

## APPENDIX A

### CERTIFICATES OF ANALYSES FOR FOUR TEST FUELS

The following pages are Certificates of Analyses for the four test fuels used in this program. These certificates were prepared by Chevron Phillips Chemical Company.

<b>Pg.</b>	<b>Chevron Phillips nomenclature</b>	<b>DEC nomenclature</b>
A9	Baseline fuel, UTG 91	Certification Fuel
A10	Oxygenated Test Gasoline (ethanol)	Ethanol RFG
A11	Oxygenated Test Gasoline (NY-MTBE)	MTBE RFG
A12	Octane Test Fuel (NON-OXY)	Non-Oxygenated ERFG



DATE OF SHIPMENT  
09-23-02

CUSTOMER PO NO.  
A200208

SALES ORDER NO.  
5603580

2 X 54 GALLON DRUM

MFG DATE: 09-2002

## CERTIFICATE OF ANALYSIS

### OXYGENATED TEST GASOLINE (ETHANOL) LOT 2IPOTG03

<u>TESTS</u>	<u>RESULTS</u>	<u>SPECIFICATIONS</u>	<u>METHOD</u>
Specific Gravity, 60/60	0.7290	Report	ASTM D-4052
API Gravity	62.60	Report	ASTM D-1298
Sulfur, ppm	16	30 Max	ASTM D-2622
Corrosion, 3hrs, 50°C	1A	Report	ASTM D-130
Oxygen Content, wt%	1.7	Report	ASTM D-240
Ethanol, N%	4.4	Report	ASTM D-4815
Existent Gums (mg/100ml)	0	Report	ASTM D-381
Existent Gums (mg/100ml)(washed)	0	Report	ASTM D-381
Reid Vapor Pressure (psi)	6.7	6.6 - 6.8	ASTM D-323
TEL (ml/gal)	0.002	0.005 Max	ASTM D-3237
Benzene Content, N%	0.32	Report	
<u>DISTILLATION, D-86 °F</u>			<u>ASTM D-86</u>
IBP	116.4	Report	
5%	132.1		
10%	138.9		
20%	151.2		
30%	183.2		
40%	203.2		
50%	214.9		
60%	225.9		
70%	241.0		
80%	270.3		
90%	324.5		
95%	360.0		
EP	405.5		
Loss	0.7		
Residue	1.0		
<u>Hydrocarbon Type, Vol%</u>			<u>ASTM D-1319</u>
Aromatics	14.7	Report	
Olefins	7.0		
Saturates	78.3		
Research Octane No.	90.5	Report	ASTM D-2699
Motor Octane No.	83.8	Report	ASTM D-2700
Antiknock Index	87.1	87 - 88	

D. G. Doerr      teh  
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Fuels Unit Team Leader

KNC: teh



DATE OF SHIPMENT  
09-19-02

CUSTOMER PO NO.  
A200206

SALES ORDER NO.  
5602619

2 X 54 GALLON DRUM

MFG DATE: 09-2002

**CERTIFICATE OF ANALYSIS**

**OXYGENATED TEST GASOLINE**  
**(NY - MTBE)**  
**LOT ZBPOTG02**

<u>TESTS</u>	<u>RESULTS</u>	<u>SPECIFICATIONS</u>	<u>METHOD</u>
Specific Gravity, 60/60	0.7382	Report	ASTM D-4052
API Gravity	60.2	Report	ASTM D-1298
Sulfur, ppm	15.0	30 Max	ASTM D-2622
Oxygen Content, wt%	1.98	Report	ASTM D-240
MTBE, %	11.2	10 - 12	ASTM D-4815
Existent Gums (mg/100ml)(washed)	0	3.0 Max	ASTM D-381
R Reid Vapor Pressure (psi)	6.86	6.75 - 6.9	ASTM D-323
TEL (ml/gal)	<0.0008	0.005 Max	ASTM D-3237
Benzene Content, %	0.88	Report	
<b><u>DISTILLATION, D-96 °F</u></b>			<b><u>ASTM D-86</u></b>
IBP	106.2		
5%	134.5		
10%	145.0		
20%	160.8		
30%	175.2		
40%	189.6		
50%	203.2	E200 47.7	
60%	224.2		
70%	243.0		
80%	277.9		
90%	330.1	E300 84.2	
95%	365.6		
EP	418.1		
Loss	0.8		
Residue	0.8		
<b><u>Hydrocarbon Type, Vol%</u></b>			<b><u>ASTM D-1319</u></b>
Aromatics	19.9	11.7 - 20.2	
Olefins	13.2	11.1 - 14.1	
Saturates	66.9		
Research Octane No.	91.3	Report	ASTM D-2699
Motor Octane No.	83.1	Report	ASTM D-2700
Antiknock Index	87.2	87 - 88	

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09/19/02



DATE OF SHIPMENT  
09-23-02

CUSTOMER PO NO.  
A200206

SALES ORDER NO.  
5603580

2 X 54 GALLON DRUM

MFG DATE: 09-2002

**CERTIFICATE OF ANALYSIS**

**OCTANE TEST FUEL**  
**NON-OXY**  
**LOT 21P0TE02**

<u>TESTS</u>	<u>RESULTS</u>	<u>SPECIFICATIONS</u>	<u>METHOD</u>
Specific Gravity, 60/60	0.7179	Report	ASTM D-4052
API Gravity	65.80	Report	ASTM D-1298
Sulfur, ppm	15	30 Max	ASTM D-2622
Corrosion 3hrs @ 50°C	1A	1A Max	ASTM D-130
MTBE, v%	0	0 Max	ASTM D-4815
Ethanol, v%	0	0 Max	ASTM D-4815
Existent Gums (ng/100ml)	1.9	Report	ASTM D-381
Existent Gums (mg/100ml)(washed)	0.8	Report	ASTM D-381
Reid Vapor Pressure	6.67	6.6 - 6.8	ASTM D-323
TEL (p/gal)	<0.005	0.005 Max	ASTM D-3237
Benzene Content, v%	0.30	Report	
<b><u>Distillation °F</u></b>			<b><u>ASTM D-86</u></b>
IBP	109.6	Report	
5%	136.1		
10%	149.1		
20%	170.5		
30%	188.9		
40%	203.0		
50%	213.8		
60%	222.8		
70%	236.2		
80%	260.0		
90%	317.1		
95%	354.3		
EP	404.8		
Loss	0.9		
Residue	1.0		
<b><u>Hydrocarbon Type, Vol%</u></b>			<b><u>ASTM D-1319</u></b>
Aromatics	11.5	Report	
Olefins	6.6		
Saturates	81.9		
Research Octane Number	90.0	Report	ASTM D-2899
Motor Octane Number	84.8	Report	ASTM D-2700
Antiknock Index	87.4	87 - 88	

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