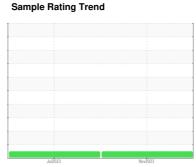


OIL ANALYSIS REPORT

Sam







Machine Id HEB MLU2

Lube System

NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The water content is negligible. There is no indication of any contamination in the oil.

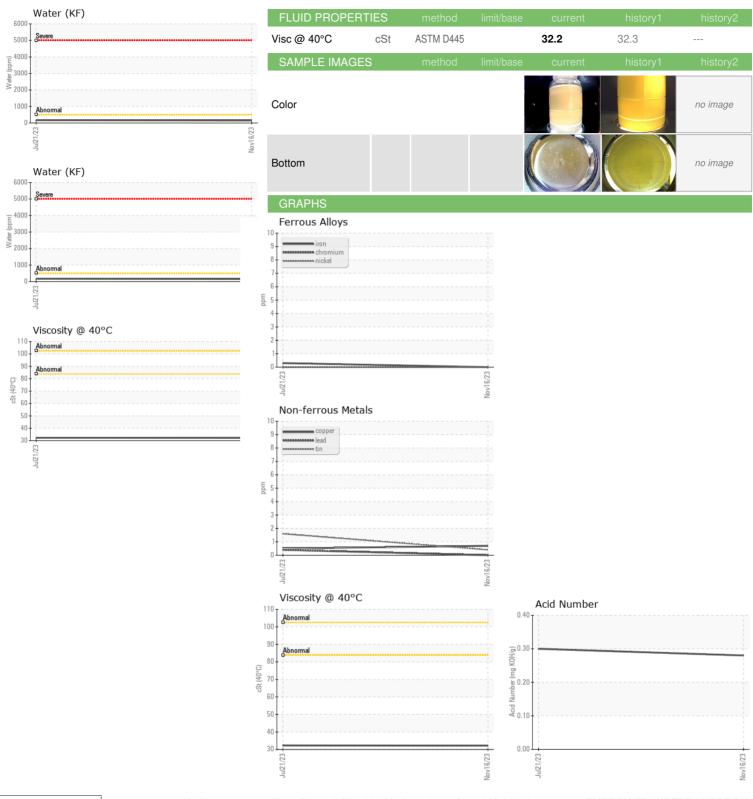
Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2				Jul2023	Nov2023		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0	Sample Number		Client Info		RP0036149	RP0032965	
Oil Age hrs Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 <1 Chromium ppm ASTM D5185m >20 0 0 Nickel ppm ASTM D5185m >20 0 0 Silver ppm ASTM D5185m >20 0 0 Aluminum ppm ASTM D5185m >20 0 Aluminum ppm ASTM D5185m >20 0 Aluminum ppm ASTM D5185m >20 0 Aluminum ppm ASTM D5185m >20 0 -1 Capper ppm ASTM D5185m >20 0 0 <	Sample Date		Client Info		16 Nov 2023	21 Jul 2023	
Oil Changed Sample Status Client Info N/A N/A N/A	Machine Age	hrs	Client Info		0	0	
NORMAL N	Oil Age	hrs	Client Info		0	0	
Iron	Oil Changed		Client Info		N/A	N/A	
Iron	Sample Status				NORMAL	NORMAL	
Chromium ppm ASTM D5185m >20 0 0	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>20	0	<1	
Titanium	Chromium	ppm	ASTM D5185m	>20	0	0	
Silver	Nickel	ppm	ASTM D5185m	>20	0	0	
Aluminum	Titanium	ppm	ASTM D5185m		0	0	
Lead	Silver	ppm	ASTM D5185m		0	0	
Copper ppm ASTM D5185m >20 -1 -1	Aluminum	ppm	ASTM D5185m	>20	0	0	
Tin ppm ASTM D5185m >20 <1 2	Lead	ppm	ASTM D5185m	>20	0	<1	
Vanadium ppm ASTM D5185m <1 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 6 69 Magnesium ppm ASTM D5185m 6 5 Calcium ppm ASTM D5185m 5 4 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 5 10 10 Zinc ppm ASTM D5185m >15 10 10 <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>20</td> <th><1</th> <td><1</td> <td></td>	Copper	ppm	ASTM D5185m	>20	<1	<1	
Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 64 69 Calcium ppm ASTM D5185m 6 5 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 Zinc ppm ASTM D5185m 9 7 Zinc ppm ASTM D5185m 3 0 Zinc ppm ASTM D5185m 15 10 10	Tin	ppm	ASTM D5185m	>20	<1	2	
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	
Boron	Cadmium	ppm	ASTM D5185m		0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 64 69 Magnesium ppm ASTM D5185m 64 69 Calcium ppm ASTM D5185m 5 4 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >20 0 1 Sodium ppm ASTM D5185m >20 0 1 Vater % ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 0.016 Potassium ppm AS	Boron	ppm	ASTM D5185m		0	0	
Manganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 64 69 Calcium ppm ASTM D5185m 6 5 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 1 Vater % ASTM D5084b >0.015 0.016 </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th><1</th> <td>0</td> <td></td>	Barium	ppm	ASTM D5185m		<1	0	
Magnesium ppm ASTM D5185m 64 69 Calcium ppm ASTM D5185m 6 5 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >20 0 1 Potassium ppm ASTM D5185m >20 0 1 Vater % ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 1 Potassium ppm ASTM D5185m >20 0 0.015 0.016 Vater	Molybdenum	ppm	ASTM D5185m		0	0	
Calcium ppm ASTM D5185m 6 5 Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >20 0 1 Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 1 Water % ASTM D5185m >20 0 0.016 Potassium ppm ASTM D5185m >20 0 0.016	Manganese	ppm	ASTM D5185m		0	0	
Phosphorus ppm ASTM D5185m 5 4 Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D6304 >0.05 0.015 0.016 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D8045 0.28 0.30 FLUID DEGRADATION method limit/base current history1 history2 VISUAL method limit/base current history1 hi	Magnesium	ppm	ASTM D5185m		64	69	
