



# CONSTRUCTION EQUIPMENT

## VOLVO ECR145EL 314199 - HYDRAULIC SYSTEM



**Sample No:** VCP432019  
**Oil Type:** VOLVO SUPER HYDRAULIC OIL 46  
**Job No:**



### SAMPLE INFORMATION

|               |                    |             |             |     |
|---------------|--------------------|-------------|-------------|-----|
| Sample Number | <b>VCP432019</b>   | VCP335392   | VCP291303   | --- |
| Sample Date   | <b>05 Feb 2024</b> | 22 Sep 2021 | 04 Dec 2020 | --- |
| Machine Hours | <b>1932</b>        | 960         | 449         | --- |
| Oil Hours     | <b>0</b>           | 960         | 449         | --- |
| Oil Changed   | <b>N/A</b>         | Not Changd  | Not Changd  | --- |
| Sample Status | <b>NORMAL</b>      | NORMAL      | NORMAL      | --- |

### RIPA AND ASSOCIATES

10149 FISHER AVENUE  
 TAMPA, FL  
 US 33619  
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### OIL CONDITION

|                  |          |             |      |       |     |
|------------------|----------|-------------|------|-------|-----|
| Visc @ 40°C      | cSt      | <b>47.1</b> | 43.8 | 44.2  | --- |
| Acid Number (AN) | mg KOH/g | <b>0.52</b> | 0.44 | 0.417 | --- |



### CONTAMINATION

|                   |     |                 |          |          |     |
|-------------------|-----|-----------------|----------|----------|-----|
| Water             | %   | <b>NEG</b>      | NEG      | NEG      | --- |
| Particles >4µm    |     | <b>4861</b>     | 17246    | 3387     | --- |
| Particles >6µm    |     | <b>548</b>      | 1102     | 987      | --- |
| Particles >14µm   |     | <b>30</b>       | 102      | 113      | --- |
| ISO 4406:1999 (c) |     | <b>19/16/12</b> | 21/17/14 | 19/17/14 | --- |
| Silicon           | ppm | <b>8</b>        | 2        | 2        | --- |
| Sodium            | ppm | <b>5</b>        | 0        | <1       | --- |
| Potassium         | ppm | <b>6</b>        | 0        | 0        | --- |

### Diagnosis

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



### WEAR METALS

|            |     |              |    |    |     |
|------------|-----|--------------|----|----|-----|
| Iron       | ppm | <b>5</b>     | 2  | 2  | --- |
| Copper     | ppm | <b>34</b>    | 46 | 39 | --- |
| Lead       | ppm | <b>2</b>     | 1  | <1 | --- |
| Tin        | ppm | <b>&lt;1</b> | <1 | 0  | --- |
| Aluminum   | ppm | <b>&lt;1</b> | <1 | 0  | --- |
| Chromium   | ppm | <b>0</b>     | 0  | 0  | --- |
| Molybdenum | ppm | <b>6</b>     | <1 | 0  | --- |
| Nickel     | ppm | <b>0</b>     | 0  | 0  | --- |
| Titanium   | ppm | <b>0</b>     | 0  | 0  | --- |
| Silver     | ppm | <b>0</b>     | 0  | 0  | --- |
| Manganese  | ppm | <b>0</b>     | 0  | 0  | --- |
| Vanadium   | ppm | <b>0</b>     | 0  | 0  | --- |



### ADDITIVES

|            |     |            |     |     |     |
|------------|-----|------------|-----|-----|-----|
| Calcium    | ppm | <b>196</b> | 69  | 75  | --- |
| Magnesium  | ppm | <b>8</b>   | 0   | <1  | --- |
| Zinc       | ppm | <b>429</b> | 466 | 487 | --- |
| Phosphorus | ppm | <b>352</b> | 373 | 353 | --- |
| Barium     | ppm | <b>0</b>   | 0   | 0   | --- |
| Boron      | ppm | <b>6</b>   | <1  | 1   | --- |

