THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 26A From 10/19/47 Hr. 1200 to 10/20/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1610	
Nat. Gas	2360	
Total	3970	40.6
Fresh Feed	5960	
F. F. by C	6850	
Avg. F. F.	6405	
Wet Gas	2940	
Contraction		54.0
Recycle	8900	
Bleed	248	
Total	9148	
Total Feed	15553	
Recycle/F.F.	1.42	
Inlet Vel.	1.14 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	365
O_2 Preheat, °F	484
Gas Preheat, °F	743
Reactor Press.	363
Steam Back Press.	828
Temperatures, °F	
Heater Outlet	498
Catalyst ±1	723
±2	647
±3	574
±4	540
±5	502
Average	597
Product Separator	

DISTILLATIONS	A S T M					Hempel Dist.		
						°F	%	A.P.I.
Prod.	GASO							
A.P.I.						to 400		
I.B.P.						400-550		
5%						550+		
10%								
20								
30						WATER		
40						Temp.	%	
50						200		
60						203		
70						208		
80								
90								
95								
E.P.								
Rec.								
Res.								
Loss								

CATALYST DATA	
In Reactor at Start of Period	212
Fresh Catalyst Charged	23
Catalyst Recharged	30
Total	265
Catalyst Taken Out	49
In Reactor at End of Period	216
Reactor d-P, H_2O	
Pounds in Reactor	127
Density, lbs./cu. ft.	70
Bed Height, Feet	3.05
Space Vel. SCFH./lb. cat.	
Inventory Figures	27.6
From d-P Meters	46.9

CATALYST ANALYSIS	Particle Size				
	Screen			Sedimentation	
	Frac.	M	%	M	%
	On 40	420+	1.0	80+	
	100	419-150	24.2	80-40	
	150	149-105	21.4	40-20	
	200	104-74	18.2	20-10	
	250	73-62	3.6	10-0	
	325	61-44	0.6		
	<325	43-0	31.0		
	Density, lbs./cu. ft			Chem. Anal	
	Aerated			% Fe	
	Settled			% C	
	Compacted			% Oil	
	Sp. Grav.	3.54		Specific Surface	
					m^2 gm

NATURAL GAS	%
CO_2	1.16
CH_4	86.56
C_2H_6	8.46
C_3H_8	3.81
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION	Oil	Water	Product	Pour °F	SUS @ °F
Neut No.					
Sap No.					
Hydrox No.					
Bromine No.					
% Fe					
% Alc					

GENERATOR ELEMENTAL BALANCE

	IN #/hr	Mol %	SCFH m/hr	C	H	O	OUT	Mol %	SCFH m/hr	C	H	O
O_2	135.94		4.248			8.496	CO_2	2.0	.338	.338		.676
CO_2	3.17		.072	.072		.144	CO	33.2	5.611	5.611		5.611
CH_4	85.25		5.328	5.328	21.312		CH_4	4.8	.810	.810	3.240	
C_2H_6	15.81		.527	1.054	3.162		H_2	56.5	9.549		19.098	
C_3H_8	10.43		.237	.711	1.896		N_2	3.5	.592			
C_4H_{10}							H_2O				4.032	2.353
N_2							Total		16.900	6.759	26.372	8.640
Total	250.60		10.408	7.165	26.370	8.640						

Less H_2O 208.25

	FRESH FEED %	m/hr	#/hr	WET GAS %	Measured m/hr	Measured #/hr	At Wt. Balance m/hr	At Wt. Balance #/hr	RECYCLE m/hr	COMB. FEED m/hr	COMB. FEED %	EFFLUENT m/hr	EFFLUENT %
CO	33.2	5.61	157.08	13.61	1.06	29.68	1.24	34.72	3.29	8.90	21.36	4.53	12.63
H2	56.5	9.55	19.10	50.01	3.88	7.76	4.54	9.08	12.07	22.25	53.41	16.61	46.31
CO2	2.0	.34	14.96	14.30	1.11	48.84	1.30	57.20	3.45	3.79	9.10	4.75	13.24
N2	3.5	.59	16.52	6.29	.49	13.72	.57	15.96	1.52	2.11	5.06	2.09	5.83
CH4	4.8	.81	12.96	11.05	.86	13.76	1.01	16.16	2.67	3.48	8.35	3.68	10.26
C2H4				1.34	.10	2.80	.12	3.36	.32	.32	.77	.44	1.23
C2H6				.68	.05	1.50	.06	1.80	.16	.16	.38	.22	.61
C3H6				.93	.07	2.94	.08	3.36	.22	.22	.53	.30	.84
C3H8				.34	.03	1.32	.04	1.76	.08	.08	.19	.12	.33
C4H8				.41	.03	1.68	.04	2.24	.10	.10	.24	.14	.39
C4H10				.49	.04	2.32	.05	3.40	.12	.12	.29	.17	.47
C5H10				.39	.03	2.60	.04	2.80	.09	.09	.22	.13	.36
C6H12				.15	.01	.84	.01	.84	.04	.04	.10	.05	.14
OIL								26.18				.19	.53
WATER												2.45	6.85
TOTAL		16.90	220.62		7.76	124.26				41.66		35.87	
H2+CO		15.16											
H2/CO		1.70					3.66			2.50		3.67	

NET CHANGE ON REACTION	Carbon m/hr	Carbon a/hr	Carbon %	Hydrogen a/hr	Hydrogen %	Oxygen a/hr	Ultimate Oil #/hr	Ultimate Oil #/gal	Ultimate Oil gal/hr	Unsats. %
CO	-4.37	-4.37	22.10			-4.37				
H2	-5.01			10.02						
CO2	.96	.96	17.11			1.42				
N2	-.02									
CH4	.20	.20	3.57	.80						
C2H4	.12	.24	4.28	.48						
C2H6	.06	.12	2.14	.36						
C3H6	.08	.24	4.28	.48			3.02		.45	
C3H8	.04	.12	2.14	.32						
C4H8	.04	.16	2.85	.32			2.13		.35	
C4H10	.05	.20	3.57	.50			3.40		.50	
C5H10	.04	.20	3.57	.40			2.80		.52	
C6H12	.01	.06	1.07	.12			.84			
OIL		1.87	33.33	3.74			26.18		4.75	
WATER				2.50		(2.45) 1.25				
TOTAL	7.80						38.57		6.67	
H2+CO										
H2/CO										

