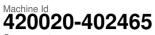


OIL ANALYSIS REPORT

Sample Rating Trend





Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- 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

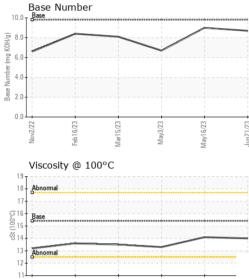
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0082680	GFL0064679	GFL0064690
Sample Date		Client Info		21 Jun 2023	16 May 2023	03 May 2023
Machine Age	hrs	Client Info		5174	5002	4969
Oil Age	hrs	Client Info		172	33	115
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>110	4	4	14
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	2	<1	8
Lead	ppm	ASTM D5185m	>45	0	<1	<1
Copper	ppm	ASTM D5185m	>85	0	<1	3
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			Press to Use a second		11 A.	biotom. O
ADDITIVES		method	limit/base	current	history 1	history 2
ADDITIVES Boron	ppm	ASTM D5185m	0	current 25	history 1 12	4
	ppm ppm		0			
Boron		ASTM D5185m	0	25	12	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	25 0	12 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	25 0 78	12 0 72	4 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	25 0 78 <1	12 0 72 <1	4 0 57 <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	25 0 78 <1 945	12 0 72 <1 946	4 0 57 <1 953
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	25 0 78 <1 945 1041	12 0 72 <1 946 1094	4 0 57 <1 953 1081
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	25 0 78 <1 945 1041 1024	12 0 72 <1 946 1094 1000	4 0 57 <1 953 1081 992
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	25 0 78 <1 945 1041 1024 1284	12 0 72 <1 946 1094 1000 1254	4 0 57 <1 953 1081 992 1271
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	25 0 78 <1 945 1041 1024 1284 3892	12 0 72 <1 946 1094 1000 1254 3615	4 0 57 <1 953 1081 992 1271 3504
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	25 0 78 <1 945 1041 1024 1284 3892 current	12 0 72 <1 946 1094 1000 1254 3615 history 1	4 0 57 <1 953 1081 992 1271 3504 history 2
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	25 0 78 <1 945 1041 1024 1284 3892 current 3	12 0 72 <1 946 1094 1000 1254 3615 history 1 4	4 0 57 <1 953 1081 992 1271 3504 history 2 6
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	25 0 78 <1 945 1041 1024 1284 3892 current 3 2	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30	25 0 78 <1 945 1041 1024 1284 3892 current 3 2 9	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11
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 >30 >20 Imit/base	25 0 78 <1 945 1041 1024 1284 3892 current 3 2 9	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12 history 1	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11 history 2
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 >30 >20 Imit/base	25 0 78 <1 945 1041 1024 1284 3892 <u>current</u> 3 2 9 <u>current</u> 0.1	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12 history 1 0.1	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11 history 2 0.3
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 <i>limit/base</i> >30 <i>limit/base</i> >20	25 0 78 <1 945 1041 1024 1284 3892 current 3 2 9 current 0.1 5.9	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12 history 1 0.1 5.2	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11 history 2 0.3 7.8
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 >30 imit/base >3 20	25 0 78 <1 945 1041 1024 1284 3892 <u>current</u> 3 2 9 <u>current</u> 0.1 5.9 18.4	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12 history 1 0.1 5.2 17.9	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11 history 2 0.3 7.8 17.8
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 TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 2060 2060 2060 2	25 0 78 <1 945 1041 1024 1284 3892 current 3 2 9 current 0.1 5.9 18.4 current	12 0 72 <1 946 1094 1000 1254 3615 history 1 4 3 12 history 1 0.1 5.2 17.9 history 1	4 0 57 <1 953 1081 992 1271 3504 history 2 6 3 11 history 2 0.3 7.8 17.8 17.8 history 2



OIL ANALYSIS REPORT

VISUAL



Mar15/23

May3/23

Feb16/23

Nov2/22

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	White Metal Yellow Metal	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE		NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE		NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE		NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE		NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE		NONE	
/23	Appearance	scalar	*Visual	NORML	NORML	NOR		NORN	
May16/23 Jun21/23	Odor	scalar	*Visual	NORML	NORML	NORM		NORN	
2 ,	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG		NEG	
	Free Water	scalar	*Visual	20.2	NEG	NEG		NEG	
	FLUID PROPI		method	limit/base		histo	rv 1	histor	rv 2
	Visc @ 100°C	cSt	ASTM D445		14.0	14.1	.,, .	13.3	., _
	GRAPHS								
	Ferrous Alloys								
May16/23 +	25 - iron chromium								
May1	20	<u> </u>							
	15								
	10								
	5-								
	0	9							
	Nov2/22 Feb16/23	Mar15/23 May3/23	May16/23	Jun21/23					
	≃ Non-ferrous Meta	<u> </u>	Ma	Ju					
	10 copper 1								
	8 - lead								
	Ed.								
	4								
	2	and a second sec							
			~						
	Nov2/22 Feb16/23	Mar15/23 May3/23	May16/23	Jun21/23					
		-	Ma	ηr					
	Viscosity @ 100°	С			Base Number				
	18 - Abnormal			1	10.0 Base				
	17-	1			8.0	-			
	-16-			Base Number (mg KOH/g)			\checkmark		
0	Base 15- 3 14			L market	6.0				
č	5 ₁₄			umbe	4.0				
	12			ase					
	13 Abnormal		<u>1</u>		2.0				
	11				0.0				
	Nov2/22 Feb16/23	Mar15/23 May3/23	May16/23	Jun21/23	Nov2/22 Feb16/23	Mar15/23	May3/23	May16/23	
	Feb	Mar	May	Jun	Feb	Mar	Ma	May	
boratory mple No. b Number que Number	: WearCheck USA - : GFL0082680 : 05884953 : 10535436	Received Diagnose	01 Madison Ave., Cary, NC 27513 Received : 27 Jun 2023 Diagnosed : 30 Jun 2023 Diagnostician : Wes Davis			4005 Hwy 161 N Little Rock, AF US 7211			
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st Package	: FLEET					0	uniaut. i	Jiau Mai	iag



Submitted By: Nicole Walls Page 2 of 2

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