

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 228020-1142

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Sample only) $% \label{eq:comment}$

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

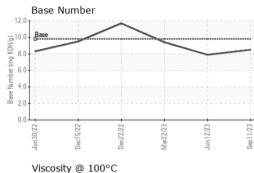
Fluid Condition

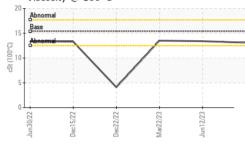
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method initibase current history1 history2 Sample Number Client Info IS Sep 20 GFL0088272 GFL0075508 GFL0088175 Sample Date Client Info 11 Sep 2023 12 Jun 2023 322 Mar 2023 Machine Age Inter Info 165 413 3342 Oil Changed Client Info 165 413 3342 Oil Changed Client Info Not Changd Not Changd Not Changd Sample Status method Imit/base current history1 history2 Fuel WC Method >2.0 <1.0 <1.0 <1.0 Glycol WC Method >2.0 <1 <1 <1 Nickel ppm ASTM05185m >40 0 <1 0 Nickel ppm ASTM05185m >3 0 0 0 Silver ppm ASTM05185m >30 0 0 0 Silver ppm AS			Jun2022	0002022 0002022	Mar2023 Jun2023	Sep2023	
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Vanadium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	<1	1	0
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Nitration Abs/cm *ASTM D7624 >20 6.7 10.0 8.5 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.4 19.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 17.8 14.9	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m 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 limit/base >25 >20	0 62 <1 930 1097 1019 1218 3594 <u>current</u> 5 2 8	6 0 60 1 985 1127 1071 1361 3852 history1 6 < 1 5	0 60 1 911 1121 977 1251 3146 history2 7 2 11
Sulfation Abs/.1mm *ASTM D7415 >30 17.7 20.4 19.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.2 17.8 14.9	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED	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 D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	0 62 <1 930 1097 1019 1218 3594 current 5 2 8 8	6 0 60 1 985 1127 1071 1361 3852 history1 6 <1 15 history1	0 60 1 911 1121 977 1251 3146 history2 7 2 11 history2
Oxidation Abs/.1mm *ASTM D7414 >25 13.2 17.8 14.9	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 limit/base >3	0 62 <1 930 1097 1019 1218 3594 current 5 2 8 8 current 0.4	6 0 60 1 985 1127 1071 1361 3852 history1 6 <1 15 history1 0.9	0 60 1 911 1121 977 1251 3146 history2 7 2 11 11 history2 0.7
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	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 20 imit/base >3 >20	0 62 <1 930 1097 1019 1218 3594 <u>current</u> 5 2 8 <u>current</u> 0.4 6.7 17.7	6 0 60 1 985 1127 1071 1361 3852 history1 6 <1 15 history1 0.9 10.0 20.4	0 60 1 911 1121 977 1251 3146 history2 7 2 11 1 history2 0.7 8.5 19.1
Dase Multiper (DN) IIIg Norig Astivi D2030 3.0 0.3 7.3 9.4	Barium Molybdenum Manganese 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 D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 33 20 330 20 330	0 62 <1 930 1097 1019 1218 3594 <u>current</u> 5 2 8 <u>current</u> 0.4 6.7 17.7 <u>current</u>	6 0 60 1 985 1127 1071 1361 3852 history1 6 <1 15 history1 0.9 10.0 20.4 history1	0 60 1 911 1121 977 1251 3146 history2 7 2 11 11 history2 0.7 8.5 19.1 history2
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 30 imit/base	0 62 <1 930 1097 1019 1218 3594 current 5 2 8 current 0.4 6.7 17.7 current 13.2	6 0 60 1 985 1127 1071 1361 3852 history1 6 <1 15 history1 0.9 10.0 20.4 history1 17.8	0 60 1 911 1121 977 1251 3146 history2 7 2 11 <u>history2</u> 0.7 8.5 19.1 <u>history2</u> 14.9

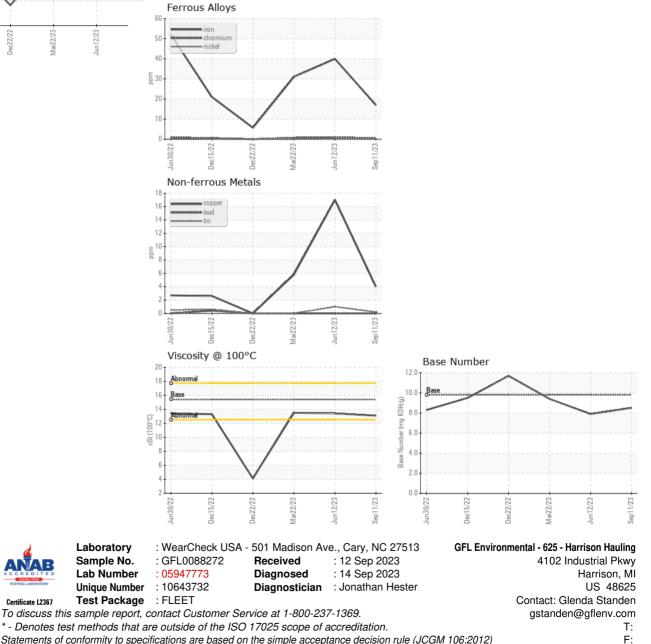


OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.4	13.5
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)