

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area SCHTRUCK 6346 [SCHTRUCK]

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.

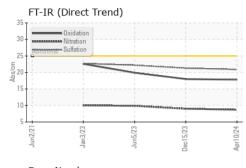
Fluid Condition

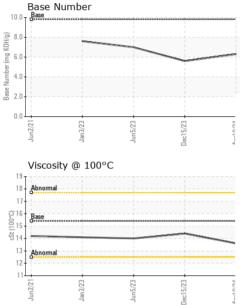
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 10 Apr 2024 15 Dec 2023 05 Jun 2023 Machine Age mis Client Info 548150 516989 480630 Dil Age mis Client Info 31161 36359 38545 Dil Changed Client Info Changed Changed Changed NORMAL S		IATION	method	limit/base	current	history1	history2
Machine Age mis Client Info 548150 516989 480630 Dil Age mis Client Info 31161 38359 38545 Dil Changed Client Info 31161 38359 38545 Dil Changed Client Info 31161 38359 38545 Dil Age Client Info NORIMAL 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 Otomium ppm ASTM 05185m >5 1 1 1 Nickel ppm ASTM 05185m >5 1 <1 <1 Nickel ppm ASTM 05185m >30 0 0 0 Korent ppm ASTM 05185m >30 0 0 0 Norent ppm ASTM 05185m 30	Sample Number		Client Info		SBP0007003	SBP0006520	SBP0004408
Dil Age mis Client Info 31161 36359 38545 Dil Changed Client Info Changed Ch	Sample Date		Client Info		10 Apr 2024	15 Dec 2023	05 Jun 2023
Dil Changed Client Info Changed NORMAL Changed NORMAL Changed NORMAL Changed 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 Silycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 fron ppm ASTM 05185m >5 1 1 1 Nickel ppm ASTM 05185m >5 1 1 1 Nickel ppm ASTM 05185m >3 0 0 0 Silver ppm ASTM 05185m >3 0 0 0 Capper ppm ASTM 05185m >3 0 0 0 Capper ppm ASTM 05185m >3 0 0 0 Cadmium ppm ASTM 05185m 0 0 0 0 Molybdenum ppm ASTM 05185m 0 0 0 0 Barium ppm ASTM 05185m 0	Machine Age	mls	Client Info		548150	516989	480630
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CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <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 D5185m >5 1 1 1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 1 Nickel ppm ASTM D5185m >3 0 0 0 0 Silver ppm ASTM D5185m >30 6 6 9 9 Lead ppm ASTM D5185m >30 0 0 0 0 Copper ppm ASTM D5185m 0 7 0 4 8 Barium ppm ASTM	Oil Changed		Client Info		Changed	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 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >5 1 1 1 Nickel ppm ASTM D5185m >2 0 <1 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 6 6 9 Lead ppm ASTM D5185m >30 0 0 0 Capper ppm ASTM D5185m >30 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 0	CONTAMINATIO	N	method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185m 0 <1	ADDITIVES Boron	ppm					
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Calcium ppm ASTM D5185m 1070 1251 1093 1195 Phosphorus ppm ASTM D5185m 1150 1086 900 938 Zinc ppm ASTM D5185m 1270 1377 1232 1208 Sulfur ppm ASTM D5185m 2060 2955 2620 2855 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 5 6 Sodium ppm ASTM D5185m >20 7 4 3 Potassium ppm ASTM D5185m >20 7 4 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.7 0.6 Nitration Abs/cm< *ASTM D7624 >20 8.7 9.0 9.9 Sulfation Abs/.Imm *ASTM D7415 >30 </th <th>Boron</th> <th>ppm</th> <th>ASTM D5185m ASTM D5185m</th> <th>0</th> <th>7 0</th> <th>0</th> <th>4</th>	Boron	ppm	ASTM D5185m ASTM D5185m	0	7 0	0	4
Phosphorus ppm ASTM D5185m 1150 1086 900 938 Zinc ppm ASTM D5185m 1270 1377 1232 1208 Sulfur ppm ASTM D5185m 2060 2955 2620 2855 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 6 5 6 Sodium ppm ASTM D5185m >20 6 5 6 Sodium ppm ASTM D5185m >20 7 4 3 Potassium ppm ASTM D5185m >20 7 4 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.7 0.6 Nitration Abs/cm *ASTM D7624 >20 8.7 9.0 9.9 Sulfation Abs/.tmm *ASTM D7415	Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	7 0 62	0 0 63	4 0 60
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Potassium ppm ASTM D5185m >20 7 4 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.7 0.6 Nitration Abs/cm *ASTM D7624 >20 8.7 9.0 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 21.3 22.2 FLUID DEGRADATION method limit/base current history1 history2	Boron 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	0 0 60 0 1010 1070 1150 1270 2060	7 0 62 <1 1018 1251 1086 1377 2955	0 0 63 0 954 1093 900 1232 2620	4 0 60 <1 861 1195 938 1208 2855
INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.50.70.6NitrationAbs/cm*ASTM D7624>208.79.09.9SulfationAbs/.1mm*ASTM D7415>3020.921.322.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Boron 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	0 0 60 1010 1070 1150 1270 2060	7 0 62 <1 1018 1251 1086 1377 2955 current	0 0 63 0 954 1093 900 1232 2620 history1	4 0 60 <1 861 1195 938 1208 2855 history2
Soot % % *ASTM D7844 >3 0.5 0.7 0.6 Nitration Abs/cm *ASTM D7624 >20 8.7 9.0 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.9 21.3 22.2 FLUID DEGRADATION method limit/base current history1 history2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	0 0 60 1010 1070 1150 1270 2060	7 0 62 <1 1018 1251 1086 1377 2955 current 6	0 0 63 0 954 1093 900 1232 2620 history1 5	4 0 60 <1 861 1195 938 1208 2855 history2 6
NitrationAbs/cm*ASTM D7624>208.79.09.9SulfationAbs/.1mm*ASTM D7415>3020.921.322.2FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	0 0 60 0 1010 1070 1150 1270 2060 limit/base	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1	0 0 63 0 954 1093 900 1232 2620 history1 5 0	4 0 60 <1 861 1195 938 1208 2855 history2 6 1
Sulfation Abs/.1mm *ASTM D7415 >30 20.9 21.3 22.2 FLUID DEGRADATION method limit/base current history1 history2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 imit/base >20	7 0 62 <1 1018 1251 1086 1377 2955 <u>current</u> 6 1 7	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3
FLUID DEGRADATION method limit/base current history1 history2	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 220	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1 7 7 current	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4 kistory1	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3 3 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 20 limit/base	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1 7 current 0.5	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4 <u>history1</u> 0.7	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3 3 history2 0.6
Oxidation Abs/1mm *ASTM D7414 >25 17.8 18.0 19.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1 7 current 0.5 8.7	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4 history1 0.7 9.0	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3 history2 0.6 9.9
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 200 200 200 320 320 33 200 230	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1 7 current 0.5 8.7 20.9	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4 history1 0.7 9.0 21.3	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3 3 history2 0.6 9.9 22.2
Base Number (BN) mg KOH/g ASTM D2896 9.8 6.3 5.6 7.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 200 200 200 320 320 33 200 230	7 0 62 <1 1018 1251 1086 1377 2955 current 6 1 7 current 0.5 8.7 20.9	0 0 63 0 954 1093 900 1232 2620 history1 5 0 4 history1 0.7 9.0 21.3	4 0 60 <1 861 1195 938 1208 2855 history2 6 1 3 3 history2 0.6 9.9 22.2



