

OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Machine Id HOWE PUMP OUT (S/N 01061-005-1-01-01)

Refrigeration Compressor

USPI 1009-68 SC (--- QTS)

DIAGNOSIS

A Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

A Wear

The iron level is abnormal.

Contamination

There is a moderate amount of visible silt present in the sample.

Fluid Condition

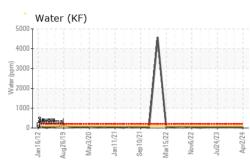
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

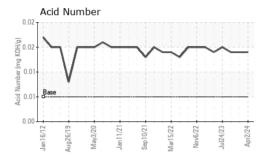
Sample Date Client Info 02 Apr 2024 03 Jan 2024 08 Oct 202 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A ABNORMAL ABN	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info N/A N/A N/A Sample Status Client Info N/A ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history history Iron ppm ASTM D5185m >2 0 <1	Sample Number		Client Info		USP0008122	USP0004630	USP0001404
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imitibase current Nistory1 Nistory1 WEAR METALS method Imitibase current Nistory1 Nistory1 Iron ppm ASTM 05185m >2 0 <1	Sample Date		Client Info		02 Apr 2024	03 Jan 2024	08 Oct 2023
Oil Changed Sample Status Client Info N/A N/A N/A N/A ABNORMAL ABNORMAL	Machine Age	hrs	Client Info		0	0	0
Oil Changed Client Info N/A N/A N/A N/A N/A Sample Status Im Imit/Dase current ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >8 61 37 31 Chromium ppm ASTM D5185m >2 0 <1	Oil Age	hrs	Client Info		0	0	0
Sample Status method limit/base current history1 history1 Iron ppm ASTM D5185m >8 61 37 31 Chromium ppm ASTM D5185m >2 0 <1	-		Client Info		N/A	N/A	N/A
Iron ppm ASTM D5185m >8 61 37 31 Chromium ppm ASTM D5185m >2 0 <1	-				ABNORMAL	ABNORMAL	ABNORMAL
Dromium ppm ASTM D5185m >2 0 <1 0 Nickel ppm ASTM D5185m 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m 2 0 <1 0 Nickel ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>8	6 1	37	▲ 31
Titanium ppm ASTM D5185m 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 1 0 Lead ppm ASTM D5185m >2 2 3 <1	Chromium	ppm	ASTM D5185m	>2	0	<1	0
Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 1 0 Lead ppm ASTM D5185m >3 0 1 0 Copper ppm ASTM D5185m >2 2 3 -1 Copper ppm ASTM D5185m >4 5 3 3 Vanadium ppm ASTM D5185m <4	Nickel		ASTM D5185m		0	<1	0
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 1 0 Lead ppm ASTM D5185m >2 2 3 <1	Titanium		ASTM D5185m		0	<1	0
Aluminum ppm ASTM D5185m >3 0 1 0 Lead ppm ASTM D5185m >2 2 3 <1	Silver		ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >2 2 3 <1 Copper ppm ASTM D5185m >8 17 13 12 Tin ppm ASTM D5185m >4 5 3 3 Vanadium ppm ASTM D5185m <1	Aluminum		ASTM D5185m	>3	0	1	0
Copper ppm ASTM D5185m >8 17 13 12 Tin ppm ASTM D5185m >4 5 3 3 Vanadium ppm ASTM D5185m <1	Lead		ASTM D5185m	>2	2	3	<1
Tin ppm ASTM D5185m >4 5 3 3 Vanadium ppm ASTM D5185m <1	Copper		ASTM D5185m	>8	17	13	12
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1							
Cadmium ppm ASTM D5185m <1 <1 <1 <1 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 <1 0 Magnese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 0 <1 <1 <1 <1 <1 Calcium ppm ASTM D5185m 0 0 <1 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1							
Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 0 <1							÷
Barium ppm ASTM D5185m 0 <1 0 <1 Molybdenum ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td>0</td> <td>0</td>	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTW D5185m 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 0<	Barium	ppm	ASTM D5185m		0	0	<1
Magnesium ppm ASTM D5185m 0 <1 0 Calcium ppm ASTM D5185m 0 <1	Molybdenum	ppm	ASTM D5185m		0	<1	0
Calcium ppm ASTM D5185m 0 <1 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Zinc ppm ASTM D5185m 0 0 0 <1 0 Sulfur ppm ASTM D5185m 50 0 0 0 0 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >15 1 1 <1	Manganese	ppm	ASTM D5185m		1	<1	<1
Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 50 0 0 <1 Sulfur ppm ASTM D5185m 50 0 0 0 0 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >15 1 1 <1 <1 Sodium ppm ASTM D5185m >15 1 0 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 <1 Water % ASTM D5185m >20 <1 <1 <1 <1 Water % ASTM D5185m >20 <1 <1 <1 <1 Water % ASTM D5185m >20 <1 <1 <1 <1 Particles >4µm ASTM D6304 >0.01 0.002 0.003 0.003 0.003 <t< td=""><td>Magnesium</td><td>ppm</td><td>ASTM D5185m</td><td></td><td>0</td><td><1</td><td>0</td></t<>	Magnesium	ppm	ASTM D5185m		0	<1	0
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Zinc ppm ASTM D5185m 0 0 <1 Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >15 1 1 <1	Phosphorus	ppm	ASTM D5185m		0	0	0
Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >15 1 1 <1 Sodium ppm ASTM D5185m >15 1 1 <1 <1 Sodium ppm ASTM D5185m >20 <1 <1 <1 <1 Potassium ppm ASTM D5185m >20 <1 <1 <1 <1 Water % ASTM D5185m >20 <1 <1 <1 <1 Water % ASTM D6304 >0.01 0.002 0.003 0.003 ppm Water ppm ASTM D6304 >100 17 28 28.4 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >2500 331707 348570 Particles >14µm		ppm	ASTM D5185m		0	0	<1
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Sodium ppm ASTM D5185m 1 0 0 Potassium ppm ASTM D5185m >20 <1	Silicon	mqq	ASTM D5185m	>15	1	1	<1
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Particles >38μm ASTM D7647 >20 0 0 Particles >71μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 ▲ 26/25/16 ▲ 26/25/22 FLUID DEGRADATION method limit/base current history1 history	Particles >14µm		ASTM D7647	>320		<u> </u>	🔺 25600
Particles >71μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 ▲ 26/25/16 ▲ 26/25/22 FLUID DEGRADATION method limit/base current history1 history	Particles >21µm		ASTM D7647	>80		36	▲ 965
Particles >71μm ASTM D7647 >4 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 ▲ 26/25/16 ▲ 26/25/22 FLUID DEGRADATION method limit/base current history1 history			ASTM D7647	>20		0	0
Oil Cleanliness ISO 4406 (c) >20/18/15 ▲ 26/25/16 ▲ 26/25/22 FLUID DEGRADATION method limit/base current history1 history			ASTM D7647	>4		0	0
· · · · · · · · · · · · · · · · · · ·						▲ 26/25/16	▲ 26/25/22
Acid Number (AN) mg KOH/g ASTM D974 0.005 0.014 0.014 0.014	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D974	0.005	0.014	0.014	0.014

