

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 727026-595 Component Diesel Engine

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

DIAGNOSIS
Recommendation
Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Serviced)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

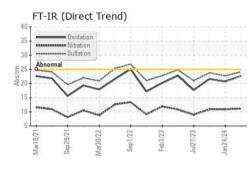
Fluid Condition

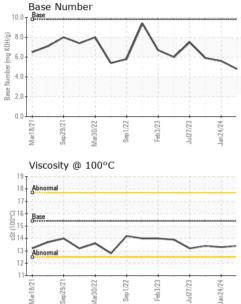
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0116274	GFL0094882	GFL0088305
Sample Date		Client Info		18 Apr 2024	24 Jan 2024	31 Oct 2023
Machine Age	hrs	Client Info		18418	17937	17276
Oil Age	hrs	Client Info		593	17937	581
Oil Changed		Client Info		Changed	Changed	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	12	9	11
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	7	5	2
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>330	2	0	0
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
					0	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		-	-
				current	history1	history2
Boron	ppm	ASTM D5185m	0	current 5	history1 8	history2 6
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	current 5 0	history1 8 0	history2 6 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 5 0 65 <1 911	history1 8 0 63 <1 955	history2 6 0 60 0 897
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 5 0 65 <1 911 1101	history1 8 0 63 <1	history2 6 0 60 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 5 0 65 <1 911 1101 1072	history1 8 0 63 <1 955 1064 1011	history2 6 0 60 0 897 1035 986
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	0 0 60 0 1010 1070 1150 1270	current 5 0 65 <1 911 1101 1072 1238	history1 8 0 63 <1 955 1064 1011 1289	history2 6 0 60 0 897 1035 986 1202
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 5 0 65 <1 911 1101 1072	history1 8 0 63 <1 955 1064 1011	history2 6 0 60 0 897 1035 986
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	current 5 0 65 <1 911 1101 1072 1238	history1 8 0 63 <1 955 1064 1011 1289	history2 6 0 60 0 897 1035 986 1202
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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 0 1010 1070 1150 1270 2060	current 5 0 65 <1 911 1101 1072 1238 2961 current 5	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3	history2 6 0 60 0 897 1035 986 1202 2661 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm 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	current 5 0 65 <1 911 1101 1072 1238 2961 current	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 3	history2 6 0 60 0 897 1035 986 1202 2661 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm 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 0 1010 1070 1150 1270 2060 kimit/base >25	current 5 0 65 <1 911 1101 1072 1238 2961 current 5	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3	history2 6 0 60 0 897 1035 986 1202 2661 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm 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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 -1 history1 3 -1 history1	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2
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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3 2 current 0.2	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 3 <1 history1 0.3	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2 0 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 TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3 2 current 0.2 11.1	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 <1 0 0.3 10.9	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2 0 history2 0.4 10.9
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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3 2 current 0.2	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 3 <1 history1 0.3	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2 0 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 2060 225 225 220 220 1imit/base >22 20	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3 2 current 0.2 11.1	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 <1 0 0.3 10.9	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2 0 history2 0.4 10.9
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 2060 225 20 225 20 20 20 20 20 20 20 20 20 20 20 20 20	current 5 0 65 <1 911 1101 1072 1238 2961 current 5 3 2 current 0.2 11.1 24.1	history1 8 0 63 <1 955 1064 1011 1289 2844 history1 3 <1 history1 0.3 10.9 22.7	history2 6 0 60 0 897 1035 986 1202 2661 history2 4 0 history2 0.4 10.9 23.8

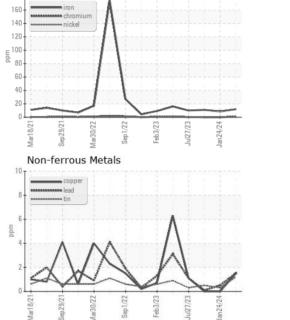


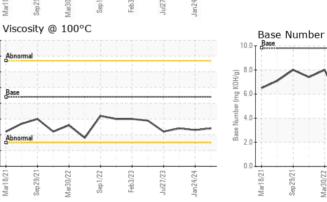
OIL ANALYSIS REPORT

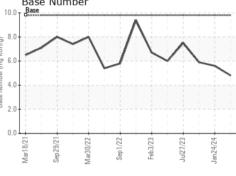




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.3	13.4
GRAPHS						
Ferrous Alloys						
iron chromium 40						







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 625 - Harrison Hauling Sample No. : GFL0116274 Received : 22 Apr 2024 4102 Industrial Pkwy Lab Number : 06156755 Tested : 23 Apr 2024 Harrison, MI US 48625 Unique Number : 10992178 Diagnosed : 24 Apr 2024 - Sean Felton Test Package : FLEET Contact: RON TROJANEK Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. ront@northerna1.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (231)624-0372 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) E:

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Submitted By: also GFL632 and GFL638 - Glenda Standen