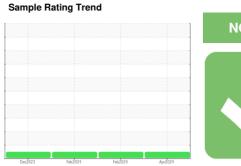


# **OIL ANALYSIS REPORT**

#### Ouiii









Machine Id
103M
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- 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

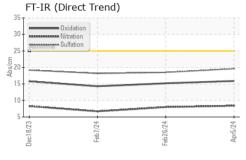
## **Fluid Condition**

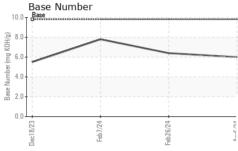
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

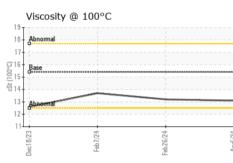
Sample Number   Client Info   GFL0114332   GFL0114390   GFL01100   Sample Date   Client Info   05 Apr 2024   26 Feb 2024   07 Feb 2024   08 Feb 2024   07 Feb 2024   08	N 3HP 13W40 (-	GAL)	D80202	3 P802024	1602024 A	pizozy	
Client Info	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   18061   17891   17755   17891   133   133	Sample Number		Client Info		GFL0114332	GFL0114390	GFL011006
Dil Changed	Sample Date		Client Info		05 Apr 2024	26 Feb 2024	07 Feb 2024
Not Changed Sample Status	Machine Age	hrs	Client Info		18061	17891	17755
NORMAL   NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history1   history1   water   WC Method   vo.2   NEG   NEG	Oil Age	hrs	Client Info		17792	17891	133
CONTAMINATION         method         limit/base         current         history1         history1           Fuel         WC Method         >3.0         <1.0	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water         WC Method         >0.2         NEG         Ned         NEG         Ned         NEG         Ned         NEG         Ned         Ned         Ned         Ned         Ned         Ned         Ned         Ned         Ned <t< td=""><td>CONTAMINA</td><td>TION</td><td>method</td><td>limit/base</td><td>current</td><td>history1</td><td>history2</td></t<>	CONTAMINA	TION	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         history1           Iron         ppm         ASTM D5185m         >120         7         6         6           Chromium         ppm         ASTM D5185m         >20         <1	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAI	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	7	6	6
Description	Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Silver	Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper         ppm         ASTM D5185m         >330         <1         <1         0           Tin         ppm         ASTM D5185m         >15         <1	Aluminum	ppm	ASTM D5185m	>20	2	1	2
Tin	Lead	ppm	ASTM D5185m	>40	<1	<1	0
Vanadium         ppm         ASTM D5185m         <1         <1         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history           Boron         ppm         ASTM D5185m         0         2         3         4           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         56         58         55           Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         1010         926         1110         900           Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1	Copper	ppm	ASTM D5185m	>330	<1	<1	0
Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         2         3         4           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         58         55           Manganese         ppm         ASTM D5185m         0         <1	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	<1	0
Boron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0   0	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         58         55           Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         1010         926         1110         900           Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1         <1         0           INFRA-RED         method         limit/bas	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         56         58         55           Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         1010         926         1110         900           Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1         <1         0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844         >4	Boron	ppm	ASTM D5185m	0	2	3	4
Manganese         ppm         ASTM D5185m         0         <1         0         <1           Magnesium         ppm         ASTM D5185m         1010         926         1110         900           Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium         ppm         ASTM D5185m         1010         926         1110         900           Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1         <1         0           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >4         0.1         0.1         0.2           Nitration         Abs/.1mm         *ASTM D7624         >20         8.4         8.0         6.7           Sulfation         Abs/.1mm         *ASTM	Molybdenum	ppm	ASTM D5185m	60	56	58	55
Calcium         ppm         ASTM D5185m         1070         1094         1216         1006           Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history1           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus         ppm         ASTM D5185m         1150         1014         1068         1029           Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         >20         <1	Magnesium	ppm	ASTM D5185m	1010	926	1110	900
Zinc         ppm         ASTM D5185m         1270         1243         1475         1208           Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         3         2         2         2           Potassium         ppm         ASTM D5185m         >20         <1	Calcium	ppm	ASTM D5185m	1070	1094	1216	1006
Sulfur         ppm         ASTM D5185m         2060         3403         3452         2944           CONTAMINANTS         method         limit/base         current         history1         history           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         >20         <1	Phosphorus	ppm	ASTM D5185m	1150	1014	1068	1029
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         >20         <1	Zinc	ppm	ASTM D5185m	1270	1243	1475	1208
Silicon         ppm         ASTM D5185m         >25         3         3         5           Sodium         ppm         ASTM D5185m         3         2         2         2           Potassium         ppm         ASTM D5185m         >20         <1         <1         0           INFRA-RED         method         limit/base         current         history1         history1           Soot %         %         *ASTM D7844         >4         0.1         0.1         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.4         8.0         6.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.6         18.5         18.2           FLUID DEGRADATION method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.9         15.2         14.3	Sulfur	ppm	ASTM D5185m	2060	3403	3452	2944
Sodium         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         >20         <1	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         <1         <1         0           INFRA-RED         method         limit/base         current         history1         history           Soot %         %         *ASTM D7844         >4         0.1         0.1         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.4         8.0         6.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.6         18.5         18.2           FLUID DEGRADATION         method         limit/base         current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.9         15.2         14.3	Silicon	ppm	ASTM D5185m	>25	3	3	5
INFRA-RED	Sodium	ppm	ASTM D5185m		3	2	2
Soot %         %         *ASTM D7844         >4         0.1         0.1         0.2           Nitration         Abs/cm         *ASTM D7624         >20         8.4         8.0         6.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.6         18.5         18.2           FLUID DEGRADATION method limit/base current         history1         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.9         15.2         14.3	Potassium	ppm	ASTM D5185m	>20	<1	<1	0
Nitration         Abs/cm         *ASTM D7624         >20         8.4         8.0         6.7           Sulfation         Abs/.1mm         *ASTM D7415         >30         19.6         18.5         18.2           FLUID DEGRADATION method limit/base current         history1         history           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.9         15.2         14.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         19.6         18.5         18.2           FLUID DEGRADATION         method         limit/base         current         history1         history1           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.9         15.2         14.3	Soot %	%	*ASTM D7844	>4	0.1	0.1	0.2
FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 15.9 15.2 14.3	Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.0	6.7
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30			
	FLUID DEGRA	NOITAG	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	15.2	14.3
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.0	6.4	7.8



# **OIL ANALYSIS REPORT**



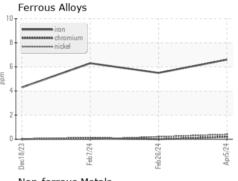


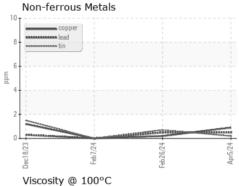


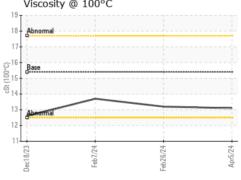
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

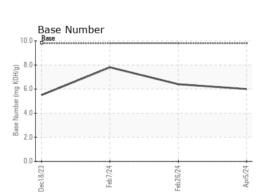
FLUID PROPI	ERHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	13.2	13.7

## **GRAPHS**













Certificate 12367

Laboratory Sample No.

Lab Number : 06145621 Unique Number : 10970429

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0114332

Received : 11 Apr 2024 **Tested** Diagnosed

: 12 Apr 2024 : 12 Apr 2024 - Wes Davis

GFL Environmental - 468 - Dearborn 3051 Schaefer Rd Dearborn, MI US 48126

Contact:

T:

F:

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)