**Depot:** RIPTAM  
**Unique No:** 10900651  
**Signed:** Wes Davis  
**Report Date:** 28 Feb 2024

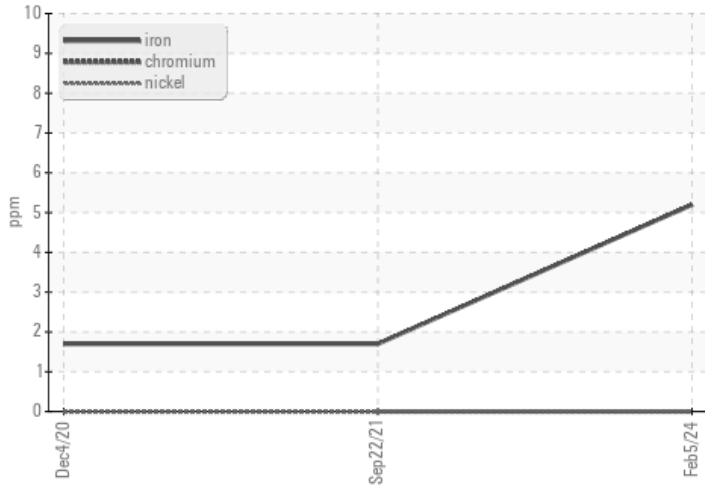


# CONSTRUCTION EQUIPMENT

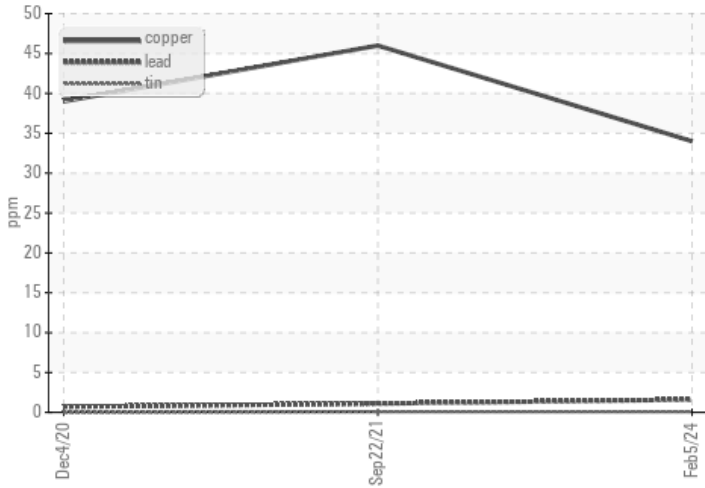


## VOLVO GRAPHS

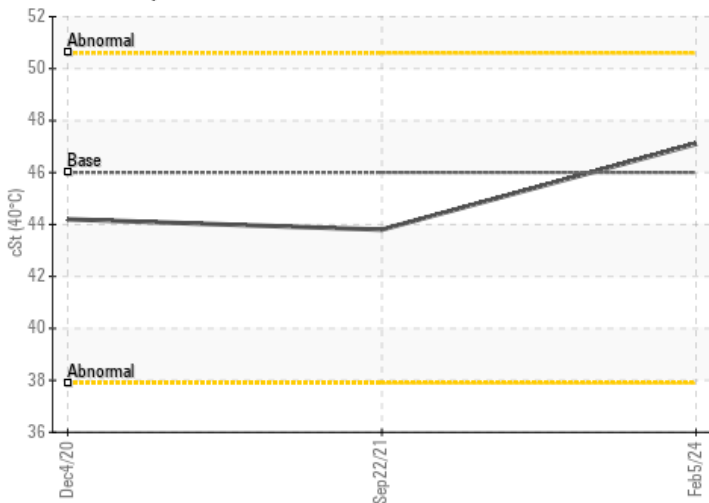
### Ferrous Alloys



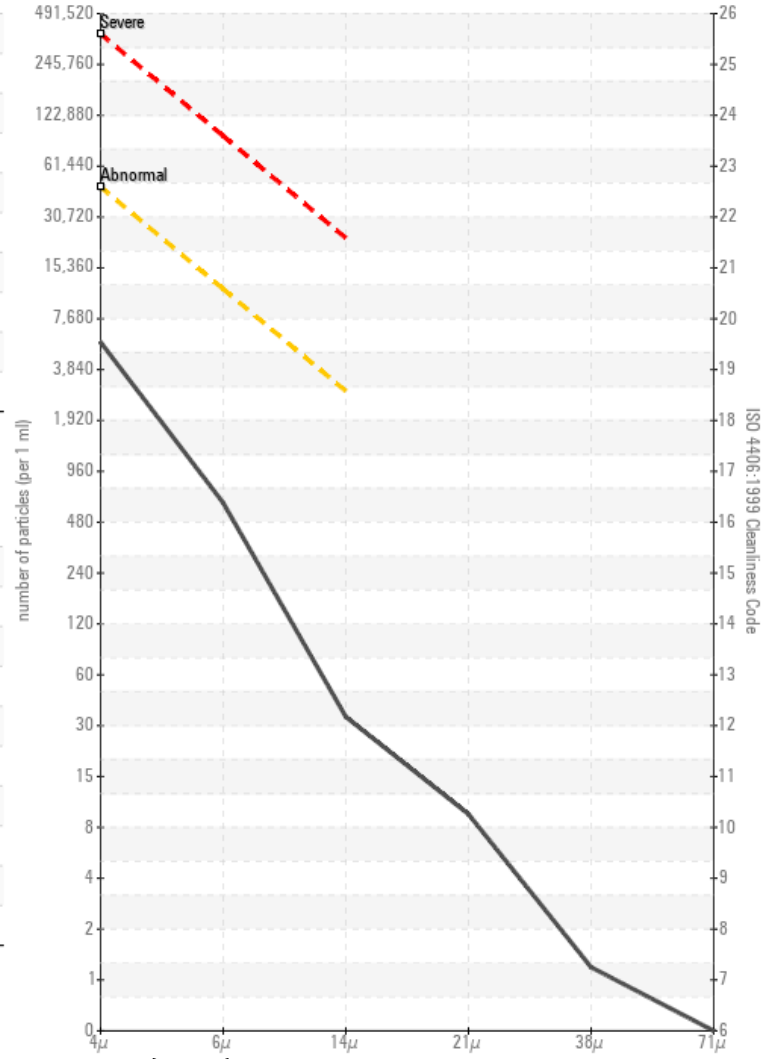
### Non-ferrous Metals



### Viscosity @ 40°C



### Particle Count



### Acid Number

