

Duralie Coal CCC Meeting

Presentation -
Company Report &
Overview of Activities

November 2015

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Environment & Community Coordinator



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1. Progress at the Mine

Mining 3rd Quarter 2015

- Waste BCM 2,429,214 BCM
- Coal tonnes 355,118 tonnes
- Total BCM 2,685,503 BCM
- Transition to owner-operator completed

*Mining in Clareval pit only

2. Environmental Projects/Activities

Management Area	Project	Status
Reporting	<ul style="list-style-type: none"> Annual Review 2015 EPL 11701 Annual Return Giant Barred Frog Management Plan Annual Report 2015 2014 Independent Environmental Audit Report NPI & NGRS 	<ul style="list-style-type: none"> DCM 2015 Annual Review completed and submitted in October 2015. Copies provided to CCC and on Duralie Coal website. EPL 11701 Annual Return completed and submitted to EPA in November. Completed and submitted to Commonwealth Department of the Environment (DotE). IEA Report 2014 revised again with DP&E and awaiting acceptance. Annual NPI and NGER reports have been completed and submitted.
Regulator	<ul style="list-style-type: none"> Site Visits 	<ul style="list-style-type: none"> DP&E site visit during September 2015. EPA site visit during September 2015.
Environmental Management Plans	<ul style="list-style-type: none"> Review following approval of Project Modification 	<ul style="list-style-type: none"> Submission of the Water MP, Rehabilitation MP, Noise MP, Biodiversity MP and Giant Barred Frog MP are planned for October 2015. Plans are placed on the Duralie Coal Mine following approval by DP&E.
Air Quality	<ul style="list-style-type: none"> EPL Pollution Reduction Programs Real-time dust management 	<ul style="list-style-type: none"> Environmental Protection Licence Pollution Reduction Program - Wind Erosion of Exposed Land Assessment completed and submitted to EPA in August 2015 No verified alarms received during the quarter.
Biodiversity	<ul style="list-style-type: none"> Annual Biodiversity Report Year 3 offset area deliverables 	<ul style="list-style-type: none"> 2015 Annual Biodiversity Report completed, a summary is included in the Annual Review. Works continuing on Year 3 deliverables. New works since last CCC include: <ul style="list-style-type: none"> Nest box monitoring ongoing; Plans continued for re-vegetation trials in select areas, works to occur during Spring 2015. Site inspections have been undertaken and works commenced.
Blast	<ul style="list-style-type: none"> Routine blasting 	<ul style="list-style-type: none"> No exceedances of licence criteria during the quarter. Total remains below 5% for the reporting period (commenced 4-Sep-15).
Bushfire Management	<ul style="list-style-type: none"> Bushfire Management 	<ul style="list-style-type: none"> DCPL has developed a hazard reduction burn plan with assistance from the RFS for areas around ML's and the biodiversity offset. Controlled burn dates to be confirmed but likely during October 2015.

2. Environmental Projects/Activities – cont.

Management Area	Project	Status
Noise	<ul style="list-style-type: none"> Routine Monitoring Real-Time Noise Management 	<ul style="list-style-type: none"> Routine quarterly monitoring of operations and train noise completed in October 2015. No non-compliances. Reports available on the Duralie Coal website. Next quarterly monitoring scheduled in January 2016. Real-time noise monitoring profiles continue to be monitored and generally indicate no exceedence of the performance criteria due to mining operations. Several noise alarms were received and reviewed by operations. On most occasions no operations were occurring or the cause of the alarm was wind or rain.
Surface Water	<ul style="list-style-type: none"> Routine monitoring Eco-toxicity monitoring Macro-invertebrate Monitoring 	<ul style="list-style-type: none"> Several rainfall events occurred during the quarter and all monitoring was completed. Ecotoxicity monitoring undertaken in July 2015. Results are now under review to determine requirements for 2016 program. Biannual macro-invertebrate sampling completed across both sites.
Groundwater	<ul style="list-style-type: none"> Alluvial Aquifers Investigation 	<ul style="list-style-type: none"> Investigation of alluvial aquifer interface has been completed and a monitoring program design has been included in the revised Groundwater Management Plan.
Giant Barred Frog	<ul style="list-style-type: none"> 2014/15 survey 	<ul style="list-style-type: none"> 2014/15 Giant Barred Frog monitoring report completed and submitted. A summary is included in the Annual Review.
Rehabilitation	<ul style="list-style-type: none"> General Annual monitoring Runoff Water Quality 	<ul style="list-style-type: none"> Preparations for rehabilitation of approximately 5ha on the southern waste emplacement and 5ha on the northern side of the power-line corridor. Currently reviewing the Landscape Function rehabilitation monitoring for 2015. Repair works planned for existing sections of rehabilitation from actions out of LFA. Work has continued on reviewing the runoff water quality from rehabilitated areas in preparation for excising of waters.
Flora	<ul style="list-style-type: none"> Weeds Program 	<ul style="list-style-type: none"> Reviewing proposal received from DPI to trial GPG bio-control on Yancoal land.
Heritage	<ul style="list-style-type: none"> Weismantel Inn 	<ul style="list-style-type: none"> Building inspection of Weismantel Inn completed in August 2015.
Community	<ul style="list-style-type: none"> Community Support Program Meetings 	<ul style="list-style-type: none"> Community support payments made including visits to community groups. Review of Community Support Program to be undertaken Attendance at Advance Gloucester meeting planned.