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	9.99	8.36	1.45	24.52			
C3+	50.81	40.58	7.06	119.38			
C4+	44.39	35.46	6.17	104.33			
Ult. Oil		38.37	6.67	112.79	6.08	1.06	149.78
C02	17.11	42.24	7.35	124.29			
H20		44.10	7.67	129.70			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	129.3		151.0
Oil	7.3		
Water	62.3		
Total	198.9	90.0	220.6

EFFLUENT RATIOS	
H2/H20	6.78
C02/C0	1.05
(H2) (C02) / (H20) (C0)	7.11

CONTRACTION: 46.2

C0 Conversion: 77.80

H2 Conversion: 59.46

Yield Calculations assume "oil" is CH_2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at 0 C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 268 From 10/20/47 Hr. 0700 to 10/21/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1520	
Nat. Gas	2230	
Total	3750	40.5
Fresh Feed	4930	
F. F. by C	6870	
Avg. F. F.	5900	
Wet Gas	2440	
Contraction		58.6
Recycle	8400	
Bleed	216	
Total	8616	
Total Feed	14576	
Recycle/F.F.	1.46	
Inlet Vel.	1.06 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	308
O_2 Preheat, °F	476
Gas Preheat, °F	776
Reactor Press.	300
Steam Back Press.	864
Temperatures, °F	
Heater Outlet	382
Catalyst #1	678
#2	632
#3	581
#4	550
#5	517
Average	591
Product Separator	

DISTILLATIONS A S T M	
Prod.	6450
A.P.I.	45.7
I.B.P.	112
5%	
10%	150
20	180
30	204
40	228
50	248
60	274
70	300
80	328
90	362
95	390
E.P.	414
Rec.	98.0
Res.	1.0
Loss	1.0

Hempel Dist.	°F	%	A.P.I.
to 400		75.3	50.8
400-550		16.3	33.4
550+			

WATER	
Temp.	%
200	
203	
208	

CATALYST DATA	
In Reactor at Start of Period	216
Fresh Catalyst Charged	62
Catalyst Recharged	
Total	278
Catalyst Taken Out	41
In Reactor at End of Period	237
Reactor d-P, H_2O	
Pounds in Reactor	145
Density, lbs./cu. ft.	70
Bed Height, Feet	3.6
Space Vel. SCFH/lb. cat.	
Inventory Figures	24.9
From d-P Meters	40.8

CATALYST ANALYSIS Particle Size	Screen			Sedimentation	
	Frac.	M	%	M	%
	On 40	420+	1.2	80+	
	100	419-150	28.3	80-40	
	150	149-105	28.3	40-20	
	200	104-74	22.5	20-10	
	250	73-62	4.2	10-0	
	325	61-44	11.7		
	<325	43-0	15.8		

Density, lbs./cu. ft.		Chem. Anal.	
Aerated		% Fe	
Settled		% C	
Compacted		% Oil	
Sp. Gravy.	4.9	Specific Surface	
			m^2 gm

NATURAL GAS	%
CO_2	.95
CH_4	85.93
C_2H_6	9.17
C_3H_8	3.94
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	56.16	34.23			
Sap. No.	49.4	128.51			
Hydrox. No.	56.0				
Bromine No.	126.34				
% Fe					
% Alc		7.6			

GENERATOR ELEMENTAL BALANCE

IN	#/hr	Mol %	SCFH m/hr	C	H	O
O_2	128.35	4.011				8.022
CO_2	2.46	.056	.056			.112
CH_4	80.90	5.056	5.056	20.224		
C_2H_6	16.20	.540	1.080	3.240		
C_3H_8	10.21	.232	.696	1.856		
C_4H_{10}						
N_2						
Total	238.12	9.895	7.888	25.320		8.134

OUT	Mol %	SCFH m/hr	C	H	O
CO_2	2.9	.452	.452		.904
CO	33.8	5.263	5.263		5.263
CH_4	1.6	.249	.249	.996	
H_2	58.3	9.077		18.154	
N_2	3.5	.545			
H_2O				6.170	1.967
Total		15.586	5.964	25.320	8.134

Less H_2O 202.71

	FRESH FEED %	m/hr	#/hr	WET GAS %	Measured m/hr	Measured #/hr	At Wt. Balance m/hr	At Wt. Balance #/hr	RECYCLE m/hr	COMB. FEED m/hr	COMB. FEED %	EFFLUENT m/hr	EFFLUENT %
CO	33.8	5.26	147.28	11.78	.76	21.28	1.00	28.00	2.68	7.94	20.72	3.68	10.87
H2	58.3	9.08	18.16	51.32	3.31	6.62	4.37	8.74	11.67	20.75	54.15	16.04	47.39
CO2	2.9	.45	19.80	15.90	1.02	44.88	1.35	59.40	3.61	4.06	10.59	4.96	14.65
N2	3.5	.54	15.12	6.23	.34	9.52	.45	12.60	1.19	1.73	4.51	1.64	4.84
CH4	1.6	.25	4.00	10.37	.67	10.72	.88	14.08	2.36	2.61	6.81	3.24	9.57
C2H4				1.51	.10	2.80	.13	3.64	.34	.34	.89	.47	1.39
C2H6				1.68	.04	1.20	.05	1.50	.15	.15	.39	.20	.59
C3H6				1.15	.07	3.08	.09	3.78	.26	.26	.68	.35	1.03
C3H8				.26	.02	.88	.03	1.32	[illegible]	.06	.16	.09	.27
C4H8				.52	.03	1.68	.04	2.24	.12	.12	.31	.16	.47
C4H10				.74	.05	3.40	.07	4.06	.17	.17	.44	.24	.71
C5H10				.42	.03	2.10	.04	2.80	.10	.10	.26	.14	.41
C6H12				.12	.01	.84	.01	.84	.03	.03	.08	.04	.12
OIL								19.74				.14	.41
WATER												2.46	7.27
TOTAL		15.57	204.36		6.44	109.00				38.32		33.85	
H2+CO		14.34											
H2/CO		1.73					4.37			2.61		4.36	

