Incident Brief: Netley Branch Mine Flyrock Incident (December 21, 2010)

Matter

Flyrock ejection from a surface mine blast affecting a county road, vegetation, and nearby residences

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Incident Date

December 21, 2010

Location

Netley Branch Mine

(The publicly available summaries of this incident identify the mine but provide limited information regarding the exact operator, county, and regulatory investigation details.)

Incident Type

Flyrock / uncontrolled blast ejecta

Summary

On December 21, 2010, a production blast at the **Netley Branch Mine** resulted in a significant flyrock event in which rock fragments were projected approximately:

1,200 feet (366 metres)

from the blast area.

The flyrock impacted:

- a county road,
- trees,
- and nearby homes.

The incident is cited in blasting safety literature as an example of flyrock exceeding expected containment areas and creating hazards beyond the immediate mine site.

Facts

Blast Event

During a routine mining blast:

- rock fragments were ejected beyond the intended blast zone;
- flyrock traveled approximately **366 metres**;
- the affected area extended beyond the mine boundary into areas accessible to the public.

The reported impact area included:

- public roadway infrastructure;
- surrounding vegetation;
- residential properties.

Damage and Consequences

Reported impacts included:

County Road

Flyrock reached a public road, creating a transportation hazard.

Potential consequences included:

- vehicle strikes;
- roadway obstruction;
- danger to motorists.

Vegetation

Trees in the surrounding area were impacted by flyrock.

This demonstrates that the blast effects extended well beyond the immediate excavation area.

Nearby Homes

Flyrock reached residential areas near the mine.

The available summary indicates impacts to nearby homes, but does not provide detailed information regarding:

- number of homes affected;
- specific damage;
- repair costs;
- whether occupants were present;
- whether claims were filed.

Injuries

No injuries or fatalities are reported in the available incident summaries.

However, the event involved a significant public safety exposure because flyrock reached areas containing:

- public roadway users;
- residential properties.

Technical Analysis

Flyrock Distance

The reported throw distance:

1,200 feet (366 metres)

is significant because many quarry blast exclusion zones commonly range from several hundred feet to several hundred metres depending on:

- blast design;
- regulatory requirements;
- site conditions;
- proximity to public areas.

The incident demonstrates that flyrock can travel substantial distances even during controlled mining operations.

Potential Causes Investigated in Flyrock Events

A technical investigation of such an event would typically examine:

Blast Design

- burden;
- spacing;
- explosive loading;
- stemming;
- initiation timing.

Geological Conditions

- fractures;
- faults;
- bedding planes;
- voids;
- weak zones.

Operational Controls

- blast clearance area;
- security procedures;
- warning systems;

- monitoring.

Legal and Regulatory Significance

No publicly available court decision or reported civil judgment was identified for this specific incident.

However, an event involving flyrock reaching:

- a public road, and
- residential properties

could potentially raise issues involving:

- negligence;
- unsafe blasting practices;
- failure to establish adequate exclusion zones;
- regulatory compliance;
- property damage liability.

Importance in Blasting Safety Literature

The Netley Branch Mine incident is significant because it demonstrates that:

1. **Flyrock can travel hundreds of metres beyond the blast area.**
2. **Public roads and residences can become exposed even when blasting occurs within a permitted mining operation.**
3. **Blast exclusion distances must account for worst-case outcomes, not only normal blast performance.**

Comparison With Other Documented Flyrock Events

Incident	Location	Flyrock Distance	Impact
Netley Branch Mine (2010)	United States	**366 m (1,200 ft)**	County road, trees, nearby homes impacted
Virginia highway incident (Aug. 2013)	Virginia	366 m (1,200 ft)	Flyrock landed on highway
Pakenham Quarry (2009)	Ontario	~300 m	Worker injury; vehicle/structure damage
Miller Braeside Quarry (2005)	Ontario	>400 m reported	Residential impacts
New York limestone quarry	New York	1,918 m reported	Extreme documented flyrock distance
Minnesota taconite mine	Minnesota	3,463 m reported	Extreme documented flyrock distance

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Key Finding

The Netley Branch Mine incident illustrates that a blast can project flyrock approximately **366 metres (1,200 feet)** into areas outside the active mining zone, including public roads and residential areas. The case is frequently used in blasting safety discussions as evidence that flyrock control requires conservative blast design and exclusion planning rather than reliance solely on typical operating distances.

Limitation: The publicly available record for this incident appears to be a secondary summary rather than a complete regulatory investigation report; therefore, details regarding the operator, exact location, cause analysis, and final corrective actions are not readily available.