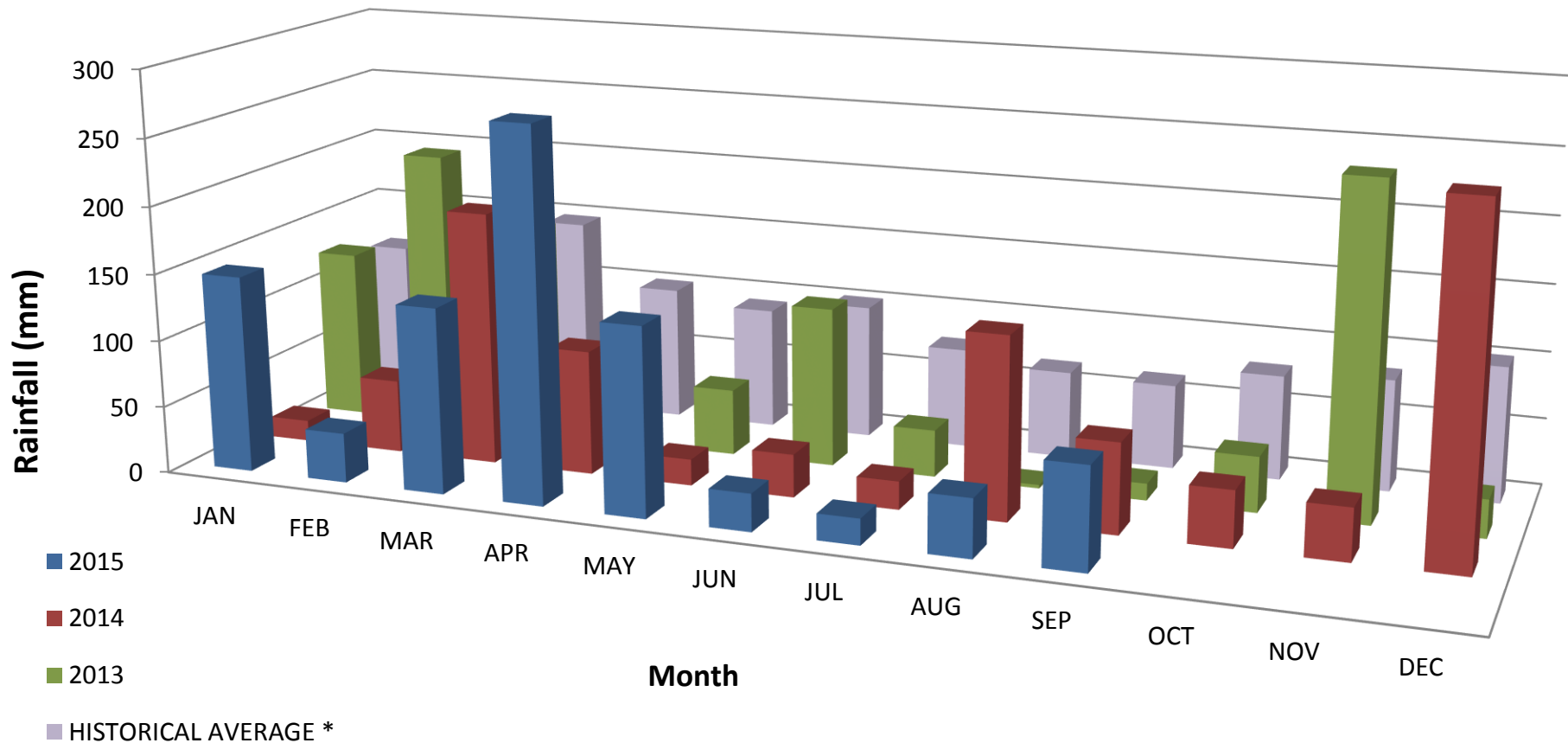
3. Environmental Monitoring Performance

1. Rainfall
2. Surface Water
 - a) Total Suspended Solids
 - b) pH
 - c) Electrical Conductivity
3. Air Quality
 - a) Dust Deposition
 - b) High Volume Air Sampler
 - c) High Volume Air Sampler-Rolling Average
4. Blasting



Rainfall

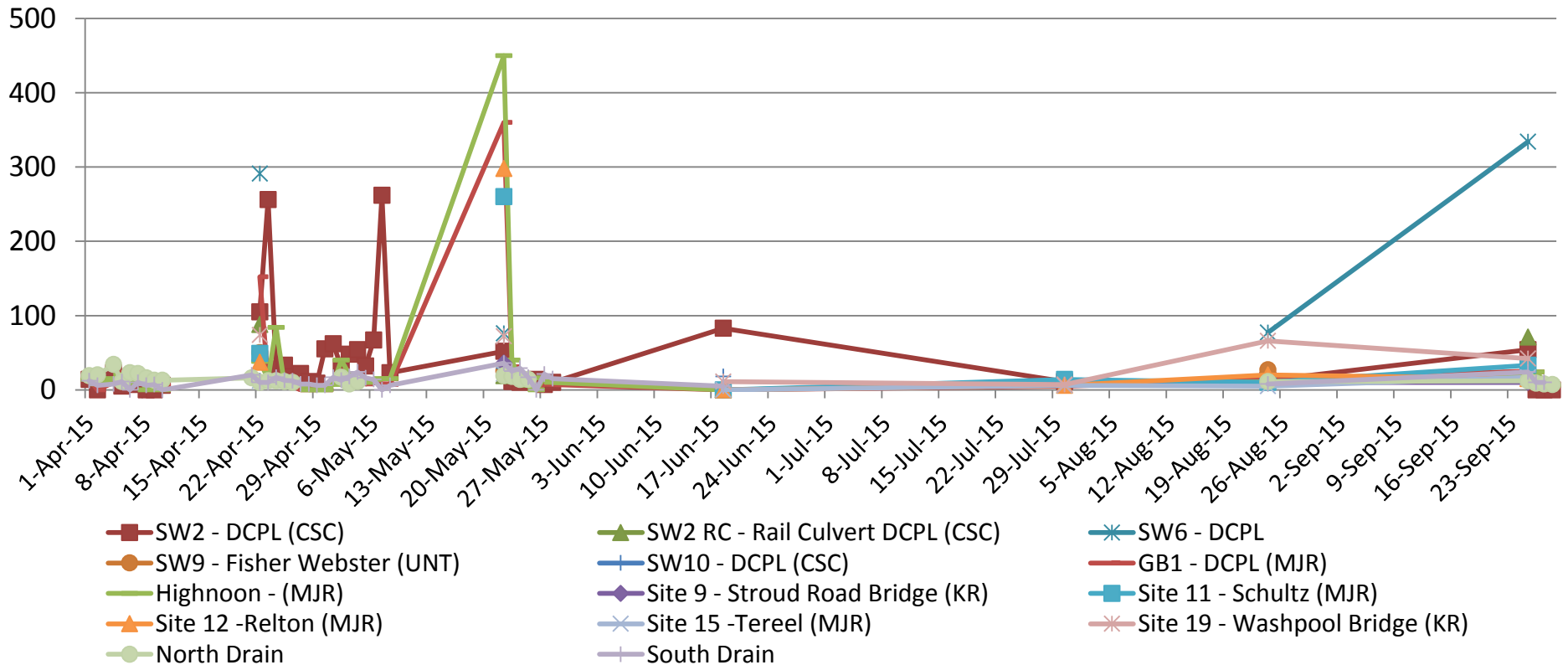
Duralie Mine Site - Monthly Rainfall



- Well above average rainfall in April and May 2015.
- Below average rainfall During Winter.

Surface Water – Total Suspended Solids

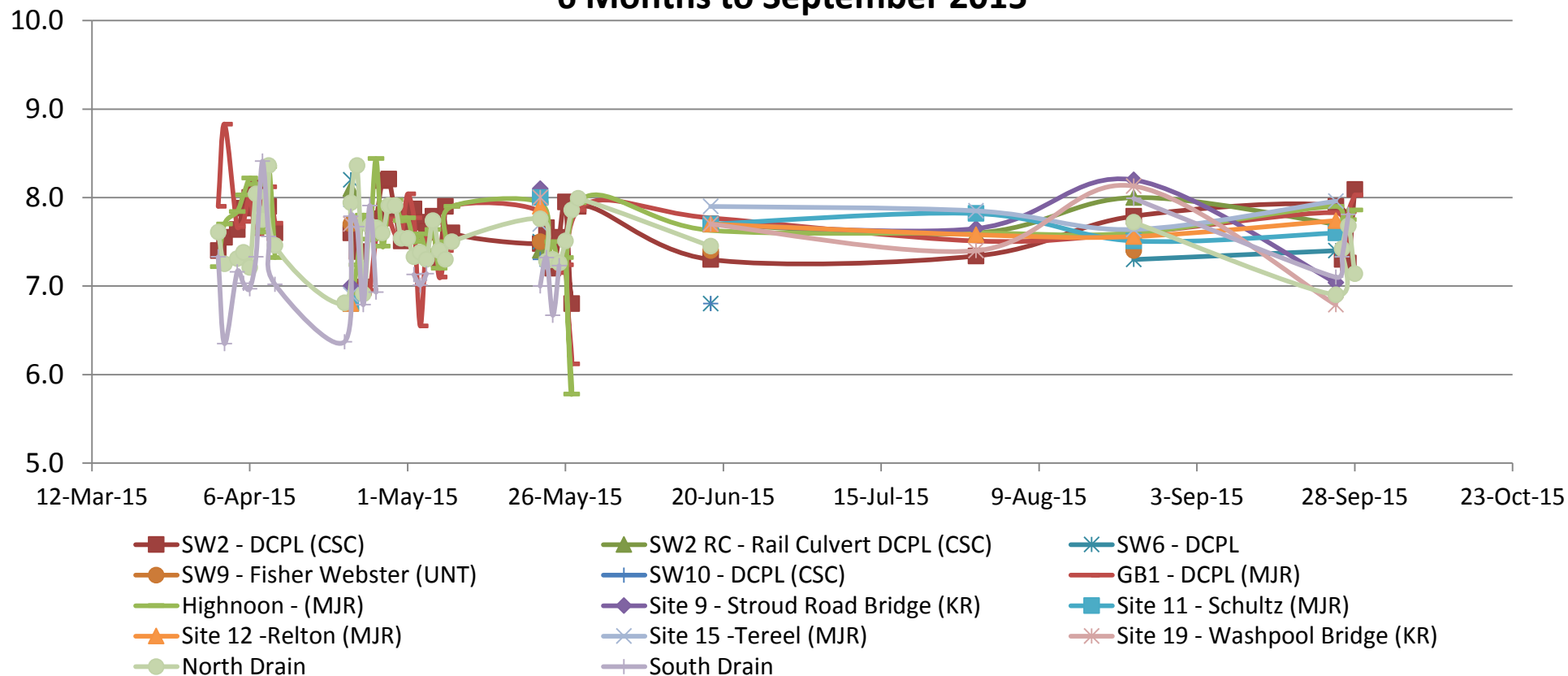
**Duralie Surface Water Monitoring - TSS (mg/L)
6 Months to September 2015**



