NAMOI MINING PTY LTD

(ABN 24 071 158 373)

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

FOR THE

SUNNYSIDE COAL MINE (ML 1624 and PA 06_0308)

01 December 2013 – 30 November 2014

Namoi Mining Pty Ltd

Annual Environmental Management Report for the Sunnyside Coal Mine (ML 1624 and PA 06_0308)

MOP Commencement Date ***15-10-2008*** – MOP Completion Date ***31-09-2015***
AEMR Commencement Date ***01-12-2013*** – AEMR Completion Date ***30-11-2014***

Namoi Mining Pty Ltd

Head Office
Level 28, 259 George Street
SYDNEY NSW 2000
Phone: +61-2-8507 9700
Fax: +61-2-8507 9701

Site
Sunnyside Site Office
259 Coocooboonah Lane
Gunnedah NSW 2380
PO Box 600
GUNNEDAH NSW 2380

Gunnedah Office
Whitehaven CHPP
10409 Kamilaroi Highway
PO Box 600
GUNNEDAH NSW 2380
Phone: +61-2-6741 9301
Fax: +61-2-6742 3607

Reporting Officer: Jill Johnson

Title: Group Environment Manager

Signature: _____

Date: _____

Distribution:

- NSW Environment Protection Authority
- NSW Department of Planning and Environment
- NSW Department of Trade and Investment, Regional Infrastructure & Services – Division of Resources and Energy
- NSW Department of Trade and Investment, Regional Infrastructure & Services – Department of Primary Industries
- NSW Office of Water
- Gunnedah Shire Council
- Sunnyside Coal Mine Community Consultative Committee

TABLE OF CONTENTS

TABLES

FIGURES

PLATES

PLANS

APPENDICES

1 INTRODUCTION AND OBJECTIVES

1.1 Scope

1.1.1 Introduction and Period of Reporting

This is the sixth Annual Environmental Management Report (AEMR) produced for the Sunnyside Coal Mine, and it has been prepared in accordance with Conditions 4 and 5 of Mining Lease (ML 1624) (Mining Act 1992) and Condition 5 (Schedule 5) of PA 06_0308. The AEMR generally follows the format identified in the Department of Primary Industries - Mineral Resources (DPI-MR) document entitled *"Guidelines to the Mining, Rehabilitation and Environmental Management Process"* Version 3, dated January 2006.

Though primarily covering the period from 1st December 2013 to 30th November 2014 (the reporting period), where relevant the AEMR provides information on historical aspects of the operation and longer term trends in environmental monitoring results.

The Sunnyside Coal Mine is located within the Gunnedah Shire, approximately 15 km west of Gunnedah (Figure 1).

1.1.2 The Company

Sunnyside Coal Mine is owned by Namoi Mining Pty Ltd (NMPL) and operated by Whitehaven Coal Mining Pty Ltd. Both companies are wholly owned subsidiaries of Whitehaven Coal Limited (WCL), a publicly listed company which has several coal mining interests in the Gunnedah region of NSW.

1.1.3 Background and History of the Sunnyside Coal Mine

The Sunnyside Coal Mine was developed after substantial investigations were undertaken under Exploration Licence 5183, granted in December 1996 and renewed in June 2006, May 2008 and March 2013. Following completion of relevant assessments and studies, the Department of Planning (Now Department of Planning and Environment) provided approval to the development via Project Approval (PA) 06_0308 on the 24th September 2008. Environment Protection Licence (EPL) 12957 was granted on the 15th December 2008.

The Project Approval provided for the extraction of approximately 7 million tonnes of ROM coal, at a maximum rate of 1 million tonnes per year. The approval allows for the crushing and

screening of ROM coal at the mine site prior to transport to the Whitehaven Coal Handling and Preparation Plant (CHPP) near Gunnedah. The external boundary of ML 1624 corresponds to the project area referred to in PA 06_0308, and covers an area of approximately 234 ha.

On the 25th October 2012, Whitehaven announced that mining operations would be suspended at Sunnyside and the mine would be placed into a care and maintenance phase. The decision was made as a result of declining coal prices applicable to the quality of marketable coal at Sunnyside. Mining operations ceased in November 2012, with the remaining ROM coal stockpiled at site crushed and transported to the CHPP until stockpiles were exhausted in May 2013.

1.1.4 Products and Markets

The Hoskissons Coal Seam within the Sunnyside Mine can be described as a medium volatile bituminous coal. Overall, the coal is 9 metres thick subdivided into three run-of-mine coal plies. These plies are as follows:

- Low Ash (12%) lower section;
- High Ash (25 to 30%) mid section and
- High-high Ash (35%) upper section.

When in operation, all coal is crushed directly to -50mm at site and transported to the CHPP. The high ash is washed to produce a 15% ash coal at good yields (70 to 75%), while the other two (low ash and high-high ash) are directly bypassed to the product stockpiles at the rail load out. All coal is transported to Port of Newcastle for export thermal shipments.

1.1.5 Operational and Environmental Management

1.1.5.1 Contacts

The management personnel responsible for operational and environmental performance at the Sunnyside Coal Mine and their relevant contact details are as follows:

- Mr Jonathan Sanders, Manager Mining Engineering - retains statutory responsibility for mining activities at the site. Contact: (02) 6740 7000.
- Mr Nigel Wood, General Manager, Open Cut Operations - oversees Open Cut Operations for the Whitehaven Group. Contact: (02) 6741 9309.

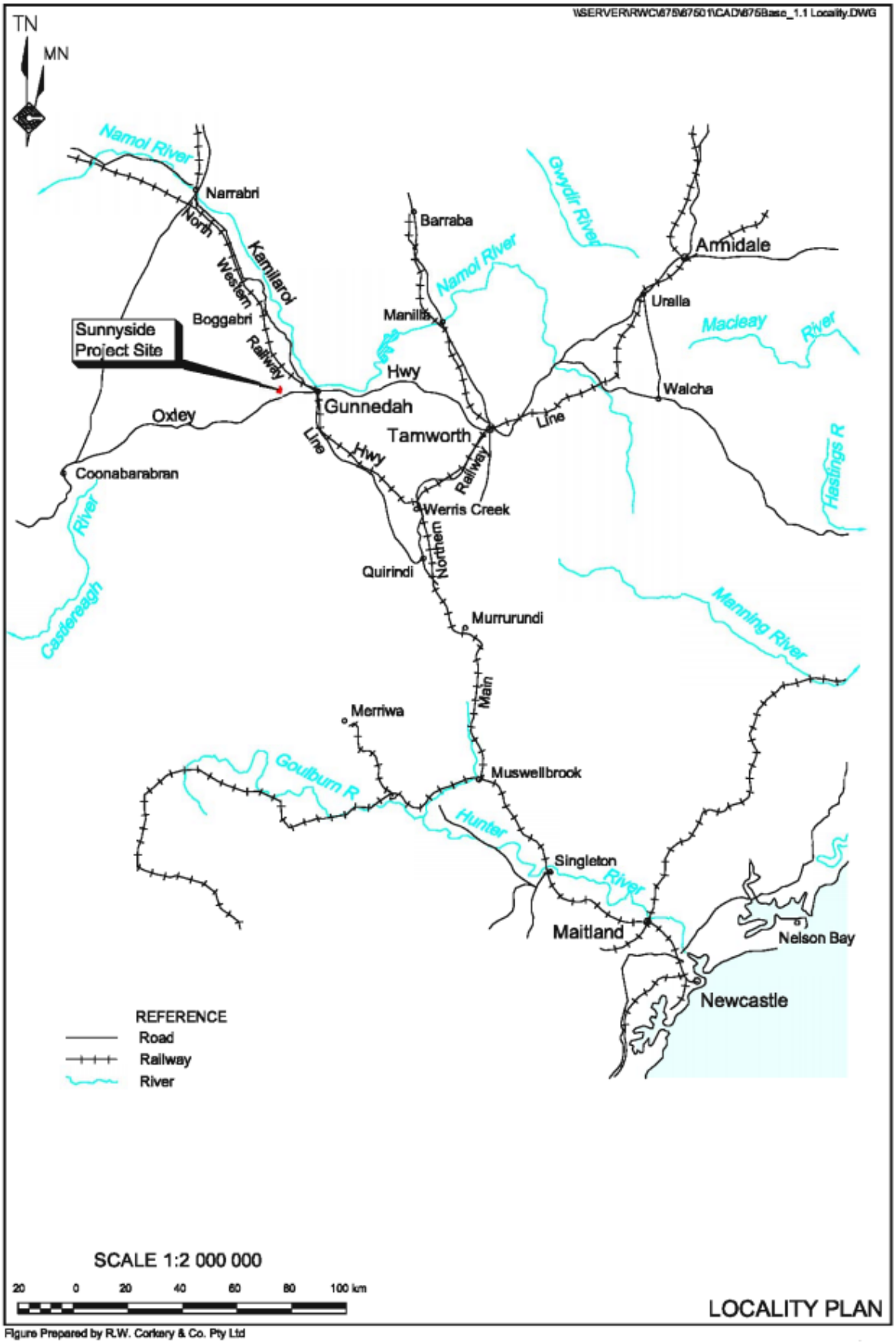


Figure 1 - Locality Plan

- Ms Jill Johnson, Group Environment Manager – oversees day to day environmental and rehabilitation performance across the site. Contact: (02) 6741 9321.

1.1.5.2 Support Personnel

In addition to the personnel identified in Section 1.1.5.1, the Sunnyside Environmental Officer oversees environmental compliance and performance across the site. Sunnyside Coal Mine also utilises specialist assistance as and when required. Specialist environment based or related companies or consultants involved in activities at the mine have included:

- ALS Acirl Pty Ltd;
- Countrywide Ecological Services;
- Greg Ward Earthmoving Solutions;
- Fields Tree Planting;
- Heritage Seeds; and
- Ag Solutions Australia.

1.1.6 Corporate Occupational Health, Safety and Environmental Policy

WCL has a documented Health, Safety and Environmental Policy which states:

Whitehaven Coal intends to conduct business in a way that maintains a safe and healthy workplace for its workers visitors and the surrounding community, and protect the environment in all stages of exploration, project development and construction, mining, processing and train loading.

Whitehaven Coal aims to:

- *Achieve zero workplace injuries and illnesses.*
- *Achieve zero plant and equipment damage.*
- *Achieve zero environmental incidents.*

Whitehaven Coal will strive to achieve these goals by:

- *Considering health, safety, welfare and environmental matters when planning and completing work activities.*
- *Consulting and communicating in a fair and effective manner regarding health, safety, welfare and environment matters.*
- *Having in place processes for identifying hazards and eliminating or minimising health, safety, welfare and environmental risks and impacts.*
- *Having in place processes for receiving and considering information regarding incidents, hazards, and risks and impacts, and responding to that information in a timely way, including learning's applied and shared.*
- *Working to improve safety and environmental performance through continuous improvement.*
- *Providing an effective injury management and return to work program for employees.*
- *Complying with applicable health, safety and environmental legal and other requirements.*
- *Providing workers with necessary health, safety, welfare and environment information, instruction, training and supervision to allow for the safe performance of their work.*
- *Making available for use, and using, health, safety, welfare and environment resources and processes to implement and maintain the requirements of this Policy and associated health, safety, welfare and environment management systems.*
- *Verifying the availability and use of health, safety and welfare resources and processes.*

Responsibilities of Workers:

- *Workers have a responsibility to comply with the applicable legislation, this policy and associated health, safety and environment management systems. No work is to be undertaken without a clear understanding of a safe method that minimises the risk of injury or illness, plant or equipment damage and environmental harm.*
- *Workers must take reasonable care for their own health and safety and have an obligation to take reasonable care that their acts or omissions don't adversely affect themselves or the health and safety of others at the operation.*
- *Workers must also comply with any reasonable instruction given by Whitehaven Coal and cooperate with any reasonable policy or procedure relating to health or safety notified to them.*

This policy applies to all sites managed by Whitehaven Coal and its subsidiaries, and to all workers, visitors and clients of Whitehaven Coal.

1.2 Approval Status

1.2.1 Leases, Licences and Approvals

Table 1 identifies the leases, licences and approvals in place for the Sunnyside Coal Mine at the end of the reporting period, the issuing / responsible Authority, dates of issue, expiry date and relevant comments.

Reviews of compliance/performance with the conditions identified in PA 06_0308 (Appendix 1), EPL 12957 (Appendix 2), and ML 1624, are presented in Appendix 3, Tables A3-1, A3-2 and A3-3 respectively.

Table 1 - Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Mineral Resources*[1]	Exploration Licence (EL 5183)	23rd December 1996 (Renewed 8th June 2005, 6th May 2008 & 12th March 2013)	22nd December 2015	
Department of Planning*[2]	Project Approval (PA) 06_0308 (Appendix 1)	24th September 2008	5th November 2015 (7 years from the grant of ML 1624)	Approval for the mine
Department of Environment and Climate Change*[3]	Environment Protection Licence No. 12957 (Appendix 2)	19th November2014 (current version)	Nil Anniversary date: 15th December	Approval for Mining for Coal to 0.5 Mtpa and Coal Works to 2 Mtpa.
Department of Primary Industries (DPI)*[1]	ML 1624	5th November 2008	5th November 2029	Approval of open cut. Mining operations and Condition 9 suspended by Minister in October 2013 following application from Whitehaven.
Department of Water and Energy (DWE)*[4]	90WA822534	27th April 2009	17th January 2025	Mining
	90BL253767	9th Feb 2007	Perpetuity	Test
	90BL253768	9th Feb 2007	Perpetuity	Test
	90BL253769	9th Feb 2007	Perpetuity	Test
	90BL254686	26th Mar 2008	Perpetuity	Monitoring
	90BL254687	26th Mar 2008	Perpetuity	Monitoring
	90BL254688	26th Mar 2008	Perpetuity	Monitoring
	90BL254689	26th Mar 2008	Perpetuity	Monitoring
	90BL254690	26th Mar 2008	Perpetuity	Monitoring

*[1] Now, Department of Trade and Investment, Regional Infrastructure and Services, Division of Resources and Energy (DRE)
*[2] Now, Department of Planning and Environment (DP&E)
*[3] Now, Environment Protection Authority (EPA)
*[4] Now, NSW Office of Water (NOW)

1.2.2 Amendments to Leases, Licences and Approvals

The Sunnyside EPL was varied twice during the reporting period. The EPA issued a notice of variation on 17th December 2013, adding Condition U1, relating to the implementation of a Spontaneous Combustion Management Plan. The EPA issued a second notice of variation on 19th November 2014, which removed Condition U1 following the implementation of a Spontaneous Combustion Management Plan, and added Condition U1.1, which is a pollution reduction program requiring the licensee to undertake an assessment of the area currently exposed on site and compare it to the predictions made in the site's Environmental Assessment.

Preparation of a Section 75W modification commenced in the reporting period. The modification relates to extension of the expiry of the current Project Approval and revision of the final landform.

An amendment to the Mining Operations Plan (MOP) for the site's placement into care and maintenance was requested by the DRE, and submitted as MOP Amendment A in September 2014.

Following further consultation with the Department, MOP Amendment B, seeking extension in MOP term to allow time for a modified Project Approval addressing final landforms to occur, was submitted to DRE on 28th November 2014 and subsequently approved on the 19th January 2015. The term of MOP Amendment B is until 5th November 2015.
It is anticipated that a Care and Maintenance MOP, including site closure and final rehabilitation, will be submitted for approval in 2015.

1.3 Actions Requested at Previous AEMR Review

The 2012-2013 AEMR was submitted to DRE and other relevant agencies in April 2014. A site inspection by the Department of Planning and Environment (DP&E), DRE and the EPA was carried out on 10th October 2014. A summary of the issues identified, actions requested and due dates given by each of the regulatory bodies from the inspection is presented in Table 2 below.

Table 2 - AEMR Review Actions

Issue/Observation	Action	Response
Department of Planning and Environment		
Department observed that the highwall angle is extremely steep and at the time of inspection was fretting. The Department noted that geotechnical investigations are planned in relation to this matter.	Report the outcome of geotechnical investigation in the next AEMR	Intend to complete geotechnical investigations during 2015 and report their findings in the next AEMR.
The Department noted the faint odour of spontaneous combustion during the site visit.	The Department requested regular inspections occur in order to identify and manage any further spontaneous combustion outbreaks, and report the results of these inspections in the next AEMR.	Regular inspections of spontaneous combustion undertaken throughout AEMR period and reported on in Section 3.14.
Division of Resources and Energy		
2013/14 proposed rehabilitation areas not shown on a plan.	Include areas subject of rehabilitation in the next AEMR period on future plans.	Proposed rehabilitation category has been included in this year's AEMR plans.
Risk of spontaneous combustion within waste emplacements or pit areas	Continue regular surveillance for spontaneous combustion and take action to control as necessary.	Regular inspections of spontaneous combustion undertaken throughout AEMR period and reported on in Section 3.14.
Hydrocarbon management	Hydrocarbons currently retained on site should be either removed or adequately bunded in order to prevent possible land contamination.	Hydrocarbons retained on site have been adequately bunded. Program of hydrocarbon removal from site is ongoing.
Environment Protection Authority		
Liquid in the base of self-bunded pallets.	Self-bunded pallets at the old workshop require decanting.	Completed in November 2014.
Carbonaceous material stockpiles in pit required active management to prevent spontaneous combustion.	Site inspections for evidence of spontaneous combustion are undertaken regularly. It is anticipated that the material from this area will be pushed to the bottom of the pit and covered when final rehabilitation commences at the site.	Regular inspections of spontaneous combustion undertaken throughout AEMR period and reported on in Section 3.14.
Coal contact water is managed as a part of the dirty water system, the EPA does not regard this as acceptable or in line with best practice.	EPA considers that the Site Water Management Plan needs to be reviewed to include management options to upgrade the existing systems to manage surface water that comes into contact with coal.	Discussions with EPA and DP&E on coal contact water management are continuing.

2 SUMMARY OF OPERATIONS

2.1 Exploration, Resources / Reserves and Mine Life

2.1.1 Exploration

There was no exploratory drilling during the 2013-2014 AEMR period.

2.1.2 Resources and Reserves

Regionally, the Sunnyside Coal Mine lies in the Mullaley sub-basin of the central Gunnedah Coalfield. When operational, coal extraction is from the Hoskissons Seam, part of the Late Permian Black Jack Group. Two major coal seams occur at Mining Lease 1624, namely the Hoskissons Seam and the underlying Melville Seam.

The depth of weathering extends approximately 20 to 35 metres below the surface, with the depth to the top of the Hoskissons Seam extending from the base of weathering in the north to approximately 80m below surface in the south. Seam rolls, minor faults, igneous dykes and sills also affect open cut operations.

The 2011-2012 AEMR stated that a resource estimate in November 2012 showed there was 10.2 million tonnes of open cut coal within ML 1624. A mineable reserve of approximately 2.01 million tonnes of recoverable coal and 1.79 million tonnes of marketable coal was estimated to exist in the current open cut consent area. This is the most recent resource estimate available for Sunnyside, and as mining activity ceased in November 2012, this estimate can still be considered valid.

2.1.3 Estimated Mine Life

Based upon the remaining mineable reserve of 2.01 million tonnes and approved annual extraction limit of 1 Mt/pa, estimated mine life at full production is approximately 2 years.

2.2 Land Preparation

No mining, waste emplacement, topsoil stripping or subsoil stripping occurred during the reporting period. Spontaneous combustion remediation works, which primarily involved reprofiling of pit walls and the emplacement of inert capping material in the eastern section of

the open cut, and the blasting and removal of suitable capping material by excavator and truck from the western area of the open cut, was undertaken during the reporting period.

Table 3, the "Production and Waste Summary", shows that at the end of the reporting period, more than 55,000m^3 of topsoil and subsoil had been replaced from existing stockpiles for rehabilitation purposes.

Table 3 - Production and Waste Summary

	Cumulative Production			
	Start of Reporting period (up to 01/12/13)	**During Reporting period (1/12/13 to 30/11/14)**	**Cumulative Total at End of Reporting period**	**Cumulative Total at End of next Reporting period (estimated)**
Soil Stripped (m^3)	177,286	0	177,286	177,286
Soil Used/spread (m^3)	55,312	0	55,312	55,312
Waste Rock (m^3)	12,908,003	0	12,908,003	12,908,003
ROM Coal (t)*	1,460,915	0	1,460,915	1,460,915
Processing Waste (t)**	148,737	0	148,737	148,737
Product (t)	1,286,334	0	1,286,334	1,286,334

* ROM Coal is total production at the mine site. The difference between ROM Coal and final Product is related to changes in stockpile volumes both at the mine and the CHPP during the reporting period.

** Sunnyside waste produced at Whitehaven CHPP.

2.3 Construction

No construction occurred during the reporting period.

2.4 Mining

2.4.1 Mining Method

No mining occurred during the reporting period. Plan 4 presents the status of mine and infrastructure development as of 30th November 2014.

At the end of the reporting period, the open cut covered an area of approximately 15ha. This is unchanged from the previous reporting period as no mining activity occurred in the 2013-2014 reporting period, and although spontaneous combustion remediation works were completed, which required the handling and movement of inert material from other areas of the pit this did not have a material impact on the extent of the mine void.

2.4.2 Mining Constraints

Mining activities at the Sunnyside Coal Mine were primarily constrained by economic considerations which are determined to a large extent by factors beyond the Company's control (i.e. coal price and demand). Economic factors determine the maximum profitable overburden:coal stripping ratio and hence the lateral extent of mining undertaken. It was as a result of poor economic viability that the Sunnyside Mine was placed into care and maintenance in November 2012.

Other constraints to mining operations at the Sunnyside Coal Mine have included, and if mining resumes will likely include:

- The potential presence of faulting and intrusions within the seam structure which may influence coal quality, the sequence and possibly the method of mining;
- The potential for an uneven coal seam floor which could potentially complicate vehicular access to the coal;
- Restricted operating hours, as per PA 06_0308; and
- Major periods of wet weather.

Since the mine was placed into care and maintenance, the site has experienced issues with spontaneous combustion in the void and emplacement area. Management of spontaneous combustion is discussed in Section 3.14 and referred to throughout the AEMR.

2.4.3 Mining Equipment

Mining equipment present during the reporting period comprised dozers, an excavator, a loader, dump trucks, a grader, a water truck, drills, an explosives truck, a service truck, a generator and a light vehicle. This equipment was utilised in the earthworks required for management of spontaneous combustion.

2.4.4 Hours of Operations

Sunnyside is permitted to undertake mining operations between 7:00am to 10:00pm Monday to Friday and 7:00am to 6:00pm on Saturdays, and not on public holidays. No mining operations occurred during the reporting period, however earthworks to control spontaneous combustion on site were undertaken during the reporting period. From 10th December 2013 to 24th

December 2013 two shifts operated for a total of 11 hours a day, Monday to Friday, with work recommencing on 6th January 2014 for 10.5 hours each day, Monday to Friday, and ceasing upon completion of the works on 10th April 2014.

Coal transportation from the mine site is permitted to be undertaken between the hours of 7:00am to 6:00pm Monday to Friday (or between 7:00am to 8:00pm during Eastern Summer Time) and 7:00am to 4:00pm on Saturdays, and not on public holidays. No coal haulage occurred during the reporting period.

Blasting activities are permitted to occur between 10:00am and 5:00pm Monday to Friday and 10:00am to 2:00pm on Saturdays (excepting public holidays). Blasting occurred during the reporting period, recommencing with shot 61 in January 2014, and finishing with shot 64 in March 2014.

2.5 Processing

2.5.1 Outline of Processing Activities

No coal production, processing or transport was undertaken during the reporting period.

2.5.2 Changes or Additions to the Process or Facilities

No changes or additions to the process or facilities occurred during the reporting period.

2.6 Waste Management

2.6.1 Introduction

Wastes produced from the Sunnyside Coal Mine during the reporting period vary from those identified in the original EIS due to the mine being placed into care and maintenance. Waste is, or potentially is, comprised of:

- General domestic-type wastes from on-site buildings and routine maintenance consumables;
- Oils and grease;
- Sewage; and

- Mine equipment tyres.

The following sub-sections identify the management procedures adopted for each of these wastes throughout the reporting period.

2.6.2 Domestic Type Wastes

All general wastes were collected on-site and placed into large storage receptacles as required. An industrial waste collector collected this waste upon request.

2.6.3 Oil Containment and Disposal

Waste oils from maintenance activities were pumped from equipment to bulk storage tanks contained within a bunded area (also see Section 2.8.2). When breakdown maintenance was undertaken away from this location, oil was pumped from the equipment to a tank on the service truck from which it was subsequently transferred to the bulk storage tank. Waste oil stored at the maintenance workshop was collected and disposed of by a licensed contractor as required.

Runoff from the concrete vehicle and equipment wash pad was collected and disposed of by a licensed contractor. All potential sources of contamination were removed from around the workshop and wash pad during the reporting period, and the area cleaned with high pressure washers and degreaser. As such, runoff directed into the workshop sump should be free of contamination in the future. Water quality samples will be taken to confirm that the water is free of contamination.

2.6.4 Sewage Treatment and Disposal

Effluent from the sewerage and ablutions facilities at the Sunnyside Coal Mine was managed through the Council-approved septic system, with pump outs undertaken by a licensed waste disposal contractor on an as-needs-basis.

2.6.5 Mine Equipment Tyres

No tyres were disposed at site during the reporting period. Records of tyre burials are maintained through detailed survey.

2.6.6 Overburden and Interburden

There was limited overburden handling undertaken during the reporting period in relation to the spontaneous combustion management works on site. Suitable inert overburden and interburden material was sourced from the western area of the open cut and excavated for use as capping material. This material was trucked to the eastern section of the open cut to cap the spontaneous combustion affected area.

2.6.7 Processing Plant Residues

2.6.7.1 Physical and Chemical Characteristics

The coarse and fine rejects produced from washing Sunnyside coal has comprised a mixture of coal and non-coal materials, e.g. sedimentary rocks such as shale, mudstone or claystone, and sand, silts and clays which either occur naturally within the coal seam or represent overburden or interburden materials which dilute the coal during its extraction. No processing plant residues associated with the Sunnyside Mine were produced at the Whitehaven CHPP in the reporting period.

2.6.7.2 Reject Handling and Disposal Procedures

Coarse Reject – No coarse reject produced at the Whitehaven CHPP was disposed of at the Sunnyside Mine during the reporting period. Coarse reject is currently being disposed of at Tarrawonga Mine, which is a joint venture majority owned and wholly operated by Whitehaven.

Fine Reject – Pumped to a series of eleven fine reject ponds within the Whitehaven CHPP rail loop and adjacent to the Whitehaven CHPP for consolidation. No coarse or fine reject from Sunnyside was generated during the reporting period. The ponds are encircled by bunding and drains to contain fine reject in the event of a pond failure. Following consolidation, the fine rejects are excavated and transported to the former Gunnedah Colliery for use in final landform development and emplacement in the Melville and North Cut Void.

2.6.7.3 Management of Fine Reject Containment Facilities

Management, including routine monitoring, of reject material at the Whitehaven CHPP is undertaken by Whitehaven Coal personnel under the direction of the Plant Manager.

Inspections of the reject ponds at the Whitehaven CHPP are undertaken by officers of DRE, the statutorily responsible Authority.

2.7 Stockpile Capacity

There was no ROM coal produced or stockpiled at Sunnyside during the reporting period.

2.8 Water Management

2.8.1 Objectives

The Sunnyside Coal Mine lies within the catchment of the Namoi River. The majority of the surface water runoff flows northwards across the mine site. It then flows into Coocooboonah Creek which flows north-west within a constructed waterway paralleling Coocooboonah Lane. From there, it flows into Rock Well Creek then into Native Cat Creek which continues to flow north-west for 6km. Runoff then flows northwards within Collygra Creek where it flows across a floodplain area before flowing into the Namoi River some 25km north of the Mine Site. The remainder of the mine's surface water flows south into Coocooboonah Creek ultimately flowing into the Namoi River to the north. The design of sediment detention basins within the disturbed area of the mine limits the opportunity for discharge of runoff from mine-disturbed area, i.e. after appropriate detention time to satisfy licensed discharge criteria.

Two wet weather discharge points are nominated in the current EPL 12957. These are Storage Dam 3 (EPL ID No. 9) and Storage Dam 4 (EPL ID No. 10). Two additional monitoring points are nominated on the EPL for water quality monitoring during discharge events. These are Coocooboonah Creek Upstream (CCUS – EPL ID No. 11) and Coocooboonah Creek Downstream (CCDS – EPL ID No. 12).

The management of water at the Sunnyside Coal Mine is undertaken with the following objectives.

i. To ensure sufficient quantities of water can be obtained through the capture of "dirty" water, harvesting of "clean" water, and extraction/harvesting of groundwater to meet the requirements of dust suppression on the mine site.

ii. To ensure the segregation of "dirty" water from "clean" water, with "dirty" water directed to and detained in sediment basins which, on discharge, flow to storage dams. "Clean" water, comprising clarified water originating from the sediment basins

and run-on water collected in accordance with the Company's harvestable right, will be directed to and/or collected in storage dams.

iii. To ensure the treatment and separation of "contaminated" water from the workshop and wash bay area by diversion to an oil separating unit, with clarified water reporting to sediment basins when operational.

iv. To ensure segregation of "pit" water from surface flows by collection in isolated pit dewatering dams.

v. To maximise the use of "dirty" and "pit" water for dust suppression purposes and minimise the necessity to harvest "clean" run-on water.

vi. To minimise the volume of water discharged from the mine site, but, should the discharge of water prove necessary, ensure sufficient settlement time is provided prior to discharge such that suspended sediment within the water meets the water quality criteria as specified in the EPL 12957.

vii. To minimise erosion and sedimentation from all active and rehabilitated areas of the mine site.

viii. To monitor the effectiveness of surface water controls and ensure all relevant surface and groundwater quality criteria are met.

ix. To monitor the impact on groundwater level, quality and availability.

x. To minimise any impacts on the availability of surface water or groundwater to surrounding residents and landholders.

xi. To establish a method of assessing the level of impact on groundwater supply attributable to the mine.

2.8.2 Surface Water Management

Water within the Project Approval area is nominally classified either as "clean", "dirty", "contaminated" or "pit water" depending on the source of the flow and it's potential for physical or chemical contamination.

All sediment basins, storage dams and associated banks and drains have been designed and constructed in accordance with the *Managing Urban Stormwater: Soils and Construction Vol 2E Mines and Quarries* (DECC, 2008) in conjunction with the references to Volume 1 (Landcom,2004).

*"**Clean water**"* comprises surface runoff from catchments undisturbed or relatively undisturbed by mining or related activities and rehabilitated catchments. Within the Project Approval area, clean surface water flows either flow to natural drainage lines and hence off-site or are collected by diversion banks and directed to the storage dams for use on-site. All water flowing from sediment basins ultimately flows to storage dams to provide a final "polishing" prior to potential off-site discharge.

*"**Dirty water**"* comprises surface runoff from disturbed catchments such as the active mine area and overburden emplacement, ROM and product coal stockpiles, soil and subsoil stockpiles and rehabilitated areas (until stabilised), all of which could contain sediments.

Dirty water originating from surface runoff is collected by catch banks located down slope of the potential sources of pollution and directed to the sediment basins. Water collected within the sediment basins and storage dams is managed to minimise potential for off-site water discharge.

Sediment basins have been designed to meet the requirements of the 90% 5 day event in accordance with the *Managing Urban Stormwater: Soils and Construction Vol 2E Mines and Quarries* (DECC, 2008) in conjunction with the references to Volume 1 (Landcom,2004.

The Site Water Management Plan provides further details regarding storage capacity. Sediment levels in all sediment basins generally remain low due to the high vegetation cover and water management structures existing on rehabilitated areas which assist in reducing sediment load of waters during runoff.

Sediment basins are either cleaned out once their capacity is reduced by 25% or supplementary structures are installed to provide the required storage volume. In the event of structure replacement, the contents of the former structure will be allowed to dry prior to being capped and rehabilitated.

The principal components of the "clean" and "dirty" water management systems in place at the end of the reporting period are shown on Plan 4.

"***Contaminated Water Management***" comprises runoff water which could potentially contain hydrocarbons. One 68,000L self bunded diesel fuel tank was maintained adjacent to the Sunnyside workshop area for use during the spontaneous combustion remediation works. A concrete bund is located adjacent to the workshop enabling oils and lubricants to be stored in a safe manner. Any runoff or associated spills within the bunded area reported to the workshop sump, where they were treated by an oil/water separating unit when the site was operational. Separated oil was then disposed of by an appropriately licensed contractor. Waters potentially

contaminated with hydrocarbons from the workshop area are also diverted to the workshop sump, with clean water returned to the water management system. A spill kit is also maintained on the mine site

The likelihood of localised spills of fuel or oil external to bunded areas is kept to a minimum by the adoption of the above practice. In the event that localised spills do occur, immediate action would be undertaken to ensure appropriate clean-up and minimisation of harm.

"***Pit Water***" comprises water contained within the open cut sump or pumped to the void water dam for containment and use for dust suppression across the site.

2.8.3 Discharges

There were no wet weather discharges during the reporting period.

2.8.4 Water Sources, Demand and Use

Within the Project Approval Area and immediate vicinity of Sunnyside Coal Mine, surface water resources are limited to a number of ephemeral drainage lines which flow for a short period after substantial rainfall, farm dams, water storage dams and a series of interlinked sediment basins as shown on Plans 3 and 4.

Historically, water has been required on the mine site primarily for dust suppression purposes, with minor quantities required for potable, toilet and ablutions purposes. Where practicable, water collected on-site has been retained or reused, with water for dust suppression sourced from a combination of on-site water harvesting, inflows from the exposed coal seam, overburden and interburden, and groundwater extraction. Water for potable, toilet and ablutions purposes has historically been trucked to the site from Gunnedah.

During the reporting period, a total of approximately 12.5 ML was used on the mine site, generally for dust suppression purposes. The approximate volumes obtained from the various sources are as follows:

- 0 ML from groundwater sourced under licence from the production bore located on the "Werona" property. No water was utilized from the Werona production bore as the bore was unequipped (gen set removed) in June 2013;
- 12.5 ML from surface water storages, the pit, and the designated Void Water Dam.

The above water use is much lower than predicted in the EA (75-100ML per year for dust suppression and processing requirements) due to the mine being in care and maintenance. Water use is however marginally lower compared to the previous AEMR period. This is despite spontaneous combustion remediation works occurring at the mine, which required dust suppression activities to resume. This is due to the increased volume of water used in the previous reporting period to manage spontaneous combustion at the mine.

2.8.5 Stored Water

Table 4 presents the volume of stored water at the beginning and end of the reporting period. The Void Water Dam was has remained empty for some time however it is estimated that approximately 30ML of water is currently held in pit.

Table 4 - Stored Water

	Volumes Held (m^3)		**Storage Capacity at the end of the Reporting period (m^3)**
	Start of Reporting period	**At end of Reporting period**	
Clean Water (in Storage Dams)	0	0	30,400
Dirty Water (in Sediment Basins)	5,800	7,200	31,200
Pit Water*	0	0	29,200
* Void Water Dam			

2.8.6 Groundwater Management

Inflows into the open cut result from a combination of:

- Direct rainfall runoff and infiltration through the emplaced overburden which flows down-dip to the open cut sump(s); and
- Inflows from the exposed coal seam.

As discussed above, at the end of the reporting period an estimated 30 ML of water was held in the pit from rainfall and groundwater seepage.

Contamination of groundwater is controlled by the management of chemical, oil and grease spills and storage, with:

- Vehicle maintenance carried out in designated areas;
- Any spills being cleaned up; and
- Fuels, oil and grease being stored within a bunded area, constructed in accordance with AS 1940-2004 (also see Section 2.8.2) and/or EPA requirements.

Groundwater from surrounding bores, as well as the mine production bore, is monitored on a regular basis to detect and assess any changes in groundwater quality or level that may be attributable to the mine (see Section 3.4.2). The mine production bore is not currently operating as the generator supplying power to the pump was removed. As such the water meter has not been read to assess usage in comparison to the allocation.

2.9 Hazardous and Explosive Material Management

No explosive materials are retained within the Sunnyside Mine Site. Blasting occurred on site between January and March 2014, with the mixing of nitropril and distillate to produce an explosive undertaken on the day of each blast. This was done using a purpose built explosives mixer, and in a quantity adequate only for that particular blast.

Safety Data Sheets (SDS) are available for all hazardous materials, independent of the quantity. Additionally, all contractors are required to supply SDS for any hazardous goods they may bring onto the site.

2.10 Infrastructure Management

Management of infrastructure (e.g. buildings, roads, generators and pumps) and other facilities not specified elsewhere within this AEMR is undertaken on an as-needs basis or in accordance with Statutory requirements in order to maintain them in an operationally efficient, safe, neat and tidy condition, and one which does not result in the direct or indirect generation of unacceptable environmental impacts.

2.11 Product Transport

No coal was transported from the mine during the reporting period.

3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the Sunnyside Coal Mine, together with monitoring data for the reporting period. Existing monitoring sites are shown in Figure 2. Life of mine monitoring data is included in this AEMR, where relevant, to allow for discussion on longer-term trends. A risk identification matrix and the relevant environmental management procedures are identified in the Sunnyside Coal Mine MOP.

3.1 Air Pollution

3.1.1 Criteria

The air quality criteria applicable to the Sunnyside Coal Mine are specified in PA 06_0308 Schedule 3, Tables 7, 8 & 9 (Appendix 1), which is summarised below.

- Acceptable mean annual increase in deposited dust – 2 g/m^2/month.
- Mean annual dust deposition (all sources) – 4 g/m^2/month.
- Mean annual Total Suspended Particulate (TSP) matter (all sources) concentration – 90 $\mu g/m^3$.
- Mean annual PM_{10} particulate level – 30 $\mu g/m^3$.
- 24 hour average PM_{10} particulate level – 50 $\mu g/m^3$.

Notwithstanding the diversity of the criteria identified above, routine air quality monitoring at the Sunnyside Coal Mine is required for deposited dust and PM_{10} particulates.

Monitoring of deposited dust is undertaken on a monthly basis whilst PM_{10} levels are monitored every 6 days.

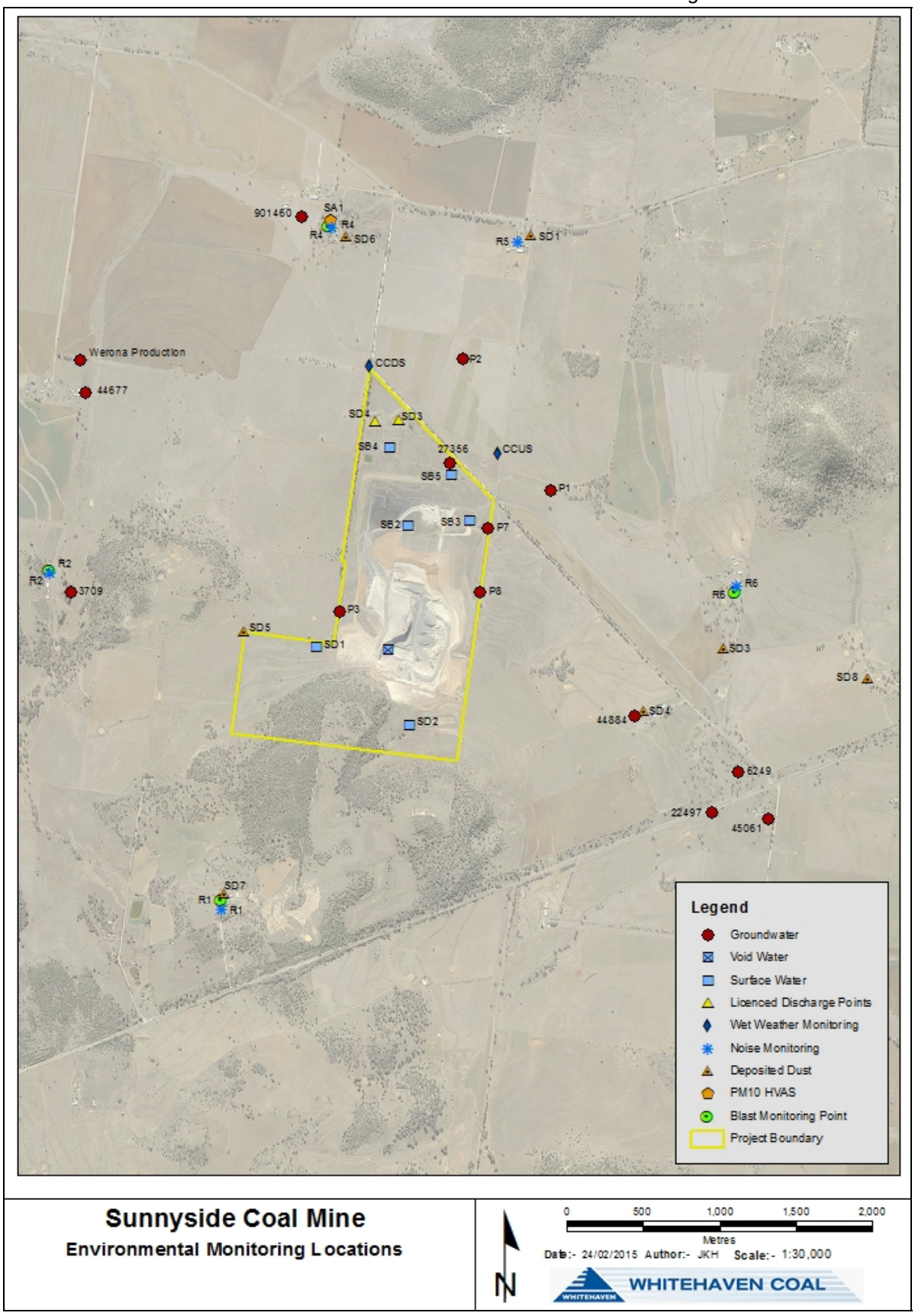


Figure 2 - Monitoring Locations

3.1.2 Control Procedures

In order to satisfy the criteria identified above, Sunnyside Coal Mine employs a range of air pollution control measures while operational, including:

- Limiting groundcover removal in advance of mining consistent with operational requirements. Under normal operational circumstances, a maximum of 100 m is prepared in advance of mining;
- Groundcover removal as part of the topsoil removal activities, rather than prior to topsoil removal;
- Where practicable, limiting soil stripping activities to periods when there is sufficient soil moisture to prevent significant dust lift-off and avoiding periods of high winds;
- Soil stripping using open bowl scrapers, thereby eliminating the dust generated from elevated scrapers;
- Application of water to exposed surfaces, with emphasis on those areas subject to frequent vehicle / equipment movements which may cause dust generation and dispersal;
- Use of water injection on the drilling rig;
- Use of imported aggregates for blast hole stemming;
- Water application at the crusher;
- Cessation of coal processing activities during periods of concurrent high winds and temperatures which cause coal dust dispersal, independent of water applications.
- ROM coal pad watering;
- Progressive shaping and rehabilitation of areas once they are no longer required for mining purposes;
- Speed limit restrictions on all vehicles and equipment on the mine site;
- Equipment exhaust positioning to avoid exhausts impinging on the ground and causing dust lift-off; and
- Use of covers on all product coal trucks.

3.1.3 Dust Monitoring

Table 5 presents a summary of the deposited dust monitoring data presented in Appendix 4. A graphical representation of the total insoluble solids and ash content data for each of the sites monitored during the reporting period is also included in Appendix 4. Figure 2 identifies the locations of the various deposited dust gauges maintained during the reporting period.

Table 5 - Deposited Dust Monitoring Data Summary (December 2013 to November 2014)

Site (see Figure 2)	EPL ID no.	Property Name	Mean Total Insoluble Solids (g/m^2/month)	Mean Ash (g/m^2/month)
SD1	1	Ferndale	1.3	0.8
SD3	2	Plainview	1.4	0.7
SD4		Lilydale	1.3	0.6
SD5	4	Ivanhoe	2.1	1.1
SD6	5	Illili	2.0	0.7
SD7	6	Innisvale	1.5	0.9
SD8		Woodlawn	1.9	1.0

A review of Table 5 and Appendix 4 shows that despite the mine not be operational for the majority of the reporting period, elevated dust results were still recorded at several monitoring locations:

- 7.6g/m^2/mth in March 2014 at SD6 (Illili)
- 10.4g/m^2/mth in April 2014 at SD8 (Woodlawn)
- 4.2g/m^2/mth in August 2014 at SD3 (Plain View)

Spontaneous combustion remediation works were undertaken on site from December 2013 to April 2014, and as such it is possible the elevated monthly results in March 2014 at SD6 and in April 2014 at SD8 may have contribution from this work, however, the criterion for the mean annual total insoluble solids (deposited dust) was satisfied at all monitoring locations during the reporting period. The strong seasonal pattern of dust levels evident from previous years monitoring results at SD4 (Lilydale) and SD7 (Innisvale) were maintained for the reporting period.

Sunnyside Coal Mine has one High Volume Air Sampler (HVAS - PM_{10}) located at the property "Illili" (EPL ID 7), to the north-west of the mine site. The HVAS runs for 24 hours every 6 days, with filter papers removed after each run and sent to an accredited laboratory for analysis.

The PM_{10} results for the reporting period show compliance with the 24hr criteria, and the annual average criteria (refer Figure 3). Results have remained relatively stable, with an annual average of 13.42µg/m^3 at the beginning of the reporting period to an average of 13.04µg/m^3 at the end of the reporting period. A peak of 15.22µg/m^3 occurred in March 2014, with a minimum of 12.47µg/m^3 in mid-November 2014. The full data set for PM_{10} monitoring is contained within Appendix 4.

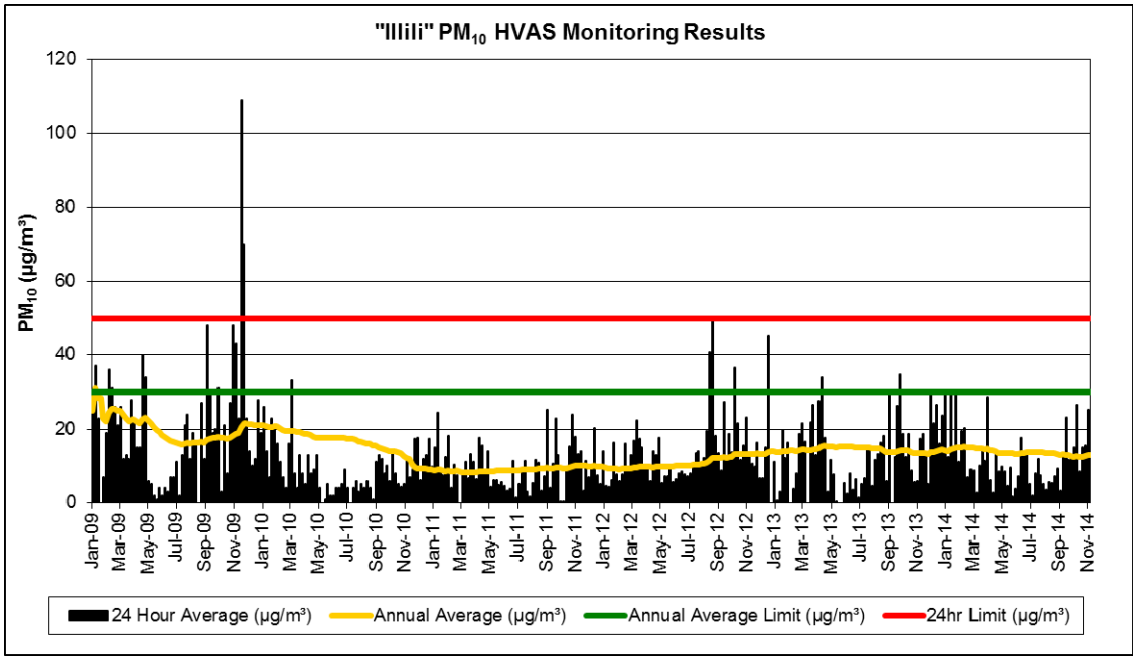


Figure 3 - "Illili" HVAS PM_{10} Data

3.2 Erosion and Sedimentation

3.2.1 Management

Methods for the management of erosion and sediment control at the Sunnyside Coal Mine are presented in the MOP and Site Water Management Plan prepared in accordance with PA 06_0308.

Control of erosion and sediment generation is achieved primarily through the implementation of water management controls identified in Section 2.8.2 and shown on Plan 4. Additional measures which are undertaken when the mine is operational that assist in the control of erosion and sedimentation include:

- Minimising the extent of disturbance consistent with operational requirements. Where possible, a maximum of 100 m is generally disturbed in advance of mining;
- Revegetation of long-term subsoil and topsoil stockpiles, areas shaped to their final landform and areas no longer required for mining-related purposes;
- Undertaking soil management activities generally in accordance with the soil stripping and stockpiling recommendations from Geoff Cunningham Natural Resource Consultants; and
- Installation of contour banks and sediment ponds/weirs on the final landform following soil application.

Soil stockpiles have been placed in gently sloping or near flat areas surrounded by grassland which effectively reduces the runoff velocity, and hence erosive potential, from any run-on waters. However, NMPL is aware of the potential for stockpile erosion and monitor accordingly to minimise impacts as required over the remaining life of the mine. All soil stockpiles on the Sunnyside site have been sown to cover crops to aid in stabilisation.

3.2.2 Performance

The effectiveness of the procedures for erosion and sedimentation management are assessed as part of monthly environmental inspections, undertaken by the Sunnyside Coal Mine Environmental Officer. Items such as water management structures, vegetation cover and sediment basins are inspected, with any ameliorative works initiated as and when required.

Sufficient vegetation cover on rehabilitated slopes and the water management structures that are in place have reduced the amount of erosion and sedimentation of water storages. Some rill erosion is present on areas that have been topsoiled, but are yet to be contoured and mounded. It is anticipated that this will occur following the development of the Care and Maintenance MOP in the next reporting period.

3.3 Surface Water Pollution

3.3.1 Management

The prevention of surface water pollution is achieved through the management of surface water as presented in Section 2.8.2.

3.3.2 Performance

No wet weather discharges occurred during the reporting period.

Sunnyside Coal Mine has a requirement to undertake surface water monitoring on a quarterly basis in addition to the monitoring of any wet weather discharge event. Due to below average rainfall for much of the year, several dams were dry and unable to be sampled at each quarterly monitoring event. Quarterly surface water results are shown in Appendix 5.

The quarterly monitoring results show that water quality within onsite storages was generally consistent with results from previous years, with the exception of elevated Total Suspended Solids in May 2014 at one storage dam, SD4 (maximum of 3190mg/L, previous maximum 318mg/L), and two sediment basins, SB4 (maximum of 647mg/L, previous maximum 149mg/L), and SB5 (maximum of 6750mg/L, previous maximum 471mg/L),elevated Total Organic Carbon (TOC) levels at two sediment basins,SB2 (maximum of 31mg/L, previous maximum 11mg/L) and SB5 (maximum of 56mg/L, previous maximum 43mg/L), and elevated Electrical Conductivity (EC) at one storage dam SD1 (maximum of 644µS/cm, previous maximum 513µS/cm). As no discharges occurred during the reporting period, these elevated results, which are believed to be influenced by the limited volume of dam water at the time of sampling, did not have any potential for impact on downstream water bodies.

Aside from the single occurrence of elevated EC at SD1, the water in all sediment basins and storage dams can be described as fresh, neutral to slightly alkaline, and free of oil and grease. Void water results were generally consistent with previous reporting periods with the exception of an increase in EC of about 900µS/cm compared to the previous maximum of 6300µS/cm. Oil and grease levels were not detected in any water storage throughout the period.

3.4 Groundwater Pollution

3.4.1 Management

With the exception of some lubricants contained within self bunded tanks, and some containers of oils, no materials occur or are retained on the mine site which are likely to be a source of groundwater pollution.

The methods for management of potential pollutants are summarised in Section 2.8.6. Ongoing monitoring to assess trends in groundwater chemistry will enable assessment of potential contaminants to groundwater, with particular emphasis on heavy metals, and major cations and anions. Groundwater monitoring requirements are identified in Table 6.

3.4.2 Performance

The mine's performance with respect to groundwater management, the prevention of pollution and the assessment of impacts on groundwater availability to other surrounding users, has been assessed through groundwater level and chemistry monitoring undertaken at a series of piezometers and bores within ML 1624 and adjacent properties. The details of these piezometers and bores monitored throughout the reporting period are listed in Table 6.

Appendix 6 presents the results of the groundwater monitoring undertaken since commencement of mining. Monitoring sites are shown on Figure 2. Groundwater sampling and analysis was undertaken by ALS Acirl Pty Ltd during the reporting period. During the reporting period, Nitrite, Nitrate and NOx were not included in the groundwater monitoring suite for March 2014 due to an administrative error. Monitoring of these analytes recommenced in September 2014. Below are some points to note regarding monitoring locations and frequencies:

- Bore 27356 has not been monitored since June 2012, as there is a windmill over the bore and it no longer functions resulting in samples for analysis being unobtainable.
- Standing Water Level (SWL) data was unavailable for bore 901460 bore 45061 for March and September, and not available for bore 44884 for September, due to a pump or windmill being over the bore.

Table 6 - Groundwater Monitoring Points

Site ID (see Figure 2)	Registered Bore No. & Licence No	Property/ Location	Frequency		Purpose
			SWL*[2], EC*[3] and pH	Representative Metals and Ions	
P1*[1]	GW968386 90BL253767	"Plainview"	Quarterly	Six monthly	To determine existing status and any impacts
P2*[1]	GW968387 90BL253768	"Ferndale"	Quarterly	Six monthly	
P3	GW968388 90BL253769	"Sunnyside"	Quarterly	Six monthly	
P4	GW968389 90BL254686	"Sunnyside"	Removed by mining		
P5	GW968390 90BL254687	"Sunnyside"	Removed by mining		
P6	GW968391 90BL254688	"Sunnyside"	Removed by mining		
P7	GW968392 90BL254689	"Sunnyside"	Quarterly	Six monthly	To determine existing status and any impacts
P8	GW968393 90BL254690	"Sunnyside"	Quarterly	Six monthly	
3709*[1]	N/A	"Ivanhoe"	Quarterly	Six monthly*[5]	
22497*[1]	N/A	"Coocooboonah"	Quarterly	Six monthly	
44677*[1]	N/A	"Werona"	Quarterly*[5]	Six monthly	
44884*[1]	N/A	"Lilydale"	Quarterly	Six monthly	
6249*[1]	N/A	"Lilydale"	Quarterly	Six monthly	
No 5 Entry*[4]	90BL254691	"Sunnyside"	Removed by mining		
901460	GW901460 90BL249138	"Illili"	Quarterly	Six monthly*[5]	To determine existing status and any impacts
27356	GW027356 90BL020042	"Sunnyside"	Quarterly	Six monthly*[5]	
45061	N/A	"Coocooboonah"	Quarterly	Six monthly*[5]	
Werona Production	90BL255246	"Werona"	Quarterly	Six monthly*[5]	

*[1] Non-Company owned bore

*[2] SWL – Standing Water Level

*[3] EC = Electrical Conductivity

*[4] Company production bore

*[5] – Not available this reporting period due to lack of access

- The Werona Production Bore and bore 3709 have not been monitored since March 2013 as a pump has been over each bore.
- Water level data loggers, which store SWL data at 12 hourly intervals, have remained in P2 and P3 during the reporting period, and are monitored by Geoterra Pty Ltd.

The trends evident from the results presented in Appendix 6 are discussed below.

Groundwater levels

Groundwater levels have remained relatively consistent at all locations monitored during the reporting period.

Groundwater quality

Analysis of samples taken during the reporting period has shown that groundwater quality has remained in line with historical data at all locations monitored, with the exception of several parameters at the bore 22497. Water quality has been compared to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) (ANZECC) guidelines for stock watering (cattle), and with the exception of lead (Pb) at bore 22497 and naturally high total dissolved solids concentration (greater than 4000mg/L) at bore P3, water quality results show all bores remained within the ANZECC guidelines.

The results obtained from bore 22497 in September 2014 were noticeably greater than had been recorded previously. The monitoring of this bore during the reporting period showed:

- An increase in Ba – 0.613mg/L in March to 0.91mg/L
- An increase in Fe – 7.38mg/L in March to 66.9mg/L
- An increase in Pb – 0.007mg/L in March to 0.148mg/L
- An increase in Zn – 0.238mg/L in March to 7.73mg/L

Despite the increase in concentration of the analytes above, excluding Pb, the other analytes either fell within the ANZECC guideline for stock drinking water (Cattle), or did not have a guideline value. The increase in the concentration of these analytes is thought to have occurred as a result of the loss of a galvanised piece of metal into the bore, which has corroded resulting in a temporary spike in these analytes concentrations. It is expected that future monitoring will show a decrease in these analyte levels.

3.5 Contaminated or Polluted Land

Prior to mining, the Project Approval Area was a greenfields site. Discussion with landowners during the preparation of the EA revealed that no environmentally harmful products had been used on their landholding nor had there been any disposal of potential environmental contaminants. As a part of the mine closure process, a contaminated lands assessment will be conducted on the Project Approval Area to determine whether any contaminated lands are present, and inform their remediation.

3.6 Threatened Flora

Investigations into the occurrence of threatened flora within the Project Approval Area were undertaken as part of the Environmental Assessment by Geoff Cunningham Natural Resource Consultants Pty Ltd in 2007 following field surveys in October and December 2006. The investigation identified no significant impact on threatened flora species, endangered ecological communities, endangered flora populations or critical habitat as a consequence of the development, either because they do not exist in the area or avoidance is possible due to project design.

Investigations identified a remnant of the White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community within the study area but concluded that it would not be affected in any significant manner by the mine.

A remnant of the Native Vegetation on Cracking Clay Soils of the Liverpool Plains endangered ecological community was also identified within the study area. It was noted that a small section of this community would be temporarily affected by the Coocooboonah Lane re-alignment but the community would be rehabilitated and enhanced following rehabilitation after mining ceases. It was assessed that this action, due to its temporary impact and final environmental enhancement, would not require approval under the Commonwealth EPBC Act.

Much of the area has been cleared in the past and most of this cleared area has been cultivated. The vegetation on the cleared areas has been invaded by introduced species. The establishment of the mine site does not involve clearing of native vegetation and as such no biodiversity offsets were required.