NET CHANGE ON REACTION	Carbon a/hr	Carbon %	Hydrogen a/hr	Hydrogen %	Oxygen a/hr	Ultimate Oil #/hr	Ultimate Oil #/gal	Ultimate Oil gal/hr	Unsats. %
CO	-4.26	19.01			-4.26				
H2	-4.71		-9.42						
CO2	.90	17.11			1.80				
N2	.09								
CH4	1.53	10.08	2.12						68.95
C2H4	.13	4.94	.52						
C2H6	.05	1.90	.30						
C3H6	.09	5.13	.54			3.40		.54	81.56
C3H8	.03	1.71	.27						
C4H8	.04	3.04	.32			2.13		.35	41.27
C4H10	.07	5.32	.70			4.06		.84	
C5H10	.04	3.80	.40			2.80		.52	
C6H12	.01	1.14	.12			.84			
OIL	1.41	26.81	2.82			19.74		3.04	
WATER			1.31		2.46				
TOTAL	7.17				.65	32.97		5.29	

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	16.52	15.22	2.80	47.35			
C3+	46.95	34.78	6.41	108.39			
C4+	40.11	29.68	5.47	92.50			
Ult. Oil		32.97	6.07	102.64	5.29	0.974	137.63
C02	17.11	39.60	7.29	123.27			
H20		44.28	8.15	137.82			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	109.0		144.0
Oil	11.8		
Water	49.1		
Total	169.9	82.8	204.4

EFFLUENT RATIOS	
H2/H20	6.52
C02/C0	1.35
(H2) (C02) / (H20) (C0)	8.79

CONTRACTION: 46.05

C0 Conversion: 80.99

H2 Conversion: 57.87

Yield Calculations assume "oil" is CH2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at O C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 26C From 10/21/47 Hr. 0700 to 10/22/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1370	
Nat. Gas	2280	
Total	3790	40.0
Fresh Feed	5320	
F. F. by C	6800	
Avg. F. F.	6060	
Wet Gas	2900	
Contraction		52.2
Recycle	8250	
Bleed	202	
Total	8452	
Total Feed	14512	
Recycle/F.F.	1.39	
Inlet Vel.	1.09 Ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	309
O_2 Preheat, °F	493
Gas Preheat, °F	760
Reactor Press.	300
Steam Back Press.	683
Temperatures, °F	
Heater Outlet	512
Catalyst #1	672
#2	630
#3	591
#4	564
#5	516
Average	594
Product Separator	

DISTILLATIONS									
	A S T M					Hempel Dist.			
						°F	%	A.P.I.	
Prod.	Gaso					to 400	72.6	49.9	
A.P.I.	45.7					400-550	22.6	29.8	
I.B.P.	111					550+			
5%									
10%	152								
20	168								
30	202					WATER			
40	224					Temp.	%		
50	244					200			
60	264					203			
70	284					208			
80	318								
90	354								
95	382								
E.P.	400								
Rec.	98.0								
Res.	0.8								
Loss.	1.2								

CATALYST DATA	
In Reactor at Start of Period	237
Fresh Catalyst Charged	32
Catalyst Recharged	
Total	269
Catalyst Taken Out	14.5
In Reactor at End of Period	255.5
Reactor d-P, H_2O	
Pounds in Reactor	145
Density, lbs./cu. ft.	70
Bed Height, Feet	3.6
Space Vel. SCFH/lb. cat.	
Inventory Figures	23.9
From d-P Meters	41.8

CATALYST ANALYSIS				
Particle Size				
Screen			Sedimentation	
Frac.	M	%	M	%
On 40	420+	1.3	80+	
100	419-150	18.3	80-40	
150	149-105	16.8	40-20	
200	104-74	24.2	20-10	
250	73-62	9.6	10-0	
325	61-44	3.4		
<325	43-0	23.4		
Density, lbs./cu. ft.			Chem. Anal.	
Aerated			% Fe	
Settled			% C	
Compacted			% Oil	
Sp. Grav. 4.7			Specific Surface	
			m^2 gm	

NATURAL GAS	%
CO_2	1.95
CH_4	85.91
C_2H_6	8.94
C_3H_8	3.20
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	55.0	38.26			
Sap. No.	103.8	127.95			
Hydrox. No.	68.7				
Bromine No.	109.5				
% Fe					
% Alc		8.0			

GENERATOR ELEMENTAL BALANCE

	IN					OUT					
	#/hr Mol %	SCFH m/hr	C	H	O		Mol %	SCFH m/hr	C	H	O
O_2	127.49	3.984			7.968	CO_2	2.4	.384	.384		.768
CO_2	5.15	.117	.117		.234	CO	35.1	5.612	5.612		5.612
CH_4	82.69	5.168	5.168	20.672		CH_4	1.0	.160	.160	.640	
C_2H_6	16.14	.538	1.076	3.228		H_2	57.9	9.258		18.516	
C_3H_8	8.49	.193	.579	1.544		N_2	3.6	.576			
C_4H_{10}						H_2O				6.268	1.822
N_2						Total		15.990	6.156	25.444	8.202
Total	239.96	10.000	6.940	25.444	8.202						

