

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **7814M** Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (36 QTS)

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.

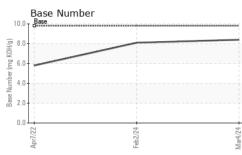
Fluid Condition

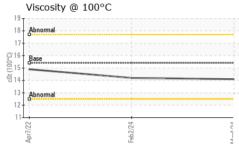
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104378	GFL0110080	GFL0018490
Sample Date		Client Info		04 Mar 2024	02 Feb 2024	07 Apr 2022
Machine Age	hrs	Client Info		4944	4863	3662
Oil Age	hrs	Client Info		600	600	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	26	19	71
Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	<1	<1	2
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	1. 1			U	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm		limit/base			
ADDITIVES		method	0	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current <1	history1 2	history2 8
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current <1 0	history1 2 5	history2 8 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current <1 0 60	history1 2 5 60	history2 8 0 70
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current <1 0 60 0	history1 2 5 60 0	history2 8 0 70 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current <1 0 60 0 1049	history1 2 5 60 0 947	history2 8 0 70 <1 1131
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current <1 0 60 0 1049 1126	history1 2 5 60 0 947 1013	history2 8 0 70 <1 1131 1278
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	<1 0 60 0 1049 1126 1140	history1 2 5 60 0 947 1013 940	history2 8 0 70 <1 1131 1278 1252
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	<1 0 60 0 1049 1126 1140 1313	history1 2 5 60 0 947 1013 940 1185	history2 8 0 70 <1 1131 1278 1252 1467
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	Current <1 0 60 0 1049 1126 1140 1313 3162	history1 2 5 60 0 947 1013 940 1185 2943	history2 8 0 70 <1 1131 1278 1252 1467 2556
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current <1 0 60 0 1049 1126 1140 1313 3162 current	history1 2 5 60 0 947 1013 940 1185 2943 history1	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	<1 0 60 0 1049 1126 1140 1313 3162 current 5	history1 2 5 60 0 947 1013 940 1185 2943 history1 5	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base	current <1 0 60 0 1049 1126 1140 1313 3162 current 5 14	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20	<1 0 60 0 1049 1126 1140 1313 3162 current 5 14 0	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0 2	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	<1 0 60 0 1049 1126 1140 1313 3162 current 5 14 0 current	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0 2 history1	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8 <1 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 Imit/base >20	current <1 0 60 0 1049 1126 1140 1313 3162 current 5 14 0 current 0 current 0.8	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0 2 history1 0.4	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8 <1 history2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >20	current <1 0 60 0 1049 1126 1140 1313 3162 current 5 14 0 current 0 current 0.8 9.6	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0 2 history1 0 2 0.4 9.1	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8 <1 history2 1 <
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >20 imit/base >20	<1 0 60 0 1049 1126 1140 1313 3162 current 5 14 0 current 0.8 9.6 21.1	history1 2 5 60 0 947 1013 940 1185 2943 history1 5 0 2 history1 0.4 9.1 20.9	history2 8 0 70 <1 1131 1278 1252 1467 2556 history2 7 8 <1 history2 12 56 1252 1467 2556 history2 1 1 1 1 1 1 1 1 1 2 1 1 1 2 1 1 1 2 1 1 2 3 3 3 4 4 4 4 4 5 4 5 4 5



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	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
Feb2/24 Mar4/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Fet	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.2	14.9
	GRAPHS						
	Ferrous Alloys						
	80 70 iron						
Feb2/24	/0 - chromium						
P.	60 - minimum nickel						
	50						
	₽40 20						
	30						
	10						
	Apr7/22	Feb2/24 -		Mar4/24 -			
	Apr	Feb		Mar			
	4 						
	0	A MARKANING					
	0	eb 2/24	***************	Aar4/24			
	April/22	Feb2/24		Mar4/24	D Number		
	Viscosity @ 100°C				Base Number		
	Viscosity @ 100°C			10.0	Base Number		
	Viscosity @ 100°C			10.0	Base Number		
	Viscosity @ 100°C			10.0	Base Number		
	Viscosity @ 100°C			10.0	Base Number		
	Viscosity @ 100°C			10.0	Base Number		
	Viscosity @ 100°C				Base Number		
	Viscosity @ 100°C			10.0 (BHO) BU aum 10 (BHO) BU (BHO) BU	Base Number		
	Viscosity @ 100°C			10.0 (b)HOX BUD 4.0 (c) HOX BU	Base	24	
	Viscosity @ 100°C			10.0 (BHO) BU aum 10 (BHO) BU (BHO) BU	Base Number	Feb224	
Laboratory Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C Abnormal Control 19 Abnormal 12 11 22 12 12 12 12 12 12 12	Feb224	ved : 06 d : 07	10.0 (BHQ) (GFL Envi	ronmental - 410 3900	- Michigan We DO Van Born F Wayne, I US 4818 : Belal Dgheis

VISUAI method limit/base current history1 history2

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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