

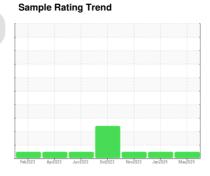
OIL ANALYSIS REPORT



Machine Id 426150-SW4629 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

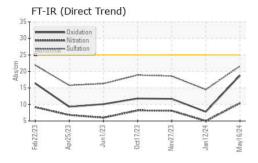
Fluid Condition

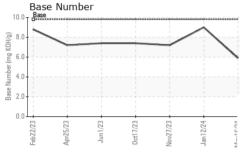
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

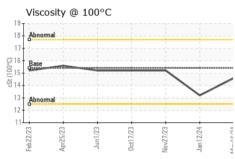
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112105	GFL0105541	GFL0094153
Sample Date		Client Info		16 May 2024	12 Jan 2024	27 Nov 2023
Machine Age	mls	Client Info		351744	344695	344709
Oil Age	mls	Client Info		351744	344695	334709
Oil Changed		Client Info		Changed	N/A	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	>80	31	12	35
Chromium	ppm	ASTM D5185m	>5	1	<1	1
Nickel	ppm		>2	<1	0	0
Titanium	ppm	ASTM D5185m	_	0	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m		5	3	4
Lead	ppm		>30	<1	0	<1
Copper	ppm	ASTM D5185m		14	3	13
Tin	ppm		>5	1	<1	<1
Vanadium	ppm	ASTM D5185m	/5	- <1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
			0	<1	0	
Boron	mag	ASTM D5185m	U	< I	U	0
Boron Barium	ppm	ASTM D5185m			3	0
Barium	ppm	ASTM D5185m	0	0	3	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 55	3 49	0 49
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 55 1	3 49 <1	0 49 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 55 1 37	3 49 <1 19	0 49 <1 97
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 55 1 37 2607	3 49 <1 19 2242	0 49 <1 97 2716
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 55 1 37 2607 1080	3 49 <1 19 2242 1008	0 49 <1 97 2716 1300
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 55 1 37 2607	3 49 <1 19 2242	0 49 <1 97 2716
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 60 0 1010 1070 1150 1270	0 55 1 37 2607 1080 1363	3 49 <1 19 2242 1008 1168	0 49 <1 97 2716 1300 1633
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 60 0 1010 1070 1150 1270 2060	0 55 1 37 2607 1080 1363 3610	3 49 <1 19 2242 1008 1168 3352	0 49 <1 97 2716 1300 1633 3970
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 60 0 1010 1070 1150 1270 2060	0 55 1 37 2607 1080 1363 3610 current	3 49 <1 19 2242 1008 1168 3352 history1	0 49 <1 97 2716 1300 1633 3970 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 55 1 37 2607 1080 1363 3610 current	3 49 <1 19 2242 1008 1168 3352 history1	0 49 <1 97 2716 1300 1633 3970 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 55 1 37 2607 1080 1363 3610 current	3 49 <1 19 2242 1008 1168 3352 history1	0 49 <1 97 2716 1300 1633 3970 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >20	0 55 1 37 2607 1080 1363 3610 current 12 1	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2	0 49 <1 97 2716 1300 1633 3970 history2 16 0
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 60 0 1010 1070 1150 1270 2060 limit/base >20	0 55 1 37 2607 1080 1363 3610 current 12 1 2 current 0.3	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2	0 49 <1 97 2716 1300 1633 3970 history2 16 0 1 history2 0.5
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	0 60 0 1010 1070 1150 1270 2060 limit/base >20 limit/base >3	0 55 1 37 2607 1080 1363 3610 current 12 1	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2 history1 0.1	0 49 <1 97 2716 1300 1633 3970 history2 16 0 1
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 ppm	ASTM D5185m method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7624 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20	0 55 1 37 2607 1080 1363 3610 current 12 1 2 current 0.3 10.4	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2 history1 0.1 5.0	0 49 <1 97 2716 1300 1633 3970 history2 16 0 1 history2 0.5 8.1
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 method ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7624 *ASTM D7624 *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >3	0 55 1 37 2607 1080 1363 3610 current 12 1 2 current 0.3 10.4 21.6	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2 history1 0.1 5.0 14.5	0 49 <1 97 2716 1300 1633 3970 history2 16 0 1 history2 0.5 8.1 18.6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20 limit/base >3 >20 >3 limit/base	0 555 1 37 2607 1080 1363 3610 current 12 1 2 current 0.3 10.4 21.6 current	3 49 <1 19 2242 1008 1168 3352 history1 11 0 2 history1 5.0 14.5 history1	0 49 <1 97 2716 1300 1633 3970 history2 16 0 1 history2 0.5 8.1 18.6 history2



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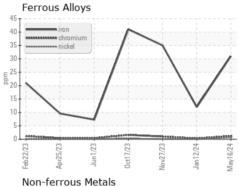


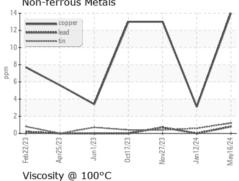


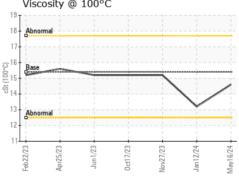
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

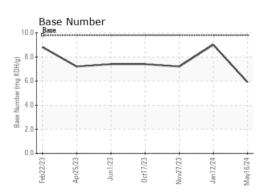
FLUID PROP	ERHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.6	13.2	15.2

GRAPHS













Certificate 12367

Laboratory Sample No.

Test Package : FLEET

: GFL0112105 Lab Number : 06190225 Unique Number : 11046977

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 24 May 2024

Tested : 31 May 2024 Diagnosed : 31 May 2024 - Sean Felton

16011 West Belfort Street Sugar Land, TX

GFL Environmental - 983 - Sugar Land Hauling

US 77498 Contact: Adrian Martinez adrianmartinez@gflenv.com

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: GFL983 [WUSCAR] 06190225 (Generated: 05/31/2024 18:16:36) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

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