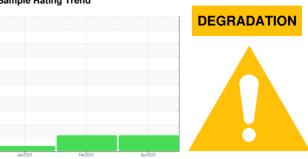


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 913084 **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (36 QTS)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. 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.

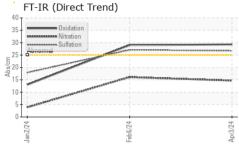
Fluid Condition

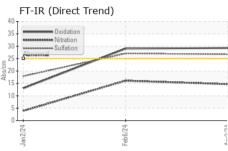
The BN level is low. The condition of the oil is acceptable for the time in service.

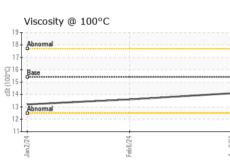
Sample Number Client Info GFL0104488 GFL0110092 GFL01048 Sample Date Client Info 03 Apr 2024 06 Feb 2024 02 Jan 20 Machine Age hrs Client Info 600 600 127 Changed Client Info G00 600 127 Changed Changed Changed Changed Changed ABNORMAL ABNOR	N SHP 15W4U (3	0 (413)	Va	ž024	Feb 2024 Apr 20	27	
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 600 600 127	Sample Number		Client Info		GFL0104488	GFL0110092	GFL0104252
Oil Changed	Sample Date		Client Info		03 Apr 2024	06 Feb 2024	02 Jan 2024
Client Info Changed Changed Changed ABNORMAL ABNORMAL	Machine Age	hrs	Client Info		4205	131	127
CONTAMINATION	Oil Age	hrs	Client Info		600	600	127
CONTAMINATION method limit/base current history1 history1 Fuel WC Method >3.0 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 74 93 5 Chromium ppm ASTM D5185m >20 2 3 <1 Nickel ppm ASTM D5185m >20 2 3 <1 Silver ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >20 2 3 2 Lead ppm ASTM D5185m >40 0 1 <1 1 Copper ppm ASTM D5185m >40 0 1 <1 1 Vanadium ppm ASTM D5185m 0 <1 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 histor ron ppm ASTM D5185m >120 74 93 5 Chromium ppm ASTM D5185m >20 2 3 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>120	74	93	5
Description	Chromium	ppm	ASTM D5185m	>20	2	3	<1
Silver	Nickel	ppm	ASTM D5185m	>5	4	8	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	<1	0
Lead ppm ASTM D5185m >40 0 1 <1 Copper ppm ASTM D5185m >330 29 46 <1 Tin ppm ASTM D5185m >15 3 4 <1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 5 4 2 Barium ppm ASTM D5185m 0 0 <1 <1 Barium ppm ASTM D5185m 0 0 <1 <1 Molybdenum ppm ASTM D5185m 0 2 3 <1 Magnesium ppm ASTM D5185m 1010 967 1247 856 Calcium ppm ASTM D5185m 1070 1167 1508 898	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper	Aluminum	ppm	ASTM D5185m	>20	2	3	2
Tin	_ead	ppm	ASTM D5185m	>40	0	1	<1
Standard	Copper	ppm	ASTM D5185m	>330	29	46	<1
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history3 Boron ppm ASTM D5185m 0 5 4 2 Barium ppm ASTM D5185m 0 0 <1			ASTM D5185m	>15	3	4	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 64 85 50 Manganese ppm ASTM D5185m 0 2 3 <1 Magnesium ppm ASTM D5185m 1010 967 1247 856 Calcium ppm ASTM D5185m 1070 1167 1508 898 Phosphorus ppm ASTM D5185m 1150 1038 1337 1031 Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Solf with a contraction Abs/cmm *AS	Boron	ppm	ASTM D5185m	0	5	4	2
Manganese ppm ASTM D5185m 0 2 3 <1 Magnesium ppm ASTM D5185m 1010 967 1247 856 Calcium ppm ASTM D5185m 1070 1167 1508 898 Phosphorus ppm ASTM D5185m 1150 1038 1337 1031 Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >25 8 8 2 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7624	Barium	ppm	ASTM D5185m	0	0	<1	<1
Magnesium ppm ASTM D5185m 1010 967 1247 856 Calcium ppm ASTM D5185m 1070 1167 1508 898 Phosphorus ppm ASTM D5185m 1150 1038 1337 1031 Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D74	Molybdenum	ppm	ASTM D5185m	60	64	85	50
Calcium ppm ASTM D5185m 1070 1167 1508 898 Phosphorus ppm ASTM D5185m 1150 1038 1337 1031 Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method </td <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>2</td> <td>3</td> <td><1</td>	Manganese	ppm	ASTM D5185m	0	2	3	<1
Phosphorus ppm ASTM D5185m 1150 1038 1337 1031 Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *A	Magnesium	ppm	ASTM D5185m	1010	967	1247	856
Zinc ppm ASTM D5185m 1270 1297 1641 1179 Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *	Calcium	ppm	ASTM D5185m	1070	1167	1508	898
Sulfur ppm ASTM D5185m 2060 2446 3249 3152 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m >20 0 5 3 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Phosphorus	ppm	ASTM D5185m	1150	1038	1337	1031
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m 8 8 2 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Zinc	ppm	ASTM D5185m	1270	1297	1641	1179
Silicon ppm ASTM D5185m >25 8 12 8 Sodium ppm ASTM D5185m 8 8 2 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Sulfur	ppm	ASTM D5185m	2060	2446	3249	3152
Sodium ppm ASTM D5185m 8 2 Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Silicon	ppm	ASTM D5185m	>25	8	12	8
INFRA-RED	Sodium	ppm	ASTM D5185m		8	8	2
Soot % % *ASTM D7844 >4 1.5 1.5 0 Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Potassium	ppm	ASTM D5185m	>20	0	5	3
Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 14.7 16.1 3.9 Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Soot %	%	*ASTM D7844	>4	1.5	1.5	0
Sulfation Abs/.1mm *ASTM D7415 >30 26.7 27.1 17.9 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 29.3 29.0 13.0	Vitration	Abs/cm	*ASTM D7624	>20	14.7		3.9
Oxidation	Sulfation						
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	29.3	29.0	13.0
	Base Number (BN)	mg KOH/g	ASTM D2896		△ 3.2	<u>▲</u> 2.7	8.0

