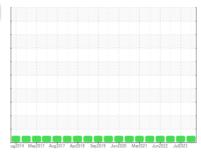


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id INTERNATONAL 243

Front Diesel Engine

PETRO CANADA 15W40 (--- QTS)

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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

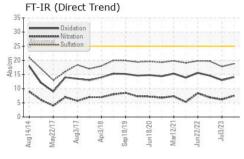
Fluid Condition

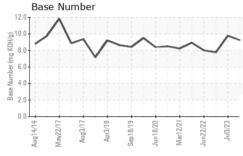
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

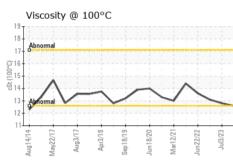
Sample Date Client Info 17 Jun 2024 03 Jul 2023 11 Oct 2022 Machine Age hrs Client Info 2893 2759 2714 Oil Age hrs Client Info Changed Changed Changed Oil Changed Client Info Changed NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >2.0 *1.0 <1.0	мд2014 Мөд2017 Анд2017 Ард2016 Sep2019 Jun2020 Мөд2021 Jun2022 Ju2023							
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 2893 2759 2714 Oil Age hrs Client Info 134 45 47 Oil Changed Client Info Changed NeG Ne	Sample Number		Client Info		RW0005206	RW0004288	RW0003952	
Oil Changed	Sample Date		Client Info		17 Jun 2024	03 Jul 2023	11 Oct 2022	
Client Info Changed Changed NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		2893	2759	2714	
NORMAL NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		134	45	47	
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >2.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 19 7 11 Chromium ppm ASTM D5185m >4 0 <1 0 Nickel ppm ASTM D5185m >4 0 <1 0 Silver ppm ASTM D5185m >3 0 <1 <1 Aluminum ppm ASTM D5185m >3 0 <1 <1 <1 Copper ppm ASTM D5185m >40 <1 <1 <1 <1 Vanadium ppm ASTM D5185m >330 <1 <1	Oil Changed		Client Info		Changed	Changed	Changed	
Fuel	Sample Status				NORMAL	NORMAL	NORMAL	
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 19 7 11 Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >4 0 <1 0 Silver ppm ASTM D5185m >4 0 <1 <1 Aluminum ppm ASTM D5185m >20 5 <1 3 Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 <1 <1 <1 <1 Vanadium ppm ASTM D5185m >15 0 <1 <1 <1 <1 Vanadium ppm ASTM D5185m 6 8 4 <1 <1 <1	CONTAMINATION	1	method	limit/base	current	history1	history2	
WEAR METALS	Fuel		WC Method	>2.0	<1.0	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 19 7 11 Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >4 0 <1 0 Titanium ppm ASTM D5185m >3 0 <1 <1 Aluminum ppm ASTM D5185m >20 5 <1 3 Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 <1 <1 <1 Copper ppm ASTM D5185m >30 <1 <1 <1 Copper ppm ASTM D5185m >15 0 <1 <1 Codhum ppm ASTM D5185m >1 <1 <t< th=""><th>Water</th><th></th><th>WC Method</th><th>>0.2</th><th>NEG</th><th>NEG</th><th>NEG</th></t<>	Water		WC Method	>0.2	NEG	NEG	NEG	
Iron	Glycol		WC Method		NEG	NEG	NEG	
Chromium ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	history1	history2	
Nickel	Iron	ppm	ASTM D5185m	>100	19	7	11	
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	0	<1	
Silver ppm ASTM D5185m >3 0 <1	Nickel	ppm	ASTM D5185m	>4	0	<1	0	
Aluminum ppm ASTM D5185m >20 5 <1	Titanium	ppm	ASTM D5185m		0	0	0	
Lead	Silver	ppm	ASTM D5185m	>3	0	<1	<1	
Copper ppm ASTM D5185m >330 <1	Aluminum	ppm	ASTM D5185m	>20	5	<1	3	
Tin	Lead	ppm	ASTM D5185m	>40	<1	<1	<1	
Vanadium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>330	<1	<1	<1	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 8 4 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 58 67 54 Manganese ppm ASTM D5185m <1 <1 <1 <1 Magnesium ppm ASTM D5185m 869 834 860 Calcium ppm ASTM D5185m 1132 1085 1039 Phosphorus ppm ASTM D5185m 1027 983 986 Zinc ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 0 0 Potassium <	Tin	ppm	ASTM D5185m	>15	0	<1	<1	
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0	