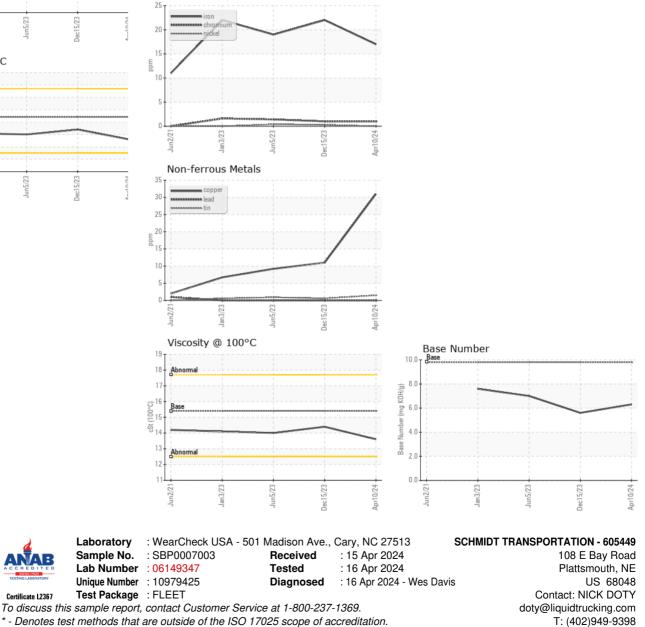
OIL ANALYSIS REPORT

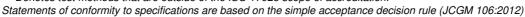




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	14.4	14.0
GRAPHS						

Ferrous Alloys





Certificate 12367

F: