

# **OIL ANALYSIS REPORT**

## Sample Rating Trend





Machine Id
413103
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)

## DIAGNOSIS Recommendation

#### 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

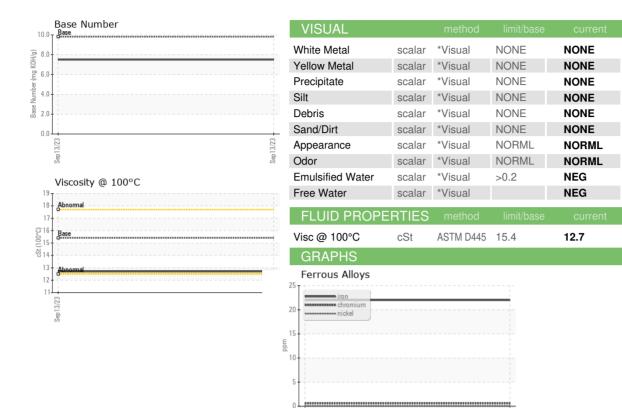
## **Fluid Condition**

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

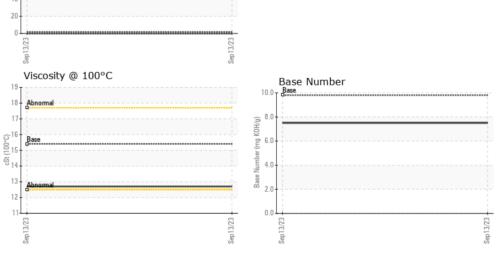
Sample Number   Client Info   GFL0093005       Sample Date   Client Info   13 Sep 2023       Machine Age   hrs   Client Info   0       Oil Age   hrs   Client Info   N/A       Oil Age   Client Info   N	N SHP 15W40 (	GAL)			Sep2023		
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0093005		
Machine Age   hrs   Client Info   0         Client Info   0         Client Info   0           Client Info   N/A       Client Info   N/A   Client Info   N/A     Client Info   N/A   Client I							
Dil Age	•	hrs			•		
Contamped   Client Info   N/A   Contamped   Client Info   N/A   Contamped   Client Info   NORMAL   Contamped   C							
CONTAMINATION   method   limit/base   current   history1   history2   Silcon   WC Method   NEG       Contamination   Co	-						
CONTAMINATION							
WEAR METALS	•	TION	method	limit/hase		history1	history2
WEAR METALS		TION					,
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         22             Chromium         ppm         ASTM D5185m         >20         <1				>0.0			
Chromium	•		VVC IVIELITOU		NEG		
ASTM D5185m   >20	WEAR META	LS	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>120	22		
Silver	Chromium	ppm	ASTM D5185m	>20	<1		
Silver	Nickel	ppm	ASTM D5185m	>5	0		
Aluminum	Titanium	ppm	ASTM D5185m	>2	0		
Lead	Silver	ppm	ASTM D5185m	>2	1		
Copper	Aluminum	ppm	ASTM D5185m	>20	3		
Tin	_ead	ppm	ASTM D5185m	>40	0		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         11             Barium         ppm         ASTM D5185m         0         0             Molybdenum         ppm         ASTM D5185m         0         1             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         1070         1313             Calcium         ppm         ASTM D5185m         1150         962             Phosphorus         ppm         ASTM D5185m         1270         1212             Zinc         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1 </td <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;330</td> <td>134</td> <td></td> <td></td>	Copper	ppm	ASTM D5185m	>330	134		
ADDITIVES	Γin	ppm	ASTM D5185m	>15	2		
ADDITIVES	Vanadium	ppm	ASTM D5185m		0		
Soron   ppm   ASTM D5185m   0   0   0   0   0   0   0   0   0	Cadmium		ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         66             Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         1010         939             Calcium         ppm         ASTM D5185m         1070         1313             Phosphorus         ppm         ASTM D5185m         1150         962             Zinc         ppm         ASTM D5185m         1270         1212             Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         >20         19             Potassium         ppm         ASTM D5185m         >20         19             Soot %         *ASTM D5185m         >4 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>11</td> <td></td> <td></td>	Boron	ppm	ASTM D5185m	0	11		
Manganese         ppm         ASTM D5185m         0         1             Magnesium         ppm         ASTM D5185m         1010         939             Calcium         ppm         ASTM D5185m         1070         1313             Phosphorus         ppm         ASTM D5185m         1270         1212             Zinc         ppm         ASTM D5185m         2060         3174             Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20	Barium	ppm	ASTM D5185m	0	0		
Magnesium         ppm         ASTM D5185m         1010         939             Calcium         ppm         ASTM D5185m         1070         1313             Phosphorus         ppm         ASTM D5185m         1150         962             Zinc         ppm         ASTM D5185m         1270         1212             Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         >20         19             Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.4             Sulfation         Abs/.1mm         *ASTM D78415	Molybdenum	ppm	ASTM D5185m	60	66		
Calcium         ppm         ASTM D5185m         1070         1313             Phosphorus         ppm         ASTM D5185m         1150         962             Zinc         ppm         ASTM D5185m         1270         1212             Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         19             Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         8.7             Sulfation         Abs/.1mm         *ASTM D7415         >30 <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>1</td> <td></td> <td></td>	Manganese	ppm	ASTM D5185m	0	1		
Phosphorus         ppm         ASTM D5185m         1150         962             Zinc         ppm         ASTM D5185m         1270         1212             Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.4             Silicon         ppm         Abs/cm         *ASTM D7845         >30         20.1             FUID DEGRADATION         method         limit/base         current         history1         history2           Dxidation         Abs/.1mm         *ASTM D741	Magnesium	ppm	ASTM D5185m	1010	939		
Table   Content   Conten	Calcium	ppm	ASTM D5185m	1070	1313		
Sulfur         ppm         ASTM D5185m         2060         3174             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.4             Soulfation         Abs/cm         *ASTM D7624         >20         8.7             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	Phosphorus	ppm	ASTM D5185m	1150	962		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         11             Sodium         ppm         ASTM D5185m         3             Potassium         ppm         ASTM D5185m         >20         19            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.7             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	Zinc	ppm	ASTM D5185m	1270	1212		
Solicon   ppm   ASTM D5185m   >25   11	Sulfur	ppm	ASTM D5185m	2060	3174		
Sodium   ppm   ASTM D5185m   3	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         19             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.7             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	Silicon	ppm	ASTM D5185m	>25	11		
INFRA-RED	Sodium	ppm	ASTM D5185m		3		
Soot %	Potassium	ppm	ASTM D5185m	>20	19		
Nitration         Abs/cm         *ASTM D7624         >20         8.7             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	Soot %	%	*ASTM D7844	>4	0.4		
Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         16.5	Vitration	Abs/cm	*ASTM D7624	>20	8.7		
Oxidation	Sulfation						
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.5		



## **OIL ANALYSIS REPORT**



Non-ferrous Metals







Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

: GFL0093005 : 05958497 : 10659710 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Sep 2023

: 24 Sep 2023 Diagnosed : Don Baldridge Diagnostician

GFL Environmental - 413 - Whiteland Hauling 2959 S EMERSON AVE WHITELAND, IN

> US 46184 Contact: Christyan Trent-Proctor

ctrentproctor@gflenv.com

\* - 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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