

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (WEL942) 11252 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (16 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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0111523	GFL0111546	GFL0083139
Sample Date		Client Info		18 Apr 2024	12 Feb 2024	30 Oct 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	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	>100	54	52	16
Chromium	ppm	ASTM D5185m	>20	3	4	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	4	5	3
Lead	ppm	ASTM D5185m	>40	0	4	<1
Copper	ppm	ASTM D5185m	>330	5	68	1
Tin	ppm	ASTM D5185m	>15	<1	2	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	nnm	ASTM D5185m		•	0	<1
Gaannam	ppm	ASTIVI DOTODITI		0	0	< 1
ADDITIVES	ppin	method	limit/base	current	0 history1	<1 history2
	ppm		limit/base			
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 3	history1 15	history2 1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 3 0	history1 15 2	history2 1 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 3 0 67	history1 15 2 68	history2 1 0 65
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 3 0 67 <1	history1 15 2 68 2	history2 1 0 65 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 3 0 67 <1 1018	history1 15 2 68 2 823	history2 1 0 65 0 940
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	0 0 60 0 1010 1070	current 3 0 67 <1 1018 1192	history1 15 2 68 2 823 1404	history2 1 0 65 0 940 1068
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 3 0 67 <1 1018 1192 1073	history1 15 2 68 2 823 1404 886	history2 1 0 65 0 940 1068 1018
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 3 0 67 <1 1018 1192 1073 1325	history1 15 2 68 2 823 1404 886 1148	history2 1 0 65 0 940 1068 1018 1238
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method 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 3 0 67 <1 1018 1192 1073 1325 3276	history1 15 2 68 2 823 1404 886 1148 2437	history2 1 0 65 0 940 1068 1018 1238 3535
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method 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 3 0 67 <1 1018 1192 1073 1325 3276 current	history1 15 2 68 2 823 1404 886 1148 2437 history1	history2 1 0 65 0 940 1068 1018 1238 3535 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 3 0 67 <1 1018 1192 1073 1325 3276 current 8	history1 15 2 68 2 823 1404 886 1148 2437 history1 17	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	Current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4 0	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2 3	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0 2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 20	Current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4 0 current	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2 3 history1	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0 2 history2
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3	current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4 0 current 2.8	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2 3 history1 1.3	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0 2 history2 1.2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 1000 225 220 20 20 20 20 20 20 20 20 20 20 20	current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4 0 current 2.8 10.1	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2 3 history1 1.3 12.3	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0 2 history2 1.2 8.8
ADDITIVES 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <u>imit/base</u> >3 20 330	Current 3 0 67 <1 1018 1192 1073 1325 3276 current 8 4 0 current 2.8 10.1 24.0	history1 15 2 68 2 823 1404 886 1148 2437 history1 17 2 3 history1 1.3 12.3 24.6	history2 1 0 65 0 940 1068 1018 1238 3535 history2 7 0 2 history2 1.2 8.8 20.8



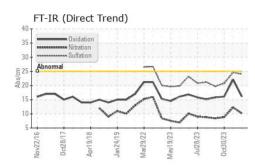
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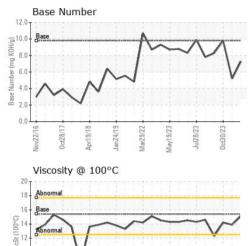
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OIL ANALYSIS REPORT





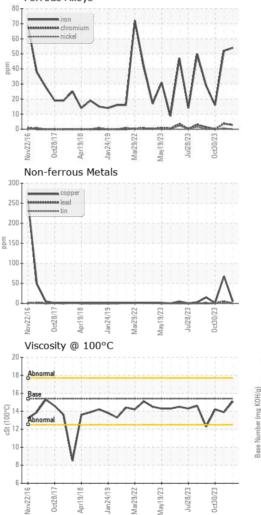
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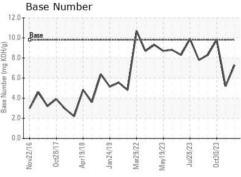
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	15.1	13.9	14.2
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 074 - Douglas - Transwaste Sample No. : GFL0111523 Received : 24 Apr 2024 1219 Landfill Road Lab Number : 06158886 Tested : 25 Apr 2024 Douglas, GA US 31533 Unique Number : 10994309 Diagnosed : 25 Apr 2024 - Wes Davis Test Package : FLEET Contact: CURTIS JACOBS Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. CURTIS.JACOBS@GFLENV.COM T: (912)384-6001 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: CURTIS JACOBS

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