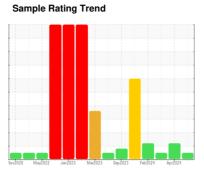


OIL ANALYSIS REPORT

Area (EAQ339) 10977

Diesel Engine

PETRO CANADA DURON SHP 15W40 (8 GAL)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

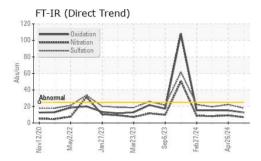
Fluid Condition

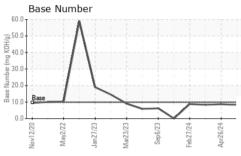
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

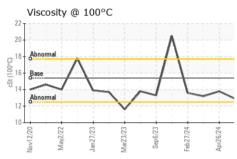
Sample Number Client Info Client Info Cample Date Client Info Client Info Cample Date Client Info College hrs Client Info Coll Age hrs Client Info Coll Changed Not Changed	4L)		V0VZUZU IVI	iayzuzz Janzuza iviai	ZZUZS SEPZUZS FEDZUZ4	Aprzuz4	
Client Info 26 Jun 2024 26 Apr 2024 20 Mar 2024	SAMPLE INFOR	AMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 2488 2286 0 Oil Age hrs Client Info 202 2196 0 Oil Changed Not Changed	Sample Number		Client Info		GFL0077447	GFL0111496	GFL0089559
Oil Age	Sample Date		Client Info		26 Jun 2024	26 Apr 2024	20 Mar 2024
Oil Changed Client Info Not Changed Normal ATTENTION Normal ATTENTION Normal ATTENTION Normal Normal ATTENTION Normal N	Machine Age	hrs	Client Info		2488	2286	0
NORMAL ATTENTION NORMAL	Oil Age	hrs	Client Info		202	2196	0
CONTAMINATION	Oil Changed		Client Info		Not Changd	Changed	Not Changd
Fuel	Sample Status				NORMAL	ATTENTION	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >5 12 59 14 Chromium ppm ASTM D5185m >5 0 2 1 Nickel ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >25 0 0 4 11 3 Lead ppm ASTM D5185m >10 0 3 1 1 Copper ppm ASTM D5185m >10 0 <1 1 Vanadium ppm ASTM D5185m 0	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR META	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>75	12	59	14
Titanium ppm ASTM D5185m >2 <1 <1 <1 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >15 4 11 3 Lead ppm ASTM D5185m >10 0 4 4 Copper ppm ASTM D5185m >10 0 3 1 Tin ppm ASTM D5185m 0 0 <1	Chromium	ppm	ASTM D5185m	>5	0	2	1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum ppm ASTM D5185m >15 4 11 3 Lead ppm ASTM D5185m >25 0 0 4 Copper ppm ASTM D5185m >100 0 3 1 Tin ppm ASTM D5185m >4 0 <1	Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >100 0 3 1 Tin ppm ASTM D5185m >4 0 <1	Aluminum	ppm	ASTM D5185m	>15	4	11	3
Tin	Lead	ppm	ASTM D5185m	>25	0	0	4
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 25 8 Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 0 0 0 <1 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 917 840 883 Calcium ppm ASTM D5185m 1070 954 985 1150 Phosphorus ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1<	Copper	ppm	ASTM D5185m	>100	0	3	1
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 25 8 Barium ppm ASTM D5185m 0 0 0 <1	Tin	ppm	ASTM D5185m	>4	0	<1	1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 0 0 0 <1 Molybdenum ppm ASTM D5185m 60 50 61 65 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 50 61 65 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 917 840 883 Calcium ppm ASTM D5185m 1070 954 985 1150 Phosphorus ppm ASTM D5185m 1150 989 965 1148 Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m >20 2 118 <1 Potassium ppm ASTM D5185m >20 2 23 1 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	0	2	25	8
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 917 840 883 Calcium ppm ASTM D5185m 1070 954 985 1150 Phosphorus ppm ASTM D5185m 1150 989 965 1148 Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m >20 2 118 <1	Barium	ppm	ASTM D5185m	0	0	0	<1
Magnesium ppm ASTM D5185m 1010 917 840 883 Calcium ppm ASTM D5185m 1070 954 985 1150 Phosphorus ppm ASTM D5185m 1150 989 965 1148 Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m >20 2 118 <1 Potassium ppm ASTM D5185m >20 2 23 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 2.1 0.5 Nitration Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	50	61	65
Calcium ppm ASTM D5185m 1070 954 985 1150 Phosphorus ppm ASTM D5185m 1150 989 965 1148 Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 989 965 1148 Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1	Magnesium	ppm	ASTM D5185m	1010	917	840	883
Zinc ppm ASTM D5185m 1270 1211 1133 1224 Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1	Calcium	ppm	ASTM D5185m	1070	954	985	1150
Sulfur ppm ASTM D5185m 2060 3407 3169 3262 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1	Phosphorus	ppm	ASTM D5185m	1150	989	965	1148
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1	Zinc	ppm	ASTM D5185m	1270	1211	1133	1224
Silicon ppm ASTM D5185m >25 7 12 8 Sodium ppm ASTM D5185m 2 118 <1 Potassium ppm ASTM D5185m >20 2 23 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 2.1 0.5 Nitration Abs/cm *ASTM D7624 >20 6.9 9.2 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Sulfur	ppm	ASTM D5185m	2060	3407	3169	3262
Sodium ppm ASTM D5185m 2 118 <1 Potassium ppm ASTM D5185m >20 2 23 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 2.1 0.5 Nitration Abs/cm *ASTM D7624 >20 6.9 9.2 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 23 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.6 2.1 0.5 Nitration Abs/cm *ASTM D7624 >20 6.9 9.2 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Silicon	ppm	ASTM D5185m	>25	7	12	8
INFRA-RED	Sodium	ppm	ASTM D5185m		2	118	<1
Soot % % *ASTM D7844 >6 0.6 2.1 0.5 Nitration Abs/cm *ASTM D7624 >20 6.9 9.2 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Potassium	ppm	ASTM D5185m	>20	2	23	1
Nitration Abs/cm *ASTM D7624 >20 6.9 9.2 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 22.3 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Soot %	%	*ASTM D7844	>6	0.6	2.1	0.5
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Nitration	Abs/cm	*ASTM D7624	>20	6.9	9.2	8.3
Oxidation Abs/.1mm *ASTM D7414 >25 12.7 15.2 15.3	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	22.3	19.6
	FLUID DEGRA	ADATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.2 8.7 8.3	Oxidation	Abs/.1mm	*ASTM D7414	>25	12.7	15.2	15.3
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.2	8.7	8.3

