

OIL ANALYSIS REPORT

Sample Rating Trend

FUEL

Area SCHTRUCK 6332 [SCHTRUCK]

Front Diesel Engine

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

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring.

Fluid Condition

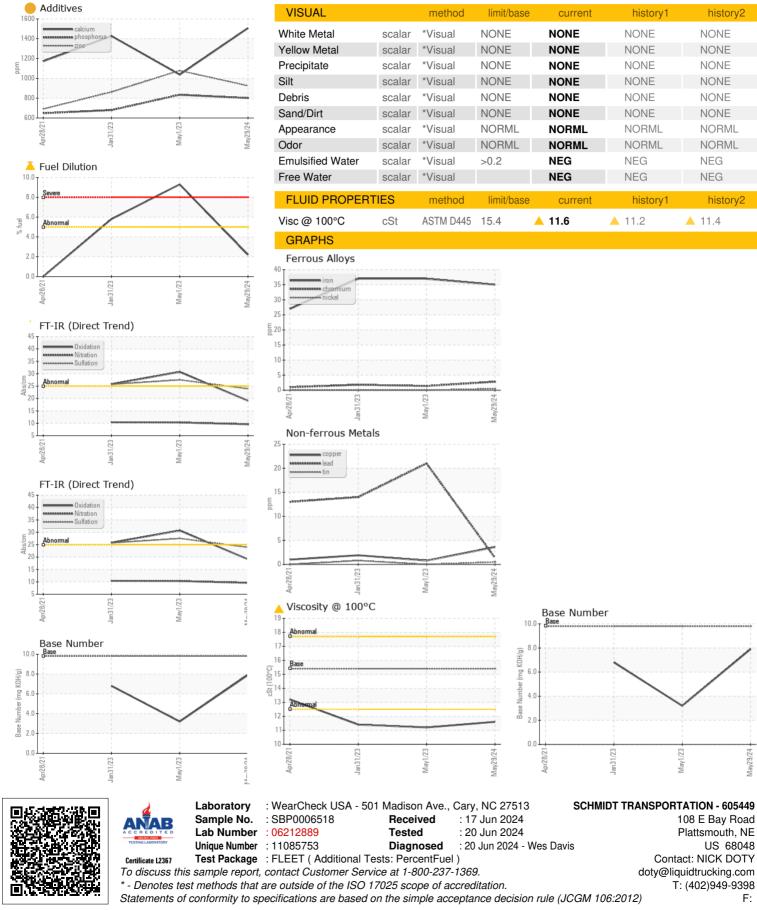
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method Imitbase current history1 history2 Sample Number Client Info 29 May 2024 01 May 2023 31 Jan 2023 Machine Age mits Client Info 24072 32108 25388 Oil Age mits Client Info 667792 643720 613612 Oil Age mits Client Info 667792 643720 613612 Sample Status Client Info 667792 64370 Changed Changed Sample Status Client Info 667792 64370 Changed Changed Sample Status Client Info 94072 32108 Client Info 64772 64374 Changed Changed Changed Client Info 94772 61374 Changed Client Info 94772 61374 Client Info 94772 61374 Client Info 94772 61374 Client Info 94772 61374 Client Info 95753 37 37 7 7 7 7	AL)		Apr202	1 Jan2023	May2023 M	ay2024		
Sample Date Client Info 29 May 2024 01 May 2023 31 Jan 2023 Machine Age mis Client Info 667792 643720 613612 Oil Ageo mis Client Info 24072 32108 25388 Oil Changed Client Info Panged Changed Changed Changed Sample Status Imit Mase current history1 Mistory2 Water WC Method >0.2 NEG NEG NEG Water WC Method >0.2 NEG NEG NEG WEAR METALS method Imit/base current History1 history2 Kron ppm ASTM 051655 >5 3 1 2 Nickel ppm ASTM 051655 >30 1 2 1 Lead ppm ASTM 051655 >30 1 2 1 Corper ppm ASTM 051655 >5 1 0 -1 2 Nickel	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2	
Machine AgemisClient Info667792643720613612Oil ApagedClient Info240723210825388Oil ChangedClient InfoParpedChangedChangedSample StatusIIRENORMALSEVEREABNORMALCONTAMINATIONWC Method>0.2NEGNEGNEGGlycolIWC Method>0.2NEGNEGNEGGlycolIWC Method>0.2NEGNEGNEGWAterWC MethodSIM05155>303737KononppmASTM05155>2<1	Sample Number		Client Info		SBP0006518	SBP0004343	SBP0002527	
Machine AgemisClient Info667792643720613612Di AgoMisClient Info24072321082538Di ChangedClient InfoParedChangedChangedSample StatusIIRENORMALSEVEREABNORMALCONTAMINATIONWC MethodPareNEGNEGNEGGlycolVC MethodPareNEGNEGNEGGlycolPareWC MethodPareNEGNEGNEGWARF METALSWC MethodPareSTM DS1553737KondppmASTM DS155>2< <td>1100NickelppmASTM DS155>30312VickelppmASTM DS155>30000BanduminumppmASTM DS155>3011414CopperppmASTM DS155>3012114CadmiumppmASTM DS15550100ADDTIVESmethodImit/basecurrentHistory1History2ManganeseppmASTM DS15510000ADDTIVESmethodImit/basecurrentHistory14ManganeseppmASTM DS15510000ADDTIVESmethodImit/basecurrentHistory14MandumppmASTM DS15510000ADDTIVESmethodImit/base<</td> <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>29 May 2024</td> <td>01 May 2023</td> <td>31 Jan 2023</td>	1100NickelppmASTM DS155>30312VickelppmASTM DS155>30000BanduminumppmASTM DS155>3011414CopperppmASTM DS155>3012114CadmiumppmASTM DS15550100ADDTIVESmethodImit/basecurrentHistory1History2ManganeseppmASTM DS15510000ADDTIVESmethodImit/basecurrentHistory14ManganeseppmASTM DS15510000ADDTIVESmethodImit/basecurrentHistory14MandumppmASTM DS15510000ADDTIVESmethodImit/base<	Sample Date		Client Info		29 May 2024	01 May 2023	31 Jan 2023