Loss H_2O 207.19

	FRESH FEED			WET GAS					RECYCLE	COMB. FEED		EFFLUENT		NET CHANGE ON REACTION									
					Measured		At Wt. Balance							Carbon			Hydrogen		Oxygen	Ultimate Oil			Unsats.
	%	m/hr	#/hr	%	m/hr	#/hr	m/hr	#/hr	m/hr	m/hr	%	m/hr	%	m/hr	a/hr	%	a/hr	%	a/hr	#/hr	#/gal	gal/hr	%
CO	35.1	5.61	157.08	9.24	.71	19.88	.78	21.84	2.06	7.67	20.03	2.84	8.67	-4.83	-4.83	13.90			-4.83				
H2	57.9	9.26	18.52	47.93	3.67	7.34	4.04	8.08	10.69	19.95	52.09	14.73	44.99	-5.22			-10.44						
CO2	2.4	.38	16.72	22.10	1.69	74.63	1.86	81.84	4.93	5.31	13.86	6.79	20.74	1.48	1.48	26.38			2.96				
N2	3.6	.58	16.24	5.45	.42	11.76	.46	12.88	1.22	1.80	4.70	1.68	5.13	-.12									
CH4	1.0	.16	2.56	9.70	.74	11.84	.81	12.96	2.16	2.32	6.06	2.97	9.07	.68	.65	11.59	2.60						
C2H4				1.33	.10	.28	.11	3.08	.30	.30	.78	.41	1.25	.11	.22	3.92	.44						64.56
C2H6				.73	.06	1.80	.07	2.10	.16	.16	.42	.23	.70	.07	.14	2.50	.42						
C3H6				1.00	.08	3.36	.09	3.78	.22	.22	.57	.31	.95	.09	.27	4.81	.54			3.40		.54	42.92
C3H8				1.33	.10	4.40	.11	4.84	.30	.30	.78	.41	1.25	.11	.33	5.88	.88						
C4H8				.48	.04	2.24	.04	2.24	.11	.11	.29	.15	.46	.04	.16	2.85	.32			2.13		.35	53.33
C4H10				.42	.03	1.74	.03	1.74	.09	.09	.23	.12	.37	.03	.12	2.14	.30			1.74		.36	
C5H10				.33	.03	2.10	.03	2.10	.07	.07	.18	.10	.31	.03	.15	2.67	.30			2.10		.39	
C6H12																							
OIL								18.34				.13	.40		1.31	23.35	2.62			18.34		2.82	
WATER												1.87	5.71				3.02		(1.87)				
TOTAL		15.99	211.12		7.65	141.37				38.30		32.74		7.56					1.01	27.71		4.46	
H2+CO		14.87																					
H2/CO		1.65					5.18			2.60		5.19											

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	18.01	15.58	2.76	46.67			
C3+	41.70	33.04	5.86	99.09			
C4+	31.01	24.42	4.33	73.22			
Ult. Oil		27.71	4.91	83.03	4.46	0.791	111.77
C02	26.38	65.12	11.54	195.14			
H20		33.66	5.97	100.95			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	141.4		155.0
Oil	14.5		
Water	42.2		
Total	198.1	93.8	211.1

EFFLUENT RATIOS	
H2/H20	7.88
C02/C0	2.39
(H2) (C02) / (H20) (C0)	18.87

CONTRACTION: 47.28

C0 Conversion: 86.10

H2 Conversion: 56.37

Yield Calculations assume "oil" is CH2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at O C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 26 D From 10/22/47 Hr. 0700 to 10/23/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1500	
Nat. Gas	2240	
Total	3740	40.3
Fresh Feed	5200	
F. F. by C	6220	
Avg. F. F.	5710	
Wet Gas	2540	
Contraction		59.3
Recycle	8500	
Bleed	210	
Total	8710	
Total Feed	14930	
Recycle/F.F.	1.4	
Inlet Vel.	1.04 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	308
O_2 Preheat, °F	492
Gas Preheat, °F	731
Reactor Press.	300
Steam Back Press.	653
Temperatures, °F	
Heater Outlet	581
Catalyst #1	666
#2	630
#3	609
#4	583
#5	539
Average	605
Product Separator	

DISTILLATIONS	A S T M	Hempel Dist. °F	%	A.P.I.
Prod.	60/50	to 400	72.0	54.2
A.P.I.	48.0	400-550	14.3	
I.B.P.	110	550+		
5%				
10%	146			
20	172			
30	196	WATER		
40	220	Temp.	%	
50	240	200		
60	262	203		
70	290	208		
80	320			
90	344			
95	384			
E.P.	402			
Rec.	97.5			
Res.	1.4			
Loss.	1.1			

CATALYST DATA	
In Reactor at Start of Period	254.5
Fresh Catalyst Charged	47.0
Catalyst Recharged	
Total	301.5
Catalyst Taken Out	17.25
In Reactor at End of Period	284.25
Reactor d-P, H_2O	
Pounds in Reactor	145.0
Density, lbs./cu. ft.	75.5
Bed Height, Feet	3.4
Space Vel. SCFH/lb. cat.	
Inventory Figures	21.9
From d-P Meters	42.9

CATALYST ANALYSIS — Particle Size				
	Screen		Sedimentation	
Frac.	M	%	M	%
On 40	420+	2.0	80+	73.0
100	419-150	21.2	80-40	21.0
150	149-105	22.2	40-20	4.0
200	104-74	24.7	20-10	2.0
250	73-62	5.0	10-0	—
325	61-44	18.7		
<325	43-0	6.2		
Density, lbs./cu. ft.			Chem. Anal.	
Aerated			% Fe	
Settled			% C	
Compacted			% Oil	
Sp. Grav. 4.5			Specific Surface	
				m^2 gm

