

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 929053

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

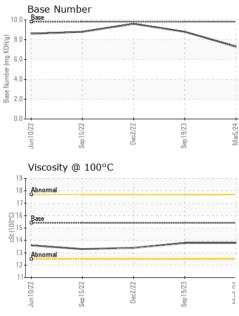
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2						
Sample Number		Client Info		GFL0107693	GFL0027547	GFL0063303						
Sample Date		Client Info		05 Mar 2024	19 Sep 2023	02 Dec 2022						
Machine Age	hrs	Client Info		10058	9391	8693						
Oil Age	hrs	Client Info		600	600	600						
Oil Changed		Client Info		N/A	Not Changd	Changed						
Sample Status				NORMAL	NORMAL	NORMAL						
CONTAMINAT	ION	method	limit/base	current	history1	history2						
Fuel		WC Method	>5	<1.0	<1.0	<1.0						
Water		WC Method	>0.2	NEG	NEG	NEG						
Glycol		WC Method		NEG	NEG	NEG						
WEAR METALS method limit/base current history1 history2												
Iron	ppm	ASTM D5185m	>110	11	27	17						
Chromium	ppm	ASTM D5185m	>4	0	2	<1						
Nickel	ppm	ASTM D5185m	>2	4	0	0						
Titanium	ppm	ASTM D5185m		0	0	0						
Silver	ppm	ASTM D5185m	>2	0	0	0						
Aluminum	ppm	ASTM D5185m	>25	<1	1	4						
Lead	ppm	ASTM D5185m	>45	0	0	0						
Copper	ppm	ASTM D5185m	>85	<1	<1	<1						
Tin	ppm	ASTM D5185m	>4	1	0	0						
Vanadium	ppm	ASTM D5185m		0	0	0						
Cadmium	ppm	ASTM D5185m		0	0	0						
ADDITIVES		method	limit/base	current	history1	history2						
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current <1	history1 0	history2 4						
	ppm ppm	ASTM D5185m										
Boron		ASTM D5185m	0	<1	0	4						
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	<1 0	0	4						
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 56	0 0 55	4 0 59						
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 56 0	0 0 55 0	4 0 59 <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	<1 0 56 0 1046	0 0 55 0 944	4 0 59 <1 921						
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	<1 0 56 0 1046 1179	0 0 55 0 944 1062	4 0 59 <1 921 1075						
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	<1 0 56 0 1046 1179 1017	0 0 55 0 944 1062 986	4 0 59 <1 921 1075 1004						
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	<1 0 56 0 1046 1179 1017 1312	0 0 55 0 944 1062 986 1252	4 0 59 <1 921 1075 1004 1222						
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	<1 0 56 0 1046 1179 1017 1312 2967	0 0 55 0 944 1062 986 1252 3583	4 0 59 <1 921 1075 1004 1222 3545						
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	<1 0 56 0 1046 1179 1017 1312 2967 current	0 0 55 0 944 1062 986 1252 3583 history1	4 0 59 <1 921 1075 1004 1222 3545 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 method	0 0 60 1010 1070 1150 1270 2060 limit/base >30	<1 0 56 0 1046 1179 1017 1312 2967 current 2	0 0 55 0 944 1062 986 1252 3583 history1 14	4 0 59 <1 921 1075 1004 1222 3545 history2 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	<1 0 56 0 1046 1179 1017 1312 2967 current 2 2 2	0 0 55 0 944 1062 986 1252 3583 history1 14 7	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2						
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30	<1 0 56 0 1046 1179 1017 1312 2967 current 2 2 2 0	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1						
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 >30 20	<1 0 56 0 1046 1179 1017 1312 2967 current 2 2 2 0 0	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5 5 history1	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1 1 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 Imit/base >30 20	<1 0 56 0 1046 1179 1017 1312 2967 <i>current</i> 2 2 0 <i>current</i> 0.5	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5 5 history1 0.3	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1 history2 0.5						
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 imit/base >30 220 imit/base >3 20	<1 0 56 0 1046 1179 1017 1312 2967 <i>current</i> 2 2 2 0 <i>current</i> 0.5 8.4	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5 history1 0.3 7.2	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1 history2 0.5 7.2						
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 >20 imit/base >3 >20	<1 0 56 0 1046 1179 1017 1312 2967 <i>current</i> 2 2 2 0 <i>current</i> 0.5 8.4 19.2	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5 <u>history1</u> 0.3 7.2 19.1	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1 1 history2 0.5 7.2 20.5						
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	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 >20 imit/base >3 >20	<1 0 56 0 1046 1179 1017 1312 2967 Current 2 2 2 0 Current 0.5 8.4 19.2 Current	0 0 55 0 944 1062 986 1252 3583 history1 14 7 5 history1 0.3 7.2 19.1 history1	4 0 59 <1 921 1075 1004 1222 3545 history2 6 2 1 history2 0.5 7.2 20.5 history2						



OIL ANALYSIS REPORT

VISUAL



Sample Lab Nu Unique N	Unique Num		Rece Teste	ived : 06 ed : 07	NC 27513 Mar 2024 Mar 2024 Jar 2024 - Don Bald		invironmental - 465 - Pontiac 888 Baldwin Pontiac, MI US 48340 Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514		
		33 14 13 12 11 12 11 22 11 22 11 22 11 22 11 22 12 1	Dec2/22	Sep19/23	Mar5/24 9 0 0 0 2 8ase Minn Jun 10/22	Sep15/22	Dec2/22	Sep19/23	
		18 Abnormal			0.8 0.0 0.0 KOH(d) per (mg				
		Viscosity @	-	Sep 19/23	Ba:	se Number			
			122	1/23	124				
		6							
		Non-ferrou							
		Jun 10/22 0		Sep 19/23	Mar5/24				
		8 15	Ť						
Dec2/22 -	Sep19/23 -		ium	\wedge					
		GRAPHS Ferrous Allo							
		FLUID PI Visc @ 100°(ROPERTIES C cSt	method ASTM D445	limit/base	current 3.8	history1 13.8	history: 13.4	
:		Emulsified W Free Water	ater scalar scalar	*Visual *Visual		EG EG	NEG NEG	NEG NEG	
Dec2/22	Appearance Odor	scalar scalar scalar	*Visual	NORML N	ONE ORML ORML	NONE NORML NORML	NONE NORML NORML		
	Silt Debris	scalar scalar	*Visual	NONE N	ONE	NONE NONE	NONE		
	White Metal Yellow Metal Precipitate	scalar scalar scalar	*Visual	NONE N	ONE ONE ONE	NONE NONE NONE	NONE NONE NONE		

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Submitted By: Ricky Matthews

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