95.66	94.99	94.93	94.98
GM ATOM OXYGEN %	97.37	98.44	96.34	97.61	95.61
RATIO CHX/(H2O+CO2)	1.1090	1.0661	1.1316	1.1034	1.1546
RATIO X IN CHX	2.3011	2.3134	2.4203	2.4342	2.4356
USAGE H2/CO PRODT	1.8846	1.9101	1.8033	1.8414	1.8085
FEED H2/CO FRM EFFLNT	1.4048	1.4094	1.3822	1.3841	1.3796
RESIDUAL H2/CO RATIO	0.7615	0.7524	0.6939	0.6957	0.7135
RATIO CO2/(H2O+CO2)	0.0645	0.0676	0.1173	0.1095	0.1132
K SHIFT IN EFFLNT	0.0525	0.0545	0.0922	0.0856	0.0911
SPECIFIC ACTIVITY SA	0.7730	0.7750	0.7064	0.6571	0.6474
CONVERSION					
ON CO %	57.28	56.75	62.05	60.08	60.83
ON H2 %	76.84	76.91	80.95	79.93	79.74
ON CO+H2 %	68.71	68.54	73.01	71.61	71.79
PRDT SELECTIVITY, WT %					
CH4	8.71	9.31	14.66	15.36	15.55
C2 HC'S	1.60	1.82	2.46	2.48	2.48
C3H8	2.16	2.26	3.31	3.44	3.41
C3H6=	1.30	1.34	1.15	1.25	1.13
C4H10	1.90	1.94	2.60	2.73	2.67
C4H8=	2.33	2.37	2.43	2.53	2.39
CSH12	2.57	2.54	3.29	3.49	3.40
CSH10=	1.41	1.36	1.44	1.51	1.44
C6H14	3.48	3.30	4.44	4.71	4.62
C6H12= & CYCLO'S	1.50	1.35	1.47	1.20	1.51
C7+ IN GAS	5.25	4.93	7.21	7.84	8.49
LIQ HC'S	67.78	67.47	55.53	53.47	52.92
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	18.00	19.04	26.62	27.78	27.63
C5 -420 F		31.03	36.83	39.07	
420-700 F		24.19	21.49	21.87	
700-END PT		25.74	15.07	11.28	

Table V-8 (cont.)

FILE: 1257004H T6Q2

A1

CS--END PT	82.00	80.96	73.38	72.22	72.37
ISO/NORMAL MOLE RATIO					
C4	0.0260	0.0286	0.0341	0.0337	0.0366
C5	0.0434	0.0461	0.0631	0.0608	0.0616
C6	0.1958	0.1965	0.2150	0.2128	0.2115
C4=	0.0731	0.0744	0.0982	0.0954	0.0976
PARAFFIN/OLEFIN RATIO					
C3	1.5822	1.6084	2.7422	2.6389	2.8717
C4	0.7870	0.7907	1.0323	1.0408	1.0805
C5	1.7687	1.8092	2.2221	2.2451	2.2897
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))		0.8698	0.8458	0.8403	
RATIO CH4/(1-A)**2		5.4939	6.1662	6.0238	
ALPHA FRM CORRELATION		0.8246	0.8281	0.8280	
ALPHA (EXPTL/CORR)		1.0549	1.0214	1.0149	
W%CH4 FRM CORRELATION		22.4383	23.0004	23.0404	
W%CH4 (EXPTL/CORR)		0.4147	0.6375	0.6667	
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F		302.00	294.00	288.00	
16		349.00	332.00	309.00	
50		598.00	518.00	487.00	
84		921.00	830.00	750.00	
90		1006.00	930.00	839.00	
RANGE(16-84 %)		572.00	498.00	441.00	
WT % @ 420 F		26.00	34.17	38.00	
WT % @ 700 F		61.85	72.87	78.90	

Table V-8 (cont.)