NATURAL GAS	%
CO_2	1.44
CH_4	58.31
C_2H_6	8.11
C_3H_8	2.13
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	46.9	43.33			
Sap. No.	102.7	127.95			
Hydrox. No.	65.0				
Bromine No.	133.8				
% Fe					
% Alc		9.3			

GENERATOR ELEMENTAL BALANCE

	IN Mol %	SCFH m/hr	C	H	O
O_2					
CO_2					
CH_4					
C_2H_6					
C_3H_8					
C_4H_{10}					
N_2					
Total					

	OUT Mol %	SCFH m/hr	C	H	O
CO_2					
CO					
CH_4					
H_2					
N_2					
H_2O					
Total					

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 86E From 10/23/47 Hr. 0700 to 10/24/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1550	
Nat. Gas	2180	
Total	3730	41.6
Fresh Feed	5000	
F. F. by C	5500	
Avg. F. F.	5250	
Wet Gas	2490	
Contraction		54.8
Recycle	8900	
Bleed	223	
Total	9123	
Total Feed	14623	
Recycle/F.F.	1.65	
Inlet Vel.	1.06 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	310
O_2 Preheat, °F	464
Gas Preheat, °F	756
Reactor Press.	300
Steam Back Press.	760
Temperatures, °F	
Heater Outlet	620
Catalyst #1	675
#2	659
#3	624
#4	616
#5	604
Average	635
Product Separator	

DISTILLATIONS — ASTM	
Prod.	Condso
A.P.I.	47.5
I.B.P.	110
5%	
10%	144
20	166
30	190
40	
50	
60	
70	
80	
90	
95	
E.P.	
Rec.	
Res.	
Loss.	

Hempel Dist.	°F	%	A.P.I.
to 400		71.6	54.1
400-550		20.3	35.1
550+			

WATER	Temp.	%
	200	
	203	
	208	

CATALYST DATA	
In Reactor at Start of Period	284.2
Fresh Catalyst Charged	80
Catalyst Recharged	
Total	364.2
Catalyst Taken Out	57
In Reactor at End of Period	307.2
Reactor d-P, H_2O	
Pounds in Reactor	232.0
Density, lbs./cu. ft.	95.0
Bed Height, Feet	4.6
Space Vel. SCFH/lb. cat.	
Inventory Figures	17.9
From d-P Meters	23.6

CATALYST ANALYSIS — Particle Size	Screen		Sedimentation	
Frac.	M	%	M	%
On 40	420+	2.2	80+	57.0
100	419-150	22.0	80-40	35.0
150	149-105	21.4	40-20	4.0
200	104-74	17.2	20-10	2.0
250	73-62	25.3	10-0	2.0
325	61-44	4.6		
<325	43-0	7.3		

Density, lbs./cu. ft.	Chem. Anal.	
Aerated	% Fe	
Settled	% C	
Compacted	% Oil	
Sp. Grav. 4.2	Specific Surface	
		m^2/gm

NATURAL GAS	%
CO_2	1.18
CH_4	87.89
C_2H_6	8.63
C_3H_8	2.30
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	47.0	40.51			
Sap. No.	94.3	127.55			
Hydrox. No.	75.0				
Bromine No.	106.0				
% Fe					
% Alc		10.9			

GENERATOR ELEMENTAL BALANCE

IN	~~#/hr Mol %~~	~~SCFH~~ m/hr	C	H	O
O_2	130.88	4.090			8.180
CO_2	2.99	.068	.068		.136
CH_4	80.88	5.055	5.055	20.220	
C_2H_6	14.88	.496	.992	2.976	
C_3H_8	5.81	.132	.690	1.056	
C_4H_{10}					
N_2					
Total	235.44	9.842	6.805	24.252	8.316

Loss H2O 194.42

OUT	Mol %	~~SCFH~~ m/hr	C	H	O
CO_2	1.7	.247	.247		.494
CO	38.2	5.543	5.543		5.543
CH_4	5.0	.726	.726	2.904	
H_2	54.5	7.907		15.814	
N_2	0.6	.087			
H_2O				5.534	2.279
Total		14.510	6.516	24.852	8.316

	FRESH FEED %	m/hr	#/hr	WET GAS %	Measured m/hr	Measured #/hr	At Wt. Balance m/hr	At Wt. Balance #/hr	RECYCLE m/hr	COMB. FEED m/hr	COMB. FEED %	EFFLUENT m/hr	EFFLUENT %
CO	38.2	5.54	153.12	1.41	.09	2.52	.10	2.80	.34	5.88	15.24	1.44	1.27
H2	54.5	7.91	15.82	49.86	3.28	6.56	3.80	7.60	12.00	19.91	51.59	15.80	45.65
CO2	1.7	.25	11.00	20.20	1.33	58.52	1.54	67.76	4.86	5.11	13.24	6.40	18.49
N2	0.6	.09	2.52	1.57	.10	2.80	.12	3.36	.37	.46	1.19	.49	1.42
CH4	5.0	.73	11.68	19.44	1.28	20.48	1.48	23.68	4.68	5.41	14.02	6.16	17.80
C2H4				2.00	.13	3.64	.15	4.20	.48	.48	1.24	.63	1.82
C2H6				.94	.06	1.80	.07	2.10	.23	.23	.60	.30	.87
C3H6				4.69	.11	4.62	.13	5.46	.41	.41	1.06	.54	1.56
C3H8				.69	.05	2.20	.06	2.64	.17	.17	.44	.23	.66
C4H8				.81	.05	2.80	.06	3.36	.19	.19	.49	.25	.72
C4H10				.34	.02	1.16	.02	1.16	.08	.08	.21	.10	.29
C5H10				.78	.05	3.80	.06	4.20	.19	.19	.49	.15	.43
C6H12				.31	.02	1.68	.02	1.68	.07	.07	.18	.09	.26
OIL								23.10				.17	.49
WATER												2.86	8.26
TOTAL		14.51	196.14		6.57	112.28				38.59		34.61	
H2+CO		13.45											
H2/CO		1.43					38.0			3.39		35.9	