Chianged Sample Status Client Info Changed ABNORMAL Changed SEVERE Changed ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Kornon ppm ASTM D5185m >80 35 37 37 Chromium ppm ASTM D5185m >2 <1	Machine Age	mls	Client Info		-		613612	
Sample Status Image of the second secon	Oil Age	mls	Client Info		24072	32108	25388	
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG NEG Silvol WC Method Imit/base current history1 history2 WEAR METALS method Imit/base current history1 history2 ron ppm ASTM D5185m >55 3 1 2 Vickel ppm ASTM D5185m >5 3 1 2 Silver ppm ASTM D5185m >30 0 0 0 Silver ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >5 <1	Oil Changed		Client Info		Changed	Changed	Changed	
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imit/base current history1 history2 Iron ppm ASTM D5185m >5 3 1 2 Iron ppm ASTM D5185m >2 <1	Sample Status				ABNORMAL	SEVERE	ABNORMAL	
Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 3 1 2 Nickel ppm ASTM D5185m >2 <1	CONTAMINATION	١	method	limit/base	current	history1	history2	
WEAR METALS method limit/base current history1 history2 iron ppm ASTM D5185m >80 35 37 37 Shromium ppm ASTM D5185m >2 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
Iron ppm ASTM D5185m >80 35 37 37 Chromium ppm ASTM D5185m >5 3 1 2 Nickel ppm ASTM D5185m >2 <1	Glycol		WC Method		NEG	NEG	NEG	
Dromium ppm ASTM D5185m >5 3 1 2 Nickel ppm ASTM D5185m >2 <1	WEAR METALS		method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >2 <1 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 4 2 1 Lead ppm ASTM D5185m >30 4 2 1 Copper ppm ASTM D5185m >5 <1	Iron	ppm	ASTM D5185m	>80	35	37	37	
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >30 4 2 1 Lead ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >150 4 <1	Chromium	ppm	ASTM D5185m	>5	3	1	2	
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 4 2 1 Lead ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >150 4 <10 <11 Vanadium ppm ASTM D5185m >5 <1 0 <10 <11 Vanadium ppm ASTM D5185m >5 <1 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 0 0 0 ADD1TIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 0 0 0 Maganese ppm ASTM D5185m 0 11 <1 <1 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus	Nickel	ppm	ASTM D5185m	>2	<1	0	0	
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 4 2 1 Lead ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >150 4 <10 21 Vanadium ppm ASTM D5185m >5 <1 0 0 0 Vanadium ppm ASTM D5185m >5 <10 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 0 ADDITIVES method limi/base current history1 history2 Barium ppm ASTM D5185m 0 0 0 0 0 Magnesiem ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Nbosphorus <thp< td=""><td>Titanium</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>0</td><td>0</td><td>0</td></thp<>	Titanium	ppm	ASTM D5185m		0	0	0	
