

OIL ANALYSIS REPORT

Sample Rating Trend



812091 Component Diesel Engine Fluid

Area (34739UA) Machine Id

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

SAMPLE INFORMATION method

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.

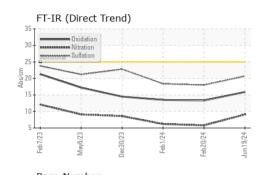
Fluid Condition

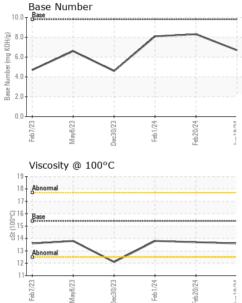
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method		Current		
Sample Number		Client Info		GFL0110412	GFL0108280	GFL0108259
Sample Date		Client Info		19 Jun 2024	20 Feb 2024	01 Feb 2024
Machine Age	hrs	Client Info		5821	5102	4970
Oil Age	hrs	Client Info		5821	132	192
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
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CONTAMINAT		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	17	2	6
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	1	1	1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	3	0	4
Tin	ppm		>15	۲ ۲	<1	<1
Vanadium	ppm	ASTM D5185m	210	<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppin			0	0	-
						In the second of
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	14	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	5 0	14 0	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	5 0 58	14 0 49	9 0 51
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 58 <1	14 0 49 <1	9 0 51 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	5 0 58 <1 1017	14 0 49 <1 821	9 0 51 <1 845
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	5 0 58 <1 1017 1300	14 0 49 <1 821 982	9 0 51 <1 845 1055
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	5 0 58 <1 1017 1300 1099	14 0 49 <1 821 982 923	9 0 51 <1 845
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	5 0 58 <1 1017 1300	14 0 49 <1 821 982 923 1138	9 0 51 <1 845 1055
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	5 0 58 <1 1017 1300 1099	14 0 49 <1 821 982 923	9 0 51 <1 845 1055 980
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	5 0 58 <1 1017 1300 1099 1411	14 0 49 <1 821 982 923 1138	9 0 51 <1 845 1055 980 1199
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 0 1010 1070 1150 1270 2060	5 0 58 <1 1017 1300 1099 1411 3417	14 0 49 <1 821 982 923 1138 2836	9 0 51 <1 845 1055 980 1199 2913
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	5 0 58 <1 1017 1300 1099 1411 3417 current	14 0 49 <1 821 982 923 1138 2836 history1	9 0 51 <1 845 1055 980 1199 2913 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	0 0 60 1010 1070 1150 1270 2060	5 0 58 <1 1017 1300 1099 1411 3417 current 5	14 0 49 <1 821 982 923 1138 2836 history1 2	9 0 51 <1 845 1055 980 1199 2913 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 0 1010 1070 1150 1270 2060 kimit/base >25	5 0 58 <1 1017 1300 1099 1411 3417 <u>current</u> 5 2	14 0 49 <1 821 982 923 1138 2836 history1 2 <1	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	5 0 58 <1 1017 1300 1099 1411 3417 <u>current</u> 5 2 3	14 0 49 <1 821 982 923 1138 2836 history1 2 <1 1	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	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	5 0 58 <1 1017 1300 1099 1411 3417 <i>current</i> 5 2 3 <i>current</i> 0.6	14 0 49 <1 821 982 923 1138 2836 history1 2 <1 1 1 history1 0.2	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1 <1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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	5 0 58 <1 1017 1300 1099 1411 3417 current 5 2 3 3 current	14 0 49 <1 821 982 923 1138 2836 history1 2 <1 1 1 history1	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1 <1 <1 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS 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	5 0 58 <1 1017 1300 1099 1411 3417 <i>current</i> 5 2 3 <i>current</i> 0.6 9.1	14 0 49 <1 821 982 923 1138 2836 history1 2 2 <1 1 1 history1 0.2 5.8	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1 <1 <1 history2 0.2 6.2
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	5 0 58 <1 1017 1300 1099 1411 3417 <i>current</i> 5 2 3 <i>current</i> 0.6 9.1 20.7	14 0 49 <1 821 982 923 1138 2836 history1 2 <1 1 2 <1 1 0.2 5.8 18.0 history1	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1 <1 <1 history2 0.2 6.2 18.4 history2
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 TS 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	5 0 58 <1 1017 1300 1099 1411 3417 <u>current</u> 5 2 3 3 <u>current</u> 0.6 9.1 20.7	14 0 49 <1 821 982 923 1138 2836 history1 2 <1 1 1 history1 0.2 5.8 18.0	9 0 51 <1 845 1055 980 1199 2913 history2 7 <1 <1 <1 history2 0.2 6.2 18.4



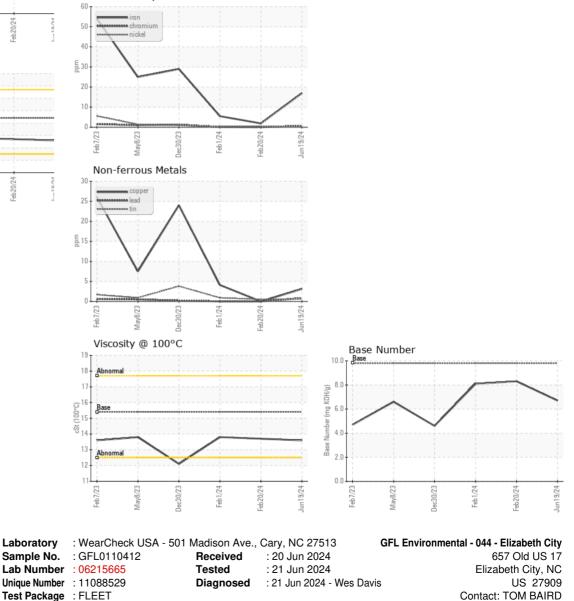
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	13.6	13.7	13.8
GRAPHS						

Ferrous Alloys



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)

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