

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 7838M Component

Fluid

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0069879		
Sample Date		Client Info		01 May 2023		
Machine Age	hrs	Client Info		7734		
Oil Age	hrs	Client Info		600		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron		ASTM D5185m	>80	4		
Chromium	ppm ppm	ASTM D5185m	>60 >5	4		
Nickel		ASTM D5185m	>0	0		
Titanium	ppm ppm	ASTM D5185m	22	0		
Silver		ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>30	1		
Lead	ppm	ASTM D5185m	>30	0		
	ppm	ASTM D5185m	>30	0		
Copper	ppm			-		
Tin	ppm		>5	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 5	history1	history2
	ppm ppm				history1 	
Boron Barium		ASTM D5185m	0	5		
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	5 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 59		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 59 <1		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 59 <1 976		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	5 0 59 <1 976 1057	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	5 0 59 <1 976 1057 1085	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	5 0 59 <1 976 1057 1085 1319	 	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	5 0 59 <1 976 1057 1085 1319 3174		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	5 0 59 <1 976 1057 1085 1319 3174 current		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060 limit/base	5 0 59 <1 976 1057 1085 1319 3174 current 2	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	5 0 59 <1 976 1057 1085 1319 3174 current 2 1	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >20	5 0 59 <1 976 1057 1085 1319 3174 current 2 1 1 <1	 history1 	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3	5 0 59 <1 976 1057 1085 1319 3174 current 2 1 <1 <1	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >3	5 0 59 <1 976 1057 1085 1319 3174 2 1 2 1 <1 <1 current 0.1	 history1 history1 	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20	5 0 59 <1 976 1057 1085 1319 3174 <i>current</i> 2 1 <1 <1 <i>current</i> 0.1 5.7	 history1 history1 history1	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20 s3 >20	5 0 59 <1 976 1057 1085 1319 3174 2 2 1 2 1 <1 <1 0.1 5.7 17.4 current	 history1 history1 history1	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 imit/base >20 imit/base >3 >20 >30 imit/base	5 0 59 <1 976 1057 1085 1319 3174 <i>current</i> 2 1 <1 <1 <i>current</i> 0.1 5.7 17.4	history1 history1 history1 history1	 history2 history2 history2

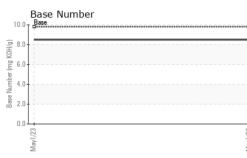


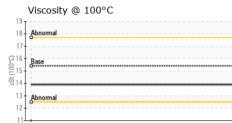
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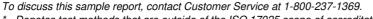
OIL ANALYSIS REPORT

VISUAL





White Metal Yellow Metal Precipitate Silt Debris	scalar *	Visual	NONE	NONE		
Precipitate Silt			NONL	NONE		
Precipitate Silt		Visual	NONE	NONE		
Silt	scalar *	Visual	NONE	NONE		
		Visual	NONE	NONE		
		Visual	NONE	NONE		
Sand/Dirt		Visual	NONE	NONE		
Appearance		Visual	NORML	NORML		
Odor						
			>0.2			
		visual		NEG		
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt A	STM D445	15.4	13.9		
GRAPHS						
Ferrous Alloys						
iron						
8 - seesesse chromium						
6- E						
a 4						
2-						
0	******		53			
ay1//			ay1/			
			2			
	Is					
lead						
tin the second s						
6-						
dd						
4						
2						
-						
0						
May1/23			May1/23			
W			W			
	3					
Viscosity @ 100°C				Base Number		
Viscosity @ 100°C			10.0			
Viscosity @ 100°C						
Viscosity @ 100°C						
Viscosity @ 100°C						
Viscosity @ 100°C						
Viscosity @ 100°C						
Viscosity @ 100°C			-0.8 -0.8 per (mg KOH/d)			
Viscosity @ 100°C			(0,0) (0,0)			
Viscosity @ 100°C			6.0- () () () () () () () () () () () () () (
Viscosity @ 100°C			(B)HOX (B)HOX) aqumn aqumn 4.0- 888 2.0-			
	Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys 10 6 6 10 10 10 10 10 10 10 10 10 10	Emulsified Water scalar * Free Water scalar * FLUID PROPERTIES Visc @ 100°C cSt A GRAPHS Ferrous Alloys 10 6 4 2 0 Non-ferrous Metals 10 6 4 2 0 10 10 10 10 10 10 10 10 10	Emulsified Water scalar *Visual Free Water scalar *Visual FLUID PROPERTIES method Visc @ 100°C cSt ASTM D445 GRAPHS Ferrous Alloys 10 6 6 7 7 8 10 10 10 10 10 10 10 10 10 10	Emulsified Water scalar *Visual >0.2 Free Water scalar *Visual FLUID PROPERTIES method limit/base Visc @ 100°C cSt ASTM D445 15.4 GRAPHS Ferrous Alloys ferrous Alloys Non-ferrous Metals	Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current Visc @ 100°C cSt ASTM D445 15.4 13.9 GRAPHS Ferrous Alloys Non-ferrous Metals Non-ferrous Metals	Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual NEG FLUID PROPERTIES method imit/base current history1 Visc @ 100°C cSt ASTM D445 15.4 13.9 GRAPHS Ferrous Alloys formium nickel Non-ferrous Metals Non-ferrous Metals



* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Т:

F:

Certificate L2367