FILE: 12570041 T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO.	12570-04				
CATALYST	CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)				
FEED	H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)				
RUN & SAMPLE NO.	12570-04-41	570-04-42	570-04-43	570-04-44	570-04-45
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	980.50	1005.50	1031.00	1049.50	1074.00
PRESSURE, PSIG	500.00	500.00	500.00	430.00	500.00
TEMP. C	269.00	269.00	268.00	265.00	262.00
FEED CC/MIN	400.00	400.00	400.00	400.00	400.00
HOURS FEEDING	22.50	25.00	25.50	18.50	24.50
EFFLNT GAS LITER	194.30	217.90	216.30	110.90	186.90
GM AQUEOUS LAYER	67.17	74.49	75.60	63.71	87.58
GM OIL	33.54	43.32	47.03	23.24	29.32
MATERIAL BALANCE					
GM ATOM CARBON %	98.97	102.72	102.70	78.00	83.03
GM ATOM HYDROGEN %	92.44	94.54	94.33	78.60	85.86
GM ATOM OXYGEN %	94.74	95.48	93.75	88.24	97.30
RATIO CHX/(H2O+CO2)	1.0868	1.1488	1.1861	0.8064	0.7427
RATIO X IN CHX	2.4608	2.4406	2.4125	2.4236	2.4362
USAGE H2/CO PRODT	1.8718	1.8337	1.8163	2.2032	2.2701
FEED H2/CO FRM EFFLNT	1.4009	1.3805	1.3778	1.5115	1.5510
RESIDUAL H2/CO RATIO	0.7291	0.7185	0.7176	0.5193	0.7047
RATIO CO2/(H2O+CO2)	0.1055	0.1042	0.0981	0.0626	0.0869
K SHIFT IN EFFLNT	0.0860	0.0836	0.0781	0.0347	0.0505
SPECIFIC ACTIVITY SA	0.5838	0.6116	0.6604	1.3783	0.7411
CONVERSION					
ON CO %	58.79	59.36	60.09	58.92	54.06
ON H2 %	78.55	78.85	79.21	85.89	79.13
ON CO+H2 %	70.32	70.66	71.17	75.15	69.30
PRDT SELECTIVITY, WT %					
CH4	16.68	15.69	14.29	14.65	15.26
C2 HC'S	2.65	2.47	2.29	2.34	2.37
C3H8	3.76	3.45	3.18	3.86	3.81
C3H6=	1.20	1.17	1.23	1.51	1.35
C4H10	2.98	2.76	2.60	3.06	3.11
C4H8=	2.54	2.48	2.47	2.97	2.65
CSH12	3.82	3.46	3.34	3.81	3.98
CSH10=	1.50	1.44	1.41	1.66	1.51
C6H14	5.08	4.42	4.38	5.00	5.31
C6H12= & CYCLO'S	1.52	1.39	1.43	1.57	1.52
C7+ IN GAS	9.16	7.05	6.67	7.99	8.27
LIQ HC'S	49.09	54.22	56.71	51.59	50.85
TOTAL	100.00	100.00	100.00	100.00	100.00
SUB-GROUPING					
C1 -C4	29.82	28.02	26.05	28.38	28.55
CS -420 F			38.78		41.70
420-700 F			24.10		26.29
700-END PT			11.06		3.46

Table V-8 (cont.)

FILE: 1257004I T6Q2

A1

C5+-END PT	70.18	71.98	73.95	71.62	71.45
ISO/NORMAL MOLE RATIO					
C4	0.0352	0.0343	0.0380	0.0410	0.0387
C5	0.0581	0.0576	0.0612	0.0542	0.0541
C6	0.1986	0.2073	0.2021	0.1929	0.1714
C4=	0.0958	0.0936	0.0932	0.0875	0.0904
PARAFFIN/OLEFIN RATIO					
C3	2.9856	2.8085	2.4670	2.4413	2.6937
C4	1.1319	1.0717	1.0177	0.9932	1.1319
C5	2.4751	2.3445	2.3015	2.2352	2.5574
SCHULZ-FLORY DISTRBTN					
ALPHA (EXP(SLOPE))			0.8455		0.8121
RATIO CH4/(1-A)**2			5.9879		4.3236
ALPHA FRM CORRELATION			0.8265		0.8277
ALPHA (EXPTL/CORR)			1.0230		0.9811
W%CH4 FRM CORRELATION			23.2874		21.6737
W%CH4 (EXPTL/CORR)			0.6135		0.7042
LIQ HC COLLECTION					
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY					
N, REFRACTIVE INDEX					
SIMULT'D DISTILATN					
10 WT % @ DEG F			292.00		290.00
16			310.00		305.00
50			486.00		454.00
84			738.00		620.00
90			810.00		664.00
RANGE(16-84 %)			428.00		315.00
WT % @ 420 F			38.00		41.50
WT % @ 700 F			80.50		93.20

Table V-8 (cont.)