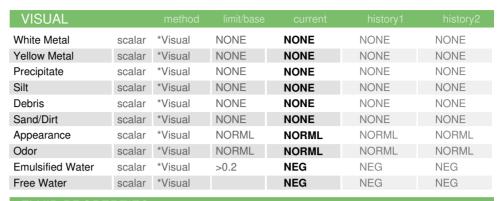


OIL ANALYSIS REPORT



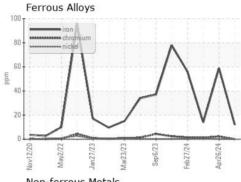


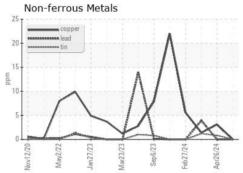


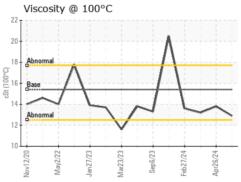


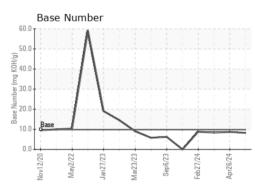
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	13.8	13.2

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0077447 Lab Number : 06228280

Unique Number : 11111773 Test Package : FLEET

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

: 05 Jul 2024 **Tested** : 05 Jul 2024 Diagnosed : 05 Jul 2024 - Wes Davis

GFL Environmental - 072 - Americus - Transwaste

361 McMath Mill Road Americus, GA US 31719

Contact: RICHARD HEINZERLING richard.heinzerling@gflenv.com T: (229)924-3669

To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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)