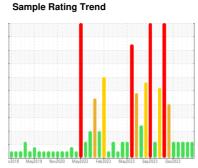


OIL ANALYSIS REPORT

(DUW950) 10630

Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (7 GAL)





DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels remain high. Test for glycol is negative.

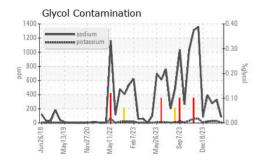
Fluid Condition

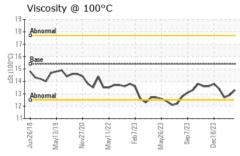
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

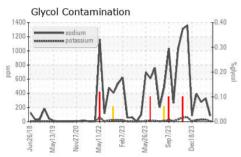
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SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115708	GFL0112304	GFL0109931
Sample Date		Client Info		25 Mar 2024	19 Feb 2024	08 Feb 2024
Machine Age	hrs	Client Info		7169	6924	6836
Oil Age	hrs	Client Info		245	413	325
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ABNORMAL	ATTENTION	ATTENTION
CONTAMINATION	ON	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
WEAR METALS	3	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	15	15	6
Chromium	ppm	ASTM D5185m	>5	1	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	2	2
Lead	ppm	ASTM D5185m	>25	<1	0	0
Copper	ppm	ASTM D5185m	>100	1	2	<1
Tin	ppm	ASTM D5185m	>4	- <1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
	le le		15			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	12	15	21
Boron Barium	ppm ppm	ASTM D5185m	0	0	15 0	0
Boron	ppm	ASTM D5185m ASTM D5185m	0 60	0 67	15 0 69	0 69
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 67 <1	15 0 69 <1	0 69 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 67 <1 866	15 0 69 <1 808	0 69 <1 844
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 67 <1 866 1092	15 0 69 <1 808 953	0 69 <1 844 950
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 67 <1 866 1092 951	15 0 69 <1 808	0 69 <1 844 950 975
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 67 <1 866 1092	15 0 69 <1 808 953	0 69 <1 844 950
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 60 0 1010 1070 1150	0 67 <1 866 1092 951	15 0 69 <1 808 953 920	0 69 <1 844 950 975
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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 60 0 1010 1070 1150 1270 2060	0 67 <1 866 1092 951 1154	15 0 69 <1 808 953 920 1085	0 69 <1 844 950 975 1131
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 60 0 1010 1070 1150 1270 2060	0 67 <1 866 1092 951 1154 3001	15 0 69 <1 808 953 920 1085 2728	0 69 <1 844 950 975 1131 2795
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	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 60 0 1010 1070 1150 1270 2060	0 67 <1 866 1092 951 1154 3001 current	15 0 69 <1 808 953 920 1085 2728 history1	0 69 <1 844 950 975 1131 2795
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 67 <1 866 1092 951 1154 3001 current	15 0 69 <1 808 953 920 1085 2728 history1 6	0 69 <1 844 950 975 1131 2795 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82	15 0 69 <1 808 953 920 1085 2728 history1 6 331	0 69 <1 844 950 975 1131 2795 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 67 <1 866 1092 951 1154 3001 current 8 82 7	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27	0 69 <1 844 950 975 1131 2795 history2 7 277 26
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol	ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82 7 NEG	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82 7 NEG	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG history1	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D7844	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82 7 NEG current 0.5	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG history1 0.5	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	0 67 <1 866 1092 951 1154 3001 current 8 82 7 NEG current 0.5 6.7	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG history1 0.5 7.2	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG history2 0.3 6.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82 7 NEG current 0.5 6.7 18.5	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG history1 0.5 7.2 18.7	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG history2 0.3 6.0 17.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7614	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 limit/base >25	0 67 <1 866 1092 951 1154 3001 current 8 ▲ 82 7 NEG current 0.5 6.7 18.5	15 0 69 <1 808 953 920 1085 2728 history1 6 331 27 NEG history1 0.5 7.2 18.7 history1	0 69 <1 844 950 975 1131 2795 history2 7 277 26 NEG history2 0.3 6.0 17.4 history2



OIL ANALYSIS REPORT



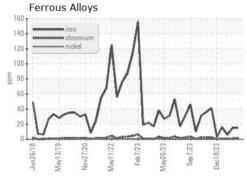


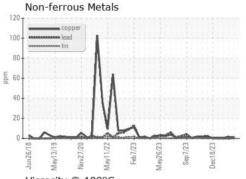


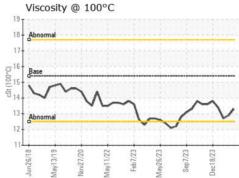
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

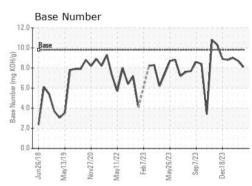
FLUID PROP	ERHES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	12.9	12.7

GRAPHS













Laboratory Sample No. Lab Number : 06129170 Unique Number : 10943321

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0115708

Received **Tested**

: 26 Mar 2024 : 02 Apr 2024 Diagnosed

: 02 Apr 2024 - Jonathan Hester

GFL Environmental - 010 - Stockbridge 1280 Rum Creek Parkway

Stockbridge, GA US 30281

Contact: JOSHUA TINKER joshuatinker@gflenv.com

Test Package: FLEET (Additional Tests: Glycol) 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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