NET CHANGE ON REACTION	Carbon m/hr	Carbon a/hr	Carbon %	Hydrogen a/hr	Hydrogen %	Oxygen a/hr	Ultimate Oil #/hr	Ultimate Oil #/gal	Ultimate Oil gal/hr	Unsats. %
CO	-5.44	-5.44	1.81			-5.44				
H2	-4.11			-8.22						
CO2	1.29	1.29	23.29			2.58				
N2	-.03									
CH4	.75	.75	13.54	3.00						
C2H4	.15	.30	5.42	.60						68.03
C2H6	.07	.14	2.53	.42						
C3H6	.13	.39	7.04	.72			4.91		.79	71.01
C3H8	.06	.18	3.25	.48						
C4H8	.06	.24	4.33	.48			3.91		.52	70.43
C4H10	.02	.08	1.44	.20			1.16		.24	
C5H10	.06	.30	5.42	.60			4.20		.78	
C6H12	.02	.12	2.17	.24			1.68			
OIL		1.65	29.78	2.20			23.10		3.55	
WATER				-8.18		-2.86				
TOTAL	6.97					-4.09	38.24		5.88	
H2+CO										
H2/CO										

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	21.49	18.30	3.59	60.70			
C3+	53.43	41.60	8.16	137.99			
C4+	43.14	33.50	6.57	111.10			
Ult. Oil		38.24	7.50	126.83	5.88	1.15	162.50
C02	23.29	56.76	11.13	188.21			
H20		51.48	10.09	170.62			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	112.2		130.0
Oil	20.4		
Water	46.4		
Total	179.0	91.3	196.1

EFFLUENT RATIOS	
H2/H20	5.52
C02/C0	14.55
(H2) (C02) / (H20) (C0)	8.02

CONTRACTION:	48.04
C0 Conversion:	98.19
H2 Conversion:	57.96

Yield Calculations assume "oil" is CH2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at O C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 26F From 10/24/47 Hr. 0700 to 10/25/47 Hr. 0700

FLOWS	SCFH	%
Oxygen	1530	
Nat. Gas	2240	
Total	3770	40.7
Fresh Feed	5090	
F. F. by C	5400	
Avg. F. F.		
Wet Gas	2910	
Contraction		46.2
Recycle	8950	
Bleed	238	
Total	9188	
Total Feed	14588	
Recycle/F.F.	1.70	
Inlet Vel.	1.06 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	309
O_2 Preheat, °F	474
Gas Preheat, °F	764
Reactor Press.	300
Steam Back Press.	758
Temperatures, °F	
Heater Outlet	674
Catalyst #1	671
#2	657
#3	624
#4	607
#5	571
Average	626
Product Separator	

DISTILLATIONS — A S T M	
Prod.	60.50
A.P.I.	47.1
I.B.P.	108
5%	
10%	148
20	160
30	196
40	218
50	240
60	264
70	288
80	318
90	350
95	380
E.P.	400
Rec.	98.0
Res.	1.0
Loss	1.0

Hempel Dist.		
°F	%	A.P.I.
to 400	72.3	57.8
400-550	16.0	35.1
550+		

WATER	
Temp.	%
200	
203	
208	

CATALYST DATA	
In Reactor at Start of Period	307.2
Fresh Catalyst Charged	20
Catalyst Recharged	89.7
Total	357.0
Catalyst Taken Out	66
In Reactor at End of Period	291.0
Reactor d-P, H_2O	
Pounds in Reactor	210
Density, lbs./cu. ft.	91.0
Bed Height, Feet	4.6
Space Vel. SCFH/lb. cat.	
Inventory Figures	18.5
From d-P Meters	25.7

CATALYST ANALYSIS — Particle Size				
	Screen		Sedimentation	
Frac.	M	%	M	%
On 40	420+	1.8	80+	71.0
100	419-150	26.5	80-40	27.0
150	149-105	24.5	40-20	1.0
200	104-74	24.1	20-10	1.0
250	73-62	12.0	10-0	—
325	61-44	7.8		
<325	43-0	3.3		

Density, lbs./cu. ft	Chem. Anal.
Aerated	% Fe
Settled	% C
Compacted	% Oil
Sp. Grav. 3.6	Specific Surface
	m^2 gm

NATURAL GAS	%
CO_2	1.54
CH_4	88.23
C_2H_6	7.62
C_3H_8	2.61
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	51.7	41.64			
Sap. No.	103.8	128.51			
Hydrox No.	69.0				
Bromine No.	107.1				
% Fe					
% Alc		11.3			

GENERATOR ELEMENTAL BALANCE

	IN #/hr ~~Mol %~~	IN ~~SCFH~~ m/hr	IN C	IN H	IN O	OUT	OUT Mol %	OUT ~~SCFH~~ m/hr	OUT C	OUT H	OUT O
O_2	129.18	4.037			8.074	CO_2	2.3	.328	.328		.656
CO_2	4.05	.092	.092		.184	CO	37.9	5.400	5.400		5.400
CH_4	83.42	5.214	5.214	20.856		CH_4	6.9	.980	.980	3.920	
C_2H_6	13.50	.450	.900	2.700		H_2	52.7	7.598		15.196	
C_3H_8	6.78	.154	.462	1.232		N_2	0.1	.014			
C_4H_{10}						H_2O				5.672	2.202
N_2						Total		14.320	6.708	24.788	8.258
Total	236.93	9.947	6.668	24.788	8.258						

