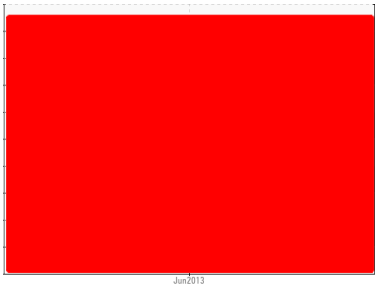
PROBLEM SUMMARY

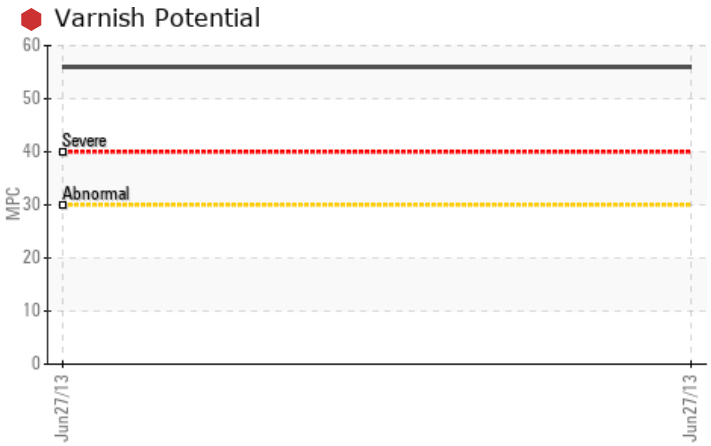
Sample Rating Trend

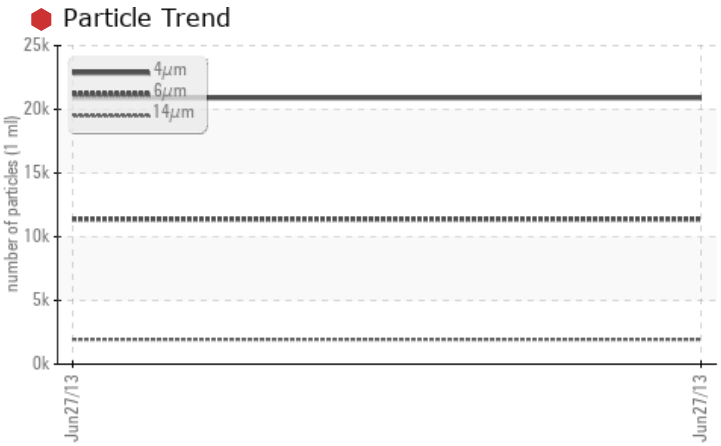


ISO

Area
E1
Machine Id
E1 Pignone Frame 5-70001 Hydraulic System
Component
Hydraulic System
Fluid
{not provided} (--- GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We recommend that you use electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Particles >4µm		ASTM D7647		▲ **20896**	---	---
Particles >6µm		ASTM D7647		⬢ **11383**	---	---
Particles >14µm		ASTM D7647		⬢ **1939**	---	---
Particles >21µm		ASTM D7647		⬢ **654**	---	---
Particles >38µm		ASTM D7647		⬢ **101**	---	---
Particles >71µm		ASTM D7647		▲ **10**	---	---
Oil Cleanliness		ISO 4406 (c)		⬢ **22/21/18**	---	---
MPC Varnish Potential	Scale	ASTM D7843	>15	⬢ **56**	---	---

Customer Id: CONANCAK
Sample No.: WCI2218541
Lab Number: 03313478
Test Package: AOM 1

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

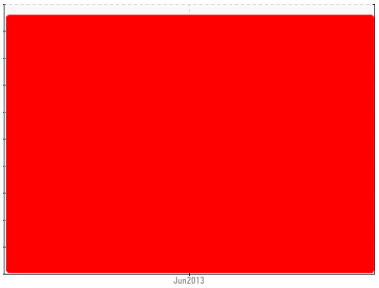
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Filter Fluid	---	---	?	We recommend that you use electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
E1
Machine Id
E1 Pignone Frame 5-70001 Hydraulic System
Component
Hydraulic System
Fluid
{not provided} (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you use electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil. MPC (Membrane Patch Calorimetery) test indicates a high concentration of varnish present.

