ExxonMobil
22777 Springwoods Village Parkway, Spring, TX 77389

Reference: **LIZA20Y**
Crude: **Liza**

Crude Summary Report

General Information	
Reference:	LIZA20Y
Name:	Liza
Traded Crude:	Liza
Origin:	Guyana
Sample Date:	4-May-20
Assay Date:	4-Jun-20

Molecules (%wt on crude)	
methane + ethane	0.08
propane	0.25
isobutane	0.16
n-butane	0.70
isopentane	0.61
n-pentane	0.80
cyclopentane	0.14
C_6 paraffins	1.56
C_6 naphthenes	-
benzene	0.06
C_7 paraffins	1.45
C_7 naphthenes	-
toluene	0.28

Whole Crude Properties	
Density @ 59 F (g/cc)	0.865
API Gravity	32.00
Total Sulphur (% wt)	0.58
Pour Point (°F)	32.00
Viscosity @ 68 F (cSt)	15.33
Viscosity @ 104 F (cSt)	7.79
Nickel (ppm)	16.0
Vanadium (ppm)	23.5
Total Nitrogen (ppm)	1741
Total Acid Number (mgKOH/g)	0.24
Salt content, ptb	20.0
Hydrogen Sulphide (ppm)	-
Reid Vapour Pressure (psi)	5.7

Cut Data		Atmospheric Cuts									Vacuum Cuts			
Start (°F)	IBP	C5	149	212	302	392	482	572	662	698	698	842	932	1022
End (°F)	FBP	149	212	302	392	482	572	662	698	FBP	842	932	1022	FBP
Yield (% wt)		2.8	4.3	7.2	7.3	7.9	8.9	9.2	3.7	47.7	14.4	8.1	6.8	18.5
Yield (% vol)		3.8	5.1	8.2	7.9	8.3	9.1	9.2	3.6	43.4	13.7	7.6	6.2	15.9
Cumulative Yield (% wt)		1.0	3.8	8.1	15.3	22.6	30.5	39.4	48.7	52.3	52.3	66.7	74.8	81.5
Volume Average B.P. (°F)	651	108	182	257	347	438	528	617	680	978	769	886	975	1203
Density @ 59°F (g/cc)	0.865	0.642	0.726	0.760	0.796	0.824	0.850	0.865	0.885	0.948	0.903	0.925	0.936	1.003
API Gravity	32.0	88.7	63.4	54.7	46.3	40.0	34.9	32.0	28.3	17.6	25.1	21.4	19.6	9.4
UOPK	12.0			11.8	11.7	11.7	11.7	11.8	11.8	11.9	11.9	11.9	12.0	11.8
Molecular Weight (g/mol)				110	137	170	208	254	288	526	344	441	558	1008
Total Sulphur (% wt)	0.58	0.000	0.000	0.005	0.036	0.107	0.260	0.434	0.53	1.03	0.63	0.79	0.96	1.47
Mercaptan Sulphur (ppm)	5.0	0.0	0.0	0.1	1.3	2.4	1.4							
Total Nitrogen (ppm)	1741					10	59	248	526	3549	1165	2129	2993	6228
Total Acid Number (mgKOH/g)	0.24	0.01	0.02	0.06	0.10	0.15	0.19	0.24	0.29	0.34	0.35	0.39	0.39	0.29
Viscosity @ 68 F (cSt)	15.3				1.45									
Viscosity @ 104 F (cSt)	7.79				1.10	1.71	3.07	6.47	12.3					
Viscosity @ 122 F (cSt)	5.92					1.47	2.53	4.98	8.93	691	23.7	110	451	
Viscosity @ 140 F (cSt)										341	16.3	64.9	232	
Viscosity @ 212 F (cSt)										44.7	5.43	14.2	34.2	3255
Viscosity @ 266 F (cSt)														471
RON (Clear)	58.4	76.0	51.7	58.8	32.5									
MON (Clear)	63.9	74.5	63.2	58.3	31.3									
Paraffins (% wt)	27.2	94.0	51.3	32.9	39.8									
Naphthenes (%wt)	37.7	6.0	47.3	57.1	47.7									
Aromatics (% wt)	35.1	0.0	1.4	9.9	12.5									
Pour Point (°F)	32					-56	-15	28	52	98	81	108	125	119
Cloud Point (°F)						-53	-9	34						
Freeze Point (°F)					-79	-45	-5							
Smoke Point (mm)					25	21	17							
Cetane Index					36	43	49	58	59					
Naphthalenes (% vol)					0.1303	2.8632	6.7458	8.3018						
Aniline Point (°F)				126.7	131.8	141.3	156.9	171.4	176.2		190.2	206.7	208.7	
Hydrogen (% wt)		16.5	15.2	14.3	14.2	13.6	13.5	13.2	12.8		12.7	12.6	12.7	
Wax (% wt)	-									-	-	-	-	-
C_7 Asphaltenes (% wt)	0.3									0.7		0.0	0.0	1.9
Micro Carbon Residue (% wt)	3.4									7.1		0.1	1.1	17.8
Vanadium (ppm)	23.5									49.2		0.0	0.0	127.1
Nickel (ppm)	16.0									33.5		0.0	0.0	86.4
Iron (ppm)	2.4									5.1		0.0	0.0	13.1