

OIL ANALYSIS REPORT

GLYCOL



Machine Id 827020-1032

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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels remain high. Test for glycol is negative.

Fluid Condition

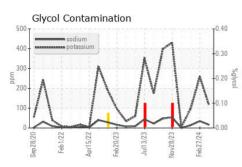
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

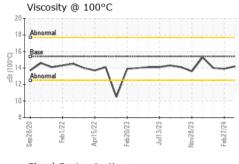
ſR)		ep2020 Fe	b2022 Apr2022 Fet	52023 Jul2023 Nov2023	Feb2024	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0113600	GFL0113593	GFL0103836
Sample Date		Client Info		12 Mar 2024	27 Feb 2024	26 Dec 2023
Machine Age	mls	Client Info		188422	18228	17761
Oil Age	mls	Client Info		188422	467	102
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
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
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	4	8	5
Chromium	ppm	ASTM D5185m	>4	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	2	<1
Lead	ppm	ASTM D5185m	>45	0	2	2
Copper	ppm	ASTM D5185m	>85	<1	<1	1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base	current 3	history1 3	history2 9
Boron	ppm ppm					
Boron Barium		ASTM D5185m	0	3	3	9
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	3 0	9 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 72	3 0 89	9 0 73
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 72 0	3 0 89 <1	9 0 73 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 72 0 989	3 0 89 <1 987	9 0 73 0 1033
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	3 0 72 0 989 1113	3 0 89 <1 987 1083	9 0 73 0 1033 1162
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 ASTM D5185m	0 0 60 0 1010 1070 1150	3 0 72 0 989 1113 1060	3 0 89 <1 987 1083 1084	9 0 73 0 1033 1162 1104
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 1010 1070 1150 1270	3 0 72 0 989 1113 1060 1275	3 0 89 <1 987 1083 1084 1308	9 0 73 0 1033 1162 1104 1333
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 0 1010 1070 1150 1270 2060	3 0 72 0 989 1113 1060 1275 3851	3 0 89 <1 987 1083 1084 1308 3463	9 0 73 0 1033 1162 1104 1333 3413
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 limit/base	3 0 72 0 989 1113 1060 1275 3851 current	3 0 89 <1 987 1083 1084 1308 3463 history1	9 0 73 0 1033 1162 1104 1333 3413 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 ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	3 0 72 0 989 1113 1060 1275 3851 current 4	3 0 89 <1 987 1083 1084 1308 3463 history1 6	9 0 73 0 1033 1162 1104 1333 3413 history2 5
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 ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	3 0 72 0 989 1113 1060 1275 3851 current 4 16	3 0 89 <1 987 1083 1084 1308 3463 3463 history1 6 ▲ 35	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >30	3 0 72 0 989 1113 1060 1275 3851 <u>current</u> 4 16 ▲ 114	3 0 89 <1 987 1083 1084 1308 3463 history1 6 6 ▲ 35 ▲ 259	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14 ↓ 97
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30 	3 0 72 0 989 1113 1060 1275 3851 <u>current</u> 4 16 ▲ 114 NEG	3 0 89 <1 987 1083 1084 1308 3463 history1 6 ▲ 35 ▲ 259 NEG	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14 \$ 97 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D2982	0 0 0 1010 1070 1150 1270 2060 limit/base >30 	3 0 72 0 989 1113 1060 1275 3851 current 4 16 16 114 NEG	3 0 89 <1 987 1083 1084 1308 3463 history1 6 ▲ 35 259 NEG history1	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14 5 14 97 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982	0 0 0 1010 1070 1150 1270 2060 limit/base >30 	3 0 72 0 989 1113 1060 1275 3851 current 4 16 ▲ 114 NEG current 0.1	3 0 89 <1 987 1083 1084 1308 3463 history1 6 ▲ 35 259 NEG history1 0.3	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14 97 NEG 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >20 imit/base >3	3 0 72 0 989 1113 1060 1275 3851 current 4 16 ▲ 114 NEG 0.1 6.9	3 0 89 <1 987 1083 1084 1308 3463 history1 6 ▲ 35 € 259 NEG NEG history1 0.3 9.8	9 0 73 0 1033 1162 1104 1333 3413 history2 5 14 5 14 97 NEG NEG 0.2 0.2 7.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624	0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >20 imit/base >3 >20	3 0 72 0 989 1113 1060 1275 3851 current 4 16 16 114 NEG current 0.1 6.9 19.2	3 0 89 <1 987 1083 1084 1308 3463 history1 6 ▲ 35 259 NEG history1 0.3 9.8 21.7	9 0 73 0 1033 1162 1104 1333 3413 bistory2 5 14 ▶ 97 NEG 0.2 0.2 7.2 19.5

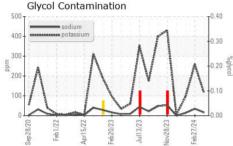
Sample Rating Trend



OIL ANALYSIS REPORT

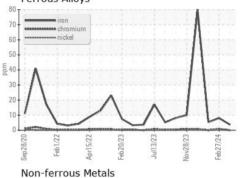


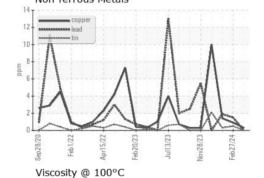


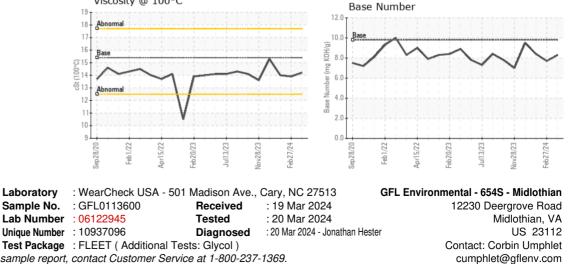


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.2	13.9	14.0
GRAPHS						

Ferrous Alloys







To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

: GFL0113600

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18 17

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9 Sep28/20.

Laboratory

Sample No.

Lab Number : 06122945

Unique Number : 10937096

At

Feb 1/22

Apr15/22

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

Feb20/23

Certificate L2367

Submitted By: Matt oversee 654, 654S, 659 - Matthew Shinault

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