

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 827039

Component Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Resample of engine oil for soot)

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.

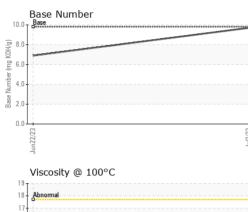
AL)			Jun2023	Jul2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0085616	GFL0076889	
Sample Date		Client Info		03 Jul 2023	22 Jun 2023	
Machine Age	mls	Client Info		162207	161659	
Oil Age	mls	Client Info		548	7876	
Oil Changed		Client Info		Not Changd	Changed	
Sample Status				NORMAL	ABNORMAL	
CONTAMINATIO	NC	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METALS	;	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	10	56	
Chromium	ppm	ASTM D5185m	>4	<1	1	
Nickel	ppm	ASTM D5185m	>2	0	0	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>25	3	13	
Lead	ppm	ASTM D5185m	>45	<1	0	
Copper	ppm	ASTM D5185m	>85	<1	3	
Tin	ppm	ASTM D5185m	>4	<1	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	10	7	
Barium	ppm	ASTM D5185m	0	0	4	
Molybdenum	ppm	ASTM D5185m	60	59	51	
Manganese	ppm	ASTM D5185m	0	<1	<1	
	1-1-					
-	ppm	ASTM D5185m	1010	875	709	
Magnesium	• •			875 1096	709 900	
Magnesium Calcium	ppm	ASTM D5185m	1010			
Magnesium Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1010 1070	1096	900	
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	1096 1010	900 779	
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	1096 1010 1162	900 779 993	
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base	1096 1010 1162 3144	900 779 993 2746	
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	1096 1010 1162 3144 current	900 779 993 2746 history1	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >30	1096 1010 1162 3144 current 4	900 779 993 2746 history1 7	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm S ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >30	1096 1010 1162 3144 current 4 0	900 779 993 2746 history1 7 5	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm S ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >30 >20	1096 1010 1162 3144 current 4 0 2	900 779 993 2746 history1 7 5 2	 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm S ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >30 >20 limit/base >3	1096 1010 1162 3144 current 4 0 2 2 current	900 779 993 2746 history1 7 5 2 2 history1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	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	1010 1070 1150 1270 2060 limit/base >30 20 limit/base >3 >20	1096 1010 1162 3144 <i>current</i> 4 0 2 2 <i>current</i> 0.7	900 779 993 2746 history1 7 5 2 2 history1 ▲ 3.1	 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm 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 ASTM D5185m ASTM D7844 *ASTM D7844	1010 1070 1150 1270 2060 limit/base >30 20 limit/base >3 >20	1096 1010 1162 3144 <i>current</i> 4 0 2 <i>current</i> 0.7 6.3	900 779 993 2746 history1 7 5 2 2 history1 ▲ 3.1 13.1	 history2 history2 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD.	ppm 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 ASTM D51854 *ASTM D7844 *ASTM D7844	1010 1070 1150 2060 iimit/base >30 iimit/base >3 >20 >30 iimit/base	1096 1010 1162 3144 <i>current</i> 4 0 2 <i>current</i> 0.7 6.3 19.4	900 779 993 2746 history1 7 5 2 2 history1 ▲ 3.1 13.1 27.7	 history2 history2 history2



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> 13 Abnormal 12 11 Jun22/23

OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Appearance	scalar	*Visual	NORML	NORML	NORML	
-	Ödor	scalar	*Visual	NORML	NORML	NORML	
°C	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
-	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.7	14.3	
	GRAPHS						
	Ferrous Alloys						
	⁶⁰ T						
	50 - iron						
	nickel						
	40-						
	틆 30						
	20						
	10-						
	0						
				/23			
	Jun 22/23			Jul3/23			
	-,	1-					
	Non-ferrous Meta	IS					
	copper						
	8 - sessesses lead						
	е ⁶						
	ш ц 4-						
	2						
	33			23			
	un22/23			Jul3/23			
		_					
	Viscosity @ 100°C				Base Number		
	18 - Abnormal			10.0	Base		
	17-			- 80			
				B/HO			
	015 314						
	215-			nber (
	³ 14.			4.0	•		
	13 Abnormal			6.0 Base Number 4.0 Base 2.0			
	12			2.0			
	114			0.0			
	Jun22/23			Jul3/23	Jun22/23		Jul3/23
	Ъ.			7	Jur		
Laboratory	: WearCheck USA - 5	501 Madis	on Ave Ca	rv. NC 27513	GFI Envi	ronmental - 411	- Kingsford HC
Sample No.		Received		Jul 2023			1001 E Blvd
Lab Number		Diagnose		Jul 2023			Kingsford, MI
TESTING LABORATORY Unique Number		Diagnosti		an Felton			US 49802
Certificate L2367 Test Packag		•				Contact: Se	ervice Manager
To discuss this sample report	t, contact Customer Serv						-
* - Denotes test methods that							T:
Statements of conformity to spe	ecifications are based on t	the simple a	acceptance d	decision rule (J	JCGM 106:2012)		F:
		r	,	(*	/		

Submitted By: TECHNICIAN ACCOUNT