Aluminum ppm ASTM D5185m >30 4 2 1 Lead ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >150 4 <1	Silver		ASTM D5185m	>3	0	0	0	
Lead ppm ASTM D5185m >30 1 21 14 Copper ppm ASTM D5185m >150 4 <1 2 Tin ppm ASTM D5185m >5 <1 0 <1 Vanadium ppm ASTM D5185m 5 <1 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 Magnesiam ppm ASTM D5185m 0 11 <1 <1 <1 Magnesium ppm ASTM D5185m 0 1 <1 <1< <1< Calcium ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm	Aluminum		ASTM D5185m	>30	4	2	1	
Copper ppm ASTM D5185m >150 4 <1 2 Tin ppm ASTM D5185m >5 <1	Lead			>30	1	21	14	
Tin ppm ASTM D5185m >5 <1 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 49 54 45 Maganese ppm ASTM D5185m 0 1 <1					4	<1	2	
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 29 1 26 Barium ppm ASTM D5185m 0 0 0 0 Magnaese ppm ASTM D5185m 0 49 54 45 Magneseium ppm ASTM D5185m 0 1 <1								
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 29 1 26 Barium ppm ASTM D5185m 0 0 0 0 0 0 Manganese ppm ASTM D5185m 0 1 <1 <1 <1 Magnesium ppm ASTM D5185m 0 1 <1 <1 <1 Calcium ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 Solicon ppm								
Boron ppm ASTM D5185m 0 29 1 26 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 49 54 45 Manganese ppm ASTM D5185m 0 1 <1								
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 49 54 45 Manganese ppm ASTM D5185m 0 1 <1	ADDITIVES		method	limit/base	current	history1	history2	
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 49 54 45 Manganese ppm ASTM D5185m 0 1 <1	Boron	ppm	ASTM D5185m	0	29	1	26	
Molybdenum ppm ASTM D5185m 60 49 54 45 Manganese ppm ASTM D5185m 0 1 <1	Barium	ppm	ASTM D5185m	0	0	0	0	
Manganese ppm ASTM D5185m 0 1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus ppm ASTM D5185m 1150 801 834 679 Zinc ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5.8 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624	Molybdenum			60	49	54	45	
Magnesium ppm ASTM D5185m 1010 571 832 491 Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus ppm ASTM D5185m 1150 801 834 679 Zinc ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5.8 5.8 INFRA-RED Method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/m *ASTM D7624	-		ASTM D5185m	0	1	<1	<1	
Calcium ppm ASTM D5185m 1070 1506 1037 1427 Phosphorus ppm ASTM D5185m 1150 801 834 679 Zinc ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5.8 10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3	-				5 71	832	491	
Phosphorus ppm ASTM D5185m 1150 801 834 679 Zinc ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 6 5 4 Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5 4 Fuel % ASTM D5185m >20 6 5 4 Soto % % ASTM D5185m >20 6 10.3 10.4 INFRA-RED method limit/base current <	0		ASTM D5185m	1070		1037	1427	
Zinc ppm ASTM D5185m 1270 925 1078 862 Sulfur ppm ASTM D5185m 2060 2792 2810 2074 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 6 5 4 Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5 4 Fuel % ASTM D5324 >5 ▲ 2.2 ▲ 9.3 ▲ 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/.1mm< *ASTM D7415					-			
