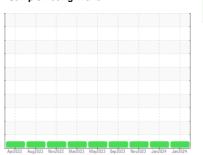


OIL ANALYSIS REPORT

Sample Rating Trend









422022-402157

Component

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

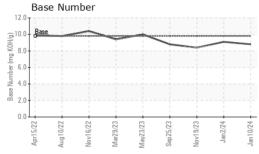
Fluid Condition

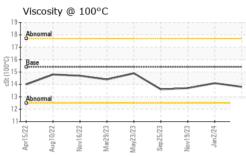
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0048372	GFL0048366	GFL0093553
Sample Date		Client Info		10 Jan 2024	02 Jan 2024	19 Nov 2023
Machine Age	hrs	Client Info		42743	42722	42609
Oil Age	hrs	Client Info		134	113	580
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	2	5	29
Chromium	ppm	ASTM D5185m	>20	0	<1	2
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	2
Lead	ppm	ASTM D5185m	>40	1	1	2
Copper	ppm	ASTM D5185m	>330	1	1	6
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m	>10	0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	PPIII	method	limit/base	current	history1	history2
	D 10 100				•	
Boron	ppm	ASTM D5185m	0	<1	3	1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 0	3	1 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 53	3 0 56	1 0 58
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 53 0	3 0 56 <1	1 0 58 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 53 0 912	3 0 56 <1 958	1 0 58 <1 860
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 53 0 912 976	3 0 56 <1 958 1000	1 0 58 <1 860 973
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	<1 0 53 0 912 976 948	3 0 56 <1 958 1000 1094	1 0 58 <1 860 973 949
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 0 53 0 912 976 948 1228	3 0 56 <1 958 1000 1094 1283	1 0 58 <1 860 973 949 1119
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 0 1010 1070 1150 1270 2060	<1 0 53 0 912 976 948 1228 2925	3 0 56 <1 958 1000 1094 1283 3270	1 0 58 <1 860 973 949 1119 2831
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 53 0 912 976 948 1228 2925	3 0 56 <1 958 1000 1094 1283 3270 history1	1 0 58 <1 860 973 949 1119 2831 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	<1 0 53 0 912 976 948 1228 2925 current	3 0 56 <1 958 1000 1094 1283 3270 history1	1 0 58 <1 860 973 949 1119 2831 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	<1 0 53 0 912 976 948 1228 2925 current 3 <1	3 0 56 <1 958 1000 1094 1283 3270 history1	1 0 58 <1 860 973 949 1119 2831 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2	1 0 58 <1 860 973 949 1119 2831 history2 7 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2
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 method *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 limit/base	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1 current 0.4	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3 history1 0.4	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1 current 0.4 4.7	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3 history1 0.4 4.7	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2 history2 2.1 7.5
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 method *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 limit/base	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1 current 0.4	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3 history1 0.4	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 0 0 1010 1150 1270 2060 limit/base >25 >20 limit/base	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1 current 0.4 4.7	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3 history1 0.4 4.7	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2 history2 2.1 7.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	<1 0 53 0 912 976 948 1228 2925 current 3 <1 <1 <1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 0 56 <1 958 1000 1094 1283 3270 history1 5 2 3 history1 0.4 4.7 17.8	1 0 58 <1 860 973 949 1119 2831 history2 7 4 2 history2 2.1 7.5 21.0



OIL ANALYSIS REPORT

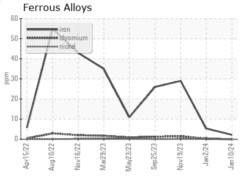


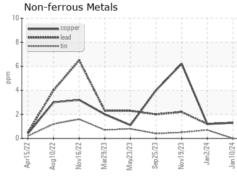


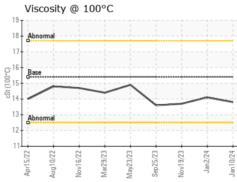
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

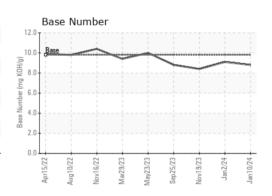
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.1	13.7

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10823646

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0048372 Recieved : 11 Jan 2024 : 06057697

: 11 Jan 2024 Diagnosed Diagnostician : Wes Davis

GFL Environmental - 891 - Oklahoma City Hauling

1001 South Rockwell Oklahoma City, OK US 73128

Contact: Andy Smith andrew.smith@gflenv.com T: (405)306-1651

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

Report Id: GFL891 [WUSCAR] 06057697 (Generated: 01/11/2024 15:35:07) Rev: 1