Zinc ppm ASTM D5185m 9 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m >20 0 1 Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D6304 >0.05 0.015 0.016 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE	Calcium	ppm	ASTM D5185m		6	5	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D6304 >0.05 0.015 0.016 Water % ASTM D6304 >500 152 168.5 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHlg ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE <	Phosphorus	ppm	ASTM D5185m		5	4	
Silicon ppm ASTM D5185m >15 10 10 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D6304 >0.05 0.015 0.016 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar	Zinc	ppm	ASTM D5185m		9	7	
Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D6304 >0.05 0.015 0.016 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Aside Number (AN) mg KOH/g ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Silt <th>CONTAMINANTS</th> <th>\$</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINANTS	\$	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 1 Water % ASTM D6304 >0.05 0.015 0.016 ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg K0Hg ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML	Silicon	ppm	ASTM D5185m	>15	10	10	
Water % ASTM D6304 > 0.05 0.015 0.016 ppm Water ppm ASTM D6304 > 500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Sodium	ppm	ASTM D5185m		3	0	
ppm Water ppm ASTM D6304 >500 152 168.5 FLUID DEGRADATION method limit/base current history1 history2 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emu	Potassium	ppm	ASTM D5185m	>20	0	1	
FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.30 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 Silt scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Codor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Water	%	ASTM D6304	>0.05	0.015	0.016	
Acid Number (AN) mg KOH/g ASTM D8045 0.28 0.30 VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Codor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	ppm Water	ppm	ASTM D6304	>500	152	168.5	
VISUAL method limit/base current history1 history2 White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	FLUID DEGRADA	NOITA	method	limit/base	current	history1	history2
White Metal scalar *Visual NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Acid Number (AN)	mg KOH/g	ASTM D8045		0.28	0.30	
Yellow Metalscalar*VisualNONENONENONEPrecipitatescalar*VisualNONENONENONESiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEG	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	White Metal	scalar	*Visual	NONE		NONE	
Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE LIGHT Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Debrisscalar*VisualNONENONELIGHTSand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEG	Precipitate	scalar	*Visual	NONE		NONE	
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.05NEGNEG		scalar	*Visual	NONE	NONE	NONE	
Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Debris	scalar	*Visual	NONE		LIGHT	
Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.05 NEG NEG	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.05 NEG NEG	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Odor	scalar	*Visual	NORML	NORML	NORML	
Free Meter	Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	
Free Water scalar *Visual NEG on: Step@ce ManagerENEHER	Free Water	scalar	*Visual		NEG	on: Stell (Coe Mar	nagerENEHEB



OIL ANALYSIS REPORT







Laboratory Sample No. Lab Number Unique Number : 10776404

: RP0036149 : 06026613

Test Package : IND 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 06 Dec 2023

Diagnosed : 08 Dec 2023 Diagnostician : Jonathan Hester **ENERGY TRANSFER - HEBRON**

HEBRON, KY US 41048

Contact: Service Manager

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)

T:

F: