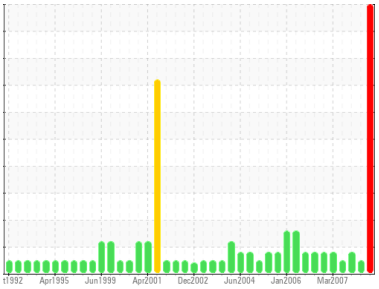
LUBE 360 DIAGNOSTICS

PROBLEM SUMMARY

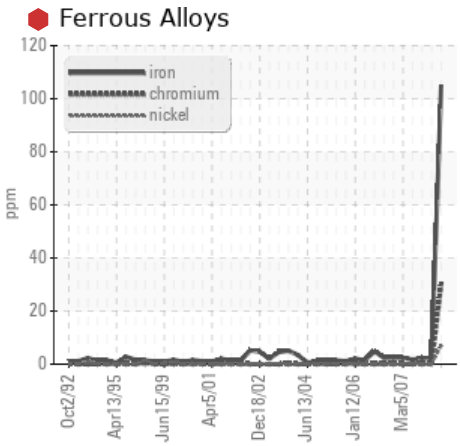
Sample Rating Trend

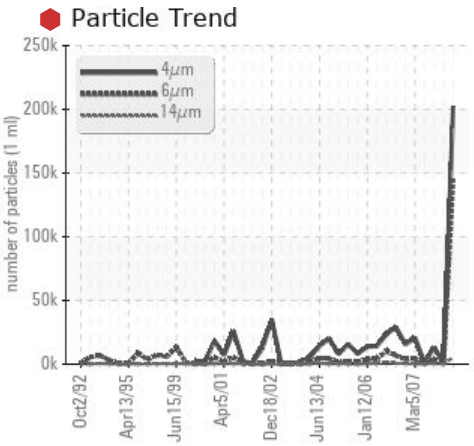


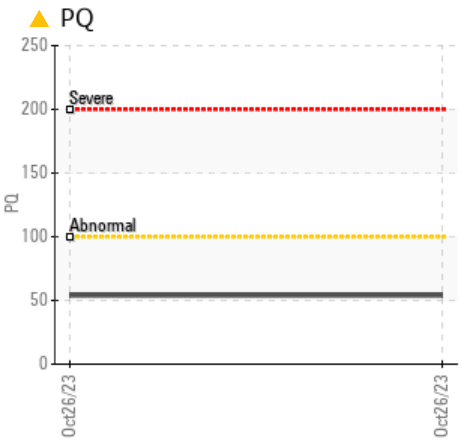
WEAR

Area
INACTIVE
Machine Id
166182
Component
Hydraulic System
Fluid
ESSO NUTO H ISO 68 (114 LTR)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ABNORMAL
PQ		ASTM D8184*		▲ **54**	---	---
Iron	ppm	ASTM D5185(m)	>20	⬢ **105**	2	2
Chromium	ppm	ASTM D5185(m)	>20	▲ **30**	0	<1
Particles >6µm		ASTM D7647	>1300	⬢ **145727**	178	▲ 3941
Particles >14µm		ASTM D7647	>160	⬢ **5552**	20	▲ 388
Particles >21µm		ASTM D7647	>40	▲ **141**	6	126
Oil Cleanliness		ISO 4406 (c)	>--/17/14	⬢ **25/24/20**	17/15/11	▲ 21/19/16

Customer Id: CANDRY
Sample No.: PC0069857
Lab Number: 02595017
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1 (289)291-4641 x4641
Bill.Quesnel@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

24 Jan 2008 Diag:

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The condition of oil is suitable for further service.

view report

22 Oct 2007 Diag:

ISO

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.All component wear rates are normal. There is a moderate amount of particulates (5 to >100 microns in size) present in the oil. The condition of oil is suitable for further service.

view report

28 Aug 2007 Diag:

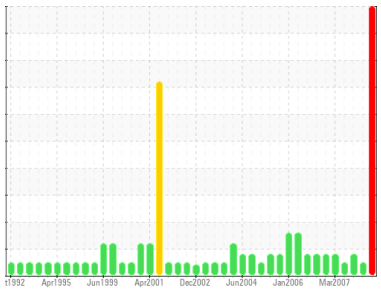
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The condition of oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
INACTIVE
Machine Id
166182
Component
Hydraulic System
Fluid
ESSO NUTO H ISO 68 (114 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

Wear

Iron ppm levels are severe. PQ levels are abnormal. Chromium ppm levels are abnormal. Cylinder or oil pump wear indicated. Cylinder liner, rod or spool wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0069857**	WC753895	WC754173
Sample Date		Client Info		**26 Oct 2023**	24 Jan 2008	22 Oct 2007
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	NORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		▲ **54**	---	---
Iron	ppm	ASTM D5185(m)	>20	⬢ **105**	2	2
Chromium	ppm	ASTM D5185(m)	>20	▲ **30**	0	<1
Nickel	ppm	ASTM D5185(m)	>20	**7**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**0**	<1	0
Lead	ppm	ASTM D5185(m)	>20	**<1**	3	4
Copper	ppm	ASTM D5185(m)	>20	**1**	33	35
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	1
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

