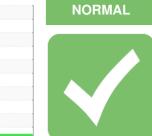


OIL ANALYSIS REPORT

Sample Rating Trend





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		GFL0085539	GFL0085587						
Sample Date		Client Info		15 Apr 2024	15 Dec 2023						
Machine Age	hrs	Client Info		26145	26071						
Oil Age	hrs	Client Info		0	600						
Oil Changed		Client Info		Changed	Changed						
Sample Status				NORMAL	NORMAL						
CONTAMINAT	ION	method	limit/base	current	history1	history2					
Fuel		WC Method	>3.0	<1.0	<1.0						
Water		WC Method	>0.2	NEG	NEG						
Glycol		WC Method		NEG	NEG						
WEAR METALS method limit/base current history1 history2											
Iron	ppm	ASTM D5185m	>120	4	8						
Chromium	ppm	ASTM D5185m	>20	<1	0						
Nickel	ppm	ASTM D5185m	>5	0	1						
Titanium	ppm	ASTM D5185m	>2	0	0						
Silver	ppm	ASTM D5185m	>2	0	0						
Aluminum	ppm	ASTM D5185m	>20	<1	3						
Lead	ppm	ASTM D5185m	>40	0	0						
Copper	ppm	ASTM D5185m	>330	2	0						
Tin	ppm	ASTM D5185m	>15	<1	0						
Vanadium	ppm	ASTM D5185m		0	0						
Cadmium	ppm	ASTM D5185m		0	0						
ADDITIVES		method	limit/base	current	history1	history2					
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 4	history1 3	history2					
	ppm ppm	ASTM D5185m									
Boron		ASTM D5185m	0	4	3						
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	4 1	3 0						
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 1 58	3 0 56						
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 1 58 1	3 0 56 0						
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	4 1 58 1 927	3 0 56 0 887 993 1032						
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	4 1 58 1 927 1051	3 0 56 0 887 993	 					
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	4 1 58 1 927 1051 1068	3 0 56 0 887 993 1032	 					
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	4 1 58 1 927 1051 1068 1251	3 0 56 0 887 993 1032 1244	 					
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	4 1 58 1 927 1051 1068 1251 3653	3 0 56 0 887 993 1032 1244 2927						
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	4 1 58 1 927 1051 1068 1251 3653 current	3 0 56 0 887 993 1032 1244 2927 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 Limit/base	4 1 58 1 927 1051 1068 1251 3653 current 3	3 0 56 0 887 993 1032 1244 2927 history1 8	 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Limit/base	4 1 58 1 927 1051 1068 1251 3653 current 3 3 3	3 0 56 0 887 993 1032 1244 2927 history1 8 3	 history2					
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 >25	4 1 58 1 927 1051 1068 1251 3653 current 3 3 0	3 0 56 0 887 993 1032 1244 2927 history1 8 3 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	4 1 58 1 927 1051 1068 1251 3653 current 3 3 0 current	3 0 56 0 887 993 1032 1244 2927 history1 8 3 2 2 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 2060 225 >25 >20 imit/base >20	4 1 58 1 927 1051 1068 1251 3653 <u>current</u> 3 3 0 <u>current</u> 0.1	3 0 56 0 887 993 1032 1244 2927 history1 8 3 2 2 history1 0.3	 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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	4 1 58 1 927 1051 1068 1251 3653 current 3 3 0 current 0.1 5.1	3 0 56 0 887 993 1032 1244 2927 history1 8 3 2 2 history1 0.3 8.9	 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 >25 imit/base >20 imit/base >20	4 1 58 1 927 1051 1068 1251 3653 <u>current</u> 3 3 0 <u>current</u> 0.1 5.1 17.2	3 0 56 0 887 993 1032 1244 2927 history1 8 3 2 2 history1 0.3 8.9 19.3	 history2 history2 history2					



OIL ANALYSIS REPORT

FT-IR (Direct Ti	rend)	VISUAL		method	limit/base	current	history1	history2		
30 - Oxidation		White Metal	scalar	*Visual	NONE	NONE	NONE			
25 - Annorman Sulfation		Yellow Metal	scalar	*Visual	NONE	NONE	NONE			
820- 920-		Precipitate	scalar	*Visual	NONE	NONE	NONE			
15		Silt	scalar	*Visual	NONE	NONE	NONE			
10 -		Debris	scalar	*Visual	NONE	NONE	NONE			
5	₩₩₩₽₽₩₩₽₽₽₩₩₽₽₩₩₽₽₩₩₽₽₩₽₽₽₩₽₽₽₽₽₽₽₽₽₽	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE			
Dec15/23		Appearance Odor	scalar	*Visual	NORML	NORML	NORML			
Dec		0.00	scalar	*Visual	NORML	NORML	NORML			
Base Number		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG			
T		Free Water	scalar	*Visual		NEG	NEG			
6.0		FLUID PROP	ERTIES	method	limit/base	current	history1	history2		
n 6.0 -		Visc @ 100°C	cSt	ASTM D445	15.4	13.8	12.9			
E 4.0		GRAPHS								
<u>8</u> 2.0		Ferrous Alloys								
0.0		iron								
Dec15/23		8- nickel								
Viscosity @ 100	0°C	6-								
¹⁹		E 4 -								
18 - Abnormal										
		2								
215		0								
		Dec15/23			Apr15/24					
13 Abnomial					Apı					
11		Non-ferrous Met	als							
Dec15/23		copper								
Ď		< 8 - Banana lead								
		E d d								
		4								
		2								
		10 33			24					
		Dec15/23			Apr15/24					
		 Viscosity @ 1009	°C			Base Numbe	r			
		19 T			10.					
		18 - Abnormal								
		17-			(B/HO					
		() 16 Base 0000 15 15 15 14			8 Base Number (mg KOHYg) 7 7	0				
		2215- 53.4			mber	0				
		_			se Nu					
		13 Abhormal			<u>2</u>	0 -				
		11			0	0				
		Dec15/23			Apr15/24 -	Dec15/23 -		Apr15/24 -		
		Decl			Aprl	Deci		Aprl		
	Laborator Sample No	-	501 Madisc Rece		v, NC 27513 2 Apr 2024	GFL E	nvironmental - 6	60S - Roanoke 2045 LEE HWY		
		per : 06155749								
		ber : 10991172	Diagr		3 Apr 2024 - V	Ves Davis		US 24077		
		ige : FLEET	nuice at 1 f	00 227 100	n		Contact: DELBI	ERT BEASLEY		
	To discuss this sample rep * - Denotes test methods th							T:		
1021068049242	Statements of conformity to					rule (JCGM 10	06:2012)	F:		
	CAPI 06155740 (Concreted: 04/26/									

Contact/Location: DELBERT BEASLEY - GFL660R