FILE: 1257004J T6Q2

A1

RESULT OF SYNGAS OPERATION

RUN NO. 12570-04
 CATALYST CO/X9/X11-TC123 80 CC 40.5 G AFTER USE:56.4 G (+15.9 G)
 FEED H2:CO OF 60:40 @ 400 CC/MN OR 300 GHSV (CAT#12524-43)

RUN & SAMPLE NO.	12570-04-46	570-04-47	570-04-48	570-04-49
	=====	=====	=====	=====
FEED H2:CO:AR	60:40: 0	60:40: 0	60:40: 0	60:40: 0
HRS ON STREAM	1079.42	1098.42	1122.42	1145.42
PRESSURE, PSIG	500.00	500.00	500.00	500.00
TEMP. C	260.00	254.00	261.00	260.00
FEED CC/MIN	400.00	400.00	400.00	400.00
HOURS FEEDING	5.42	19.00	24.00	23.00
EFFLNT GAS LITER	44.40	117.00	213.40	205.70
GM AQUEOUS LAYER	13.20	56.31	73.03	72.25
GM OIL	10.30	18.27	43.91	43.80
MATERIAL BALANCE				
GM ATOM CARBON %	100.17	61.22	101.27	102.23
GM ATOM HYDROGEN %	86.84	68.20	93.30	94.62
GM ATOM OXYGEN %	84.77	76.26	96.59	97.92
RATIO CHX/(H2O+CO2)	1.3868	0.6573	1.0976	1.0883
RATIO X IN CHX	2.3740	2.3705	2.3783	2.3568
USAGE H2/CO PRDCT	1.7125	2.5812	1.9075	1.9346
FEED H2/CO FRM EFFLNT	1.3004	1.6712	1.3820	1.3883
RESIDUAL H2/CO RATIO	0.7047	0.8053	0.7270	0.7235
RATIO CO2/(H2O+CO2)	0.1000	0.0230	0.0728	0.0603
K SHIFT IN EFFLNT	0.0783	0.0190	0.0571	0.0465
SPECIFIC ACTIVITY SA	0.9980	0.7598	0.7994	0.8179
CONVERSION				
ON CO %	59.11	48.76	55.48	54.89
ON H2 %	77.84	75.31	76.58	76.49
ON CO+H2 %	69.70	65.37	67.73	67.45
PRDCT SELECTIVITY, WT %				
CH4	12.27	12.04	12.35	11.44
C2 HC'S	1.91	1.86	1.99	1.83
C3H8	3.06	3.07	3.02	2.66
C3H6=	1.09	1.28	1.22	1.20
C4H10	2.50	2.77	2.56	2.29
C4H8=	2.13	2.19	2.37	2.23
C5H12	3.20	3.52	3.40	3.13
C5H10=	1.22	1.17	1.34	1.35
C6H14	4.27	4.62	4.43	4.08
C6H12= & CYCLO'S	1.23	1.10	0.12	1.24
C7+ IN GAS	6.65	7.77	6.19	5.53
LIQ HC'S	60.47	58.62	61.00	63.02
TOTAL	100.00	100.00	100.00	100.00
SUB-GROUPING				
C1 -C4	22.96	23.20	23.51	21.64
C5 -420 F	35.32			32.98
420-700 F	28.30			24.14
700-END PT	13.42			21.24

Table V-8 (cont.)