Fluid Condition

Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WCI2218541**	---	---
Sample Date		Client Info		**27 Jun 2013**	---	---
Machine Age	hrs	Client Info		**110155**	---	---
Oil Age	hrs	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**SEVERE**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		**<1**	---	---
Chromium	ppm	ASTM D5185m		**0**	---	---
Nickel	ppm	ASTM D5185m		**0**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m		**0**	---	---
Aluminum	ppm	ASTM D5185m		**<1**	---	---
Lead	ppm	ASTM D5185m		**0**	---	---
Copper	ppm	ASTM D5185m		**<1**	---	---
Tin	ppm	ASTM D5185m		**0**	---	---
Antimony	ppm	ASTM D5185m		**0**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**<1**	---	---

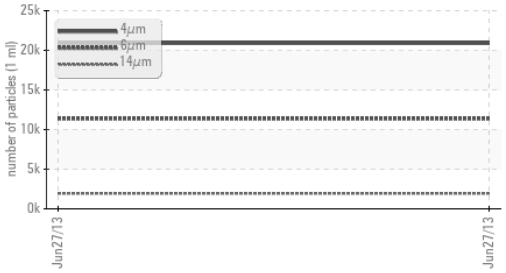
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**1**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**0**	---	---
Manganese	ppm	ASTM D5185m		**0**	---	---
Magnesium	ppm	ASTM D5185m		**81**	---	---
Calcium	ppm	ASTM D5185m		**1**	---	---
Phosphorus	ppm	ASTM D5185m		**9**	---	---
Zinc	ppm	ASTM D5185m		**1**	---	---
Sulfur	ppm	ASTM D5185m		**29668**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m		**2**	---	---
Sodium	ppm	ASTM D5185m		**25**	---	---
Potassium	ppm	ASTM D5185m		**0**	---	---

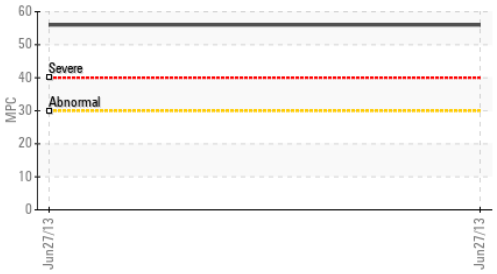
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		▲ **20896**	---	---
Particles >6µm	ASTM D7647		● **11383**	---	---
Particles >14µm	ASTM D7647		● **1939**	---	---
Particles >21µm	ASTM D7647		● **654**	---	---
Particles >38µm	ASTM D7647		● **101**	---	---
Particles >71µm	ASTM D7647		▲ **10**	---	---
Oil Cleanliness	ISO 4406 (c)		● **22/21/18**	---	---

OIL ANALYSIS REPORT

Particle Trend

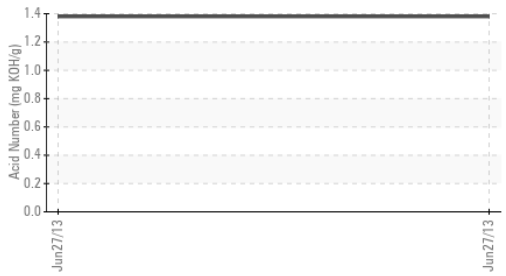


Varnish Potential

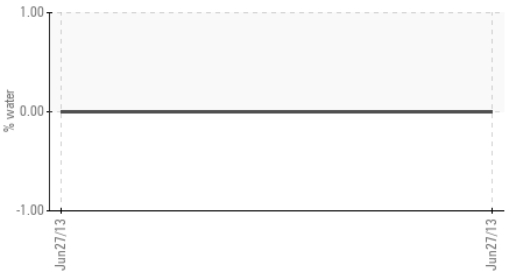


Remaining Life (RULER)