Flora quadrat establishment and monitoring was undertaken in June 2010 by Geoff Cunningham Natural Resource Consultants Pty Ltd. The vegetation communities present at Sunnyside include:

- **Community 1** – Cleared Cropland and Pastureland Community;
- **Community 2** – Regenerating Grasslands Community;
- **Community 3** – Bare Disturbed Land with Minimal Vegetation Cover;
- **Community 4** – *Atalaya hemiglauca* [Whitewood] Community;
- **Community 5** – Dry Scrub Community of the Rocky Scarp;
- **Community 6** – *Eucalyptus dealbata* [Tumbledown Gum] – *Geijera parviflora* [Wilga] – *Callitris glaucophylla* [White Cypress Pine] Community;
- **Community 7** – *Eucalyptus albens* [White Box] Community;
- **Community 8** – *Eucalyptus populnea* subsp. *bimbil* [Bimble Box] – *Eucalyptus melliodora* [Yellow Box] - *Eucalyptus albens* [White Box] Woodland Community; and
- **Community 9** - Degraded *Austrostipa aristiglumis* [Plains Grass] Grassland.

The mine is located wholly within Community 1 and therefore two quadrats are established within the mine site to monitor ground cover and other vegetation changes in the area. Quadrat 1 is located in the north-eastern corner of the site and Quadrat 2 is located in the western corner of the site.

Additional quadrats will be established on the mined area once a care and maintenance MOP is finalised. Once these plots are established, monitoring campaigns will be carried out to measure the performance of rehabilitation on a progressive basis.

3.7 Threatened Fauna

Investigations into the occurrence of threatened fauna within the Project Approval Area were undertaken by Kevin Mills and Associates as part of the Environmental Assessment, following surveys conducted in September 2006. These investigations identified that the proposed development was unlikely to significantly affect any of the threatened species, fauna populations or communities listed under the *Threatened Species Conservation Act 1995*, or their habitats.

It was also concluded that development of the mine was not likely to have a significant impact on any matter of national environmental significance listed under the *Environment Protection and Biodiversity Conservation Act 1999*. Referral to the Commonwealth Minister for the Environment for assessment and approval was therefore not warranted.

The area surrounding the mine site supports a viable Koala population. NMPL has undertaken a number of measures to minimise the impacts on this population, including:

- Relocating the southern section of Coocooboonah Lane to avoid disturbing remnant Koala habitat;
- Erecting a Koala-proof fence around the active mine area;
- Minimising clearing and utilising local tree species for revegetation with an emphasis on Koala feed trees. This has continued since the last reporting period with Koala feed trees planted across rehabilitation areas, consisting of White Box, Bimble Box and Kurrajong tree species.

The initial fauna quadrat establishment was undertaken in November 2010 by Dr Leong Lim (Countrywide Ecological Services), where two grassland monitoring plots were established. Since establishment, roof tiles have been scattered throughout the quadrats to enhance the ground habitat structure and provide refuges for the ground fauna. The establishment of two woodland plots to the south of the active mining area occurred in February 2011, during a monitoring campaign. These plots are placed in open woodland, and open woodland with grassy understory communities. No monitoring was conducted during the reporting period.

3.8 Weeds

Weed management within the ML area involves targeted monthly inspections to determine levels of weed infestation. Weed control is undertaken by contractors or Whitehaven's own qualified personnel. All persons involved with weed control hold required chemical handling certificates.

Minor ongoing weed management comprised spot spraying of Mexican Poppy along the haul road and around the office facilities. Cochineal Beetles were also transferred onto some Prickly Pear. No major weed infestations were identified on rehabilitation areas.

3.9 Blasting

3.9.1 Criteria

Blasting criteria for the Sunnyside Coal Mine is noted in PA 06_0308 (Appendix 1), and Condition L5 of EPL 12957 (Appendix 2) and specify that:

- Blasting must only be carried out between 10:00 am and 5:00 pm, Monday to Friday, 10:00am to 2:00pm on Saturdays and at no time on Sundays or Public Holidays.
- The overpressure level from blasting operations must not:

  (a) exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over each reporting period; and

  (b) Exceed 120dB (Lin Peak) at any time.

  At any residence on privately-owned land.

- Ground vibration peak particle velocity from the blasting operations must not:

  (a) exceed 5mm/s for more than 5% of the total number of blasts during each reporting period; and

  (b) exceed 10mm/s at any time,

  At any residence on privately-owned land.

PA 06_0308 also specifies that the mine shall not carry out more than:

(a) 2 blasts a day; and

(b) 5 blasts a week, averaged over a 12 month period.

3.9.2 Control Procedures

Flyrock, air vibration, ground vibration and dust from blasting are controlled using a combination of blast design and operational methods which are detailed in the MOP and/or documented blasting procedures.

3.9.3 Performance

During the reporting period, a total of four blasts were initiated in relation to spontaneous combustion management works required at the Sunnyside Mine. Of the four blasts initiated, one did not perform as expected, exceeding the 95% criteria of 115dBL overpressure, and the 100% criteria of 120dBL overpressure. The non-compliant blast occurred on the 26th February 2014. Results non-compliant with the overpressure criteria for blasting were recorded at Ivanhoe (118.0dBL), Plain View (122.8dBL) and Innisvale (126.1dBL). The relevant Departments and affected landholders were notified of the exceedance.

An investigation into the cause of the overpressure exceedances was undertaken by Whitehaven's Drill and Blast Manager in consultation with LDE Corporation Pty Ltd. An Incident Cause Analysis Method (ICAM) investigation identified a number of issues that would have likely contributed to the overpressure exceedances. A letter stating the findings of the ICAM investigation was sent to the EPA and DoPI (now DP&E) in March 2014. As a result of the non-compliant blast, the EPA issued NMPL with an Official Caution on the 5th May 2014. All other blasts undertaken in the reporting period were compliant.

The maximum recorded ground vibration during the reporting period was 2.3 mm/s recorded at "Plain View" on the 11th February 2012. This is well inside the consent criteria of 5 mm/s.

All blast monitoring results for the reporting period, including the time of initiation are presented in Appendix 7.

3.10 Operational Noise

3.10.1 Criteria

The EPL and Project Approval detail the noise criteria for site operations and coal haulage however the requirement for noise monitoring was removed during the previous reporting period.

3.10.2 Control Procedures

Historic control of noise generation and propagation on the Sunnyside Coal Mine site has been by a combination of general source and propagation path methods including, where practical:

- Installation and maintenance of appropriate mufflers on plant and equipment;
- Where operationally feasible, scheduling activities to minimise operation of equipment in exposed locations when winds are blowing towards residences;
- Equipment removal or replacement;
- Changing operational procedures;
- Restricting hours of operations;
- Enclosure of fixed items of plant, e.g. generators;
- Bunding close to noise sources to create obstructions to the propagation path;
- Site road maintenance using the mine-based grader; and
- Regular equipment maintenance.

Sunnyside Coal Mine also liaises with surrounding neighbours to seek feedback on activities at the mine. Any issues raised are investigated and appropriate measures are implemented to alleviate further impacts.

3.10.3 Operational Noise Monitoring

No monitoring of mine noise was conducted during the reporting period.

3.11 Light and Visual

3.11.1 Management

Management of light impacts was not an issue at the mine during the reporting period on the basis that all care and maintenance activities and works associated with spontaneous combustion management were undertaken during daylight hours only.

Management / minimisation of local and more distant visual impacts are achieved by:

- Minimising the extent of land disturbance / clearing in advance of mining;
- Maintenance of amenity bunds on the northern and eastern boundaries of the mine site; and
- Progressive rehabilitation of disturbed areas.

3.11.2 Performance

Sunnyside Coal Mine did not receive any complaints during the reporting period which related to light or visual impacts.

The eastern amenity bund was designed to reduce the visual impacts at the "Lilydale" property to the east of the mine. Although "Lilydale" is mine owned the bund provides an effective screen to all residences east of the mine.

The northern amenity bund continues to reduce visual impacts from Coocooboonah Lane and neighbouring properties. Rehabilitation of the eastern and northern slopes of the out of pit waste emplacement area also serve to reduce the mines impact on visual amenity.

3.12 Aboriginal Heritage Management

3.12.1 Sites Management and Performance

An assessment of the cultural heritage of the mine site was conducted by Archaeological Surveys and Reports Pty Ltd (ASR). Prior to the investigation, ASR contacted the Red Chief Local Aboriginal Land Council (LALC) and Bigundi Biame Gunnedarr Traditional People to arrange for site officers to assist in the survey. A representative from each group was present for the site survey conducted on the 12th September 2006 and the coal transport route survey on the 7th December 2006. The ASR assessment was used in the preparation of the Environmental Assessment for the mine, undertaken by R.W. Corkery & Co. Pty Ltd on behalf of Namoi Mining Pty.

Four sites were recorded during the investigation, as detailed in Table 7. Only one site (AGG1) was recorded within the mine site while the three isolated artefact sites were identified to the south of the mine site.

Table 7 - Aboriginal Artefacts

Site Name	Site Type	Site Description/Comments
Sunnyside AGG1	Axe Grinding Groove	Axe grinding groove at the rim of a cliff-like scarp (beside a small water-filled natural depression in the rock). Dimensions: 28cm (L) x 6cm (W) x 2cm (D). Located approximately 150m from the southern side of the open cut area.
Sunnyside ISO1	Isolated Artefact	Flake with possible retouch to one margin located on the bank beside the upper reaches of a dry creek (on a vehicle track). Dimensions: 21 x 12 x 3mm
Sunnyside ISO2	Isolated Artefact	Proximal fragment of a flake located on the bank beside the upper reaches of a dry creek. Dimensions: 22 x 22 x 5mm.
Sunnyside OS1	Artefact Scatter	Artefact scatter of at least ten artefacts in a lozenge-shaped area of 30 x 8m, on the upper slopes down slope of a contour bank down slope of a saddle. Artefact types: flakes and flaked pieces, including a backed blade.
Source: Modified after ASR (2007) – EA SCSC Part 7		

All Aboriginal Heritage sites are managed in accordance with the Sunnyside Coal Mine Aboriginal Cultural Heritage Management Plan, prepared in accordance with Condition 3(32) of PA 06_0308. The specific management measures for each of the identified sites are as follows:

AGG1

Although the site will not be directly impacted upon by mining operations and associated facilities, there is some potential for indirect impact from fly-rock as the site is located approximately 150 m from the extent of open cut operations.

In consultation with the relevant Aboriginal groups, it was determined that the site requires measures to ensure it is not damaged from flyrock. This has been achieved by the covering of the site with a layer of thick rubber (conveyor belt).

Sites ISO1, ISO2 and OS1

Each of these artefact sites are located outside the site boundary and more than 500m from any mining related activity. On this basis no specific protection mechanisms are considered necessary.

In the event that additional protective measures are required in the future, Sunnyside Coal Mine will initiate such actions in consultation with local Aboriginal groups and the OEH.

3.12.2 Consultation

On the basis of the mine being in care and maintenance, no soil stripping took place during the reporting period. No additional Aboriginal cultural heritage items have been discovered during the reporting period and no consultation with Aboriginal stakeholders was conducted.

3.13 Natural Heritage

There are no features of natural heritage within the Project Approval area and hence, no specific management procedures are required.

3.14 Spontaneous Combustion

Sunnyside Coal Mine is located within the Hoskissons Coal Seam which has been mined for over 120 years with a number of reported outbreaks of spontaneous combustion. Tests confirmed that coal from the Sunnyside Coal Mine has the potential to spontaneously combust and this has been particularly evident during the care and maintenance phase. A Spontaneous Combustion Management Plan was developed when the mine was operational to prevent and manage spontaneous combustion issues.

During the reporting period, Sunnyside has experienced spontaneous combustion issues as a result of exposed carbonaceous material. Whitehaven had been temporarily managing the issue via dozer push however due to the widespread and deep nature of the spontaneous combustion a comprehensive management plan was developed. This plan was provided to the Environment Protection Authority (EPA) following issue of a Notice of Cleanup Action in the last reporting period. The major earthworks described in the plan began in December 2013 as planned, and were completed in April 2014 (refer Plate 1). The plan provided to the EPA consisted of the following major components:

- Engagement of a contract Open Cut Examiner to supervise the works in accordance with statutory requirements;

- Completion of appropriate Risk Assessments for the project in accordance with Safety Management Standards, and identification of risk management measures for personnel working in proximity to the spontaneous combustion;
- Engagement of a suitable contractor and equipment to complete the works;
- Progressive completion of earthmoving works to ensure sufficient capping material was available as early as possible. Earthmoving involved dozing material from the eastern waste emplacement, drill and blast of the western and the northern sections of the pit to access suitable cover material for dozing, in addition to hauling and dumping in the southern area of the pit.

Areas exhibiting spontaneous combustion in the void were capped with a minimum of 5m of inert material and the final landform in the areas will be documented within the care and maintenance MOP, which will address final rehabilitation of the mine.

Plate 1 - Spontaneous Combustion Remediation Area (viewed from the west)

Following the completion of the spontaneous combustion management earthworks, weekly onsite inspections have occurred, and thermal imaging undertaken on the affected area. No visible sign of spontaneous combustion has been observed during the regular onsite inspections, however, a slight sulphur odour has been detected on some occasions, in close proximity to the affected area.

Monitoring of the affected area via thermal imaging in June 2014 confirmed that at the time combustion was continuing below the ground level. It is expected that this will continue until the material underground becomes oxygen depleted. Areas affected by spontaneous

combustion, and other areas that may develop spontaneous combustion, will continue to be monitored on a weekly basis throughout the next AEMR period. The use of a remote operated drone aircraft with thermal imaging capabilities is also being investigated to assist in monitoring.

3.15 Bushfire Management

Sunnyside Coal Mine is located within an area of cleared agricultural land. Whitehaven Coal personnel liaise with the local (Coocooboonah) Rural Fire Service, as required.

There have been no bushfire incidents on or adjacent to the mine site since development commenced.

3.16 Hydrocarbon Contamination

3.16.1 Management

It is Sunnyside Coal Mine's objective that:

- All bulk hydrocarbons, i.e. fuel, oils, grease etc. (both new and waste) retained at the mine be contained within bunded areas within the contained water management system as described in Section 2.8.2.
- All fixed or portable equipment incorporate self-contained bunding;
- Hydrocarbon-contaminated materials be disposed of appropriately;
- Minor spillages, if occurring, are cleaned up and the contaminated soil either bio-remediated or transferred off-site to an appropriately licensed waste disposal area; and
- Major spillages, if occurring, would be treated in the mine's Hydrocarbon Management Plan and Pollution Incident Response Management Plan.

The mine's procedures for hydrocarbon management have been effective throughout the reporting period with no groundwater contamination evident or reported by landowners and no requirement for off-site disposal of contaminated materials. A small area of potentially contaminated soil where a dozer was parked for several months was identified and will be remediated or disposed of in line with the Hydrocarbon Management Plan.

3.16.2 Greenhouse Gas Emissions

Diesel Consumption

During the reporting period, a total of 233,291 litres of diesel fuel was used on site during the spontaneous combustion management works. Assuming an energy content of diesel fuel of 38.6GJ/kL, and using Table 3 of the "National Greenhouse Accounts (NGA) Factors" – July 2012, the estimated direct – scope 1, Greenhouse Gas Emissions including all CO_2 and non CO_2 gases are 629 tonnes.

The site does not utilise electricity from the power grid, but via number of diesel powered gensets. The emissions associated with diesel consumption by the gensets are included in the above calculation.

Explosives

During the reporting period, a total of 184 t of explosives was used at Sunnyside Coal Mine in four blasts, significantly less than when the mine was operational. Assuming a conversion factor of 0.1778, it is estimated that blasting at the mine yielded 33 equivalent tonnes of CO_2.

Whitehaven reported greenhouse gas emissions for the Whitehaven Group (including Sunnyside) for the 2013/2014 financial year via the Federal Government's National Greenhouse and Energy Reporting Scheme (NGERS). Reporting was undertaken and submitted in October 2014.

3.17 Public Safety

The Sunnyside Coal Mine is located wholly on NMPL owned land in a relatively remote area. The northern boundary of the mine site is adjacent to Coocooboonah Lane, an unsealed road generally used by local traffic only. The site is fenced and appropriate warning signs have been installed. The access gates are locked whenever the site is unattended.

There were several instances of break and entry which occurred in October and November of the reporting period. Access to the site was gained by cutting through the fence adjacent to Coocooboonah Lane. Appropriate action was taken after each incident to deter further break-ins and the police were notified, with additional patrols to be conducted in the area. Access to the site is permitted only by authorised personnel.

3.18 Feral Animal Control

Feral animals are not a significant land management issue on Sunnyside Coal Mine's landholding and are limited to isolated occurrences of pigs, foxes, hares and rabbits. In view of the low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme was considered warranted during the reporting period. Trapping of feral pigs has been occurring since mid-2013, with nine captured to date.

In accordance with prior commitments, mine personnel will continue to monitor feral animal occurrences and implement necessary control programmes if and when necessary.

3.19 Land Capability

Land currently disturbed by mining is classified as Land Capability Class II, III, VII and VIII. On completion of all mining activities, the successful rehabilitation of areas of disturbance and the relinquishment of the mining leases, the land affected by mining within the Project Approval area will, in the main, be returned to a classification similar to that prior to mining. Sections of the waste emplacement will be returned to Class IV and areas of the residual mine void will be returned to Class VIII.

3.20 Meteorological Monitoring

The Sunnyside meteorological station had been operating continuously since 2007 recording 15 minute wind speed, wind direction, temperatures, humidity and rainfall. Meteorological monitoring at Sunnyside ceased in early 2013 in line with the requirement being removed from the EPL. Weather data is currently acquired from the BOM weather station 055023 (Gunnedah Pool) for the purposes of determining wet weather discharge compliance. Consideration will be given to utilising weather data from the Gunnedah CHPP following the installation of a new system.

4 COMMUNITY RELATIONS

4.1 Environmental Complaints

Sunnyside Coal Mine maintains a designated complaints line, with messages checked on a regular basis by environmental personnel. In the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded on a "Complaints Form".

One complaint was received during the reporting period in December 2013 in relation to spontaneous combustion impacts. The nature of the complaint, details and response to the complaint is presented in Table 8.

Any complaints that are made are reported to the Community Consultative Committee and documented in the AEMR. A complaints register is also maintained on Whitehaven's website.

Last reporting period, seven complaints were recorded, compared to one for this reporting period. A complaints comparison summary is presented in Table 9.

4.2 Employment Status, Demography and Socio-Economic Contributions

4.2.1 Employment Status and Demography

During the reporting period, major earthworks to control spontaneous combustion on site were undertaken. This resulted in employees being onsite from 10th December 2013 to 24th December 2013, working 11 hour shifts, and 6th January 2014 through until 10th April 2014, working 10.5 hour shifts.

4.2.2 Social and Economic Contributions

In addition to direct and indirect employment, and the purchase of goods and services from local suppliers, the Whitehaven Group continues to support the local community by means such as provision of cadetships to local university students.

As members of the Gunnedah / Boggabri area community, mine-related employees also contribute socially and economically through their involvement in community sporting, educational and social organisations and local expenditure.

Table 8 - Complaints Summary

Method	Date/Time of Complaint	Nature of Complaint	Investigation	Action Taken / Follow-up
EPA on behalf of nominated complainant	11/12/2013 12:09pm	Complaint in relation to fumes and sometimes smoke from the direction of the Sunnyside Mine. Odour has been occurring for 4-6 months and is quite strong in the early morning. Complainant concerned nothing is being done to manage spontaneous combustion in the pit.	EPA was advised that the issue had been discussed with the complainants and that actions were about to commence at site to start major earthworks to cap the affected material. A newsletter was also about to be issued to advise surrounding residents of actions being taken.	A meeting with concerned community members occurred on 17th December at which the complainants were present to outline the actions being undertaken to control the spontaneous combustion issue.

Table 9 - Complaints Comparison Summary

AEMR period	Issue								Total
	Noise	Coal trucks pushing gravel onto Oxley Highway	Blackjack Road intersection construction works	Coal truck speed when turning onto highway	Coal truck noise /excessive exhaust breaking /failing to stop or give way turning at Blackjack Road	Blasting	Coal truck using excessive exhaust breaking	Spontaneous Combustion odour	
2008-2009	1	1	1						3
2009-2010	1			1					2
2010-2011					1	3			4
2011-2012						2			2
2012-2013							1	6	7
2013-2014								1	1

4.3 Community Liaison

In accordance with Condition 9 of Schedule 5 of PA 06_0308, a Community Consultative Committee (CCC) was formed in January 2009. The committee, which formerly met on a quarterly basis, comprises representatives of Gunnedah Shire Council, Sunnyside Coal Mine and the community, and is chaired by Mr Michael Broekman.

During the reporting period there was a meeting held on the 14th October 2014. Minutes of this meeting are available on Whitehaven's website.

Sunnyside Mine representatives and Whitehaven's Manager Community Relations have continued to maintain contact with neighbours in the vicinity of the mine. These contacts not only provide a means of information dissemination, but also enable Whitehaven to ascertain and address any potential issues which may arise from time to time.

5 REHABILITATION

5.1 Buildings

No buildings were removed during the reporting period.

5.2 Rehabilitation of Disturbed Land

5.2.1 Objectives

Sunnyside Coal Mine's rehabilitation/land use objectives for the mine site are as follows:

(a) Areas affected by mining – short term

(i) Stabilising all earthworks, drainage lines and disturbed areas that are no longer required for mine related activities; and

(ii) Reducing the visibility of mining activities from adjacent properties and the local road network.

(b) Areas affected by mining – long term

(i) Creating a low maintenance, geotechnically stable and safe landform which is commensurate with the agricultural and nature conservation land uses on and around the mine site;

(ii) Blending of the final landform with the surrounding topography such that the visual impact of the post-mining landform is minimised; and

(iii) Re-establishing 100ha of agricultural land over the areas disturbed by the mine with approximately 16ha of land rehabilitated to a woodland vegetation community.

(c) Areas to be unaffected by mining

(i) Stock exclusion through fencing of the entire mining lease. This includes areas disturbed and rehabilitated with native vegetation and existing agricultural land fenced to exclude stock and allowed to naturally revegetate.

5.2.2 Variations in Activities against MOP

Extensive shaping works took place during the reporting period as a part of the spontaneous combustion management earthworks, however no seeding or tree planting occurred in active rehabilitation areas. An area was planted with trees to establish a western koala corridor connection the remnant vegetation on the western boundary to the remnant woodland to the south of the mine void.

A modified Project Approval addressing final landforms will be sought in the next reporting period. Following determination, a Care and Maintenance MOP, including site closure and final rehabilitation, will be submitted.

5.2.3 Post Rehabilitation Land Use

Two final rehabilitation land uses are to be established at Sunnyside, being Pasture and Woodland. The eastern, northern and western slopes of the out of pit emplacement area will be planted with locally occurring tree and shrub species with the objective of re-establishing woodland areas and providing habitat and food trees for the local koala population. The plateau on top of the waste emplacement and the flatter areas around the base of the emplacement area will be returned to pasture.

5.2.4 Landform Details

The major features of the proposed final landform include the final void, an elevated landform formed to the north of the final void and vegetation corridors to facilitate the

movement of koalas in the area. A more detailed description of the proposed final landform will be provided in the next AEMR following the determination of a modified Project Approval to address final landforms at Sunnyside, and the subsequent development and submission of a Care and Maintenance MOP. The slopes of the elevated landform to the north of the final void, and the eastern, northern and western slopes of the final void will generally be less than 10 degrees, or between 10-18 degrees.

Consistent with other Whitehaven operated sites, erosion controls are built into the rehabilitation slopes before and during the seeding process. Contour banks are constructed to capture and transport runoff from rehabilitation slopes to water conveyance / drainage structures, reducing the potential for erosion on the rehabilitation slopes. During the seeding process, the area is also mounded to increase the retention rate of water on the rehabilitation slopes, and reduce the volume and velocity of runoff, which also reduces the potential for erosion. Runoff which reports to the water management structures located on the rehabilitation slopes is directed into the existing water management system on site.

5.2.5 Cover Material

Subsoil will be replaced on rehabilitation slopes prior to topsoil, which will be replaced to a minimum depth of 150 millimetres, giving a combined depth of soil material on the rehabilitated landform of 300 millimetres minimum. No subsoil or topsoil was replaced during the reporting period.

5.2.6 Vegetation Species

Vegetation species planted during the reporting period were restricted to the planned koala corridor, which was established in accordance with the Rehabilitation and Landscape Management Plan. Vegetation species used in rehabilitation on site, their common name and the number of each species planted is described in Table 10 below. Seed collection programmes have been undertaken through Fields Native Nursery who supplied Whitehaven with significant quantities of understorey and overstorey species.

Table 10 - Rehabilitation Vegetation Species

Species	Common Name	Number Planted To Date
Acacia deanei	Deane's Wattle	90
Acacia hakeoides	Western Black Wattle, Hakea Wattle	25
Acacia implexa	Lightwood	125
Acacia spectabilis	Mudgee Wattle	30
Brachychiton populneus	Kurrajong	1329
Callitris glaucophylla	White Cypress	60
Casurina cristata	Belah	904
Chrysopogon filipes	Reeder	24
Eucalyptus albens	White Box	1199
Eucalyptus chloroclada	Baradine Red Gum	50
Eucalyptus crebra	Narrow-leaved Ironbark	924
Eucalyptus melanophloia	Silver-leaved Ironbark	904
Eucalyptus melliodora	Yellow Box	495
Eucalyptus microcarpa	Grey Box	924
Eucalyptus pilligaensis	Pilliga Box	899
Eucalyptus populneus	Poplar box	1254
Hardenbergia violacea	False sarsparilla	30

5.2.7 Progression to Maturity

The rehabilitation on the out of pit waste emplacement consists of established and maturing woodland vegetation, with extensive establishment of grasses/groundcover. Limited rainfall during the reporting period appears to have limited the success of these plantings, however the area will be targeted for infill planting when weather conditions are suitable. Most areas of current rehabilitation are established and maturing, reducing the risks associated with the success of the plantings. Risks associated with weather, such as rainfall, wind storms and high temperatures, and fire damage, are considered most likely to have a widespread severe impact on tree survival in the established areas. Other factors such as grazing pressure, competition from weeds and other trees, and disease may also impact on vegetation establishment. Many of these risks can be managed, and it is anticipated that grazing pressure associated with native herbivores will be further reduced following the continued growth of the trees, while risks associated with competition from weeds is managed by ongoing weed control, and the impact of adverse weather can be minimised by watering if required, and infill planting in the event of tree loss.

5.2.8 Present and Future Habitat

Winter and spring monitoring programmes will be undertaken on site in accordance with the Rehabilitation Management Plan. Part of this monitoring provides an annual snapshot of the habitats available in these areas and habitat utilisation by fauna. This is then compared to baseline data collected from adjacent unaffected land surrounding the mine to determine its success and progression in regards to habitat value for native and threatened species. In past monitoring programmes several threatened fauna species have been identified and recorded adjacent to the mine lease.

5.2.9 Weeds Management

Monthly inspections of rehabilitation areas, as well as periodic general observations of the site, are undertaken in order to identify the presence of weeds. Where practicable weed infestations are managed with a combination of chemical, physical or biological controls.

There were no significant noxious weed populations identified at Sunnyside at the end of the reporting period, however Mexican Poppy continues to be present adjacent to the site access/haul road, and on the shaped/soiled area of the spontaneous combustion earthworks.

5.2.10 Erosion Control

Monthly inspections of rehabilitation and water management areas, as well as general observations of the site are undertaken in order to identify and record the presence of erosion. Erosion is managed on site by various measures and methods including the construction of contour banks on rehabilitation slopes to direct water to conveyance structures capable of resisting erosion, the installation of mounding in between contours on rehabilitation sloped to reduce the velocity and volume of runoff water, and the seeding of rehabilitation areas as soon as practicably possible following soil replacement.

During the reporting period, minor erosion occurred primarily on the uncontoured area of rehabilitation on the western slope of the out of pit emplacement, on the sloped sections of the spontaneous combustion management earthworks, and within the mine void on exposed areas such as roadways. Where practicable, these erosion areas will be controlled

by seeding with a cover crop, the installation of contours/diversion bunds, and the installation of mounding between contour banks on slopes as part of rehabilitation works.

5.2.11 Pollution Monitoring

Sediment basins and storage dams are sampled quarterly, with additional sampling occurring from licensed discharge points in the event of wet weather discharge, and from upstream and downstream sampling locations on Coocooboonah Creek in the event of wet weather discharge or flow during the quarter.

5.2.12 Fencing

No exclusion fencing is in place around rehabilitated areas, however fencing around the site boundary excludes stock from the site, including rehabilitation areas. The northern boundary fence, adjacent to Coocooboonah Lane, is monitored regularly as it was cut numerous times in the reporting period. Each time it has been repaired with additional star pickets installed, limiting future access at that location.

5.2.13 Achievements During the Reporting Period

Table 11 and Table 12 present a Rehabilitation Summary and listing of maintenance activities as required in the NSW Department of Primary Industries – Mineral Resources (now DRE), *Guidelines and Format for Preparation of an Annual Environmental Management Report*. Rehabilitation works during the reporting period were limited to the shaping of part of the eastern mine void associated with spontaneous combustion management earthworks. There were 446 trees/shrubs planted during the reporting period in the koala corridor south of SD1 (refer Plan 4).

Table 11 - Rehabilitation Summary

		Area Affected (hectares)			
		This Report Period (as of 30.11.14)	**Last Report Period (30.11.13)**	**Cumulative Next Report Period (estimated)**	
A:	**MINE LEASE AREA**				
A1	**Mine Lease(s) Area**	233.9			
B:	**DISTURBED AREAS**				
B1	**Infrastructure area** (other disturbed areas to be rehabilitated at closure including facilities, roads)	9.05	9.05	9.05	
B2:	**Active Mining Area** (excluding items B3 - B5 below)	16.78	10.87	16.78	
B3	**Waste emplacements**, (active/unshaped/in or out-of-pit)	18.72	31.78	18.72	
B4	**Tailings emplacements,** (active/unshaped/uncapped)	N/A	N/A	N/A	
B5	**Shaped waste emplacement** (awaits final vegetation)	10.23	0	10.23	
ALL DISTURBED AREAS		54.78	51.7	54.78	F1
C	**REHABILITATION PROGRESS**				
C1	**Total Rehabilitated area*** (except for maintenance)	37.08	37.08	37.08	F2
D:	**REHABILITATION ON SLOPES**				
D1	**10 to 18 degrees**	16.76	16.76	16.76	
D2	**Greater than 18 degrees**	0	0	0	
E:	**SURFACE OF REHABILITATED LAND**				
E1	**Pasture and grasses**	18.31	18.31	18.31	
E2	**Native forest/ecosystems**	18.77	18.77	18.77	
E3	**Plantations and crops**	0	0	0	
E4	**Other** (include non vegetative outcomes)	0	0	0	

Areas with established tube stock are considered to be “native forest/ecosystem”.

“Pasture and Grasses” also includes areas with recently planted tubestock that are not yet established and the northern and eastern amenity bunds (bunds total 8.31ha).

C1 – Total Rehabilitated Area includes all rehabilitation regardless of progress.

Table 12 - Maintenance Activities on Rehabilitated Land

NATURE OF TREATMENT	Area Treated (ha)		
	Report period	**Next period**	**Comment/control strategies/ treatment detail**
Additional erosion control works (drains re-contouring, rock protection)	Nil	Nil	Minor erosion repairs/maintenance to be carried out as required.
Re-covering (detail - further topsoil, subsoil sealing etc)	Nil	Nil	
Soil treatment (detail - fertilizer, lime, gypsum etc)	Nil	Nil	
Treatment/Management (detail - grazing, cropping, slashing etc)	Nil	Nil	
Re-seeding/Replanting (detail - species density, season etc)	Nil	Nil	Re-seeding of small sections on the western and south-eastern batter of the waste emplacement may be undertaken.
Adversely Affected by Weeds (detail - type and treatment)	<1 ha	<1 ha	Spot spraying of Mexican Poppy along the haul road. Cochineal Beetles were transferred onto some Prickly Pear for biological control. No major weed infestations were identified on rehabilitation areas, however Mexican poppy is present on south slope of eastern void in spontaneous combustion remediation area.
Feral animal control (detail - additional fencing, trapping, baiting etc)	Mine lease	Nil	Trapping of feral pigs

5.3 Rehabilitation Monitoring and Performance

Rehabilitation condition is monitored through monthly environmental inspections. The monitoring of rehabilitation condition involves the regular inspections of ground cover, trees and the presence of erosion and weeds. A general overview of the rehabilitation performance of the site is presented in Plate 2.

Plate 2 - Sunnyside viewed from the East (Plain View property)

6 CONTINUOUS IMPROVEMENT AND TARGET INITIATIVES

6.1 Objectives

Namoi Mining Pty Ltd has an ongoing commitment to environmental management and aims to minimise any adverse impacts on the physical, biological, cultural and socio-economic environment in the area of the mine and in surrounding areas.

Improvements in environmental management will be achieved through the effective implementation of the operational and monitoring aspects of the current MOP and modified Project Approval and Care and Maintenance MOP, which in turn, will incorporate relevant aspects of various management plans and monitoring programs prepared in accordance with the Mine's Project Approval.

6.2 Achievements to Date

Achievements at the mine over this reporting period have included:

- Obtaining an extension to the MOP term in order to allow sufficient time for a modified Project Approval addressing final landforms to occur, and allow for the development of a Care and Maintenance MOP;
- Completion of extensive earthworks to control spontaneous combustion issues on site. There have been no complaints relating to spontaneous combustion since the remediation works were completed;
- The establishment and maintenance of an open and honest relationship with the neighbours, community in general, regulatory authorities, Local Government and other groups such as the local Aboriginal community;
- Demonstration of adequate surface water controls through water management, drainage and sediment control structures, with no exceedance of water quality criteria and no wet weather discharges during the reporting period;
- Continuation of pasture and woodland establishment rehabilitation on the plateau and batter areas of the waste emplacement; and
- Continuation of koala habitat enhancement, through the planting and continued establishment of seedlings of koala feed tree species.

6.3 Targets and Goals

- The ongoing development of rehabilitation of the reshaped out of pit overburden emplacement and void;
- The continuation of successful spontaneous combustion management on site;
- The continuation of development and maintenance of the koala habitat enhancement area;
- The development and maintenance of woodland on the rehabilitated waste emplacements slopes;
- Continued community liaison, support and involvement / education in the mines activities;
- Compliance with all relevant conditions of the lease, licences and consents;
- The continuation of environmental monitoring and management despite the mine not being operational; and
- The development and submission of a Care and Maintenance MOP, following determination of the modified Project approval.

N6570000
N6569500
N6569000
N6568500
N6568000

E223000
E223500
E224000
E224500
E225000
E225500

163
DP 755503

3
DP 1140891

494
DP 755503

12
DP 755503

118
DP 755503

1
DP 393755

DP 755503

164
DP 755503

216

217

ML 1624

SD4

SD3

SB4

SB5

SB3

SB2

SD1

SD2

①

②

③

④

Weighbridge

ACCESS TS

SITE OFFICE & FACILITIES

ROM PAD

HELIPAD

VOID WATER DAM

Aboriginal Site

TS

SUNNYSIDE HAUL ROAD

COOCOOBOONAH LANE

N

W

E

S

00 100 200 300 400 500

LEGEND

- *Soil Stripping Area (2011/2012 AEMR)*
- *No Soil Stripping Area (2012/2013 AEMR)*
- *No Soil Stripping Area (2013/2014 AEMR)*
- *No Proposed Soil Stripping Area (2013/2014 AEMR)*
- *Stockpile Areas*
- *Infrastructure Areas*
- *Sediment Basin (Dirty)*
- *Storage Dam (Clean)*
- *Void Water Dam*
- *Limit of Open Cut*
- *Mining Lease Boundary*
- *Vegetation Boundary*
- TS *Topsoil*
- *Aboriginal Site*
- * *Pre-existing Farm Dam*
- ① *Fauna/Vegetation Monitoring*
- *Flow (Dirty)*
- *Flow (Clean)*

PLAN 3
LAND PREPARATION
SUNNYSIDE MINE

File Ref:	4506
Surveyor:	
Date:	30/11/2014

N6570000
N6569500
N6569000
N6568500
N6568000
E223000
E223500
E224000
E224500
E225000
E225500
163 DP 755503
3 DP 1140891
494 DP 755503
12 DP 755503
118 DP 755503
1 DP 393755
DP 755503
216
217
164 DP 755503
ML 1624
SD4
SD3
SB4
SB5
SB2
SB3
SD1
SD2
Weighbridge
ACCESS
SITE OFFICE & FACILITIES
ROM PAD
HELIPAD
VOID WATER DAM
2009/2010
2010/2011
2011/2012
Aboriginal Site
SUNNYSIDE HAUL ROAD
COOCOOBOONAH LANE
N
W
E
S
00 100 200 300 400 500

LEGEND

- Soil Covered Slopes (10°- 18°)
- Soil Covered Slopes (<10°)
- No Rehabilitation (Proposed 2014/2015 AEMR)
- Koala Corridor
- Infrastructure Areas
- Stockpile Areas
- Sediment Basin (Dirty)
- Storage Dam (Clean)
- Void Water Dam
- Area shaped not soiled (2013/2014 AEMR) Note: soil on shaped southern slope in pit may be of acceptable depth - requires further investigation.
- Mining Lease Boundary
- Flow (Dirty)
- Flow (Clean)
- Extent of Mining (To 30.11.12)
- No Mining (To 30.11.13)
- No Mining (To 30.11.14)
- No Mining (Proposed 2014/2015 AEMR)
- No Waste Emplacement (2013/2014 AEMR)
- No Waste Emplacement (Proposed 2014/2015 AEMR)
- Contour banks
- * Pre-existing Farm Dam
- Aboriginal Site
- ① Fauna/Vegetation Monitoring

PLAN 4
MINING & REHABILITATION
SUNNYSIDE MINE

File Ref:	4506
Surveyor:	
Date:	30/11/2014

Appendix 1

PA 06_0308

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:
- prevent and/or minimise adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Honourable Kristina Keneally MP
Minister for Planning

24/5/08

Sydney 2008

SCHEDULE 1

Application No:	06_0308
Proponent:	Namoi Mining Pty Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Sunnyside Coal Project

TABLE OF CONTENTS

DEFINITIONS

AEMR	Annual Environmental Management Report
AgQuip	The AqQuip Festival, held at Blackjack Road, generally during the 3rd week in August
BCA	Building Code of Australia
CCC	Community Consultative Committee
CHPP	Coal handling and preparation plant
Council	Gunnedah Shire Council
Day	The period from 7am to 6pm on Monday to Saturday
DECC	Department of Environment and Climate Change
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
DPI	Department of Primary Industries
DWE	Department of Water and Energy
EA	Environmental Assessment prepared for Namoi Mining Pty Limited entitled *Environmental Assessment Sunnyside Coal Project via Gunnedah* and *Specialist Consultant Studies Compendium,* Volumes 1 & 2 (April 2008)
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997*
Evening	The period from 6pm to 10pm
Land	The whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Material harm to the environment as defined in *Protection of the Environment Operations Act 1997*
Mining operations	The removal and emplacement of overburden and the extraction, processing and transportation of coal on and from the site
Minister	Minister for Planning, or delegate
Privately-owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Proponent	Namoi Mining Pty Limited or any other person or persons who rely on this approval to carry out the project that is subject to this approval
Project	The Sunnyside Coal Project described in the EA
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering corrections and what is practical to build
RTA	Roads and Traffic Authority
ROM	Run-of-mine
Site	Land to which the project application applies (see Appendix 1 and 2)
Statement of Commitments	The Proponent's Final Statement of Commitments for Site Operations and Management in Appendix 3

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) Sunnyside Coal Project Response to Public and Government Agency Submissions (June 2008);
   (c) Sunnyside Coal Project Supplementary Response to Submissions (July 2008);
   (d) Statement of Commitments (see Appendix 3); and
   (e) conditions of this approval.

   Notes:
   - *The general layout of the project is shown in Figure 1 of Appendix 2; and*
   - *The Statement of Commitments is reproduced in Appendix 3.*

3. If there is any inconsistency between the above documents, the latter document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent shall comply with any reasonable and feasible requirements of the Director-General arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with the conditions of this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

Limits on Approval

5. Mining operations may take place on the site for 7 years from the grant of the mining lease for the project.

   Note: Under this Approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General and DPI. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent shall not extract more than 1 million tonnes of ROM coal a year from the site.

7. The Proponent shall use the coal transport route shown in Figure 2 of Appendix 2 to transport all coal from the site to the Whitehaven Siding CHPP.

Hours of Operation

8. Construction activities may take place only between 7 am to 6 pm each Monday to Friday and 7 am to 4 pm on Saturdays, and not on Public Holidays.

9. Mining operations may take place only between 7 am to 10 pm each Monday to Friday and 7 am to 6 pm on Saturdays, and not on Public Holidays.

10. Transport of coal may take place only between 7 am to 6 pm Monday to Friday (or between 7 am to 8 pm during Eastern Summer Time) and between 7 am to 4 pm on Saturdays, and not on Public Holidays.

    Note: See condition 39 of Schedule 3.

Management Plans / Monitoring Programs

11. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.

Structural Adequacy

12. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:
- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

13. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

14. The Proponent shall ensure that all plant and equipment used on site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

Community Enhancement Funds

15. By 31 November 2008, and on each anniversary of that date until and including 2012, the Proponent shall provide development contributions of $100,000 per annum to the Gunnedah Shire Council for expenditure by the Council on community enhancement projects.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

ACQUISITION OF AFFECTED PROPERTIES

Acquisition Upon Request

1. Upon receiving a written request for acquisition from the owner of "Lilydale", the Proponent shall acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.

NOISE

Note: These conditions must be read in conjunction with Section 8 of the Statement of Commitments.

Construction Noise Impact Assessment Criteria

2. The Proponent shall ensure that the noise generated during the construction of the project does not exceed the level set out in Table 1.

Table 1: Construction noise impact assessment criterion dB(A)

Day/Evening $L_{A10(15\ minute)}$	***Land***
40	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Operational Noise Impact Assessment Criteria

3. The Proponent shall ensure that the noise generated during mining operations and other activities on the site does not exceed the level set out in Table 2:

Table 2: Operational noise impact assessment criterion dB(A)

Day/Evening $L_{Aeq(15\ minute)}$	***Land***
35	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ limit, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *These limits apply under meteorological conditions of:*
  - *wind speeds of 3 m/s at 10 metres above ground level; or*
  - *up to 3°C/100 m temperature inversion strength for all receivers, plus a 2 m/s source-to-receiver component drainage flow wind at 10 metres above ground level for those receivers where applicable.*

However, if the Proponent has a written negotiated noise agreement with the landowner of any land, and a copy of this agreement has been forwarded to the Department and DECC, then the Proponent may exceed the noise limits in Table 1 or Table 2 on that land in accordance with the negotiated noise agreement.

Land Acquisition Criteria

4. If the noise generated by the project exceeds the level in Table 3, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.

Table 3: Land acquisition criterion dB(A)

Day/Evening $L_{Aeq(15\ minute)}$	***Land***
40	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 1.

Additional Operational Noise Mitigation Measures

5. Upon receiving a written request from the landowner of:
   (a) "Illili", "Ferndale", or
   (b) any residence on privately owned land where noise generated by the project exceeds 37 dB(A) $L_{Aeq(15\ minute)}$,

   the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

   These additional mitigation measures must be reasonable and feasible.

   If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

   Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.

Traffic Noise Impact Assessment Criteria

6. The Proponent shall implement all reasonable and feasible measures to ensure that the traffic noise generated by the project combined with the traffic noise generated by other mines does not exceed the level in Table 4:

Table 4: Traffic noise criterion dB(A)

Day/Evening $L_{Aeq(1\ hour)}$	***Road***
55	Any residence adjacent to Torrens Road

Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the DECC's Environmental Criteria for Road Traffic Noise.

Additional Traffic Noise Mitigation Measures

7. If the traffic noise generated by the project exceeds the criterion in Table 4, the Proponent shall, upon receiving a written request from any landowner adjacent to Torrens Road, implement noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

   These additional mitigation measures must be reasonable and feasible.

   If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

   Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.

Continuous Improvement

8. The Proponent shall:
   (a) implement all reasonable and feasible best practice noise mitigation measures;
   (b) investigate ways to reduce the noise generated by the project, including off-site road noise; and
   (c) report on these investigations and the implementation and effectiveness of these measures in the AEMR,

   to the satisfaction of the Director-General.

Monitoring

9. The Proponent shall prepare and implement a detailed Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must:
   (a) be prepared in consultation with DECC;
   (b) be submitted to the Director-General for approval prior to carrying out any development on site; and
   (c) include:
      - attended monitoring measures; and
      - a noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria in this approval.

BLASTING AND VIBRATION

Note: These conditions should be read in conjunction with section 8 of the Statement of Commitments.

Airblast Overpressure Limits

10. The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 5 at any residence on privately-owned land.

Table 5: Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts in a 12 month period
120	0%

Note: The overpressure values in Table 5 apply when the measurements are performed with equipment having a lower cut-off frequency of 2 Hz or less. If the instrumentation has a higher cut-off frequency a correction of 5 dB should be added to the measured value. Equipment with a lower cut-off frequency exceeding 10 Hz should not be used.

Ground Vibration Impact Assessment Criteria

11. The Proponent shall ensure that the ground vibration level from blasting, or any other activity at the project does not exceed the levels in Table 6 at any residence on privately-owned land.

Table 6: Ground vibration impact assessment criteria

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts in a 12 month period
10	0%

Blasting Hours

12. The Proponent shall carry out blasting on site only between 10 am and 5 pm each Monday to Friday and 10 am and 2 pm on Saturdays (excepting Public Holidays).

Blasting Frequency

13. The Proponent shall not carry out more than:
    (a) 2 blasts a day; and
    (b) 5 blasts a week, averaged over any 12 month period;
    on site.

Property Inspections

14. At least 2 months before carrying out any blasting on the site, the Proponent shall advise all landowners within 2 km of proposed blasting activities, and any other landowner nominated by the Director-General, that they are entitled to a property inspection to establish the baseline condition of the property.

15. If the Proponent receives a written request for a property inspection from any such landowner, the Proponent shall:
    (a) commission a suitably qualified person, whose appointment has been approved by the Director-General, to inspect and report on the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and
    (b) give the landowner a copy of this property inspection report.

    Note: It is preferable for the property inspection to be carried out prior to the commencement of blasting activities on the site, and the Proponent should facilitate this occurring wherever possible.

Property Investigations

16. If any landowner within 2 km of proposed blasting activities, or any other landowner nominated by the Director-General, claims that his/her property, including vibration-sensitive infrastructure such as water supply or underground irrigation mains, has been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request:
    (a) commission a suitably qualified person whose appointment has been approved by the Director-General to investigate the claim and prepare a property investigation report; and
    (b) give the landowner a copy of the report.

    If this independent investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Director-General.

    If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.

Monitoring

17. Prior to the commencement of blasting, the Proponent shall prepare and implement a detailed Blast Monitoring Program for the project, in consultation with the DECC and to the satisfaction of the Director-General.

AIR QUALITY

Note: These conditions must be read in conjunction with Section 11 of the Statement of Commitments.

Impact Assessment Criteria

18. The Proponent shall ensure that dust emissions generated by the project do not cause additional exceedances of the criteria listed in Tables 7 to 9 at any residence on privately owned land, or on more than 25 percent of any privately-owned land.

Table 7: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 8: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 9: Long term impact assessment criterion for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

19. The Proponent shall prepare and implement an Air Quality Monitoring Program for the project to the satisfaction of the Director-General. This program must:
    (a) be submitted to the Director-General prior to the commencement of construction activities;
    (b) be prepared in consultation with the DECC; and
    (c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the project.

METEOROLOGICAL MONITORING

Note: This condition must be read in conjunction with Section 11 of the Statement of Commitments

20. During the project, the Proponent shall ensure there is a suitable continuously operating meteorological station on site that complies with the requirements in *Approved Methods for Sampling of Air Pollutants in New South Wales* (DECC, 2007), or its latest version.

WATER MANAGEMENT

Note: These conditions must be read in conjunction with Section 7 & 10 of the Statement of Commitments.

Discharge

21. Except as may be expressly provided for by an EPL, or in accordance with section 120 of the *Protection of the Environment Operations Act 1997*, the Proponent shall not discharge any mine water from the site.

Water Management Plan

22. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane) in consultation with the DECC and DWE by suitably qualified expert/s whose appointment/s have been approved by the Director-General and include a:
    (a) Site Water Balance;
    (b) Erosion and Sediment Control Plan;
    (c) Surface Water Monitoring Plan;
    (d) Groundwater Monitoring Program; and
    (e) Groundwater Contingency Plan.

Site Water Balance

23. The Site Water Balance must:
    (a) include details of:
        - sources and security of water supply;
        - water use on site;
        - water management on site;
        - off-site water transfers;
        - reporting procedures;
    (b) describe measures to minimise water use by the project; and
    (c) be reviewed and recalculated each year using the most recent water monitoring data.

Erosion and Sediment Control

24. The Erosion and Sediment Control Plan must:
    (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* manual (Landcom, 2004), or its latest version;
    (b) identify activities that could cause soil erosion and generate sediment;
    (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters;
    (d) describe the location, function, and capacity of erosion and sediment control structures; and
    (e) describe what measures would be implemented to monitor and maintain the structures over time.

Surface Water Monitoring Program

25. The Surface Water Monitoring Program must include:
    (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project;
    (b) surface water impact assessment criteria;
    (c) a program to monitor the impact of the project on surface water flows and quality; and
    (d) procedures for reporting the results of this monitoring.

Groundwater Monitoring Program

26. The Groundwater Monitoring Program must include:
    (a) further development of the regional and local groundwater model;
    (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality (including at any privately owned bores in the vicinity of the site);
    (c) groundwater impact assessment criteria;
    (d) a program to monitor the impact of the project on groundwater levels, yield and quality; and
    (e) procedures for reporting the results of this monitoring.

Groundwater Contingency Plan

27. The Groundwater Contingency Plan must:
    (a) provide measures to mitigate any impacts of the mine on the quality or quantity of groundwater supplies available on privately-owned land;
    (b) establish trigger levels, benchmarks and contingency criteria; and
    (c) provide for negotiated agreements with affected landowners, including compensation where mining impacts result in increased extraction costs for landowners.

LANDSCAPE MANAGEMENT

Koala Habitat

Note: This condition must be read in conjunction with Sections 2, 9 and 18 of the Statement of Commitments.

28. The Proponent shall implement the Koala habitat management and enhancement actions described in the EA (shown conceptually in Figure 6 in Appendix 4) in consultation with the DECC and to the satisfaction of the Director-General.

Note: Conditions 29 – 31 must be read in conjunction with Section 17 of the Statement of Commitments.

Rehabilitation

29. The Proponent shall rehabilitate the site to the satisfaction of the Director-General and DPI.

Rehabilitation and Landscape Management Plan

30. The Proponent shall prepare and implement a detailed Rehabilitation and Landscape Management Plan for the site to the satisfaction of the Director-General and DPI. This plan must:
    (a) be prepared in consultation with DECC, DWE and Council by suitably qualified expert/s whose appointment/s have been approved by the Director-General; and
    (b) be submitted to the Director-General and DPI for approval by 1 March 2009;
    (c) include:
        - the rehabilitation objectives for the site;
        - a description of how the rehabilitation of the site would be integrated with the landscape of the surrounding area;
        - detailed performance and completion criteria for the rehabilitation of the site;
        - a detailed description of the measures that would be implemented to achieve the performance and completion criteria for each site, including the procedures to be implemented for
            - protection and enhancement of koala habitat;
            - progressively rehabilitating the areas disturbed by mining operations;
            - restoration of agricultural land suitability;
            - revegetating the site;
            - protecting and/or enhancing areas in the vicinity of the disturbance area;
            - conserving and re-using any topsoil;
            - controlling weeds and feral pests;
            - controlling access; and
            - bushfire management.
        - a program to monitor the performance of the rehabilitation against the stated objectives, performance and completion criteria;
        - a description of the potential risks to successful rehabilitation, and a description of the contingency measures that would be implemented to minimise these risks; and
        - details of who is responsible for monitoring, reviewing and implementing the plan.

Mine Closure Plan

31. At least 2 years prior to the cessation of mining operations on the site the Proponent shall prepare a Mine Closure Plan. This plan must:
    (a) define the objectives and criteria for mine closure;
    (b) investigate options for the future use of the site;
    (c) provide a detailed methodology for decommissioning the site's storage dams;
    (d) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels;
    (e) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and
    (f) describe how the performance of these measures would be monitored over time.

HERITAGE

Note: These conditions must be read in conjunction with Section 12 of the Statement of Commitments.

Aboriginal Cultural Heritage Management Plan

32. The Proponent shall not destroy any known Aboriginal objects (as defined in the *National Parks and Wildlife Act 1974*) without the written approval of the Director-General.

33. The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane);
    (b) be prepared in consultation with the DECC and the local Aboriginal community;

(c) include a protocol for the ongoing consultation and involvement of Aboriginal communities in the conservation and management of Aboriginal heritage on site; and
(d) describe the measures that would be implemented to protect Aboriginal sites on site, or if any new Aboriginal objects or skeletal remains are discovered during the project.

TRANSPORT

Note: These conditions must be read in conjunction with Section 2 of the Statement of Commitments.

Monitoring of Coal Transport

34. The Proponent shall keep records of the amount of coal transported from the site each year, and include these records in the AEMR.

Traffic Management

35. Prior to transporting any coal off-site, the Proponent shall:
(a) construct a realignment of Coocooboonah Lane to the satisfaction of the landowner and Council;
(b) upgrade the intersection of Coocooboonah Lane and the Oxley Highway to the satisfaction of the RTA and Council;
(c) upgrade the intersection of the Oxley Highway and Blackjack Road to the satisfaction of the RTA and Council;
(d) upgrade the section of Blackjack Road to be used for coal transport to the satisfaction of Council;
(e) upgrade the intersection of Blackjack Road and Quia Road to the satisfaction of Council;
(f) upgrade the section of Quia Road to be used for coal transport to the satisfaction of Council;
(g) upgrade the intersection of Quia Road and Farrar Road to the satisfaction of Council;
(h) upgrade the intersection of Quia Road and Torrens Road to the satisfaction of Council; and
(i) upgrade Torrens Road to the satisfaction of Council.

36. Prior to carrying out any development on site, the Proponent shall prepare, and subsequently implement, a Construction Traffic Management Plan for the project to the satisfaction of the RTA and Council.

37. Within 6 months of this approval the Proponent shall enter into an agreement with Council for the maintenance of the section of the Oxley Highway between Coocooboonah Lane and Blackjack Road.

38. Prior to transporting coal from the site the Proponent shall construct 2 bus stops on the Oxley Highway to the satisfaction of Council.

39. Notwithstanding condition 10 of Schedule 2, the Proponent shall ensure no coal is transported from the site during AgQuip.

VISUAL IMPACT

Visual Amenity

40. The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director-General.

Lighting Emissions

41. The Proponent shall ensure that:
(a) no outdoor lights shine above the horizontal; and
(b) all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.

GREENHOUSE GAS

Energy Savings Action Plan

42. The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be prepared in accordance with the *Guidelines for Energy Savings Action Plans* (DEUS, 2005), or its latest version;
    (b) include consideration of energy use by mobile equipment;
    (c) be submitted to the Director-General for approval within 3 months of this approval; and
    (d) include a program to monitor the effectiveness of measures to reduce energy use on site.

WASTE

Waste Minimisation

43. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval prior to commencing of construction;
    (b) identify the various waste streams of the project;
    (c) describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project;
    (d) ensure irrigation of treated wastewater is undertaken in accordance with *Environmental Guidelines: Use of Effluent by Irrigation* (DEC, 2004), or its latest version; and
    (e) include a program to monitor the effectiveness of these measures.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. Within 1 month of this approval, the Proponent shall notify the owner of "Lilydale" in writing that he/she has the right to require the Proponent to acquire their land at any stage during the project.

2. If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria in schedule 3, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3. However, no notification is required if the impact is predicted in the EA or where an agreement has been negotiated with a landowner that excludes the requirement for ongoing notification of such impacts.

INDEPENDENT REVIEW

3. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.

   If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision:
   (a) consult with the landowner to determine his/her concerns;
   (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to:
      - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
      - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
   (c) give the Director-General and landowner a copy of the independent review.

   If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

4. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall:
   (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
   (b) conduct further monitoring to determine whether these measures ensure compliance; or
   (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria,
   to the satisfaction of the Director-General.

   If further monitoring under paragraph (b) determines that the project is complying with the relevant criteria, then the Proponent may discontinue the independent review with the approval of the Director-General.

5. If further monitoring under condition 4(b) determines that measures implemented under condition 4(a) have not achieved compliance with the land acquisition criteria in schedule 3, and the Proponent cannot then secure within 3 months a written agreement with the landowner under condition 4(c) to allow these exceedances, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 7-9 below.

6. If:
   (a) the landowner disputes the results of the independent review; or
   (b) the Proponent is unable to secure a written agreement under condition 4(c) with the landowner
   then (subject to condition 5) either the Proponent or the landowner may refer the matter to the Director-General for resolution.

Where matters referred to the Director-General under this condition cannot be resolved by the Director-General within 28 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

LAND ACQUISITION

7. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
   (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project the subject of the project application, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
      - presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in conditions 5 and 7 of schedule 3;
   (b) the reasonable costs associated with:
      - relocating within the Gunnedah local government area, or to any other local government area determined by the Director-General;
      - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
   (c) reasonable compensation for any disturbance caused by the land acquisition process.

   However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

   Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.

   The appointed valuer is to provide a full report and explanation of the determination and proposed terms to the Proponent, landowner and the Director-General.

   Within 14 days of receiving the independent valuer's determination, the Proponent shall make a written offer to purchase the land at a price not less than the independent valuer's determination.

   If the landowner refuses to accept this offer within 6 months of the date of the Proponent's offer, the Proponent's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

8. The Proponent shall bear the costs of any valuation or survey assessment requested by the independent valuer, or the Director-General and the costs of determination referred above.

9. If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

SCHEDULE 5

ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

Note: This schedule must be read in conjunction with section 18 of the Statement of Commitments.

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to the commencement of construction activities, and:
   (a) provide the strategic context for environmental management of the project;
   (b) identify the statutory requirements that apply to the project;
   (c) describe in general how the environmental performance of the project would be monitored and managed;
   (d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.

ENVIRONMENTAL MONITORING PROGRAM

2. The Proponent shall prepare and implement an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General within 6 months of this approval and consolidate the various monitoring requirements in schedule 3 of this approval into a single document.

REPORTING

Incident Reporting

3. As soon as practicable, and in any event within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.

4. Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that:
   (a) describes the date, time, and nature of the exceedance/incident;
   (b) identifies the cause (or likely cause) of the exceedance/incident;
   (c) describes what action has been taken to date; and
   (d) describes the proposed measures to address the exceedance/incident.