Loss H_2O 197.29

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS Measured m/hr	WET GAS Measured #/hr	WET GAS At Wt. Balance m/hr	WET GAS At Wt. Balance #/hr	RECYCLE m/hr	COMB. FEED m/hr	COMB. FEED %	EFFLUENT m/hr	EFFLUENT %
CO	37.9	5.40	151.20	10.36	.80	22.40	.86	24.08	2.57	7.91	20.36	3.37	9.76
H2	52.7	7.51	15.02	52.01	3.99	7.98	4.27	8.54	12.61	20.12	52.30	16.88	48.89
CO2	2.3	.33	14.52	20.40	1.57	69.08	1.68	73.92	4.94	5.27	13.70	6.62	19.17
N2	0.1	.01	.28	1.03	.08	2.24	.09	2.52	.25	.26	.68	.34	.98
CH4	6.9	.98	15.68	12.66	.97	15.52	1.04	16.64	3.07	4.05	10.53	4.11	11.90
C2H4				1.22	.09	2.52	.10	2.80	.30	.30	.80	.40	1.16
C2H6				.41	.03	.90	.03	.90	.10	.10	.26	.13	.38
C3H6				.57	.04	1.68	.04	1.68	.14	.14	.36	.18	.52
C3H8				.33	.03	1.32	.03	1.32	.08	.08	.21	.11	.32
C4H8				.29	.02	1.12	.02	1.12	.07	.07	.18	.09	.26
C4H10				.24	.02	1.16	.02	1.16	.06	.06	.16	.08	.23
C5H10				.38	.03	2.10	.03	2.10	.09	.09	.23	.12	.35
C6H12				.10	.01	.84	.01	.84	.02	.02	.05	.03	.09
OIL								32.06				.23	.67
WATER												1.84	5.33
TOTAL		14.25	196.7		7.68	128.9				38.47		34.53	
H2+CO		12.91											
H2/CO		1.40					4.97			2.54		5.01	

NET CHANGE ON REACTION — Carbon m/hr	Carbon a/hr	Carbon %	Hydrogen a/hr	Hydrogen %	Oxygen a/hr	Ultimate Oil #/hr	Ultimate Oil #/gal	Ultimate Oil gal/hr	Unsats. %
- 4.54	- 4.54	15.93			- 4.54				
- 3.24			- 6.48						
1.35	1.35	3.99			8.70				
- .08									
.06	.06	1.11	.24						
.10	.20	3.70	.40						74.85
.03	.06	1.11	.18						
.04	.12	2.22	.24			1.51		.24	63.33
.03	.09	1.67	.24						
.02	.08	1.48	.16			1.06		.17	54.72
.02	.08	1.48	.20			1.16		.24	
.03	.15	2.78	.30			2.10		.34	
.01	.06	1.11	.12			.84			
	2.29	42.41	4.58			32.06		4.93	
			- .82		(1.84)				
6.17					- .41	38.73		5.97	

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	5.92	4.66	0.95	16.06			
C3+	53.15	40.28	8.24	139.34			
C4+	49.26	37.28	7.62	128.85			
Ult. Oil		38.73	7.92	133.93	5.97	1.22	172.39
C02	24.99	59.40	12.15	205.46			
H20		33.12	6.77	114.48			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	138.9		137.0
Oil	13.9		
Water	46.4		
Total	189.2	96.4	196.7

EFFLUENT RATIOS	
H2/H20	9.17
C02/C0	1.96
(H2) (C02) / (H20) (C0)	18.02

CONTRACTION: 43.3

C0 Conversion: 85.07

H2 Conversion: 43.14

Yield Calculations assume "oil" is CH2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at 0 C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.

THE TEXAS COMPANY — MONTEBELLO LABORATORY

DATA SUMMARY SHEET

Synthesis Run Number 26 G From 10/25/47 Hr. 0700 to 10/26/47 Hr. 0400

FLOWS	SCFH	%
Oxygen	1580	
Nat. Gas	2220	
Total	3800	41.6
Fresh Feed	5200	
F. F. by C	6080	
Avg. F. F.		
Wet Gas	2280	
Contraction		62.5
Recycle	8800	
Bleed	221	
Total	9021	
Total Feed	15101	
Recycle/F.F.	1.48	
Inlet Vel.	1.02 ft/sec	
Steam Flow		

RUN CONDITIONS	
Generator Press.	314
O_2 Preheat, °F	574
Gas Preheat, °F	748
Reactor Press.	300
Steam Back Press.	849
Temperatures, °F	
Heater Outlet	764
Catalyst #1	692
#2	669
#3	625
#4	585
#5	550
Average	624
Product Separator	

DISTILLATIONS	A S T M
Prod.	GASO
A.P.I.	47.9
I.B.P.	106
5%	
10%	142
20	168
30	188
40	218
50	238
60	262
70	288
80	318
90	342
95	374
E.P.	401
Rec.	98.0
Res.	1.0
Loss	1.0

Hempel Dist.	°F	%	A.P.I.
to 400	720	54.5	
400-550	163	34.7	
550+			

WATER	Temp.	%
	200	
	203	
	208	

CATALYST DATA	
In Reactor at Start of Period	291
Fresh Catalyst Charged	67
Catalyst Recharged	90
Total	448
Catalyst Taken Out	103.75
In Reactor at End of Period	344.25
Reactor d-P, H_2O	
Pounds in Reactor	130
Density, lbs./cu. ft.	42
Bed Height, Feet	6.0
Space Vel. SCFH/lb. cat.	
Inventory Figures	17.8
From d-P Meters	46.8

CATALYST ANALYSIS — Particle Size	Screen			Sedimentation	
	Frac.	M	%	M	%
	On 40	420+	2.2	80+	37.0
	100	419-150	14.0	80-40	17.0
	150	149-105	10.2	40-20	27.0
	200	104-74	13.9	20-10	15.0
	250	73-62	5.2	10-0	4.0
	325	61-44	8.1		
	<325	43-0	46.4		

Density, lbs./cu. ft.	Chem. Anal.
Aerated	% Fe
Settled	% C
Compacted	% Oil
Sp. Grav. 3.9	Specific Surface
	m^2 gm

