

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id MACK 725069 Component

Diesel Engine

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

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

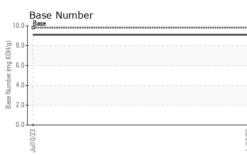
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

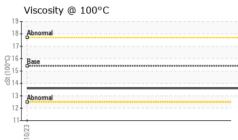
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0076905		
Sample Date		Client Info		10 Jul 2023		
Machine Age	hrs	Client Info		26678		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	9		
Chromium	ppm	ASTM D5185m		ر <1		
Nickel	ppm	ASTM D5185m	>5	0		
Titanium	ppm	ASTM D5185m		0		
Silver		ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m		2		
Lead	ppm	ASTM D5185m	>20	2 <1		
	ppm					
Copper	ppm	ASTM D5185m		<1		
Tin	ppm	ASTM D5185m	>15	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 11	history1	history2
	ppm ppm					
Boron		ASTM D5185m	0	11		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	11 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	11 0 56		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	11 0 56 <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	11 0 56 <1 781		
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	11 0 56 <1 781 1151	 	
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	11 0 56 <1 781 1151 962	 	
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 1010 1070 1150 1270	11 0 56 <1 781 1151 962 1150	 	
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 0 1010 1070 1150 1270 2060	11 0 56 <1 781 1151 962 1150 3189		
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	0 0 60 1010 1070 1150 1270 2060 limit/base	11 0 56 <1 781 1151 962 1150 3189 current		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	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	11 0 56 <1 781 1151 962 1150 3189 current 2		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	11 0 56 <1 781 1151 962 1150 3189 <u>current</u> 2 2		 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	11 0 56 <1 781 1151 962 1150 3189 current 2 2 2 2 2	 history1 	 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base	11 0 56 <1 781 1151 962 1150 3189 <u>current</u> 2 2 2 2 2 2 2 2 2 2	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base	11 0 56 <1 781 1151 962 1150 3189 current 2 2 2 2 2	 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 20 limit/base >4 >20	11 0 56 <1 781 1151 962 1150 3189 <u>current</u> 2 2 2 2 2 2 2 0.7 6.3	 history1 history1 	 history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	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 >25 imit/base >20 imit/base >4 >20 >30	11 0 56 <1 781 1151 962 1150 3189 Current 2 2 2 2 Current 0.7 6.3 18.4 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	11 0 56 <1 781 1151 962 1150 3189 <u>current</u> 2 2 2 2 2 2 2 2 2 0.7 6.3 18.4	 history1 history1 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT

VISUAL





	- ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	VISUAL		method	limit/base	current	history1	history2
		White Metal	scalar	*Visual	NONE	NONE		
		Yellow Metal	scalar	*Visual	NONE	NONE		
		Precipitate	scalar	*Visual	NONE	NONE		
		Silt	scalar	*Visual	NONE	NONE		
		Debris	scalar	*Visual	NONE	NONE		
		Sand/Dirt	scalar	*Visual	NONE	NONE		
	Jul10/23	Appearance	scalar	*Visual	NORML	NORML		
	Jult	Odor	scalar	*Visual	NORML	NORML		
		Emulsified Water	scalar	*Visual	>0.2	NEG		
		Free Water	scalar	*Visual		NEG		
					11 11 11			
		FLUID PROPE		method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	13.6		
		GRAPHS						
		Ferrous Alloys						
		iron						
		8 - nickel						
		c						
		mdd .						
		4						
		2-						
		0						
		Juli 0/23			Jul10/23			
		llul			Jult			
		Non-ferrous Meta	ls					
		10 copper]						
		8						
		tin						
		6-						
		u d						
		2						
		2-						
		0						
		0	***********					
		0 للسو ۱۳۱۲ میں ۲۰			Juli0/23			
		0			Jul10/23	Base Number		
		ر لی EZ/Olim Viscosity @ 100°C			Jul10/23	Base Number		
		Viscosity @ 100°C			EZ/011/10.	Base		
		0. Viscosity @ 100°C			EZ/011/10.	0 Base		
		0. Viscosity @ 100°C			EZ/011/10.	0 Base		
		Viscosity @ 100°C			EZ/011/10.	0 - Base		
		Viscosity @ 100°C			EZOULIN (0)HOX 80 (0)HOX 8	0 - Base. 0		
		Viscosity @ 100°C			. 10. Preu (Jul 023 Preu (Jul 023)	0 - Base. 0		
		Viscosity @ 100°C			10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1	0 - Base. 0		
		Viscosity @ 100°C			10.1 10.1 10.1 10.1 10.1 10.1 10.1 10.1	0 - Base. 0		22
		Viscosity @ 100°C			2.0 10.1 (b) HOX bul) المعالي 10.1 (b) HOX bul) I (b) HOX bul) I (c)	0 - Base. 0		COULD III
Sam Lab Uniq	oratory ple No. Number ue Number Package	Viscosity @ 100°C	C	son Ave., Ca 1 : 19 . ed : 20 .	CZ/01JIn (6/HC)X Bull Jack Participant (6/HC)X Bull Jack (6/HC)X Bull Jack (7/HC)X Bull Jack (7/HC)		ronmental - 412 - No	

* - 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)

Submitted By: TECHNICIAN ACCOUNT