Annual Reporting

5. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and to all relevant agencies. This report must:
   (a) identify the standards and performance measures that apply to the project;
   (b) describe the works carried out in the last 12 months;
   (c) describe the works that would be carried out in the next 12 months;
   (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
   (e) include a summary of the monitoring results for the project during the past year;
   (f) include an analysis of these monitoring results against the relevant:
      - impact assessment criteria/limits;
      - monitoring results from previous years; and

- predictions in the EA;

(g) identify any trends in the monitoring results over the life of the project;
(h) identify any non-compliance during the previous year; and
(i) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. Within 2 years of this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements of this approval and any relevant mining lease or EPL (including any strategy, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate,
   (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals.

   Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of water, noise management and mine rehabilitation.

7. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

8. Within 3 months of submitting the audit report to the Director-General, the Proponent shall review, and if necessary revise the strategies/plans/programs required under this approval to the satisfaction of the Director-General.

COMMUNITY CONSULTATIVE COMMITTEE

9. Within 3 months of this approval, the Proponent shall establish a Community Consultative Committee (CCC) for the project. This CCC must be established and operated in accordance with the *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007)*, or its latest version, and to the satisfaction of the Director-General.

ACCESS TO INFORMATION

10. Within 3 months of the approval of any strategy/plan/ program required under this approval (or any subsequent revision of these strategies/plans/ programs), or the completion of the audits or AEMRs required under this approval, the Proponent shall:
    (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and
    (b) put a copy of the relevant document/s on its website.

11. During the project, the Proponent shall:
    (a) make a summary of all monitoring results required under this approval publicly available at the mine and on its website; and
    (b) update these results on a regular basis (at least every three months).

APPENDIX 1
SCHEDULE OF PROJECT LAND

Parish	***Land Title Reference***
Gill	*Lot 1 DP 393755* *Lot 12 DP 755503* *Lot 16 DP 7555031* *Lot 162 DP 755503* *Various Road Reserves*

APPENDIX 2
PROJECT MAPS

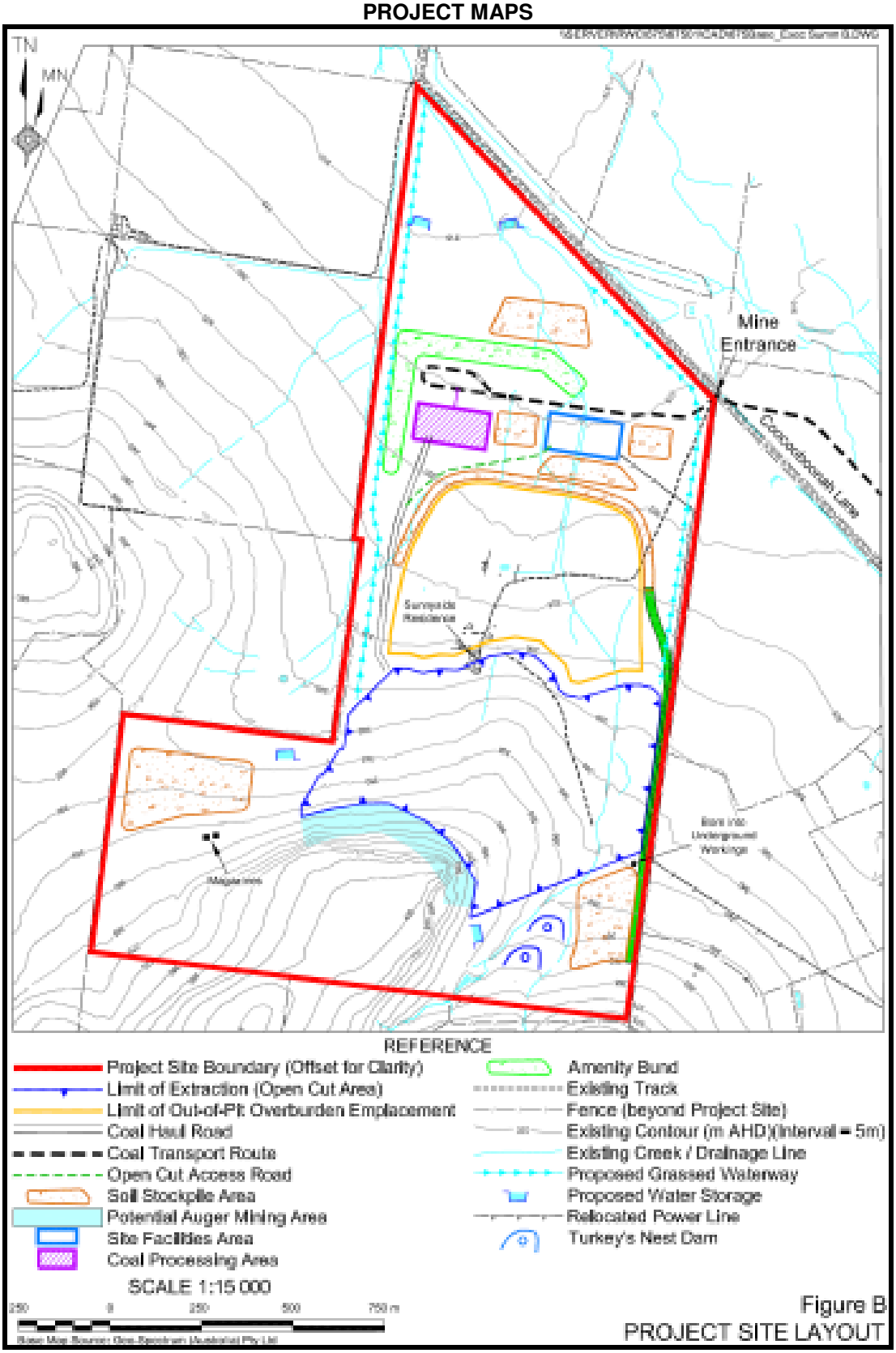


Figure 1: *Project Layout*

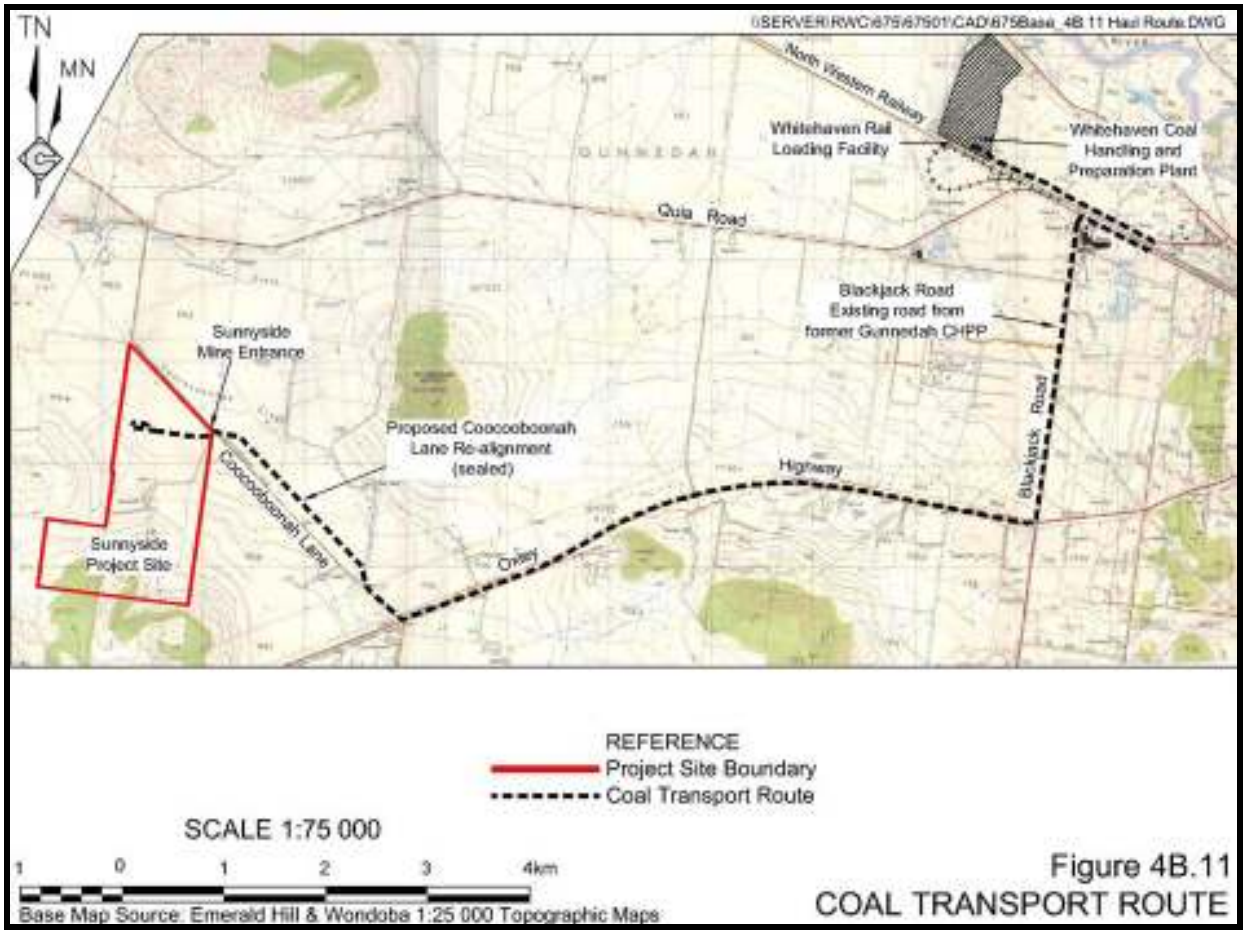


Figure 2: *Coal transport route*

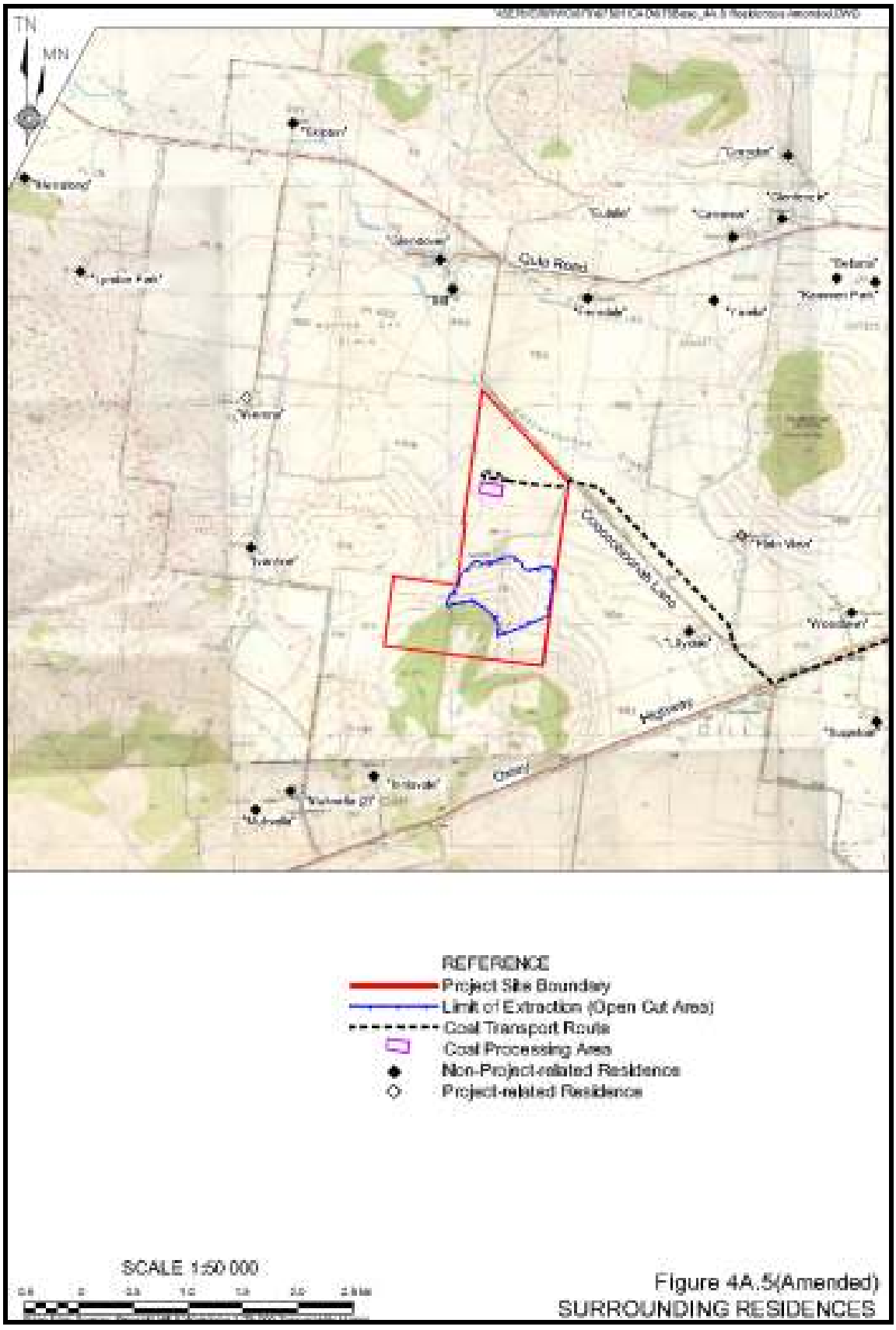


Figure 3: *Residences in proximity to the site*

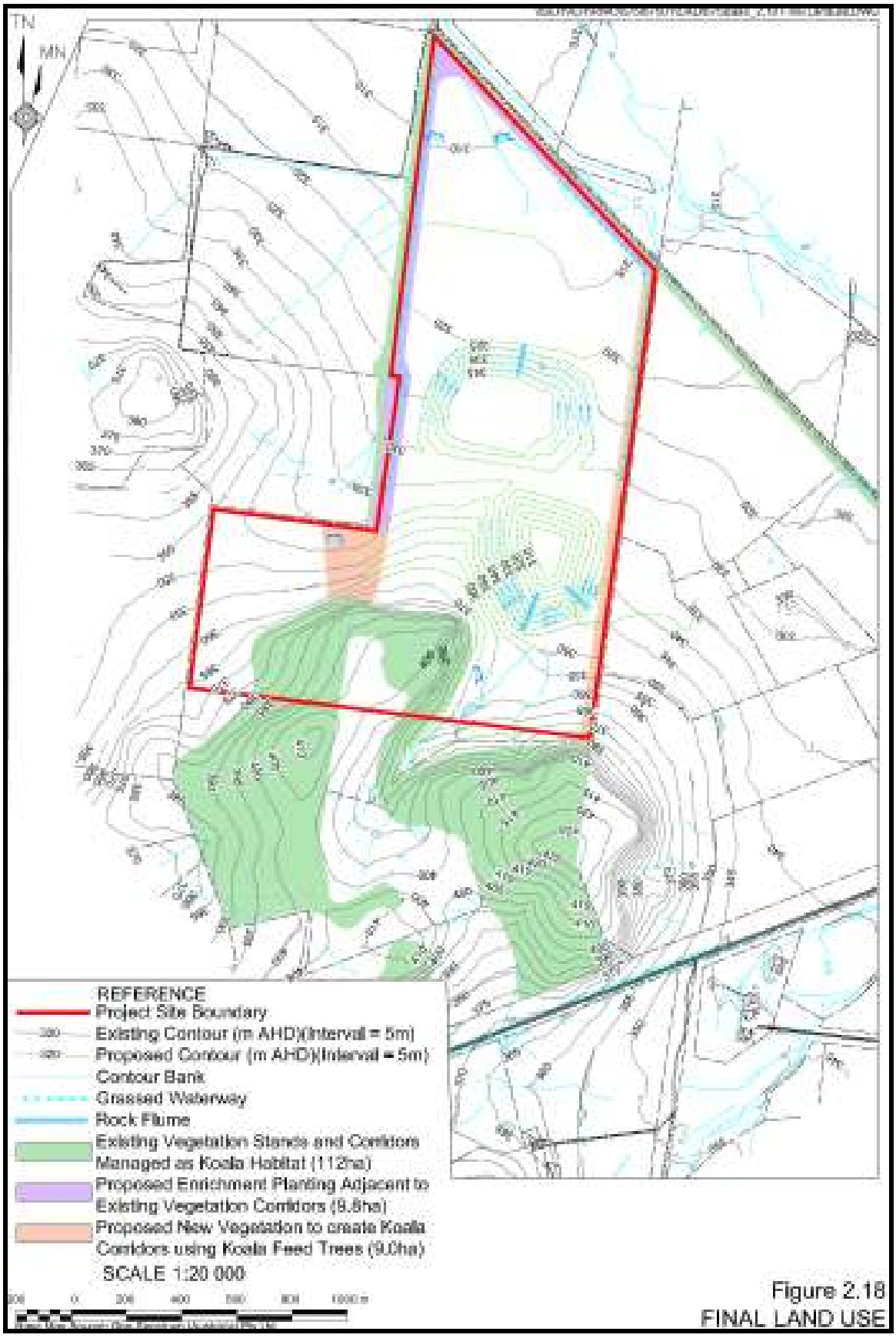


Figure 4: *Conceptual final land-use showing Koala habitat protection and enhancement areas*

APPENDIX 3
STATEMENT OF COMMITMENTS

Desired Outcome	Action		Timing
1. General Project Development			
Operate the Project to ensure that all component activities are undertaken in a responsible and proactive manner	1.1	All activities will be subject to the Mining, Rehabilitation and Environmental Management Process managed by the Department of Primary Industries – Mineral Resources.	Ongoing.
	1.2	Operate the mine with comprehensive systems to manage and monitor groundwater, surface water, noise, blasting, air quality, visibility, Aboriginal heritage, flora, fauna, traffic, visual and socio-economic aspects.	Ongoing.
	1.3	Apply for a Mining Lease with boundaries generally coincident with the Project Site.	Late 2007.
	1.4	Obtain all necessary certifications for all buildings constructed or relocated on site from Gunnedah Shire Council.	Mid 2008.
	1.5	Seek approval from Gunnedah Shire Council to install a septic system on site.	Prior to Project commencement.
	1.6	Undertake all rehabilitation and site decommissioning within 12 months of the end of mining. This would include re-instating Coocooboonah Lane to its pre-mining alignment	Approximately December 2013.
	1.7	Implement management strategies to minimise the likelihood of spontaneous combustion.	Ongoing.
	1.8	Construct the out-of-pit overburden emplacement in a manner that would ensure the initial emplaced overburden would form an acoustic barrier around the operating area within the emplacement.	During Year 1 of mining operations.
	1.9	Undertake a geological and geotechnical assessment prior to any auger mining to confirm it is both safe and economic to proceed.	During mining operations.
	1.10	Direct surface runoff water around the final void.	Ongoing.
	1.11	Potable water would be transported from Gunnedah to supplement rainwater collected off site buildings and stored in tanks. Ablutions water would be transported from Gunnedah.	Ongoing.

Desired Outcome	Action	Timing
1. General Project Development		
Operate the Project to ensure that all component activities are undertaken in a responsible and proactive manner (Cont'd).	1.12 Operational water will initially be supplied from water within the Gunnedah Coal Mine N^{o} 5 Entry underground workings. This will eventually augment the pit groundwater inflow and water drawn from the various sedimentation and fresh water dams that would form part of the site surface water management system.	Ongoing.
	1.13 Power will be predominantly generated on site by diesel powered generators.	Ongoing.
	1.14 There will be capacity to store 68 000L of diesel and 10 000L of oil on site in self-bunded fuel tanks.	Ongoing.
	1.15 An Environment Protection Licence to be applied for.	Mid 2008.
	1.16 RTA approval to be sought for proposed roadworks along the Oxley Highway.	Mid 2008.
	1.17 Road Construction Permit to be applied for from Gunnedah Shire Council prior to modifications and other roadworks associated with re-alignment of Coocooboonah Lane and public road intersections along the coal transport route.	Mid 2008.
	1.18 A Water Licence be applied for and granted before installation and operation of a water bore into the Gunnedah N^{o} 5 Colliery workings.	Mid 2008.
	1.19 A licence be applied and granted from WorkCover for the installation of explosives magazine within the Project Site area.	Mid 2008.
2. Traffic and Transport		
	2.1 Ensure all trucks transporting coal are well maintained and that drivers act in a courteous manner at all times.	Ongoing.
	2.2 Avoid loading trucks that are unroadworthy or not carrying covers.	Ongoing.
	2.3 Ensure all truck drivers operate in accordance with a Transport Policy and Code of Conduct.	Ongoing.

Desired Outcome	Action	Timing
2. Traffic and Transport (cont'd)		
	2.4 Contact all potentially affected landowners and surrounding residents prior to initial construction and the commencement of any upgrading works to inform / discuss the proposed works.	Prior to initial construction and ongoing.
	2.5 Liaise routinely with local residents to ensure their satisfaction with all aspects of changed traffic conditions.	Ongoing.
	2.6 Relocate part of Coocooboonah Lane to avoid disturbing remnant Koala habitat. RTA requested changes will result in approximately three trees being removed.	Prior to mining commencing.
	2.7 Upgrade parts of the proposed coal transport route beyond Coocooboonah Lane and various intersections to improve traffic flow and safety aspects.	Prior to coal transportation.
	2.8 The truck fleet will consist of a mix of standard 28t capacity semi-trailers and 40t capacity B-Double vehicles.	Ongoing.
	2.9 Develop a Road Maintenance and Capital Improvement Agreement with Gunnedah Shire Council.	Prior to mining commencing.
	2.10 Erect appropriate road signage.	Prior to coal transportation.
	2.11 Ensure all employees and contractors are regularly informed about the safe driving requirements to and from the Project Site.	Ongoing.
	2.12 Transport all oversize loads with all necessary permits.	During transport of oversize loads (primarily during site establishment).
	2.13 Erect a blast board at the Project Site entrance and update at least 24 hours prior to each blast.	Prior to initial blast.

Desired Outcome	Action		Timing
3. Operating Hours – Site Establishment			
Management of construction activities in accordance with the approved operating hours.	3.1	Undertake on-site construction within the hours of: 7.00am to 6.00pm / Monday to Friday, 7.00am to 4.00pm / Saturday.	During site establishment.
	3.2	Undertake coal transport route construction within the hours of: 7:00am to 6:00pm / Monday to Friday with the contingency to extend to 8.00pm if light and seasonal conditions permit, 7.00am to 4.00pm / Saturday	During site establishment.
4. Operating Hours – Operations			
Management of operating hours of work in accordance with the approved consent conditions	4.1	Undertake vegetation clearing / soil removal within the hours: 7.00am to 6.00pm Monday to Friday with a contingency to extend operations to 8.00pm if light and seasonal conditions permit. Saturday activity would be between 7.00am and 4.00pm with contingency to extend through to 6.00pm	During vegetation clearing and soil removal.
	4.2	Undertake drilling within the hours: 7.00am to 8.00pm / Monday to Friday and 7.00am to 6.00pm Saturday.	During drilling.
	4.3	Undertake blasting within the hours: 10.00am to 5.00pm / Monday to Friday and 10.00am to 2.00pm Saturday	During blasting.
	4.4	Undertake overburden / interburden removal and placement within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 4.00pm Saturday.	During overburden / interburden removal and placement.
	4.5	Undertake internal transport of coal product to ROM stockpile within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 4.00pm Saturday.	During internal transport of coal.
	4.6	Undertake on-site processing within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 6.00pm Saturday.	Ongoing.
	4.7	Undertake coal transport to Whitehaven CHPP and Rail Loading Facility within the hours 7.00am to 6.00pm Monday to Friday with contingency to extend to 8.00pm light and seasonal conditions permitting.	During coal transport.
	4.8	Undertake maintenance within the hours: 24 hours over 7 days.	During maintenance.
	4.9	Undertake rehabilitation within the hours: 7.00am to 6.00pm / Monday to Friday and 7.00am to 4.00pm Saturday.	During rehabilitation.

Desired Outcome	Action		Timing
5. Waste Management			
Minimisation of general waste creation and maximisation of recycling wherever possible.	5.1	Place all paper and general wastes originating from the Site Facilities Area, together with routine maintenance consumables from the daily servicing of equipment in garbage bins located adjacent to the various buildings.	Continuous.
Minimisation of the potential risk of environmental impact due to waste creation, storage and/or disposal.	5.2	Collect general waste bins and place contents in large waste skip bins positioned adjacent to the heavy vehicle maintenance building to await removal by licensed contractor.	Daily - wastebins. As required – skip bins.
	5.3	Collect industrial waste regularly.	Fortnightly.
	5.4	Collect waste oils and grease and pump to bulk storage tanks.	As required.
	5.5	Store waste oils and grease at the maintenance workshop for collection by a licensed waste recycling contractor.	Bi-monthly.
	5.6	Collect all parts and packaging and transfer to the maintenance workshop for disposal or recycling.	As required.
	5.7	Install adequate toilet and ablution facilities within the mine facilities area for the site workforce and visitors.	During site establishment.
	5.8	Direct sewage to a bio-cycle (or equivalent system) with effluent irrigation to land – to be approved by Gunnedah Shire Council.	Ongoing following installation.
	5.9	Store potentially hydrocarbon-contaminated water in the oil/water separator for regular removal from site by a licensed contractor.	As required.
	5.10	Assemble all proposed waste management practices in a Waste Management Plan.	Within 6 months of the start of site establishment.
6. Safety and Security			
To protect the safety of employees (including contractors), visitors to the mine, the public as well as local land owners and land users.	6.1	Ensure compliance with statutory regulations and maintain awareness of changes.	Ongoing.
	6.2	Eliminate or control safety and health hazards in the work environment.	Ongoing.
	6.3	Provide relevant occupational health and safe working practices and job training.	Ongoing.
	6.4	Conduct regular safety meetings and provide open forum for input from all employees.	Ongoing.
	6.5	Provide effective emergency arrangements for all employees and general public protection.	Ongoing.
	6.6	Undertake regular employee assessment and counselling if required.	Ongoing.

Desired Outcome	Action		Timing
6. Safety and Security (cont'd)			
	6.7	Ensure all contractors adopt the NMPL's policy objectives and maintain safety standards at all times while working on the premises.	Ongoing.
To protect the safety of employees (including contractors), visitors to the mine, the public as well as local land owners and land users. (Cont'd)	6.8	Develop an Occupational Health and Safety Management System and Major Hazard Management System to be approved by the Chief Inspector of Coal Mines.	Prior to mining and Ongoing.
	6.9	Erect and maintain all boundary fencing encompassing the Project Site.	During site establishment.
	6.10	Install lockable mine entrance gate.	During site establishment.
	6.11	Erect appropriate security fencing signs at key locations in and around the Project Site.	During site establishment.
	6.12	Erect advisory truck traffic warning signage prior to intersection of private sections of the proposed coal transport route along the re-aligned Coocooboonah Lane.	During site establishment.
	6.13	Ensure all equipment complies with Mine Design Guidelines (MDG15).	Prior to commencement of operations.
	6.14	Submit Mining Operations Plan to the Department of Primary Industries.	Prior to commencement of operations.
7. Groundwater			
Access to groundwater resources within the N^{o} 5 underground as a supplementary water source for mine operations.	7.1	Obtain all necessary approvals and construct a groundwater bore (see **Figure A**) to withdraw water collected in the void of the Gunnedah N^{o} 5 underground workings.	During site establishment.
Prevention of groundwater contamination.	7.2	Control dirty or contaminated surface water within surface structures (see Commitments in Section 10).	Ongoing.
	7.3	Refuel the mining fleet within designated areas of the Project surface facilities.	Ongoing.
	7.4	Undertake all maintenance works requiring the use of oils, greases and lubricants within designated areas of the Project surface facilities.	Ongoing.
	7.5	Direct all water from wash-down areas and workshops, except some mobile equipment to oil / water separators and containment systems.	Ongoing.
	7.6	Ensure all storage tanks are either self-bunded tanks or bunded with an impermeable surface and a capacity to contain a minimum 110% of the largest storage tank capacity.	Prior to mining and Ongoing.

Desired Outcome	Action		Timing
7. Groundwater (Cont'd)			
Prevention of groundwater contamination. (Cont'd)	7.7	Construct two turkey's nest dams for the storage of any surplus open cut pit inflows (rather than direct placement into underground workings).	Ongoing.
	7.8	Preferentially use water in the two turkey's nest dams for on-site dust suppression (rather than placing water from these dams underground).	Ongoing.
	7.9	Construct a suitable bore and install appropriate pumping equipment to place diluted pit water (from Turkey's Nest Dam N^{o} 2) into the N^{o} 5 underground workings. (All bores would be licenced by DWE).	Prior to the completion of construction of Turkey's Nest Dam N^{o} 2.
	7.10	Pump water to the N^{o} 5 underground workings only from the second turkey's nest dam (to ensure only diluted water is placed underground). This would occur in the event of excessive wet weather when the second turkey's nest dam is approaching its capacity.	As required.
Preparation of a contingency plan in the event that the availability or quality of groundwater is reduced for local groundwater users.	7.11	Undertake remedial action if the available groundwater for existing groundwater users is reduced by over 15% due to mine activities.	As required.
Implement a groundwater monitoring program to confirm predictions and to identify emerging issues.	7.12	Implement the water monitoring programme outlined in Section 4B.1.6.1 including ongoing review and modification as required.	Before commencement of Project and ongoing throughput life of Project.
	7.13	Develop contingency measures identified to address any impacts identified by monitoring.	Ongoing.
	7.14	Include relevant data in the Sunnyside Mine Annual Environmental Management Report (AEMR)	Annually.
	7.15	Prepare a monitoring report at the conclusion of mining to outline changes in the local groundwater system.	At conclusion of mining.
	7.16	Establish and maintain a coverage of piezometers to the satisfaction of DWE in the vicinity of the open pit and the Project Site.	Within 12 months after the commencement of mining operations.

Desired Outcome	Action	Timing
8. Noise and Vibration		
Noise generated by site establishment, construction and operational activities does not exceed DECC nominated criteria nor significantly impact on neighbouring landowners and/or residents.	8.1 Seal the re-aligned Coocooboonah Lane and all other upgraded road sections.	Prior to commencement of coal transportation.
	8.2 Regularly maintain all roads comprising the proposed coal transport route under a contribution plan with Gunnedah Shire Council.	Ongoing.
	8.3 Avoid all noisy activities occurring concurrently during construction particularly before 9.00am when the affects of local inversions may be noticeable.	During construction.
	8.4 Construct the out-of-pit overburden emplacement to provide an acoustic barrier between the open cut and Non-Project-related residences.	During emplacement construction in Year 1.
	8.5 Construct the amenity bund around the coal processing area to act as an acoustic barrier.	At commencement of overburden stripping.
	8.6 Adhere strictly to hours of operation, including transport activities, enforced by Mine Management.	Ongoing.
	8.7 Use equipment with lower sound power levels in preference to more noisy equipment.	Ongoing.
	8.8 Regularly service all equipment used on site to ensure the power sound levels remain at or below the levels used in the modelling to assess generated noise levels and compliance with the criteria.	Ongoing.
	8.9 Ensure that bulldozers either operate in first gear when reversing on the out-of-pit emplacement (and demonstrating compliance with noise criteria) **or** suspends operations (when compliance is not achieved with noise criteria).	During adverse weather conditions, particularly during periods of temperature inversions.
	8.10 Manage scraper operations through seasonal / daily programming to avoid operations during inversion conditions and, when necessary to reduce the number of scrapers operating from two to one when noise monitoring demonstrates the $L_{Aeq\ (15\ minute)}$ criteria of 35dB(A) is or will be exceeded.	Under inversion conditions or as required.
	8.11 Confine operations to lower levels of the in-pit overburden emplacement to mitigate noise exceedances under adverse wind conditions, ie. avoid operations on elevated section of the overburden emplacements during inversions and SSW winds.	Under adverse wind conditions or as required.

Desired Outcome	Action	Timing
8. Noise and Vibration (cont'd)		
Noise generated by site establishment, construction and operational activities does not exceed DECC nominated criteria nor significantly impact on neighbouring landowners and/or residents.	8.12 Fit mid frequency broadband reversing beepers to mobile mining equipment, decreasing sound power levels by 2dB(A) to 3dB(A).	At start of Project.
	8.13 Ensure the on-site road network is well maintained to limit body noise from empty trucks travelling on internal roads.	Ongoing.
	8.14 Maintain dialogue with neighbours and local community to ensure any concerns over construction, operational or transport noise are addressed.	Ongoing.
	8.15 Establish a noise monitoring program, in consultation with the DECC, prior to the commencement of the Project, designed to initially validate the predictions arising from the modelling and then record noise levels against the Project noise criteria.	Prior to construction.
	8.16 Document all proposed noise management strategies formally in a Noise Management Plan.	Prior to construction and mining activity.
	8.17 Monitor construction noise near "Lilydale" when the realignment of Coocooboonah Lane is being undertaken.	During construction.
	8.18 Conduct operational noise monitoring monthly for the first six months of mining operations, reverting to quarterly for the remainder of the year.	Ongoing.
	8.19 Instruct all truck drivers to avoid the use of engine brakes when approaching the Project Site entrance and coal transport route intersections and to be mindful when accelerating.	During inductions and ongoing.
	8.20 Adhere strictly to approved hours of coal transportation.	Ongoing.
	8.21 Ensure all blasts are designed to comply with blast limits specified in the Environment Protection Licence.	All blasts.
	8.22 Install a blast monitor at all residences within a 2km radius of the active blasting area to monitor blast parameters.	Ongoing.

Desired Outcome	Action	Timing
9. Flora and Fauna		
	8.23 Use aggregates for blast hole stemming to prevent venting of explosion gases.	During blasting. Ongoing.
	8.24 Use average size blasts (MIC 960kg) when within the range of 150m to 210m of axe grinding groove (AGGI).	When mining near axe grinding groove.
	9.1 Re-align Coocooboonah Lane to avoid removal of Koala habitat.	Prior to off-site coal transportation.
	9.2 Erect fencing to exclude livestock from Koala habitat areas.	Prior to topsoil removal.
	9.3 Erect a Koala-proof fence around the active mine area.	Progressively, as required.
	9.4 Restrict speeds of all vehicles on the Project Site to 40kph.	Entire mine life.
	9.5 Utilise local tree species in revegetation of disturbed areas with an emphasis on Koala feed trees.	During rehabilitation.
	9.6 Re-establish a small area of the Endangered ecological community Native Vegetation on Cracking Clay Soils of the Liverpool Plains.	After Coocooboonah Lane is re-established in pre-mining location.
	9.7 Undertake clearing so the extent is minimised and consistent with operational requirements.	Ongoing.
	9.8 Clearly define all areas to be cleared.	Ongoing.
	9.9 Transfer soil material and biomass removed beyond the first 18 to 24 months of mining directly to an active rehabilitation area, where practicable.	Ongoing.
	9.10 Undertake progressive rehabilitation of all disturbed areas.	Ongoing.
	9.11 Control noxious weeds at all times.	Ongoing.
	9.12 Adopt a strategy to rehabilitate specific areas of the Project Site to native vegetation, create and / or improve habitat corridors on and adjacent to the Project Site, and protect areas of native vegetation from agricultural activities on NMPL land external to the Project Site.	Ongoing.
	9.13 Maintain, expand and / or create several Koala habitat corridors to promote the linkage of remnant vegetation in the local area.	Ongoing.

Desired Outcome	Action		Timing
9. Flora and Fauna (cont'd)			
	9.14	Conserve the existing native vegetation on the Project Site during the life of the proposal and in the final landform.	Ongoing.
	9.15	Carry out, where possible, tree removal, especially the mature trees in late spring and early autumn to avoid spring nesting birds and over-wintering bats.	Ongoing.
	9.16	Undertake inspections of mature trees for nesting birds and roosting bats prior to each clearing campaign where mature tree with hollows are to be removed.	Prior to clearing.
	9.17	Relocate any nesting and roosting hollows, as well as nests, used by listed threatened species to appropriate locations nearby.	Prior to clearing.
	9.18	Bury all stumps, branches and tree trunks from felled timber within the overburden emplacements.	Ongoing.
	9.19	Commence post-mining rehabilitation of the Box Cut area as soon as possible. Re-establish the connectivity of habitat corridor along Coocooboonah Lane. Commence post-mining establishment of the Koala habitat corridors between Coocooboonah Lane and the remnant woodlands south of the Project Site as soon as practicable to re-establish and enhance the connectivity of local Koala habitat corridors.	As early as possible during mining activity.
	9.20	Include a vertebrate pest control program as part of the mining operation and management plan.	Ongoing.
	9.21	Avoid the clearing of native vegetation along the road shoulders where the proposed coal transport route utilizes public roads.	Ongoing.
10. Surface Water			
Prevention of discharge of dirty, saline or contaminated water from the Project Site.	10.1	Securely store all hydrocarbon products in accordance with the approved Hydrocarbon Management Plan.	Ongoing.
	10.2	Refuel all of the NMPL's mining fleet within designated areas of the Project surface facilities.	Ongoing.
	10.3	Direct all water from wash-down areas and workshops to oil/water separators and containment systems.	Ongoing.

Desired Outcome	Action	Timing
10. Surface Water (cont'd)		
Prevention of discharge of dirty, saline or contaminated water from the Project Site.	10.4 Ensure all storage tanks are either self-bunded tanks or bunded with an impermeable surface and have a capacity to contain a minimum 110% of the largest storage tank capacity.	Ongoing.
	10.5 Construct catchment banks / drains directing sediment-laden water to sediment basins.	Prior to commencing activities in relevant catchment.
	10.6 Maintain groundcover on all land that is not being used for processing facilities, administration / maintenance facilities, roads, mining activities and the overburden emplacement.	Ongoing.
	10.7 Add flocculants to dirty water within the sediment basins, if required, to expedite the settlement process.	Ongoing.
	10.8 Implement the monitoring program nominated in the Environment Protection Licence to enable appropriate auditing and management.	Ongoing.
	10.9 Record any periods when elevated levels of sediment occur in water discharged from site.	As required.
	10.10 Enlarge the sediment basins or construct additional sediment basins, if required, to capture a minimum of a 5 day 90%ile storm event.	As required. Ongoing.
Minimisation of erosion and sedimentation.	10.11 Construct an additional storage dam downstream, if required. This dam would become the new site discharge point and monitoring location.	As required. Ongoing.
	10.12 Implement a 3-phase remedial action plan in the event of a major hydrocarbon spill.	As required. Ongoing.
Adequate water is available for site dust suppression.	10.13 Prepare an annual review of the water balance for management of surface and pit water.	Annually.
11. Air Quality		
Site activities are undertaken without exceeding DECC air quality criteria or goals.	11.1 Fence off all land which is not to be disturbed to encourage natural regeneration.	At start of mining.
	11.2 Establish ground cover on disturbed areas and emplacement area as soon as possible.	Ongoing.
	11.3 Undertake soil stripping at a time when there is sufficient soil moisture to prevent significant lift-off of dust.	Ongoing.
	11.4 Avoid stripping soil in periods of high wind.	Ongoing.
	11.5 Use water application for dust suppression to increase soil moisture should stripping occur during periods of high wind or low soil moisture.	As required.

Desired Outcome	Action	Timing
11. Air Quality (cont'd)		
	11.6 Utilise water injection on the drill rigs or alternatively fit them with dust collectors.	Ongoing.
	11.7 Use aggregates for blast hole stemming to prevent venting of explosion gases.	Ongoing.
	11.8 Conduct blasting both before the establishment, and after the break up of low-level atmospheric temperature inversions.	As required.
	11.9 Avoid ripping of softer overburden material during periods of high wind.	As required.
	11.10 Spray low moisture coal with water prior to excavation to raise moisture content to >6%.	As required.
	11.11 Minimise clearing ahead of construction activities.	Ongoing.
	11.12 Water cleared areas regularly during construction activities.	During construction.
	11.13 Minimise clearing ahead of road construction.	During construction.
	11.14 Water active construction areas regularly.	Ongoing.
Site activities are undertaken without exceeding DECC air quality criteria or goals. (Cont'd)	11.15 Restrict truck speeds on roads under construction to <50kph.	During construction.
	11.16 Apply water to the coal at the feed hopper, crusher and all conveyor transfer and discharge points at the rate of approximately 2.0L/t coal processed.	Ongoing.
	11.17 Temporarily cease operation in the event of protracted dry periods, high winds and significant dust generation and dispersal towards the surrounding residences.	As required.
	11.18 Minimise the extent of clearing / site preparation in advance of mining.	Ongoing.
	11.19 Clearly define any access or haul roads and restrict vehicles and equipment to those roads.	Ongoing.
	11.20 Routinely apply water with or without chemical dust suppressants.	Ongoing.
	11.21 Progressively rehabilitate areas of disturbance including topsoil and subsoil stockpiles.	Ongoing.
	11.22 Install bund walls and wind breaks as required.	Ongoing.
	11.23 Regularly water haul roads.	Ongoing.
	11.24 Avoid coal being loaded above the truck body sides.	Ongoing.

Desired Outcome	Action	Timing
11. Air Quality (cont'd)		
	11.25 Cover all trucks carrying product coal from the mine with approved covers and securely fix the tailgates to prevent windblown dust emission or spillages.	Ongoing.
	11.26 Fit all earthmoving equipment on-site with exhaust controls which satisfy NSW DECC emission requirements.	Prior to commencing site activity. Ongoing.
	11.27 Ensure all equipment is properly maintained to ensure no unacceptable exhaust emissions occur and commit to the removal of any vehicle or item of mobile equipment from on-site activities which is observed not to comply with NSW DECC guidelines.	Ongoing.
	11.28 Direct the exhausts of all equipment upwards or to the side so as not to impinge on the ground and cause dust lift-off.	Ongoing.
	11.29 Undertake an air quality monitoring program to demonstrate compliance with the nominated goals specified in the Environment Protection Licence. •1 Deposited dust at selected residences and strategic locations surrounding the Project Site. •2 Continuous wind speed and direction at the Project Site weather station. •3 PM_{10} dust at a residence nearby six day cycle. Refer Section 4B.5.8.	Ongoing. Monthly / Ongoing Continuous. Six day cycle.
	11.30 Avoid burning vegetation.	Ongoing.
	11.31 Use water injection or dust collectors during drilling.	During drilling.
Site activities are undertaken without exceeding DECC air quality criteria or goals. (Cont'd)	11.32 Avoid ripping softer overburden material during periods of high wind.	Ongoing.
	11.33 Establish and maintain a dust monitoring program in line with recommended locations.	Ongoing.
	11.34 Install and maintain an automatic weather station within the Project Site.	Established
Minimise Greenhouse Gas Emissions wherever possible.	11.35 Adopt strategies to reduce GHG environs as nominated in EA Section 4B.5.5.4.	Ongoing.
Avoidance of accumulation of coal dust in domestic water tanks.	11.36 Install first flush devices on the domestic water tanks at "Werona", "Ivanhoe"," Mulwalla"," Mulwalla (2)","Innisvale","Sugarloaf", "Lilydale", "Woodlawn", "Plain View", "Illili", "Glendower", "Ferndale" and"Eulalie".	Prior to recovery of coal.

Desired Outcome	Action		Timing
12. Aboriginal Heritage			
Provide appropriate protection to identified Aboriginal artefacts.	12.1	Undertake medium sized blasts when open cut pit is near axe grinding groove.	As required.
	12.2	Cover axe grinding groove with straw bales to prevent possible fly rock damage when blasting is nearby.	As required.
Minimise potential to impact upon unidentified Aboriginal artefacts.	12.3	Invite Aboriginal monitors to site for all soil stripping and ground disturbance activities. Manage any sites detected in accordance with the relevant acts.	Ongoing.
	12.4	Cease work at any area if further Aboriginal objects are uncovered during the course of the Project, and contact the NSW DECC for advice.	Ongoing.
Employees who are sensitive and respectful of possible identified Aboriginal sites and artefacts.	12.5	Conduct a Cultural Heritage Awareness Induction Course for staff, contractors and any heritage monitors working on the Project Site to help raise awareness and ameliorate any impact on heritage sites during site establishment and subsequent mining activities.	During induction of employees/contractors.
13. Visibility			
Restriction of vantage points of Project activities from neighbouring residences and public roads.	13.1	Minimise cleared or non-vegetated areas by progressively rehabilitating the Project Site.	Ongoing.
	13.2	Design the overburden emplacements to as much as possible, replicate existing topographic features.	During planning and design.
	13.3	Minimise the extent of land disturbance / clearing in advance of mining.	Ongoing.
	13.4	Implement air quality controls as identified in Section 4B.5.5.	Ongoing.
	13.5	Maintain the mine and associated areas of disturbance in a clean and tidy condition at all times.	Ongoing.
.	13.6	Construct amenity bund around coal processing area to provide visual screening.	At start of Project.
The operation of the Siding Springs Observatory is not affected by Project operations.	13.7	Use a maximum of six lighting plants for night-time activities.	Ongoing.
	13.8	Position and direct floodlights to minimise emissions.	Ongoing.
Ongoing communication with neighbours.	13.9	Maintain regular communications with those residents whose visual amenity is affected by the Project and implement any reasonable additional controls to further reduce the impact on their visual amenity.	Ongoing.

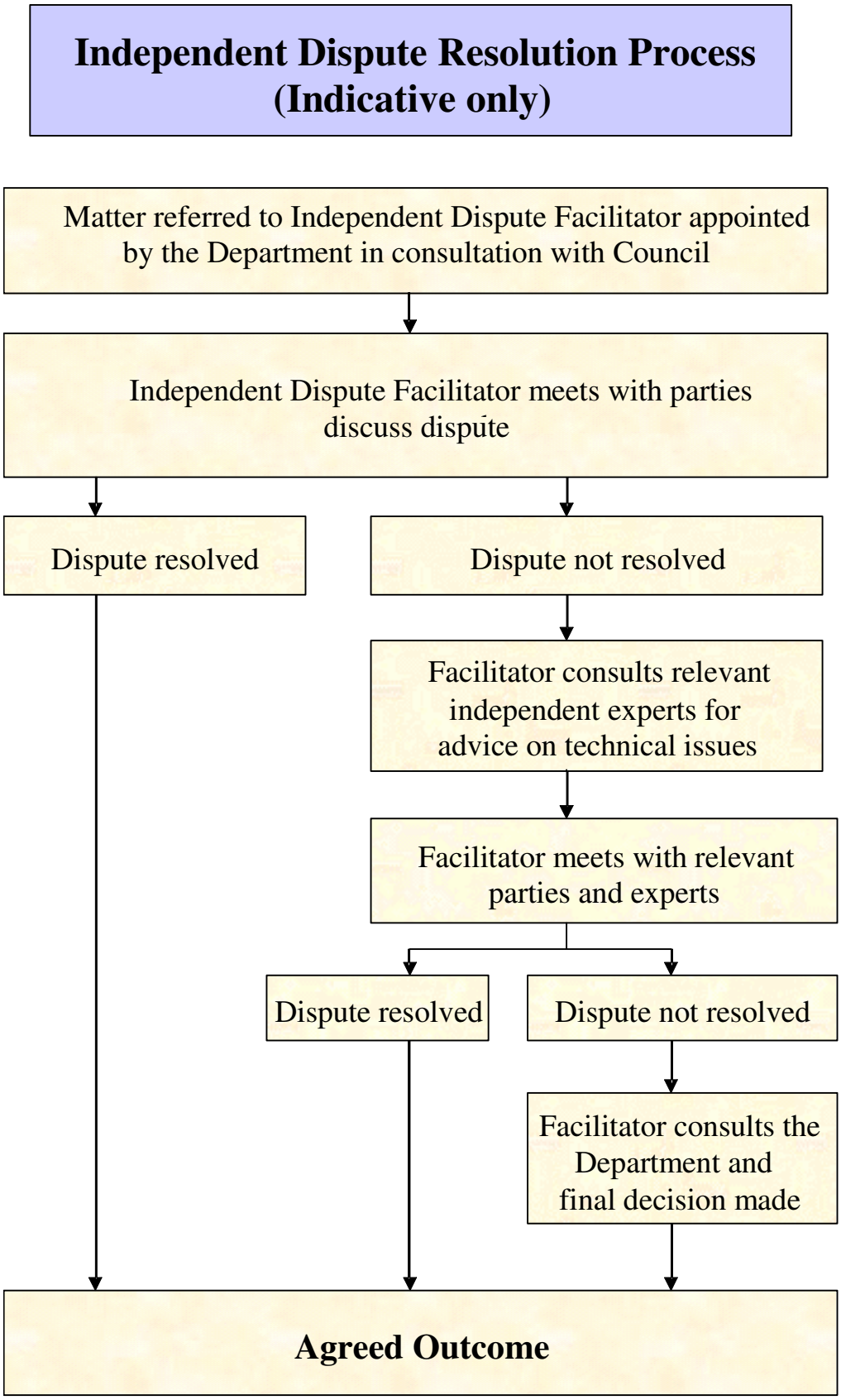
Desired Outcome	Action		Timing
14. Soils, Land Capability and Agricultural Suitability			
Maintenance of soil value for rehabilitation and minimisation of soil loss though erosion.	14.1	Strip topsoil from each SMU to a depth of 15cm. Stockpile topsoil for later retrieval and spreading over specific areas during the first 18 to 24 months of mine operations. Beyond this period, Project Site topsoil would be typically directly transferred onto sections of the final landform.	Ongoing.
	14.2	Strip subsoil from each SMU to a depth of 50cm below the topsoil. Stockpiles would be available for re-spreading as areas become available for rehabilitation.	Ongoing.
	14.3	Strip further subsoil to bedrock and segregate each SMU.	Ongoing.
	14.4	Place higher alkalinity soils over the surface of the overburden emplacement to provide neutralising capacity in the event pockets of acid forming rock are encountered.	Ongoing.
	14.5	Install erosion protection around stockpiles of this material with direct transfer from source to sink commenced as soon as practicable.	Ongoing.
	14.6	Topsoil stockpiles not exceed 2m in height and where practicable, be maintained as windrows in preference to larger structures.	Ongoing.
	14.7	Seed any stockpiles with a non-persistent cover crop as soon as possible after they have been established to reduce erosion potential and assist in the maintenance of the biological viability of the soil.	Ongoing.
	14.8	Subsoil stockpiles to generally not exceed 3m in height and typically be placed in larger stockpiles than the topsoil.	Ongoing.
	14.9	Maintain and regularly reconcile with rehabilitation requirements an inventory of soil resources present on the Project Site, ie. both in stockpiles and awaiting stripping.	Ongoing.
	14.10	Utilise water management structures to divert surface water flow away from soil stockpile areas to reduce the potential for erosion.	Ongoing.
	14.11	Place silt-stop fencing or similar immediately downslope of stockpiles where required, until stable vegetation cover is established.	Ongoing.
	14.12	Monitor erosion from soil stockpiles or rehabilitated surfaces throughout the life of the Project with remedial works undertaken should erosion be observed.	Ongoing.

Desired Outcome	Action	Timing
14. Soils, Land Capability and Agricultural Suitability (cont'd)		
	14.13 Undertake all clearing and topsoil stripping in campaigns on an as-needs basis.	Ongoing.
15. Bushfire Controls		
Avoid fire initiation.	15.1 Clear vegetation away from blast (>20m).	During blasting.
	15.2 Remove all coal from open cut around blast.	As required. Ongoing
	15.3 Undertake blast design by qualified personnel.	Ongoing.
	15.4 Undertake refuelling within designated fuel bays or within cleared area of the Project Site.	Ongoing.
	15.5 Turn vehicle engines off during refuelling.	Ongoing.
	15.6 Enforce no smoking policy in designated areas of the Project Site.	Ongoing.
	15.7 Maintain fire extinguishers within all site vehicles.	Ongoing.
	15.8 Regularly inspect and water stockpiles.	Ongoing.
	15.9 Control stockpile height and volume to limit the duration coal is retained in stockpiles.	Ongoing.
	15.10 Maintenance of housekeeping by mine management.	Ongoing.
	15.11 Ensure water cart is available to assist in extinguishing any fire ignited.	Ongoing.
16. Socio-Economic		
	16.1 Implement a policy which encourages employment of local district personnel with training and certification of suitable local persons provided.	During recruitment and induction. Ongoing.
	16.2 Provide a local induction kit to any new workers (from outside the district) including contact details for community groups and services throughout the region.	New arrivals. Ongoing.
	16.3 Inform Gunnedah Council of the predicted increase of population based on employment at the Project.	During recruitment. Ongoing.
	16.4 Establish a community enhancement fund to the value of $500,000.	Five equal annual payments commencing within 3 months of the receipt of Project Approval.

Desired Outcome	Action		Timing
17. Rehabilitation			
Ensure ongoing viable landuse post-mining.	17.1	Stabilise earthworks, drainage lines and disturbed areas no longer required for mine-related activities in order to minimise erosion and the associated generation of sediment-laden water, and to reduce the visibility of activities from adjacent properties and the local road network.	Ongoing.
	17.2	Provide a low maintenance, geotechnically snd safe landform which is commensurate with a variety of agricultural land uses and / or nature conservation.	Ongoing.
	17.3	Blend the created landforms with the surrounding land fabric as far as practicable.	Ongoing.
	17.4	Utilise native tree, shrub and grass species and / or pasture species comparable with either the existing vegetation communities or those which occurred in the area prior to mining and agriculture-related disturbance.	Ongoing.
	17.5	Rehabilitate out-of-pit emplacement with agricultural pasture species and incorporate random tree plantings.	Ongoing.
18. Management Plans			
Develop and implement a series of Management Plans to assist with appropriate control of potentially impacting activities.	18.1	Mining Operations Plan.	Prior to commencement of any site activities.
	18.2	Koala Management Plan.	Prior to commencing site activities.
	18.3	Vegetation Management Plan.	Prior to commencing site activities.
	18.4	Blast Monitoring Plan.	Prior to blasting commencing and ongoing.
	18.5	Surface Water Management Plan.	Already produced and to be updated prior to site activities.
	18.6	Waste Management Plan.	Within 6 months of the start of site establishment.
	18.7	Spontaneous Combustion Monitoring Plan.	Within 6 months of the start of mining operations.
	18.8	Hydrocarbon Management Plan.	Prior to commencing site activities.
	18.9	Mine Closure Plan.	At least 2 years prior to mine closure.

Desired Outcome	Action		Timing
18. Management Plans (cont'd)			
	18.10	Prepare a Traffic Management Plan to ensure appropriate procedures are in place for public traffic during the realignment of Coocooboonah Lane and intersection upgrades – for submission with Section 138 permit applications to Gunnedah Shire Council and RTA.	Prior to commencement of the realignment of Coocooboonah Lane and intersection upgrades.
	18.11	Construction Noise Management Plan.	Prior to commencement of site activities.
	18.12	Operations Noise Management Plan.	Prior to commencing Project Operations stage.
	18.13	Traffic Noise Management Plan.	Prior to commencement of coal transportation.
	18.14	Air Quality Monitoring Plan.	Prior to commencing site activities.
	18.15	Groundwater Management Plan	Within 6 months of the start of mining operations.
	18.16	Archaeological Site Management Plan.	Prior to blasting commencing.
	18.17	Bushfire Management Plan.	Prior to commencing site activities.

APPENDIX 4
INDEPENDENT DISPUTE RESOLUTION PROCESS



Appendix 2

ENVIRONMENT PROTECTION

LICENCE 12957

Environment Protection Licence

Licence - 12957

Licence Details	
Number:	12957
Anniversary Date:	15-December

Licensee

NAMOI MINING PTY. LTD.

PO BOX 600

GUNNEDAH NSW 2380

Premises

SUNNYSIDE COAL PROJECT

259 COOCOOBOONAH LANE

GUNNEDAH NSW 2380

Scheduled Activity

Coal Works

Mining for Coal

Fee Based Activity	Scale
Coal works	0-2000000 T handled
Mining for coal	0-500000 T produced

Region

North - Armidale

Ground Floor, NSW Govt Offices, 85 Faulkner Street
ARMIDALE NSW 2350

Phone: (02) 6773 7000

Fax: (02) 6772 2336

PO Box 494 ARMIDALE

NSW 2350

Environment Protection Licence

Licence - 12957

Environment Protection Licence

Licence - 12957

Environment Protection Licence

Licence - 12957

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 12957

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

NAMOI MINING PTY. LTD.
PO BOX 600
GUNNEDAH NSW 2380

subject to the conditions which follow.

Environment Protection Licence

Licence - 12957

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2:
Construction of surface infrastructure including but not limited to access roads, intersection and surface facilities prior to mining.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal Works	Coal works	0 - 2000000 T handled
Mining for Coal	Mining for coal	0 - 500000 T produced

A1.3 The licensee must not carry on any scheduled activities until the scheduled development works are completed, except as elsewhere provided in this licence.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
SUNNYSIDE COAL PROJECT
259 COOCOOBOONAH LANE
GUNNEDAH
NSW 2380
LOT 1 DP 393755, LOT 3 DP 611154, LOT 12 DP 755503

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with

the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Ambient Air Monitoring		Deposited dust location labelled 'SD1' on property Ferndale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
2	Ambient Air Monitoring		Deposited dust location labelled 'SD3' on property PlainView identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 Dec 2008.
4	Ambient Air Monitoring		Deposited dust location labelled 'SD5' on property Ivanhoe identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
5	Ambient Air Monitoring		Deposited dust location labelled 'SD6' on property Illili identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
6	Ambient Air Monitoring		Deposited dust location labelled 'SD7' on property Innisvale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
7	Ambient Air Monitoring		PM10 location labelled 'SA1' on property Illili identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.

Environment Protection Licence

Licence - 12957

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
9	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Discharge point from Storage Dam 3 located on northern side of premises labelled "SD3" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
10	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Discharge point from Storage Dam 4 located on northern side of premises labelled "SD4" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
11	Ambient water quality monitoring		Monitoring point on Coocooboonah Creek upstream of project site labelled "CCUS" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
12	Ambient water quality monitoring		Monitoring point on Coocooboonah Creek downstream of project site labelled "CCDS" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

Environment Protection Licence

Licence - 12957

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 9,10

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	-	-	-	10
pH	pH	-	-	-	6.5 - 8.5
Total suspended solids	milligrams per litre	-	-	-	50

L2.5 The Total Suspended Solids concentration limits specified for Points 9 and 10 may be exceeded for water discharged provided that:

(a) the discharge occurs solely as a result of rainfall measured at the premises that exceeds 38.4 millimetres over any consecutive 5 day period immediately prior to the discharge occurring; and

(b) all practical measures have been implemented to dewater all sediment dams within 5 days of rainfall such that they have sufficient capacity to store run off from a 38.4 millimetre, 5 day rainfall event.

Note: 38.4 mm equates to the 5 day 90%ile rainfall depth for Gunnedah sourced from Table 6.3a Managing Urban Stormwater: Soils and Construction Volume 1: 4th edition, March 2004.

