

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id HINO SK7456

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (18 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.

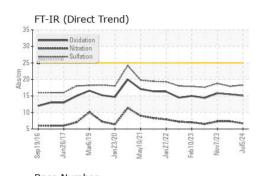
Fluid Condition

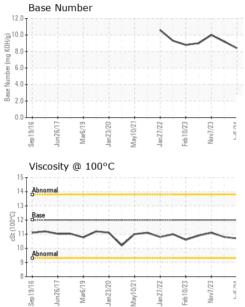
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 10 17 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >20 1 3 1 Copper ppm ASTM D5185m >20 1 3 1 Vanadium ppm ASTM D5185m >330 3 7 2 Cadmium ppm ASTM D5185m >15 0 <1 1 Cadmium ppm ASTM D5185m 0 0 0	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age mis Client Info 147198 145493 143390 Oil Age mis Client Info 0 0 0 Oil Age mis Client Info N/A Changed Changed Sample Status Imit/base current NoRMAL NORMAL NORMAL CONTAMINATION method imit/base current History1 History2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Oli Age WC Method NEG NEG NEG NEG Itron ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >30 0 0 0 Gropper ppm ASTM D5185m >30 3 <1 <1 Vanadium ppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>PCA0128940</th> <th>PCA0120641</th> <th>PCA0110490</th>	Sample Number		Client Info		PCA0128940	PCA0120641	PCA0110490
Oil Age mis Client Info 0 0 0 Oil Changed Client Info N/A Changed Changed Sample Status Imutbase current NoRMAL NORMAL CONTAMINATION method Journet 41.0 Vistory1 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0 NEG NEG NEG Glycol WC Method >0 0 0 17 Vickel ppm ASTM D5185m >40 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >0 <1 <1 1 Cadmium ppm ASTM D5185m 20 <1 <1 1 Cadmium ppm ASTM D5185m 0 0 0	Sample Date		Client Info		05 Jul 2024	08 Mar 2024	07 Nov 2023
Oli Changed Client Info N/A Changed Changed Changed Sample Status Imit/base current NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 10 17 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m 20 1 3 1	Machine Age	mls	Client Info		147198	145493	143390
Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method timit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WeAR METALS method timit/base current history1 history2 Iron ppm ASTM D5185m >100 6 10 17 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m 20 1 3 8 Lead ppm ASTM D5185m 20 1 3 8 Lead ppm ASTM D5185m 20 1 3 8 Lead ppm ASTM D5185m 20 0 <1 2 Vanadium ppm	Oil Age	mls	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >100 6 10 17 Chromium ppm ASTM 05185m >4 0 0 0 Nickel ppm ASTM 05185m >4 0 0 0 Silver ppm ASTM 05185m >3 0 0 0 Copper ppm ASTM 05185m >40 0 <1 <1 Copper ppm ASTM 05185m >15 0 <1 <1 Copper ppm ASTM 05185m 0 0 0 0 Copper	Oil Changed		Client Info		N/A	Changed	Changed
Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imit/base current history1 history2 Iron ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >30 3 7 2 Tin ppm ASTM D5185m >30 3 7 2 Soloper ppm ASTM D5185m >15 0 0 0	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WeAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >15 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 59 63 57 Bar	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 10 17 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Auminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >15 0 <1 1 Copper ppm ASTM D5185m 0 0 0 0	Water		WC Method	>0.2	NEG	NEG	NEG
Iron ppm ASTM D5185m >100 6 10 17 Chromium ppm ASTM D5185m >20 0 <1	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >20 1 3 8 Copper ppm ASTM D5185m >20 1 3 8 Copper ppm ASTM D5185m >20 1 3 8 Copper ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 15 0 <0 0 Cadmium ppm ASTM D5185m 2 3 4 2 Barium ppm ASTM D5185m 50 59 63 57 Magneseum ppm ASTM D5185m 50 929 910 <td< th=""><th>Iron</th><th>ppm</th><th>ASTM D5185m</th><th>>100</th><th>6</th><th>10</th><th>17</th></td<>	Iron	ppm	ASTM D5185m	>100	6	10	17
Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 3 7 2 Tin ppm ASTM D5185m >15 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 59 63 57 Maganese ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 1050 1081 1032	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >40 0 <1	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum ppm ASTM D5185m >20 1 3 8 Lead ppm ASTM D5185m >40 0 <1 <1 Copper ppm ASTM D5185m >330 3 7 2 Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 2 3 4 2 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 59 63 57 Marganese ppm ASTM D5185m 050 599 910 963 Calcium ppm ASTM D5185m 050 1081 1032 1071 Phosphorus ppm ASTM D5185m 1160 1179 <t< th=""><th>Titanium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >40 0 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 3 7 2 Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 4 2 Barium ppm ASTM D5185m 0 0 0 0 Molyddenum ppm ASTM D5185m 0 <11 0 <1 Maganese ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 950 929 907 21071 Phosphorus ppm ASTM D5185m 950 950	Aluminum	ppm	ASTM D5185m	>20	1	3	8
Tin ppm ASTM D5185m >15 0 <1	Lead	ppm	ASTM D5185m	>40	0	<1	<1
Vanadium ppm ASTM D5185m 0 0 <1	Copper	ppm	ASTM D5185m	>330	3	7	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 3 4 2 Barium ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 59 63 57 Magnesium ppm ASTM D5185m 0 <10	Tin	ppm	ASTM D5185m	>15	0	<1	<1
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m2342BariumppmASTM D5185m0000MolybdenumppmASTM D5185m50596357ManganeseppmASTM D5185m0<10<1MagnesiumppmASTM D5185m950929910963CalciumppmASTM D5185m1050108110321071PhosphorusppmASTM D5185m9951017973997ZincppmASTM D5185m2600350829093025CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25243SodiumppmASTM D5185m>20223INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7624>206.77.37.3SulfationAbs/.tmm*ASTM D7624>206.77.37.3SulfationAbs/.tmm*ASTM D7415>3018.317.918.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.tmm*ASTM D7414>2515.115.515.8	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron ppm ASTM D5185m 2 3 4 2 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 59 63 57 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 950 1081 1032 1071 Phosphorus ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 926 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 3 INFRA-RED method limit/base current	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 50 59 63 57 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 1050 1081 1032 1071 Phosphorus ppm ASTM D5185m 1950 929 910 963 Zinc ppm ASTM D5185m 1050 1081 1032 1071 Phosphorus ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 4 3 Sodium ppm ASTM	ADDITIVES		method	limit/base	current	historv1	history2
Molybdenum ppm ASTM D5185m 50 59 63 57 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 1050 1081 1032 1071 Phosphorus ppm ASTM D5185m 1950 1017 973 997 Zinc ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 3 INFRA-RED method limit/base							
Manganese ppm ASTM D5185m 0 <1	Boron	ppm					
Magnesium ppm ASTM D5185m 950 929 910 963 Calcium ppm ASTM D5185m 1050 1081 1032 1071 Phosphorus ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 9960 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 3 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/.1mm *ASTM D7624 <t< th=""><th></th><th></th><th>ASTM D5185m</th><th>2</th><th>3</th><th>4</th><th>2</th></t<>			ASTM D5185m	2	3	4	2
Calcium ppm ASTM D5185m 1050 1081 1032 1071 Phosphorus ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 1180 1179 1138 1224 Sulfur ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 3 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 0.2 0.3 0.4 Nitration Abs/.tmm *ASTM D7415 <	Barium	ppm	ASTM D5185m ASTM D5185m	2 0	3 0	4	2 0
