

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 publishing 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>

3 AIR QUALITY

3.1 DEPOSITIONAL DUST

Depositional dust gauges for the December 2021 monitoring period were collected on the 5 January 2022. All depositional dust sampling locations were in compliance with the annual average limit (4g/m²/month) for the month of December 2021. 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**.

MONTHLY ENVIRONMENTAL MONITORING DATA

December 2021

Table 1 *Depositional Dust Monitoring Results*

Obtained: 25/01/2022		Premise: Invincible Colliery		
Published: 27/01/2022		Licensee: Shoalhaven Coal		
		EPL number: 1095		
		Exposure Period: 30 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)	06-December-21	05-January-22	0.3	0.3*
ID-D2 (EPA Point 4)	06-December-21	05-January-22	0.2	0.4
ID-D3 (EPA Point 5)	06-December-21	05-January-22	0.1	0.5
ID-D4 (EPA Point 6)	06-December-21	05-January-22	0.6	0.5
ID-D5 (EPA Point 7)	06-December-21	05-January-22	0.1	0.2
Annual Average Limit				4.0

Required Frequency: Monthly - exposure period 30 ± 2 days

* Excludes the November 2021 result based on the combustible matter content.

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 December did not exceed the 24-hour average maximum allowable limit of 50µg/m³.

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

Table 2 *High Volume Air Sampler Monitoring Results*

Obtained: 25/01/2022		Premise: Invincible Colliery	
Published: 27/01/2022		Licensee: Shoalhaven Coal	
		EPL number: 1095	
Sampling Point	Run Date	PM ₁₀ (µg/m ³)	TSP (µg/m ³)^
HVAS 1 (EPA Point 3)	5-December-21	4	10
	11- December -21	3	7.5
	17- December -21	10	25
	23- December -21	9	22.5
	29- December -21	3	7.5
Rolling Annual Average (calculation period January-21 to December-21)		5.4	13.6
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

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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. Water was not observed to be discharging from the Main Dam during the site visit on 6 December 2021. A sample was collected at Discharge Point 2 (EPA Point 2) and from the Main Dam for due diligence purposes only. Water quality results are presented in **Table 3**.

Table 3 *Discharge Water Quality Results*

Sampled:	6/12/2021	Premise:	Invincible Colliery	
Obtained:	25/01/2022	Licensee:	Shoalhaven Coal	
Published:	27/01/2022	EPL number:	1095	
Sampling Point	Frequency	Pollutant	100 Percentile Concentration Limit ^	Sample Concentration
Main Dam ¹	Monthly (for due diligence)	pH (pH unit)	--	6.15
		TSS (mg/L)	--	6
		Oil & Grease (mg/L)	--	<5
Discharge Point 2 ¹ (EPA Point 2)	Weekly during discharge	pH (pH unit)	6.5 – 8.5	6.1
		TSS (mg/L)	30	19.1
		Oil & Grease (mg/L)	10	<5

¹ – sample collected for due diligence purposes only.

--No limit applies

The pH, total suspended solids (TSS) and oil and grease concentration was compliant with the EPL limits as no water was being discharged at the time of sampling.

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: www.ccoal.com.au/environmental-reporting-compliance/

6 BLASTING

No blasting was undertaken during December 2021.

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