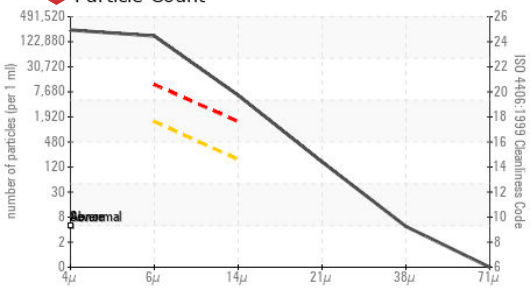
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	0	0
Barium	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	0	**3**	<1	<1
Manganese	ppm	ASTM D5185(m)		**1**	0	0
Magnesium	ppm	ASTM D5185(m)	5	**0**	<1	<1
Calcium	ppm	ASTM D5185(m)	50	**49**	27	29
Phosphorus	ppm	ASTM D5185(m)	330	**313**	341	362
Zinc	ppm	ASTM D5185(m)	420	**396**	394	423
Sulfur	ppm	ASTM D5185(m)	3100	**687**	2514	2665
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**<1**	4	5
Sodium	ppm	ASTM D5185(m)		**<1**	1	<1
Potassium	ppm	ASTM D5185(m)	>20	**0**	0	0

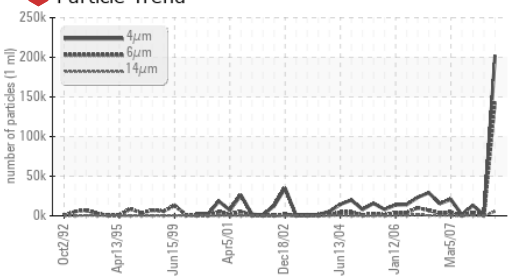
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**202248**	937	13191
Particles >6µm		ASTM D7647	>1300	⬢ **145727**	178	▲ 3941
Particles >14µm		ASTM D7647	>160	⬢ **5552**	20	▲ 388
Particles >21µm		ASTM D7647	>40	▲ **141**	6	126
Particles >38µm		ASTM D7647	>10	**4**	1	10
Particles >71µm		ASTM D7647	>3	**0**	0	1
Oil Cleanliness		ISO 4406 (c)	>--/17/14	⬢ **25/24/20**	17/15/11	▲ 21/19/16

OIL ANALYSIS REPORT

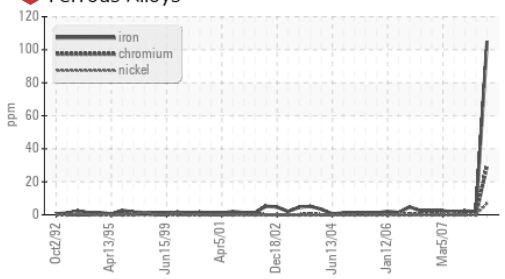
Particle Count



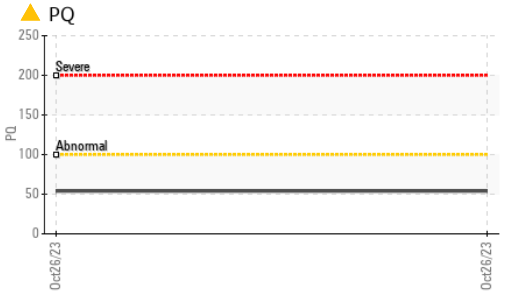
Particle Trend



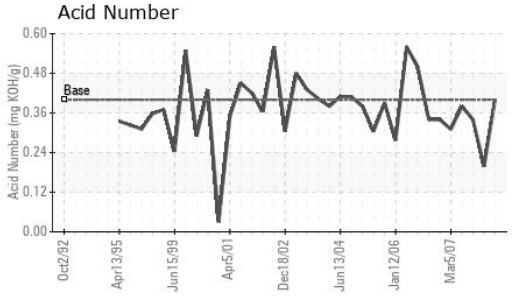
Ferrous Alloys



PQ



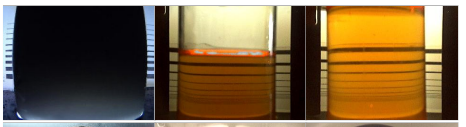
Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	.40	**0.40**	0.198	0.34

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
Debris	scalar	Visual*	NONE	**NONE**	NONE	VLITE
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*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.8	**65.9**	46.3	47.9
Visc @ 100°C	cSt	ASTM D7279(m)	8.7	**9**	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	97	**111**	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0069857 **Received** : 08 Nov 2023
Lab Number : 02595017 **Diagnosed** : 10 Nov 2023
Unique Number : 5672096 **Diagnostician** : Bill Quesnel
Test Package : IND 2 (Additional Tests: KV100, PQ, VI)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

Dryden Fibre
Box 3001, 1 Duke Street
Dryden, ON
CA P8N 2Z7
Contact: Adebukola Adekanye
AADEKANYE@DRYDENFIBRE.CA
T: (807)223-9950
F: (807)223-9176