Phosphorus ppm ASTM D5185m 995 1017 973 997 Zinc ppm ASTM D5185m 1180 1179 1138 1224 Sulfur ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 3 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.tmm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/b	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	3 0 59	4 0 63	2 0 57
Zinc ppm ASTM D5185m 1180 1179 1138 1224 Sulfur ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 3 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.tmm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tmm *ASTM D7414<	Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	3 0 59 <1	4 0 63 0	2 0 57 <1
Sulfur ppm ASTM D5185m 2600 3508 2909 3025 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >25 2 4 3 Potassium ppm ASTM D5185m >20 2 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.tm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	3 0 59 <1 929	4 0 63 0 910	2 0 57 <1 963
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>25243SodiumppmASTM D5185m202PotassiumppmASTM D5185m20223INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.20.30.4NitrationAbs/cm*ASTM D7624>206.77.37.3SulfationAbs/.1mm*ASTM D7415>3018.317.918.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2515.115.515.8	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	3 0 59 <1 929 1081	4 0 63 0 910 1032	2 0 57 <1 963 1071
Silicon ppm ASTM D5185m >25 2 4 3 Sodium ppm ASTM D5185m >20 2 0 2 Potassium ppm ASTM D5185m >20 2 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.imm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.imm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	3 0 59 <1 929 1081 1017	4 0 63 0 910 1032 973	2 0 57 <1 963 1071 997
Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m<>20 2 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844<>3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624<>20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415<>30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414<>25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	3 0 59 <1 929 1081 1017 1179	4 0 63 0 910 1032 973 1138	2 0 57 <1 963 1071 997 1224
Potassium ppm ASTM D5185m >20 2 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	3 0 59 <1 929 1081 1017 1179 3508	4 0 63 0 910 1032 973 1138 2909	2 0 57 <1 963 1071 997 1224 3025
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	3 0 59 <1 929 1081 1017 1179 3508 current	4 0 63 0 910 1032 973 1138 2909 history1	2 0 57 <1 963 1071 997 1224 3025 history2
Soot % % *ASTM D7844 >3 0.2 0.3 0.4 Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600	3 0 59 <1 929 1081 1017 1179 3508 current 2	4 0 63 0 910 1032 973 1138 2909 history1 4	2 0 57 <1 963 1071 997 1224 3025 history2 3
Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	3 0 59 <1 929 1081 1017 1179 3508 <u>current</u> 2 2	4 0 63 0 910 1032 973 1138 2909 history1 4 0	2 0 57 <1 963 1071 997 1224 3025 history2 3 2
Nitration Abs/cm *ASTM D7624 >20 6.7 7.3 7.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	3 0 59 <1 929 1081 1017 1179 3508 current 2 2 2 2	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 3
Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.9 18.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	3 0 59 <1 929 1081 1017 1179 3508 current 2 2 2 2 2 2	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2 history1	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 3 <i>history2</i>
Oxidation Abs/.1mm *ASTM D7414 >25 15.1 15.5 15.8	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	3 0 59 <1 929 1081 1017 1179 3508 <u>current</u> 2 2 2 2 2 2 <u>current</u> 0.2	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2 <u>history1</u> 0.3	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 2 3 <i>h</i> istory2 0.4
