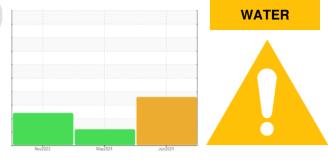


OIL ANALYSIS REPORT

SAMPLE INFORMATION method

Sample Rating Trend

limit/base



history1

current

history2

Machine Id

SENNEBOGEN 840E MH-82

Left Swing Drive Fluid AW HYDRAULIC OIL ISO 46 (--- LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. We recommend an early resample to monitor this condition.

🔺 Wear

Gear wear is indicated.

Contamination

There is a high concentration of water present in the oil.

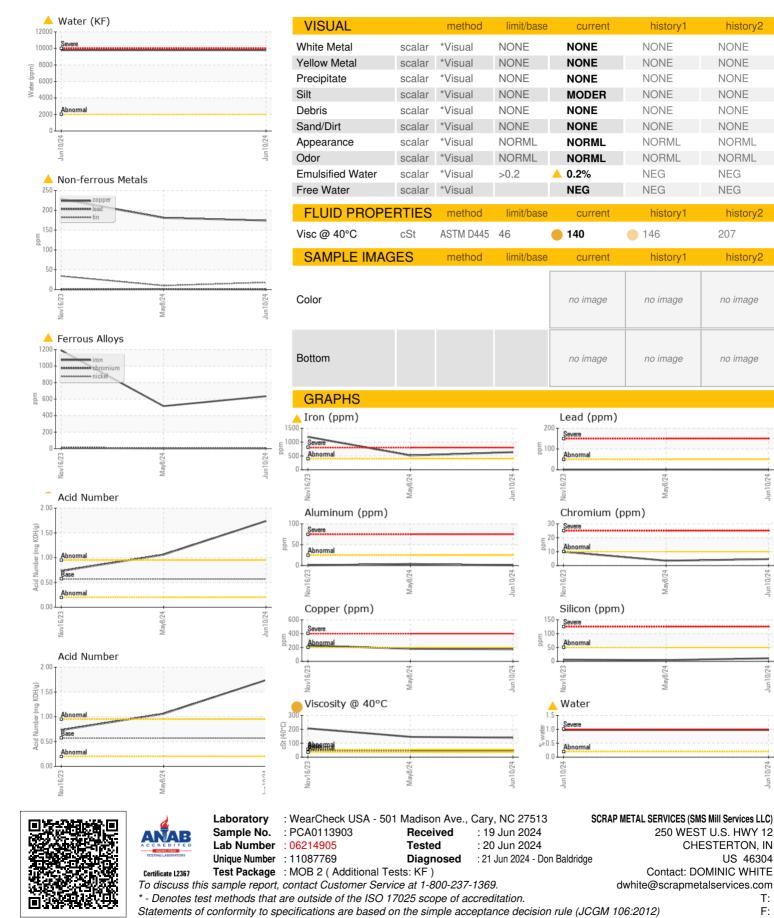
Fluid Condition

The oil viscosity is higher than normal. Confirm oil type. The AN level is acceptable for this fluid.