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

Environment Protection Licence

Licence - 12957

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits in the table below.

Locality and Location	Day- LAeq (15 minute)	Evening- LAeq (15 minute)	Night- LAeq (15 minute)	Night- LA1 (1 minute)
All surrounding residences	35	35	35	45

L4.2 For the purpose of the table above:

a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;
b) Evening is defined as the period from 6pm to 10pm;
c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

L4.3 **Determining Compliance**

To determine compliance:
a) with the Leq(15 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located:
i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade.
c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located:
i) at the most affected point at a location where there is no dwelling at the location; or
ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.

L4.4 The noise limits set out in the Noise Limits table apply under all meteorological conditions except for the following:
a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.

For the purposes of this condition:
a) Data recorded by the meteorological station identified as EPA Identification Point(s) W1 must be used to determine meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L4.5 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the

noise monitoring equipment.

L4.6 The noise limits set by this licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that:

a) agrees to an alternative noise limit for that property; or

b) provides an alternative means of compensation to address noise impacts from the premises.

A copy of any agreement must be provided to the EPA before the licensee can take advantage of the agreement.

L5 Blasting

L5.1 The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.2 The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.3 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L6 Hours of operation

L6.1 Construction activities covered by this licence must only be carried out between the hours of 0700 to 1800 hrs Monday to Friday and between 0700 and 1600 hrs Saturday and at no time on Sundays and Public Holidays.

L6.2 Mining operations covered by this licence (other than transport of coal from the premises and blasting) must only be carried out between the hours of 0700 and 2200 hrs Monday to Friday, and 0700 and 1800 hrs Saturday, and at no time on Sundays and Public Holidays.

L6.3 Transportation of coal from the premises must only be carried out between the hours of 0700 and 1800 (Eastern Standard Time) hrs Monday to Friday, and 0700 and 2000 hrs (Eastern Summer Time) Monday to Friday, and 0700 to 1600 hrs on Saturdays, and at no time on Sundays and Public Holidays.

L6.4 Blasting in or on the premises must only be carried out between the hours of 1000 and 1700 hours Monday to Friday, and 1000 and 1400 hrs on Saturdays, and no time on Sundays and Public Holidays.

L6.5 Conditions L6.1, L6.2, L6.3 and L6.4 do not apply to the delivery of material, and mining operation, if required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances notification must be provided to the EPA and affected residents as soon as practicable.

L6.6 The hours of operation specified in conditions L6.1, L6.2, L6.3 and L6.4 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.

L7 Other limit conditions

L7.1 Extraction limits

The maximum tonnage of extraction of ROM coal at the premises during the reporting period must not exceed 1 million tonnes

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.2 Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.

Environment Protection Licence

Licence - 12957

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 1,2,4,5,6

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Continuous	AM-19

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

M2.3 Water and/ or Land Monitoring Requirements

Environment Protection Licence

Licence - 12957

POINT 9,10

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Special Frequency 1	In situ
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	In situ
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

POINT 11,12

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Special Frequency 2	In situ
Oil and Grease	milligrams per litre	Special Frequency 2	Grab sample
pH	pH	Special Frequency 2	In situ
Total organic carbon	milligrams per litre	Special Frequency 2	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 2	Grab sample

M2.4 For the purposes of the table(s) above Special Frequency 1 means the collection of samples as soon as practicable after each discharge commences and in any case not more than 12 hours after each discharge commences.

M2.5 For the purposes of the table(s) above Special Frequency 2 means the collection of samples quarterly (in the event of a flow during the quarter) at a time when there is flow and as soon as practicable after each wet weather discharge from points 9 and 10 commences and in any case not more than 12 hours after each discharge commences.

Note: Water monitoring requirements will be included as part of a licence variation following completion of construction works of the approved site water management plan as documented in the report “Site Water Management Plan for the Sunnyside Coal Mine, Namoi Mining Pty. Ltd., 8/8/2008”

Note: Groundwater monitoring points have not been formally included in the licence. However, the licensee is required to undertake groundwater monitoring in accordance with a Department of Planning approved Water Management Plan required under Schedule 3, condition 2 Project Approval 06-0308 dated 24 May 2008. The licensee has submitted the document “Site Water Management Plan for the Sunnyside Coal Mine, Namoi Coal Mining Pty Ltd, 2008.” This document has been approved by Planning following consultation by the licensee with the EPA. The results of this monitoring are required to be reported in the Annual Environmental Management Report (AEMR) and submitted to the EPA under the conditions of approval.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence

must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 The preceding two conditions do not apply until 3 months after:

a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M6 Blasting

M6.1 To determine compliance with condition(s) L5.1, L5.2, L5.3 and L5.4:

a) Airblast overpressure and ground vibration levels experienced at the following noise sensitive locations must be measured and recorded for all blasts carried out in or on the premises;
- and electronically recorded at receptors R1, R2, R4 and R6

b) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

Note: A breach of the licence will still occur where airblast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in this licence at any “noise sensitive locations” other than the locations identified in the above condition.

M6.2 For the purpose of conditions M8.1 and M9.1, the noise monitoring locations are described as:

EPA identification number	Description of location
R1	Property ‘Innisvale’ residence
R2	Property ‘Ivanhoe’ residence
R4	Property ‘Illili’ residence
R5	Property “Ferndale” residence
R6	Property ‘Plain View’ residence

Note: The location, frequency of monitoring and the parameters to be monitored may be varied by the EPA once the variability of the noise impact is established.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the

carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 BLAST REPORTING

R4.2 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

R4.3 The results of the blast monitoring required by this licence must be submitted to the EPA at the end of each reporting period.

R4.4 A noise compliance assessment report must be submitted to the EPA within thirty (30) days of the completion of the quarterly noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:
a) an assessment of compliance with noise limits detailed in the limit conditions of this licence; and
b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits detailed in the limit conditions of this licence.

7 General Conditions

Environment Protection Licence

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Pollution Studies and Reduction Programs

U1 Coal Mine Wind Erosion of Exposed Land Assessment

U1.1 The licensee must undertake the following steps:
1. Calculate the wind erosion exposed surface area (in hectares) within the premises as of 31 July 2015.
2. Determine the wind erosion exposed surface area (in hectares) predicted as at 31 July 2015 within the licensee's Environmental Assessment for the premises.
3. Compare the areas calculated in steps 1 and 2.
4. Submit a written report to the EPA at armidale@epa.nsw.gov.au containing the analysis required in steps 1 to 3, by 31 August 2015.

The report submitted to the EPA must be accompanied by spatial data to confirm the wind erosion exposed surface area calculations. The following data is required:
· Shapefiles showing the premises boundary.
· Shapefiles showing the wind erosion exposed area within the premises as of 31 July 2015
· Shapefiles showing areas classified as stabilised surface as of 31 July 2015
· Details of any studies undertaken to verify that the areas of stabilised surface meet the definition.

U1.2 *Definitions:*
Environmental Assessment means any environmental assessment document prepared in order to gain approval or consent under the Environmental Planning and Assessment Act (1979) under which the licensee currently operates at the premises. If the predictions made in this document do not correspond to the current year of mine operation, the licensee should extrapolate between predictions.

Stabilised Surface means any previously disturbed surface area which shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilised. Stabilisation can be determined in accordance with one or more of the applicable test methods contained in the Rule 403 Implementation Handbook located at: www.capcoa.org/Docs/SCAQMD%20r403%20handbook.doc.

Wind Erosion Exposed Surface Area means the portion of the premises surface which has been physically moved, uncovered, destabilised or otherwise modified from its natural state, thereby increasing the potential for fugitive particulate matter emissions, but excluding areas which have been:
· paved or covered by a permanent building or structure;
· maintained with a vegetative ground cover of at least 50% of ground cover for particular areas. Vegetative ground cover can be determined in accordance with the standardised procedure for revegetation assessment contained in Atyeo C. & Thackway R. (2009) located at: http://data.daff.gov.au/data/warehouse/pe_brs90000004196/revegetationManual200906_20100410_ap14

.pdf or
· classified as a stabilised surface.

9 Special Conditions

E1 Discontinuation of Mining

Note: The EPA understands that the licensee has ceased coal mining and handling activities at the premises. It is the EPA's intention to include Pollution Reduction Programs requiring the licensee to implement a number of best practice measures to address wheel-generated dust and the handling of overburden to reduce particulate emissions from coal mining activities, if coal mining recommences.

E1.1 The licensee must notify the EPA's Manager, Armidale Region in writing 1 month prior to mining or handling any coal on the premises.

Environment Protection Licence

Licence - 12957

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 12957

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 12957

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Stephen O'Donoghue

Environment Protection Authority

(By Delegation)

Date of this edition: 15-December-2008

End Notes

1	Licence varied by notice 1103274, issued on 18-Aug-2009, which came into effect on 18-Aug-2009.
2	Licence varied by notice 1126972, issued on 13-Jul-2011, which came into effect on 13-Jul-2011.
3	Licence varied by notice 1503266 issued on 20-Dec-2011
4	Licence varied by notice 1503675 issued on 15-Jun-2012
5	Licence varied by notice 1510436 issued on 21-Mar-2013
6	Licence varied by notice 1513053 issued on 18-Apr-2013
7	Licence varied by notice 1518195 issued on 17-Dec-2013
8	Licence varied by notice 1522248 issued on 19-Nov-2014

Appendix 3

COMPLIANCE REVIEWS

- PA 06_0308 (Table A3-1)
- Environment Protection Licence

No 12957 (Table A3-2)

- ML 1624 (Table A3-3)

TABLE A3-1

Compliance Review – PA 06_0308

Condition	Conditional Requirement	Compliance	Comments
Schedule 2: Administrative Conditions			
1.	The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.	No	Various non compliances recorded during the reporting period.
2.	The Proponent shall carry out the project generally in accordance with the: a) EA; b) Sunnyside Coal Project Response to Public and government Agency Submissions Government Agency Submissions (June 2008); c) Sunnyside Coal Project Supplementary Response to Submissions (July 2008) d) Statement of Commitments (see Appendix 3); and e) Conditions of this approval.	No	Aspects of operation not generally in accordance with EA. Discussion with relevant regulators is ongoing, with the intent to obtain a modification to the Project Approval and develop the associated Care and Maintenance MOP.
3.	If there is an inconsistency between the above documents, the latter document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Not applicable	
4.	The Proponent shall comply with any reasonable and feasible requirements of the Director-General arising from the Departments assessment of: (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.	Yes	Any requests by the Department have been addressed.
5.	Mining operations may take place on the site for 7 years from the grant of the mining lease for the project. *Note: Under this Approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General and DPI. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.*	Not yet applicable	
6.	The Proponent shall not extract more than 1 million tonnes of ROM coal a year from the site.	Not applicable	No coal extracted during the reporting period.
7.	The Proponent shall use the coal transport route shown in Figure 2 of Appendix 2 to transport all coal from the site to the Whitehaven Siding CHPP.	Not Applicable	No transport of coal occurred during the reporting period.
8.	Construction activities may take place only between 7 am to 6 pm each Monday to Friday and 7 am to 4pm on Saturdays, and not on Public Holidays.	Not applicable	No construction during the reporting period.
9.	Mining operations may take place only between 7 am to 10 pm each Monday to Friday and 7 am to 6 pm on Saturdays, and not on Public Holidays.	Not applicable	No mining activities took place during the reporting period.
10.	Transport of coal may take place only between 7 am to 6 pm Monday to Friday (or between 7 am to 8 pm during Eastern Summer Time) and between 7 am to 4 pm on Saturdays, and not on Public Holidays.	Not Applicable	No transport of coal occurred during the reporting period.

Condition	Conditional Requirement	Compliance	Comments
11.	With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.	Not applicable	
12.	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. *Notes:* • *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.* • *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*	Not applicable	No related activity during the reporting period.
13.	The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard 2601-2001: The Demolition of Structures*, or its latest version.	Not applicable	No demolition works during reporting period.
14.	The Proponent shall ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Yes	
15.	By 31 November 2008, and on each anniversary of that date until and including 2012, the Proponent shall provide development contributions of $100,000 per annum to the Gunnedah Shire Council for expenditure by the Council on community enhancement projects.	No longer applicable	Period for contributions has ended.
Schedule 3: Specific Environmental Conditions			
1.	Upon receiving a written request for acquisition from the owner of "Lilydale", the Proponent shall acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.	Not applicable	Property purchased at commencement of the project.
2.	The Proponent shall ensure that the noise generated during the construction of the project does not exceed the level set out in Table 1. • Over the day/evening limit of 40 $L_{A10(15\ minute)}$, for any residences on, or more than 25% of, any privately owned land (except at "Lilydale")	Not applicable	No construction during the reporting period.
3.	The Proponent shall ensure that the noise generated during mining operations and other activities on the site does not exceed the level set out in Table 2: • Over the day/evening limit of 35 $L_{Aeq(15\ minute)}$, for any residences on, or more than 25% of, any privately owned land (except at "Lilydale") However, if the Proponent has a written negotiated noise agreement with the landowner of any land, and a copy of this agreement has been forwarded to the Department and DECC, then the Proponent may exceed the noise limits in Table 1 or Table 2 on that land in accordance with the negotiated noise agreement.	Yes	
4.	If the noise generated by the project exceeds the level in Table 3, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8-10 of schedule 4. • Over the day/evening limit of 40 $L_{Aeq(15\ minute)}$, for any residences on, or more than 25% of, any privately owned land (except at "Lilydale")	Not Applicable	No written requests received to date.

Condition	Conditional Requirement	Compliance	Comments
5.	Upon receiving a written request from the landowner of: (a) "Illili", "Ferndale", or (b) any residence on privately owned land where noise generated by the project exceeds 37 dB(A) LAeq(15 minute), the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution. Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.	Not Applicable	No written requests received to date.
6.	The Proponent shall implement all reasonable and feasible measures to ensure that the traffic noise generated by the project combined with the traffic noise generated by other mines does not exceed the level in Table 4: • Over the day/evening limit of 55 $L_{Aeq(1\ hour)}$, for any residence adjacent to Torrens Road *Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the DECC's Environmental Criteria for Road Traffic Noise.*	Yes	
7.	If the traffic noise generated by the project exceeds the criterion in Table 4, the Proponent shall, upon receiving a written request from any landowner adjacent to Torrens Road, implement noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution. Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.	Not yet applicable	No written requests received to date.
8.	The Proponent shall: (a) implement all reasonable and feasible best practice noise mitigation measures; (b) investigate ways to reduce the noise generated by the project, including off-site road and rail noise and; (c) report on these investigations and the implementation and effectiveness of these measures in the AEMR, to the satisfaction of the Director-General.	Yes	See Section 3.10.3 for further details on noise mitigation initiatives.

Condition	Conditional Requirement	Compliance	Comments
9.	The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must: (a) be prepared in consultation with the DECC; (b) be submitted to the Director-General for approval prior to carrying out any development on site; and (c) include: • attended monitoring measures; and • a noise monitoring protocol for evaluating compliance with the noise impact assessment and	Yes	Plan approved by DG – 20th October 2008.
10.	The Proponent shall ensure that the airblast overpressure level from blasting at the project does no exceed the criteria in Table 5 and any residence on privately-owned land. • 115dBL, Allowable exceedances: 5% of the total number of blasts in a 12 month period. • 120dBL at any time.	No	See Section 3.9.3 of AEMR
11.	The Proponent shall ensure that the ground vibration level from blasting, or any other activity at the project does not exceed the criteria in Table 6 at any residence on privately-owned land. • 5mm/s, Allowable exceedances: 5% of the total number of blasts in a 12 month period. • 10mm/s at any time.	Yes	
12.	The Proponent shall carry out blasting on site only between 10 am and 5 pm each Monday to Friday and 10am and 2 pm on Saturdays (excepting Public Holidays).	Yes	
13.	The Proponent shall not carry out more than: (a) 2 blasts a day; and (b) 5 blasts a week, averaged over any 12 month period on site.	Yes	
14.	At least 2 months before carrying out any blasting on the site, the Proponent shall advise all landowners within 2 km of proposed blasting activities, and any other landowner nominated by the Director-General that they are entitled to a property inspection to establish the baseline condition of the property.	Not applicable to this reporting period	
15.	If the Proponent receives a written request for a property inspection from any such landowner, the Proponent shall: (a) commission a suitably qualified person, whose appointment has been approved by the Director-General, to inspect and report on the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and (b) give the landowner a copy of this property inspection report. *Note: It is preferable for the property inspection to be carried out prior to the commencement of blasting activities on the site, and the Proponent should facilitate this occurring wherever possible.*	Not applicable	No requests received in reporting period.

Condition	Conditional Requirement	Compliance	Comments
16.	If any landowner within 2 km of proposed blasting activities, or any other landowner nominated by the Director-General, claims that his/her property, including vibration-sensitive infrastructure such as water supply or underground irrigation mains, has been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request: (a) commission a suitably qualified person whose appointment has been approved by the Director-General to investigate the claim and prepare a property investigation report; and (b) give the landowner a copy of the report. If this independent investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Director-General. If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.	Not applicable	No claims made during the reporting period.
17.	Prior to the commencement of blasting, the Proponent shall prepare and implement a detailed Blast Monitoring Program for the project, in consultation with the DECC and to the satisfaction of the Director-General.	Yes	Approved by DG – 20th October 2008.
18.	The Proponent shall ensure that dust emissions generated by the project do not cause additional exceedances of the criteria listed in Tables 7 to 9 at any residence on privately owned land, or on more than 25 percent of any privately-owned land. • Total suspended particulate (TSP) matter – Annual average: 90µg/m3 • Particulate matter <10 µm(PM10) – Annual average: 30 µg/m3 • Particulate matter <10 µm(PM10) – 24 hour period - 50 µg/m3 • Deposited dust – Annual average: o Maximum increase in deposited dust level – 2 g/m^2/month o Maximum total deposited dust level – 4 g/m^2/month	Yes	
19.	The Proponent shall prepare and implement an Air Quality Monitoring Program for the project to the satisfaction of the Director-General. This program must: (a) be submitted to the Director-General prior to the commencement of construction activities; (b) be prepared in consultation with the DECC; and (c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the project.	Yes	Approved by DG – 20th October 2008.
20.	During the project, the Proponent shall ensure there is a suitable continuously operating meteorological station on site that complies with the requirements in *Approved Methods for Sampling of Air Pollutants in New South Wales* (DECC, 2007), or its latest version.	No	EPL varied to remove requirement for meteorological monitoring. Ongoing applicability of Condition 20 to be discussed with DP&E.
21.	Except as may be expressly provided for by an EPL, or in accordance with section 120 of the *Protection of the Environment Operations Act 1997*, the Proponent shall not discharge any mine water from the site.	Yes	No discharges during the reporting period.

Condition	Conditional Requirement	Compliance	Comments
22.	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane) in consultation with the DECC and DWE by suitably qualified expert/s whose appointment/s have been approved by the Director-General and include a: (a) Site Water Balance; (b) Erosion and Sediment Control Plan; (c) Surface Water Monitoring Plan; (d) Groundwater Monitoring Program; and (e) Groundwater Contingency Plan.	Yes	Approved by DG – 20th October 2008.
23.	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; • off-site water transfers; • reporting procedures; (b) describe measures to minimise water use by the project; and (c) be reviewed and recalculated each year using the most recent water monitoring data.	Yes	As per condition.
24.	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* manual (Landcom, 2004), or its latest version; (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to monitor and maintain the structures over time.	Yes	As per condition.
25.	The Surface Water Monitoring Program must include: (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project; (b) surface water impact assessment criteria; (c) a program to monitor the impact of the project on surface water flows and quality; and (d) procedures for reporting the results of this monitoring.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
26.	The Groundwater Monitoring Program must include: (a) further development of the regional and local groundwater model; (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality (including at any privately owned bores in the vicinity of the site); (c) groundwater impact assessment criteria; (d) a program to monitor the impact of the project on groundwater levels, yield and quality; and (e) procedures for reporting the results of this monitoring.	Yes	As per condition.
27.	The Groundwater Contingency Plan must: (a) provide measures to mitigate any impacts of the mine on the quality or quantity of groundwater supplies available on privately-owned land; (b) establish trigger levels, benchmarks and contingency criteria; and (c) provide for negotiated agreements with affected landowners, including compensation where mining impacts result in increased extraction costs for landowners.	Yes	As per condition.
28.	The Proponent shall implement the Koala habitat management and enhancement actions described in the EA (shown conceptually in Figure 6 in Appendix 4) in consultation with the DECC and to the satisfaction of the Director-General.	Yes	Management and enhancement actions have been implemented.
29.	The Proponent shall rehabilitate the site to the satisfaction of the Director-General and DPI.	Not yet applicable	

Condition	Conditional Requirement	Compliance	Comments
30.	The Proponent shall prepare and implement a detailed Rehabilitation and Landscape Management Plan for the site to the satisfaction of the Director-General and DPI. This plan must: (a) be prepared in consultation with DECC, DWE and Council by suitably qualified expert/s whose appointment/s have been approved by the Director-General; and (b) be submitted to the Director-General and DPI for approval by 1 March 2009; (c) include: • the rehabilitation objectives for the site; • a description of how the rehabilitation of the site would be integrated with the landscape of the surrounding area; • detailed performance and completion criteria for the rehabilitation of the site; • a detailed description of the measures that would be implemented to achieve the performance and completion criteria for each site, including the procedures to be implemented for - protection and enhancement of koala habitat; - progressively rehabilitating the areas disturbed by mining operations; - restoration of agricultural land suitability; - revegetating the site; - protecting and/or enhancing areas in the vicinity of the disturbance area; - conserving and re-using any topsoil; - controlling weeds and feral pests; - controlling access; and - bushfire management. • a program to monitor the performance of the rehabilitation against the stated objectives, • performance and completion criteria; • a description of the potential risks to successful rehabilitation, and a description of the contingency measures that would be implemented to minimise these risks; • and details of who is responsible for monitoring, reviewing and implementing the plan.	No (Not applicable to this reporting period)	The plan was submitted in September 2011 and was approved by DoPI in October 2011.
31.	At least 2 years prior to the cessation of mining operations on the site the Proponent shall prepare a Mine Closure Plan. This plan must: (a) define the objectives and criteria for mine closure; (b) investigate options for the future use of the site; (c) provide a detailed methodology for decommissioning the site's storage dams; (d) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels; (e) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and (f) describe how the performance of these measures would be monitored over time.	Yes	Mine Closure Plan was developed as part of the Rehabilitation and Landscape Management Plan.

Condition	Conditional Requirement	Compliance	Comments
32.	The Proponent shall not destroy any known Aboriginal objects (as defined in the *National Parks and Wildlife Act 1974*) without the written approval of the Director-General.	Yes	As per condition.
33.	The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane); (b) be prepared in consultation with the DECC and the local Aboriginal community; (c) include a protocol for the ongoing consultation and involvement of Aboriginal communities in the conservation and management of Aboriginal heritage on site; and (d) describe the measures that would be implemented to protect Aboriginal sites on site, or if any new Aboriginal objects or skeletal remains are discovered during the project.	Yes	Approved by DG – 20th October 2008
34.	The Proponent shall keep records of the amount of coal transported from the site each year, and include these records in the AEMR.	Not applicable in this reporting period	No coal was transported in the reporting period
35.	Prior to transporting any coal off-site, the Proponent shall: (a) construct a realignment of Coocooboonah Lane to the satisfaction of the landowner and Council; (b) upgrade the intersection of Coocooboonah Lane and the Oxley Highway to the satisfaction of the RTA and Council; (c) upgrade the intersection of the Oxley Highway and Blackjack Road to the satisfaction of the RTA and Council; (d) upgrade the section of Blackjack Road to be used for coal transport to the satisfaction of Council; (e) upgrade the intersection of Blackjack Road and Quia Road to the satisfaction of Council; (f) upgrade the section of Quia Road to be used for coal transport to the satisfaction of Council; (g) upgrade the intersection of Quia Road and Farrar Road to the satisfaction of Council; (h) upgrade the intersection of Quia Road and Torrens Road to the satisfaction of Council; and (i) upgrade Torrens Road to the satisfaction of Council.	Not applicable to this reporting period	NMPL received approval from RTA and Council to commence haulage prior to upgrade of the Oxley Highway/Coocooboonah Lane intersection and Oxley Highway/Blackjack Road intersection. All transport route upgrades have been completed.
36.	Prior to carrying out any development on site, the Proponent shall prepare, and subsequently implement, a Construction Traffic Management Plan for the project to the satisfaction of the RTA and Council.	Yes	As per condition.
37.	Within 6 months of this approval the Proponent shall enter into an agreement with Council for the maintenance of the section of the Oxley Highway between Coocooboonah Lane and Blackjack Road.	No (Not applicable to this reporting period)	Road Maintenance Agreement finalised August 2009.
38.	Prior to transporting coal from the site the Proponent shall construct 2 bus stops on the Oxley Highway to the satisfaction of Council.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
39.	Notwithstanding condition 10 of Schedule 2, the Proponent shall ensure no coal is transported from the site during AgQuip.	Not applicable in this reporting period.	
40.	The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director-General	Yes	As per condition. See Section 3.11.2
41.	The Proponent shall ensure that: (a) no outdoor lights shine above the horizontal; and (b) all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.*	Yes	As per condition.
42.	The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in accordance with the *Guidelines for Energy Savings Action Plans (DEUS, 2005)*, or its latest version; (b) include consideration of energy use by mobile equipment; (c) be submitted to the Director-General for approval within 3 months of this approval; and (d) include a program to monitor the effectiveness of measures to reduce energy use on site.	Yes	Approved by DG – July 2009.
43.	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General for approval prior to commencing of construction; (b) identify the various waste streams of the project; (c) describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project; (d) ensure irrigation of treated wastewater is undertaken in accordance with Environmental Guidelines :Use of Effluent by Irrigation (DEC, 2004), or its latest version; and (e) include a program to monitor the effectiveness of these measures.	Yes	Approved by DG – 28th October 2008.
Schedule 4: Additional Procedures			
1.	Within 1 month of this approval, the Proponent shall notify the owner of "Lilydale" in writing that he/she has the right to require the Proponent to acquire their land at any stage during the project.	Not Applicable	Property was purchased at commencement of project.
2.	If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria in schedule 3, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3. However, no notification is required if the impact is predicted in the EA or where an agreement has been negotiated with a landowner that excludes the requirement for ongoing notification of such impacts.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
3.	If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land. If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to: o determine whether the project is complying with the relevant impact assessment criteria in schedule 3; o and identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and (c) give the Director-General and landowner a copy of the independent review. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.	Not applicable	No requests during the reporting period.
4.	If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Director-General. If further monitoring under paragraph (b) determines that the project is complying with the relevant criteria, then the Proponent may discontinue the independent review with the approval of the Director-General.	Not yet applicable	
5.	If further monitoring under condition 4(b) determines that measures implemented under condition 4(a) have not achieved compliance with the land acquisition criteria in schedule 3, and the Proponent cannot then secure within 3 months a written agreement with the landowner under condition 4(c) to allow these exceedances, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 7-9 below.	Not yet applicable	

Condition	Conditional Requirement	Compliance	Comments
6.	If: (a) the landowner disputes the results of the independent review; or (b) the Proponent is unable to secure a written agreement under condition 4(c) with the landowner then (subject to condition 5) either the Proponent or the landowner may refer the matter to the Director-General for resolution. Where matters referred to the Director-General under this condition cannot be resolved by the Director-General within 28 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.	Not yet applicable	
Schedule 5: Environmental Management, Monitoring, Auditing and Reporting			
1.	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to the commencement of construction activities, and: (a) provide the strategic framework for environmental management of the project; (b) identify the statutory requirements that apply to the project; (c) describe in general how the environmental performance of the project would be monitored and managed; (d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies; and (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.	Yes	Approved by DG – 20th October 2008.
2.	The Proponent shall prepare and implement an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General within 6 months of this approval and consolidate the various monitoring requirements in schedule 3 of this approval into a single document.	Yes	Completed and approved by DoPI on 10th October 2011.
3.	As soon as practicable, and in any event within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
4.	Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that: (a) describe the date, time and nature of the exceedance/incident; (b) identifies the cause (or likely cause) of the exceedance/incident; (c) describes what action has been taken to date; and (d) describes the proposed measures to address the exceedance/incident.	No	Subsequent to agreement with the Department, a report regarding blast overpressure exceedance was submitted on 14th March 2014.
5.	Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and to all relevant agencies. This report must: (a) identify the standards and performance measures that apply to the project; (b) describe the works carried out in the last 12 months; (c) describe the works that would be carried out in the next 12 months; (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; (e) include a summary of the monitoring results for the project during the past year; (f) include an analysis of these monitoring results against the relevant: o impact assessment criteria/limits; o monitoring results from previous years; and o predictions in the EA; (g) identify any trends in the monitoring results over the life of the project; (h) identify any non-compliance during the previous year; and (i) describe what actions were, or are being, taken to ensure compliance.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
6.	Within 2 years of this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must: (a) include consultation with the relevant agencies; (b) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any associated EPL or Mining Lease (including any strategy, plan or program required under these approvals); (c) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate, (d) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals. *Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of water, noise management and mine rehabilitation.*	Yes	Audit undertaken in 2013.
7.	Within 6 weeks of the completing of this audit, or as otherwise directed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	Yes	Audit Report was received in December 2013. The Report, and the proponents' response to the Report, were submitted on 8th January 2014.
8.	Within 3 months of submitting the audit report to the Director-General, the Proponent shall review, and if necessary revise the strategies/plans/programs required under this approval to the satisfaction of the Director-General.	Yes	Site Water Management Plan was updated in November 2013. This was consistent with the recommendation made in the Audit Report,
9.	Within 3 months of this approval, the Proponent shall establish a Community Consultative Committee (CCC) for the project. This CCC must be established and operated in accordance with the *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007)*, or its latest version, and to the satisfaction of the Director-General.	Yes	Sunnyside Community Consultative Committee established in January 2009.
10.	Within 3 months of the approval of any strategy/plan/program required under this approval (or any subsequent revision of these strategies/plans/programs), or the completion of the audits or AEMRs required under this approval, the Proponent shall: (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and (b) put a copy of the relevant document/s on its website.	Yes	All relevant documentation available on the Whitehaven website. AEMR also provided to relevant agencies and CCC.
11.	During the project, the Proponent shall: (a) make a summary of all monitoring results required under this approval publicly available at the mine and on its website; and (b) update these results on a regular basis (at least every three months).	Yes	Data provided on website in CCC monitoring reports, EPL monitoring data and AEMR.

TABLE A3.2

Compliance Review – Environment Protection Licence 12957

Condition	Conditional Requirement	Compliance	Comments
A1.1	This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2: Construction of surface infrastructure including but not limited to access roads, intersection and surface facilities prior to mining.	Not Applicable	
A1.2	The licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The Activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition. Coal Works: 0 – 2,000,000 t handled Mining for Coal: 0 – 500,000 t produced	Yes	No Coal Works or Mining for Coal occurred during the reporting period.
A1.3	The licensee must not carry on any scheduled activities until the scheduled development works are completed, except as elsewhere provided in this licence.	Not Applicable	
A2.1	The licence applies to the following premises: Premises Details: SUNNYSIDE COAL PROJECT 259 COOCOOBOONAH LANE GUNNEDAH NSW 2380 LOT 1 DP 393755, LOT 3 DP 611154, LOT 12 DP 755503	Yes	Premises details are correct
A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; (b) and the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Yes	As per condition.
P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point. (refer to table “Air”, EPL p. 7, Appendix 2)	Yes	

Condition	Conditional Requirement	Compliance	Comments
P1.2	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.	Not Applicable	
P1.3	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area. (refer to table "Water and Land", EPL p. 8, Appendix 2)	Not Applicable	
L1.1	Comply with Section 120 of the POEO Act 1997 (re pollution of waters).	Yes	All efforts are maintained to ensure compliance with Section 120.
L2.1	For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	Yes	No discharge of waters from site hence no potential for pollution of waters
L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.	Not Applicable	No monitoring required
L2.3	To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.	Not Applicable	No monitoring required
L2.4	Water and/or Land Concentration Limits: Point 9, 10 Oil & Grease 10 mg/L pH 6.5 – 8.5 TSS 50 mg/L	Not applicable	No monitoring required
L2.5	The Total Suspended Solids concentration limits specified for Points 9 and 10 may be exceeded for water discharged provided that: (a) the discharge occurs solely as a result of rainfall measured at the premises that exceeds 38.4 millimetres over any consecutive 5 day period immediately prior to the discharge occurring; and (b) all practical measures have been implemented to dewater all sediment dams within 5 days of rainfall such that they have sufficient capacity to store run off from a 38.4 millimetres, 5 day rainfall event. Note: 38.4 mm equates to the 5 day 90%ile rainfall depth for Gunnedah sourced from Table 6.3a Managing Urban Stormwater: Soils and Construction Volume 1: 4th edition, March 2004.	Not applicable	No monitoring required

Condition	Conditional Requirement	Compliance	Comments
L3.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.	Yes	As per condition.
L3.2	This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.	Not Applicable	As per condition.
L4.1	Noise generated at the premises must not exceed the noise limits below: LAeq(15min) criterion of 35dB(A) at all times (day, evening and night time periods); and LA1(1 min) criterion of 45dB(A) during night time periods.	Yes	Site not operating, monitoring not required by licence
L4.2	For the purpose of the criteria above: a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays; b) Evening is defined as the period from 6pm to 10pm; c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.	Not Applicable	
L4.3	To determine compliance with L4.1: noise measurement equipment must be located: i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable: iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve. b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade. c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located: i) at the most affected point at a location where there is no dwelling at the location; or ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.	Not Applicable	Noise monitoring not required by licence

Condition	Conditional Requirement	Compliance	Comments
L4.4	The noise limits set out in the Noise Limits table apply under all meteorological conditions except for the following: a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions. For the purposes of this condition: a) Data recorded by the meteorological station identified as EPA Identification Point(s) W1 must be used to determine meteorological conditions; and b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.	Not Applicable	
L4.5	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.	Not Applicable	
L4.6	The noise limits set this licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that: (a) agrees to an alternative noise limit for that property; or (b) provides an alternative means of compensation to address noise impacts from the premises. A copy of any agreement must be provided to the EPA before the licensee can take advantage of the agreement.	Yes	Agreement in place with "Plain View" property, monitoring point R6.
L5.1	The overpressure level from blasting operations at the premises must not exceed 115dB(Lin Peak) for more than 5% of total number of blasts over reporting period.	No	Refer to section 3.9.3
L5.2	The overpressure level from blasting operations at the premises must not exceed 120dB(Lin Peak) at any time.	No	Refer to section 3.9.3
L5.3	Ground vibration peak particle velocity from blasting operations must not exceed 5mm/s for more than 5% of the total number of blasts during each reporting period.	Yes	
L5.4	Ground vibration peak particle velocity from blasting operations must not exceed 10mm/s at any time.	Yes	
L6.1	Construction activities covered by this licence must only be carried out between the hours of 0700 to 1800 hrs Monday to Friday and between 0700 and 1600 hrs Saturday and at no time on Sundays and Public Holidays.	Not applicable	

Condition	Conditional Requirement	Compliance	Comments
L6.2	Mining operations covered by this licence (other than transport of coal from the premises and blasting) must only be carried out between the hours of 0700 and 2200 hrs Monday to Friday, and 0700 and 1800 hrs Saturday, and at no time on Sundays and Public Holidays.	Yes	No mining operations occurred during the reporting period.
L6.3	Transportation of coal from the premises must only be carried out between the hours of 0700 and 1800 (Eastern Standard Time) hrs Monday to Friday, and 0700 and 2000 hrs (Eastern Summer Time) Monday to Friday, and 0700 to 1600 hrs on Saturdays, and at no time on Sundays and Public Holidays.	Not Applicable	
L6.4	Blasting in or on the premises must only be carried out between the hours of 1000 and 1700 hours Monday to Friday, and 1000 and 1400 hrs on Saturdays, and no time on Sundays and Public Holidays.	Yes	
L6.5	Conditions L6.1, L6.2, L6.3 and L6.4 do not apply to the delivery of material, and mining operation, if required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances notification must be provided to the EPA and affected residents as soon as practicable.	Not Applicable	
L6.6	The hours of operation specified in conditions L6.1, L6.2, L6.3 and L6.4 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.	Not Applicable	
L7.1	The maximum tonnage of extraction of ROM coal at the premises during the reporting period must not exceed 1 million tonnes.	Not applicable	No ROM coal extracted during the reporting period.
O1.1	Carry out licensed activities in a competent manner, i.e. (a) processing, handling, movement and storage of materials and substances; and (b) treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Not Applicable	
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity must: (a) be maintained in a proper and efficient condition; and (b) be operated in a proper and efficient manner.	Not Applicable	
O3.1	Minimise or prevent emission of dust from the premises.	Yes	
03.2	Ensure all trucks cover their loads after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	Not Applicable	

Condition	Conditional Requirement	Compliance	Comments
M1.1	Record and retain monitoring results required as per this licence.	Yes	
M1.2	Keep all monitoring records associated with this licence: (a) in a legible form; (b) for at least 4 years; (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Yes	
M1.3	Keep the following records in respect to samples required: (a) sampling date; (b) sampling time; (c) sampling location; and (d) sample collector's name.	Yes	
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number) the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified in the opposite columns.	Yes	
M2.2	Air Monitoring Requirements (refer to tables "Point 1, 2, 3, 4, 5, 6" and "Point 7", EPL p. 13, Appendix 2)	Yes	
M2.3	Water and/ or Land Monitoring Requirements (refer to tables "Point 9, 10" and "Point 11, 12", EPL p. 14, Appendix 2)	Not Applicable	No monitoring required
M2.4	For the purposes of the table(s) above Special Frequency 1 means the collection of samples as soon as practicable after each discharge commences and in any case not more than 12 hours after each discharge commences.	Not Applicable	
M2.5	For the purposes of the table(s) above Special Frequency 2 means the collection of samples quarterly (in the event of a flow during the quarter) at a time when there is flow and as soon as practicable after each wet weather discharge from points 9 and 10 commences and in any case not more than 12 hours after each discharge commences.	Not Applicable	

Condition	Conditional Requirement	Compliance	Comments
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: (a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or (b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for testing; or (c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	Yes	
M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	Not applicable	No monitoring required
M4.1	Keep a legible record of all complaints re pollution arising from licenced activity.	Yes	
M4.2	Keep the following records of complaints. (a) date and time of complaint; (b) method complaint made; (c) any personal details of complainant; (d) nature of complaint; (e) licensee's action in response, any follow-up contact; and (f) if no action – reason why.	Yes	
M4.3	Keep records of complaints for 4 years.	Yes	
M4.4	Present records to EPA upon request.	Not Applicable	
M5.1	Operate telephone complaints line for receipt of complaints from the public.	Yes	
M5.2	Notify the public of the complaints telephone line number.	Yes	
M5.3	The preceding two conditions do not apply until 3 months after: a) the date of the issue of this licence or b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.	Not Applicable	
M6.1	(a) Monitor airblast and ground vibration at receptors R1, R2, R4 and R6. (b) Instrumentation used to measure airblast and vibration must meet AS2187.2-2006.	Yes	

Condition	Conditional Requirement	Compliance	Comments
M6.2	For the purpose of conditions M8.1 and M9.1, the noise monitoring locations are described as: EPA ID : Description of location R1 : Property 'Innisvale' residence R2 : Property 'Ivanhoe' residence R4 : Property 'Illili' residence R5 : Property "Ferndale" residence R6 : Property 'Plain View' residence	Not Applicable	
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: A Statement of Compliance; and A Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Yes	
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below	Yes	
R1.3	Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	Not Applicable	
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not Applicable	
R1.5	Provide EPA with Annual Return no later than 60 days after end of each reporting period.	No	2012/2013 AR submitted beyond required 60 day period from licence anniversary
R1.6	Retain copy of Annual Return for 4 years.	Yes	
R1.7	Certify the Statement of Compliance within the Annual Return and sign the Monitoring and Complaints Summary by: (a) licence holder; or (b) approved person.	Yes	

Condition	Conditional Requirement	Compliance	Comments
R2.1	Notify EPA of threatening or harmful incidents as soon as practicable by phoning EPA's Pollution Line service.	Yes	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Yes	
R3.1	Upon an EPA officer suspecting that an event is causing or likely to cause environmental harm: (a) at the premises; or (b) in connection with vehicles or plant associated with the licenced activities; a request may be made for a written report of the event.	Yes	
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Yes	
R3.3	The report may be required to include: (a) event cause, time and duration; (b) type, volume and concentration of every pollutant discharged; (c) contact details of employees or agents of licensee who witnessed event; (d) contact details of any other persons witnessing the event; (e) the action taken and follow-up contact with complainants in relation to event; (f) mitigation measures proposed to prevent recurrence; (g) any other relevant matters.	Not Applicable	
R3.4	EPA may request further details – must be supplied within specified time.	Not Applicable	
R4.1	BLAST REPORTING	Not Applicable	
R4.2	Report any exceedance of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedance becomes known.	Yes	
R4.3	The results of the blast monitoring required by this licence must be submitted to the EPA at the end of each reporting period.	Yes	

Condition	Conditional Requirement	Compliance	Comments
R4.4	A noise compliance assessment report must be submitted to the EPA within thirty (30) days of the completion of the quarterly noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: a) an assessment of compliance with noise limits detailed in the limit conditions of this licence; and b) an outline of any management actions taken within the monitoring period to address any exceedances of the limits detailed in the limit conditions of this licence.	Not Applicable	No monitoring required
G1.1	Retain a copy of this licence at premises to which the licence applies.	Yes	
G1.2	Produce licence to EPA officer upon request.	Not Applicable	
G1.3	Make licence available for inspection by any employee or agent of licensee working at premises.	Yes	
U1.1	The licensee must undertake the following steps: 1. Calculate the wind erosion exposed surface area (in hectares) within the premises as of 31 July 2015. 2. Determine the wind erosion exposed surface area (in hectares) predicted as at 31 July 2015 within the licensee's Environmental Assessment for the premises. 3. Compare the areas calculated in steps 1 and 2. 4. Submit a written report to the EPA at armidale@epa.nsw.gov.au containing the analysis required in steps 1 to 3, by 31 August 2015. The report submitted to the EPA must be accompanied by spatial data to confirm the wind erosion exposed surface area calculations. The following data is required: · Shapefiles showing the premises boundary. · Shapefiles showing the wind erosion exposed area within the premises as of 31 July 2015 · Shapefiles showing areas classified as stabilised surface as of 31 July 2015 · Details of any studies undertaken to verify that the areas of stabilised surface meet the definition.	Not Applicable	

Condition	Conditional Requirement	Compliance	Comments
U1.2	Definitions: Environmental Assessment means any environmental assessment document prepared in order to gain approval or consent under the Environmental Planning and Assessment Act (1979) under which the licensee currently operates at the premises. If the predictions made in this document do not correspond to the current year of mine operation, the licensee should extrapolate between predictions. Stabilised Surface means any previously disturbed surface area which shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilised. Stabilisation can be determined in accordance with one or more of the applicable test methods contained in the Rule 403 Implementation Handbook located at: www.capcoa.org/Docs/SCAQMD%20r403%20handbook.doc. Wind Erosion Exposed Surface Area means the portion of the premises surface which has been physically moved, uncovered, destabilised or otherwise modified from its natural state, thereby increasing the potential for fugitive particulate matter emissions, but excluding areas which have been: · paved or covered by a permanent building or structure; · maintained with a vegetative ground cover of at least 50% of ground cover for particular areas. Vegetative ground cover can be determined in accordance with the standardised procedure for revegetation assessment contained in Atyeo C. & Thackway R. (2009) located at: http://data.daff.gov.au/data/warehouse/pe_brs90000004196/revegetationManual200906_20100410_ap14.pdf or · classified as a stabilised surface.	Not Applicable	
E1.1	The licensee must notify the EPA's Manager, Armidale Region in writing 1 month prior to mining or handling of any coal on the premises	Not Applicable	

TABLE A3-3

Compliance Review – ML 1624

Relevant Condition	Conditional Requirement	Compliance	Comments
1	Service of notice on landholders within 3 months of granting of mining lease.	Not Applicable.	NMPL only landholders on mining lease.
2	Implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the development.	No	Spontaneous combustion issues discussed in Section 3.14.
3	Prepare and submit a MOP in accordance with DG's guidelines.	Yes	Initial MOP lodged with DPI and accepted on the 25th September 2008. MOP period ends September 2015. Care and Maintenance MOP to be prepared in next reporting period.
4	Lodge an annual Environmental Management Report with DG annually.	Yes	
5.	Prepare the EMR in accordance with requirements in the Mining Lease.	Yes	Prepared in accordance with the requirements.
6	Submit additional environmental reports as directed by the DG.	Not yet applicable	No directions issued.
7	Rehabilitate disturbed land to a sustainable/agreed end land use to the satisfaction of the DG.	Not Yet Applicable	
8	Prepare a Subsidence Management Plan prior to commencing underground mining, in accordance with specified requirements	Not applicable	Open cut operation.
9	(a) Ensure that at least 10 competent people are efficiently employed on the lease area on each day week day except Sunday or any week day that is a public holiday, OR (b) Expend on operations an amount of not less than $175, 000 per annum whilst the lease is in force.	Not applicable	Suspension of condition granted 10th October 2013.
10	Comply with any direction given by an Environmental Officer of the Department in regard to non-compliance with the Act or any condition of this lease.	Not yet applicable	No direction received during reporting period.
11	Provide an exploration report, within a period of 28 days after each anniversary of the date this lease has effect. The report must be to the satisfaction of the DG and contain the specified requirements.	Yes	As per condition.

Relevant Condition	Conditional Requirement	Compliance	Comments
15(a)	Ensure that ground vibration peak particle velocity generated by any blasting does not exceed 10mm/sec and does not exceed 5mm/sec in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises.	Yes	
15(b)	Ensure that blast overpressure noise level generated by any blasting does not exceed 120 dB (linear) and does not exceed 115 dB (linear) more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises.	No	See Section 3.9.3 of AEMR
16	Carry out operations in a manner that ensures the safety of persons and stock.	Yes	As per condition.
17(a)	Advise DWE Regional hydrogeologist of intention to drill exploration holes 28 days prior to commencement.	Not applicable	No exploration drilling during the reporting period.
17(b)	All exploration drill holes must be completed to the satisfaction of the Director General in relation to:- • adequate marking/survey • sealed to prevent collapse • sealed with cement plugs to prevent discharge of groundwaters • if meets gas, it is plugged to prevent escape • if meets artesian or sub-artesian flow is sealed to prevent contamination of aquifer • once no longer used, is sealed according to Department guidelines • once no longer used, the land is left in a clean, tidy and stable condition.	Not applicable	No exploration drilling during the reporting period.
18	Operations must be carried out so as not to cause or aggravate air pollution, water pollution or soil contamination or erosion.	No	Spontaneous combustion issue and remediation discussed in Section 3.14
19	Operations must not interfere with transmission lines, communication lines, pipelines or any other utility, without prior written approval of the DG and subject to any conditions he may stipulate.	Yes	As per condition.
20	Activities must not interfere with or damage fences and gates must be closed or left open in accordance with landholder requirements.	Yes	As per condition.

Relevant Condition	Conditional Requirement	Compliance	Comments
21(a)	Operations must not affect any road unless in accordance with the MOP or written approval of Director General.	Yes	As per condition.
21(b)	Leaseholder must pay to the authority responsible for the road the cost incurred in fixing any damage to the roads caused by the operations.	Yes	Agreement in place with GSC.
22	Access tracks kept to a minimum and positioned so as not to cause unnecessary damage. Temporary tracks to be ripped, topsoiled and revegetated when no longer required.	Yes	As per condition.
23(a)	Trees must not be felled without the consent of the landholder who is entitled to the use of the timber.	Yes	As per condition.
23(b)	Trees must not be felled on the lease area except where it directly obstructs or prevents the carrying out of operations.	Yes	As per condition.
23(c)	Timber from Crown land within the lease area must not be used until all relevant approvals have been obtained.	Yes	As per condition.
25	Comply with direction of Director General if notice is issued with regard to resource recovery	Not Yet Applicable	No notice issued.
27	Provision of Security of $3,175,000 to the Minister to ensure fulfilment of lease conditions.	Yes	As per condition.
31	Make every reasonable attempt, and demonstrate attempts, to enter into a cooperation agreement with the holder(s) of any overlapping petroleum title(s).	Not Applicable	

Appendix 4

DUST MONITORING RESULTS

PM10 - SA1 "Illili"

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
24/01/2009	37.4	25.0	25.00	30	50
30/01/2009	56.5	37.0	31.00	30	50
5/02/2009	34.9	23.0	28.33	30	50
11/02/2009			28.33	30	50
17/02/2009	11.3	7.0	23.00	30	50
23/02/2009	28.7	19.0	22.20	30	50
1/03/2009	55.5	36.0	24.50	30	50
7/03/2009	49.3	31.0	25.43	30	50
13/03/2009	41.3	26.0	25.50	30	50
19/03/2009	33.6	21.0	25.00	30	50
25/03/2009	41.3	26.0	25.10	30	50
31/03/2009	18.8	12.0	23.91	30	50
6/04/2009	20.1	13.0	23.00	30	50
12/04/2009	18.9	12.0	22.15	30	50
18/04/2009	45.0	28.0	22.57	30	50
24/04/2009	34.6	22.0	22.53	30	50
30/04/2009	24.2	15.0	22.06	30	50
6/05/2009	23.5	15.0	21.65	30	50
12/05/2009	64.7	40.0	22.67	30	50
18/05/2009	55.2	34.0	23.26	30	50
24/05/2009	21.7	6.0	22.40	30	50
30/05/2009	19.0	5.0	21.57	30	50
5/06/2009	3.1	2.0	20.68	30	50
11/06/2009	2.1	1.0	19.83	30	50
17/06/2009	6.7	4.0	19.17	30	50
23/06/2009	5.5	2.0	18.48	30	50
29/06/2009	3.7	4.0	17.92	30	50
5/07/2009	4.6	3.0	17.37	30	50
11/07/2009	12.0	7.0	17.00	30	50
17/07/2009	11.4	7.0	16.66	30	50
23/07/2009	17.8	11.0	16.47	30	50
29/07/2009	2.6	2.0	16.00	30	50
4/08/2009	20.7	13.0	15.91	30	50
10/08/2009	33.4	21.0	16.06	30	50
16/08/2009	39.0	24.0	16.29	30	50
22/08/2009	19.2	12.0	16.17	30	50
28/08/2009	28.6	19.0	16.25	30	50
3/09/2009	27.6	17.0	16.27	30	50
9/09/2009	<0.1	<1	16.27	30	50
15/09/2009	42.6	27.0	16.55	30	50
21/09/2009	19.2	12.0	16.44	30	50
27/09/2009	75.6	48.0	17.23	30	50
3/10/2009	47.6	30.0	17.54	30	50
9/10/2009	30.5	19.0	17.57	30	50
15/10/2009	31.1	20.0	17.63	30	50
21/10/2009	48.7	31.0	17.93	30	50
27/10/2009	5.5	3.0	17.60	30	50
2/11/2009	32.7	21.0	17.67	30	50
8/11/2009	12.4	8.0	17.47	30	50
14/11/2009	42.6	27.0	17.67	30	50
20/11/2009	75.4	48.0	18.29	30	50
26/11/2009	65.6	43.0	18.78	30	50
2/12/2009	36.5	23.0	18.86	30	50
8/12/2009	161.7	109.0	20.60	30	50
14/12/2009	107.8	70.0	21.53	30	50
20/12/2009	36.0	23.0	21.56	30	50
26/12/2009	21.3	14.0	21.42	30	50
1/01/2010	15.3	10.0	21.21	30	50
7/01/2010	18.9	12.0	21.05	30	50

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
13/01/2010	42.6	28.0	21.17	30	50
19/01/2010	30.4	19.0	21.14	30	50
25/01/2010	39.6	26.0	21.15	30	50
31/01/2010	20.8	14.0	20.76	30	50
6/02/2010	10.3	7.0	20.49	30	50
12/02/2010	34.4	23.0	20.53	30	50
18/02/2010	31.1	20.0	20.75	30	50
24/02/2010	24.2	16.0	20.70	30	50
2/03/2010	16.4	11.0	20.28	30	50
8/03/2010	11.1	7.0	19.88	30	50
14/03/2010	6.6	4.0	19.52	30	50
20/03/2010	24.9	16.0	19.43	30	50
26/03/2010	50.8	33.0	19.55	30	50
1/04/2010	11.6	8.0	19.48	30	50
7/04/2010	6.7	4.0	19.33	30	50
13/04/2010	20.6	13.0	19.35	30	50
19/04/2010	12.8	8.0	19.02	30	50
25/04/2010	8.4	5.0	18.73	30	50
1/05/2010	20.9	13.0	18.70	30	50
7/05/2010	13.3	8.0	18.58	30	50
13/05/2010	14.2	9.0	18.07	30	50
19/05/2010	20.4	13.0	17.72	30	50
25/05/2010	7.0	4.0	17.68	30	50
31/05/2010	0.0	0.0	17.60	30	50
6/06/2010	1.0	1.0	17.58	30	50
12/06/2010	9.0	5.0	17.65	30	50
18/06/2010	3.8	2.0	17.62	30	50
24/06/2010	3.2	2.0	17.62	30	50
30/06/2010	5.9	4.0	17.62	30	50
6/07/2010	6.0	4.0	17.63	30	50
12/07/2010	8.0	5.0	17.60	30	50
18/07/2010	14.1	9.0	17.63	30	50
24/07/2010	6.9	4.0	17.52	30	50
30/07/2010	0.1	0.0	17.48	30	50
5/08/2010	7.0	4.0	17.33	30	50
11/08/2010	8.9	6.0	17.08	30	50
17/08/2010	4.6	3.0	16.73	30	50
23/08/2010	8.2	5.0	16.62	30	50
29/08/2010	6.4	4.0	16.37	30	50
4/09/2010	8.9	6.0	16.18	30	50
10/09/2010	7.1	4.0	15.98	30	50
16/09/2010	1.7	1.0	15.56	30	50
22/09/2010	17.9	11.0	15.54	30	50
28/09/2010	20.0	13.0	14.97	30	50
4/10/2010	18.9	12.0	14.67	30	50
10/10/2010	12.9	8.0	14.49	30	50
16/10/2010	16.6	10.0	14.33	30	50
22/10/2010	9.8	6.0	13.92	30	50
28/10/2010	22.4	14.0	14.10	30	50
3/11/2010	13.1	8.0	13.89	30	50
9/11/2010	8.4	5.2	13.84	30	50
15/11/2010	7.1	4.4	13.47	30	50
21/11/2010	8.4	5.2	12.77	30	50
27/11/2010	18.7	11.5	12.25	30	50
3/12/2010	11.7	7.0	11.99	30	50
9/12/2010	15.1	9.0	10.35	30	50
15/12/2010	29.4	17.5	9.49	30	50
21/12/2010	29.6	17.6	9.40	30	50
27/12/2010	10.3	6.1	9.27	30	50
2/01/2011	20.0	11.9	9.30	30	50
8/01/2011	21.7	12.9	9.32	30	50

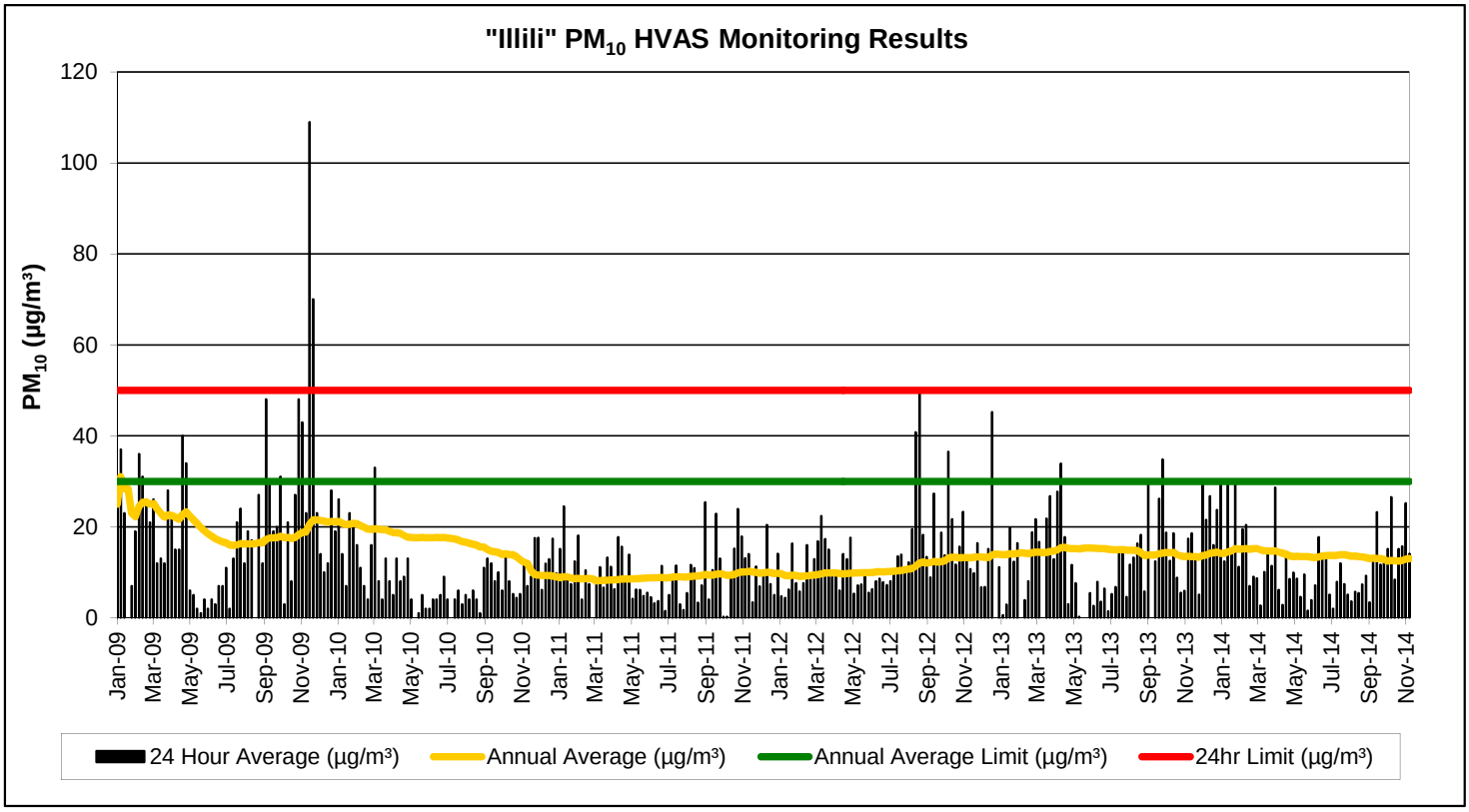
Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
14/01/2011	29.2	17.4	9.14	30	50
20/01/2011	16.6	9.8	8.99	30	50
26/01/2011	25.4	15.1	8.81	30	50
1/02/2011	41.2	24.5	8.99	30	50
7/02/2011	14.3	8.5	9.01	30	50
13/02/2011	12.5	7.4	8.75	30	50
19/02/2011	20.9	12.4	8.63	30	50
25/02/2011	30.4	18.1	8.66	30	50
3/03/2011	6.8	4.0	8.55	30	50
9/03/2011	17.6	10.4	8.60	30	50
15/03/2011	12.4	7.4	8.66	30	50
21/03/2011	<0.1	<0.1	8.54	30	50
27/03/2011	14.5	8.6	8.13	30	50
2/04/2011	18.7	11.1	8.18	30	50
8/04/2011	11.0	6.6	8.23	30	50
14/04/2011	21.8	13.2	8.23	30	50
20/04/2011	18.7	11.2	8.28	30	50
26/04/2011	10.6	6.3	8.31	30	50
2/05/2011	29.8	17.7	8.38	30	50
8/05/2011	26.2	15.6	8.51	30	50
14/05/2011	13.3	7.9	8.49	30	50
20/05/2011	23.4	13.9	8.51	30	50
26/05/2011	7.1	4.2	8.51	30	50
1/06/2011	10.4	6.2	8.61	30	50
7/06/2011	10.2	6.1	8.70	30	50
13/06/2011	8.0	4.8	8.70	30	50
19/06/2011	9.3	5.5	8.75	30	50
25/06/2011	7.6	4.5	8.80	30	50
1/07/2011	5.3	3.2	8.78	30	50
7/07/2011	6.2	3.7	8.78	30	50
13/07/2011	19.1	11.4	8.88	30	50
19/07/2011	2.5	1.5	8.76	30	50
25/07/2011	8.4	5.0	8.78	30	50
31/07/2011	14.6	8.7	8.92	30	50
6/08/2011	19.3	11.5	9.05	30	50
12/08/2011	5.0	3.0	9.00	30	50
18/08/2011	2.9	1.7	8.97	30	50
24/08/2011	9.1	5.4	8.98	30	50
30/08/2011	19.5	11.6	9.11	30	50
5/09/2011	18.3	10.9	9.19	30	50
11/09/2011	5.6	3.3	9.18	30	50
17/09/2011	11.9	7.1	9.28	30	50
23/09/2011	42.7	25.4	9.52	30	50
29/09/2011	6.7	4.0	9.37	30	50
5/10/2011	17.6	10.5	9.34	30	50
11/10/2011	38.4	22.9	9.59	30	50
17/10/2011	21.8	13.0	9.64	30	50
23/10/2011	0.4	0.2	9.55	30	50
29/10/2011	0.4	0.2	9.32	30	50
4/11/2011	15.6	9.3	9.34	30	50
10/11/2011	25.6	15.2	9.50	30	50
16/11/2011	40.2	23.9	9.83	30	50
22/11/2011	30.0	17.9	10.04	30	50
28/11/2011	19.6	13.1	10.07	30	50
4/12/2011	23.5	14.0	10.18	30	50
10/12/2011	5.7	3.4	10.09	30	50
16/12/2011	19.0	11.3	9.99	30	50
22/12/2011	11.6	6.9	9.81	30	50
28/12/2011	17.2	10.2	9.88	30	50
3/01/2012	34.2	20.4	10.02	30	50
9/01/2012	12.4	7.4	9.93	30	50

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
15/01/2012	8.4	5.0	9.72	30	50
21/01/2012	23.7	14.1	9.79	30	50
27/01/2012	7.9	4.7	9.62	30	50
2/02/2012	7.4	4.4	9.28	30	50
8/02/2012	10.4	6.2	9.25	30	50
14/02/2012	27.3	16.3	9.39	30	50
20/02/2012	12.7	7.6	9.31	30	50
26/02/2012	9.8	5.8	9.11	30	50
3/03/2012	12.8	7.6	9.17	30	50
9/03/2012	26.8	16.0	9.26	30	50
15/03/2012	14.4	8.6	9.28	30	50
21/03/2012	21.6	12.9	9.34	30	50
27/03/2012	28.2	16.8	9.48	30	50
2/04/2012	37.7	22.4	9.66	30	50
8/04/2012	29.1	17.3	9.84	30	50
14/04/2012	25.1	15.0	9.87	30	50
20/04/2012	15.2	9.0	9.83	30	50
26/04/2012	16.1	9.6	9.88	30	50
2/05/2012	10.1	6.0	9.69	30	50
8/05/2012	23.6	14.0	9.67	30	50
14/05/2012	21.6	12.9	9.75	30	50
20/05/2012	29.5	17.6	9.81	30	50
26/05/2012	8.9	5.3	9.83	30	50
1/06/2012	12.0	7.1	9.84	30	50
7/06/2012	12.3	7.3	9.86	30	50
13/06/2012	15.5	9.2	9.93	30	50
19/06/2012	9.3	5.5	9.93	30	50
25/06/2012	10.6	6.3	9.96	30	50
1/07/2012	13.4	8.0	10.04	30	50
7/07/2012	14.5	8.6	10.12	30	50
13/07/2012	13.1	7.8	10.06	30	50
19/07/2012	12.1	7.2	10.16	30	50
25/07/2012	13.5	8.0	10.20	30	50
31/07/2012	17.8	10.6	10.24	30	50
6/08/2012	22.6	13.5	10.27	30	50
12/08/2012	23.4	13.9	10.45	30	50
18/08/2012	17.2	10.2	10.59	30	50
24/08/2012	20.4	12.2	10.70	30	50
30/08/2012	32.7	19.5	10.83	30	50
5/09/2012	68.2	40.8	11.32	30	50
11/09/2012	82.3	49.3	12.07	30	50
17/09/2012	30.4	18.2	12.25	30	50
23/09/2012	22.4	13.4	12.06	30	50
29/09/2012	14.8	8.9	12.14	30	50
5/10/2012	45.9	27.3	12.41	30	50
11/10/2012	19.2	11.4	12.22	30	50
17/10/2012	31.4	18.7	12.32	30	50
23/10/2012	23.0	13.7	12.54	30	50
29/10/2012	61.4	36.5	13.13	30	50
4/11/2012	36.5	21.7	13.34	30	50
10/11/2012	19.6	11.7	13.28	30	50
16/11/2012	26.2	15.6	13.14	30	50
22/11/2012	39.1	23.3	13.23	30	50
28/11/2012	20.8	12.4	13.22	30	50
4/12/2012	17.9	10.7	13.17	30	50
10/12/2012	16.4	9.8	13.27	30	50
16/12/2012	27.5	16.4	13.36	30	50
22/12/2012	11.3	6.7	13.35	30	50
28/12/2012	11.5	6.8	13.30	30	50
3/01/2013	25.3	15.1	13.21	30	50
9/01/2013	75.8	45.2	13.83	30	50

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
15/01/2013			13.98	30	50
21/01/2013	18.6	11.1	13.93	30	50
27/01/2013	1.0	0.6	13.86	30	50
2/02/2013	4.9	2.9	13.83	30	50
8/02/2013	33.3	19.8	14.06	30	50
14/02/2013	20.6	12.3	13.99	30	50
20/02/2013	27.6	16.4	14.14	30	50
26/02/2013			14.28	30	50
4/03/2013	6.5	3.9	14.22	30	50
10/03/2013	13.5	8.0	14.08	30	50
16/03/2013	31.5	18.8	14.26	30	50
22/03/2013	36.4	21.7	14.41	30	50
28/03/2013	28.1	16.7	14.40	30	50
3/04/2013	<0.1	<0.1	14.27	30	50
9/04/2013	36.6	21.8	14.34	30	50
15/04/2013	44.9	26.7	14.54	30	50
21/04/2013	21.7	12.9	14.61	30	50
27/04/2013	46.6	27.7	14.92	30	50
3/05/2013	57.0	33.9	15.41	30	50
9/05/2013	26.2	17.7	15.47	30	50
15/05/2013	5.1	3.0	15.30	30	50
21/05/2013	19.4	11.6	15.19	30	50
27/05/2013	12.7	7.6	15.23	30	50
2/06/2013	0.3	0.2	15.12	30	50
8/06/2013			15.25	30	50
14/06/2013	<0.1	<0.1	15.36	30	50
20/06/2013	9.1	5.4	15.36	30	50
26/06/2013	4.3	2.6	15.29	30	50
2/07/2013	13.2	7.9	15.29	30	50
8/07/2013	5.9	3.5	15.20	30	50
14/07/2013	10.7	6.4	15.18	30	50
20/07/2013	2.3	1.4	15.07	30	50
26/07/2013	8.7	5.2	15.02	30	50
1/08/2013	11.5	6.8	14.95	30	50
7/08/2013	24.8	14.8	14.98	30	50
13/08/2013	23.9	14.2	14.98	30	50
19/08/2013	7.7	4.6	14.88	30	50
25/08/2013	19.6	11.7	14.87	30	50
31/08/2013	22.1	13.2	14.84	30	50
6/09/2013	27.3	16.3	14.79	30	50
12/09/2013	30.5	18.2	14.39	30	50
18/09/2013	9.7	5.8	13.63	30	50
24/09/2013	49.1	29.2	13.82	30	50
6/10/2013	20.8	12.4	13.80	30	50
12/10/2013	44.0	26.2	14.11	30	50
18/10/2013	58.5	34.8	14.24	30	50
24/10/2013	31.4	18.7	14.37	30	50
30/10/2013	21.0	12.5	14.26	30	50
5/11/2013	31.2	18.6	14.34	30	50
11/11/2013	14.7	8.8	13.86	30	50
17/11/2013	9.2	5.5	13.57	30	50
23/11/2013	9.9	5.9	13.47	30	50
29/11/2013	29.2	17.4	13.50	30	50
5/12/2013	31.2	18.6	13.42	30	50
11/12/2013	21.5	12.8	13.43	30	50
17/12/2013	8.6	5.1	13.33	30	50
23/12/2013	50.5	30.0	13.68	30	50

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
29/12/2013	36.2	21.5	13.77	30	50
4/01/2014	44.9	26.7	14.12	30	50
10/01/2014	26.8	16.0	14.29	30	50
16/01/2014	39.8	23.7	14.44	30	50
22/01/2014	50.1	29.8	14.17	30	50
28/01/2014	20.8	12.4	14.14	30	50
3/02/2014	50.9	30.3	14.47	30	50
9/02/2014	25.6	15.3	14.72	30	50
15/02/2014	49.6	29.5	15.18	30	50
21/02/2014	18.9	11.2	15.03	30	50
27/02/2014	32.8	19.5	15.16	30	50
5/03/2014	34.3	20.4	15.22	30	50
11/03/2014	11.7	7.0	15.08	30	50
17/03/2014	15.1	9.0	15.17	30	50
23/03/2014	14.6	8.7	15.18	30	50
29/03/2014	4.6	2.7	14.91	30	50
4/04/2014	16.9	10.1	14.71	30	50
10/04/2014	25.2	15.0	14.68	30	50
16/04/2014	19.2	11.4	14.63	30	50
22/04/2014	48.1	28.6	14.74	30	50
28/04/2014	10.2	6.1	14.40	30	50
4/05/2014	4.7	2.8	14.23	30	50
10/05/2014	22.2	13.2	13.99	30	50
16/05/2014	14.3	8.5	13.57	30	50
22/05/2014	16.6	9.9	13.44	30	50
28/05/2014	14.5	8.6	13.53	30	50
3/06/2014	7.8	4.6	13.41	30	50
9/06/2014	15.9	9.5	13.45	30	50
15/06/2014	2.7	1.6	13.47	30	50
21/06/2014	6.5	3.9	13.31	30	50
27/06/2014	12.0	7.1	13.21	30	50
3/07/2014	29.7	17.7	13.41	30	50
9/07/2014	23.2	13.8	13.59	30	50
15/07/2014	23.7	14.1	13.69	30	50
21/07/2014	8.6	5.1	13.72	30	50
27/07/2014	3.4	2.0	13.65	30	50
2/08/2014	13.2	7.9	13.75	30	50
8/08/2014	20.1	12.0	13.86	30	50
14/08/2014	12.5	7.4	13.87	30	50
20/08/2014	8.6	5.1	13.71	30	50
26/08/2014	6.0	3.6	13.54	30	50
1/09/2014	9.6	5.7	13.56	30	50
7/09/2014	9.0	5.4	13.46	30	50
13/09/2014	12.2	7.3	13.36	30	50
19/09/2014	15.2	9.2	13.25	30	50
25/09/2014	5.8	3.4	13.01	30	50
1/10/2014	21.8	13.0	13.13	30	50
7/10/2014	39.0	23.2	13.03	30	50
13/10/2014	19.7	11.7	13.02	30	50
19/10/2014	20.1	12.0	12.79	30	50
25/10/2014	25.4	15.1	12.47	30	50
31/10/2014	44.5	26.5	12.60	30	50
6/11/2014	14.2	8.4	12.53	30	50

Date	mg/paper	24 Hour Average (µg/m³)	Annual Average (µg/m³)	Annual Average Limit (µg/m³)	24hr Limit (µg/m³)
12/11/2014	25.3	15.1	12.47	30	50
18/11/2014	26.4	15.7	12.59	30	50
24/11/2014	42.4	25.2	12.90	30	50
30/11/2014	23.7	14.1	13.04	30	50



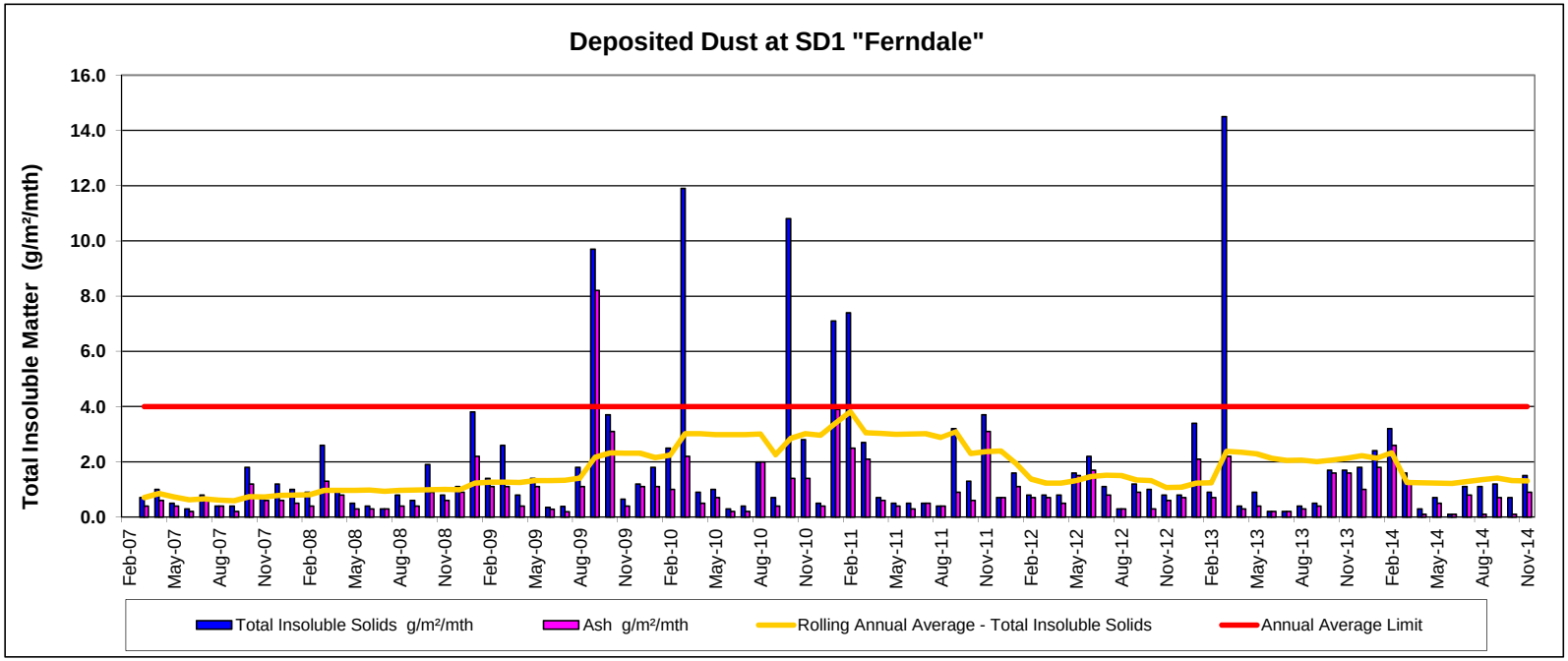
Deposited Dust - SD1 "Ferndale"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
26519.01	SD1 - Ferndale	03-Apr-07	Mar-07	Client	1620	440	0.7	0.7	4.0	0.4	0.4	
26630.01	SD1 - Ferndale	02-May-07	Apr-07	Client	1550	375	1.0	0.9	4.0	0.6	0.5	
26959.01	SD1 - Ferndale	05-Jun-07	May-07	Client	1555	1170	0.5	0.7	4.0	0.4	0.5	
27233.01	SD1 - Ferndale	02-Jul-07	Jun-07	Client	1600	1310	0.3	0.6	4.0	0.2	0.4	
27530.01	SD1 - Ferndale	03-Aug-07	Jul-07	Client	1225	215	0.8	0.7	4.0	0.6	0.4	
27819.01	SD1 - Ferndale	04-Sep-07	Aug-07	Client	1400	1145	0.4	0.6	4.0	0.4	0.4	
28118.01	SD1 - Ferndale	05-Oct-07	Sep-07	Client	0915	60	0.4	0.6	4.0	0.2	0.4	
28397.01	SD1 - Ferndale	02-Nov-07	Oct-07	Client	1415	825	1.8	0.7	4.0	1.2	0.5	
28661.01	SD1 - Ferndale	05-Dec-07	Nov-07	Client	940	1075	0.7	0.7	4.0	0.6	0.5	
28922.01	SD1 - Ferndale	02-Jan-08	Dec-07	Client	1645	2110	1.2	0.8	4.0	0.6	0.5	
29223.01	SD1 - Ferndale	04-Feb-08	Jan-08	Client	1545	1375	1.0	0.8	4.0	0.5	0.5	
29524.01	SD1 - Ferndale	05-Mar-08	Feb-08	Client	-	1635	0.9	0.8	4.0	0.4	0.5	
29772.01	SD1 - Ferndale	04-Apr-08	Mar-08	Client	1405	165	2.6	1.0	4.0	1.3	0.6	
30054.01	SD1 - Ferndale	08-May-08	Apr-08	Client	1545	330	1.0	1.0	4.0	0.8	0.6	
30385.01	SD1 - Ferndale	03-Jun-08	May-08	Client	0835	770	0.5	1.0	4.0	0.3	0.6	
30659.01	SD1 - Ferndale	09-Jul-08	Jun-08	Client	0845	670	0.4	1.0	4.0	0.3	0.6	
30901.01	SD1 - Ferndale	04-Aug-08	Jul-08	Client	1545	455	0.3	0.9	4.0	0.3	0.6	
31209.01	SD1 - Ferndale	02-Sep-08	Aug-08	Client	0800	510	0.8	1.0	4.0	0.4	0.6	
31526.01	SD1 - Ferndale	03-Oct-08	Sep-08	Client	1020	815	0.6	1.0	4.0	0.4	0.6	
31774.01	SD1 - Ferndale	05-Nov-08	Oct-08	Client	1050	1160	1.9	1.0	4.0	0.9	0.6	
32022.01	SD1 - Ferndale	02-Dec-08	Nov-08	Client	1115	1760	0.8	1.0	4.0	0.6	0.6	
32517.01	SD1 - Ferndale	06-Jan-09	Dec-08	Client	0950	1005	1.1	1.0	4.0	0.9	0.6	
32245.01	SD1 - Ferndale	03-Feb-09	Jan-09	Client	1051	300	3.8	1.2	4.0	2.2	0.7	
32862.01	SD1 - Ferndale	03-Mar-09	Feb-09	Client	1024	1200	1.4	1.3	4.0	1.1	0.8	
2600 1005 - 00	SD1 - Ferndale	02-Apr-09	Mar-09	ALS	1105	50	2.6	1.3	4.0	1.1	0.8	Insects

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600 1016 - 00	SD1 - Ferndale	04-May-09	Apr-09	ALS	1035	350	0.8	1.3	4.0	0.4	0.7	Insects
2600 1035 - 01	SD1 - Ferndale	03-Jun-09	May-09	ALS	1420	600	1.4	1.3	4.0	1.1	0.8	
2600 1040 - 02	SD1 - Ferndale	06-Jul-09	Jun-09	ALS	1455	600	0.3	1.3	4.0	0.3	0.8	Insects
2600 1052 - 01	SD1 - Ferndale	03-Aug-09	Jul-09	ALS	1658	400	0.4	1.3	4.0	0.2	0.8	Insects, Bird Droppings
2600 1063 - 00	SD1 - Ferndale	01-Sep-09	Aug-09	ALS	0916	10	1.8	1.4	4.0	1.1	0.9	Insects
2600 1099 - 01	SD1 - Ferndale	30-Sep-09	Sep-09	ALS	1244	1100	9.7	2.2	4.0	8.2	1.5	Dust storm 23/9, Insects, Bird Droppings
2600 1129 - 00	SD1 - Ferndale	04-Nov-09	Oct-09	ALS	1047	700	3.7	2.3	4.0	3.1	1.7	Insects
2600 1204 - 116	SD1 - Ferndale	02-Dec-09	Nov-09	ALS	1021	10	0.6	2.3	4.0	0.4	1.7	Insects, Plant Material
2600 1222 - 116	SD1 - Ferndale	31-Dec-09	Dec-09	ALS	0900	2200	1.2	2.3	4.0	1.1	1.7	
2600 1234 - 000	SD1 - Ferndale	02-Feb-10	Jan-10	ALS	1230	2100	1.8	2.1	4.0	1.1	1.6	Insects, Plant Material
2600 1247 - 000	SD1 - Ferndale	04-Mar-10	Feb-10	ALS	1005	2000	2.5	2.2	4.0	1.0	1.6	Insects,One Frog
2600 1260 - 000	SD1 - Ferndale	01-Apr-10	Mar-10	ALS	0950	900	11.9	3.0	4.0	2.2	1.7	Insects,Plant Material
2600 1268 - 000	SD1 - Ferndale	29-Apr-10	Apr-10	ALS	1230	100	0.9	3.0	4.0	0.5	1.7	Insects,Plant Material
2600 1277 - 000	SD1 - Ferndale	27-May-10	May-10	ALS	1335	40	1.0	3.0	4.0	0.7	1.7	Insects,Plant Material
2600 1288 - 778	SD1 - Ferndale	24-Jun-10	Jun-10	ALS	1330	300	0.3	3.0	4.0	0.2	1.6	Insects,Plant Material
26001289-879	SD1 - Ferndale	22-Jul-10	Jul-10	ALS	1430	800	0.4	3.0	4.0	0.2	1.6	Insects,Plant Material
2600-1309-912	SD1 - Ferndale	23-Aug-10	Aug-10	ALS	1150	1800	2.0	3.0	4.0	2.0	1.7	Insects,Plant Material
2600-1319	SD1 - Ferndale	22-Sep-10	Sep-10	ALS	1150	1000	0.7	2.3	4.0	0.4	1.1	Insects, Plant Material
2600-1340-17	SD1 - Ferndale	22-Oct-10	Oct-10	ALS	1055	2500	10.8	2.8	4.0	1.4	0.9	dead frog in bottle
1002974-001	SD1 - Ferndale	23-Nov-10	Nov-10	ALS	1055	2500	2.8	3.0	4.0	1.4	1.0	N/A
1003112-001	SD1 - Ferndale	23-Dec-10	Dec-10	ALS	1030		0.5	3.0	4.0	0.4	1.0	No field observations
1100198-001	SD1 - Ferndale	24-Jan-11	Jan-11	ALS	1120	1400	7.1	3.4	4.0	3.9	1.2	Insects, Bird droppings, plant material-Dead frog in bottle
1100461-001	SD1 - Ferndale	23-Feb-11	Feb-11	ALS	1230		7.4	3.8	4.0	2.5	1.3	No field observations
1100716-001	SD1 - Ferndale	25-Mar-11	Mar-11	ALS	1225	400	2.7	3.0	4.0	2.1	1.3	Insects, plant material
1100964-001	SD1 - Ferndale	21-Apr-11	Apr-11	ALS	1330	400	0.7	3.0	4.0	0.6	1.3	Insects, plant material
1101206-001	SD1 - Ferndale	23-May-11	May-11	ALS	1240	400	0.5	3.0	4.0	0.4	1.3	No field observations
1101487-001	SD1 - Ferndale	23-Jun-11	Jun-11	ALS	1110	500	0.5	3.0	4.0	0.3	1.3	Plant material
1101835-001	SD1 - Ferndale	20-Jul-11	Jul-11	ALS	0900	50	0.5	3.0	4.0	0.5	1.3	No field observations
1102364-001	SD1 - Ferndale	19-Aug-11	Aug-11	ALS	1020	400	0.4	2.9	4.0	0.4	1.2	Insects, Plant material
1102817-001	SD1 - Ferndale	20-Sep-11	Sep-11	ALS	1155	600	3.2	3.1	4.0	0.9	1.2	Insects, Bird Droppings, Plant material
1103134-001	SD1 - Ferndale	18-Oct-11	Oct-11	ALS	1110	900	1.3	2.3	4.0	0.6	1.2	Insects, Plant material
1103513-001	SD1 - Ferndale	18-Nov-11	Nov-11	ALS	1025	800	3.7	2.4	4.0	3.1	1.3	Insects, Plant material
1104388-001	SD1 - Ferndale	19-Dec-11	Dec-11	ALS	1140	2500	0.7	2.4	4.0	0.7	1.3	N/A
1200253-001	SD1 - Ferndale	17-Jan-12	Jan-12	ALS	1130	800	1.6	1.9	4.0	1.1	1.1	Insects, Plant material
1200664-001	SD1 - Ferndale	16-Feb-12	Feb-12	ALS	1045	1600	0.8	1.4	4.0	0.7	1.0	Insects, Plant material

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
1201070-001	SD1 - Ferndale	19-Mar-12	Mar-12	ALS	1040	800	0.8	1.2	4.0	0.7	0.8	Insects, Plant material
1201471-001	SD1 - Ferndale	18-Apr-12	Apr-12	ALS	1045	200	0.8	1.2	4.0	0.5	0.8	Insects, Plant material
1201905-001	SD1 - Ferndale	18-May-12	May-12	ALS	1210	500	1.6	1.3	4.0	1.5	0.9	Insects, Plant material
1202280-001	SD1 - Ferndale	19-Jun-12	Jun-12	ALS	1315	500	2.2	1.5	4.0	1.7	1.0	Insects, Plant material
1202698-001	SD1 - Ferndale	19-Jul-12	Jul-12	ALS	0900	900	1.1	1.5	4.0	0.8	1.1	Insects, Plant material
1203137-001	SD1 - Ferndale	20-Aug-12	Aug-12	ALS	1230	100	0.3	1.5	4.0	0.3	1.1	Insects, Plant material
1203602-001	SD1 - Ferndale	19-Sep-12	Sep-12	ALS	1010	100	1.2	1.3	4.0	0.9	1.1	Insects, Plant material
1204037-001	SD1 - Ferndale	19-Oct-12	Oct-12	ALS	1010	300	1.0	1.3	4.0	0.3	1.0	Insects, Plant material
1204424-001	SD1 - Ferndale	20-Nov-12	Nov-12	ALS	1055	150	0.8	1.1	4.0	0.6	0.8	Insects, Plant material
EN1204867-001	SD1 - Ferndale	21-Dec-12	Dec-12	ALS	1010	100	0.8	1.1	4.0	0.7	0.8	Insects, Plant material
EN1300276-001	SD1 - Ferndale	21-Jan-13	Jan-13	ALS	1030	500	3.4	1.2	4.0	2.1	0.9	Insects, Plant material
EN1300720-001	SD1 - Ferndale	21-Feb-13	Feb-13	ALS	1100	1700	0.9	1.2	4.0	0.7	0.9	Insects, Plant material
EN1301116-001	SD1 - Ferndale	21-Mar-13	Mar-13	ALS	0845	600	14.5	2.4	4.0	2.2	1.0	Insects, Bird droppings -ploughed paddock adjacent to dust gauge
EN1301518-001	SD1 - Ferndale	22-Apr-13	Apr-13	ALS	1100	<100	0.4	2.4	4.0	0.3	1.0	Insects, Plant material
EN1301854-001	SD1 - Ferndale	20-May-13	May-13	ALS	1210	250	0.9	2.3	4.0	0.4	0.9	Insects, Plant material
EN1302249-001	SD1 - Ferndale	19-Jun-13	Jun-13	ALS	1030	800	0.2	2.1	4.0	0.2	0.8	Insects, Plant material
EN1302655-001	SD1 - Ferndale	18-Jul-13	Jul-13	ALS	1055	400	0.2	2.1	4.0	0.2	0.7	Plant material
EN1303087-001	SD1 - Ferndale	19-Aug-13	Aug-13	ALS	1100	600	0.4	2.1	4.0	0.3	0.7	Insects, Plant material
EN1303472-001	SD1 - Ferndale	18-Sep-13	Sep-13	ALS	1140	150	0.5	2.0	4.0	0.4	0.7	Insects, Plant material
EN130855-001	SD1 - Ferndale	17-Oct-13	Oct-13	ALS	1100	200	1.7	2.1	4.0	1.6	0.8	Insects, Plant material
EN1304243-001	SD1 - Ferndale	15-Nov-13	Nov-13	ALS	1040	200	1.7	2.1	4.0	1.6	0.9	Insects, Plant material
EN1304678-001	SD1 - Ferndale	17-Dec-13	Dec-13	ALS	1050	650	1.8	2.2	4.0	1.0	0.9	Insects, Plant material
2600185403-001	SD1 - Ferndale	15-Jan-14	Jan-14	ALS	1045	100	2.4	2.1	4.0	1.8	0.9	Insects, Bird droppings
2600186703-001	SD1 - Ferndale	14-Feb-14	Feb-14	ALS	1035	200	3.2	2.3	4.0	2.6	1.1	Insects, Plant material
2600188203-001	SD1 - Ferndale	17-Mar-14	Mar-14	ALS	1145	1000	1.6	1.3	4.0	1.2	1.0	Insects, Plant material
2600189703-001	SD1 - Ferndale	16-Apr-14	Apr-14	ALS	1100	2000	0.3	1.2	4.0	0.1	1.0	Insects,
2600191003-001	SD1 - Ferndale	16-May-14	May-14	ALS	1120	500	0.7	1.2	4.0	0.5	1.0	Insects,
2600192303-001	SD1 - Ferndale	16-Jun-14	Jun-14	ALS	1150	1150	0.1	1.2	4.0	0.1	1.0	Insects,
2600193603-001	SD1 - Ferndale	15-Jul-14	Jul-14	ALS	0830	250	1.1	1.3	4.0	0.8	1.0	Insects, Bird droppings

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600195003-001	SD1 - Ferndale	14-Aug-14	Aug-14	ALS	1100	500	1.1	1.4	4.0	0.1	1.0	Insects, Plant material
2600196403-001	SD1 - Ferndale	15-Sep-14	Sep-14	ALS	1040	1250	1.2	1.4	4.0	0.7	1.0	Insects,
2600197803-001	SD1 - Ferndale	15-Oct-14	Oct-14	ALS	1000	500	0.7	1.3	4.0	0.1	0.9	Insects,
2600199203-001	SD1 - Ferndale	14-Nov-14	Nov-14	ALS	1020	500	1.5	1.3	4.0	0.9	0.8	Plant material



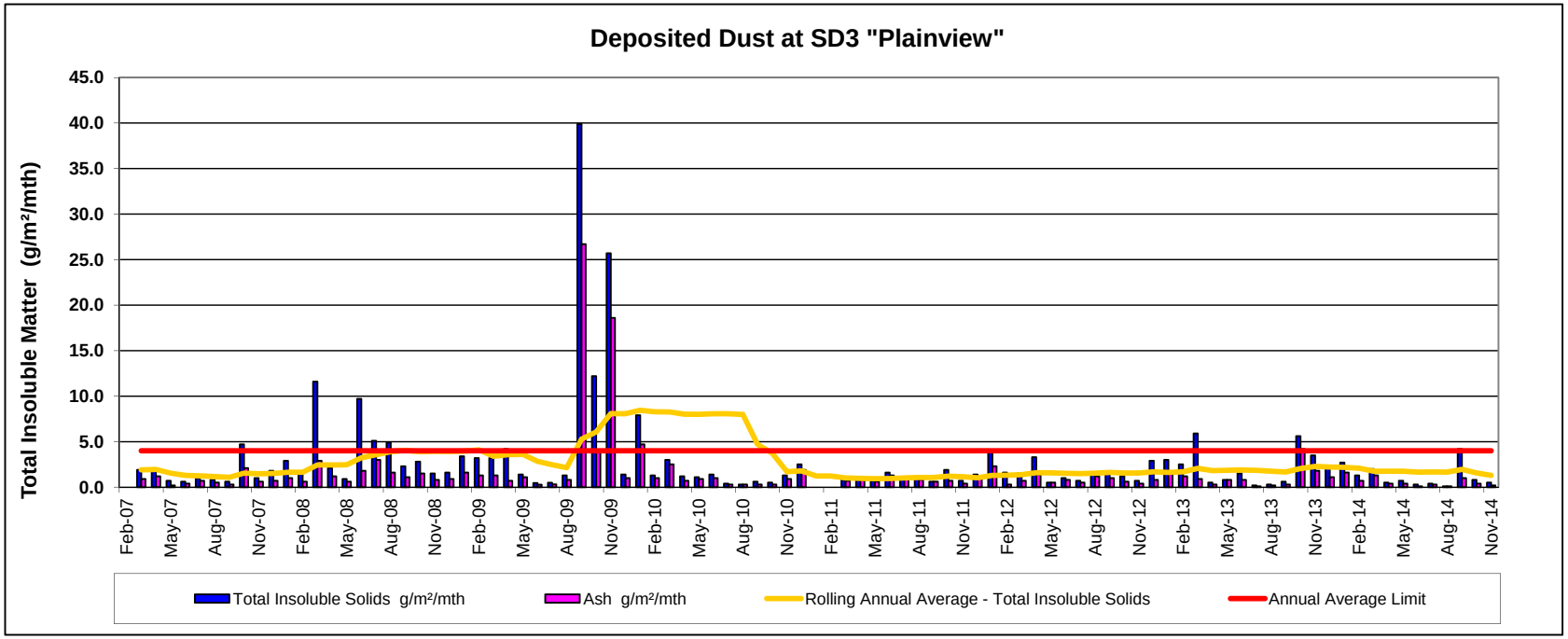
Deposited Dust - SD3 "Plainview"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
26519.03	SD3 - Plainview	03-Apr-07	Mar-07	Client	1630	660	1.9	1.9	4.0	0.9	0.9	
26630.03	SD3 - Plainview	02-May-07	Apr-07	Client	1715	400	2.0	2.0	4.0	1.2	1.1	
26959.03	SD3 - Plainview	05-Jun-07	May-07	Client	1645	1255	0.7	1.5	4.0	0.2	0.8	
27233.03	SD3 - Plainview	02-Jul-07	Jun-07	Client	1650	1400	0.6	1.3	4.0	0.4	0.7	
27530.03	SD3 - Plainview	03-Aug-07	Jul-07	Client	1400	165	1.0	1.2	4.0	0.7	0.7	
27819.03	SD3 - Plainview	04-Sep-07	Aug-07	Client	1505	1300	0.8	1.2	4.0	0.5	0.7	
28118.03	SD3 - Plainview	05-Oct-07	Sep-07	Client	0830	80	0.6	1.1	4.0	0.3	0.6	
28397.03	SD3 - Plainview	02-Nov-07	Oct-07	Client	1515	870	4.7	1.5	4.0	2.1	0.8	
28661.03	SD3 - Plainview	05-Dec-07	Nov-07	Client	0830	1290	1.0	1.5	4.0	0.6	0.8	
28922.03	SD3 - Plainview	02-Jan-08	Dec-07	Client	1730	2235	1.8	1.5	4.0	0.7	0.8	
29223.03	SD3 - Plainview	04-Feb-08	Jan-08	Client	1635	1535	2.9	1.6	4.0	1.0	0.8	
29524.03	SD3 - Plainview	05-Mar-08	Feb-08	Client	0810	2070	1.6	1.6	4.0	0.6	0.8	
29772.03	SD3 - Plainview	04-Apr-08	Mar-08	Client	1510	325	11.6	2.4	4.0	2.9	0.9	
30054.03	SD3 - Plainview	08-May-08	Apr-08	Client	1730	500	2.1	2.5	4.0	1.2	0.9	
30385.03	SD3 - Plainview	03-Jun-08	May-08	Client	1025	950	0.9	2.5	4.0	0.6	1.0	
30659.03	SD3 - Plainview	09-Jul-08	Jun-08	Client	1100	790	9.7	3.2	4.0	1.8	1.1	
30901.03	SD3 - Plainview	04-Aug-08	Jul-08	Client	1625	590	5.1	3.6	4.0	3.0	1.3	
31209.03	SD3 - Plainview	02-Sep-08	Aug-08	Client	0910	570	4.9	3.9	4.0	1.6	1.4	
31526.03	SD3 - Plainview	03-Oct-08	Sep-08	Client	1150	930	2.3	4.1	4.0	1.1	1.4	
31774.03	SD3 - Plainview	05-Nov-08	Oct-08	Client	1140	1250	2.8	3.9	4.0	1.5	1.4	
32022.03	SD3 - Plainview	02-Dec-08	Nov-08	Client	1245	2070	1.5	3.9	4.0	0.8	1.4	
32517.03	SD3 - Plainview	06-Jan-09	Dec-08	Client	1347	1580	1.6	3.9	4.0	0.9	1.4	
32245.02	SD3 - Plainview	03-Feb-09	Jan-09	Client	1208	585	3.4	4.0	4.0	1.6	1.5	
32862.03	SD3 - Plainview	03-Mar-09	Feb-09	Client	1142	1410	3.2	4.1	4.0	1.3	1.5	

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600 1005 - 00	SD3 - Plainview	02-Apr-09	Mar-09	ALS	1115	50	3.2	3.4	4.0	1.3	1.4	Insects
2600 1016 - 00	SD3 - Plainview	04-May-09	Apr-09	ALS	1045	300	4.2	3.6	4.0	0.7	1.4	Insects
2600 1035 - 01	SD3 - Plainview	03-Jun-09	May-09	ALS	1330	600	1.4	3.6	4.0	1.1	1.4	
2602 1040 - 02	SD3 - Plainview	06-Jul-09	Jun-09	ALS	1420	600	0.5	2.8	4.0	0.3	1.3	Insects, Plant Material
2601 1052 - 01	SD3 - Plainview	03-Aug-09	Jul-09	ALS	1708	450	0.5	2.5	4.0	0.3	1.0	Insects, Plant Material, Bird Droppings
2600 1063 - 00	SD3 - Plainview	01-Sep-09	Aug-09	ALS	0824	10	1.3	2.2	4.0	0.8	1.0	Insects, Plant Material
2600 1063 - 00	SD3 - Plainview	30-Sep-09	Sep-09	ALS	1222	1200	39.9	5.3	4.0	26.7	3.1	Insects, Bird Droppings,
2600 1129 - 00	SD3 - Plainview	04-Nov-09	Oct-09	ALS	1141	300	12.2	6.1	4.0	4.0	3.3	Dust storm - 23/9, sample contamination
2600 1204 - 116	SD3 - Plainview	02-Dec-09	Nov-09	ALS	0932	100	25.7	8.1	4.0	18.6	4.8	Insects, Bird Droppings, Plant Material
2600 1222 - 116	SD3 - Plainview	31-Dec-09	Dec-09	ALS	0819	2000	1.4	8.1	4.0	1	4.8	Insects
2600 1234 - 000	SD3 - Plainview	02-Feb-10	Jan-10	ALS	1145	2400	7.9	8.4	4.0	4.7	5.1	Insects, Plant Material
2601 1247 - 000	SD3 - Plainview	04-Mar-10	Feb-10	ALS	1120	2200	1.3	8.3	4.0	1	5.0	Insects
2600 1260 - 000	SD3 - Plainview	01-Apr-10	Mar-10	ALS	0925	900	3	8.3	4.0	2.5	5.1	Insects,Plant Material
2600 1268 - 000	SD3 - Plainview	29-Apr-10	Apr-10	ALS	1130	100	1.2	8.0	4.0	0.7	5.1	Insects,Plant Material
2600 1277 - 000	SD3 - Plainview	27-May-10	May-10	ALS	1300	50	1.1	8.0	4.0	0.9	5.1	Insects,Plant Material
2600 1288 - 778	SD3 - Plainview	24-Jun-10	Jun-10	ALS	1405	300	1.4	8.1	4.0	1	5.2	Plant Material
26001289-879	SD3 - Plainview	22-Jul-10	Jul-10	ALS	1510	800	0.4	8.1	4.0	0.3	5.2	Insects
2600-1309-912	SD3 - Plainview	23-Aug-10	Aug-10	ALS	1325	1800	0.3	8.0	4.0	0.3	5.1	Insects
2600-1319	SD3 - Plainview	22-Sep-10	Sep-10	ALS	1325	900	0.6	4.7	4.0	0.3	2.9	Insects, Plant Material
2600-1340-17	SD3 - Plainview	22-Oct-10	Oct-10	ALS	1250	2500	0.5	3.7	4.0	0.3	2.6	N/A
1002974-002	SD3 - Plainview	23-Nov-10	Nov-10	ALS	1250	2500	1.3	1.7	4.0	0.9	1.2	N/A
1003112-002	SD3 - Plainview	23-Dec-10	Dec-10	ALS	1000	N/A	2.5	1.8	4.0	1.9	1.2	No field observations
N/A	SD3 - Plainview	N/A	Jan-11	ALS	N/A	N/A	N/A	1.2	4.0	N/A	0.9	SD3 Damaged. To be replaced.
N/A	SD3 - Plainview	N/A	Feb-11	ALS	N/A	N/A	N/A	1.2	4.0	N/A	0.9	SD3 Damaged. To be replaced.
1100716-002	SD3 - Plainview	25-Mar-11	Mar-11	ALS	1305	500	0.8	1.0	4.0	0.7	0.7	Insects, plant material
1100964-002	SD3 - Plainview	21-Apr-11	Apr-11	ALS	1350	500	0.8	1.0	4.0	0.8	0.7	Insects, plant material
1101206-002	SD3 - Plainview	23-May-11	May-11	ALS	1335	500	0.7	0.9	4.0	0.6	0.7	Insects
1101487-002	SD3 - Plainview	23-Jun-11	Jun-11	ALS	1150	500	1.6	1.0	4.0	1.3	0.7	Insects/Plant material
1101835-002	SD3 - Plainview	20-Jul-11	Jul-11	ALS	0910	100	1.0	1.0	4.0	1.0	0.8	Insects, Plant material
1102364-002	SD3 - Plainview	19-Aug-11	Aug-11	ALS	1040	400	0.9	1.1	4.0	0.8	0.9	Plant material
1102817-002	SD3 - Plainview	20-Sep-11	Sep-11	ALS	1000	800	0.6	1.1	4.0	0.6	0.9	Insects
1103134-002	SD3 - Plainview	18-Oct-11	Oct-11	ALS	1150	1100	1.9	1.2	4.0	0.7	0.9	Insects, Bird Droppings, Plant material
1103513-002	SD3 - Plainview	18-Nov-11	Nov-11	ALS	1110	800	0.7	1.2	4.0	0.4	0.9	Insects, Plant material

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
1104388-002	SD3 - Plainview	19-Dec-11	Dec-11	ALS	1320	2500	1.4	1.0	4.0	1.0	0.8	Plant Material
1200253-002	SD3 - Plainview	17-Jan-12	Jan-12	ALS	0920	1100	3.8	1.3	4.0	2.3	0.9	Insects, Plant material
1200664-002	SD3 - Plainview	16-Feb-12	Feb-12	ALS	1150	1500	1.6	1.3	4.0	0.3	0.9	Insects, Plant material
1201070-002	SD3 - Plainview	19-Mar-12	Mar-12	ALS	0910	800	1.5	1.4	4.0	0.7	0.9	Insects, Plant material
1201471-002	SD3 - Plainview	18-Apr-12	Apr-12	ALS	1000	200	3.3	1.6	4.0	1.4	0.9	Insects, Plant material
1201905-002	SD3 - Plainview	18-May-12	May-12	ALS	1320	500	0.5	1.6	4.0	0.5	0.9	Insects, Plant material
1202280-002	SD3 - Plainview	19-Jun-12	Jun-12	ALS	1430	500	1.0	1.5	4.0	0.8	0.9	Plant material
1202698-002	SD3 - Plainview	19-Jul-12	Jul-12	ALS	1135	900	0.7	1.5	4.0	0.5	0.8	Insects, Plant material
1203137-002	SD3 - Plainview	20-Aug-12	Aug-12	ALS	1130	100	1.5	1.5	4.0	1.2	0.9	Insects, Plant material
1203602-002	SD3 - Plainview	19-Sep-12	Sep-12	ALS	0915	100	1.5	1.6	4.0	1.0	0.9	Insects, Plant material
1204037-002	SD3 - Plainview	19-Oct-12	Oct-12	ALS	1100	300	1.2	1.6	4.0	0.6	0.9	Insects, Plant material
1204424-002	SD3 - Plainview	20-Nov-12	Nov-12	ALS	1145	150	0.7	1.6	4.0	0.4	0.9	Insects, Plant material
EN1204867-002	SD3 - Plainview	21-Dec-12	Dec-12	ALS	0930	100	2.9	1.7	4.0	0.8	0.9	Insects, Plant material
EN1300276-002	SD3 - Plainview	21-Jan-13	Jan-13	ALS	1130	500	3.0	1.6	4.0	1.5	0.8	Insects, Plant material
EN1300720-002	SD3 - Plainview	21-Feb-13	Feb-13	ALS	1200	1700	2.5	1.7	4.0	1.2	0.9	Insects, Plant material
EN1301116-002	SD3 - Plainview	21-Mar-13	Mar-13	ALS	0945	600	5.9	2.1	4.0	0.9	0.9	Bird droppings
EN1301518-002	SD3 - Plainview	22-Apr-13	Apr-13	ALS	1145	<100	0.5	1.8	4.0	0.3	0.8	Insects, Plant material
EN1301854-002	SD3 - Plainview	20-May-13	May-13	ALS	1030	250	0.8	1.9	4.0	0.8	0.8	Insects, Plant material
EN1302249-002	SD3 - Plainview	19-Jun-13	Jun-13	ALS	1115	800	1.5	1.9	4.0	0.8	0.8	Insects, Plant material
EN1302655-002	SD3 - Plainview	18-Jul-13	Jul-13	ALS	0955	500	0.2	1.9	4.0	0.1	0.8	Insects, Plant material
EN1303087-002	SD3 - Plainview	19-Aug-13	Aug-13	ALS	1130	600	0.3	1.8	4.0	0.2	0.7	Insects, Plant material
EN1303472-002	SD3 - Plainview	18-Sep-13	Sep-13	ALS	1300	150	0.6	1.7	4.0	0.3	0.7	Insects, Plant material
EN130855-002	SD3 - Plainview	17-Oct-13	Oct-13	ALS	1150	200	5.6	2.0	4.0	4.2	1.0	Insects, Plant material
EN1304243-002	SD3 - Plainview	15-Nov-13	Nov-13	ALS	1130	200	3.5	2.3	4.0	1.8	1.1	Insects, Bird Droppings, Plant material
EN1304678-002	SD3 - Plainview	17-Dec-13	Dec-13	ALS	1135	600	2.1	2.2	4.0	1.1	1.1	Insects, Plant material
2600185403-002	SD3 - Plainview	15-Jan-14	Jan-14	ALS	1115	100	2.7	2.2	4.0	1.6	1.1	Insects, Plant material
2600186703-002	SD3 - Plainview	14-Feb-14	Feb-14	ALS	1105	150	1.3	2.1	4.0	0.7	1.1	Insects, Plant material
2600188203-002	SD3 - Plainview	17-Mar-14	Mar-14	ALS	1215	800	2.0	1.8	4.0	1.3	1.1	Insects,
2600189703-002	SD3 - Plainview	16-Apr-14	Apr-14	ALS	1145	2000	0.5	1.8	4.0	0.4	1.1	Insects,

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600191003-002	SD3 - Plainview	16-May-14	May-14	ALS	1225	500	0.7	1.8	4.0	0.4	1.1	Insects,
2600192303-002	SD3 - Plainview	16-Jun-14	Jun-14	ALS	1250	1250	0.3	1.7	4.0	0.1	1.0	Insects, plant material-glass
2600193603-002	SD3 - Plainview	15-Jul-14	Jul-14	ALS	1535	300	0.4	1.7	4.0	0.3	1.0	Insects, Plant material
2600195003-002	SD3 - Plainview	14-Aug-14	Aug-14	ALS	1200	400	0.1	1.7	4.0	0.1	1.0	Insects,
2600196403-002	SD3 - Plainview	15-Sep-14	Sep-14	ALS	1110	1250	4.2	2.0	4.0	1.0	1.1	Insects, Plant material
2600197803-002	SD3 - Plainview	15-Oct-14	Oct-14	ALS	1515	500	0.8	1.6	4.0	0.4	0.8	Plant material
2600199203-002	SD3 - Plainview	14-Nov-14	Nov-14	ALS	1105	250	0.5	1.3	4.0	0.2	0.6	Plant material

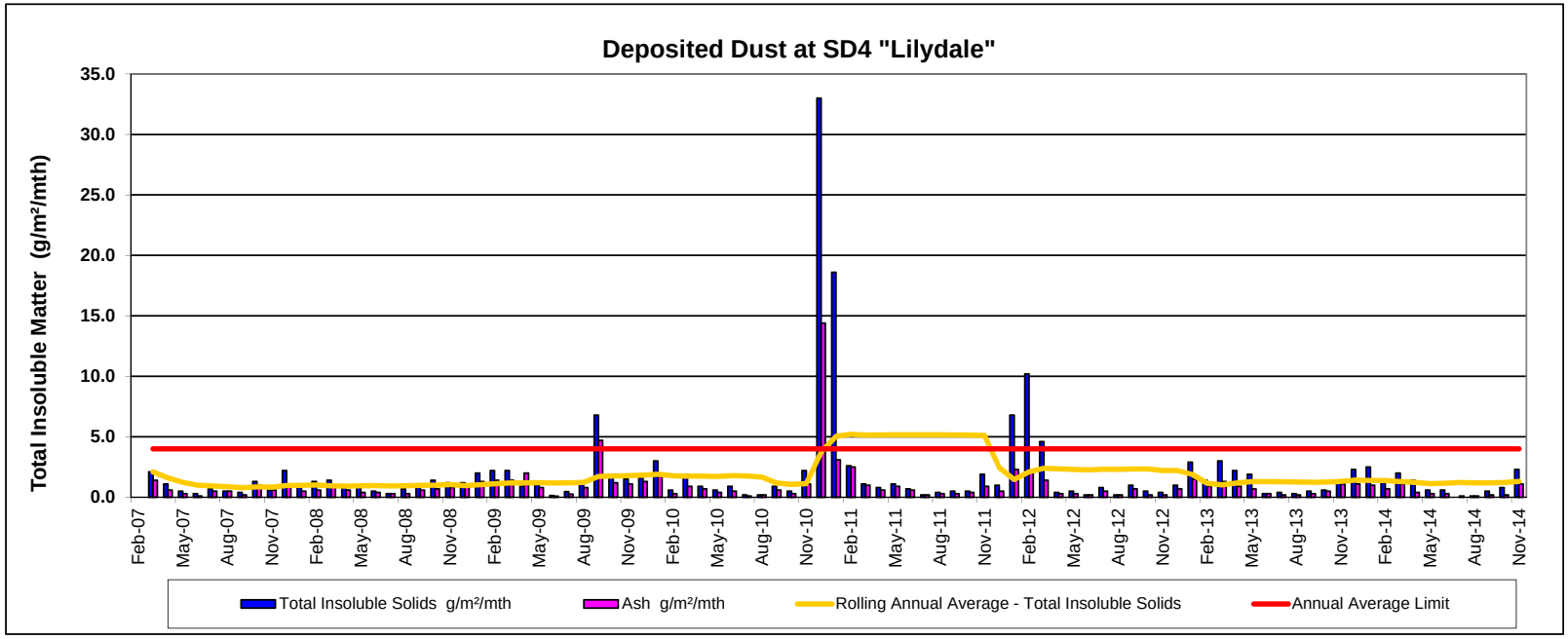


Deposited Dust - SD4 "Lilydale"												
Sample Number	**Sample Location**	**Sample Date**	**Sample Month**	**Sampler**	**Time: (d)**	**Volume Collected (ml)**	**Total Insoluble Solids g/m²/mth**	**Rolling Annual Average - Total Insoluble Solids**	**Annual Average Limit**	**Ash g/m²/mth**	**Rolling Annual Average - Ash**	**Comment**
26519.04	SD4 - Lilydale	03-Apr-07	Mar-07	Client	1635	365	2.1	2.1	4.0	1.4	1.4	
26630.04	SD4 - Lilydale	02-May-07	Apr-07	Client	1705	405	1.1	1.6	4.0	0.6	1.0	
26959.04	SD4 - Lilydale	05-Jun-07	May-07	Client	1640	1180	0.5	1.2	4.0	0.3	0.8	
27233.04	SD4 - Lilydale	02-Jul-07	Jun-07	Client	1645	1360	0.3	1.0	4.0	0.1	0.6	
27530.04	SD4 - Lilydale	03-Aug-07	Jul-07	Client	1345	115	0.7	0.9	4.0	0.5	0.6	
27819.04	SD4 - Lilydale	04-Sep-07	Aug-07	Client	1500	1190	0.5	0.9	4.0	0.5	0.6	
28118.04	SD4 - Lilydale	05-Oct-07	Sep-07	Client	0840	65	0.4	0.8	4.0	0.2	0.5	
28397.04	SD4 - Lilydale	02-Nov-07	Oct-07	Client	1505	640	1.3	0.9	4.0	1.0	0.6	
28661.04	SD4 - Lilydale	05-Dec-07	Nov-07	Client	0840	1240	0.6	0.8	4.0	0.6	0.6	
28922.04	SD4 - Lilydale	02-Jan-08	Dec-07	Client	1720	2075	2.2	1.0	4.0	1.0	0.6	
29223.04	SD4 - Lilydale	04-Feb-08	Jan-08	Client	1625	1510	1.1	1.0	4.0	0.5	0.6	
29524.04	SD4 - Lilydale	05-Mar-08	Feb-08	Client	0820	1740	1.3	1.0	4.0	0.6	0.6	
29772.04	SD4 - Lilydale	04-Apr-08	Mar-08	Client	1500	140	1.4	1.0	4.0	0.9	0.6	
30054.04	SD4 - Lilydale	08-May-08	Apr-08	Client	1725	355	0.8	0.9	4.0	0.6	0.6	
30385-04	SD4 - Lilydale	03-Jun-08	May-08	Client	1020	915	0.8	1.0	4.0	0.4	0.6	
30659.04	SD4 - Lilydale	09-Jul-08	Jun-08	Client	1050	670	0.5	1.0	4.0	0.4	0.6	
30901.04	SD4 - Lilydale	04-Aug-08	Jul-08	Client	1615	465	0.3	0.9	4.0	0.3	0.6	
31209.04	SD4 - Lilydale	02-Sep-08	Aug-08	Client	0900	525	0.7	1.0	4.0	0.3	0.6	
31526.04	SD4 - Lilydale	03-Oct-08	Sep-08	Client	1135	785	0.9	1.0	4.0	0.6	0.6	
31774.04	SD4 - Lilydale	05-Nov-08	Oct-08	Client	1130	1030	1.4	1.0	4.0	0.7	0.6	
32022.04	SD4 - Lilydale	02-Dec-08	Nov-08	Client	1235	1895	1.2	1.1	4.0	0.8	0.6	
32517.04	SD4 - Lilydale	06-Jan-09	Dec-08	Client	1338	1090	1.2	1.0	4.0	0.9	0.6	
32245.03	SD4 - Lilydale	03-Feb-09	Jan-09	Client	1151	125	2.0	1.0	4.0	1.3	0.7	
32862.04	SD4 - Lilydale	03-Mar-09	Feb-09	Client	1127	1090	2.2	1.1	4.0	1.4	0.7	
2600 1005 - 00	SD4 - Lilydale	02-Apr-09	Mar-09	ALS	1036	50	2.2	1.2	4.0	1.4	0.8	Insects
2600 1016 - 00	SD4 - Lilydale	04-May-09	Apr-09	ALS	1109	250	0.9	1.2	4.0	2.0	0.9	Insects
2600 1035 - 01	SD4 - Lilydale	03-Jun-09	May-09	ALS	1325	500	1.0	1.2	4.0	0.8	0.9	