- All sites returned generally low TSS. Elevated results recorded on 22-May-15 both upstream and downstream on MJR following heavy rainfall. SW6 on 25-September under low flow.
- Gaps indicate no flow. All sites generally within DEP water quality performance indicators

Surface Water - pH

Duralie Surface Water Monitoring - pH 6 Months to September 2015

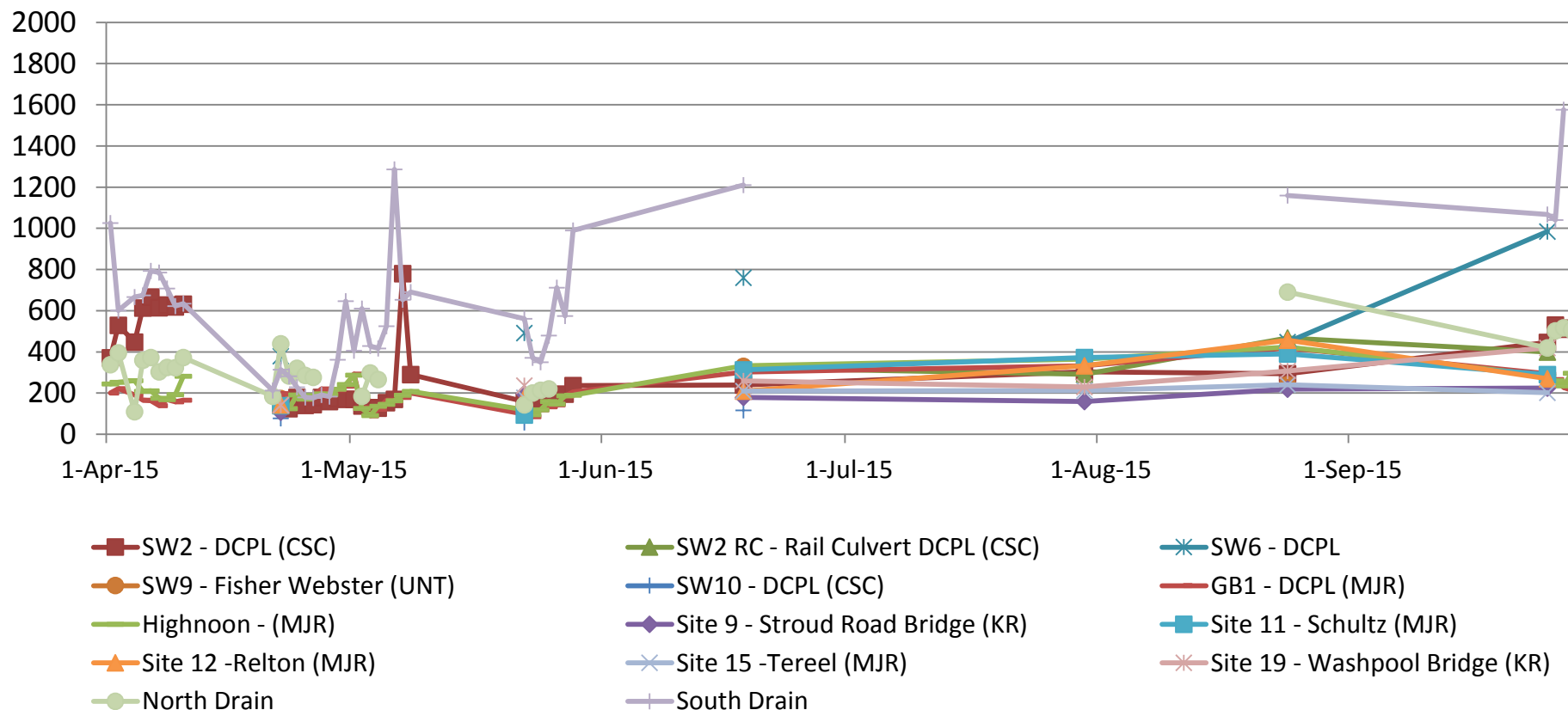


- All sites generally within DEP water quality performance indicators. No obvious trending towards performance indicators.
- Two anomalous readings at Highnoon and GB1 on 27-May-2015 possibly due to incorrect probe calibration.
- Gaps indicate no flow



