



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL

Area
TPR-Houston Port

Machine Id
481142 112360

Component
Swing Drive

Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0023373	DJJ0023392	DJJ0018819
Sample Date		Client Info		14 Jun 2024	20 Mar 2024	19 Jan 2024
Machine Age	hrs	Client Info		13308	12756	12110
Oil Age	hrs	Client Info		500	1000	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Changed	N/A
Filter Changed		Client Info		Not Changd	Changed	N/A
Sample Status				ABNORMAL	SEVERE	SEVERE

WEAR

The iron level has decreased, but is still abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>400	▲ 400	▲ 1362	▲ 821
Chromium	ppm	ASTM D5185m	>10	4	▲ 12	7
Nickel	ppm	ASTM D5185m	>10	<1	2	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>25	3	2	<1
Lead	ppm	ASTM D5185m	>50	0	<1	0
Copper	ppm	ASTM D5185m	>200	58	▲ 216	68
Tin	ppm	ASTM D5185m	>10	<1	5	5
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

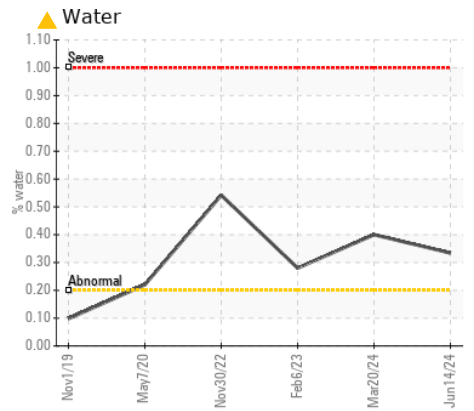
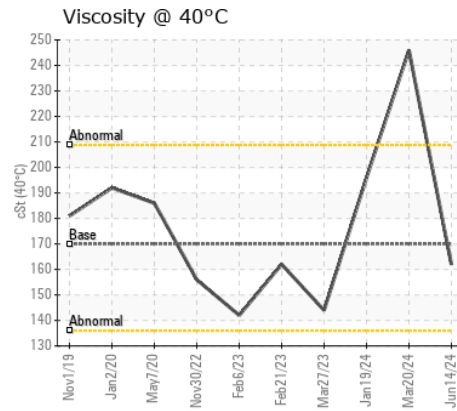
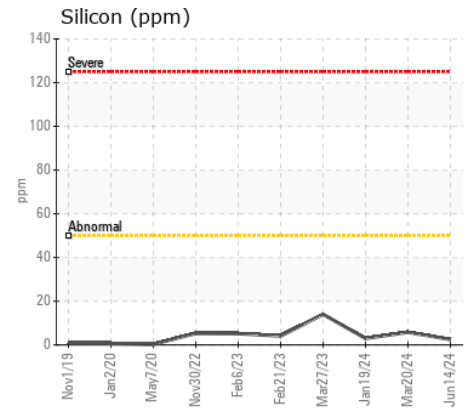
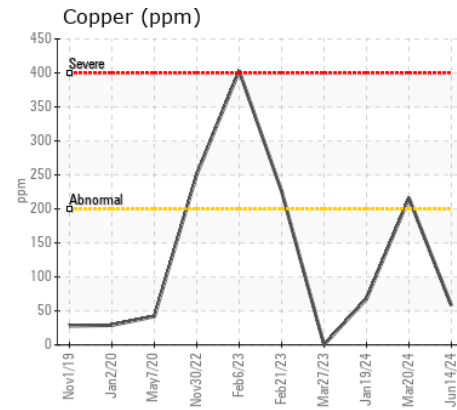
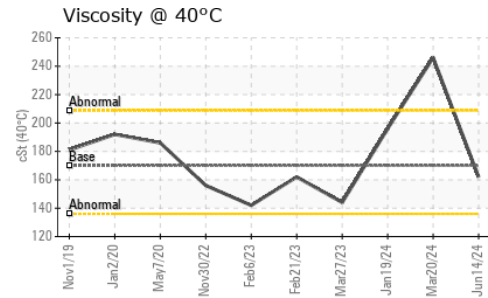
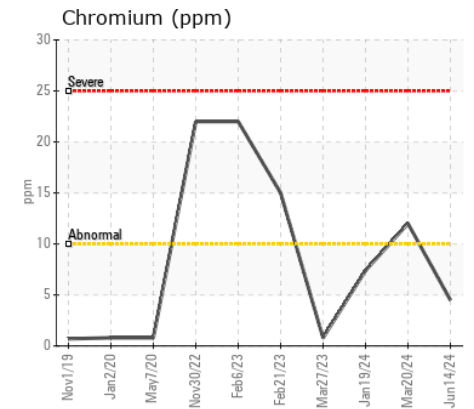
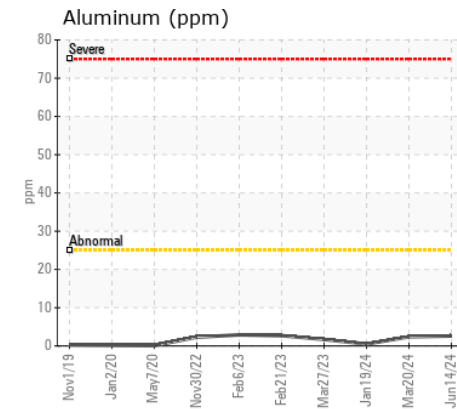
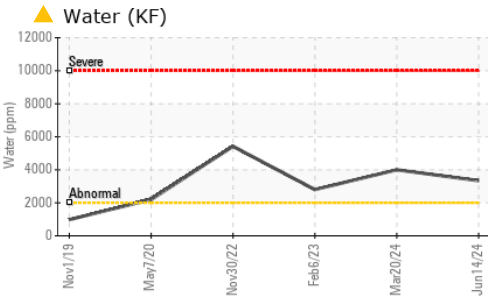
