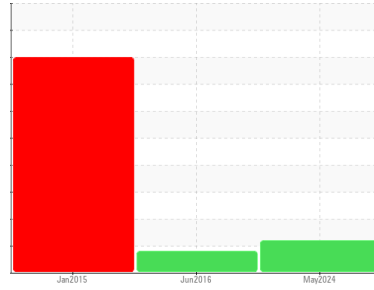


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
1420-5511-4249 PEBBLE CRUSHER HYD/LUBE SKID
Component
Circulating Oil
Fluid
PETRO CANADA SYNDURO SHB ISO150 (150 LTR)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | PC0077236 | PC349088 | PC365644 |
| Sample Date | Client Info | 02 May 2024 | 12 Jun 2016 | 21 Jan 2015 |
| Machine Age | yrs | Client Info | 0 | 2 |
| Oil Age | yrs | Client Info | 0 | 0 |
| Oil Changed | Client Info | N/A | N/A | Not Changd |
| Sample Status | | ABNORMAL | ABNORMAL | SEVERE |

CONTAMINATION

| method | limit/base | current | history1 | history2 |
|--------|------------|------------|----------|----------|
| Water | WC Method | NEG | NEG | NEG |

WEAR METALS

| method | limit/base | current | history1 | history2 | |
|-----------|-------------|-------------------|--------------|----------|----|
| PQ | ASTM D8184* | 0 | 10 | 9 | |
| Iron | ppm | ASTM D5185(m) >20 | 1 | <1 | 2 |
| Chromium | ppm | ASTM D5185(m) >20 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) >20 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) >20 | 0 | 0 | <1 |
| Lead | ppm | ASTM D5185(m) >20 | 5 | <1 | 3 |
| Copper | ppm | ASTM D5185(m) >20 | 13 | 5 | 8 |
| Tin | ppm | ASTM D5185(m) >20 | <1 | <1 | <1 |
| Antimony | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | 0 | 0 | <1 |

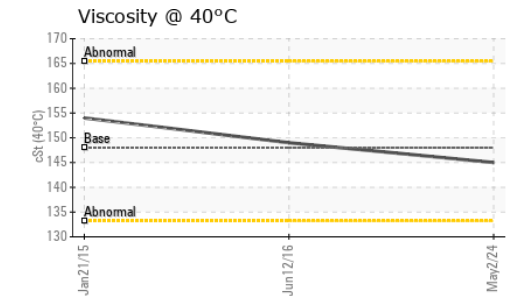
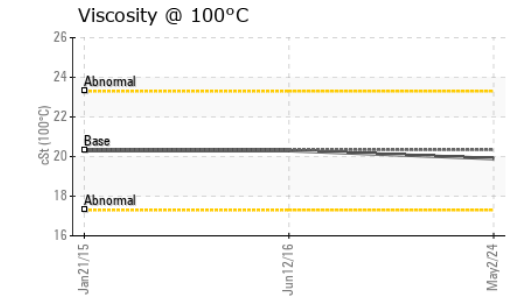
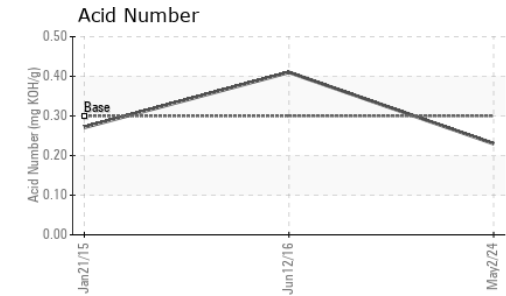
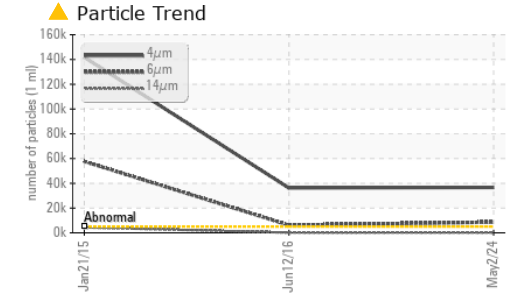
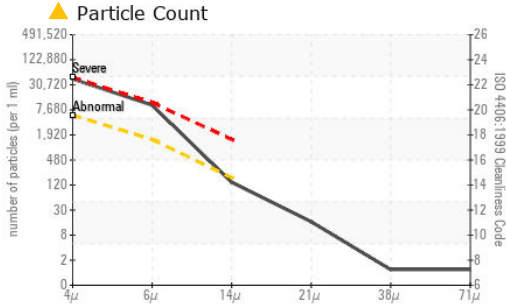
ADDITIVES

| method | limit/base | current | history1 | history2 | |
|------------|------------|--------------------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) | 0 | <1 | <1 |
| Barium | ppm | ASTM D5185(m) 5.0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | 0 | <1 |
| Manganese | ppm | ASTM D5185(m) | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) 5.0 | <1 | 0 | 0 |
| Calcium | ppm | ASTM D5185(m) 5.0 | 0 | 0 | 3 |
| Phosphorus | ppm | ASTM D5185(m) 100 | 72 | 81 | 62 |
| Zinc | ppm | ASTM D5185(m) 5.0 | 1 | 2 | 2 |
| Sulfur | ppm | ASTM D5185(m) 1900 | 1834 | 1850 | 2100 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 | |
|-----------|------------|-------------------|--------------|----------|----|
| Silicon | ppm | ASTM D5185(m) >15 | 0 | <1 | <1 |
| Sodium | ppm | ASTM D5185(m) | 0 | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) >20 | <1 | 0 | <1 |

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0077236
Lab Number : 02634559
Unique Number : 5775712
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Stn. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.com

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.

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|------------|------------|------------|
| Particles >4µm | ASTM D7647 | >5000 | ▲ 36628 | ▲ 36215 | 141767 |
| Particles >6µm | ASTM D7647 | >1300 | ▲ 8659 | ▲ 6172 | ▲ 57626 |
| Particles >14µm | ASTM D7647 | >160 | 123 | 107 | ▲ 4347 |
| Particles >21µm | ASTM D7647 | >40 | 14 | 14 | ▲ 865 |
| Particles >38µm | ASTM D7647 | >10 | 1 | 0 | ▲ 40 |
| Particles >71µm | ASTM D7647 | >3 | 1 | 0 | 4 |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | ▲ 22/20/14 | ▲ 22/20/14 | ▲ 24/23/19 |

| FLUID DEGRADATION | method | limit/base | current | history1 | history2 |
|-------------------|---------------------|------------|---------|----------|----------|
| Acid Number (AN) | mg KOH/g ASTM D974* | 0.3 | 0.23 | 0.41 | 0.271 |

| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|----------------|------------|---------|----------|----------|
| White Metal | scalar Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar Visual* | NONE | NONE | NONE | ▲ LIGHT |
| Precipitate | scalar Visual* | NONE | NONE | NONE | NONE |
| Silt | scalar Visual* | NONE | NONE | NONE | VLITE |
| 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* | | 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) | 148 | 145 | 149 | 154 |
| Visc @ 100°C | cSt ASTM D7279(m) | 20.34 | 19.9 | 20.3 | 20.3 |
| Viscosity Index (VI) | Scale ASTM D2270* | 159 | 158 | 158 | 153 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
| Color | | | | | |
| Bottom | | | | | |
| PrtFilter | | | | no image | no image |