NATURAL GAS	%
CO_2	3.21
CH_4	85.50
C_2H_6	8.60
C_3H_8	2.69
C_4H_{10}	
N_2	
O_2	

PRODUCT INSPECTION					
	Oil	Water	Product	Pour °F	SUS @ °F
Neut. No.	48.0	39.11			
Sap. No.	95.4	124.59			
Hydrox. No.	15.0				
Bromine No.	123.6				
% Fe					
% Alc		11.1			

GENERATOR ELEMENTAL BALANCE

	IN #/hr ~~Mol %~~	IN SCFH m/hr	IN C	IN H	IN O	OUT Mol %	OUT SCFH m/hr	OUT C	OUT H	OUT O
O_2	133.41	4.169			8.338					
CO_2	8.27	.188	.188		.376	2.7	.433	.433		.866
CO						32.7	5.245	5.245		5.245
CH_4	80.13	5.008	5.008	20.032		6.2	.994	.994	3.976	
H_2						58.2	9.335		18.670	
C_2H_6	15.12	.504	1.008	3.024						
N_2						0.2	.032			
C_3H_8	6.95	.158	.774	1.264						
H_2O									1.674	2.603
C_4H_{10}										
N_2										
Total	243.88	10.027	6.978	24.320	8.714	Total	16.040	6.672	24.320	8.714

Loss H_2O 197.03

	FRESH FEED %	FRESH FEED m/hr	FRESH FEED #/hr	WET GAS %	WET GAS Measured m/hr	WET GAS Measured #/hr	WET GAS At Wt. Balance m/hr	WET GAS At Wt. Balance #/hr	RECYCLE m/hr	COMB. FEED m/hr	COMB. FEED %	EFFLUENT m/hr	EFFLUENT %
CO	32.7	5.25	147.00	3.83	.23	6.44	.23	6.44	.91	6.16	15.46	1.14	3.46
H2	58.2	9.34	18.68	40.04	2.41	4.82	2.36	4.72	9.53	18.87	47.36	11.89	36.08
CO2	2.7	.43	18.92	24.10	1.45	63.80	1.42	62.48	5.74	6.17	15.49	7.16	21.73
N2	0.2	.03	.84	.41	.02	.28	.02	.28	.10	.13	.33	.12	.36
CH4	6.2	.99	15.84	22.14	1.33	21.28	1.30	20.80	5.27	6.26	15.71	6.57	19.94
C2H4				3.08	.19	5.32	.19	5.32	.73	.73	1.83	.92	2.79
C2H6				1.23	.07	2.10	.07	2.10	.29	.29	.73	.36	1.09
C3H6				3.02	.18	7.56	.18	7.56	.72	.72	1.81	.90	2.73
C3H8				.39	.02	.88	.02	.88	.09	.09	.23	.11	.33
C4H8				.78	.05	2.80	.05	2.80	.19	.19	.48	.24	.73
C4H10				.26	.02	1.16	.02	1.16	.06	.06	.15	.08	.24
C5H10				.56	.03	2.10	.03	2.10	.13	.13	.33	.16	.49
C6H12				.17	.01	.84	.01	.84	.04	.04	.10	.05	.15
OIL								29.54				.21	.64
WATER												3.04	9.23
TOTAL		16.04	201.28		6.02	119.38				39.84		32.95	
H2+CO		14.59											
H2/CO		1.78					10.26			3.06		10.43	

NET CHANGE ON REACTION	Carbon m/hr	Carbon a/hr	Carbon %	Hydrogen a/hr	Hydrogen %	Oxygen a/hr	Ultimate Oil #/hr	Ultimate Oil #/gal	Ultimate Oil gal/hr	Unsats. %
CO	- 5.02	- 5.02	4.38			- 5.02				
H2	- 6.98			- 13.96						
CO2	.99	.99	18.86			1.98				
N2	- .01									
CH4	.31	.31	5.90	1.24						
C2H4	.19	.38	7.24	.76						71.46
C2H6	.07	.14	2.67	.42						
C3H6	.18	.54	10.29	1.08			6.80		1.09	88.56
C3H8	.02	.06	1.14	.16						
C4H8	.05	.20	3.81	.40			2.66		.44	75.00
C4H10	.02	.08	1.52	.20			1.16		.24	
C5H10	.03	.15	2.86	.30			2.10		.39	
C6H12	.01	.06	1.14	.12			.84			
OIL		2.11	40.19	4.22			29.54		4.54	
WATER				5.06		(3.04) 2.53				
TOTAL	10.14									

ULTIMATE YIELDS	% C0 Fed	#/hr	H2/C0 #/MCF	H2/C0 g/M3	Gal/hr	H2/C0 Gal/MCF	H2/C0 cc/M3
C1+C2	15.81	12.38	2.24	37.88			
C3+	60.95	44.88	8.12	137.31			
C4+	49.52	36.44	6.59	111.44			
Ult. Oil		43.10	7.79	131.73	6.70	1.21	170.10
C02	18.86	43.52	7.87	133.08			
H20		54.72	9.90	167.41			

WEIGHT BALANCE	#/hr	%	#/hr
Wet Gas	169.4		117.1
Oil	20.4		20.4
Water	63.8		63.8
Total	203.6	100.9	201.3

EFFLUENT RATIOS	
H2/H20	3.91
C02/C0	6.28
(H2) (C02) / (H20) (C0)	24.53

CONTRACTION: 63.2

C0 Conversion: 95.62

H2 Conversion: 74.7

Yield Calculations assume "oil" is CH2, and is found by difference on Carbon, and H20 by difference on Hydrogen. "Oil" figures therefore include hydrocarbon fraction of oxygenated compounds. Standard cubic feet measured at 60 F and 14.7 psig. Cubic Meters measured at O C. and 14.7 psig. g/M3 = 16.91 × #/MCF. cc/M3 = 141.3 × gal/MCF.