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2603 1040 - 02	SD4 - Lilydale	06-Jul-09	Jun-09	ALS	1415	650	0.1	1.2	4.0	0.1	0.9	Insects, Plant Material
2602 1052 - 01	SD4 - Lilydale	03-Aug-09	Jul-09	ALS	1635	450	0.5	1.2	4.0	0.3	0.9	
2600 1063 - 00	SD4 - Lilydale	01-Sep-09	Aug-09	ALS	0830	10	1.2	1.2	4.0	0.8	0.9	Insects
2600 1063 - 00	SD4 - Lilydale	30-Sep-09	Sep-09	ALS	1139	900	6.8	1.7	4.0	4.7	1.3	Dust storm 23/9
2600 1129 - 00	SD4 - Lilydale	04-Nov-09	Oct-09	ALS	1127	600	1.9	1.8	4.0	1.2	1.3	Insects, Bird Dropping, Plant Material
2600 1204 - 116	SD4 - Lilydale	02-Dec-09	Nov-09	ALS	0925	15	1.5	1.8	4.0	1.1	1.3	Insects, Plant Material
2600 1222 - 116	SD4 - Lilydale	31-Dec-09	Dec-09	ALS	0830	2200	1.6	1.8	4.0	1.3	1.4	
2600 1234 - 000	SD4 - Lilydale	02-Feb-10	Jan-10	ALS	1125	2200	3.0	1.9	4.0	1.7	1.4	Insects, Plant Material
2602 1247 - 000	SD4 - Lilydale	04-Mar-10	Feb-10	ALS	1115	1800	0.6	1.8	4.0	0.3	1.3	Insects, Bird droppings, Plant Material
2600 1260 - 000	SD4 - Lilydale	01-Apr-10	Mar-10	ALS	0915	800	1.9	1.8	4.0	0.9	1.3	Insects,Plant Material
2600 1268 - 000	SD4 - Lilydale	29-Apr-10	Apr-10	ALS	1115	75	0.9	1.8	4.0	0.7	1.2	Insects,Bird Droppings,Plant Material, Frogs
2600 1277 - 000	SD4 - Lilydale	27-May-10	May-10	ALS	1245	50	0.6	1.7	4.0	0.4	1.1	Plant Material
2600 1288 - 778	SD4 - Lilydale	24-Jun-10	Jun-10	ALS	1415	200	0.9	1.8	4.0	0.5	1.2	Insects,Plant Material
26001289-879	SD4 - Lilydale	22-Jul-10	Jul-10	ALS	1500	600	0.2	1.8	4.0	0.1	1.1	Insects
2600-1309-912	SD4 - Lilydale	23-Aug-10	Aug-10	ALS	1005	1800	0.2	1.7	4.0	0.2	1.1	Insects
2600-1319	SD4 - Lilydale	22-Sep-10	Sep-10	ALS	1005	800	0.9	1.2	4.0	0.6	0.7	Insects
2600-1340-17	SD4 - Lilydale	22-Oct-10	Oct-10	ALS	1215	2500	0.5	1.1	4.0	0.3	0.7	dead frog in bottle
1002974-003	SD4 - Lilydale	23-Nov-10	Nov-10	ALS	1215	2500	2.2	1.1	4.0	1.1	0.7	N/A
1003112-003	SD4 - Lilydale	23-Dec-10	Dec-10	ALS	0900	N/A	33.0	3.7	4.0	14.4	1.8	No field observations
1100198-003	SD4 - Lilydale	24-Jan-11	Jan-11	ALS	1230	1000	18.6	5.0	4.0	3.1	1.9	Insects, plant material
1100461-003	SD4 - Lilydale	23-Feb-11	Feb-11	ALS	1345	N/A	2.6	5.2	4.0	2.5	2.1	No field observations
1100716-003	SD4 - Lilydale	25-Mar-11	Mar-11	ALS	1325	600	1.1	5.1	4.0	1.0	2.1	Insects, plant material
1100964-003	SD4 - Lilydale	21-Apr-11	Apr-11	ALS	1405	400	0.8	5.1	4.0	0.6	2.1	Insects, plant material
1101206-003	SD4 - Lilydale	23-May-11	May-11	ALS	1350	300	1.1	5.2	4.0	0.9	2.1	Insects
1101487-003	SD4 - Lilydale	23-Jun-11	Jun-11	ALS	1205	500	0.7	5.2	4.0	0.6	2.1	Insects/Plant material
1101835-003	SD4 - Lilydale	20-Jul-11	Jul-11	ALS	0830	100	0.2	5.2	4.0	0.2	2.1	Insects
1102364-003	SD4 - Lilydale	19-Aug-11	Aug-11	ALS	1050	400	0.4	5.2	4.0	0.3	2.1	Insects, Plant material
1102817-003	SD4 - Lilydale	20-Sep-11	Sep-11	ALS	1030	600	0.5	5.1	4.0	0.3	2.1	Insects, Plant material
1103134-003	SD4 - Lilydale	18-Oct-11	Oct-11	ALS	1215	900	0.5	5.1	4.0	0.4	2.1	Insects, Plant material

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
1103513-003	SD4 - Lilydale	18-Nov-11	Nov-11	ALS	1120	800	1.9	5.1	4.0	0.9	2.1	Insects, Plant material
1104388-003	SD4 - Lilydale	19-Dec-11	Dec-11	ALS	1250	2500	1.0	2.5	4.0	0.5	0.9	Insects, Plant material
1200253-003	SD4 - Lilydale	17-Jan-12	Jan-12	ALS	0930	1100	6.8	1.5	4.0	2.3	0.9	Insects, Plant material
1200664-003	SD4 - Lilydale	16-Feb-12	Feb-12	ALS	1135	1400	10.2	2.1	4.0	2.1	0.8	Insects, Plant material
1201070-003	SD4 - Lilydale	19-Mar-12	Mar-12	ALS	0930	800	4.6	2.4	4.0	1.4	0.9	Insects, Bird droppings, Plant material
1201471-003	SD4 - Lilydale	18-Apr-12	Apr-12	ALS	1015	200	0.4	2.4	4.0	0.3	0.9	Insects, Plant material
1201905-003	SD4 - Lilydale	18-May-12	May-12	ALS	1235	400	0.5	2.3	4.0	0.3	0.8	Insects, Plant material
1202280-003	SD4 - Lilydale	19-Jun-12	Jun-12	ALS	1410	400	0.2	2.3	4.0	0.2	0.8	Plant material
1202698-003	SD4 - Lilydale	19-Jul-12	Jul-12	ALS	1125	900	0.8	2.3	4.0	0.5	0.8	Insects, Plant material
1203137-003	SD4 - Lilydale	20-Aug-12	Aug-12	ALS	1200	100	0.2	2.3	4.0	0.2	0.8	Insects, Plant material
1203602-003	SD4 - Lilydale	19-Sep-12	Sep-12	ALS	0900	100	1.0	2.3	4.0	0.7	0.8	Insects, Plant material
1204037-003	SD4 - Lilydale	19-Oct-12	Oct-12	ALS	1110	300	0.5	2.3	4.0	0.2	0.8	Insects, Plant material
1204424-003	SD4 - Lilydale	20-Nov-12	Nov-12	ALS	1210	150	0.4	2.2	4.0	0.2	0.7	Insects, Plant material
EN1204867-003	SD4 - Lilydale	21-Dec-12	Dec-12	ALS	0920	100	1.0	2.2	4.0	0.7	0.8	Insects, Plant material
EN1300276-003	SD4 - Lilydale	21-Jan-13	Jan-13	ALS	1150	600	2.9	1.9	4.0	1.5	0.7	Insects, Plant material
EN1300720-003	SD4 - Lilydale	21-Feb-13	Feb-13	ALS	1215	1650	1.4	1.2	4.0	0.9	0.6	Insects, Plant material
EN1301116-003	SD4 - Lilydale	21-Mar-13	Mar-13	ALS	0925	600	3.0	1.0	4.0	1.3	0.6	Insects, Plant material
EN1301518-003	SD4 - Lilydale	22-Apr-13	Apr-13	ALS	1135	<100	2.2	1.2	4.0	0.9	0.6	Insects, Bird Droppings, Plant material
EN1301854-003	SD4 - Lilydale	20-May-13	May-13	ALS	1050	250	1.9	1.3	4.0	0.7	0.7	Insects, Plant material
EN1302249-003	SD4 - Lilydale	19-Jun-13	Jun-13	ALS	1130	700	0.3	1.3	4.0	0.3	0.7	Insects, Plant material
EN1302655-003	SD4 - Lilydale	18-Jul-13	Jul-13	ALS	0935	400	0.4	1.3	4.0	0.2	0.7	Plant material
EN1303087-003	SD4 - Lilydale	19-Aug-13	Aug-13	ALS	1145	600	0.3	1.3	4.0	0.2	0.7	Insects, Plant material
EN1303472-003	SD4 - Lilydale	18-Sep-13	Sep-13	ALS	1240	150	0.5	1.2	4.0	0.3	0.6	Insects, Plant material
EN130855-003	SD4 - Lilydale	17-Oct-13	Oct-13	ALS	1205	200	0.6	1.2	4.0	0.5	0.6	Insects, Plant material
EN1304243-003	SD4 - Lilydale	15-Nov-13	Nov-13	ALS	1145	200	1.3	1.3	4.0	1.1	0.7	Insects, Plant material
EN1304678-003	SD4 - Lilydale	17-Dec-13	Dec-13	ALS	1150	500	2.3	1.4	4.0	1.1	0.8	Insects, Plant material
2600185403-003	SD4 - Lilydale	15-Jan-14	Jan-14	ALS	1130	100	2.5	1.4	4.0	1.0	0.7	Insects, Plant material
2600186703-003	SD4 - Lilydale	14-Feb-14	Feb-14	ALS	1115	150	1.3	1.4	4.0	0.7	0.7	Insects, Plant material
2600188203-003	SD4 - Lilydale	17-Mar-14	Mar-14	ALS	1225	1000	2.0	1.3	4.0	1.1	0.7	Insects-broken funnel
2600189703-003	SD4 - Lilydale	16-Apr-14	Apr-14	ALS	1130	1900	1.4	1.2	4.0	0.4	0.6	Insects, plant material

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600191003-003	SD4 - Lilydale	16-May-14	May-14	ALS	1240	500	0.6	1.1	4.0	0.3	0.6	Insects,
2600192303-003	SD4 - Lilydale	16-Jun-14	Jun-14	ALS	1300	1000	0.6	1.2	4.0	0.3	0.6	Plant material
2600193603-003	SD4 - Lilydale	15-Jul-14	Jul-14	ALS	0950	250	<0.1	1.2	4.0	0.1	0.6	Insects, Plant material
2600195003-003	SD4 - Lilydale	14-Aug-14	Aug-14	ALS	1215	200	0.1	1.2	4.0	0.1	0.6	Insects,
2600196403-003	SD4 - Lilydale	15-Sep-14	Sep-14	ALS	1120	1250	0.5	1.2	4.0	0.2	0.6	Insects, Plant material
2600197803-003	SD4 - Lilydale	15-Oct-14	Oct-14	ALS	0900	250	0.8	1.2	4.0	0.2	0.6	Insects,
2600199203-003	SD4 - Lilydale	14-Nov-14	Nov-14	ALS	1115	200	2.3	1.3	4.0	1.1	0.6	Insects,

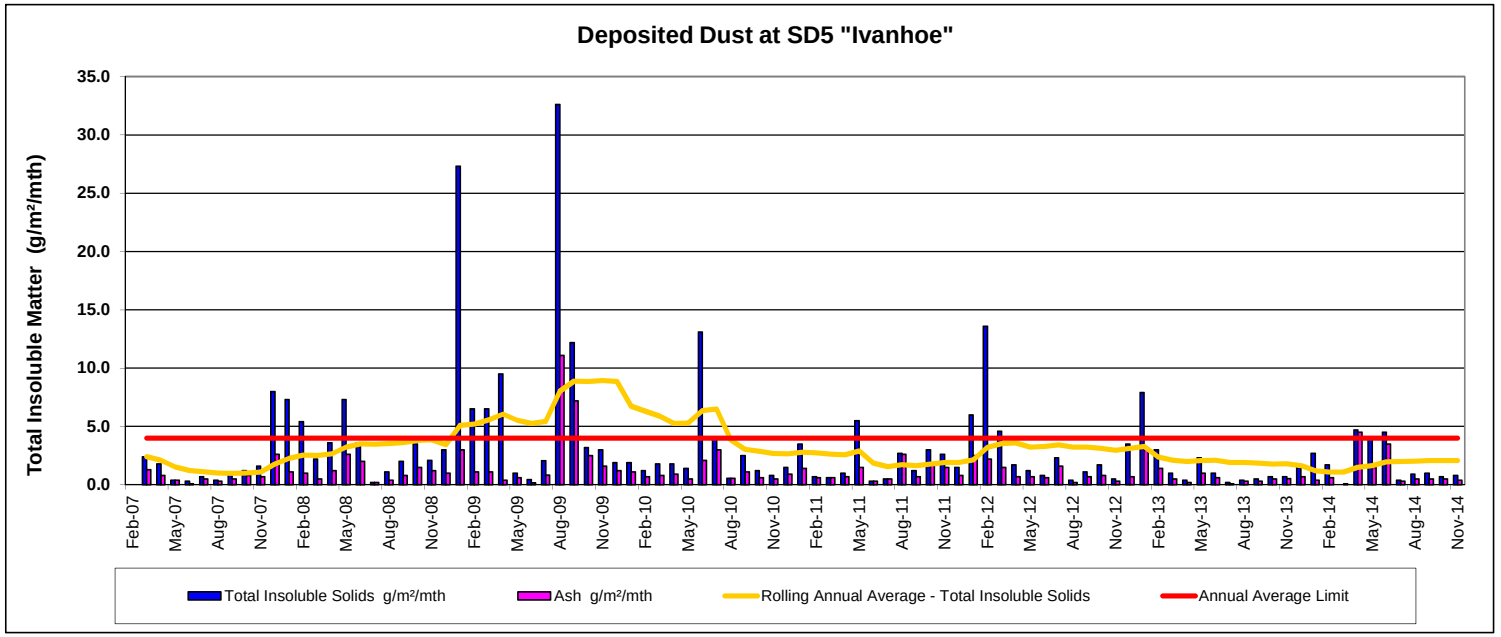


Deposited Dust - SD5 "Ivanhoe"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
26519.05	SD5 - Ivanhoe	03-Apr-07	Mar-07	Client	1655	410	2.4	2.4	4.0	1.3	1.3	
26630.05	SD5 - Ivanhoe	02-May-07	Apr-07	Client	1445	430	1.8	2.1	4.0	0.8	1.1	
26959.05	SD5 - Ivanhoe	05-Jun-07	May-07	Client	1625	1345	0.4	1.5	4.0	0.4	0.8	
27233.05	SD5 - Ivanhoe	02-Jul-07	Jun-07	Client	1630	1570	0.3	1.2	4.0	0.1	0.7	
27530.05	SD5 - Ivanhoe	03-Aug-07	Jul-07	Client	1330	185	0.7	1.1	4.0	0.5	0.6	
27819.05	SD5 - Ivanhoe	04-Sep-07	Aug-07	Client	1440	1325	0.4	1.0	4.0	0.3	0.6	
28118.05	SD5 - Ivanhoe	05-Oct-07	Sep-07	Client	0905	80	0.9	1.0	4.0	0.5	0.6	
28397.05	SD5 - Ivanhoe	02-Nov-07	Oct-07	Client	1450	830	1.2	1.0	4.0	0.8	0.6	
28661.05	SD5 - Ivanhoe	05-Dec-07	Nov-07	Client	0920	1545	1.6	1.1	4.0	0.7	0.6	
28922.05	SD5 - Ivanhoe	02-Jan-08	Dec-07	Client	1705	2265	8.0	1.8	4.0	2.6	0.8	
29223.05	SD5 - Ivanhoe	04-Feb-08	Jan-08	Client	1610	1330	7.3	2.3	4.0	1.1	0.8	
29524.05	SD5 - Ivanhoe	05-Mar-08	Feb-08	Client	0940	1415	5.4	2.5	4.0	1.0	0.8	
29772.05	SD5 - Ivanhoe	04-Apr-08	Mar-08	Client	1425	155	2.2	2.5	4.0	0.5	0.8	
30054.05	SD5 - Ivanhoe	08-May-08	Apr-08	Client	1635	480	3.6	2.7	4.0	1.2	0.8	
30385-05	SD5 - Ivanhoe	03-Jun-08	May-08	Client	931	1060	7.3	3.2	4.0	2.6	1.0	
30659.05	SD5 - Ivanhoe	09-Jul-08	Jun-08	Client	1015	695	3.6	3.5	4.0	2.0	1.2	
30901.05	SD5 - Ivanhoe	04-Aug-08	Jul-08	Client	1600	375	0.2	3.5	4.0	0.2	1.1	
31209.05	SD5 - Ivanhoe	02-Sep-08	Aug-08	Client	0830	535	1.1	3.5	4.0	0.4	1.1	
31526.05	SD5 - Ivanhoe	03-Oct-08	Sep-08	Client	1100	865	2.0	3.6	4.0	0.8	1.2	
31774.05	SD5 - Ivanhoe	05-Nov-08	Oct-08	Client	1114	1060	3.5	3.8	4.0	1.5	1.2	
32022.05	SD5 - Ivanhoe	02-Dec-08	Nov-08	Client	1145	2030	2.1	3.9	4.0	1.2	1.3	
32517.05	SD5 - Ivanhoe	06-Jan-09	Dec-08	Client	1321	1395	3.0	3.4	4.0	1.0	1.1	
32245.04	SD5 - Ivanhoe	03-Feb-09	Jan-09	Client	1130	375	27.3	5.1	4.0	3.0	1.3	
32862.05	SD5 - Ivanhoe	03-Mar-09	Feb-09	Client	1100	1550	6.5	5.2	4.0	1.1	1.3	
2600 1005 - 00	SD5 - Ivanhoe	02-Apr-09	Mar-09	ALS	1044	150	6.5	5.6	4.0	1.1	1.3	Insects, Bird droppings
2600 1016 - 00	SD5 - Ivanhoe	04-May-09	Apr-09	ALS	1120	300	9.5	6.1	4.0	0.4	1.3	Insects,
2600 1035 - 01	SD5 - Ivanhoe	03-Jun-09	May-09	ALS	1345	600	1.0	5.5	4.0	0.6	1.1	Insects, plant material
2604 1040 - 02	SD5 - Ivanhoe	06-Jul-09	Jun-09	ALS	1520	700	0.4	5.3	4.0	0.2	1.0	
2603 1052 - 01	SD5 - Ivanhoe	03-Aug-09	Jul-09	ALS	1642	450	2.1	5.4	4.0	0.8	1.0	Insects, Bird Droppings
2600 1063 - 00	SD5 - Ivanhoe	01-Sep-09	Aug-09	ALS	0847	10	32.6	8.0	4.0	11.1	1.9	Insects, Bird Droppings, Plant Material
2600 1063 - 00	SD5 - Ivanhoe	30-Sep-09	Sep-09	ALS	1206	1100	12.2	8.9	4.0	7.2	2.4	Dust storm 23/9, sample contamination
2600 1129 - 00	SD5 - Ivanhoe	04-Nov-09	Oct-09	ALS	1113	600	3.2	8.9	4.0	2.5	2.5	Insects, Plant Material
2600 1204 - 116	SD5 - Ivanhoe	2-Dec-09	Nov-09	ALS	1000	100	3	8.9	4.0	1.6	2.6	Insects, Bird Droppings, Plant Material
2600 1222 - 116	SD5 - Ivanhoe	31-Dec-09	Dec-09	ALS	1035	2500	1.9	8.9	4.0	1.2	2.6	Insects, Plant Material
2600 1234 - 000	SD5 - Ivanhoe	02-Feb-10	Jan-10	ALS	1200	300	1.9	6.7	4.0	1.1	2.4	Insects, Bird droppings, Plant Material
2603 1247 - 000	SD5 - Ivanhoe	04-Mar-10	Feb-10	ALS	1045	1800	1.2	6.3	4.0	0.7	2.4	Insects
2600 1260 - 000	SD5 - Ivanhoe	06-Apr-10	Mar-10	ALS	0930	1000	1.8	5.9	4.0	0.8	2.4	Insects, Bird droppings
2600 1268 - 000	SD5 - Ivanhoe	29-Apr-10	Apr-10	ALS	1150	100	1.8	5.3	4.0	0.9	2.4	Insects,Plant Material

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
2600 1277 - 000	SD5 - Ivanhoe	27-May-10	May-10	ALS	1310	50	1.4	5.3	4.0	0.5	2.4	Insects,Plant Material
2600 1288 - 778	SD5 - Ivanhoe	24-Jun-10	Jun-10	ALS	1350	300	13.1	6.3	4.0	2.1	2.5	Insects,Plant Material, Bird Droppings
26001289-879	SD5 - Ivanhoe	22-Jul-10	Jul-10	ALS	1445	800	4	6.5	4.0	3	2.7	Insects, Bird Droppings
2600-1309-912	SD5 - Ivanhoe	23-Aug-10	Aug-10	ALS	1100	1800	0.6	3.8	4.0	0.6	1.8	Insects, Bird Droppings
2600-1319	SD5 - Ivanhoe	22-Sep-10	Sep-10	ALS	1100	900	2.5	3.0	4.0	1.1	1.3	Insects
2600-1340-17	SD5 - Ivanhoe	22-Oct-10	Oct-10	ALS	1150	2500	1.2	2.9	4.0	0.6	1.2	N/A
1002974-004	SD5 - Ivanhoe	23-Nov-10	Nov-10	ALS	1150	2500	0.8	2.7	4.0	0.5	1.1	N/A
1003112-004	SD5 - Ivanhoe	23-Dec-10	Dec-10	ALS	0930		1.5	2.6	4.0	0.9	1.1	No field observations
1100198-004	SD5 - Ivanhoe	24-Jan-11	Jan-11	ALS	1200	1100	3.5	2.8	4.0	1.4	1.1	Insects, bird droppings, plant material-Oiley substance in bottle
1100461-004	SD5 - Ivanhoe	23-Feb-11	Feb-11	ALS	1310		0.7	2.7	4.0	0.6	1.1	No field observations
1100716-004	SD5 - Ivanhoe	25-Mar-11	Mar-11	ALS	1250	700	0.6	2.6	4.0	0.6	1.1	Insects, plant material
1100964-004	SD5 - Ivanhoe	21-Apr-11	Apr-11	ALS	1430	300	1.0	2.6	4.0	0.7	1.0	Insects, plant material
1101206-004	SD5 - Ivanhoe	23-May-11	May-11	ALS	1310	500	5.5	2.9	4.0	1.5	1.1	Insects/Bird Droppings/Plant material
1101487-004	SD5 - Ivanhoe	23-Jun-11	Jun-11	ALS	1140	500	0.3	1.8	4.0	0.3	1.0	Plant material
1101835-004	SD5 - Ivanhoe	20-Jul-11	Jul-11	ALS	1400	100	0.5	1.6	4.0	0.5	0.8	Insects, Plant material
1102364-004	SD5 - Ivanhoe	19-Aug-11	Aug-11	ALS	1210	400	2.7	1.7	4.0	2.6	0.9	Insects, Plant material
1102817-004	SD5 - Ivanhoe	20-Sep-11	Sep-11	ALS	1130	600	1.2	1.6	4.0	0.7	0.9	Insects, Bird Droppings, Plant material
1103134-004	SD5 - Ivanhoe	18-Oct-11	Oct-11	ALS	1135	900	3.0	1.8	4.0	1.7	1.0	Insects, Plant material
1103513-004	SD5 - Ivanhoe	18-Nov-11	Nov-11	ALS	1050	800	2.6	1.9	4.0	1.5	1.1	Insects, Bird Droppings, Plant material
1104388-004	SD5 - Ivanhoe	19-Dec-11	Dec-11	ALS	1230	2500	1.5	1.9	4.0	0.8	1.1	Insects, Plant material
1200253-004	SD5 - Ivanhoe	17-Jan-12	Jan-12	ALS	0915	1100	6.0	2.1	4.0	2.5	1.2	Insects, Plant material
1200664-004	SD5 - Ivanhoe	16-Feb-12	Feb-12	ALS	1120	1400	13.6	3.2	4.0	2.2	1.3	Insects, Plant material
1201070-004	SD5 - Ivanhoe	19-Mar-12	Mar-12	ALS	0815	800	4.6	3.5	4.0	1.5	1.4	Insects, Plant material-dead spider in bottle
1201471-004	SD5 - Ivanhoe	18-Apr-12	Apr-12	ALS	0945	200	1.7	3.6	4.0	0.7	1.4	Insects, Plant material
1201905-004	SD5 - Ivanhoe	18-May-12	May-12	ALS	1340	400	1.2	3.2	4.0	0.7	1.3	Insects, Plant material
1202280-004	SD5 - Ivanhoe	19-Jun-12	Jun-12	ALS	1355	400	0.8	3.3	4.0	0.6	1.3	Insects, Plant material
1202698-004	SD5 - Ivanhoe	19-Jul-12	Jul-12	ALS	1250	900	2.3	3.4	4.0	1.6	1.4	Insects, Plant material
1203137-004	SD5 - Ivanhoe	20-Aug-12	Aug-12	ALS	1120	100	0.4	3.2	4.0	0.2	1.2	Insects, Plant material
1203602-004	SD5 - Ivanhoe	19-Sep-12	Sep-12	ALS	0940	100	1.1	3.2	4.0	0.7	1.2	Insects, Plant material, lage amount of insects
1204037-004	SD5 - Ivanhoe	19-Oct-12	Oct-12	ALS	1045	300	1.7	3.1	4.0	0.8	1.2	Insects, Plant material-large amount of insects in bottle
1204424-004	SD5 - Ivanhoe	20-Nov-12	Nov-12	ALS	1130	150	0.5	3.0	4.0	0.3	1.1	Insects, Plant material
EN1204867-004	SD5 - Ivanhoe	21-Dec-12	Dec-12	ALS	0940	100	3.5	3.1	4.0	0.7	1.0	Insects, Bird droppings, Plant meterial
EN1300276-004	SD5 - Ivanhoe	21-Jan-13	Jan-13	ALS	1110	700	7.9	3.3	4.0	3.0	1.1	Insects, Plant material
EN1300720-004	SD5 - Ivanhoe	21-Feb-13	Feb-13	ALS	1130	1600	3.0	2.4	4.0	1.4	1.0	Insects, Plant material
EN1301116-004	SD5 - Ivanhoe	21-Mar-13	Mar-13	ALS	1015	700	1.0	2.1	4.0	0.5	0.9	Insects,
EN1301518-004	SD5 - Ivanhoe	22-Apr-13	Apr-13	ALS	1120	100	0.4	2.0	4.0	0.2	0.9	Insects, Plant material
EN1301854-004	SD5 - Ivanhoe	20-May-13	May-13	ALS	1115	250	2.3	2.1	4.0	1.0	0.9	Insects, Plant material
EN1302249-004	SD5 - Ivanhoe	19-Jun-13	Jun-13	ALS	0830	700	1.0	2.1	4.0	0.6	0.9	Insects, Plant material

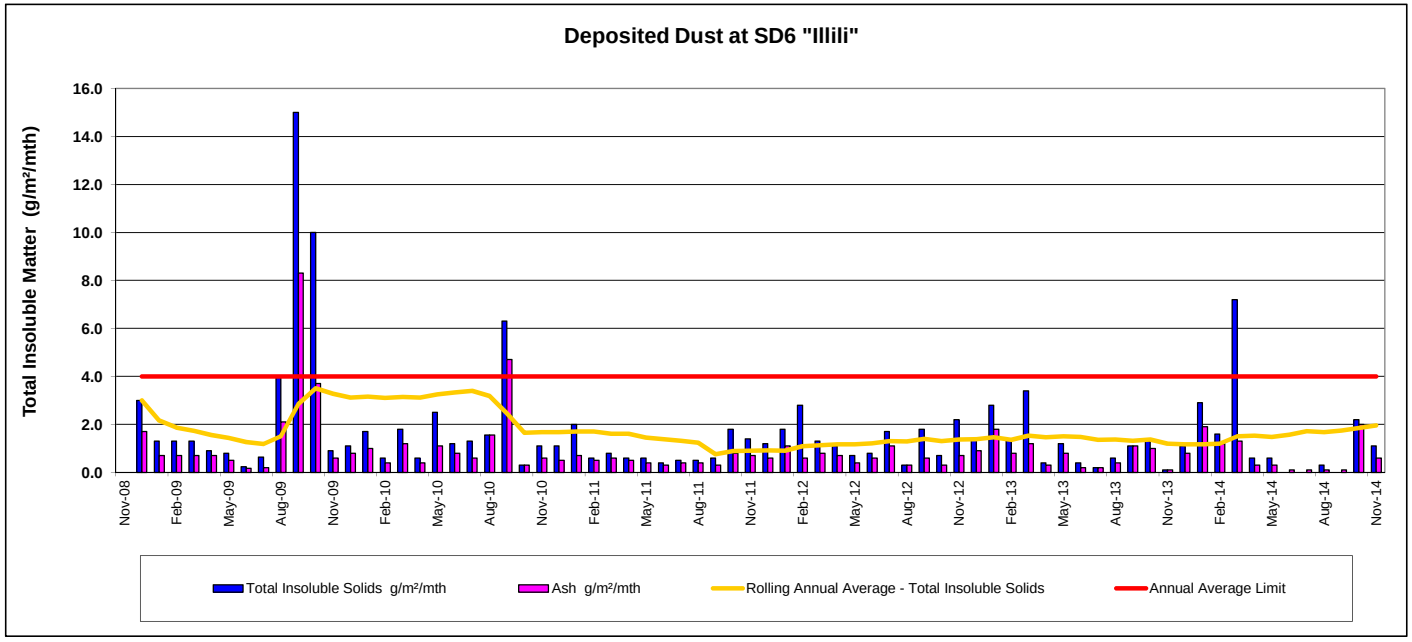
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
EN1302655-004	SD5 - Ivanhoe	18-Jul-13	Jul-13	ALS	1015	500	0.2	1.9	4.0	0.1	0.8	Insects, Plant material
EN1303087-005	SD5 - Ivanhoe	19-Aug-13	Aug-13	ALS	1100	600	0.4	1.9	4.0	0.3	0.8	Insects, Plant material
EN1303472-005	SD5 - Ivanhoe	18-Sep-13	Sep-13	ALS	1225	150	0.5	1.9	4.0	0.3	0.8	Insects, Plant material-Installed on 20/8/13
EN130855-005	SD5 - Ivanhoe	17-Oct-13	Oct-13	ALS	1130	200	0.7	1.8	4.0	0.5	0.7	Insects, Plant material
EN1304243-004	SD5 - Ivanhoe	15-Nov-13	Nov-13	ALS	1110	200	0.7	1.8	4.0	0.5	0.8	Insects, Plant material
EN1304678-004	SD5 - Ivanhoe	17-Dec-13	Dec-13	ALS	1120	500	1.5	1.6	4.0	0.7	0.8	Insects, Plant material
2600185403-004	SD5 - Ivanhoe	15-Jan-14	Jan-14	ALS	1215	100	2.7	1.2	4.0	0.4	0.5	Insects, Geko in bottle
2600186703-004	SD5 - Ivanhoe	14-Feb-14	Feb-14	ALS	1055	150	1.7	1.1	4.0	0.6	0.5	Insects, Plant material
2600188203-004	SD5 - Ivanhoe	17-Mar-14	Mar-14	ALS	1230	750	<0.1	1.1	4.0	0.1	0.4	Insects,
2600189703-004	SD5 - Ivanhoe	16-Apr-14	Apr-14	ALS	1230	1700	4.7	1.5	4.0	4.5	0.8	Insects,
2600191003-004	SD5 - Ivanhoe	16-May-14	May-14	ALS	1200	500	4.0	1.6	4.0	1.5	0.8	Lizard
2600192303-004	SD5 - Ivanhoe	16-Jun-14	Jun-14	ALS	1230	1200	4.5	2.0	4.0	3.5	1.1	Insects,
2600193603-004	SD5 - Ivanhoe	15-Jul-14	Jul-14	ALS	0920	250	0.4	2.0	4.0	0.3	1.1	Insects, Plant material
2600195003-004	SD5 - Ivanhoe	14-Aug-14	Aug-14	ALS	1140	400	0.9	2.0	4.0	0.5	1.1	Insects, Plant material
2600196403-004	SD5 - Ivanhoe	15-Sep-14	Sep-14	ALS	1100	1250	1.0	2.1	4.0	0.5	1.1	Insects,
2600197803-004	SD5 - Ivanhoe	15-Oct-14	Oct-14	ALS	0930	500	0.7	2.1	4.0	0.5	1.1	Insects,
2600199203-004	SD5 - Ivanhoe	14-Nov-14	Nov-14	ALS	1050	150	0.8	2.1	4.0	0.4	1.1	Plant material



Deposited Dust - SD6 "Illili"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
32517.06	SD6 - Illili	06-Jan-09	Dec-08	Client	1219	1090	3.0	3.0	4.0	1.7	1.7	
32245.05	SD6 - Illili	03-Feb-09	Jan-09	Client	1104	210	1.3	2.2	4.0	0.7	1.2	
32862.06	SD6 - Illili	03-Mar-09	Feb-09	Client	1030	1425	1.3	1.9	4.0	0.7	1.0	
2600 1005 - 00	SD6 - Illili	02-Apr-09	Mar-09	ALS	1055	50	1.3	1.7	4.0	0.7	1.0	Insects, Bird droppings
2600 1016 - 00	SD6 - Illili	04-May-09	Apr-09	ALS	1130	300	0.9	1.6	4.0	0.7	0.9	Insects, Bird droppings
2600 1035 - 01	SD6 - Illili	03-Jun-09	May-09	ALS	1400	700	0.8	1.4	4.0	0.5	0.8	Plant material
2605 1040 - 02	SD6 - Illili	06-Jul-09	Jun-09	ALS	1440	650	0.2	1.3	4.0	0.2	0.7	Insects, Plant Material
2604 1052 - 01	SD6 - Illili	03-Aug-09	Jul-09	ALS	1653	350	0.6	1.2	4.0	0.2	0.7	Insects, Plant Material
2600 1063 - 00	SD6 - Illili	01-Sep-09	Aug-09	ALS	0902	20	4.0	1.5	4.0	2.1	0.8	
2600 1063 - 00	SD6 - Illili	30-Sep-09	Sep-09	ALS	1236	1200	15.0	2.8	4.0	8.3	1.6	Dust storm 23/9, contamination
2600 1129 - 00	SD6 - Illili	04-Nov-09	Oct-09	ALS	1057	700	10.0	3.5	4.0	3.7	1.8	Insects, Plant Material
2600 1204 - 116	SD6 - Illili	2-Dec-09	Nov-09	ALS	0940	20	0.9	3.3	4.0	0.6	1.7	Insects
2600 1222 - 116	SD6 - Illili	31-Dec-09	Dec-09	ALS	0851	2400	1.1	3.1	4.0	0.8	1.6	Insects, Bird Droppings
2600 1234 - 000	SD6 - Illili	02-Feb-10	Jan-10	ALS	1220	2100	1.7	3.2	4.0	1.0	1.6	Insects, Plant Material
2604 1247 - 000	SD6 - Illili	04-Mar-10	Feb-10	ALS	1020	2200	0.6	3.1	4.0	0.4	1.6	Insects
2600 1260 - 000	SD6 - Illili	01-Apr-10	Mar-10	ALS	0940	1000	1.8	3.1	4.0	1.2	1.6	Insects, Plant Material
2600 1268 - 000	SD6 - Illili	29-Apr-10	Apr-10	ALS	1215	100	0.6	3.1	4.0	0.4	1.6	Insects, Plant Material
2600 1277 - 000	SD6 - Illili	27-May-10	May-10	ALS	1330	50	2.5	3.3	4.0	1.1	1.7	Insects, Bird Droppings, Plant Material
2600 1288 - 778	SD6 - Illili	24-Jun-10	Jun-10	ALS	1340	300	1.2	3.3	4.0	0.8	1.7	Insects, Plant Material
26001289-879	SD6 - Illili	22-Jul-10	Jul-10	ALS	1435	800	1.3	3.4	4.0	0.6	1.8	Insects, Bird Droppings
2600-1309-912	SD6 - Illili	23-Aug-10	Aug-10	ALS	1135	1800	1.6	3.2	4.0	1.6	1.7	Insects, Bird Droppings
2600-1319	SD6 - Illili	22-Sep-10	Sep-10	ALS	1135	900	6.3	2.5	4.0	4.7	1.4	Insects, Plant Material
2600-1340-17	SD6 - Illili	22-Oct-10	Oct-10	ALS	1115	2500	0.3	1.7	4.0	0.3	1.1	N/A
1002974-005	SD6 - Illili	23-Nov-10	Nov-10	ALS	1115	2500	1.1	1.7	4.0	0.6	1.1	N/A
1003112-005	SD6 - Illili	23-Dec-10	Dec-10	ALS	1015		1.1	1.7	4.0	0.5	1.1	No field observations
1100198-005	SD6 - Illili	24-Jan-11	Jan-11	ALS	1130	1000	2.0	1.7	4.0	0.7	1.1	Insects, plant material
1100461-005	SD6 - Illili	23-Feb-11	Feb-11	ALS	1245		0.6	1.7	4.0	0.5	1.1	No field observations
1100716-005	SD6 - Illili	25-Mar-11	Mar-11	ALS	1215	400	0.8	1.6	4.0	0.6	1.0	Insects, plant material
1100964-005	SD6 - Illili	21-Apr-11	Apr-11	ALS	1335	200	0.6	1.6	4.0	0.5	1.0	Plant material
1101206-005	SD6 - Illili	23-May-11	May-11	ALS	1250	400	0.6	1.5	4.0	0.4	1.0	Insects
1101487-005	SD6 - Illili	23-Jun-11	Jun-11	ALS	1120	500	0.4	1.4	4.0	0.3	0.9	Insects/Plant material/dead spider in bottle
1101835-005	SD6 - Illili	20-Jul-11	Jul-11	ALS	0840	100	0.5	1.3	4.0	0.4	0.9	Insects, Bird droppings, Plant material
1102364-005	SD6 - Illili	19-Aug-11	Aug-11	ALS	1030	400	0.5	1.2	4.0	0.4	0.8	Plant material
1102817-005	SD6 - Illili	20-Sep-11	Sep-11	ALS	1110	600	0.6	0.8	4.0	0.3	0.5	Insects, Plant material
1103134-005	SD6 - Illili	18-Oct-11	Oct-11	ALS	1125	900	1.8	0.9	4.0	0.8	0.5	Insects, Plant material
1103513-005	SD6 - Illili	18-Nov-11	Nov-11	ALS	1030	800	1.4	0.9	4.0	0.7	0.5	Insects, Plant material
1104388-005	SD6 - Illili	19-Dec-11	Dec-11	ALS	1200	2500	1.2	0.9	4.0	0.6	0.5	Insects, Plant material
1200253-005	SD6 - Illili	17-Jan-12	Jan-12	ALS	1220	1100	1.8	0.9	4.0	1.1	0.6	Insects, Plant material
1200664-005	SD6 - Illili	16-Feb-12	Feb-12	ALS	1100	1200	2.8	1.1	4.0	0.6	0.6	Insects, Plant material
1201070-005	SD6 - Illili	19-Mar-12	Mar-12	ALS	0850	800	1.3	1.1	4.0	0.8	0.6	Insects, Plant material
1201471-005	SD6 - Illili	18-Apr-12	Apr-12	ALS	1030	200	1.1	1.2	4.0	0.7	0.6	Insects, Plant material
1201905-005	SD6 - Illili	18-May-12	May-12	ALS	1220	500	0.7	1.2	4.0	0.4	0.6	Insects, Plant material
1202280-005	SD6 - Illili	19-Jun-12	Jun-12	ALS	1330	500	0.8	1.2	4.0	0.6	0.6	Plant material
1202698-005	SD6 - Illili	19-Jul-12	Jul-12	ALS	0910	900	1.7	1.3	4.0	1.1	0.7	Insects, Plant material
1203137-005	SD6 - Illili	20-Aug-12	Aug-12	ALS	1515	100	0.3	1.3	4.0	0.3	0.7	Insects, Plant material
1203602-005	SD6 - Illili	19-Sep-12	Sep-12	ALS	1000	100	1.8	1.4	4.0	0.6	0.7	Insects, Plant material
1204037-005	SD6 - Illili	19-Oct-12	Oct-12	ALS	1030	300	0.7	1.3	4.0	0.3	0.7	Insects, Plant material
1204424-005	SD6 - Illili	20-Nov-12	Nov-12	ALS	1110	150	2.2	1.4	4.0	0.7	0.7	Insects, Plant material
EN1204867-005	SD6 - Illili	21-Dec-12	Dec-12	ALS	1000	100	1.4	1.4	4.0	0.9	0.7	Insects, Plant material
EN1300276-005	SD6 - Illili	21-Jan-13	Jan-13	ALS	1050	600	2.8	1.5	4.0	1.8	0.7	Insects, Plant material
EN1300720-005	SD6 - Illili	21-Feb-13	Feb-13	ALS	1115	1600	1.4	1.4	4.0	0.8	0.8	Insects, Plant material
EN1301116-005	SD6 - Illili	21-Mar-13	Mar-13	ALS	0905	700	3.4	1.5	4.0	1.2	0.8	Insects, Bird Droppings, Plant material

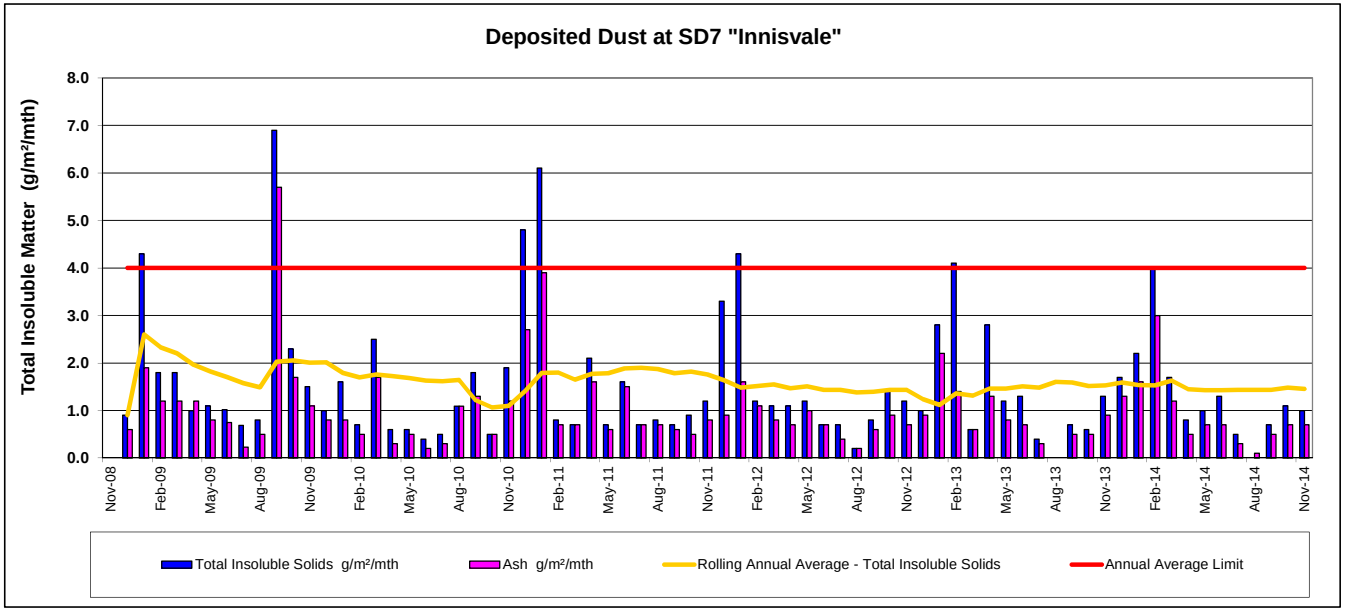
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
EN1301518-005	SD6 - Illili	22-Apr-13	Apr-13	ALS	1110	<100	0.4	1.5	4.0	0.3	0.8	Insects, Plant material
EN1301854-005	SD6 - Illili	20-May-13	May-13	ALS	1150	250	1.2	1.5	4.0	0.8	0.8	Insects, Plant material
EN1302249-005	SD6 - Illili	19-Jun-13	Jun-13	ALS	1100	800	0.4	1.5	4.0	0.2	0.8	Insects, Plant material
EN1302655-005	SD6 - Illili	18-Jul-13	Jul-13	ALS	1040	400	0.2	1.4	4.0	0.2	0.7	Insects
EN1303087-004	SD6 - Illili	19-Aug-13	Aug-13	ALS	1200	600	0.6	1.4	4.0	0.4	0.7	Insects, Plant material-broken funnel in bottle
EN1303472-006	SD6 - Illili	18-Sep-13	Sep-13	ALS	1200	150	1.1	1.3	4.0	1.1	0.7	Insects, Plant material
EN130855-006	SD6 - Illili	17-Oct-13	Oct-13	ALS	1115	200	1.3	1.4	4.0	1.0	0.8	Insects, Plant material
EN1304243-005	SD6 - Illili	15-Nov-13	Nov-13	ALS	1055	200	0.1	1.2	4.0	0.1	0.7	Insects, Plant material
EN1304678-005	SD6 - Illili	17-Dec-13	Dec-13	ALS	1005	700	1.1	1.2	4.0	0.8	0.7	Insects, Plant material
2600185403-005	SD6 - Illili	15-Jan-14	Jan-14	ALS	1100	100	2.9	1.2	4.0	1.9	0.7	Insects, Plant material
2600186703-005	SD6 - Illili	14-Feb-14	Feb-14	ALS	1045	150	1.6	1.2	4.0	1.2	0.8	Insects, Plant material
2600188203-005	SD6 - Illili	17-Mar-14	Mar-14	ALS	1200	900	7.2	1.5	4.0	1.3	0.8	Insects-plant seeds
2600189703-005	SD6 - Illili	16-Apr-14	Apr-14	ALS	1115	1900	0.6	1.5	4.0	0.3	0.8	Insects,
2600191003-005	SD6 - Illili	16-May-14	May-14	ALS	1135	550	0.6	1.5	4.0	0.3	0.7	Insects, spider
2600192303-005	SD6 - Illili	16-Jun-14	Jun-14	ALS	1205	1000	<0.1	1.6	4.0	0.1	0.7	Insects,
2600193603-005	SD6 - Illili	15-Jul-14	Jul-14	ALS	0850	250	<0.1	1.7	4.0	0.1	0.7	Insects
2600195003-005	SD6 - Illili	14-Aug-14	Aug-14	ALS	1115	600	0.3	1.7	4.0	0.1	0.7	Insects
2600196403-005	SD6 - Illili	15-Sep-14	Sep-14	ALS	1050	1150	<0.1	1.7	4.0	0.1	0.6	Insects
2600197803-005	SD6 - Illili	15-Oct-14	Oct-14	ALS	0945	500	2.2	1.8	4.0	2.0	0.7	Insects,
2600199203-005	SD6 - Illili	14-Nov-14	Nov-14	ALS	1035	250	1.1	2.0	4.0	0.6	0.7	Insects,



Deposited Dust - SD7 "Innisvale"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
32517.07	SD7 - Innisvale	06-Jan-09	Dec-08	Client	1400	975	0.9	0.9	4.0	0.6	0.6	
32245.06	SD7 - Innisvale	03-Feb-09	Jan-09	Client	1238	200	4.3	2.6	4.0	1.9	1.3	
32862.07	SD7 - Innisvale	03-Mar-09	Feb-09	Client	1158	1495	1.8	2.3	4.0	1.2	1.2	
2600 1005 - 00	SD7 - Innisvale	02-Apr-09	Mar-09	ALS	1025	50	1.8	2.2	4.0	1.2	1.2	Insects
2600 1016 - 00	SD7 - Innisvale	04-May-09	Apr-09	ALS	1215	300	1.0	2.0	4.0	1.2	1.2	
2600 1035 - 01	SD7 - Innisvale	03-Jun-09	May-09	ALS	1305	800	1.1	1.8	4.0	0.8	1.2	
2606 1040 - 02	SD7 - Innisvale	06-Jul-09	Jun-09	ALS	1405	750	1.0	1.7	4.0	0.7	1.1	Insects, Plant Material
2605 1052 - 01	SD7 - Innisvale	03-Aug-09	Jul-09	ALS	1625	350	0.7	1.6	4.0	0.2	1.0	
2600 1063 - 00	SD7 - Innisvale	01-Sep-09	Aug-09	ALS	0815	20	0.8	1.5	4.0	0.5	0.9	Insects, Plant Material
2600 1063 - 00	SD7 - Innisvale	30-Sep-09	Sep-09	ALS	1126	1000	6.9	2.0	4.0	5.7	1.4	Insects, Plant Material
2600 1129 - 00	SD7 - Innisvale	04-Nov-09	Oct-09	ALS	1155	400	2.3	2.1	4.0	1.7	1.4	Plant Material
2600 1204 - 116	SD7 - Innisvale	2-Dec-09	Nov-09	ALS	0910	10	1.5	2.0	4.0	1.1	1.4	Insects, Plant Material
2600 1222 - 116	SD7 - Innisvale	31-Dec-09	Dec-09	ALS	0805	2000	1.0	2.0	4.0	0.8	1.4	Insects
2600 1234 - 000	SD7 - Innisvale	02-Feb-10	Jan-10	ALS	1115	2200	1.6	1.8	4.0	0.8	1.3	Insects, Plant Material
2605 1247 - 000	SD7 - Innisvale	04-Mar-10	Feb-10	ALS	1130	1200	0.7	1.7	4.0	0.5	1.3	Insects
2600 1260 - 000	SD7 - Innisvale	01-Apr-10	Mar-10	ALS	0905	800	2.5	1.8	4.0	1.7	1.3	Bird Droppings, Plant Material
2600 1268 - 000	SD7 - Innisvale	29-Apr-10	Apr-10	ALS	1105	75	0.6	1.7	4.0	0.3	1.2	Insects, Plant Material
2600 1277 - 000	SD7 - Innisvale	27-May-10	May-10	ALS	1235	50	0.6	1.7	4.0	0.5	1.2	Insects
2600 1288 - 778	SD7 - Innisvale	24-Jun-10	Jun-10	ALS	1420	300	0.4	1.6	4.0	0.2	1.2	Insects, Plant Material
26001289-879	SD7 - Innisvale	22-Jul-10	Jul-10	ALS	1520	700	0.5	1.6	4.0	0.3	1.2	Plant Material
2600-1309-912	SD7 - Innisvale	23-Aug-10	Aug-10	ALS	1300	1800	1.1	1.6	4.0	1.1	1.2	Plant Material
2600-1319	SD7 - Innisvale	22-Sep-10	Sep-10	ALS	1300	800	1.8	1.2	4.0	1.3	0.9	Insects, Plant Material
2600-1340-17	SD7 - Innisvale	22-Oct-10	Oct-10	ALS	1305	2500	0.5	1.1	4.0	0.5	0.8	N/A
1002974-006	SD7 - Innisvale	23-Nov-10	Nov-10	ALS	1305	2500	1.9	1.1	4.0	1.2	0.8	N/A
1003112-006	SD7 - Innisvale	23-Dec-10	Dec-10	ALS	0835		4.8	1.4	4.0	2.7	0.9	No field observations
1100198-006	SD7 - Innisvale	24-Jan-11	Jan-11	ALS	1245	1000	6.1	1.8	4.0	3.9	1.2	Insects, plant material-Two dead frogs
1100461-006	SD7 - Innisvale	23-Feb-11	Feb-11	ALS	1410		0.8	1.8	4.0	0.7	1.2	No field observations
1100716-006	SD7 - Innisvale	25-Mar-11	Mar-11	ALS	1340	600	0.7	1.6	4.0	0.7	1.1	Insects, plant material
1100964-006	SD7 - Innisvale	21-Apr-11	Apr-11	ALS	1450	600	2.1	1.8	4.0	1.6	1.2	Insects, plant material
1101206-006	SD7 - Innisvale	23-May-11	May-11	ALS	1400	200	0.7	1.8	4.0	0.6	1.2	No field observations
1101487-006	SD7 - Innisvale	23-Jun-11	Jun-11	ALS	1220	400	1.6	1.9	4.0	1.5	1.3	Plant material
1101835-006	SD7 - Innisvale	20-Jul-11	Jul-11	ALS	0925	50	0.7	1.9	4.0	0.7	1.4	Insects, Plant material
1102364-006	SD7 - Innisvale	19-Aug-11	Aug-11	ALS	1045	400	0.8	1.9	4.0	0.7	1.3	Plant material
1102817-006	SD7 - Innisvale	20-Sep-11	Sep-11	ALS	1045	600	0.7	1.8	4.0	0.6	1.3	Insects, Plant material
1103134-006	SD7 - Innisvale	18-Oct-11	Oct-11	ALS	1230	900	0.9	1.8	4.0	0.5	1.3	Insects, Plant material, Spider in bottle
1103513-006	SD7 - Innisvale	18-Nov-11	Nov-11	ALS	1130	800	1.2	1.8	4.0	0.8	1.3	Insects, Plant material
1104388-006	SD7 - Innisvale	19-Dec-11	Dec-11	ALS	1340	2500	3.3	1.6	4.0	0.9	1.1	N/A
1200253-006	SD7 - Innisvale	17-Jan-12	Jan-12	ALS	0945	600	4.3	1.5	4.0	1.6	0.9	Insects, Plant material
1200664-006	SD7 - Innisvale	16-Feb-12	Feb-12	ALS	1200	1800	1.2	1.5	4.0	1.1	0.9	Insects, Plant material
1201070-006	SD7 - Innisvale	19-Mar-12	Mar-12	ALS	1010	800	1.1	1.6	4.0	0.8	1.0	Insects, Plant material-dead spider in bottle
1201471-006	SD7 - Innisvale	18-Apr-12	Apr-12	ALS	0915	400	1.1	1.5	4.0	0.7	0.9	Insects, Plant material
1201905-006	SD7 - Innisvale	18-May-12	May-12	ALS	1310	500	1.2	1.5	4.0	1.0	0.9	Insects, Plant material
1202280-006	SD7 - Innisvale	19-Jun-12	Jun-12	ALS	1440	500	0.7	1.4	4.0	0.7	0.8	Plant material
1202698-006	SD7 - Innisvale	19-Jul-12	Jul-12	ALS	1115	900	0.7	1.4	4.0	0.4	0.8	Insects, Plant material
1203137-006	SD7 - Innisvale	20-Aug-12	Aug-12	ALS	1240	100	0.2	1.4	4.0	0.2	0.8	Insects, Plant material
1203602-006	SD7 - Innisvale	19-Sep-12	Sep-12	ALS	0850	100	0.8	1.4	4.0	0.6	0.8	Insects, Plant material
1204037-006	SD7 - Innisvale	19-Oct-12	Oct-12	ALS	1125	300	1.4	1.4	4.0	0.9	0.8	Insects, Plant material
1204424-006	SD7 - Innisvale	20-Nov-12	Nov-12	ALS	1230	150	1.2	1.4	4.0	0.7	0.8	Insects, Bird Droppings, Plant material
EN1204867-006	SD7 - Innisvale	21-Dec-12	Dec-12	ALS	0900	100	1.0	1.2	4.0	0.9	0.8	Insects, Plant material
EN1300276-006	SD7 - Innisvale	21-Jan-13	Jan-13	ALS	1200	600	2.8	1.1	4.0	2.2	0.9	Insects, Plant material
EN1300720-006	SD7 - Innisvale	21-Feb-13	Feb-13	ALS	1230	1600	4.1	1.4	4.0	1.4	0.9	Insects, Plant material

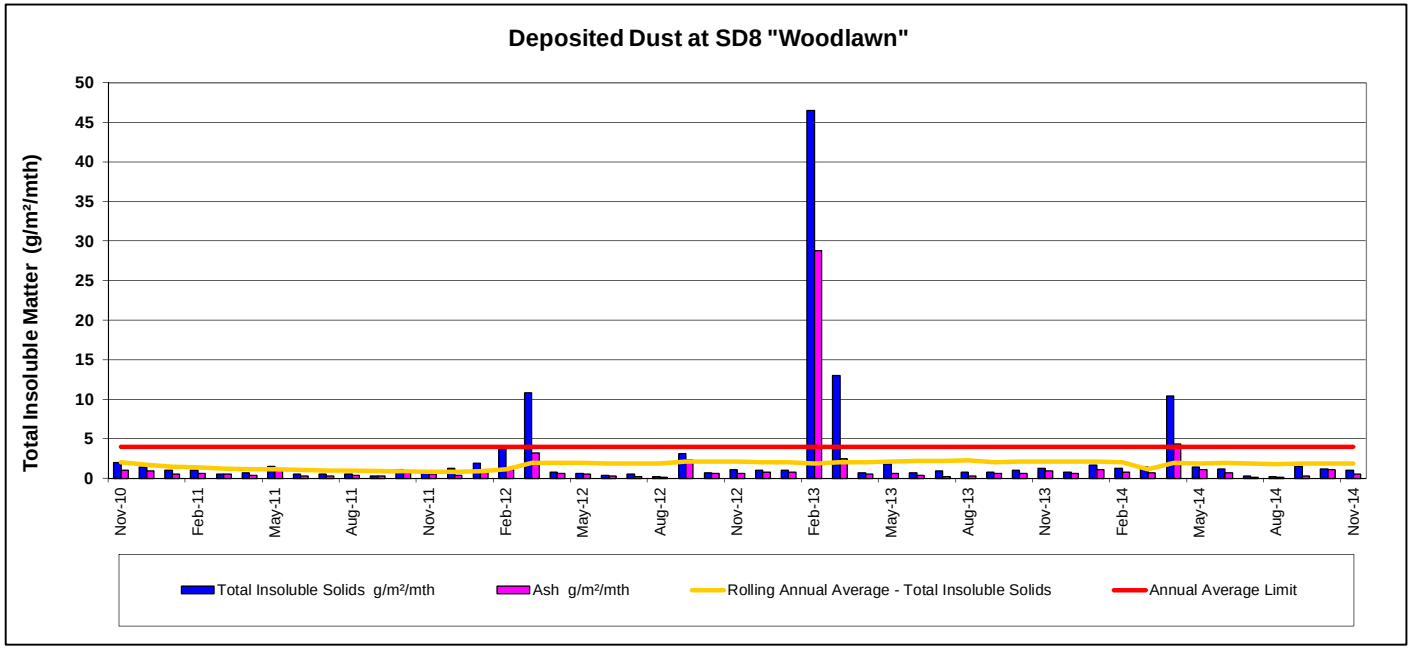
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
EN1301116-006	SD7 - Innisvale	21-Mar-13	Mar-13	ALS	1045	700	0.6	1.3	4.0	0.6	0.9	Insects,
EN1301518-006	SD7 - Innisvale	22-Apr-13	Apr-13	ALS	1215	100	2.8	1.5	4.0	1.3	0.9	Insects, Plant material
EN1301854-006	SD7 - Innisvale	20-May-13	May-13	ALS	1040	250	1.2	1.5	4.0	0.8	0.9	Insects, Plant material
EN1302249-006	SD7 - Innisvale	19-Jun-13	Jun-13	ALS	1145	700	1.3	1.5	4.0	0.7	0.9	Insects, Plant material
EN1302655-006	SD7 - Innisvale	18-Jul-13	Jul-13	ALS	0910	500	0.4	1.5	4.0	0.3	0.9	Plant material
	SD7 - Innisvale	19-Aug-13	Aug-13	ALS				1.6	4.0		0.9	Bottle broken during transit
EN1303472-004	SD7 - Innisvale	18-Sep-13	Sep-13	ALS	1320	150	0.7	1.6	4.0	0.5	0.9	Insects
EN130855-004	SD7 - Innisvale	17-Oct-13	Oct-13	ALS	1225	200	0.6	1.5	4.0	0.5	0.9	Insects, Plant material
EN1304243-006	SD7 - Innisvale	15-Nov-13	Nov-13	ALS	1200	200	1.3	1.5	4.0	0.9	0.9	Insects, Plant material
EN1304678-006	SD7 - Innisvale	17-Dec-13	Dec-13	ALS	1215	500	1.7	1.6	4.0	1.3	1.0	Insects, Plant material
2600185403-006	SD7 - Innisvale	15-Jan-14	Jan-14	ALS	1200	100	2.2	1.5	4.0	1.6	0.9	Insects, Bird droppings
2600186703-006	SD7 - Innisvale	14-Feb-14	Feb-14	ALS	1125	150	4.0	1.5	4.0	3.0	1.0	Insects, Plant material
2600188203-006	SD7 - Innisvale	17-Mar-14	Mar-14	ALS	1300	1000	1.7	1.6	4.0	1.2	1.1	Insects,
2600189703-006	SD7 - Innisvale	16-Apr-14	Apr-14	ALS	1215	1900	0.8	1.4	4.0	0.5	1.0	Insects,
2600191003-006	SD7 - Innisvale	16-May-14	May-14	ALS	1335	500	1.0	1.4	4.0	0.7	1.0	Plant material
2600192303-006	SD7 - Innisvale	16-Jun-14	Jun-14	ALS	1315	1100	1.3	1.4	4.0	0.7	1.0	Insects,
2600193603-006	SD7 - Innisvale	15-Jul-14	Jul-14	ALS	1005	200	0.5	1.4	4.0	0.3	1.0	Plant material
2600195003-006	SD7 - Innisvale	14-Aug-14	Aug-14	ALS	1230	100	<0.1	1.4	4.0	0.1	0.9	
2600196403-006	SD7 - Innisvale	15-Sep-14	Sep-14	ALS	1130	1400	0.7	1.4	4.0	0.5	0.9	Insects, Plant material
2600197803-006	SD7 - Innisvale	15-Oct-14	Oct-14	ALS	0845	250	1.1	1.5	4.0	0.7	1.0	Insects,
2600199203-006	SD7 - Innisvale	14-Nov-14	Nov-14	ALS	1130	250	1.0	1.5	4.0	0.7	0.9	Insects,



Deposited Dust - SD8 "Woodlawn"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Solids g/m²/mth	Rolling Annual Average - Total Insoluble Solids	Annual Average Limit	Ash g/m²/mth	Rolling Annual Average - Ash	Comment
1002974-007	SD8 - Woodlawn	23-Nov-10	Nov-10	ALS	1405	2500	2	2.0	4.0	1	1.0	No field observations
1003112-007	SD8 - Woodlawn	23-Dec-10	Dec-10	ALS	0825	N/A	1.4	1.7	4.0	0.9	1.0	No field observations
1100198-007	SD8 - Woodlawn	24-Jan-11	Jan-11	ALS	1300	800	1	1.5	4.0	0.5	0.8	Insects, plant material
1100461-007	SD8 - Woodlawn	23-Feb-11	Feb-11	ALS	1420	N/A	1	1.4	4.0	0.6	0.8	No field observations
1100716-007	SD8 - Woodlawn	25-Mar-11	Mar-11	ALS	1405	N/A	0.5	1.2	4.0	0.5	0.7	Insects, plant material
1100964-007	SD8 - Woodlawn	21-Apr-11	Apr-11	ALS	1415	300	0.7	1.1	4.0	0.4	0.7	Insects, plant material
1101206-007	SD8 - Woodlawn	23-May-11	May-11	ALS	1410	400	1.5	1.2	4.0	1.2	0.7	Insects/Plant material
1101487-007	SD8 - Woodlawn	23-Jun-11	Jun-11	ALS	1230	400	0.5	1.1	4.0	0.3	0.7	Plant material
1101835-007	SD8 - Woodlawn	20-Jul-11	Jul-11	ALS	0940	100	0.5	1.0	4.0	0.3	0.6	Insects, Plant material
1102364-007	SD8 - Woodlawn	19-Aug-11	Aug-11	ALS	1100	400	0.5	1.0	4.0	0.4	0.6	Plant material
1102817-007	SD8 - Woodlawn	20-Sep-11	Sep-11	ALS	1100	600	0.3	0.9	4.0	0.3	0.6	Insects, Plant material
1103134-007	SD8 - Woodlawn	18-Oct-11	Oct-11	ALS	1245	900	1.1	0.9	4.0	0.7	0.6	Insects, Plant material
1103513-007	SD8 - Woodlawn	18-Nov-11	Nov-11	ALS	1245	800	0.9	0.8	4.0	0.5	0.6	Insects, Plant material
1104388-007	SD8 - Woodlawn	19-Dec-11	Dec-11	ALS	1400	2500	1.3	0.8	4.0	0.4	0.5	
1200253-007	SD8 - Woodlawn	17-Jan-12	Jan-12	ALS	1000	800	1.9	0.9	4.0	0.9	0.5	Insects, Plant material
1200664-007	SD8 - Woodlawn	16-Feb-12	Feb-12	ALS	1220	1400	3.7	1.1	4.0	1.1	0.6	Insects, Plant material
1201070-007	SD8 - Woodlawn	19-Mar-12	Mar-12	ALS	1020	600	10.8	2.0	4.0	3.2	0.8	Insects, Plant material-dead frog in bottle
1201471-007	SD8 - Woodlawn	18-Apr-12	Apr-12	ALS	0900	200	0.8	2.0	4.0	0.6	0.8	Insects, Plant material
1201905-007	SD8 - Woodlawn	18-May-12	May-12	ALS	1300	400	0.6	1.9	4.0	0.5	0.8	Insects, Plant material
1202280-007	SD8 - Woodlawn	19-Jun-12	Jun-12	ALS	1455	400	0.4	1.9	4.0	0.3	0.8	Plant material
1202698-007	SD8 - Woodlawn	19-Jul-12	Jul-12	ALS	1310	900	0.5	1.9	4.0	0.2	0.8	Insects, Plant material
1203137-007	SD8 - Woodlawn	20-Aug-12	Aug-12	ALS	1250	100	0.2	1.9	4.0	0.1	0.7	Insects, Plant material
1203602-007	SD8 - Woodlawn	19-Sep-12	Sep-12	ALS	0830	100	3.1	2.1	4.0	2.3	0.9	Insects, Plant material, spider in bottle
1204037-007	SD8 - Woodlawn	19-Oct-12	Oct-12	ALS	1135	300	0.7	2.1	4.0	0.6	0.9	Insects, Plant material
1204424-007	SD8 - Woodlawn	20-Nov-12	Nov-12	ALS	1245	150	1.1	2.1	4.0	0.6	0.9	Insects, Plant material
EN1204867-007	SD8 - Woodlawn	21-Dec-12	Dec-12	ALS	0840	100	1.0	2.1	4.0	0.8	0.9	Insects, Plant material
EN1300276-007	SD8 - Woodlawn	21-Jan-13	Jan-13	ALS	1220	200	1.0	2.0	4.0	0.8	0.9	Insects, Plant material
EN1300720-007	SD8 - Woodlawn	21-Feb-13	Feb-13	ALS	1245	1600	46.5	1.8	4.0	28.8	0.9	Insects, Plant material
EN1301116-007	SD8 - Woodlawn	21-Mar-13	Mar-13	ALS	1100	600	13.0	2.0	4.0	2.5	0.8	Insects, Bird droppings
EN1301518-007	SD8 - Woodlawn	22-Apr-13	Apr-13	ALS	1240	100	0.7	2.0	4.0	0.5	0.8	Insects, Plant material
EN1301854-007	SD8 - Woodlawn	20-May-13	May-13	ALS	1020	250	1.8	2.1	4.0	0.6	0.8	Insects, Plant material
EN1302249-007	SD8 - Woodlawn	19-Jun-13	Jun-13	ALS	1205	700	0.7	2.2	4.0	0.4	0.9	Insects, Plant material
EN1302655-007	SD8 - Woodlawn	18-Jul-13	Jul-13	ALS	0840	500	0.9	2.2	4.0	0.2	0.9	Insects, Plant material
EN1303087-006	SD8 - Woodlawn	19-Aug-13	Aug-13	ALS	1215	600	0.8	2.3	4.0	0.3	0.9	Insects, Plant material-two spiders in bottle
EN1303472-007	SD8 - Woodlawn	18-Sep-13	Sep-13	ALS	1340	150	0.8	2.0	4.0	0.6	0.7	Bird droppings, Plant materisl
EN130855-007	SD8 - Woodlawn	17-Oct-13	Oct-13	ALS	1240	200	1.0	2.1	4.0	0.6	0.7	Insects, Plant material
EN1304243-007	SD8 - Woodlawn	15-Nov-13	Nov-13	ALS	1215	200	1.3	2.1	4.0	0.9	0.7	Insects, Plant material
EN1304678-007	SD8 - Woodlawn	17-Dec-13	Dec-13	ALS	1230	500	0.8	2.1	4.0	0.6	0.7	Insects, Plant material
2600185403-007	SD8 - Woodlawn	15-Jan-14	Jan-14	ALS	1145	100	1.7	2.1	4.0	1.1	0.8	Insects,
2600186703-007	SD8 - Woodlawn	14-Feb-14	Feb-14	ALS	1140	150	1.3	2.1	4.0	0.8	0.8	Insects, Plant material
2600188203-007	SD8 - Woodlawn	17-Mar-14	Mar-14	ALS	1240	900	1.4	1.1	4.0	0.7	0.6	Insects, Plant material
2600189703-007	SD8 - Woodlawn	16-Apr-14	Apr-14	ALS	1200	2000	10.4	1.9	4.0	4.3	0.9	Insects, frog
2600191003-007	SD8 - Woodlawn	16-May-14	May-14	ALS	1310	450	1.4	1.9	4.0	1.1	1.0	Insects,
2600192303-007	SD8 - Woodlawn	16-Jun-14	Jun-14	ALS	1330	1150	1.2	1.9	4.0	0.7	1.0	Plant material
2600193603-007	SD8 - Woodlawn	15-Jul-14	Jul-14	ALS	1020	250	0.3	1.9	4.0	0.1	1.0	Insects, Plant material

2600195003-007	SD8 - Woodlawn	14-Aug-14	Aug-14	ALS	1245	200	0.2	1.8	4.0	0.1	1.0	
2600196403-007	SD8 - Woodlawn	15-Sep-14	Sep-14	ALS	1140	1050	1.5	1.9	4.0	0.3	0.9	Insects, Plant material, spiders
2600197803-007	SD8 - Woodlawn	15-Oct-14	Oct-14	ALS	0830	500	1.2	1.9	4.0	1.1	1.0	Insects,
2600199203-007	SD8 - Woodlawn	14-Nov-14	Nov-14	ALS	1150	150	1.0	1.9	4.0	0.5	1.0	Plant material, bird droppings



Appendix 5

SURFACE WATER MONITORING DATA

Surface Water Monitoring Data

Sample No.	Date	Time	Sample Location	pH Field	pH Lab	Electrical Conductivity @25C (µS/cm)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (TOC)	Grease & Oil (mg/L)	Total Alkalinity	Hydroxide Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Aluminium	Antimony	Chloride	Sulfates	Molybdenum	Selenium	Sodium	Arsenic	Manganese	Iron	Zinc	Comments
ES1004139	04-Mar-10	12:50	SB5		7.85		412	30	6	<5																
ES1004139	04-Mar-10	13:00	SB2		8.3		554	17	<1	8																
ES1004139	04-Mar-10	13:15	SD4		8.08		321	12	<1	<5																
ES1009878	24-May-10	9:35	SB2		8.14		586	30	2	7																
ES1009878	24-May-10	9:25	SD4		8.11		351	9	2	6																
ES1016142-001	11-Aug-10	13:00	SD4		7.82		312	26	<1	<5																
ES1023171-001	15-Nov-10	9:20	SD4		7.81		186	56	3	<5																
ES1023171-002	15-Nov-10	9:40	SD3		7.54		166	140	3	<5																
ES1104965-001	08-Mar-11	9:30	SB3		8.49		1300	20	<1	<5																
ES1104965-002	08-Mar-11	9:50	SD4		8.72		271	15	2	<5																
ES1104965-003	08-Mar-11	9:15	VOID		7.68		4220	23	<1	<5																
ES1109425-001	05-May-11	9:55	SB3		8.3		3020	147	6	<5																Turbid/Odour
ES1109425-002	05-May-11	10:30	SB2		8.85		663	233	9	<1																Turbid/Odour
ES1109425-003	05-May-11	11:40	SB5		8.93		759	36	4	<5																Turbid/Odour
ES1109617-001	09-May-11	11:51	SD4		8.43		394	62	5	<5																
ES1109617-002	09-May-11	12:05	SB4		8.65		512	32	14	<5																
ES1109617-003	09-May-11	12:40	VOID		8.3		4550	6	58	<5																
ES1117295-001	10-Aug-11	11:15	SD4	8.9	8.17	360	313	13	10	<5						<0.001			0.003	<0.01		<0.001				
ES1117295-002	10-Aug-11	10:45	SB1	9.3	9.07	648	536	46	47	<5						<0.001			0.007	<0.01		0.002				
ES1117295-003	10-Aug-11	10:30	SB2	8.9	8.2	608	513	82	11	<5						<0.001			0.005	<0.01		0.001				
ES1117295-004	10-Aug-11	10:10	SB3	8.8	8.35	2250	1800	82	12	<5						<0.001			0.012	<0.01		<0.001				
ES1117295-005	10-Aug-11	11:40	SB4	8.8	8.36	546	474	62	8	<5						<0.001			0.008	<0.01		<0.001				
ES1117295-006	10-Aug-11	8:45	SB5	9.3	8.9	940	768	88	24	<5						<0.001			0.01	<0.01		0.002				
ES1117295-007	10-Aug-11	12:15	VOID	8.4	8.3	5240	4050	10	5	<5	444	<1	<1	444	0.1		1140				720	0.005	0.054	0.11		
ES1016142-001	11-Aug-11	13:00	SD4		7.82	312		26	<1	<5																
ES1123157-001	18-Oct-11	16:00	SB3	7.84	7.84		267	91	4	<5																
ES1125734-001	22-Nov-11	10:45	SD4	9.5	8.74	372	299	19	8	<5						<0.001			0.005	<0.01		0.002				
ES1125734-002	22-Nov-11	10:15	SB1	10.1	9.22	592	486	208	73	<5						<0.001			0.008	<0.01		0.009				
ES1125734-003	22-Nov-11	10:00	SB2	10.2	9.24	486	389	64	5	<5						<0.001			0.018	<0.01		0.002				
ES1125734-004	22-Nov-11	9:15	SB3	8.8	8.26	353	283	79	3	<5						<0.001			0.003	<0.01		0.002				
ES1125734-005	22-Nov-11	10:30	SB4	9.7	8.95	352	286	40	4	<5						<0.001			0.006	<0.01		<0.001				
ES1125734-006	22-Nov-11	9:30	SB5	9.5	8.65	636	504	352	43	<5						<0.001			0.002	<0.01		0.012				
ES1203324-001	14-Feb-12	10:40	SD4	8.9	8.2	274	227	16	5	<5						<0.001			0.006	<0.01		<0.001				
ES1203324-002	14-Feb-12	10:00	SB1	9.1	9.02	329	279	100	14	<5						0.001			0.004	<0.01		0.005				
ES1203324-003	14-Feb-12	11:50	SB2	9.5	9.12	481	398	51	3	<5						<0.001			0.018	<0.01		0.002				
ES1203324-004	14-Feb-12	12:10	SB3	9.3	8.83	437	360	26	1	<5						<0.001			0.014	<0.01		0.002				
ES1203324-005	14-Feb-12	11:30	SB4	9	8.74	335	276	13	2	<5						<0.001			0.011	<0.01		<0.001				
ES1203324-006	14-Feb-12	12:00	SB5	8.8	8.46	464	382	14	3	<5						<0.001			0.016	<0.01		<0.001				
ES1203324-007	14-Feb-12	12:45	VOID	8.6	8.59	2280	1810	10	<1	<5	398	<1	46	352	0.03		278				420	0.005	0.004	0.06		
ES1210728-002	01-May-12	11:00	SD4	8.1	7.9	330	276	26	2	<5						<0.001			0.005	<0.01		0.001				
ES1210728-003	01-May-12	10:00	SB1	8.7	9.82	422	364	136	21	<5						<0.001			0.005	<0.01		0.006				
ES1210728-004	01-May-12	9:40	SB2	8.2	8.92	682	562	356	9	<5						<0.001			0.017	<0.01		0.007				
ES1210728-005	01-May-12	9:00	SB3	8	8.44	498	417	42	2	<5						<0.001			0.015	<0.01		0.002				
ES1210728-006	01-May-12	10:30	SB4	8.1	8.21	400	334	39	1	<5						<0.001			0.011	<0.01		0.001				
ES1210728-007	01-May-12	9:20	SB5	8.3	8.74	543	452	34	3	<5						<0.001			0.016	<0.01		0.001				
ES1219038-001	02-Aug-12	11:30	SD4	8.94	8.63	269	311	8	5	<5						<0.001			0.005	<0.01		<0.001				
ES1219038-002	02-Aug-12	10:40	SB2	8.85	8.84	376	441	24	11	<5						<0.001			0.008	<0.01		<0.001				
ES1219038-003	02-Aug-12	10:20	SB3	8.78	8.47	349	393	14	5	<5						<0.001			0.008	<0.01		0.002				
ES1219038-004	02-Aug-12	11:10	SB4	8.89	8.79	298	339	8	3	<5						<0.001			0.008	<0.01		<0.001				
ES1219038-005	02-Aug-12	11:00	SB5	8.48	7.98	351	401	10	2	<5						<0.001			0.009	<0.01		<0.001				
ES1219038-006	02-Aug-12	10:00	VOID	8.64	8.4	3490	4400	9	<1	<5																
ES1227200-001	15-Nov-12	9:10	SD4	8.22	8.24	582	546	66	6	<5						<0.001			0.007	<0.01		0.003				
ES1227200-002	15-Nov-12	9:45	SB3	9.18	8.89	1120	926	96	29	<5						<0.001			0.025	<0.01		0.004				Dam level low
ES1227200-003	15-Nov-12	9:20	SB4	8.37	8.36	939	754	149	5	<5						<0.001			0.02	<0.01		0.001				Dam level low
ES1227200-004	15-Nov-12	10:30	VOID	8.46	8.44	5360	4720	30	<1	<5																

Sample No.	Date	Time	Sample Location	pH Field	pH Lab	Electrical Conductivity @25C (µS/cm)	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (TOC)	Grease & Oil (mg/L)	Total Alkalinity	Hydroxide Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Aluminium	Antimony	Chloride	Sulfates	Molybdenum	Selenium	Sodium	Arsenic	Manganese	Iron	Zinc	Comments
ES1303279001	12-Feb-13	12:00	SD4	9.14	8.49	458	429	248	9	<5						<0.001			0.005	<0.01		0.004				
ES1303279002	12-Feb-13	11:10	SB1	8.79	8.23	310	296	86	4	<5						<0.001			0.002	<0.01		0.006				
ES1303279003	12-Feb-13	10:40	SB2	8.33	8.2	322	309	436	2	<5						<0.001			0.004	<0.01		0.004				
ES1303279004	12-Feb-13	10:00	SB3	8.29	7.96	324	315	18	3	<5						<0.001			0.004	<0.01		0.003				
ES1303279005	12-Feb-13	11:40	SB4	8.37	7.79	243	234	113	2	<5						<0.001			0.005	<0.01		0.001				
ES1303279006	12-Feb-13	10:20	SB5	8.02	7.53	152	144	266	2	<5						<0.001			<0.001	<0.01		0.008				
ES1303279007	12-Feb-13	12:40	VOID	8.68	8.58	5090	4480	5	2	<5																
ES1310164-001	02-May-13	9:30	SB2	8.62	7.92	402	396	61	3	<5						<0.001			0.004	<0.01		0.002				
ES1310164-002	02-May-13	9:50	SB3	8.25	8.09	394	403	144	4	<5						<0.001			0.004	<0.01		0.002				
ES1310164-003	02-May-13	9:00	VOID	8.78	8.54	4870	5350	6	1	<5																
ES1318099-001	13-Aug-13	9:30	SD4	8.33	8.07	799	762	318	26	<5						<0.001	0.004			0.005	<0.01					
ES1318099-002	13-Aug-13	8:30	SD1	8.87	8.47	405	513	343	22	<5						<0.001	0.005			0.003	0.01					Dam level low
ES1318099-003	13-Aug-13	9:50	SB2	8.19	8.15	312	318	82	4	<5						<0.001	0.002			0.003	<0.01					
ES1318099-004	13-Aug-13	10:10	SB3	8.45	8.35	331	320	72	5	<5						<0.001	0.002			0.003	<0.01					
ES1318099-005	13-Aug-13	9:00	SB4	7.99	8.07	347	340	110	9	<5						<0.001	0.001			0.005	<0.01					
ES1318099-006	13-Aug-13	10:30	SB5	7.55	7.63	160	158	471	10	<5						<0.001	0.012			<0.001	0.02					Dam level low
ES1318099-007	13-Aug-13	8:00	VOID	8.48	8.51	5080	4810	22	2	<5						0.001	0.002			0.088	0.04					
ES1325115-001	18-Nov-13	10:20	SD1	9.7	8.88	399	390	46	13	<5						<0.001	0.005			0.007	<0.01					Low water level
ES1325115-002	18-Nov-13	11:15	SB2	9.2	8.31	410	420	27	8	<5						<0.001	0.002			0.005	<0.01					
ES1325115-003	18-Nov-13	10:45	VOID	8.8	8.5	5850	5370	6	3	<5	403	<1	43	360	0.02		0.004	1120					0.011	<0.05		
ES1402292-001	04-Feb-14	11:30	SB2	9.9	8.97	713	663	66	31	<5												0.002				
ES1402292-002	05-Feb-14	11:10	VOID	8.9	8.5	7270	6210	<5	52	<5																
ES1410234-001	07-May-14	10:35	SD4	8.1	7.69	717	677	3190	13	<5												0.013				
ES1410234-002	07-May-14	10:15	SD1	8.8	8.35	453	452	196	4	<5												0.005				
ES1410234-003	07-May-14	11:30	SB2	8	8.45	492	474	59	3	<5												0.001				
ES1410234-004	07-May-14	11:05	SB4	8.2	7.76	484	457	647	6	<5												0.005				
ES1410234-005	07-May-14	12:05	SB5	8.5	7.48	225	221	6750	56	<5												0.019				
ES1410234-006	07-May-14	9:30	VOID	8.7	8.51	6620	6140	26	<1	<5	629	<1	28	401	0.02		1210				933	0.002	0.007	<0.05		
ES1417254-001	05-Aug-14	11:10	SD1	8.6	8.53	609	644	40	20	<5												0.003				
ES1417254-002	05-Aug-14	12:00	SB2	9.3	8.53	522	494	11	5	<5												0.001				
ES1417254-003	05-Aug-14	12:10	SB5	8.1	7.81	177	162	5500	54	8												<0.001				
ES1417254-004	05-Aug-14	10:55	VOID	8.7	8.57	6410	5930	<5	4	<5																
ES142449-001	06-Nov-14	9:00	SB2	9.1	8.41	738	702	21	6	<5																
ES142449-002	06-Nov-14	9:20	VOID	8.8	8.66	6610	6330	6	3	<5												0.001				

Wet Weather Discharge Monitoring Data

Sample No.	Sample Location	Date	Time	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (mg/L)	Aluminium (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Molybdenum (mg/L)	Zinc (mg/L)	Iron (mg/L)	Mercury (mg/L)	NOX Nitrite + Nitrate as N (mg/L)	Total Nitrogen as N (mg/L)	Total Nitrogen as N (mg/L)	Total Phosphorous as P (mg/L)	Comments
ES1025676-001	CCU	10-Dec-10	16:00	7.17	76	646	<5	6															
ES1025676-002	CCD	10-Dec-10	16:30	6.95	74	2030	<5	8															
ES1025676-003	SD4	10-Dec-10	10:00	7.30	243	50	<5	4															
ES1025676-004	SD3	10-Dec-10	10:15	7.18	110	44	<5	7															
ES1127394-001	SD4	12-Dec-11	10:40	7.06	95	48	<5	11															
ES1127394-002	CCU	12-Dec-11	10:30	7.09	101	46	<5	13	6.7	0.003	<0.0001	0.007	0.002	0.055	<0.001	0.015	6.3	<0.0001	0.01	2	2	1.2	
ES1127394-003	CCD	12-Dec-11	10:35	7.16	89	34	<5	13	7.17	0.005	<0.0001	0.007	0.002	0.06	<0.001	0.02	6.48	<0.0001	0.01	1.3	1.3	1.22	
ES1202680-001	CCD	01-Feb-12	13:00	6.9	48	36	<5	5															
ES1202680-002	SD4	06-Feb-12	12:00	8.23	272	16	<5	3															Regional flooding

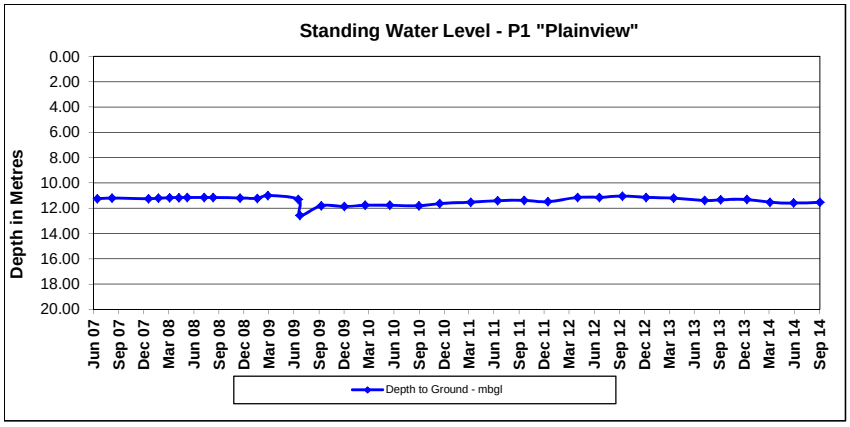
Appendix 6

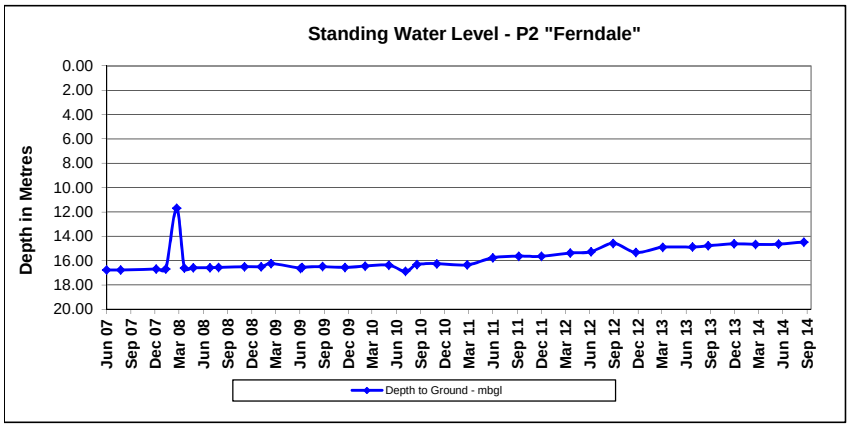
GROUNDWATER MONITORING DATA

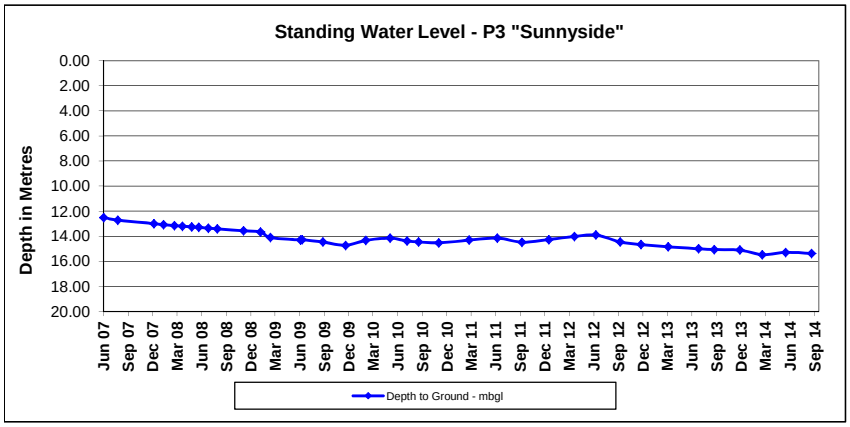
Site ID	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	Field Parameters			Dissolved Metals														Mercury (Hg) - mg/L	pH - Lab	EC - Lab - µs/cm	Major Cations				Total Cations - meq/L	Major Anions						Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N	Nitrate as N	Nitrite and Nitrate as N (NOX)	Total Dissolved Solids	Comments
					pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L								
ANZECC guideline*								5	0.5			0.01	1	1	1		0.1		1		20	0.002			1000						1000											4000	
P1	15-Jun-07		11.25	11.51
Registered Number:	07-Aug-07	0835	11.20	11.46
GW968386	19-Dec-07	1535	11.25	11.51
Licence Number:	24-Jan-08	1140	11.21	11.47
90BL253767	05-Mar-08	0835	11.17	11.43
	07-Apr-08	1515	11.17	11.43
	08-May-08	1550	11.16	11.42
	03-Jun-08																																										Too Wet to Access
	09-Jul-08	0905	11.16	11.42
	11-Aug-08	0845	11.15	11.41
	17-Nov-08	1655	11.19	11.45
	19-Jan-09	1355	11.22	11.48
	26-Feb-09	1645	11	11.3
	17-Jun-09	1015	11.3	11.6
	23-Jun-09	1000	12.57	12.83	7.1	3790	20.6		0.007	0.04	<0.001	<0.0001	0.006	0.005	0.005	1.11	0.013	0.592	0.047	<0.01	0.274	<0.0001		3610	45	160	585	8	41.1	725	39	<1	<1	1010	1010	41.4	0.4	0.53				2240
	09-Sep-09	1230	11.8	12.76
	02-Dec-09	1205	11.87	12.83	7.32	4140	32.4	<0.01	0.008				<0.005		<0.001	0.31	<0.001	0.872	0.015		<0.005	<0.0001	7.35	3700	58	195	537	6	42.5	781	39.1	<1	<1	962	962	42	0.48		<0.01	<0.01	<0.01
	16-Feb-10	1320	11.77	12.73
	17-May-10	1230	11.77	12.73	6.89	6320	21.2	<0.01	0.019				<0.005		<0.001	<0.05	<0.001	0.918	0.027		0.006	<0.0001	7.16	4150	104	226	541	4	47.5	982	81.9	<1	<1	758	758	44.6	3.16		<0.01	0.19
	31-Aug-10	1030	11.81	12.77	7.27	2136	22.1
	15-Nov-10	1150	11.63	12.59	6.81	2770	23.5
	09-Mar-11	1220	11.52	12.48	7.33	3340	24.6	1	0.004				0.003		0.096	1.98	0.022	1.27	0.013		0.277	<0.0001	8.51	3860	94		443	20	41.8	866	68	<1	116	886	860	43	1.45		0.03	0.36	0.39
	14-Jun-11	1220	11.40	12.36	7.2	3270	19.5
	20-Sep-11	1120	11.38	12.34	7.2	2960	22.6	0.52	0.006	0.164	<0.001	0.0006	0.002	0.003	0.028	1.15	0.023	1.16	0.011	0.01	0.435	<0.0001	7.49	4200	114	236	416	7	43.4	802	76	<1	<1	835	835	40.9	2.95	1.19	0.29	0.29	0.58	2120
	15-Dec-11	1050	11.49	12.45	7.04	3350	22.7
	02-Apr-12	1110	11.14	12.1	7.15	2960	24.6	4.25	0.011	0.254	<0.001	0.0008	0.01	0.011	0.121	7.07	0.084	0.858	0.02	0.1	0.943	<0.0001	7.61	3860	131	260	434	9	47	872	47	<1	<1	904	904	43.6	3.74	4.35	0.2	<0.01	0.2	2370
	20-Jun-12	1110	11.14	12.1	7.19	3480	21.5
	12-Sep-12	1145	11.04	12	7.2	3560	22.1	0.4	0.001	0.178	<0.001	0.0003	0.001	<0.001	0.02	0.84	0.008	0.503	0.004	<0.01	0.252	<0.0001	7.62	4000	98	247	410	8	43.3	854	26	<1	<1	1050	1050	45.6	2.67	6.26	<0.01	0.07	0.07	2300
	07-Dec-12	1015	11.14	12.1	7.2	3540	22
	18-Mar-13	1025	11.2	12.16	7.17	3590	21.6	0.56	0.003	0.199	<0.001	0.0001	0.001	<0.001	0.052	1.77	0.012	0.504	0.005	0.02	0.307	<0.0001	7.5	4020	157	144	412	8	43.2	725	78	<1	<1	853	853	39.1	4.93	5.29	<0.1	0.3	0.3	2130
	09-Jul-13	1020	11.39	12.35	7.12	3630	19.5
	06-Sep-13	1230	11.34	12.3	7.18	3600	22.3	2.01	0.012	0.258	<0.001	0.0004	0.004	0.004	0.21	3.64	0.026	0.544	0.012	0.1	0.729	<0.0001	7.6	4030	117	250	411	8	44.5	761	62	<1	<1	888	888	40.5	4.68	2.2				2140
	10-Dec-13	1020	11.31	12.27	7.2	3680	22.6
	04-Mar-14	1030	11.54	12.5	7.2	3670	21.5	4.58	0.006	0.328	<0.001	0.0003	0.011	0.004	0.285	8.09	0.074	0.566	0.015	0.05	0.811	<0.0001	7.57	4010	124	243	504	7	48.3	786	88	<1	<1	842	842	40.8	8.35	3.02				2150
	30-May-14	1245	11.59	12.55	7.3	3670	21.3
	03-Sep-14	1145	11.54	12.5	7.3	3720	20.4	0.44	0.01	0.283	<0.001	0.0001	0.004	0.007	0.062	2.17	0.014	0.54	0.013	0.04	0.347	<0.0001	7.43	3970	112	218	316	6	37.4	746	93	<1	<1	896	896	40.9	4.42	0.06	<0.01	0.61	0.61	2200
P2	15-Jun-07		16.77	17.61
Registered Number:	07-Aug-07	0850	16.77	17.61
GW968387	19-Dec-07	1545	16.70	17.54
Licence Number:	24-Jan-08	1155	16.69	17.53
90BL253768	05-Mar-08	0845	11.69	12.53
	04-Apr-08	1450	16.61	17.45
	08-May-08	1600	16.58	17.42																																							Too wet to access
	03-Jun-08			
	09-Jul-08	0916	16.58	17.42
	11-Aug-08	0856	16.56	17.40
	17-Nov-08	1703	16.50	17.34
	19-Jan-09	1404	16.50	17.34
	26-Feb-09	1630	16.25	17.10
	17-Jun-09	0950	16.61	17.45
	23-Jun-09	0900	16.53	17.38	7.4	4650	21.6		0.003	0.087	<0.001	<0.0001	0.032	0.012	0.024	1.96	0.006	0.414	0.154	0.07	0.064	<0.0001		4560	114	320	476	10	53	1030	410	<1	<1	973	973	57	3.62	0.02				3280
	09-Sep-09	1215	16.49	17.31
	02-Dec-09	1240	16.56	17.38	6.84	4520	31.8	<0.01	0.01				<0.005		0.001	<0.05	<0.001	0.613	0.24		0.01	<0.0001	7.03	4090	145	298	395	9	49.2	855	401	<1	<1	852	852	49.5	0.3		<0.01	3.81	3.81
	16-Feb-10	1300	16.45	17.27
	17-May-10	1150	16.38	17.20	7	6420	20.1	<0.01	0.002				<0.005		0.008	<0.05	<0.001	0.178	0.015		0.086	<0.0001	7.09	4250	173	281	457	7	51.8	832	444	<1	<1	807	807	48.8	2.93		0.02	5.09
	19-Jul-10	1226	16.89	17.71
	31-Aug-10	1015	16.33	17.15	7.06	4150	21.4
	15-Nov-10	1220	16.26	17.08	7.01	3580	22.6
	09-Mar-11	1150	16.35	17.17	7	3410	24.7	3.28	0.002				0.023		0.255	8.13	0.038	0.352	0.042		2.64	<0.0001	8.59	3860	161	282	405	10	49.1	839	362	<1	199	842	832	47.8	1.3		0.02	4.41	4.44
	14-Jun-11	1150	15.77	16.59	7.05	3400	19.6
	20-Sep-11	1150	15.63	16.45	7.05	3240	21.9	0.24	0.003	0.075	<0.001	0.0003	0.003	0.004	0.114	0.77	0.006	0.324	0.013	0.02	0.422	<0.0001	7.45	4550	154	269	409	8	47.8	828	346	<1	<1	767	767	45.9	2.05	0.18	<0.01	6.94	6.94	2560
	15-Dec-11	1240	15.65	16.47	6.85	3610	22.3
	02-Apr-12	1150	15.38	16.20	7.1	3210	24.3	0.14	0.001	0.054	<0.001	<0.0001	<0.001	0.002	0.069	0.29	0.004	0.064	0.013	0.01	0.331	<0.0001	7.56	3970	169	276	402	9	48.9	871	330	<1	<1	734	734	46.1	2.9	<0.01	0.02	5.66	5.68	2670
	20-Jun-12	1140	15.27	16.09	7.08	3710	21.3																																			Piezo-Ferndale
	12-Sep-12	1145	14.58	15.40	7.15	3860	22	0.02	0.001	0.048	<0.001	<0.0001	<0.001	0.006	0.094	0.1	0.002	0.171	0.008	0.01	0.365	<0.0001	7.5	4230	145	270	409	10	47.5	866	316	<1	<1	844	844	47.9	0.4	<0.01	<0.01	5.98	5.98	2630
	07-Dec-12	1330	15.33	16.15	7.02	3890	23.9
	18-Mar-13	1200	14.9	15.72	6.98	3870	22.7	0.13	0.002	0.06	<0.001	0.0001	<0.001	0.005	0.281	0.64	0.005	0.194	0.012	0.01	0.646	<0.0001	7.38	4300	157	244	418	9	46.3	767	310	<1	<1	769	769	43.5	3.19	<0.01	<0.01	6.02	6.02	2510
	09-Jul-13	0950	14.89	15.71	6.92	3910	19.7
	06-Sep-13	1050	14.78	15.60	7.03	3920	22	0.1	0.002	0.054	<0.001	<0.0001	<0.001	0.003	0.114	0.29	0.003	0.128	0.006	0.01	0.18	<0.0001	7.49	4300	158	281	427	10	49.8	810	321	<1	<1	778	778	45.1	5	0.02				2370
	13-Dec-13	1330	14.61	15.43	7.1	3960	24.1
	04-Mar-14	1200	14.68	15.50	7	3920	21.8	0.84	0.002	0.076	<0.001	0.0001	0.012	0.003	0.114	1.13	0.005	0.172	0.013	0.01	0.25	<0.0001	7.37	4270	158	265	511	10	52.2	796	314	<1	<1	785	785	44.7	7.73	0.01				2480
	30-May-14	1220	14.64	15.46	7.3	3950	21
	03-Sep-14	1345	14.48	15.30	6.8	4080	20.3	0.66	0.003	0.075	<0.001	<0.0001	0.002	0.005	0.146	0.88	0.006	0.175	0.01	0.01	0.324	<0.0001	7.08	4240	158	296	483	8	53.5	716	293	<1	<1	839	839	43.1	10.8	0.03	<0.01	6.59	6.59	2530
P3	15-Jun-07		12.50	12.92
Registered Number:	07-Aug-07	0945	12.72	13.14
GW968388	19-Dec-07	1620	12.99	13.41
Licence Number:	24-Jan-08	1235	13.08	13.50
90BL253769	05-Mar-08	0925	13.15	13.57
	04-Apr-08	1430	13.20	13.62
	08-May-08	1626	13.25	13.67
	03-Jun-08	0942	13.29	13.71
	09-Jul-08	0958	13.36	13.78
	11-Aug-08	0940	13.41	13.83
	17-Nov-08	1726	13.57	13.99
	19-Jan-09	1308	13.65	14.07
	26-Feb-09	1430	14.10	14.40
	17-Jun-09	0845	14.29	14.71
	23-Jun-09	1045	14.28	14.70	7.1	14200	23.3		<0.001	0.167	<0.001	<0.0001	0.008	0.002	0.008	4.11	0.018	0.376	0.038	<0.01	0.207	<0.0001		6670	160	310	852	40	71.6	2120	90	<1	<1	859	859	78.8	4.82	2.05				4210
	09-Sep-09	1340	14.46	14.90					<0.001	0.147	<0.001	<0.0001	0.003	0.002	0.007	1.5	0.005	0.408	0.027	<0.01	0.151	<0.0001		7980	189	330	1130	50	86.8	2220	225	<1	<1	882	882	84.9	1.14	1.25				5780
	02-Dec-09	1415	14.72	15.16	6.57	14040	25.4	<0.01	0.002				<0.005		0.002	0.26	<0.001	0.475	0.011		0.026	<0.0001	6.73	11900	219	521	1840	83	136	4360	549	<1	<1	637	637	147	3.95		0.01	0.16	0.17
	16-Feb-10	1045	14.33	14.77
	17-May-10	1315	14.15	14.59	6.88	14400	19.9	<0.01	0.002				<0.005		0.007	<0.05	<0.001	0.433	0.018		0.198	<0.0001	6.77	12300	319	532	2000	59	148	4560	717	<1	<1	718	718	158	3.18		<0.01	1.09
	19-Jul-10	1204	14.37	14.81
	31-Aug-10	1210	14.45	14.89	6.75	12580	23.3
	15-Nov-10	1110	14.52	14.96	6.52	10230	22.6
	08-Mar-11	1100	14.31	14.75	6.56	10350	26.4	0.26	0.001				0.001		0.016	0.42	<0.001	0.32	0.008		0.067	<0.0001	6.6	12400	290	534	2040	87	72.7	4340	502	<1	<1	791	791	149	0.14		<0.01	0.17	0.17
	21-Jun-11	1030	14.15	14.59	6.60	10540	19.3
	21-Sep-11	950	14.47	14.91	6.80	9650	22.4	0.41	0.002	0.081	<0.001	<0.0001	<0.001	0.008	0.018	0.82	0.00	0.46	0.009	<0.01	0.143	<0.0001	7.14	14100	267	0.459	1960	76	138	4350	494	<1	<1	747	747	148	3.55	<0.10	<0.01	0.57	0.57
	30-Dec-11	1420	14.26	14.70																																							SWL taken during logger changeover
	06-Jan-12																																										No Access
	03-Apr-12	0920	14.02	14.46	7.2	8650	22.4	0.06	0.002	0.081	<0.001	<0.0001	<0.001	0.016	0.015	0.16	0.001	0.385	0.008	<0.01	0.285	<0.0001	7.39	11200	307	502	2010	79	146	3950	493	<1	<1	656	656	135	4.01	<0.10	0.04	1.53	1.57	7230
	22-Jun-12	1200	13.90	14.34	6.85	8750	20.5																																			Piezo
	20-Sep-12	1500	14.46	14.90	6.68	11700	21.2	1.13	0.002	0.092	<0.001	0.0003	0.002	0.012	0.052	2.29	0.007	0.464	0.012	<0.01	0.285	<0.0001	7.37	13600	287	503	1980	76	144	4610	608	<1	<1	726	726	157	4.47	<0.10	<0.01	0.57	0.57	8710
	07-Dec-12	1135	14.66	15.10	6.64	12150	22.1
	18-Mar-13	1250	14.84	15.28	6.75	12160	21.7	0.03	<0.001	0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.05	<0.001	0.023	<0.001	<0.1	<0.005	<0.0001	7.23	13900	293	483	2000	74	143	4020	460	<1	<1	732	732	138	2.01	0.01	<0.01	0.19	0.19	8150
	09-Jul-13	0845	14.99	15.43	6.47	12460	18.9
	06-Sep-13	0950	15.06	15.50	6.49	12800	21.5	0.31	0.002	0.092	<0.001	0.0002	0.002	0.011	0.429	0.77	0.033	0.404	0.024	<0.01	0.406	<0.0001	7.18	14200	297	534	2110	86	153	3920	584	<1	<1	785	785	138	4.91	0.09				7920
	10-Dec-13	1045	15.10	15.54	6.5	12960	23.4
	04-Mar-14	1230	15.46	15.90	6.5	12700	22.3	0.74	<0.010	0.081	<0.010	<0.0010	0.015	0.012	0.194	1.31	0.028	0.434	0.019	<0.10	0.448	<0.0001	7.08	14100	309	496	2720	79	176	4670	600	<1	<1	762	762	142	10.6	0.05				8660
	30-May-14	1100	15.28	15.72	6.5	12990	20.6
	03-Sep-14	1310	15.36	15.80	6.5	13100	20.4	0.2	<0.010	0.103	<0.010	<0.0010	<0.010	0.013	0.118	0.66	0.017	0.378	0.016	<0.10	0.565	<0.0001	6.88	14400	284	538	2020	82	148	4010	603	<1	<1	826	826	142	2.14	0.08	<0.01	0.06	0.06	9820
P7	15-Jun-07		12.77	13.04
Registered Number:	07-Aug-07	0905	12.75	13.02
GW968392	20-Dec-07	1050	12.73	13.00
Licence Number:	24-Jan-08	1345	12.72	12.99
90BL254689	05-Mar-08	0855	12.74	13.01
	07-Apr-08	1520	12.70	12.97
	08-May-08	1712	12.71	12.98
	03-Jun-08	1006	12.72	12.99
	09-Jul-08	1045	12.73	13.00
	11-Aug-08	1013	12.72	12.99
	17-Nov-08	1750	12.70	12.97
	19-Jan-09	1343	13.70	13.97
	26-Feb-09	1410	12.65	12.90
	17-Jun-09	0925	11.13	11.40
	23-Jun-09	1315	11.36	11.61	6.8	7590	22.7		<0.001	0.103	<0.001	0.0027	<0.001	<0.001	0.002	<0.05	<0.001	0.029	0.002	<0.01	<0.005	<0.0001		7140	171	413	826	23	79.1	2370	231	<1	<1	782	782	87.4	4.98	0.04				4170
	09-Sep-09	1333	10.68	10.94
	02-Dec-09	1610	11.24	11.50	6.85	7900	23.3	<0.01	<0.001	<0.005			0.002			<0.05	<0.001	0.024	0.002		0.006	<0.0001	7	6940	148	420	779	24	76.5	2190	290	<1	<1	654	654	80.9	2.83		<0.01	5.9	5.9
	16-Feb-10	1145	9.89	10.15
	17-May-10	1530	10.64	10.90	7.09	8500	20.2	<0.01	<0.001				<0.005		0.002	<0.05	<0.001	0.009	0.003		0.015	<0.0001	7	7180	218	456	876	18	87	2220	349	<1	<1	681	681	83.6	2		<0.01	6.29
	31-Aug-10	1330	9.73	9.99	6.95	7700	22.5
	15-Nov-10	1040	9.60	9.86	6.82	6190	23.1
	08-Mar-11	1330	8.72	8.98	6.83	4760	26.5	2.34	<0.001				0.003		0.021	2.52	0.002	0.046	0.004		0.081	<0.0001	6.91	6330	172	365	769	24	72.7	1630	352	<1	<1	708	708	67.4	3.76		<0.01	4.31	4.31
	21-Jun-11	1210	9.17	9.43	6.85	4810	21.2
	21-Sep-11	1120	10.51	10.77	6.85	2380	24.2	3.25	0.002	0.107	<0.001	<0.0001	<0.001	0.005	0.046	5.24	0.009	0.423	0.024	0.02	0.256	<0.0001	7.34	3200	35	49	127	49		306	<1	<1	<1	974	974	28.1		224	<0.01	0.16	0.16
	06-Jan-12	930	8.31	8.57	6.83	2810	22.5
	03-Apr-12		8.16	8.42	7.25	3820	24.7	0.52	<0.001	0.03	<0.001	<0.0001	0.001	<0.001	0.04	1.4	0.003	0.096	0.004	<0.01	0.236	<0.0001	7.36	4860	34	75	214	76	49.9	494	65	<1	<1	1640	1640	48.1	1.84	432	<0.01	0.22	0.22	3250	Standpipe repaired 20/4 - new "stick up" = 0.5m
	11-May-12	1245						2.97	0.002	0.138	<0.001	<0.0001	0.009	0.006	0.111	4.8	0.009	0.365	0.02	0.02	0.319	<0.0001	7.27	4750	51	92	247	64	49.2	548	7	<1	<1	1580	1580	47.2	2.07	374	<0.01	0.02	0.02	1390
	11-May-12	1330						1.34	<0.001	0.078	<0.001	<0.0001	0.006	0.001	0.016	1.89	0.004	0.083	0.006	<0.01	0.062	<0.0001	7.32	4760	119	232	588	24	51.2	1020	235	<1	<1	696	696	47.6	3.68	28	0.08	3.03	3.11	2810
	22-Jun-12	1300	8.12	8.62	7.26	3690	20
	20-Sep-12	1500	9.70	10.20	7.18	4310	21.9	1.06	0.001	0.065	<0.001	<0.0001	0.003	0.002	0.032	1.65	0.004	0.096	0.005	<0.01	0.128	<0.0001	7.67	5030	121	230	597	21	51.5	1100	327	<1	<1	648	648	50.8	0.66	10.9	0.07	0.12	0.19	2930
	07-Dec-12	1255	10.47	10.97	7.27	4420	22.5
	18-Mar-13	1345	10.39	10.89	7.4	4460	23.6	0.06	<0.001	0.046	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.05	<0.001	0.005	<0.001	<0.01	0.03	<0.0001	7.73	5040	127	235	659	21	54.9	1120	298	<1	<1	604	604	59.9	4.77	0.07	<0.01	3.93	3.93	2950
	09-Jul-13	0925	10.44	10.94	7.34	4630	19.5
	06-Sep-13	1030	10.60	11.10	7.46	4630	22.4	0.04	<0.001	0.062	<0.001	<0.0001	<0.001	<0.001	0.033	0.11	0.002	0.034	0.004	<0.01	0.14	<0.0001	7.83	5150	132	244	669	23	56.4	1110	315	<1	<1	659	659	51	4.94	0.06				2560
	10-Dec-13	1100	10.99	11.44	7.6	4870	22.5
	04-Mar-14	1250	11.35	11.80	7.8	4740	21.6	0.38	<0.001	0.069	<0.001	0.0002	0.024	0.002	0.113	0.84	0.01	0.059	0.018	<0.01	0.335	<0.0001	7.93	5160	131	237	754	23	59.4	1120	328	<1	<1	643	643	51.3	7.35	0.05				3290
	30-May-14	1120	11.38	11.88
	03-Sep-14	1220	11.55	12.00	7.2	4940	20.2	0.03	<0.001	0.072	<0.001	<0.0001	<0.001	<0.001	0.019	0.15	0.002	0.02	0.004	<0.01	0.143	<0.0001	7.34	5180	123	260	830	18	64.1	992	239	<1	<1	797	797	48.9	13.4	<0.01	<0.01	491	491	2780
P8	15-Jun-07		15.63	15.63
Registered Number:	07-Aug-07	0910	15.70	15.70
GW968393	19-Dec-07	1630	21.25	21.25
Licence Number:	24-Jan-08	1240	21.30	21.30
90BL254690	05-Mar-08	0900	19.25	19.25
	07-Apr-08	1525	20.13	20.13
	08-May-08	1710	20.49	20.49
	03-Jun-08	1003	18.79	18.79
	09-Jul-08	1043	19.12	19.12
	11-Aug-08	1010	19.72	19.72																																							Windmill pumping
	17-Nov-08	1747	16.74	16.74
	02-Mar-09	1300	15.85	15.95																																							Windmill pumping
	17-Jun-09	0920	16.90	16.90
	23-Jun-09	1245	16.59	16.69	6.9	6460	21.8		<0.001	0.068	<0.001	0.0022	<0.001	<0.001	0.004	0.35	0.002	0.023	0.01	<0.01	0.046	<0.0001		6220	158	306	771	24	79.1	1930	245	<1	<1	710	710	73.6	4.54	<0.01				3600
	09-Sep-09	1330	16.58	16.71																																							Windmill pumping
	02-Dec-09	1555	17.67	17.80	6.96	6440	23.8	<0.01	<0.001				<0.005		0.014	<0.05	<0.001	0.004	0.022		0.063	<0.0001	7.05	6000	119	308	723	24	63.3	1830	238	<1	<1	601	601	68.7	4.08		<0.01	8.64	8.64		Bore equipped
	16-Feb-10	1140	16.94	17.07
	17-May-10	1550	16.94	17.07	7.41	4380	20.6	<0.01	<0.001				<0.005		0.002	<0.05	<0.001	0.003	0.003		0.02	<0.0001	7.02	6000	185	320	793	18	70.5	1730	259	<1	<1	690	690	68.1	1.77		<0.01	8.99			Bore equipped
	31-Aug-10	1330	16.96	17.09	6.87	6220	22.9																																			Bore equipped
	15-Nov-10	1030	16.88	17.01	6.67	5400	23.5
	08-Mar-11	1250	17.02	17.15	6.82	4790	26.1	0.18	<0.001				0.002		0.0034	1	0.004	0.053	0.004		0.171	<0.0001	6.98	6280	194	337	760	18	71.2	1660	50	<1	23	144	765	66.4	3.48		0.03	0.57	0.6
	21-Jun-11	1150	16.79	16.92	6.8	4920	21.1
	21-Sep-11	1100	16.91	17.04	6.75	5040	24.2	1.53	<0.001	0.084	<0.001	<0.0001	<0.001	0.005	0.012	3.64	0.002	0.062	0.008	<0.01	0.036	<0.0001	7.31	7180	198	330	786	23	71.8	1710	261	<1	<1	660	660	66.9	3.57	0.86	0.02	3.71	3.73
	06-Jan-12	950	16.89	17.02	6.64	5590	23.8
	03-Apr-12	1010	16.15	16.28	6.95	5140	24.6	6	0.002	0.156	<0.001	<0.0001	0.016	0.011	0.023	7.42	0.005	0.162	0.011	0.02	0.048	<0.0001	7.46	6520	196	334	710	21	68.7	1800	276	<1	<1	677	677	70	0.98	1.86	0.03	0.79	0.82	4180
	22-Jun-12	1315	2.86	3.66	7.29	6150	19.8
	11-Jul-12	1200	3.46	4.26																																							Dipped to confirm previous reading
	20-Sep-12	1500	4.79	5.59	7.04	725	21.7	7.12	0.01	0.198	<0.001	0.0003	0.013	0.018	0.069	12	0.021	2.54	0.028	0.02	0.191	<0.0001	7.55	803	42	29	49	9	7.48	123	50	<1	<1	151	151	7.53	0.33	4.12	0.01	0.12	0.13	426
	07-Dec-12	1235	23.63	24.13	7.43	1311	23.2
	18-Mar-13	1320	22.44	22.94	7.25	1005	23.4	0.82	0.006	0.12	<0.001	0.0012	0.003	0.023	0.112	<0.05	0.017	1.01	0.022	<0.01	0.399	<0.0001	7.3	958	51	36	71	11	8.88	158	86	<1	<1	138	138	9	0.71	0.07	<0.01	3.93	3.93	506
	09-Jul-13	905	23.43	23.93	7.05	1098	19.6
	06-Sep-13	1010	23.10	23.90	6.92	1140	22.4	0.18	0.002	0.101	<0.001	0.0006	<0.001	0.010	0.093	0.49	0.006	0.815	0.017	<0.01	0.21	<0.0001	7.35	1020	49	36	78	12	9.11	165	75	<1	<1	154	154	9.29	1	3.57				511
	10-Dec-13	1120	23.30	24.05	7.1	978	22.9
	04-Mar-14	1310	23.05	23.80	7.2	915	22	0.32	0.001	0.087	<0.001	0.0002	0.017	0.008	0.135	1.25	0.01	0.841	0.022	<0.01	0.319	<0.0001	7.16	1100	50	39	110	13	10.8	194	86	<1	<1	157	157	10.4	1.99	2.93				617
	30-May-14	1135	23.63	24.13	6.9	1017	21.8
	03-Sep-14	1245	23.25	24.00	6.9	1030	20.4	0.37	0.003	0.099	<0.001	0.0004	0.004	0.010	0.128	1.83	0.014	1.01	0.028	<0.01	0.743	<0.0001	7.09	972	55	44	80	12	10.2	154	84	<1	<1	163	163	9.35	4.12	1.55	<0.01	0.96	0.96	514
27356	07-Aug-07	1005		
Registered Number:	19-Dec-07	1555		
GW027356	24-Jan-08	1220	14.30	14.61
Licence Number:	05-Mar-08	1000	14.25	14.56
90BL020042	04-Apr-08	1447	14.11	14.42
	08-May-08	1605	15.30	15.61
	03-Jun-08	0852	17.61	17.92
	09-Jul-08	0925	14.12	14.43																																							No access
	11-Aug-08	0908	16.05	16.36																																							No access
	17-Nov-08	1710	13.92	14.23
	19-Jan-09	1250	14.45	14.76
	26-Feb-09	1400	14.50	14.80
	09-Sep-09	1255			7.47	4350	20.2		<0.001	0.182	<0.001	<0.0001	<0.001	0.003	0.035	0.47	<0.001	0.08	0.003	<0.01	0.031	<0.0001		4260	143	247	446	17	47.3	946	164	<1	<1	745	745	45	2.5	0.15				2910
	02-Dec-09	1340			7.07	4620	26.2	<0.01	<0.001				<0.005		0.021	<0.05	<0.001	0.074	0.002		0.018	<0.0001	7.24	4160	77	245	433	18	73.3	1070	196	<1	<1	654	654	47.2	4.33		<0.01	1.57	1.57
	16-Feb-10	1205	13.41	13.71
	17-May-10	1600			8.26	5400	23.5	<0.01	0.002				<0.005		0.015	0.06	<0.001	0.056	0.002		0.013	<0.0001	7.78	4810	172	306	538	14	57.6	1280	268	<1	<1	680	680	55.2	2.1		<0.01	0.28			Bore Covered
	31-Aug-10	1100			7.8	4610	17.3																																			Bore Covered
	15-Nov-10	1320			7.65	4100	23.2																																			Bore Covered
	09-Mar-11	1350			7.35	4700	25.4	0.02	0.003				<0.001		0.021	1.34	0.002	0.142	0.006		0.1	<0.0001	7.54	5520	173	366	573	24	64.3	1840	198	<1	<1	636	636	68.7	3.34		<0.01	0.7	0.7		Bore Covered
	14-Jun-11	1020			7.4	4141	15.3																																			Bore Covered
	21-Sep-11	1150			7.55	3900	18.4	0.05	<0.001	0.368	<0.001	<0.0001	<0.001	0.002	0.049	1.09	0.001	0.036	0.003	<0.01	0.104	<0.0001	7.84	5650	170	330	474	19	56.8	1350	139	<1	<1	694	694	54.8	1.7	0.03	0.03	1.93	1.96		Bore Covered
	15-Dec-11	1310			7.49	4360	23.2
	03-Apr-12	1240			8.3	4150	25.9	0.28	0.003	0.528	<0.001	<0.0001	<0.001	0.004	0.079	2.2	0.003	0.114	0.004	<0.01	0.184	<0.0001	7.89	5550	89	406	567	25	63.2	1540	152	<1	<1	556	556	57.7	4.49	0.29	<0.01	0.07	0.07	3820
	20-Jun-12	1210			8.12	4310	19.5																																			Tank fed by windmill
	07-Dec-12	1150																																										Windmill over bore no sample (now disconnected)
	18-Mar-13	1130																																										Windmill over bore no Sample (now disconnected)
	09-Jul-13	1140																																										Windmill over bore, windmill on mine site
	06-Sep-13																																											Windmill over bore, windmill on mine site
	10-Dec-13																																											Windmill over bore
	04-Mar-14																																											Windmill over bore
	30-May-14	1155																																										Windmill over bore, on mine site.
	03-Sep-14																																											Windmill over bore

