

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id 727129 Component

Component Diesel Engine Fluid 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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0067012		
Sample Date		Client Info		29 Jun 2023		
Machine Age	hrs	Client Info		6560		
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	5		
Chromium	ppm	ASTM D5185m	>20	<1		
Nickel	ppm	ASTM D5185m	>5	0		
Titanium	ppm	ASTM D5185m	>2	0		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m	>20	1		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method				history2
ADDITIVES Boron	ppm	Method ASTM D5185m	limit/base	current 6	history1	history2
	ppm ppm					
Boron		ASTM D5185m	0	6		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	6 <1		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 <1 61		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 <1 61 <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	6 <1 61 <1 991		
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	6 <1 61 <1 991 1222	 	
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	6 <1 61 <1 991 1222 1065		
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	6 <1 61 <1 991 1222 1065 1328	 	
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	6 <1 61 <1 991 1222 1065 1328 3568		
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	6 <1 61 <1 991 1222 1065 1328 3568 current	 history1	 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 method	0 0 60 1010 1070 1150 1270 2060	6 <1 61 <1 991 1222 1065 1328 3568 current 3	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	6 <1 61 <1 991 1222 1065 1328 3568 <u>current</u> 3 3	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	6 <1 61 <1 991 1222 1065 1328 3568 current 3 3 3 <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 TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	6 <1 61 <1 991 1222 1065 1328 3568 current 3 3 <1 current	 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	6 <1 61 <1 991 1222 1065 1328 3568 <u>current</u> 3 3 <1 <u>current</u> 0.2	 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	6 <1 61 <1 991 1222 1065 1328 3568 current 3 3 <1 current 0.2 8.6	history1 history1	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 ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	6 <1 61 <1 991 1222 1065 1328 3568 Current 3 3 <1 Current 0.2 8.6 20.0 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 D5185m	0 0 0 1010 1070 1150 1270 2060 /////////////////////////////////	6 <1 61 <1 991 1222 1065 1328 3568 <u>current</u> 3 3 <1 <u>current</u> 0.2 8.6 20.0	 history1 history1 history1	 history2 history2 history2 history2



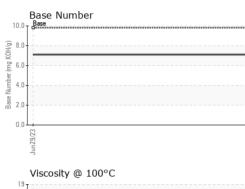
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OIL ANALYSIS REPORT

VISUAL



	VISUAL		method	iimit/base		nistory i	nistory2
	White Metal	scalar *	*Visual	NONE	NONE		
	Yellow Metal		*Visual	NONE	NONE		
	Precipitate		'Visual	NONE	NONE		
	Silt		*Visual	NONE	NONE		
	Debris		Visual	NONE	NONE		
	_ Sand/Dirt		*Visual	NONE	NONE		
				NORML			
Jun 29/23	Appearance		*Visual		NORML		
Ť	000		*Visual	NORML	NORML		
	Emulsified Water		*Visual	>0.2	NEG		
	Free Water	scalar *	*Visual		NEG		
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt A	ASTM D445	15.4	13.3		
	GRAPHS						
	Ferrous Alloys						
	10 iron]						
	8 chromium						
	nickel						
	6						
	E dd						
	1						
	2 -						
	2						
	in29/23			Jun29/23			
	⇒ Nasa (annana Mata	L.		Ϋ́			
	Non-ferrous Meta	IS					
	copper						
	8 - Bassassan lead						
	E dd						
	4						
	2						
				Jun29/23			
	9/23						
	Jun29/23			Jun2			
		2		Jun2	Deee Number		
	Viscosity @ 100°C	2		-	Base Number		
	Viscosity @ 100°C	2		-	Base Number		
	Viscosity @ 100°C	2		10.0			
	Viscosity @ 100°C	2		10.0			
	Viscosity @ 100°C	2		10.0			
	Viscosity @ 100°C	2		10.0			
	Viscosity @ 100°C	5		10.0 (0,HO) (0,H			
	Viscosity @ 100°C	C		0.0 8.0 HOX Bu bag			
	Viscosity @ 100°C			10.0 (0)HOX DU bu apunny 9 2.0			
	Viscosity @ 100°C			10.0 (0) 8.0 (0) HOX (0) HOX (0) 10 (0) 10 (Base		
	Viscosity @ 100°C			10.0 (0)HOX DU bu apunny 9 2.0			
Laboratory Sample No. Lab Number Unique Number	Viscosity @ 100°C		: 24 J : 24 J	10.0 (0, 8.0 (0, 100 KOH(0) (0, 100)	Base		Dunty Trunk I DePere, US 541
Laboratory Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C	501 Madiso Received Diagnosed Diagnostic	: 24 J 1 : 24 J sian : Wes	10.0 10.0	Base	1799 Contac	Dunty Trunk I DePere, US 541 Travis Run
Laboratory Sample No. Lab Number Unique Number	Viscosity @ 100°C	501 Madiso Received Diagnosed Diagnostic	: 24 J 1 : 24 J 2 : 24 J 2 : ian : Wes 0-237-1369	10.0 () () () () () () () () () () () () () (Base	1799 Contac Contac travis.rung	ounty Trunk DePere, US 54

Contact/Location: Travis Runge - GFL916