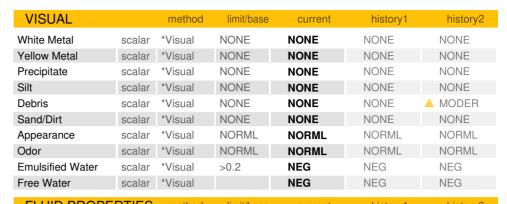


OIL ANALYSIS REPORT



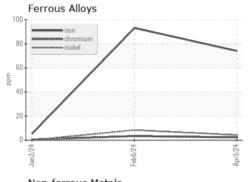


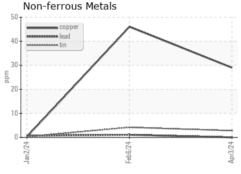


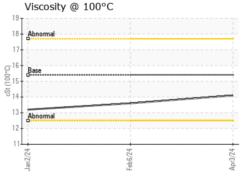


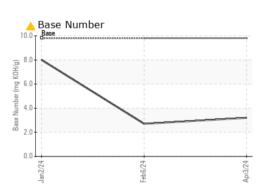
FLUID PROPER	1115	method	iiiiii/base	current	flistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.6	13.2

GRAPHS













Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0104488 Lab Number : 06140961

Unique Number : 10965769 Test Package : FLEET

Received : 08 Apr 2024 **Tested** Diagnosed

: 09 Apr 2024 : 10 Apr 2024 - Jonathan Hester

GFL Environmental - 410 - Michigan West

39000 Van Born Rd Wayne, MI US 48184

Contact: Belal Dgheish bdgheish@gflenv.com T: (734)714-2340

Certificate 12367

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)