Boron ppm ASTM D5185m 6	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 58 67 54 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 869 834 860 Calcium ppm ASTM D5185m 1132 1085 1039 Phosphorus ppm ASTM D5185m 1027 983 986 Zinc ppm ASTM D5185m 1173 1109 1161 Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m 2 0 0 INFRA-RED method limit/base current	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 58 67 54 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		6	8	4	
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m 869 834 860 Calcium ppm ASTM D5185m 1132 1085 1039 Phosphorus ppm ASTM D5185m 1027 983 986 Zinc ppm ASTM D5185m 1173 1109 1161 Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 22 0 0 Potassium ppm ASTM D5185m 20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 <th cols<="" th=""><th>Molybdenum</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>58</th><th>67</th><th>54</th></th>	<th>Molybdenum</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>58</th> <th>67</th> <th>54</th>	Molybdenum	ppm	ASTM D5185m		58	67	54
Calcium ppm ASTM D5185m 1132 1085 1039 Phosphorus ppm ASTM D5185m 1027 983 986 Zinc ppm ASTM D5185m 1173 1109 1161 Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 <th>Manganese</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th><1</th> <th><1</th> <th><1</th>	Manganese	ppm	ASTM D5185m		<1	<1	<1	
Phosphorus ppm ASTM D5185m 1027 983 986 Zinc ppm ASTM D5185m 1173 1109 1161 Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current <	Magnesium	ppm	ASTM D5185m					
Zinc ppm ASTM D5185m 1173 1109 1161 Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0<	Calcium	ppm						
Sulfur ppm ASTM D5185m 3527 2897 3585 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6					-			
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6					_			
Silicon ppm ASTM D5185m >25 3 3 4 Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6		• •			3527			
Sodium ppm ASTM D5185m 2 0 0 Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6							·	
Potassium ppm ASTM D5185m >20 2 2 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6		• •		>25				
INFRA-RED								
Soot % % *ASTM D7844 >3 0.7 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6		ppm			2	2	0	
Nitration Abs/cm *ASTM D7624 >20 7.5 6.2 6.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6								
Sulfation Abs/.1mm *ASTM D7415 >30 18.8 17.8 19.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6	Soot %							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6	Nitration							
Oxidation Abs/.1mm *ASTM D7414 >25 14.1 13.0 14.6	Sulfation		*ASTM D7415	>30	18.8		19.7	
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
Base Number (BN) mg K0H/g ASTM D2896 9.78 7.77	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.1	13.0	14.6	
	Base Number (BN)	mg KOH/g	ASTM D2896		9.25	9.78	7.77	



OIL ANALYSIS REPORT





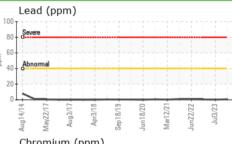


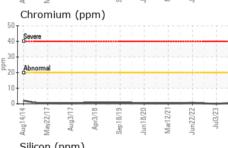
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

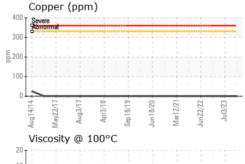
FLUID FROFEI	TILO	method		HISTOLAL	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	12.6	12.8	13.1

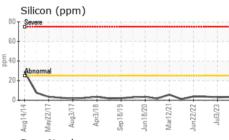
Jun22/22 +

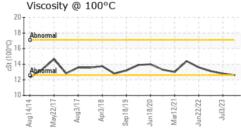
GRAPHS

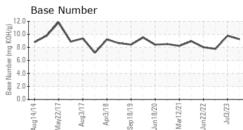
















Laboratory Sample No.

Lab Number : 06220427 Unique Number : 11098624

: RW0005206

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 25 Jun 2024 **Tested** : 26 Jun 2024

Diagnosed : 26 Jun 2024 - Wes Davis

Test Package : MOB 2 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)

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