

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 912063

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

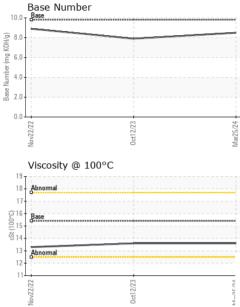
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0108383	GFL0086738	GFL0060637
Sample Date		Client Info		25 Mar 2024	12 Oct 2023	22 Nov 2022
Machine Age	hrs	Client Info		5946	4804	2332
Oil Age	hrs	Client Info		1142	4804	2332
Oil Changed	1110	Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT		mathad	limit/base	current	history1	
		method				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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	8	6	11
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	5	2	4
Lead	ppm	ASTM D5185m	>45	<1	0	0
Copper	ppm	ASTM D5185m	>85	0	<1	3
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
oddiniani	ppm			0		0
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1 1	history2 5
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 2 0	history1 1 0	history2 5 <1
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 57	history1 1 0 54	history2 5 <1 58
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 57 <1	history1 1 0 54 <1	history2 5 <1 58 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 57 <1 977	history1 1 0 54 <1 963	history2 5 <1 58 <1 928
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 2 0 57 <1 977 1062	history1 1 0 54 <1 963 990	history2 5 <1 58 <1 928 1070 980 1234
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 2 0 57 <1 977 1062 1070	history1 1 0 54 <1 963 990 919	history2 5 <1 58 <1 928 1070 980
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 2 0 57 <1 977 1062 1070 1302	history1 1 0 54 <1 963 990 919 1235	history2 5 <1 58 <1 928 1070 980 1234
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current 2 0 57 <1 977 1062 1070 1302 3555	history1 1 0 54 <1 963 990 919 1235 2790	history2 5 <1 58 <1 928 1070 980 1234 3401
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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	current 2 0 57 <1 977 1062 1070 1302 3555 current	history1 1 0 54 <1 963 990 919 1235 2790 history1	history2 5 <1 58 <1 928 1070 980 1234 3401 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	current 2 0 57 <1 977 1062 1070 1302 3555 current 2	history1 1 0 54 <1 963 990 919 1235 2790 history1 3	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sidium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Jimit/base >30	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 -20 Imit/base	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3 current	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6 history2
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 20 limit/base	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3 current 0.4	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4 history1 0.4	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6 history2 0.4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 20	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3 current 0.4 7.4	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4 history1 0.4 7.0	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6 history2 0.4 8.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 2060 2060 2060 2060 200 200 200 200 20	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3 current 0.4 7.4 19.1 current	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4 history1 0.4 7.0 18.7 history1	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6 history2 0.4 8.8 21.1 history2
ADDITIVES 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	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	current 2 0 57 <1 977 1062 1070 1302 3555 current 2 <1 3 current 0.4 7.4 19.1	history1 1 0 54 <1 963 990 919 1235 2790 history1 3 1 4 history1 0.4 7.0 18.7	history2 5 <1 58 <1 928 1070 980 1234 3401 history2 2 1 6 history2 0.4 8.8 21.1



OIL ANALYSIS REPORT

VISUAL



Mar25/24	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water Free Water Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual method ASTM D445	NONE NONE NONE NONE NORML NORML >0.2 Iimit/base	NONE NONE NONE NONE NORML NORML NEG NEG Current 13.6	NONE NONE NONE NONE NORML NORML NEG NEG history1 13.6	NONE NONE NONE NONE NOR NOR NOR NOR NEG NEG history2 13.3
Marchona MarcSDA	Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NONE NORML NORML >0.2 limit/base	NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NORML NORML NEG NEG history2
Mar25/24	Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual method	NONE NONE NORML NORML >0.2 limit/base	NONE NONE NORML NORML NEG NEG	NONE NONE NORML NORML NEG NEG history1	NONE NONE NORML NORML NEG NEG history2
Mar25/24	Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual *Visual *Visual method	NONE NORML NORML >0.2 limit/base	NONE NORML NORML NEG NEG	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Mar25/24	Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual *Visual method	NONE NORML NORML >0.2 limit/base	NONE NORML NORML NEG NEG current	NONE NORML NORML NEG NEG history1	NONE NORML NORML NEG NEG history2
Mar2524	Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar scalar RTIES	*Visual *Visual *Visual *Visual method	NORML NORML >0.2 limit/base	NORML NORML NEG NEG current	NORML NORML NEG history1	NORML NORML NEG NEG history2
Ma25/24	Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar scalar RTIES	*Visual *Visual *Visual method	NORML >0.2 limit/base	NORML NEG NEG current	NORML NEG NEG history1	NORML NEG NEG history2
DEM	Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	scalar scalar RTIES	*Visual *Visual method	>0.2 limit/base	NEG NEG current	NEG NEG history1	NEG NEG history2
AA71-CAA	Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys 12 10 tran chromium	scalar RTIES	*Visual method	limit/base	NEG NEG current	NEG history1	NEG history2
RA-DE DA	FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys	RTIES	method	limit/base	current	history1	history2
Acce.M	Visc @ 100°C GRAPHS Ferrous Alloys						
M-JE 24	GRAPHS Ferrous Alloys	cSt	ASTM D445	15.4	13.6	13.6	13.3
Lá-JC DA	Ferrous Alloys						
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