

# RIO TINTO

## Safety Notice 2002-A-19

**Date** 10-May-2002

**Classification** A - Safety Alert

**Department/Location on Site** Mine (open pit)

**Type of activity** Maintenance - field

**What happened** A truck mounted drill rig (UDR 1000) was being washed in preparation for further drilling. The operation was commenced with the mast in the horizontal position. To allow the driller to hose the under side of the mast head, the mast was raised approximately one metre above the rig carrier.

The hydraulic jacks were extended to ground level. Hosing was carried out using a high pressure hose from the ground. During this exercise the back mast hinge welds snapped causing the mast to drop down into the mast cradle damaging several rig fittings.

As the mast dropped it pivoted on the mast hydraulic lifting rams causing the mast to move back approximately 75mm at the rear mast hinge points. The two drill crew personnel were standing on the ground alongside the drill rig when the incident happened. There were no injuries.

The drilling contractor has 2 other truck mounted drill rigs on site. These were shut down and inspected by a competent person. The welds on the mast hinges of these rigs were structurally sound.

**Incident Classification** B3 - Vehicles on site - Other (including rail)

**Underlying Causes** A1 - General Safety Systems **Causes** Investigation to date has revealed the following:

Both the second pivot point mountings have failed at the weld joint. The welds appear to be the original welds from manufacture and show the following:-

- 1/ Lack of fusion
- 2/ Lack of penetration
- 3/ A large amount of porosity in the weld material
- 4/ Corrosion cracking running from the inside of the welded joint through to the porous

material.



The above problems would be consistent with the welds having a lack of shielding gas during the welding process, and is evident on both welded mountings. An amount of moisture has been able to penetrate the porous weld which has caused the welds to rust and induce corrosion cracking around the inside edges of the weld. These cracks have caused stress raisers in the weld material and allowed these cracks and porosity to combine, until they weakened the joint sufficiently to induced the failure.

**Remedial Action** The internal investigation is continuing. Representatives from the drilling contractor will make further assessments in consultation with the manufacturer.

**Product Group** Diamonds & Gold

**Business** Argyle **Contact person** David Cameron

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**Status** FINAL (no more information to come)

**Notes** [System Message: May 10 2002 2:31PM]

An email has been sent to the following Notice Approver(s) to approve the notice.

Approver: ARGYLE\HEATH.WESTAWAY  
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Heath.Westaway@argylediamonds.com.au

[System Message: May 10 2002 2:37PM]

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