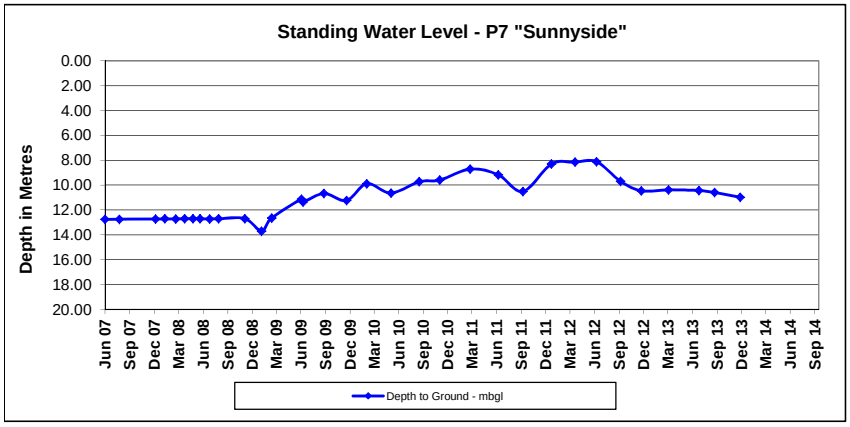
					Field Parameters			Dissolved Metals																	Major Cations					Major Anions													
Site ID	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH - Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N	Nitrate as N	Nitrite and Nitrate as N (NOX)	Total Dissolved Solids	Comments
ANZECC guideline*								5	0.5			0.01	1	1	1		0.1		1		20	0.002			1000						1000											4000	
901460	10-Dec-08	0900	15.38	15.80																																							Bore covered
Registered Number:	19-Jan-09	1414	15.53	15.95																																							Bore covered
GW901460	02-Mar-09	1320	19.73	20.15																																							Bore covered
	08-Apr-11	1410	15.18	15.60																																							Bore covered
	14-Jun-11	1120	15.03	15.45																																							Windmill over bore
	20-Sep-11	1230	14.97	15.39																																							Windmill over bore
	15-Dec-11	1130	15.03	15.45																																							Illili windmill over bore
	02-Apr-12	1230	14.87	15.29																																							Illili windmill over bore
	20-Jun-12	1240	14.74	15.16																																							Pump cap over bore
	12-Sep-12	1205	14.63	15.05																																							Pump cap over bore
	07-Dec-12	1045	17.66	18.08																																							Pump cap over bore
	09-Jul-13	1050	14.57	14.99																																							Pump over bore
	06-Sep-13	1115	14.5	14.92																																							Pump over bore
	10-Dec-13	1150	14.43	14.83																																							Pump over bore
	04-Mar-14																																										Pump over bore
	30-May-14	1030	14.2	14.62																																							Pump over Bore
	03-Sep-14																																										
6249	09-Sep-09	1500	10.10		7.75	2340	19.6		0.002	0.346	<0.001	0.0001	0.002	0.005	0.062	9.15	0.012	0.798	0.018	<0.01	1.01	<0.0001		2300	70	94	281	13	23.7	596	16.9	<1	<1	272	272	22.6	2.41	2.47					
	02-Dec-09	1100	10.22	9.89	7.5	3480	23.7	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	1.14	0.004		0.101	<0.0001	7.48	3370	67	135	361	12	30.5	980	11	<1	<1	289	289	33.6	4.98		<0.01	0.93	0.93		
	16-Feb-10	1000	9.87	10.20																																						1770	
	17-May-10	1025	9.96	10.29	7.1	5930	20.8	<0.01	<0.001				<0.005		<0.001	<0.05	<0.001	1.80	0.003		0.122	<0.0001	7.53	3890	106	198	480	4	42.5	1070	71.6	<1	<1	372	372	39.1	4.14		<0.01	1.31			
	31-Aug-10	0820	9.91	10.24	7.9	3260	17.3																																				
	23-Nov-10	1330	9.86	10.19	7.4	2430	24.5																																				
	09-Mar-11	1040	10.02	10.35	7.6	2230	23.5	0.22	0.001				0.001		0.079	2.29	0.01	0.51	0.007		0.768	<0.0001	7.84	2420	69	125	283	8	26.3	700	44	<1	<1	284	284	26.3	0.12		0.26	2.36	2.63		
	14-Jun-11	950	9.62	9.95	7.6	2420	18.7																																				
	20-Sep-11	1010	9.65	9.98	7.7	2520	22.3	0.06	0.003	0.324	<0.001	0.0001	0.002	<0.001	0.035	0.96	0.00	0.67	0.007	<0.01	0.264	<0.0001	7.86	3470	80	155	369	7	33	868	44	<1	<1	278	278	31	3.16	0.32	<0.01	10.9	10.9	1640	
	15-Dec-11	1010	9.69	10.02	7.31	3020	21.8																																				
	02-Apr-12	1010	9.35	9.68	7.75	2350	22.9	0.02	<0.001	0.317	<0.001	<0.0001	<0.001	0.002	0.021	1.47	0.003	1.96	0.006	<0.01	0.387	<0.0001	7.78	2760	80	131	295	10	27.9	785	28	<1	<1	321	321	29.1	2.25	3.4	0.14	1.05	1.19	1700	
	20-Jun-12	1020	9.21	9.54	7.7	3100	20.2																																				TSR near tanks
	12-Sep-12	1000	9.11	9.44	7.6	3090	21.2	0.02	0.002	0.362	<0.001	<0.0001	<0.001	<0.001	0.01	5.14	0.005	2.48	0.003	<0.01	0.191	<0.0001	7.72	3490	89	179	388	9	36.3	956	19	<1	<1	413	413	35.6	0.92	3.92	0.14	0.02	0.16	2180	
	07-Dec-12	0930	9.19	9.52	7.7	3210	20.9																																				
	18-Mar-13	0930	9.24	9.57	7.5	3200	20.4	0.05	0.001	0.357	<0.001	0.0001	<0.001	<0.001	0.025	5.57	0.005	2.63	0.002	<0.01	0.198	<0.0001	7.78	3540	84	174	378	11	35.2	865	4	<1	<1	375	375	32	4.84	8.9	0.09	<0.01	0.09	1890	
	09-Jul-13	1225	9.33	9.66	7.6	3220	18.6																																				
	06-Sep-13	1300	9.31	9.64	7.73	3090	21.8	0.09	<0.001	0.32	<0.001	<0.0001	<0.001	0.002	0.04	1.56	0.003	1.5	0.005	<0.01	0.158	<0.0001	7.95	3400	85	161	364	10	33.6	815	8	<1	<1	366	366	30.5	4.85	5.71				1680	
	10-Dec-13	945	9.33	9.63	7.8	3260	21																																				
	04-Mar-14	945	9.54	9.87	7.8	3140	20.1	0.1	<0.001	0.339	<0.001	<0.0001	0.004	0.002	0.036	3.65	0.009	1.37	0.006	<0.01	0.43	<0.0001	7.79	3420	86	158	453	11	37.3	847	6	<1	<1	361	361	31.2	8.82	3.86				2030	
	30-May-14	1320	9.56	9.88	7.8	3120	19.5																																				
	03-Sep-14	1100	9.50	9.83	7.5	3180	19.6	0.02	<0.001	0.357	<0.001	<0.0001	<0.001	0.003	0.01	1.13	0.001	1.29	0.006	<0.01	0.233	<0.0001	7.74	3300	84	138	290	10	28.4	810	5	<1	<1	385	385	30.6	3.77	0.73	<0.01	0.29	0.29	1820	
44884	09-Sep-09	1155			7.50	3050	20.2		0.007	0.624	<0.001	0.0005	<0.001	0.004	0.004	5.32	0.002	0.787	0.001	<0.01	0.223	<0.0001		2950	45	102	527	5	33.7	442	16.2	<1	<1	1040	1040	33.7	0.02	0.14					
	02-Dec-09	1145			7.4	3700	25	<0.01	0.002				<0.005		<0.001	<0.05	<0.001	0.89	0.002		0.076	<0.0001	7.47	3340	30	149	504	5	35.8	655	25	<1	<1	933	933	37.6	2.51		<0.01	<0.01	<0.01		
	16-Feb-10	1010																																									
	17-May-10	1135																																									
	31-Aug-10	0945			8.5	2720	17																																				
	15-Nov-10	1130																																									
	09-Mar-11	1100	13.10	13.57	7.9	1385	24	1.04	0.005				0.003		0.226	14.5	0.165	1.05	0.008		3.63	<0.0001	8.76	1280	23	36	279	15	16.6	203	9	<1	109	552	547	16.8	0.72		<0.01	0.06	0.06		
	14-Jun-11	1000	27.79	28.26	7.7	2080	18																																				
	20-Sep-11	1050	30.78	31.25	7.9	2460	17.3	<0.01	0.005	0.592	<0.001	0.0001	0.002	0.004	0.008	2.29	0.004	0.738	0.001	<0.01	0.795	<0.0001	8.01	3330	47	104	558	4	35.3	530	21	<1	<1	931	931	34	1.82	0.04	<0.01	0.04	0.04	1740	
	15-Nov-11	1030	14.51	14.98	8.05	2800	23.1																																				
	02-Apr-12	1040	14.83	15.30	8.25	1620	24	0.03	<0.001	0.277	<0.001	<0.0001	<0.001	<0.001	0.008	0.07	<0.001	0.011	<0.001	<0.01	0.534	<0.0001	8.23	1970	29	81	327	3	22.4	390	19	<1	<1	528	528	22	1.02	<0.01	<0.01	0.19	0.19	1050	
	20-Jun-12	1040	15.42	15.89	8.2	1160	18.4																																				Lillydale windmill
	12-Sep-12	1020	15.13	15.60	8.14	2590	18.1	<0.01	0.002	0.325	<0.001	0.0031	<0.001	<0.001	0.033	0.33	<0.001	0.066	0.006	<0.01	0.599	<0.0001	8.3	2770	29	74	549	5	31.6	420	16	<1	<1	1030	1030	32.8	1.93	<0.01	<0.01	0.1	0.1	1640	
	07-Dec-12	0945	17.09	17.56	7.89	1975	21.7																																				
	18-Mar-13	0950	15.42	15.89	7.91	2910	23.3	<0.01	0.004	0.396	<0.001	<0.0001	<0.001	<0.001	0.003	2.7	<0.001	0.122	<0.001	<0.01	0.834	<0.0001	8.1	3280	39	128	520	5	35.2	545	27	<1	<1	847	847	32	3.44	0.15	<0.01	<0.01	<0.01	1830	
	09-Jul-13	1200	15.06	15.53	7.89	1843	12.5																																				
	06-Sep-13	1240	15.43	15.90	7.49	910	17.4	<0.01	0.002	0.287	<0.001	0.0017	<0.001	<0.001	0.017	0.95	0.029	0.033	0.001	<0.01	1.52	<0.0001	7.9	956	56	37	89	2	9.76	102	41	<1	<1	283	283	9.39	1.96	<0.01				514	
	10-Dec-13	1000	15.40	15.87	7.9	2760	24.2																																				
	04-Mar-14	1005	15.53	16.00	8	2240	23.4	0.02	0.004	0.465	<0.001	0.0048	<0.001	0.001	0.082	2.15	0.037	0.352	0.001	<0.01	2.91	<0.0001	8.04	2420	42	76	527	3	31.4	330	19	<1	<1	781	781	25.3	10.6	0.07				1260	
	30-May-14	1040	15.65	16.12	8	2610	20.5																																				
	03-Sep-14	1120			8	2650	20.1	<0.01	<0.001	0.422	<0.001	0.0008	<0.001	<0.001	0.009	0.15	0.005	0.018	0.001	<0.01	1.27	<0.0001	8.1	3110	18	106	414	4	29.2	471	30	<1	<1	995	995	33.8	7.27	0.02	<0.01	0.02	0.02	1650	
Werona Bore	09-Sep-09	1245			7.68	5150	19.3		<0.001	0.325	<0.001	<0.0001	0.001	<0.001	0.001	<0.05	<0.001	0.014	<0.001	<0.01	0.01	<0.0001		5210	152	257	572	10	53.9	1390	108	<1	<1	501	501	51.4	2.3	0.1					
(bore equipped)	02-Dec-09	1405			8.0	5770	25.9	<0.01	<0.001				<0.005		0.01	<0.05	<0.001	0.00	<0.001		<0.005	<0.0001	8.16	5220	48	280	624	11	52.9	16580	120	<1	<1	354	354	56.1	2.98		0.07	1.83	1.9		
	16-Feb-10	1235	16.73	17.36																																							
	17-May-10	1255			7.8	5510	16.8	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	0.01	<0.001		<0.005	<0.0001	7.74	5100	157	288	656	7	60.2	1520	141	<1	<1	497	497	55.7	3.94		0.02	1.31			
	31-Aug-10	1200			8.4	4410	19.9																																				
	15-Nov-10	1245																																									No access
	08-Mar-11	1020			7.76	4200	25	0.18	<0.001				<0.001		0.002	0.29	<0.001	0.01	0.001		0.006	<0.0001	7.96	5060	136	262	601	11	54.8	1380	117	<1	<1	514	514	51.5	3.08		0.02	1.06	1.08		Bore covered by pump
	14-Jun-11	1100			7.85	3870	17.5																																				Bore covered by pump
	21-Sep-11	910			8.05	3200	19.7	0.08	<0.001	0.172	<0.001	<0.0001	<0.001	<0.001	0.002	0.07	<0.001	0.02	0.002	<0.01	0.018	<0.0001	8.03	4410	122	208	486	8	44.6	1070	92	<1	<1	512	512	42.3	2.55	0.03	0.02	1.09	1.11		Bore covered by pump
	06-Jan-12	1030			7.92	2745	23.8																																				bore covered by pump
	03-Apr-12	0840			7.55	3150	22.2	0.05	<0.001	0.251	<0.001	<0.0001	<0.001	<0.001	0.003	0.06	<0.001	0.01	0.001	<0.01	0.008	<0.0001	8.14	3840	94	201	483	8	42.4	1030	93	<1	<1	462	462	40.2	2.68	0.16	<0.01	0.04	0.04	2230	bore covered by pump
	20-Jun-12	1230			8.13	3070	14.5																																				bore covered by pump - from dam fed by bore
	20-Sep-12	0950			7.68	3730	22	0.81	0.001	0.184	<0.001	0.0001	0.002	0.001	0.006	0.92	<0.001	0.076	0.002	<0.01	0.021	<0.0001	8.04	4290	71	199	461	10	40.2	1040	96	<1	<1	513	513	41.6	1.67	<0.01	<0.01	0.42	0.42	2260	bore covered by pump
	07-Dec-12	1210			8.08	3410	26.8																																				bore covered by pump
	18-Mar-13	1215			8.16	3470	24.3	0.72	<0.001	0.147	<0.001	<0.0001	<0.001	<0.001	0.006	0.84	<0.001	0.022	0.002	<0.01	0.023	<0.0001	8.04	3900	78	194	476	10	40.8	935	88	<1	<1	439	439	37	4.92	0.04	<0.01	0.04	0.04	2250	bore covered by pump
	09-Jul-13	1110																																									pump cap over bore - pump off genset removed
	06-Sep-13	1125																																									pump cap over bore - pump off genset removed
	10-Dec-13	1200																																									Pump over bore
	04-Mar-14																																										Pump over bore
	05-Jun-14	1115																																									Pump over bore, genset removed
	03-Sep-14																																										Pump over bore
22497	21-Dec-09	1520	15.31	15.31	5.59	3600	25.4	<0.01	<0.001				<0.001		0.004	<0.05	<0.001	0.180	0.006		0.261	<0.0001	7.41	3600	12	155	770	54	48.2	1140	12	<1	<1	246	246	37.4	12.5		<0.01	0.05	0.05		
	16-Feb-10	0950	15.19	15.19																																							
	17-May-10	1010	15.36	15.36	7.3	5400	19.3	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	0.236	0.004		0.214	<0.0001	7.69	3460	69	201	350	14	35.6	1010	8.29	<1	<1	233	233	33.2	3.43		<0.01	0.09			
	31-Aug-10	0920	15.47	15.47	7.8	3770	19.2																																				
	23-Nov-10	1410	15.46	15.46	7.3	2730	24.4																																				
	09-Mar-11	950	15.05	15.35	7.73	2210	23.1	0.2	<0.001				<0.001		0.147	9.89	0.016	0.24	0.001		0.946	<0.0001	8.21	2190	49	127	211	24	22.7	665	5	<1	<1	232	232	23.5	1.66		0.31	1.16	1.47		
	14-Jun-11	930	15.02	15.32	7.75	2880	19.4																																				
	20-Sep-11	940	15.18	15.48	7.8	2450	23.1	0.02	0.001	0.217	<0.001	<0.0001	<0.001	<0.001	0.017			0.22	0.002	0.178	6.89	<0.0001	7.79	3500	58	171	303	23	30.7	898	<1	<1	<1	251	251	30.4	0.63	16.4	0.07	0.07	0.14	1530	
	15-Dec-11	0940	15.26	15.56	7.3	3150	21.7																																				
	02-Apr-12	0945	14.52	14.82	7.3	2610	23.8	0.01	<0.001	0.206	<0.001	<0.0001	<0.001	<0.001	0.063	7.95	0.009	0.32	<0.001	<0.01	0.435	<0.0001	7.9	3190	65	176	321	30	32.5	973	3	<1	<1	276	276	33	0.87	19	0.3	0.19	0.49	1890	
	20-Jun-12	0950	14.55	14.85	7.7	3420	20.2																																				Coocooboonah back-tyres on bore
	12-Sep-12	0930	14.60	14.90	8.0	3150	21.7	0.15	<0.001	0.292	<0.001	0.0012	<0.001	<0.001	0.17	21.2	0.08	0.088	0.005	<0.01	2.8	<0.0001	7.85	3560	50	183	337	30	33	1030	<1	<1	<1	261	261	34.3	1.92	19.1	0.11	<0.01	0.11	1860	
	07-Dec-12	0905	14.79	15.09	7.8	3200	21.9																																				
	18-Mar-13	0900	14.88	15.18	7.7	3240	20.8	0.14	0.002	0.336	<0.001	0.0006	0.002	0.001	0.159	19.2	0.041	0.417	0.003	<0.01	<0.005	<0.0001	7.79	3580	48	179	335	34	32.6	900	3	<1	<1	276	276	31	2.52	38.7	0.12	0.06	0.18	1770	
	09-Jul-13	1255	15.14	15.44	7.7	3430	19.6																																				
	06-Sep-13	1340	15.20	15.50	7.83	3560	22.5	0.16	0.001	0.547	<0.001	0.0004	0.002	<0.001	1.11	31	0.097	0.506	0.007	<0.01	1.96	<0.0001	7.84	3900	48	195	371	34	35.4	1010	<1	<1	<1	209	209	32.7	4.08	32.2				1910	
	10-Dec-13	930	15.39	15.59	7.8	3480	22.7																																				
	04-Mar-14	930	15.50	15.80	7.5	3730	21.6	0.04	<0.001	0.613	<0.001	0.0002	0.001	<0.001	0.068	7.38	0.007	0.239	0.002	<0.01	0.238	<0.0001	7.81	4000	49	194	468	31	39.6	1100	4	<1	<1	169	169	34.5	6.84	29				2410	
	05-Jun-14	945	15.64	15.84	7.8	3740	19.3																																				
	03-Sep-14	910	15.60	15.80	7.6	3810	20.8	0.52	0.002	0.91	<0.001	0.0014	0.004	0.002	0.461	66.9	0.148	1.04	0.03	0.02	7.73	<0.0001	7.67	3970	49	173	302	30	30.6	1040	2	<1	<1	158	158	32.5	3.09	22.9	0.03	0.1	0.13	2100	
45061	17-May-10	1000	9.10	9.20	5.59	3600	25.4	<0.01	<0.001				<0.001		0.004	<0.05	<0.001	0.180	0.006		0.261	<0.0001	7.41	3600	12	155	770	54	48.2	1140	12	<1	<1	246	246	37.4	12.5		<0.01	0.05	0.05		
	31-Aug-10	850	9.10	9.20																																							
	23-Nov-10	1345	9.05	9.15	7.3	5400	19.3	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	0.236	0.004		0.214	<0.0001	7.69	3460	69	201	350	14	35.6	1010	8.29	<1	<1	233	233	33.2	3.43		<0.01	0.09			
	09-Mar-11	920	9.06	9.16	7.8	3770	19.2																																				
	14-Jun-11	910	8.95	9.05	7.3	2730	24.4																																				
	20-Sep-11	910	8.86	8.96	7.73	2210	23.1	0.2	<0.001				<0.001		0.147	9.89	0.016	0.24	0.001		0.946	<0.0001	8.21	2190	49	127	211	24	22.7	665	5	<1	<1	232	232	23.5	1.66		0.31	1.16	1.47		
	15-Dec-11	920	8.86	8.96	7.75	2880	19.4																																				
	02-Apr-12	915	8.67	8.77	7.8	2450	23.1	0.02	0.001	0.217	<0.001	<0.0001	<0.001	<0.001	0.017			0.22	0.002	0.178	6.89	<0.0001	7.79	3500	58	171	303	23	30.7	898	<1	<1	<1	251	251	30.4	0.63	16.4	0.07	0.07	0.14	1530	
	20-Jun-12	920	8.52	8.62																																							Windmill over bore
	12-Sep-12	900	8.39	3.49																																							Windmill over bore
	07-Dec-12	0845	8.33	8.43																																							Windmill over bore
	18-Mar-13	0840	8.34	8.44																																							Windmill over bore
	09-Jul-13	1315																																									no access rusty casing collapsed - windmill over bore
	06-Sep-13	0920	8.33	8.43																																							Windmill over bore - rusty casing broken
	10-Dec-13	910	8.38	8.48																																							Windmill over bore, casing broken
	04-Mar-14																																										Windmill over bore
	05-Jun-14	840	8.47	8.57																																							Windmill over bore
	03-Sep-14																																										Windmill over bore
3709	21-Jun-11	910			7.05	4420	18.5																																				Covered by Pump
	22-Sep-11	1100			6.76	4937	20.1																																				Ivanhoe tank tap
	03-Apr-12	1200			7.05	4340	25.5	0.57	0.011	0.314	<0.001	0.0003	0.002	<0.001	1.41	26	0.117	0.048	0.003	0.03	4.15	<0.0001	7.9	5520	128	232	848	18	62.8	1400	100	<1	<1	767	767	56.9	4.94	<0.01	0.02	6.12	6.14	3220	Ivanhoe tank tap
	11-Jul-12	1115			7.29	4480	17.8																																				Pump over bore
	11-Oct-12	850			7.08	5570	19.2	0.01	0.001	0.294	<0.001	<0.0001	<0.001	<0.001	0.034	3.36	0.004	0.033	0.002	<0.01	1.93	<0.0001	7.76	6550	157	235	925	15	67.8	1710	142	<1	<1	849	849	68.2	0.28	0.02	0.05	0.47	0.52	3560	Ivanhoe tank tap
	07-Dec-12	1125			6.95	5470	24.7																																				Pump over bore
	18-Mar-13	1045	14.58	14.98																																							Pump cap over bore
	11-Apr-13	0900			6.99	5560	21.4	<0.01	0.001	0.261	<0.001	0.0004	<0.001	<0.001	0.021	0.77	0.006	0.016	<0.001	<0.01	4.7	<0.0001	7.54	5960	142	225	700	19	56.5	1300	97	<1	<1	783	783	54.3	1.97	<0.01	<0.01	2.69	2.69	3340	
	11-Sep-13	0830			7.03	5460	20.2	0.07	0.003	0.331	<0.001	0.0006	0.001	<0.001	0.104	4.52	0.03	0.03	0.002	<0.01	1.67	<0.0001	7.6	6200	147	217	888	14	64.2	1420	96	<1	<1	831	831	58.7	4.48	<0.01				3660	
	04-Mar-14	0830			7	5860	21.6	<0.01	0.003	0.294	<0.001	0.0001	<0.001	<0.001	0.03	0.73	0.002	0.02	0.002	<0.01	0.584	<0.0001	7.18	6470	154	229	830	14	63	1510	105	<1	<1	842	842	61.6	1.1	<0.01				3490	
	05-Jun-14	920																																									Pump over bore
	03-Sep-14	0930			6.9	5990	20.1	0.02	0.002	0.256	<0.001	0.0002	<0.001	<0.001	0.022	1.1	0.003	0.02	0.001	<0.01	1.1	<0.0001	7.33	6360	154	240	825	16	63.7	1660	101	<1	<1	931	931	67.5	2.91	0.02	<0.01	0.62	0.62	3630	
44677	15-Dec-11	1200			7.1	4080	24																																				Bore covered
	02-Apr-12	1300			7.2	3810	25.2	<0.01	<0.001	0.462	<0.001	<0.0001	<0.001	<0.001	0.004	<0.05	<0.001	<0.001	<0.001	<0.01	0.019	<0.0001	7.71	4790	202	253	531	6	54.2	1380	81	<1	<1	524	524	51.1	2.91	<0.01	<0.01	3.18	3.18	2980	Bore covered
	20-Jun-12	1320			7.1	4370	18.1																																				Bore covered with scale and grass
	12-Sep-12	1230			7.1	4360	22.8	<0.01	<0.001	0.406	<0.001	<0.0001	<0.001	<0.001	0.002	<0.05	<0.001	<0.001	<0.001	<0.01	0.013	<0.0001	7.53	4880	99	244	504	6	47.1	1280	72	<1	<1	586	586	49.3	2.31	0.06	<0.01	3.01	3.01	2750	
	07-Dec-12	1115			7.1	4320	23.9																																				Bore covered with scale and grass
	18-Mar-13	1120			7.0	4340	22.7	<0.01	0.001	0.44	<0.001	<0.0001	<0.001	<0.001	0.003	<0.05	0.017	<0.001	<0.001	<0.01	0.037	<0.0001	7.42	4910	188	236	523	5	51.7	1260	77	<1	<1	525	525	47.6	4.07	<0.01	<0.01	3.43	3.43	2770	Bore covered with scale
	09-Jul-13	1130			8.3	4470	17.1																																				Bore covered with scale
	06-Sep-13	1140			7.06	4420	23	<0.01	<0.001	0.466	<0.001	<0.0001	<0.001	<0.001	0.009	<0.05	<0.001	0.002	<0.001	<0.01	0.052	<0.0001	7.52	4920	180	237	518	5	51.2	1200	73	<1	<1	556	556	46.5	4.78	0.02				3040	
	10-Dec-13	1215			7.1	4520	27.2																																				Bore covered with scale
	04-Mar-14	1120			7	4530	23.6	<0.01	<0.001	0.494	<0.001	<0.0001	<0.001	<0.001	0.003	<0.05	<0.001	<0.001	<0.001	<0.01	0.022	<0.0001	7.45	4940	183	231	561	5	52.7	1210	77	<1	<1	546	546	46.6	6.06	<0.01				2990	
	05-Jun-14	1055			7	4650	16.8																																				
	03-Sep-14	1430			7.3	4550	21.2	0.01	<0.001	0.461	<0.001	<0.0001	<0.001	<0.001	0.004	<0.05	<0.001	0.001	<0.001	<0.01	0.063	<0.0001	7.52	4900	194	365	652	5	60	1040	70	<1	<1	590	590	42.6	17	0.01	<0.01	3.6	3.6	2900	

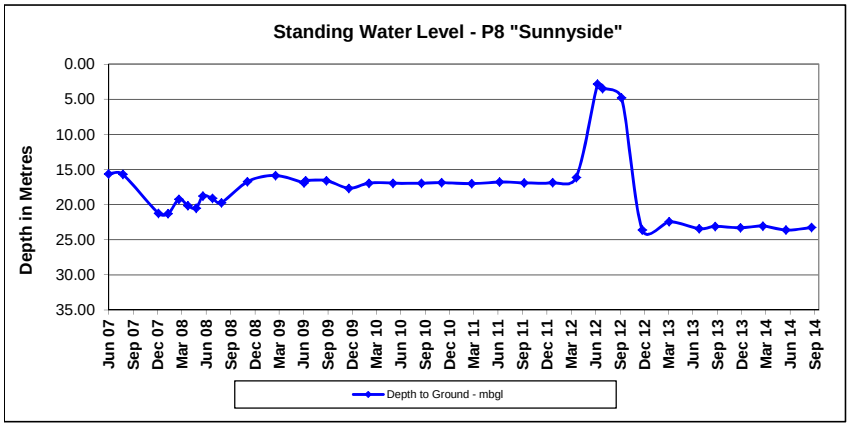
* ANZECC guideline - stock drinking water (cattle)

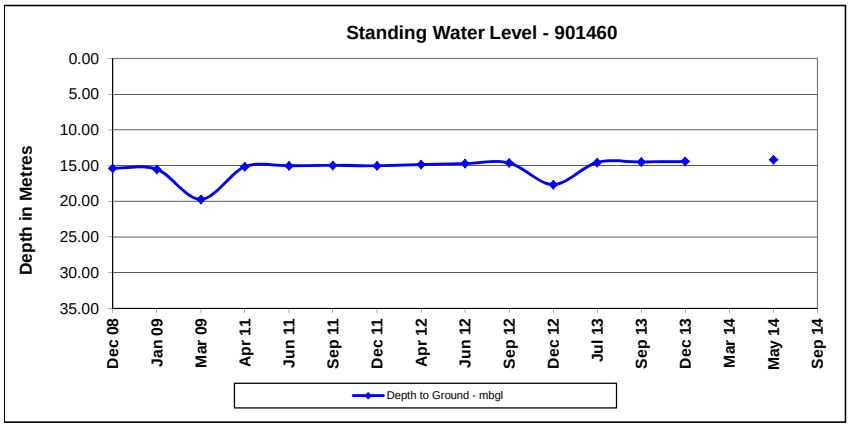

Standing Water Level - P1 "Plainview"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl

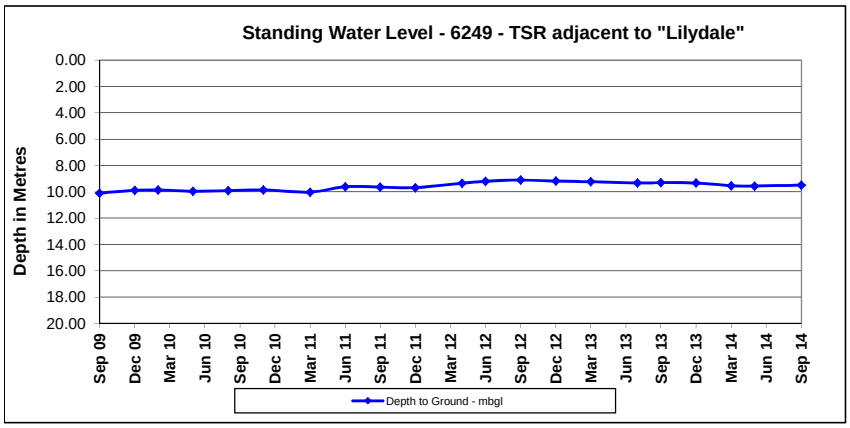

Standing Water Level - P2 "Ferndale"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl

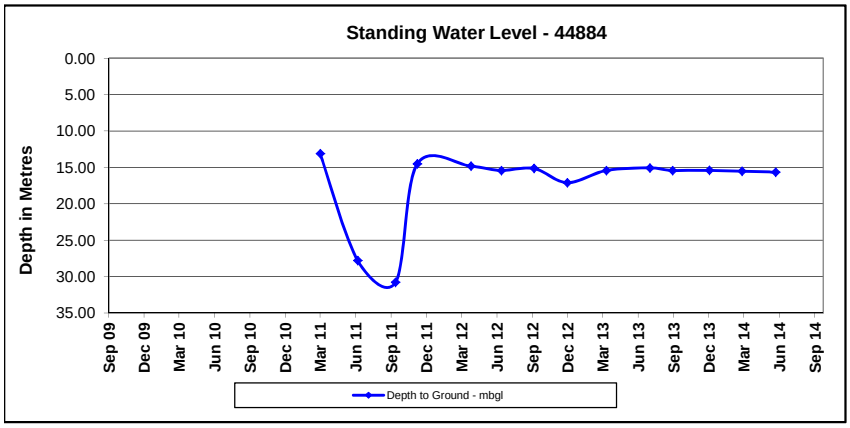

Standing Water Level - P3 "Sunnyside"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl

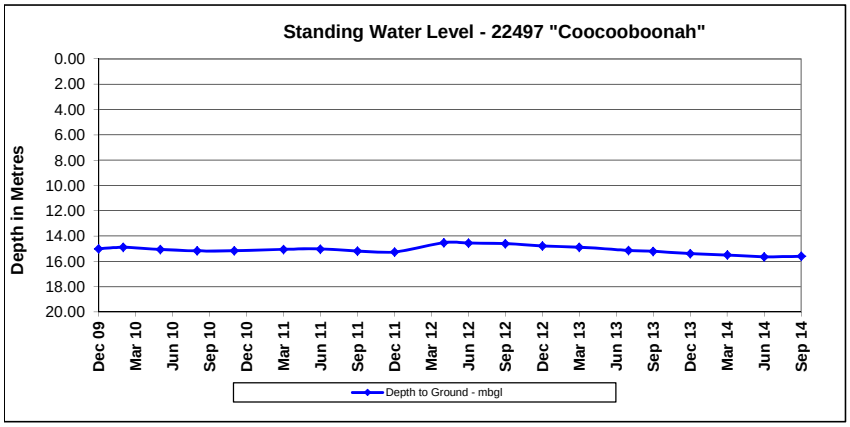

Standing Water Level - P7 "Sunnyside"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl

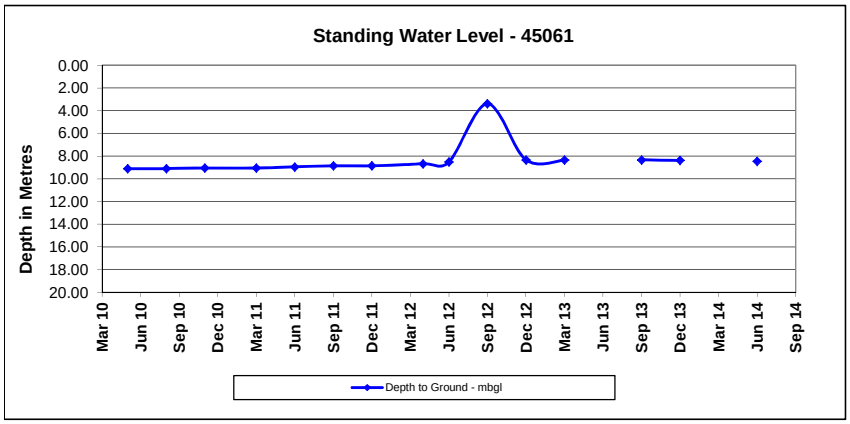

Standing Water Level - P8 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl


Standing Water Level - 901460
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Dec 08
Jan 09
Mar 09
Apr 11
Jun 11
Sep 11
Dec 11
Apr 12
Jun 12
Sep 12
Dec 12
Jul 13
Sep 13
Dec 13
Mar 14
May 14
Sep 14
Depth to Ground - mbgl


Standing Water Level - 6249 - TSR adjacent to "Lilydale"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl


Standing Water Level - 44884
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl


Standing Water Level - 22497 "Coocooboonah"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl


Standing Water Level - 45061
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Dec 11
Mar 12
Jun 12
Sep 12
Dec 12
Mar 13
Jun 13
Sep 13
Dec 13
Mar 14
Jun 14
Sep 14
Depth to Ground - mbgl

Appendix 7

BLAST MONITORING RESULTS

Sunnyside Coal Mine
Environmental Blast Monitoring

SHOT NO.	*DATE*	*MONITOR LOCATION*	*PEAK GROUND PRESSURE (mm/s)*	*PEAK OVERPRESSURE (dBL)*	*TIME*
1	18/Nov/08	Ivanhoe	0.91	110.7	1:44:48 PM
1	18/Nov/08	Plain View	0.86	107.8	1:44:58 PM
1	18/Nov/08	Illilli	0.56	107.4	1:42:25 PM
2	25/Nov/08	Innisvale	0.40	103.2	3:10:59 PM
2	25/Nov/08	Plain View	DNT	DNT	DNT
2	25/Nov/08	Illilli	0.61	105.5	3:10:48 PM
3	28/Nov/08	Ivanhoe	0.65	96.7	9:59:16 AM
3	28/Nov/08	Plain View	0.50	112.3	9:59:16 AM
3	28/Nov/08	Illilli	1.24	100.9	9:59:07 AM
4	28/Jan/09	Illilli	0.10	112.0	9:59:26 AM
4	28/Jan/09	Ivanhoe	DNT	DNT	DNT
4	28/Jan/09	Plain View	DNT	DNT	DNT
5	09/Mar/09	Ivanhoe	0.28	109.4	2:04:23 PM
5	09/Mar/09	Innisvale	0.33	109.7	2:04:29 PM
6	06/Apr/09	Illilli	0.35	97.4	1:53:19 PM
6	06/Apt/09	Ivanhoe	DNT	DNT	DNT
6	06/Apr/09	Plain View	DNT	DNT	DNT
7	11/Jun/09	Innisvale	0.30	97.0	12:21:02 PM
7	11/Jun/09	Ivanhoe	0.53	99.6	12:20:57 PM
7	11/Jun/09	Plain View	0.53	109.3	12:12:21 AM
8	18/Jun/09	Illili	0.35	106.7	2:58:16 PM
8	18/Jun/09	Ivanhoe	0.37	96.4	2:57:20 PM
8	18/Jun/09	Plain View	DNT	DNT	DNT
9/10	21/Aug/09	Innisvale	0.61	111.0	10:06:36 AM
9/10	21/Aug/09	Ivanhoe	0.97	111.8	10:07:46 AM
9/10	21/Aug/09	Plain View	0.51	111.5	10:06:49 AM
11	24/Nov/09	Innisvale	DNT	DNT	DNT
11	24/Nov/09	Ivanhoe	DNT	DNT	DNT
11	24/Nov/09	Plain View	DNT	DNT	DNT
11	24/Nov/09	Illili	0.43	109.6	12:11:41 PM
12	18/Dec/09	Innisvale	1.09	101.9	12:07:40 PM
12	18/Dec/09	Ivanhoe	1.70	107.0	12:05:20 PM
12	18/Dec/09	Plain View	1.16	101.9	12:05:34 PM
12	18/Dec/09	Illili	0.05*	114.1	12:05:50 PM
13	11/Feb/10	Innisvale	DNT	DNT	DNT
13	11/Feb/10	Ivanhoe	DNT	DNT	DNT
13	11/Feb/10	Plain View	0.91	107.4	12:06:42 PM
13	11/Feb/10	Illili	0.41	106.5	12:05:52 PM

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
14	17/Apr/10	Innisvale	0.96	108.6	12:01:29 PM
14	17/Apr/10	Ivanhoe	2.04	110.1	11:57:36 AM
14	17/Apr/10	Plain View	2.39	96.3	12:03:38 PM
14	17/Apr/10	Illili	0.61	114.8	11:59:07 AM
15	23/Jun/10	Innisvale	1.10	102.4	12:13:47 PM
15	23/Jun/10	Ivanhoe	1.54	114.1	12:13:59 PM
15	23/Jun/10	Plain View	DNT	DNT	DNT
15	23/Jun/10	Illili	0.09	114.8	12:15:17 PM
16	09/Jul/10	Innisvale	0.42	100.8	10:04:11 AM
16	09/Jul/10	Ivanhoe	DNT	DNT	DNT
16	09/Jul/10	Plain View	1.11	103.2	10:04:27 AM
16	08/Jul/10	Illili	1.60	99.1	10:04:29 AM
17	12/Aug/10	Innisvale	DNT	DNT	DNT
17	12/Aug/10	Ivanhoe	DNT	DNT	DNT
17	12/Aug/10	Plain View	0.18	110.3	11:57:01 AM
17	12/Aug/10	Illili	0.52	108.0	11:56:56 AM
18	01/Sep/10	Innisvale	0.52	101.4	11:59:00 AM
18	01/Sep/10	Ivanhoe	0.53	103.6	12:02:42 PM
18	01/Sep/10	Plain View	DNT	DNT	DNT
18	01/Sep/10	Illili	DNT	DNT	DNT
20	30/Sep/10	Innisvale	0.58	105.6	12:00:08 PM
20	30/Sep/10	Ivanhoe	0.83	86.6	12:04:38 PM
20	30/Sep/10	Plain View	1.20	92.5	12:00:53 PM
20	30/Sep/10	Illili	0.47	87.5	11:58:03 AM
21	22/Nov/10	Inisvale	0.66	108.4	15:04:15 PM
21	22/Nov/10	Ivanhoe	No access to property - monitor not set		
21	22/Nov/10	Plain View	DNT	DNT	DNT
21	22/Nov/10	Illili	0.45	107.9	15:05:12 PM
22	24/Nov/10	Inisvale	DNT	DNT	DNT
22	24/Nov/10	Plain View	0.76	100.2	12:14:40 PM
22	24/Nov/10	Illili	DNT	DNT	DNT
22	24/Nov/10	Ivanhoe	DNT	DNT	DNT
23	21/Jan/11	Innisvale	0.49	83.70	12:24:10 PM
23	21/Jan/11	Plain View	0.55	110.1	12:24:14 PM
23	21/Jan/11	Illili	0.24	100.20	12:23:46 PM
23	21/Jan/11	Ivanhoe	0.56	80.70	12:26:48 PM
24	16/Feb/11	Innisvale	0.57	104.50	12:13:37 PM
24	16/Feb/11	Plain View	DNT	DNT	12:13:00 PM
24	16/Feb/11	Illili	1.45	106.10	12:13:13 PM
24	16/Feb/11	Ivanhoe	DNT	DNT	12:13:00 PM
25	21/Feb/11	Innisvale	DNT	DNT	12:09:00 PM
25	21/Feb/11	Plain View	1.73	97.7	12:09:27 PM
25	21/Feb/11	Illili	0.26	109.00	12:09:57 PM
25	21/Feb/11	Ivanhoe	DNT	DNT	12:09:00 PM

SHOT NO.	*DATE*	*MONITOR LOCATION*	*PEAK GROUND PRESSURE (mm/s)*	*PEAK OVERPRESSURE (dBL)*	*TIME*
26	16/Mar/11	Innisvale	0.49	108.30	12:02:56 PM
26	16/Mar/11	Plain View	DNT	DNT	12:02:00 PM
26	16/Mar/11	Illili	DNT	DNT	12:02:00 PM
26	16/Mar/11	Ivanhoe	DNT	DNT	12:02:00 PM
27	09/Apr/11	Innisvale	0.99	105.30	10:51:21 AM
27	09/Apr/11	Plain View	DNT	DNT	10:51:00 AM
27	09/Apr/11	Illili	DNT	DNT	10:51:00 AM
27	09/Apr/11	Ivanhoe	No data	No data	No data
28	03/May/11	Innisvale	0.52	128.80	11:02:41 AM
28	03/May/11	Plain View	0.40	120.6	11:02:59 AM
28	03/May/11	Ferndale	0.10	124.0	11:03:05 AM
28	03/May/11	Illili	0.13	120.30	11:03:26 AM
28	03/May/11	Ivanhoe	No Data	No Data	No Data
29	18/May/11	Innisvale	0.47	104.50	12:01:34 PM
29	18/May/11	Plain View	0.78	106.9	12:01:42 PM
29	18/May/11	Ferndale	No monitor available	No monitor available	
29	18/May/11	Illili	DNT	DNT	12:01:00 PM
29	18/May/11	Ivanhoe	0.42	103.30	12:01:47 PM
30	31/May/11	Innisvale	DNT	DNT	12:01:00 PM
30	31/May/11	Plain View	DNT	DNT	12:01:00 PM
30	31/May/11	Ferndale	DNT	DNT	12:01:00 PM
30	31/May/11	Illili	DNT	DNT	12:01:00 PM
30	31/May/11	Ivanhoe	DNT	DNT	12:01:00 PM
31	25/Jun/11	Innisvale	0.44	104.30	1:27:21 PM
31	25/Jun/11	Plain View	0.50	115.9	1:27:00 PM
31	25/Jun/11	Ferndale	0.72	104.8	1:27:21 PM
31	25/Jun/11	Illili	1.92	99.10	1:27:21 PM
31	25/Jun/11	Ivanhoe	0.69	90.50	1:27:21 PM
32	15/Jul/11	Innisvale	0.12	113.40	10:14:59 AM
32	15/Jul/11	Plain View	0.70	113.3	10:13:25 AM
32	15/Jul/11	Ferndale	No monitor available	No monitor available	
32	15/Jul/11	Illili	DNT	DNT	10:14:00 AM
32	15/Jul/11	Ivanhoe	0.11	112.80	10:12:11 AM
33	01/Aug/11	Innisvale	DNT	DNT	11:11:00 AM
33	01/Aug/11	Plain View	DNT	DNT	11:11:00 AM
33	01/Aug/11	Ferndale	No monitor available	No monitor available	
33	01/Aug/11	Illili	DNT	DNT	11:11:00 AM
33	01/Aug/11	Ivanhoe	DNT	DNT	11:11:00 AM
34	11/Aug/11	Innisvale	DNT	DNT	3:03:00 PM
34	11/Aug/11	Plain View	0.70	105.9	3:03:25 PM
34	11/Aug/11	Ferndale	No monitor available	No monitor available	
34	11/Aug/11	Illili	DNT	DNT	3:03:00 PM
34	11/Aug/11	Ivanhoe	0.58	81.02	3:03:10 PM

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
35	29/Aug/11	Innisvale	0.72	109.70	10:10:58 AM
35	29/Aug/11	Plain View	0.54	113.5	10:10:58 AM
35	29/Aug/11	Ferndale	0.38	110.20	10:11:21 AM
35	29/Aug/11	Illili	0.1	113.40	10:11:05 AM
35	29/Aug/11	Ivanhoe	0.91	84.51	10:11:12 AM
36	31/Aug/11	Innisvale	DNT	DNT	12:12:00 PM
36	31/Aug/11	Plain View	DNT	DNT	12:12:00 PM
36	31/Aug/11	Ferndale	DNT	DNT	12:12:00 PM
36	31/Aug/11	Illili	DNT	DNT	12:12:00 PM
36	31/Aug/11	Ivanhoe	DNT	DNT	12:12:00 PM
37	14/Sep/11	Innisvale	0.58	112.00	12:03:39 PM
37	14/Sep/11	Plain View	DNT	DNT	12:03:00 PM
37	14/Sep/11	Ferndale	DNT	DNT	12:03:00 PM
37	14/Sep/11	Illili	DNT	DNT	12:03:00 PM
37	14/Sep/11	Ivanhoe	DNT	DNT	12:03:00 PM
38	25/Oct/11	Innisvale	DNT	DNT	11:59:00 AM
38	25/Oct/11	Plain View	1.31	115.1	11:59:20 AM
38	25/Oct/11	Ferndale	0.52	88.80	11:59:23 AM
38	25/Oct/11	Illili	0.41	102.60	11:59:22 AM
38	25/Oct/11	Ivanhoe	1.37	110.80	11:59:30 AM
39	28/Oct/11	Innisvale	DNT	DNT	12:01:00 PM
39	28/Oct/11	Plain View	DNT	DNT	12:01:00 PM
39	28/Oct/11	Ferndale	DNT	DNT	12:01:00 PM
39	28/Oct/11	Illili	DNT	DNT	12:01:00 PM
39	28/Oct/11	Ivanhoe	DNT	DNT	12:01:00 PM
40	10/Nov/11	Innisvale	DNT	DNT	1:20:00 PM
40	10/Nov/11	Plain View	DNT	DNT	1:20:00 PM
40	10/Nov/11	Ferndale	DNT	DNT	1:20:00 PM
40	10/Nov/11	Illili	DNT	DNT	1:20:00 PM
40	10/Nov/11	Ivanhoe	DNT	DNT	1:20:00 PM
41	08/Dec/11	Innisvale	0.39	109.4	12:00:22 PM
41	08/Dec/11	Plain View	0.37	109.9	12:00:23 PM
41	08/Dec/11	Ferndale	0.08	109.5	12:00:29 PM
41	08/Dec/11	Illili	DNT	DNT	12:00:00PM
41	08/Dec/11	Ivanhoe	0.51	110.7	12:00:22 PM
42	05/Jan/12	Innisvale	DNT	DNT	3:40:00 PM
42	05/Jan/12	Plain View	DNT	DNT	3:40:00 PM
42	05/Jan/12	Ferndale	DNT	DNT	3:40:00 PM
42	05/Jan/12	Illili	DNT	DNT	3:40:00 PM
42	05/Jan/12	Ivanhoe	DNT	DNT	3:40:00 PM

SHOT NO.	*DATE*	*MONITOR LOCATION*	*PEAK GROUND PRESSURE (mm/s)*	*PEAK OVERPRESSURE (dBL)*	*TIME*
43	18/Jan/12	Innisvale	0.11	114.7	12:01:22 PM
43	18/Jan/12	Plain View	0.11	122.2	12:01:22 PM
43	18/Jan/12	Ferndale	0.10	116.4	12:01:23 PM
43	18/Jan/12	Illili	DNT	DNT	12:01:00 PM
43	18/Jan/12	Ivanhoe	0.73	111.8	12:01:16 PM
44	25/Jan/12	Innisvale	0.98	109.8	11:42:12 AM
44	25/Jan/12	Plain View	0.72	104.1	11:42:12 AM
44	25/Jan/12	Ferndale	No monitor available	No monitor available	
44	25/Jan/12	Illili	0.36	112.5	11:43:14 AM
44	25/Jan/12	Ivanhoe	2.15	111.3	11:42:13 AM
45	11/Feb/12	Innisvale	0.86	112.5	11:04:23 AM
45	11/Feb/12	Plain View	2.30	107.0	11:04:21 AM
45	11/Feb/12	Ferndale	0.67	104.8	11:04:23 AM
45	11/Feb/12	Illili	DNT	DNT	11:04:00 AM
45	11/Feb/12	Ivanhoe	1.20	111.4	11:04:23 AM
46	01/Mar/12	Innisvale	Monitor Malfunction	Monitor Malfunction	
46	01/Mar/12	Plain View	0.36	105.9	12:03:01 PM
46	01/Mar/12	Ferndale	No monitor available	No monitor available	
46	01/Mar/12	Illili	1.07	102.5	12:03:00 PM
46	01/Mar/12	Ivanhoe	0.96	102.9	12:02:23 PM
47	08/Mar/12	Innisvale	0.33	105.3	11:59:59 AM
47	08/Mar/12	Plain View	DNT	DNT	12:00:00 PM
47	08/Mar/12	Ferndale	DNT	DNT	12:00:00 PM
47	08/Mar/12	Illili	DNT	DNT	12:00:00 PM
47	08/Mar/12	Ivanhoe	0.40	106.1	11:59:59 AM
48	21/Mar/12	Innisvale	DNT	DNT	12:00:00 PM
48	21/Mar/12	Plain View	DNT	DNT	12:00:00PM
48	21/Mar/12	Ferndale	DNT	DNT	12:00:00 PM
48	21/Mar/12	Illili	DNT	DNT	12:00:00PM
48	21/Mar/12	Ivanhoe	DNT	DNT	12:00:00PM
49	26/Mar/12	Innisvale	DNT	DNT	11:57:00 AM
49	26/Mar/12	Plain View	1.17	99.62	11:57:31 AM
49	26/Mar/12	Ferndale	0.33	100.5	11:57:52 AM
49	26/Mar/12	Illili	DNT	DNT	11:57:00 AM
49	26/Mar/12	Ivanhoe	1.02	105.0	11:57:30 AM
50	04/Apr/12	Innisvale	0.29	101.3	1:03:01 PM
50	04/Apr/12	Plain View	0.37	98.6	1:03:00 PM
50	04/Apr/12	Ferndale	DNT	DNT	1:03:00 PM
50	04/Apr/12	Illili	DNT	DNT	1:03:00 PM
50	04/Apr/12	Ivanhoe	DNT	DNT	1:03:00 PM

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
51	07/May/12	Innisvale	0.55	103.5	3:59:26 PM
51	07/May/12	Plain View	1.07	107.9	3:59:39 PM
51	07/May/12	Ferndale	0.49	102.1	1:59:32 PM
51	07/May/12	Illili	DNT	DNT	3:59:00 PM
51	07/May/12	Ivanhoe	0.96	104.2	3:59:37 PM
52	10/May/12	Innisvale	DNT	DNT	12:12:00 PM
52	10/May/12	Plain View	DNT	DNT	12:12:00 PM
52	10/May/12	Ferndale	DNT	DNT	12:12:00 PM
52	10/May/12	Illili	DNT	DNT	12:12:00 PM
52	10/May/12	Ivanhoe	0.30	97.5	12:12:43 PM
53	22/May/12	Innisvale	1.80	101.1	12:03:00 PM
53	22/May/12	Plain View	0.90	107.6	12:03:00 PM
53	22/May/12	Ferndale	DNT	DNT	12:03:00 PM
53	22/May/12	Illili	DNT	DNT	12:03:00 PM
53	22/May/12	Ivanhoe	1.06	107.0	12:03:00 PM
54	15/Jun/12	Innisvale	DNT	DNT	11:58:00 AM
54	15/Jun/12	Plain View	DNT	DNT	11:58:00 AM
54	15/Jun/12	Ferndale	0.31	99.4	12:00:19 PM
54	15/Jun/12	Illili	0.24	100.2	11:59:33 AM
54	15/Jun/12	Ivanhoe	0.44	99.5	11:58:57 AM
55	04/Jul/12	Innisvale	0.70	103.5	11:58:40 AM
55	04/Jul/12	Plain View	0.80	106.1	11:56:57AM
55	04/Jul/12	Ferndale	0.61	104.8	11:58:04 AM
55	04/Jul/12	Illili	0.24	108.9	11:57:55 AM
55	04/Jul/12	Ivanhoe	0.48	106.9	11:57:43 AM
56	18/Jul/12	Innisvale	DNT	DNT	11:58:00AM
56	18/Jul/12	Plain View	DNT	DNT	11:58:00AM
56	18/Jul/12	Ferndale	DNT	DNT	11:58:00 AM
56	18/Jul/12	Illili	0.25	100.9	11:58:17 AM
56	18/Jul/12	Ivanhoe	DNT	DNT	11:58:00AM
57	23/Jul/12	Innisvale	0.05	108.9	12:03:18 PM
57	23/Jul/12	Plain View	0.05	109.9	12:02:04 PM
57	23/Jul/12	Ferndale	0.18	104.3	12:02:36 PM
57	23/Jul/12	Illili	DNT	DNT	12:02:00 PM
57	23/Jul/12	Ivanhoe	DNT	DNT	12:02:00 PM
58	03/Aug/12	Innisvale	0.93	101.8	12:02:19 PM
58	03/Aug/12	Plain View	1.10	114.8	12:02:26 PM
58	03/Aug/12	Ferndale	1.05	108.1	12:02:20 PM
58	03/Aug/12	Illili	0.26	104.0	12:02:13 PM
58	03/Aug/12	Ivanhoe	0.35	107.5	12:03:03 PM

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
59	31/Aug/12	Innisvale	1.08	102.1	11:59:04 AM
59	31/Aug/12	Plain View	0.67	110.6	11:58:44 AM
59	31/Aug/12	Ferndale	0.66	109.8	11:58:49 AM
59	31/Aug/12	Illili	0.35	109.7	11:59:45 AM
59	31/Aug/12	Ivanhoe	0.62	104.9	11:58:04 AM
60	27/Sep/12	Innisvale	DNT	DNT	12:02:00 PM
60	27/Sep/12	Plain View	1.07	111.2	12:02:08 PM
60	27/Sep/12	Ferndale	0.57	108.3	12:02:08 PM
60	27/Sep/12	Illili	0.45	107.5	12:02:08 PM
60	27/Sep/12	Ivanhoe	0.79	104.9	12:01:37 PM
61	24/Jan/14	Innisvale	0.21	97.5	11:10:38 AM
61	24/Jan/14	Plain View	0.21	104.8	11:10:38 AM
61	24/Jan/14	Illili	0.16	97.5	11:10:38 AM
61	24/Jan/14	Ivanhoe	0.24	98.5	11:10:38 AM
62	21/Feb/14	Innisvale	0.24	105.5	12:40:37 PM
62	21/Feb/14	Plain View	0.18	112.2	12:40:37 PM
62	21/Feb/14	Illili	0.16	111.1	12:40:37 PM
62	21/Feb/14	Ivanhoe	0.31	106.9	12:40:37 PM
63	26/Feb/14	Innisvale	0.36	126.1	12:57:30 PM
63	26/Feb/14	Plain View	0.25	122.8	12:57:30 PM
63	26/Feb/14	Illili	0.14	112.1	12:57:30 PM
63	26/Feb/14	Ivanhoe	0.35	118.0	12:57:30 PM
64	17/Mar/14	Innisvale	0.14	100.8	11:57:44 AM
64	17/Mar/14	Plain View	0.17	109.4	11:57:44 AM
64	17/Mar/14	Illili	0.09	101.5	11:57:44 AM
64	17/Mar/14	Ivanhoe	0.14	98.0	11:57:44 AM

* Orica believes the monitor was triggered by something other than the blast. This assumption is based on the high overpressure and very low ground pressure

DNT = Did Not Trigger