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	3 0 59 <1 929 1081 1017 1179 3508 <i>current</i> 2 2 2 2 2 <i>current</i> 0.2 6.7	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2 history1 0.3 7.3	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 2 3 <i>history2</i> 0.4 7.3
	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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	3 0 59 <1 929 1081 1017 1179 3508 <u>current</u> 2 2 2 2 2 2 2 2 2 5 6.7 18.3	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2 <u>history1</u> 0.3 7.3 17.9	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 2 3 history2 0.4 7.3 18.8
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 >20 >30 >30 imit/base	3 0 59 <1 929 1081 1017 1179 3508 <i>current</i> 2 2 2 2 2 2 <i>current</i> 0.2 6.7 18.3 <i>current</i>	4 0 63 0 910 1032 973 1138 2909 history1 4 0 2 history1 0.3 7.3 17.9 history1	2 0 57 <1 963 1071 997 1224 3025 history2 3 2 3 2 3 3 history2 0.4 7.3 18.8 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/ba	ase c	urrent		histor	y1	ł	nistor	y2	
White Metal	scalar	*Visual	NONE	NC	NE	N	ONE		N	ONE		
Yellow Metal	scalar			NE				NONE				
Precipitate	scalar	*Visual	NONE	NC	NONE		NONE		NONE			
Silt	scalar *Visual NONE		NC	NE	N	NONE			NONE			
Debris	scalar	*Visual	NONE	NC	NONE		NONE			NONE		
Sand/Dirt	scalar	*Visual	NONE	NC	NE	N	NONE			NONE		
Appearance	scalar	*Visual	NORML	NC	RML NORML			L	NORML			
Odor	scalar	*Visual	*Visual NORML		NORML		NORML		NORML		_	
Emulsified Water	scalar	*Visual	>0.2	NE	NEG		NEG		NEG			
Free Water	scalar	*Visual		NE	G	N	EG		NE	EG		
FLUID PROPER	RTIES	method	limit/ba	ase c	urrent		histor	y1	ł	nistor	y2	
Visc @ 100°C	cSt	ASTM D445	12.00	10.	7	1	0.8		11	.1		
GRAPHS												
Iron (ppm)				Leac	l (ppm)						
00 - Severe				80 - Severe							_	
50 -				e 60-								
50 00 - Abnormal				40 Abnor	mal						_	
50-	\sim			20-								
	<u>}</u>			0	2			2		~	-	
Sep 19/16 Jun 26/17 Mar6/19 Jan 23/20	May10/21	Jan 2 1/2 2 Feb 1 0/2 3 Nov7 /2 3	Jul5/24	Sep 19/16	Jun26/17	Marb/19 Jan23/20	May10/21	Jan 27/22	Feb 1 0/2 3	Nov7/23	1.15/24	
	No.	Ler Ja	<u>ر</u>	07	7	-	Ma	Jar	면	ž	_	
Aluminum (ppm)				Chro 50 T	mium	(ppm)						
40 - Severe				40 - Severe								
				20								
20 - Abnormal				20 Abnor	mal							
10				10								
	\searrow			0								
Sep19/16 - Jun26/17 - Mar6/19 - Jan23/20 -	0/21.	Feb 10/23	Jul5/24	Sep 19/16	Jun26/17	Marb/19	0/21.	Jan27/22 -	Feb10/23 -	Nov7/23 -	Jul5/24	
Sep1 Jun2 Mai	May10/2	Feb1	Inf.	Sep1	Jun2	Jan2	May10/2	Jan2	Feb 1	Nov	1	
Copper (ppm)				Silico	on (ppr	n)						
90 Severe				80 Severe								
00				60								
00				특 40								
00-				20 - Abnor	mal						_	
							\sim					
20 13 10 10	1/21	123	24	0	- 11/	20	12/	727	/23 -	/23	14	
Sep19/16 Jun26/17 Mar6/19 Jan23/20	May10/2	Jan 27/22 Feb 10/23 Mov7/23	Jul5/24	Sep19/16	Jun26/17	Mar6/19 Jan 23/20	May10/2	Jan27/22	Feb 1 0/2 3	Nov7/23	Jul5/24	
Viscosity @ 100°C	_	- —		•••	Numb	-	-	,				
¹⁶ [12.0 -								
14 Abnormal				10.0					-	~	-	
12 Base				Base Mumber (mg KOH(g) 8.0 - 6.0 - 4.0 - 2.0 -								
	-		-	agu 4.0								
10 Abnormal				2.0								
50 +	21	13		0.0	11	n 00	21	12	23	23	4	
Sep19/16 Jun26/17 Mar6/19 Jan23/20	May10/21	Jan 27/22 Feb 10/23 Mov7/23	Jul5/24	Sep19/16	Jun26/17	Marb/19 Jan23/20	May10/21	Jan 27/22	Feb 10/23	Nov7/23	Jul5/24	
WearCheck USA - 501 PCA0128940 06238883 11127717	_	n Ave., Car i ved : 1 d : 1		13 4 4	7	MILLE	R TRL	JCK L 9 IND	LEAS USTR	I NG # RIAL /	≠119 AVE 5, N.	

To discuss this sample report, c * - 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) F: (201)528-7053

Report Id: MILRUT [WUSCAR] 06238883 (Generated: 07/17/2024 16:34:45) Rev: 1

Certificate L2367

Laboratory

Sample No. Lab Number **Unique Number Test Package**

Contact/Location: MIKE LONGETTE - MILRUT

Page 2 of 2