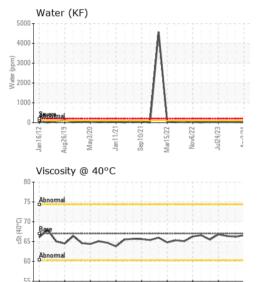
Contact/Location: SERVICE MANAGER - TYSCOU Page 1 of 2



OIL ANALYSIS REPORT







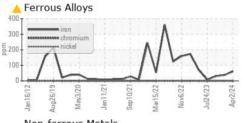
an11/7 Sep 10/2

Aua26/19

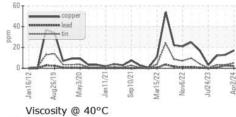
Jan 16/12

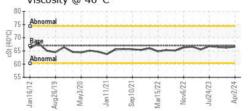
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	A MODER	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	67	66.6	66.2	66.4
SAMPLE IMAGE	S	method	limit/base	current	history1	history2
Color				• • •	·	
Bottom					(6)	











: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

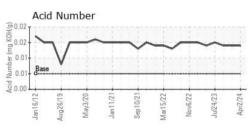
Diagnosed

Tested

: 02 Apr 2024

: 04 Apr 2024

: 04 Apr 2024 - Doug Bogart



TYSON-COUNCIL BLUFFS-USP

COUNCIL BLUFFS, IA US Contact: SERVICE MANAGER

Test Package : IND 2 To discuss this sample report, contact Customer Service at 1-800-237-1369.

: USP0008122

* - 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:

Certificate 12367

Nov6/22 lu|24/23

Laboratory

Sample No.

Lab Number : 06136930

Unique Number : 10956395

Mar15/22

Contact/Location: SERVICE MANAGER - TYSCOU Page 2 of 2