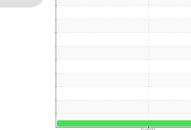


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id DODGE ATG7505 Component Gasoline Engine Fluid MOTOMASTER 5W40 (10 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

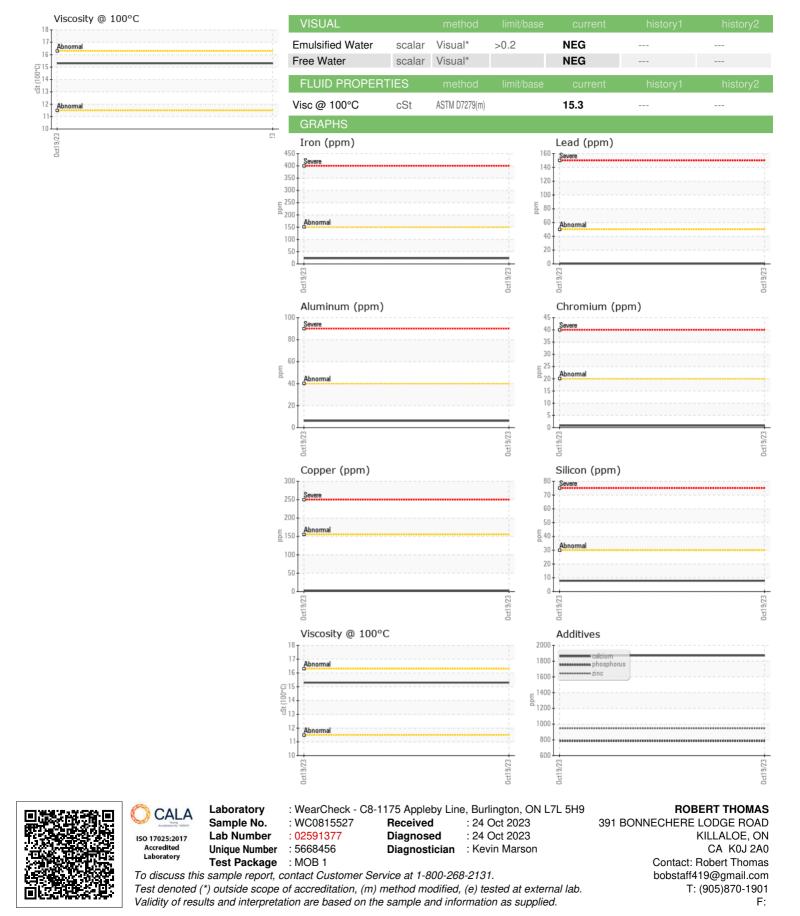
Fluid Condition

The condition of the oil is acceptable for the time in service.

Sample Number Client Info 19 Oct 2023 ··· ··· Sample Date Client Info 19 Oct 2023 ··· ··· Machine Age kms Client Info 299619 ··· ··· Oll Age kms Client Info Changed ··· ··· Oll Ange Client Info Changed ··· ··· ··· CONTAMINATION Method Imitbase Current history1 history2 Fuel WC Method >4.0 10 ··· ··· ··· Glycol WC Method >150 23 ··· ··· ··· Nickel ppm ASTM D5185(m) >20 <1 ··· ··· Nickel ppm ASTM D5185(m) >20 <1 ···< ··· Nickel ppm ASTM D5185(m) >20 <1 ···< ··· ··· Aluminum ppm ASTM D5185(m) >20 <1 ···< ··· ··· Aluminum ppm ASTM D5185(m) >50 <1	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Date Client Info 19 Oct 2023 Machine Age kms Client Info 299619 Oil Age kms Client Info 23955 Sample Status Client Info Changed Sample Status method Imit/base current history1 CONTAMINATION method Imit/base current history1 Glycol WC Method >4.0 <1.0 WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5180 >150 23 Tranum ppm ASTM D5180 >20 <1 Tranum ppm ASTM D5180 >20 <1 Silver ppm ASTM D5180 6 Auminum ppm<	Sample Number		Client Info		WC0815527		
Oil Age kms Client Info 12355 Oil Changed Client Info Changed CONTAMINATION method limit/base current history1 history2 Fuel WC Method >4.0 <1.0 Glycol WC Method >4.0 <1.0 WEAR METALS method imit/base current history1 history2 Iron ppm ASTIM 0586/m >150 23 Nickel ppm ASTIM 0586/m >50 <1 Aluminum ppm ASTIM 0586/m >50 <1 Copper ppm ASTIM 0586/m >50 <1 Autominum ppm ASTIM 0586/m >50 <1 Copper ppm ASTIM 0586/m >50 <1 A			Client Info		19 Oct 2023		
Oli Changed Client Info Changed Init Joase Init Joase <th>Machine Age</th> <th>kms</th> <th>Client Info</th> <th></th> <th>299619</th> <th></th> <th></th>	Machine Age	kms	Client Info		299619		
Sample Status method imit/base current history1 history2 Fuel WC Method >4.0 <1.0 Glycol WC Method NEG WEAR METALS method Imit/base current History1 History2 Iron ppm ASTM0585(m) >150 23 Othromium ppm ASTM0585(m) >20 <1 Nickel ppm ASTM0585(m) >5 <1 Silver ppm ASTM0585(m) >50 <1 Copper ppm ASTM0585(m) >50 <1 Antimomy ppm ASTM0585(m) >10 0 Antimomy ppm ASTM0585(m) 0 Antimomy ppm ASTM0585(m) 0	Oil Age	kms	Client Info		12355		
CONTAMINATION method imit/base current history1 history2 Fuel WC Method >4.0 WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM 05185(m) >150 23 Nickel ppm ASTM 05185(m) >20 <1 Titanium ppm ASTM 05185(m) >20 <1 Silver ppm ASTM 05185(m) >20 <1 Lead ppm ASTM 05185(m) >0 1 Antimony ppm ASTM 05185(m) 0 Antimony ppm ASTM 05185(m) 0 Copper ppm ASTM 05185(m) 0 Antimony ppm ASTM 05185(m) 0	Oil Changed		Client Info		Changed		
Fuel WC Method >4.0 <1.0	Sample Status				NORMAL		
Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185(m) >150 23 Chromium ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >2 1 Aluminum ppm ASTM D5185(m) >50 <1 Aluminum ppm ASTM D5185(m) >50 <1 Aluminum ppm ASTM D5185(m) >10 0 Copper ppm ASTM D5185(m) >10 0 Cadmium ppm ASTM D5185(m) 0 Baron ppm ASTM D5185(m) 0 Vanadium ppm ASTM D5185(m) 0	CONTAMINATION	N	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185(m) >150 23 Othomium ppm ASTM 05185(m) >20 -1 Nickel ppm ASTM 05185(m) >2 1 Silver ppm ASTM 05185(m) >2 1 Aluminum ppm ASTM 05185(m) >20 -1 Aluminum ppm ASTM 05185(m) >50 <1 Lead ppm ASTM 05185(m) >10 0 Antimony ppm ASTM 05185(m) 0 Antimony ppm ASTM 05185(m) 0 Antimony ppm ASTM 05185(m) 0 Antimiun ppm ASTM 05185(m) </th <th>Fuel</th> <th></th> <th>WC Method</th> <th>>4.0</th> <th><1.0</th> <th></th> <th></th>	Fuel		WC Method	>4.0	<1.0		
Iron ppm ASTM D5185(m) >150 23 Chromium ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >5 <1 Titanium ppm ASTM D5185(m) >2 1 Aluminum ppm ASTM D5185(m) >60 Lead ppm ASTM D5185(m) >50 <1 Antimony ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) 0 Antimony ppm ASTM D5185(m) 0 Antimony ppm ASTM D5185(m) 0 Antimony ppm ASTM D5185(m) 0 Beryllium <t< th=""><th>Glycol</th><th></th><th>WC Method</th><th></th><th>NEG</th><th></th><th></th></t<>	Glycol		WC Method		NEG		
Dromium ppm ASTM D5168(m) >20 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185(m) >5 <1	Iron	ppm	ASTM D5185(m)	>150	23		
Titanium ppm ASTM 05185(m) <1	Chromium	ppm	ASTM D5185(m)	>20	<1		
Silver ppm ASTM D5185(m) >2 1 Aluminum ppm ASTM D5185(m) >40 6 Lead ppm ASTM D5185(m) >50 <1 Copper ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0	Nickel	ppm	ASTM D5185(m)	>5	<1		
Aluminum ppm ASTM D5185(m) >40 6 Lead ppm ASTM D5185(m) >50 <1 Copper ppm ASTM D5185(m) >155 2 Antimony ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) 0 Vanadium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Suffur ppm ASTM D5185(m) 2511 Suffu	Titanium	ppm	ASTM D5185(m)		<1		
Lead ppm ASTM D5185(m) >50 <1	Silver	ppm	ASTM D5185(m)	>2	1		
Copper ppm ASTM D5185(m) >155 2 Tin ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) 0 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 0 Malybdenum ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 786 Sulfur ppm ASTM D5185(m)	Aluminum	ppm		>40	6		
Tin ppm ASTM D5185(m) >10 0 Antimony ppm ASTM D5185(m) 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 0 Marganese ppm ASTM D5185(m) 73 Marganesum ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) >30 8 Sulfur ppm ASTM	Lead	ppm	ASTM D5185(m)	>50	<1		
Antimony ppm ASTM D5185(m) 0 Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185(m) 68 Malybdenum ppm ASTM D5185(m) 0 Magnesse ppm ASTM D5185(m) 73 Magnesium ppm ASTM D5185(m) 786 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 20 <th>Copper</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th>>155</th> <th>2</th> <th></th> <th></th>	Copper	ppm	ASTM D5185(m)	>155	2		
Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 68 Molybdenum ppm ASTM D5185(m) 0 Manganese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 0 Magnese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 786 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) >30 <th></th> <th>ppm</th> <th></th> <th>>10</th> <th>0</th> <th></th> <th></th>		ppm		>10	0		
Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 68 Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 0 Magnese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Magnesium ppm ASTM D5185(m) 786 Calcium ppm ASTM D5185(m) 25111 Sulfur ppm ASTM D5185(m) >30 8 CONTAMINANTS method limit/base current history1 history2 Sodium ppm ASTM D5185(m)	,	ppm			-		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 688 Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Magnesium ppm ASTM D5185(m) 786 Calcium ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 20 8 Sulfur ppm ASTM D5185(m) >30 8 Sodium ppm		ppm	. /				
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185(m)68BariumppmASTM D5185(m)0MolybdenumppmASTM D5185(m)0MagnesiumppmASTM D5185(m)0MagnesiumppmASTM D5185(m)73CalciumppmASTM D5185(m)736PhosphorusppmASTM D5185(m)786ZincppmASTM D5185(m)2511SulfurppmASTM D5185(m)2511LithiumppmASTM D5185(m)>308SodiumppmASTM D5185(m)>308INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D5185(m)>204INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*0.5SulfationAbs/immASTM D764*>2014.5SulfationAbs/immASTM D764*>2014.5SulfationAbs/immASTM D764*>2014.5SulfationAbs/immASTM D764*>2014.5-	-	ppm					
Boron ppm ASTM D5185(m) 68 Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 0 Manganese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 786 Phosphorus ppm ASTM D5185(m) 786 Sulfur ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) >30 8 Sulfur ppm ASTM D5185(m) >30 8 Sulfur ppm ASTM D5185(m) >20 4 Sodium ppm ASTM D5185(m)	Cadmium	ppm	ASTM D5185(m)		0		
Barium ppm ASTM D5185(m) 0 Molybdenum ppm ASTM D5185(m) 0 Manganese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 1871 Calcium ppm ASTM D5185(m) 786 Phosphorus ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) -<-1 Sulfur ppm ASTM D5185(m) >30 8 Solicon ppm ASTM D5185(m) >400 3 Sodium ppm ASTM D5185(m) >20 4 INFRA-RED meth							
Molybdenum ppm ASTM D5185(m) 0 Manganese ppm ASTM D5185(m) 73 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 1871 Phosphorus ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) 2511 Solicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 Soot % % ASTM D7844*	ADDITIVES		method	limit/base	current	history1	history2
Manganese ppm ASTM D5185(m) 0 Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 1871 Phosphorus ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) 2511 Solfur ppm ASTM D5185(m) >30 8 Solicon ppm ASTM D5185(m) >30 8 Solium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 Soot % % ASTM D7844* 0.5		ppm		limit/base			
Magnesium ppm ASTM D5185(m) 73 Calcium ppm ASTM D5185(m) 1871 Phosphorus ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) 2511 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration	Boron		ASTM D5185(m)	limit/base	68		
Calcium ppm ASTM D5185(m) 1871 Phosphorus ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) 2511 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624* >20 14.5 Ni	Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	limit/base	68 0		
Phosphorus ppm ASTM D5185(m) 786 Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration Abs/.tm ASTM D7415* >30 27.4 <th>Boron Barium Molybdenum</th> <th>ppm ppm</th> <th>ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)</th> <th>limit/base</th> <th>68 0 0</th> <th></th> <th></th>	Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0		
Zinc ppm ASTM D5185(m) 946 Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7624* >20 14.5 Nitration Abs/rm ASTM D7624* >30 27.4 Sulfation Abs/lmm ASTM D7414* >25 28.7 <th>Boron Barium Molybdenum Manganese</th> <th>ppm ppm ppm</th> <th>ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)</th> <th>limit/base</th> <th>68 0 0 0</th> <th></th> <th></th>	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0 0		