SulfurppmASTM D5185m2060279228102074CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>20759SodiumppmASTM D5185m>20654PotassiumppmASTM D5185m>20654ChlorineppmASTM D5185m>20654Fuel%ASTM D5185m>20654INFRA-REDpmASTM D5185m>20▲9.3▲5.8INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>32.41.61.6NitrationAbs/cm*ASTM D7624>209.610.310.4SulfationAbs/1mm*ASTM D7415>3023.927.525.7FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/1mm*ASTM D7414>2519.130.725.8								
Silicon ppm ASTM D5185m >20 7 5 9 Sodium ppm ASTM D5185m >20 5 10 8 Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5 4 Fuel % ASTM D5185m >20 6 5 4 INFRA-RED Method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/1mm *ASTM D7415 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8								
Sodium ppm ASTM D5185m 5 10 8 Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m >20 6 5 4 Fuel % ASTM D5185m Fuel % ASTM D5185m >5 ▲ 2.2 ▲ 9.3 ▲ 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	CONTAMINANTS		method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m < 2.0 6 5 4 Fuel % ASTM D5185m 2.2 9.3 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7624 >20 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7614 >25 19.1 30.7 25.8	Silicon	ppm	ASTM D5185m	>20	7	5	9	
Potassium ppm ASTM D5185m >20 6 5 4 Chlorine ppm ASTM D5185m < 2.0 6 5 4 Fuel % ASTM D5185m 2.2 9.3 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7624 >20 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7614 >25 19.1 30.7 25.8	Sodium	ppm	ASTM D5185m		5	10	8	
Chlorine ppm ASTM D5185m Fuel % ASTM D3524 >5 ▲ 2.2 ▲ 9.3 ▲ 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/lm *ASTM D7615 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/lm *ASTM D7414 >25 19.1 30.7 25.8			ASTM D5185m	>20	6	5	4	
Fuel % ASTM D3524 >5 ▲ 2.2 ● 9.3 ▲ 5.8 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	Chlorine		ASTM D5185m					
Soot % % *ASTM D7844 >3 2.4 1.6 1.6 Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	Fuel		ASTM D3524	>5	A 2.2	9 .3	▲ 5.8	
Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7615 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	INFRA-RED		method	limit/base	current	history1	history2	
Nitration Abs/cm *ASTM D7624 >20 9.6 10.3 10.4 Sulfation Abs/.1mm *ASTM D7615 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	Soot %	%	*ASTM D7844	>3	2.4	1.6	1.6	
Sulfation Abs/.1mm *ASTM D7415 >30 23.9 27.5 25.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8	Nitration	Abs/cm	*ASTM D7624	>20		10.3	10.4	
Oxidation Abs/.1mm *ASTM D7414 >25 19.1 30.7 25.8								
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2	
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.9 ▲ 3.2 6.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.1	30.7	25.8	
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.9	3 .2	6.8	

Submitted By: AARON MERITHEW



OIL ANALYSIS REPORT



Report Id: SCHPLA [WUSCAR] 06212889 (Generated: 06/21/2024 23:11:49) Rev: 1

Submitted By: AARON MERITHEW

Page 2 of 2