Sample Number Client Info PCA0113903 PCA0124482 PCA0112788 Sample Date IClient Info I0 Jun 2024 08 May 2024 16 Nov 2023 Machine Age hrs Client Info 3318 2811 230 Oil Age hrs Client Info S00 1000 0 Oil Changed rs Client Info Not Changed Changed Changed Sample Status Imit Obs current history1 history2 Iron pp ASTM D5185m >10 5 4 10 Nickel ppm ASTM D5185m >10 <1				initi base	Current		Thistory 2
Machine Age hrs Client Info 3318 2811 230 Oil Age hrs Client Info 500 1000 0 Oil Changed Client Info Not Changed Changed Changed Sample Status method Imit/base current history1 history2 Iron ppm ASTM D5185m >400 635 515 1190 Chromium ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m >10 <1 2 2 Nickel ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m >50 0 <1 0 Gopper ppm ASTM D5185m >200 174 181 4228 Tin ppm ASTM D5185m >10 <18 10 <34 Vanadium ppm ASTM D5185m 5 154 74	Sample Number		Client Info		PCA0113903	PCA0124482	PCA0112788
Oil Age hrs Client Info 500 1000 0 Oil Changed Client Info Not Changd Changed Changed Sample Status Image Image ABNORMAL ABNORMAL ABNORMAL WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >400 635 515 4 10 Nickel ppm ASTM D5185m >10 5 4 10 Silver ppm ASTM D5185m 0 <1 0 0 Aluminum ppm ASTM D5185m >50 0 <1 0 Copper ppm ASTM D5185m >50 0 <1 0 Cadminum ppm ASTM D5185m >10 18 10 .34 Vanadium ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 1 2	Sample Date		Client Info		10 Jun 2024	08 May 2024	16 Nov 2023
Oil Changed Sample StatusClient InfoNot Changed ABNORMALChanged ABNORMALChanged ABNORMALChanged ABNORMALWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>4006355151190OhromiumppmASTM D5185m>105410NickelppmASTM D5185m0<1122TitaniumppmASTM D5185m0<110SilverppmASTM D5185m0<10<10CopperppmASTM D5185m>500<10CopperppmASTM D5185m>200174181▲ 228TinppmASTM D5185m>10▲ 1810▲ 34VanadiumppmASTM D5185m<1<10CadmiumppmASTM D5185m51547414BariumppmASTM D5185m5<120MagnesiumppmASTM D5185m5<120MagnesiumppmASTM D5185m25572CalciumppmASTM D5185m20051584PhosphorusppmASTM D5185m20051584PhosphorusppmASTM D5185m2502140299405046ContradiumppmASTM D5185m2501146Sodiumppm <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>3318</th> <th>2811</th> <th>230</th>	Machine Age	hrs	Client Info		3318	2811	230
Sample Status Image: Status Method Imit/base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >400 635 515 1190 Chromium ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m >10 <1 0 <1 0 Silver ppm ASTM D5185m >25 <1 4 <10 Lead ppm ASTM D5185m >200 174 181 <228 Tin ppm ASTM D5185m >200 174 181 <228 Tin ppm ASTM D5185m >10 18 10 <34 Vanadium ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 5 7 2 Boron ppm ASTM	Oil Age	hrs	Client Info		500	1000	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >4000 ▲ 635 ▲ 515 ▲ 1190 Chromium ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m >25 <1 4 <1 Aluminum ppm ASTM D5185m >25 <1 4 <1 Lead ppm ASTM D5185m >25 <1 4 <1 Copper ppm ASTM D5185m >200 174 181 ▲ 248 Tin ppm ASTM D5185m >10 ▲ 18 10 ▲ 34 Vanadium ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 158 4 9 Magnaese ppm ASTM D5185m 200	Oil Changed		Client Info		Not Changd	Changed	Changed
Iron ppm ASTM D5185m >400 ▲ 635 ▲ 515 ▲ 119 Chromium ppm ASTM D5185m >10 5 4 10 Nickel ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m 0 <1 0 Aluminum ppm ASTM D5185m >25 <1 4 <1 Lead ppm ASTM D5185m >50 0 <1 0 Copper ppm ASTM D5185m >200 174 181 ▲ 228 Tin ppm ASTM D5185m >200 174 181 ▲ 34 Vanadium ppm ASTM D5185m >0 <1 0 Cadmium ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 <1 2 0 Magnesium ppm ASTM D5185m 5 <1 2	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Chromium ppm ASTM D5185m >10 5 4 10 Nickel ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m 0 <1 0 Silver ppm ASTM D5185m 0 <1 0 Aluminum ppm ASTM D5185m >50 0 <1 0 Copper ppm ASTM D5185m >50 0 <1 0 Copper ppm ASTM D5185m >200 174 181 ▲ 228 Tin ppm ASTM D5185m >10 ▲ 18 10 ▲ 34 Vanadium ppm ASTM D5185m >10 ▲ 18 0 ▲ 34 Vanadium ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 <1 2 0 Magnesium ppm ASTM D5185m 5 <1 2 0 <	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >10 <1 2 2 Titanium ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>400	6 35	5 15	1 190
Titanium ppm ASTM D5185m 0 <1 0 Silver ppm ASTM D5185m >25 <1	Chromium	ppm	ASTM D5185m	>10	5	4	10
Silver ppm ASTM D5185m 0 <1 0 Aluminum ppm ASTM D5185m >25 <1	Nickel	ppm	ASTM D5185m	>10	<1	2	2
Aluminum ppm ASTM D5185m >25 <1 4 <1 Lead ppm ASTM D5185m >50 0 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >50 0 <1	Silver	ppm	ASTM D5185m		0	<1	0
Copper ppm ASTM D5185m >200 174 181 ▲ 228 Tin ppm ASTM D5185m >10 ▲ 18 10 ▲ 34 Vanadium ppm ASTM D5185m >10 ▲ 18 10 ▲ 34 Vanadium ppm ASTM D5185m 0 <1	Aluminum	ppm	ASTM D5185m	>25	<1	4	<1
Tin ppm ASTM D5185m >10 ▲ 18 10 ▲ 34 Vanadium ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>50	0	<1	0
