

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

512016

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.

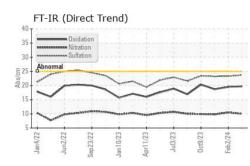
Fluid Condition

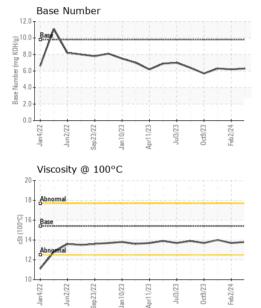
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110943	GFL0096088	GFL0096112
Sample Date		Client Info		19 Apr 2024	02 Feb 2024	30 Nov 2023
Machine Age	hrs	Client Info		10049	9337	8718
Oil Age	hrs	Client Info		704	619	653
Oil Changed		Client Info		Changed	Changed	N/A
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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	27	16	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		9	13	13
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	4	2
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	0	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	nnm	ASTM D5185m		•	0	0
Oddinidini	ppm	ASTIVI DOTODITI		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base	-	-	
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 155	history1 89	history2 99
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 155 0	history1 89 0	history2 99 2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 155 0 62	history1 89 0 43	history2 99 2 52
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 155 0 62 <1	history1 89 0 43 <1	history2 99 2 52 0
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 155 0 62 <1 702	history1 89 0 43 <1 706	history2 99 2 52 0 631
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	Current 155 0 62 <1 702 1637	history1 89 0 43 <1 706 1576	history2 99 2 52 0 631 1469
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	0 0 60 0 1010 1070 1150	Current 155 0 62 <1 702 1637 902	history1 89 0 43 <1 706 1576 748	history2 99 2 52 0 631 1469 676
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 155 0 62 <1 702 1637 902 1104	history1 89 0 43 <1 706 1576 748 905	history2 99 2 52 0 631 1469 676 862
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 155 0 62 <1 702 1637 902 1104 4024	history1 89 0 43 <1 706 1576 748 905 3058	history2 99 2 52 0 631 1469 676 862 4400
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 155 0 62 <1 702 1637 902 1104 4024 Current	history1 89 0 43 <1 706 1576 748 905 3058 history1	history2 99 2 52 0 631 1469 676 862 4400 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	current 155 0 62 <1 702 1637 902 1104 4024 current 5	history1 89 0 43 <1 706 1576 748 905 3058 history1 5	history2 99 2 52 0 631 1469 676 862 4400 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 5 5	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3 7	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 5 5 6	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3 7 current	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 5 6 history1	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3 8 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur 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 2060 225 >25 >20 Limit/base >20	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3 7 current 0.7	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 6 history1 0.7	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3 8 history2 0.6
ADDITIVES 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 TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3 7 current 0.7 10.0	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 6 history1 0.7 10.5	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3 8 history2 0.6 9.8
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 TS ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 >3 >20	current 155 0 62 <1 702 1637 902 1104 4024 current 5 3 7 current 0.7 10.0 23.7	history1 89 0 43 <1 706 1576 748 905 3058 history1 5 6 history1 0.7 10.5 23.3	history2 99 2 52 0 631 1469 676 862 4400 history2 4 3 8 history2 0.6 9.8 23.2



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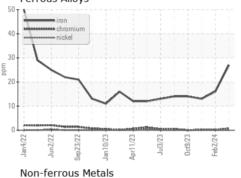
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.8	13.7	14.0
GRAPHS						

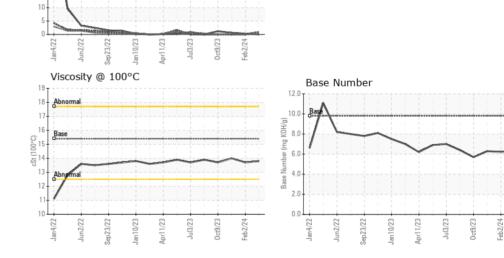
Ferrous Alloys

lead

45 40

35 30е²⁵+ 20 15





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 629 - Northern A1 Sample No. : GFL0110943 Received : 24 Apr 2024 3947 US 131 N Lab Number : 06158769 Tested : 29 Apr 2024 Kalkaska, MI US 49646-8428 Unique Number : 10994192 Diagnosed : 29 Apr 2024 - Don Baldridge Test Package : FLEET Contact: MITCH HERSHBERGER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. T: (231)624-0848 * - 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: GFL629 [WUSCAR] 06158769 (Generated: 04/30/2024 07:21:18) Rev: 2

F: Submitted By: Mitch Hershberger

Page 2 of 2