

OIL ANALYSIS REPORT

NORMAL

Machine Id

427092-402367

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.

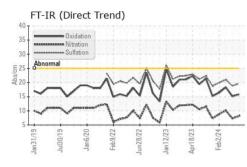
Fluid Condition

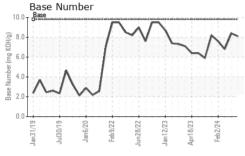
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

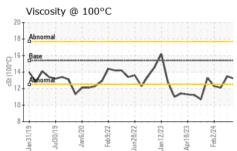
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109407	GFL0093584	GFL0109251
Sample Date		Client Info		09 Apr 2024	26 Mar 2024	28 Feb 2024
Machine Age	hrs	Client Info		18578	18456	18327
Oil Age	hrs	Client Info		251	129	424
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	MARGINAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	A 3.1	7 .4
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	8	6	27
Chromium	ppm	ASTM D5185m	>20	0	<1	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		8	9	27
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead	ppm	ASTM D5185m	>40	<1	<1	1
Copper	ppm	ASTM D5185m	>330	0	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	2	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 9	history1 9	history2 24
	ppm ppm		0			
Boron		ASTM D5185m	0	9	9	24
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	9 0	9 0	24 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	9 0 51	9 0 52	24 0 73
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	9 0 51 <1	9 0 52 0	24 0 73 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	9 0 51 <1 884	9 0 52 0 927	24 0 73 <1 1321
Boron Barium Molybdenum Manganese Magnesium Calcium	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	9 0 51 <1 884 1085	9 0 52 0 927 1134	24 0 73 <1 1321 1738
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	9 0 51 <1 884 1085 1028	9 0 52 0 927 1134 1029	24 0 73 <1 1321 1738 1570
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 0 1010 1070 1150 1270	9 0 51 <1 884 1085 1028 1230	9 0 52 0 927 1134 1029 1256	24 0 73 <1 1321 1738 1570 1922
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	0 0 60 1010 1070 1150 1270 2060	9 0 51 <1 884 1085 1028 1230 3587	9 0 52 0 927 1134 1029 1256 3789	24 0 73 <1 1321 1738 1570 1922 5262
Boron 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 0 60 1010 1070 1150 1270 2060	9 0 51 <1 884 1085 1028 1230 3587 current	9 0 52 0 927 1134 1029 1256 3789 history1	24 0 73 <1 1321 1738 1570 1922 5262 history2
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	0 0 60 1010 1070 1150 1270 2060 imit/base >25	9 0 51 <1 884 1085 1028 1230 3587 current 3	9 0 52 0 927 1134 1029 1256 3789 history1 2	24 0 73 <1 1321 1738 1570 1922 5262 history2 6
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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25	9 0 51 <1 884 1085 1028 1230 3587 current 3 4	9 0 52 0 927 1134 1029 1256 3789 history1 2 3	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Jimit/base >25	9 0 51 <1 884 1085 1028 1230 3587 current 3 4 3	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	9 0 51 <1 884 1085 1028 1230 3587 current 3 4 3 2 4 3 2	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2 3 2	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	9 0 51 <1 884 1085 1028 1230 3587 current 3 4 3 2 4 3 0.3	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2 3 2 history1 0.2	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3 3 history2 0.4
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	9 0 51 <1 884 1085 1028 1230 3587 <i>current</i> 3 4 3 <i>current</i> 0.3 8.2	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2 3 2 history1 0.2 7.3	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3 3 history2 0.4 10.1
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	9 0 51 <1 884 1085 1028 1230 3587 current 3 4 3 3 4 3 0.3 8.2 19.6	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2 <u>history1</u> 0.2 7.3 18.8	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3 history2 0.4 10.1 21.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >3 >20 >30 3 imit/base	9 0 51 <1 884 1085 1028 1230 3587 current 3 4 3 4 3 current 0.3 8.2 19.6 current	9 0 52 0 927 1134 1029 1256 3789 history1 2 3 2 history1 0.2 7.3 18.8 history1	24 0 73 <1 1321 1738 1570 1922 5262 history2 6 8 3 6 8 3 3 history2 0.4 10.1 21.0 history2



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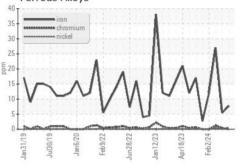


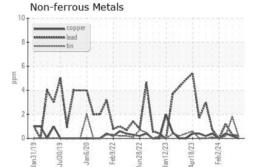


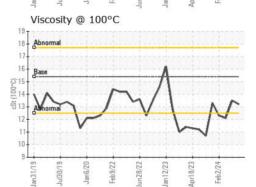


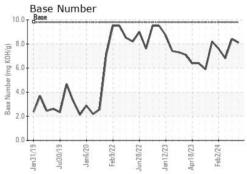
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	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	13.2	13.5	1 2.1
GRAPHS						

Ferrous Alloys









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 891 - Oklahoma City Hauling Sample No. : GFL0109407 Received : 10 Apr 2024 1001 South Rockwell Lab Number : 06145049 Tested : 11 Apr 2024 Oklahoma City, OK Unique Number : 10969857 Diagnosed : 11 Apr 2024 - Wes Davis US 73128 Test Package : FLEET Contact: Andy Smith Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. andrew.smith@gflenv.com T: (405)306-1651 * - 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] 06145049 (Generated: 04/11/2024 17:29:32) Rev: 1

Submitted By: Andy Smith Page 2 of 2

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