Acid Number



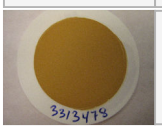
Water



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.38**	---	---
Anti-Oxidant 1	%	ASTM D6971	<25	**99**	---	---
Anti-Oxidant 2	%	ASTM D6971	<25	**25**	---	---
MPC Varnish Potential	Scale	ASTM D7843	>15	**56**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	---	---
Appearance	scalar	*Visual	NORML	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual		**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		**27.05**	---	---
Fluid Type		*In-house		***TDH_FLUID**	---	---

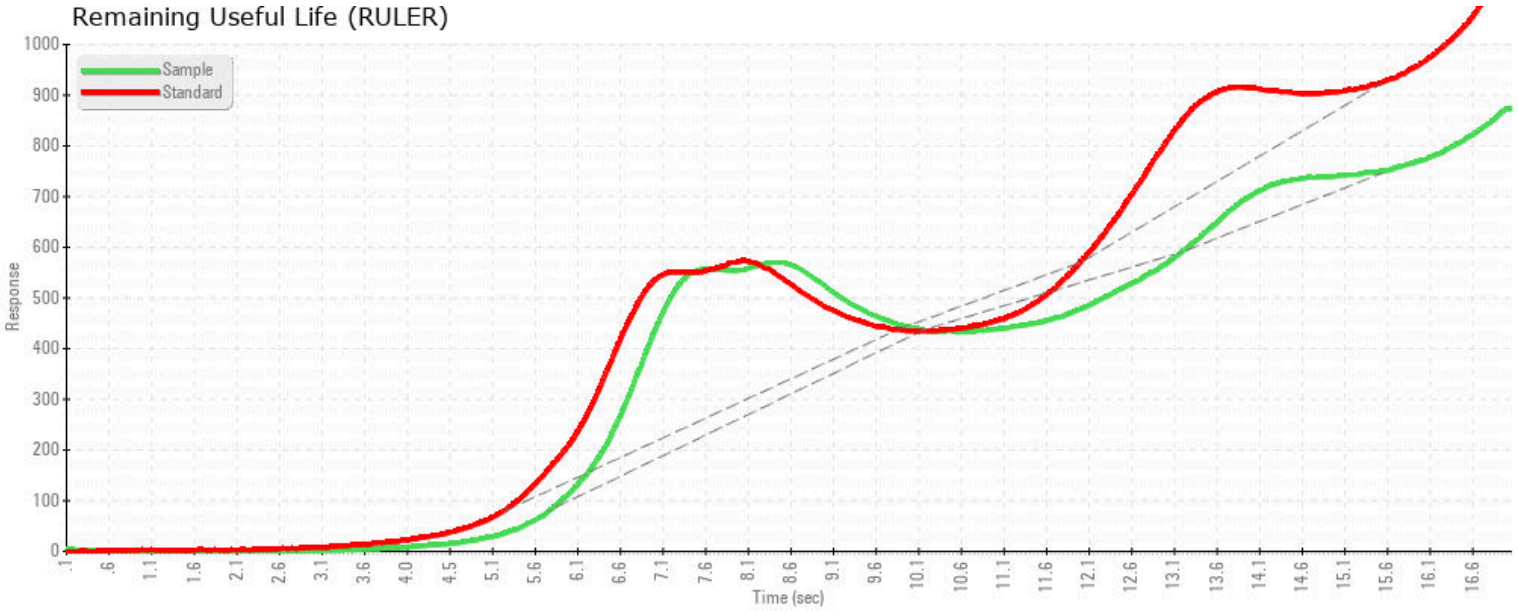
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color			*no image*	*no image*	*no image*
Bottom			*no image*	*no image*	*no image*
MPC				*no image*	*no image*

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WCI2218541 **Received** : 01 Jul 2013
Lab Number : 03313478 **Diagnosed** : 08 Jul 2013
Unique Number : 6311169 **Diagnostician** : Doug Bogart
Test Package : AOM 1 (Additional Tests: FluidDetermination, KF)

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)

Conoco Phillips ALASKA INC
C/O LAF (ALPINE), 6441 S AIRPARK PL
ANCHORAGE, AK
US 99502
Contact: Chris Van Ryzin Ben DeRaeve
alp1084@conocophillips.com
T: (907)670-4128
F: (907)670-4137



MPC (Varnish Test)

This page left intentionally blank