

INVINCIBLE COLLIERY

Monthly Environmental Monitoring data

for

Castlereagh Coal

1 INTRODUCTION

Castlereagh Coal owns and operates Invincible Colliery located near Cullen Bullen in the Central West district of New South Wales. This report has been prepared pursuant to Chapter 2, Part 3.5, Condition 66(6) of the *Protection of the Environment operations Act 1997* for the publication of results of monitoring and the NSW Environmental Protection Authority guideline titled *Requirements for publish pollution monitoring data (2012)*.

2 ENVIRONMENT PROTECTION LICENCE DETAILS

Invincible Colliery (EPL 1095)

Licensee: Shoalhaven Coal Pty Ltd

Address: Invincible Colliery, Castlereagh Highway, Cullen Bullen, NSW 2790

Link: <http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50798&SYSUID=1&LICID=1095>

MONTHLY ENVIRONMENTAL MONITORING DATA

November 2019

3 AIR QUALITY

3.1 DEPOSITIONAL DUST

Depositional dust gauges for the November 2019 monitoring period were collected on 5 December 2019. All depositional dust sampling locations were in compliance with the annual average limit (4g/m²/month) for the month of November 2019. Maximum annual increase in deposited dust levels are also below the criteria limit of 2 g/m²/month. Depositional dust monitoring results are presented in **Table 1**.

Table 1 *Depositional Dust Monitoring Results*

Obtained: 16/12/2019		Premise: Invincible Colliery		
Published: 18/12/2019		Licensee: Shoalhaven Coal		
		EPL number: 1095		
		Exposure Period: 31 days		
Sampling Point	Start Date	End Date	Insoluble Solids (g/m ² /month)	Rolling Annual Average (g/m ² /month)
ID-D1 (EPA Point 3)	4/11/2019	5/12/2019	0.8	1.1
ID-D2 (EPA Point 4)	4/11/2019	5/12/2019	1.9	1.0
ID-D3 (EPA Point 5)	4/11/2019	5/12/2019	2.9	1.4
ID-D4 (EPA Point 6)	4/11/2019	5/12/2019	1.0	1.1
ID-D5 (EPA Point 7)	4/11/2019	5/12/2019	0.7	1.7
Annual Average Limit				4.0

Required Frequency: Monthly - exposure period 30 ± 2 days

3.2 PM₁₀ AND TSP (HIGH VOLUME AIR SAMPLERS)

Monitoring of particulate concentrations less than ten (10) micrometres (PM₁₀) was undertaken using High Volume Air Sampler (HV01) on a six (6) day, 24 hour run cycle. The total suspended particulate (TSP) concentration was determined from the PM₁₀ concentrations. Annual average concentrations for TSP and PM₁₀ were in compliance with the annual average limit. The 24-hour PM₁₀ concentrations for November 2019 were in compliance with the 24-hour average maximum allowable limit of 50µg/m³ with the exception of the run dates on the 22 and 28 November 2019. These elevated concentrations are considered to be due to bushfire activity in the region. A 24-hour average PM₁₀ concentration of 200µg/m³ was recorded at the Department of Planning, Industry and Environment (DPIE) Bathurst air quality monitoring station on the 22 November 2019. A 24-hour average PM₁₀ concentration of 40.6µg/m³.

PM₁₀ and TSP results for November 2019 are presented in **Table 2**.

Table 2 *High Volume Air Sampler Monitoring Results*

Obtained: 16/12/2019		Premise: Invincible Colliery	
Published: 18/12/2019		Licensee: Shoalhaven Coal	
		EPL number: 1095	
Sampling Point	Run Date	PM ₁₀ (µg/m ³)	TSP (µg/m ³)^
HVAS1 (EPA Point 3)	4-Nov-19	4	10
	10-Nov-19	5	12.5
	16-Nov-19	29	72.5
	22-Nov-19	120	300
	28-Nov-19	88	220
Annual Average		15.2	38.0
24 Hour Limit		50	--
Annual Average Limit		30	90

Note: Results in italics indicates the results were less than laboratory detection limit.

Required Frequency: Weekly – High Volume Air Sample run events occur every six days for 24 hours.

-- No Limit

4 WATER QUALITY

A discharge event is deemed to occur when water leaves the site either through the overflow channel of the Main Dam or as a result of actively pumping water. No discharge events occurred during November 2019; therefore, no sample was required to be collected at LD002. A sample at Main Dam was collected for due diligence purposes only. Water quality results are presented in **Table 3**.

Table 3 *Discharge Water Quality Results*

Sampled: 5/11/2019		Premise: Invincible Colliery		
Obtained: 18/11/2019		Licensee: Shoalhaven Coal		
Published: 18/12/2019		EPL number: 1095		
Sampling Point	Frequency	Pollutant	100 Percentile Concentration Limit ^	Sample Concentration
Main Dam ¹	Monthly (for due diligence)	pH (pH unit)	--	8.01
		TSS (mg/L)	--	16
		Oil & Grease (mg/L)	--	<5
Discharge Point 2 (EPA Point 2)	Monthly during discharge	pH (pH unit)	6.5 – 8.5	NS
		TSS (mg/L)	30	NS
		Oil & Grease (mg/L)	10	NS

NS – no sample, no discharge event.

¹ – sample collected for due diligence purposes only.

--No limit applies

5 NOISE LIMITS

Attended noise monitoring is required to be undertaken on a quarterly frequency. Environmental Noise Monitoring results for previous quarters are available on the Castlereagh Coal website: http://www.castlereaghcoal.com.au/?page_id=1101

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6 BLASTING

No blasting was undertaken during November 2019.

7 DISCLAIMER

This report is considered accurate at the date of issue with regard to current environmental conditions. Monitoring results may vary from those presented in this report following further assessment. This report must not be reproduced except in full. Results or figures from this report must not be used without acknowledgment.

Yours Faithfully,

CASTLEREAGH COAL