

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



812035

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- Shots)

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.

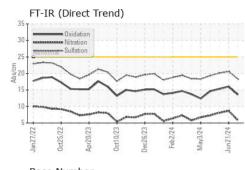
Fluid Condition

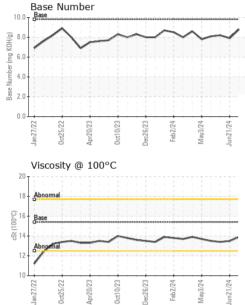
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0122582	GFL0122576	GFL0117923
Sample Date		Client Info		11 Jul 2024	21 Jun 2024	06 Jun 2024
Machine Age	hrs	Client Info		6717	6568	6442
Oil Age	hrs	Client Info		149	611	0
Oil Changed		Client Info		Not Changd	Changed	Not Changd
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	6	12	12
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	4
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	0	1	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 2	history2 <1
	ppm ppm					
Boron		ASTM D5185m	0	0	2	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	2 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 60	2 0 62	<1 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 60 0	2 0 62 <1	<1 0 65 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 60 0 958	2 0 62 <1 1035	<1 0 65 0 961
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 0 60 0 958 1102	2 0 62 <1 1035 1202	<1 0 65 0 961 1113
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	0 0 60 0 1010 1070 1150	0 0 60 0 958 1102 1138	2 0 62 <1 1035 1202 1085	<1 0 65 0 961 1113 986
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	0 0 60 958 1102 1138 1302	2 0 62 <1 1035 1202 1085 1376	<1 0 65 0 961 1113 986 1250
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	0 0 60 958 1102 1138 1302 3787	2 0 62 <1 1035 1202 1085 1376 3419	<1 0 65 0 961 1113 986 1250 3138
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	0 0 60 958 1102 1138 1302 3787 current	2 0 62 <1 1035 1202 1085 1376 3419 history1	<1 0 65 0 961 1113 986 1250 3138 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	0 0 60 0 958 1102 1138 1302 3787 current 6	2 0 62 <1 1035 1202 1085 1376 3419 history1 6	<1 0 65 0 961 1113 986 1250 3138 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 0 1010 1070 1150 1270 2060 Limit/base >25	0 0 60 958 1102 1138 1302 3787 <u>current</u> 6 1	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 <1	<1 0 65 0 961 1113 986 1250 3138 history2 6 0
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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	0 0 60 958 1102 1138 1302 3787 current 6 1 2	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 < 1	<1 0 65 0 961 1113 986 1250 3138 history2 6 0 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	0 0 60 958 1102 1138 1302 3787 current 6 1 <1 <1	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 <1 1 1	<1 0 65 0 961 1113 986 1250 3138 history2 6 0 5 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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	0 0 60 958 1102 1138 1302 3787 current 6 1 <1 <1 current 0.2	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 <1 1 1 history1 0.7	<1 0 65 0 961 1113 986 1250 3138 history2 6 0 0 5 history2 0.6
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	0 0 60 958 1102 1138 1302 3787 <i>current</i> 6 1 <i>current</i> 0.2 5.8	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 <1 1 history1 0.7 8.7	<1 0 65 0 961 1113 986 1250 3138 history2 6 0 5 history2 0.6 8.1
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 >3 >20	0 0 60 958 1102 1138 1302 3787 current 6 1 <1 <1 current 0.2 5.8 18.3	2 0 62 <1 1035 1202 1085 1376 3419 history1 6 <1 1 1 <i>history1</i> 0.7 8.7 20.6	<1 0 65 0 961 1113 986 1250 3138 history2 6 0 0 5 history2 0.6 8.1 20.1



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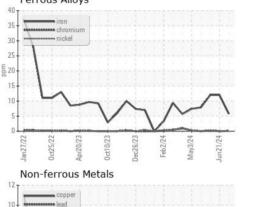


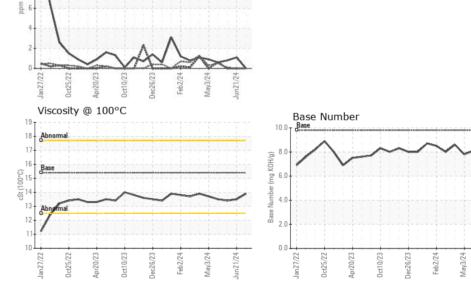


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.9	13.5	13.4
GRAPHS						

Ferrous Alloys

8





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 892 - Pauls Valley Hauling Sample No. : GFL0122582 Received : 15 Jul 2024 1910 S CHICKASAW STREET Lab Number : 06237362 Tested : 17 Jul 2024 Pauls Valley, OK US 73075 Unique Number : 11126196 Diagnosed : 17 Jul 2024 - Wes Davis Test Package : FLEET Contact: Tony Graham Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. tgraham2@wcamerica.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Contact/Location: Tony Graham - GFL892 Page 2 of 2

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