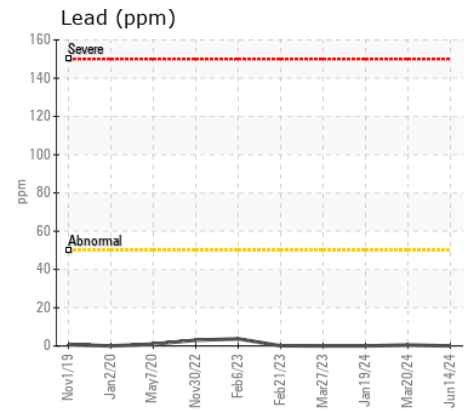
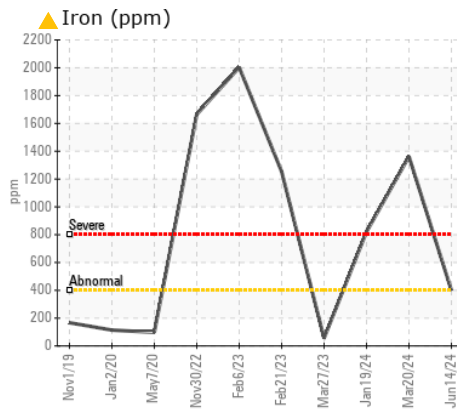
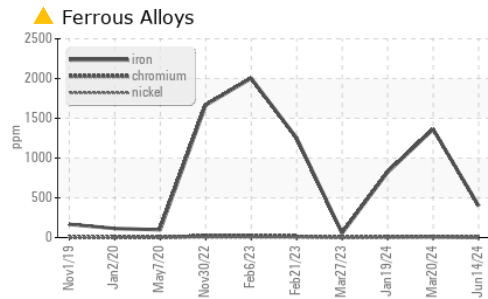
There is a light concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>50	2	6	3
Potassium	ppm	ASTM D5185m	>20	1	2	1
Water	%	ASTM D6304	>0.2	▲ 0.334	▲ 0.400	---
ppm Water	ppm	ASTM D6304	>2000	▲ 3340	▲ 4000	---
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	0.2%	▲ 0.2%	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		0	<1	2
Boron	ppm	ASTM D5185m	0	34	4	2
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	<1	1	0
Manganese	ppm	ASTM D5185m	0	2	12	7
Magnesium	ppm	ASTM D5185m	<1	143	7	8
Calcium	ppm	ASTM D5185m	<1	208	22	17
Phosphorus	ppm	ASTM D5185m	2143	1745	2330	2215
Zinc	ppm	ASTM D5185m	<1	177	29	15
Sulfur	ppm	ASTM D5185m	23468	21138	28861	25411
Visc @ 40°C	cSt	ASTM D445	170	162	● 246	196



Certificate L2367

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

Sample No. : DJJ0023373

Lab Number : 06226627

Unique Number : 11110120

Test Package : MOBCE (Additional Tests: KF)

Received : 02 Jul 2024

Tested : 03 Jul 2024

Diagnosed : 05 Jul 2024 - Don Baldrige

TEXAS PORT RECYCLING - HOUSTON PORT

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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)