Sulfur ppm ASTM D5185(m) 2511 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0 0 73		
LithiumppmASTM D5185(m)<1	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0 73 1871		
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185(m)>308SodiumppmASTM D5185(m)>4003PotassiumppmASTM D5185(m)>204INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*0.5NitrationAbs/cmASTM D7844*>2014.5SulfationAbs/.1mmASTM D7415*>3027.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mmASTM D7414*>2528.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0 73 1871 786 946	 	
Silicon ppm ASTM D5185(m) >30 8 Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7624* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		68 0 0 73 1871 786 946 2511		
Sodium ppm ASTM D5185(m) >400 3 Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		68 0 0 73 1871 786 946 2511		
Potassium ppm ASTM D5185(m) >20 4 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* 0.5 Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)		68 0 0 73 1871 786 946 2511 <1		
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%ASTM D7844*0.5NitrationAbs/cmASTM D7624*>2014.5SulfationAbs/1mmASTM D7415*>3027.4FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/1mmASTM D7414*>2528.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	limit/base	68 0 0 73 1871 786 946 2511 <1 <1	 history1	 history2
Soot % % ASTM D7844* 0.5 Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method ASTM D5185(m)	limit/base	68 0 0 73 1871 786 946 2511 <1 <1 current 8	 history1	 history2
Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7615* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >30 >400	68 0 0 73 1871 786 946 2511 <1 <1 current 8 3	 history1 	 history2
Nitration Abs/cm ASTM D7624* >20 14.5 Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >30 >400 >20	68 0 0 73 1871 786 946 2511 <1 <1 current 8 3 4	 history1 	 history2
Sulfation Abs/.1mm ASTM D7415* >30 27.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >30 >400 >20	68 0 0 73 1871 786 946 2511 <1 <1 current 8 3 4 current	 history1 history1	 history2
Oxidation Abs/.1mm ASTM D7414* >25 28.7	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >30 >400 >20 limit/base	68 0 0 73 1871 786 946 2511 <1 <1 current 8 3 4 current 0.5	 history1 history1 history1	 history2 history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	limit/base >30 >400 >20 limit/base	68 0 0 73 1871 786 946 2511 <1 <1 <i>current</i> 8 3 4 <i>current</i> 0.5 14.5	 history1 history1 history1	 history2 history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7624*	>30 >400 >20 Imit/base >30 >20 Imit/base >20 >30	68 0 0 73 1871 786 946 2511 <1 current 8 3 4 2 5 11 5 14.5 27.4	 history1 history1 history1	 history2 history2 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7844* ASTM D7844* ASTM D7844*	Iimit/base >30 >400 >20 Iimit/base >20 >30 >30 >30 >20 Iimit/base >30 >30 >30 >30 >30 >30 >30 >30 >30 >30 >30 >30	68 0 0 73 1871 786 946 2511 <1 <1 current 8 3 4 2 5 14.5 27.4 current	 history1 history1 history1	 history2 history2 history2



OIL ANALYSIS REPORT



Submitted By: Robert Thomas Page 2 of 2