FILE: 1257004J T6Q2

A1

C5+-END PT	77.04	76.80	76.49	78.36
ISO/NORMAL MOLE RATIO				
C4	0.0387	0.0342	0.0364	0.0331
C5	0.0541	0.0431	0.0516	0.0456
C6	0.1714	0.1308	0.1712	0.1690
C4=	0.0904	0.0764	0.0841	0.0744
PARAFFIN/OLEFIN RATIO				
C3	2.6937	2.2934	2.3684	2.1132
C4	1.1319	1.2177	1.0422	0.9885
C5	2.5574	2.9260	2.4782	2.2529
SCHULZ-FLORY DISTRBTN				
ALPHA (EXP(SLOPE))	0.8601			0.8623
RATIO CH4/(1-A)**2	6.2687			6.0313
ALPHA FRM CORRELATION	0.8278			0.8266
ALPHA (EXPTL/CORR)	1.0389			1.0432
W%CH4 FRM CORRELATION	21.2204			21.6189
W%CH4 (EXPTL/CORR)	0.5784			0.5291
LIQ HC COLLECTION				
PHYS. APPEARANCE	OIL WAX	OIL WAX	OIL WAX	OIL WAX
DENSITY				
N, REFRACTIVE INDEX				
SIMULT'D DISTILATN				
10 WT % @ DEG F	299.00			305.00
16	340.00			345.00
50	535.00			567.00
84	758.00			876.00
90	828.00			951.00
RANGE(16-84 %)	418.00			531.00
WT % @ 420 F	31.00			28.00
WT % @ 700 F	77.80			66.30

Table V-9

A Performance Comparison of the Key Catalysts Studied

Run No.	Hours on Stream	Syngas Conv. %	CH ₄ wt. %	C5+ wt. %	Specific Activity	Deactivation
Reference	75.5	58.4	12.3	71.3	1.0	
	284.5	55.1	13.5	68.4		1.6%/100 hours
11	71	77.8	10.1	80.3	12.5	
	165.5	68.5	16.1	73.1	4.0	11%/100 hours
15	45	60.5	11.2	74.3	2.6	
	139.5	56.5	12.6	73.7	2.1	4.2%/100 hours
	358	55.7	12.5	71.4	1.9	1.5%/100 hours
32	43.5	46.5	5.4	85.8	3.1	
	187	42.1	5.3	84.5	2.6	4.2%/100 hours
43	45	49.1	4.7	87.0	3.6	
	211	42.3	5.9	84.0	2.5	4 %/100 hours
45	45.3	48.0	3.6	91.7	3.4	
	259.3	46.2	3.4	90.3	3.0	0.9%/100 hours
51	45.5	46.0	4.0	89.6	9.9	
	166.5	44.5	3.5	89.2	9.6	1.2%/100 hours
55	24.5	35.8	6.8	79.9	5.4	
	48.5	40.7	3.5	88.8	8.6	
	71.5	75.4	9.3	80.3	4.5	(at 500 psig)
	886.5	68.5	9.3	81.0	2.6	0.8%/100 hours

Note: All of the above data at 260 C, 300 psig (except where indicated) and 300 SV.

Table V-10

An identification of Promoter and Zeolite Codes

DOE Promoter Code

X3
X4
X7
X9
X10
X11
X12
X13
X14
X15
X16

Promoter

Ruthenium
Molybdenum
Cerium
Zirconium
Magnesium
Manganese
Nickel
Rhenium
Titanium
Lanthanum
Potassium

Doe Zeolite Code*

UCC-101
UCC-103
UCC-107
TC-111
UCC-112
UCC-113

UCC-114
UCC-115
TC-121
TC-123

TC-124

TC-133

TC-201

TC-211
TC-12365

Zeolite Catalyst Support

LZ-10
Lz-10, acid extracted (A.E.) 3M HCl
LZ-210 9.0
ALPO-11 calcined 650 C/3 hours
M-8
LZ-210 SN 9.0, steamed 850 C for
1 hour and A.E. 3M HCl
Ammonium exchanged NaY
ALPO-5
LZ-210 SN 9.0, steamed 750 C/1 hour
LZ-210 SN 9.0, steamed 750 C for
1 hour and A.E. 3M HCl
LZ-210 SN 9.0, steamed 750 C for
1 hour and NH4 exchanged
LZ-210-11, steamed 750 C for
1 hour and A.E. 3M HCl
Small particle SAPO-11 calcined at
650 C and steamed 780 C/2 hours
Co/Mn/Zr-TC-123 supported on SAPO-37
LZ-210 SN 9.0, steamed 650 C and
A.E. 3M HCl

* Includes footnote that zeolite codes used in the text for the report do not distinguish between "UCC" and "TC".