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m <1	Copper	ppm	ASTM D5185m	>200	174	181	<u> </u>
CadmiumppmASTM D5185m<1<1<10ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m51547414BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1	Tin	ppm	ASTM D5185m	>10	<mark>/</mark> 18	10	4 34
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m51547414BariumppmASTM D5185m5000MolybdenumppmASTM D5185m5<1	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron ppm ASTM D5185m 5 154 74 14 Barium ppm ASTM D5185m 5 0 0 0 Molybdenum ppm ASTM D5185m 5 <1	Cadmium	ppm	ASTM D5185m		<1	<1	0
Barium ppm ASTM D5185m 5 0 0 0 Molybdenum ppm ASTM D5185m 5 <1 2 0 Manganese ppm ASTM D5185m 5 <1 2 0 Magnesium ppm ASTM D5185m 25 5 7 2 Calcium ppm ASTM D5185m 200 51 58 4 Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 <t< th=""><th>ADDITIVES</th><th></th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 5 <1 2 0 Manganese ppm ASTM D5185m 7 4 9 Magnesium ppm ASTM D5185m 25 5 7 2 Calcium ppm ASTM D5185m 200 51 58 4 Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water $%$ ASTM D5185m >20 3 3 2 ppm Water ppm ASTM D6304 >0.2 0.9790 <	Boron	ppm	ASTM D5185m	5	154	74	14
Magnesse ppm ASTM D5185m 7 4 9 Magnesium ppm ASTM D5185m 25 5 7 2 Calcium ppm ASTM D5185m 200 51 58 4 Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water % ASTM D5185m >20 3 3 2 ppm Water ppm ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790	Barium	ppm	ASTM D5185m	5	0	0	0
Magnesium ppm ASTM D5185m 25 5 7 2 Calcium ppm ASTM D5185m 200 51 58 4 Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water ppm ASTM D5185m >20 3 3 2 ppm Water ppm ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base	Molybdenum	ppm	ASTM D5185m	5	<1	2	0
Calcium ppm ASTM D5185m 200 51 58 4 Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water ppm ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Manganese						
Phosphorus ppm ASTM D5185m 300 1013 463 353 Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Manganooo	ppm	ASTM D5185m		7	4	9
Zinc ppm ASTM D5185m 370 70 107 101 Sulfur ppm ASTM D5185m 2500 21402 9940 5046 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	•			25			
SulfurppmASTM D5185m25002140299405046CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>501146SodiumppmASTM D5185m253PotassiumppmASTM D5185m>20332Water%ASTM D6304>0.20.979ppm WaterppmASTM D6304>20009790FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Magnesium	ppm	ASTM D5185m		5	7	2
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>501146SodiumppmASTM D5185m253PotassiumppmASTM D5185m>20332Water%ASTM D6304>0.20.9779ppm WaterppmASTM D6304>20009790FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	200	5 51	7 58	2 4
Silicon ppm ASTM D5185m >50 11 4 6 Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	200 300	5 51 1013	7 58 463	2 4 353
Sodium ppm ASTM D5185m 2 5 3 Potassium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 ▲ 0.979 ppm Water ppm ASTM D6304 >2000 ▲ 9790 FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370	5 51 1013 70	7 58 463 107	2 4 353 101
Potassium ppm ASTM D5185m >20 3 3 2 Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370 2500	5 51 1013 70 21402	7 58 463 107 9940	2 4 353 101 5046
Water % ASTM D6304 >0.2 0.979 ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	200 300 370 2500 limit/base	5 51 1013 70 21402 current	7 58 463 107 9940 history1	2 4 353 101 5046 history2
ppm Water ppm ASTM D6304 >2000 9790 FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370 2500 limit/base	5 51 1013 70 21402 current 11	7 58 463 107 9940 history1 4	2 4 353 101 5046 history2 6
FLUID DEGRADATION method limit/base current history1 history2	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370 2500 limit/base >50	5 51 1013 70 21402 current 11 2	7 58 463 107 9940 history1 4 5	2 4 353 101 5046 history2 6 3
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370 2500 limit/base >50 >20	5 51 1013 70 21402 <u>current</u> 11 2 3	7 58 463 107 9940 history1 4 5 3	2 4 353 101 5046 history2 6 3 2
Acid Number (AN) mg KOH/g ASTM D8045 0.57 1.74 1.06 0.73	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm tTS ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	200 300 370 2500 limit/base >50 >20 >0.2	5 51 1013 70 21402 current 11 2 3 3 ▲ 0.979	7 58 463 107 9940 history1 4 5 3 3	2 4 353 101 5046 history2 6 3 2 2
	Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Water ppm Water	ppm ppm ppm ppm ppm TS ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304	200 300 370 2500 limit/base >50 >20 >20 >0.2 >2000	5 51 1013 70 21402 current 11 2 3 ▲ 0.979 ▲ 9790	7 58 463 107 9940 history1 4 5 3 	2 4 353 101 5046 history2 6 3 2



OIL ANALYSIS REPORT



Report Id: SCRBURIN [WUSCAR] 06214905 (Generated: 06/23/2024 04:56:36) Rev: 1

Contact/Location: DOMINIC WHITE - SCRBURIN

US 46304

T:

F:

CHESTERTON, IN

history2

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history2

history2

no image

no image

NEG

NEG

207