Surface Water – Electrical Conductivity

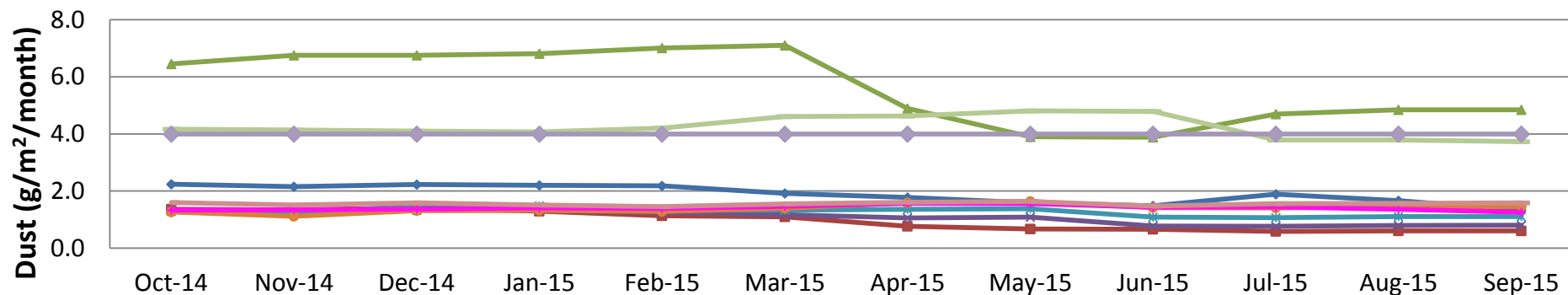
**Duralie Surface Water Monitoring - EC ($\mu\text{S}/\text{cm}$)
6 Months to September 2015**



- Gaps indicate no flow. All sites generally within DEP water quality performance indicators.
- Highest EC levels recorded in the South Drain as the flow receded. When EC level is above 1326 $\mu\text{S}/\text{cm}$ in the South Drain flow is diverted to the Main Water Dam.

Air Quality – Dust Deposition

Duralie Dust Deposition - Annual Rolling Average 12 Months to September 2015



	D3	D4	D5	D7	D8	D9	D10	D12	D13	DP&E limit
Oct-14	D13 – 5.9 - Very Heavy 40% minerals 10% Vegetation 10% Insects 40% Other									
Nov-14	D5 – 5.6 - 50% minerals, 0% coal, 10% veg, 20% insects, 20% other contamination									
Dec-14	D8 – 5.5 -Very heavy. 20% Minerals. 0% Coal. 10% Vegetation. 0% Insects. 70% Contamination. D9 -4.2 - Heavy - 40% Minerals, 0% Coal, 20% Vegetation, 10% Insects, 30% Contamination.									
Feb-15	D5- Heavy - 50% Dirt, 0% Coal, 0% Vegetation, 10% Insects, 40% Polysaccharide slime									
Mar-15	D13 - 20% Dirt 0% Coal 10% Vegetation, 30% Insects, 40% Polysaccharide slime.									
Jun-15	D5 - Heavy 40% Dirt, 0% Coal, 10% Vegetation, 10% Insects, 40% Polysaccharide Slime									
Jul-15	D3 Very heavy - 20% Dirt, 0% Coal, 10% Vegetation, 10% Insects, 60% Polysaccharide Slime. D5 -Very heavy - 40% Dirt, 0% Coal, 0% Vegetation, 0% Insects, 60% Polysaccharide Slime. D13-Very heavy - 30% Dirt, 0% Coal, 0% Vegetation, 30% Insects, 40% Polysaccharide Slime.									

Guide to Descriptions used by Laboratory

Coal: Black sharp angled grains with glossy conchoidal fractures or dull with cellular features.

Dirt/Minerals: Subhedral to euhedral crystalline grains including fine sand, clay and other fine mineral particulates.

Insects: Whole insects such as spiders, ants, moths or outer parts of insects including wings, legs and exoskeletons.

Vegetation: Plant debris and algae including trichomes, decomposed organic matter and charred particulates showing characteristic cellular plant structures.

Polysaccharide Slime: Slimy gelatinous material including decomposed soft body parts of insects and vegetation.

Copper Sludge: Blue-green subhedral to euhedral crystalline salts, commonly precipitated from the copper sulphate algacide solution.

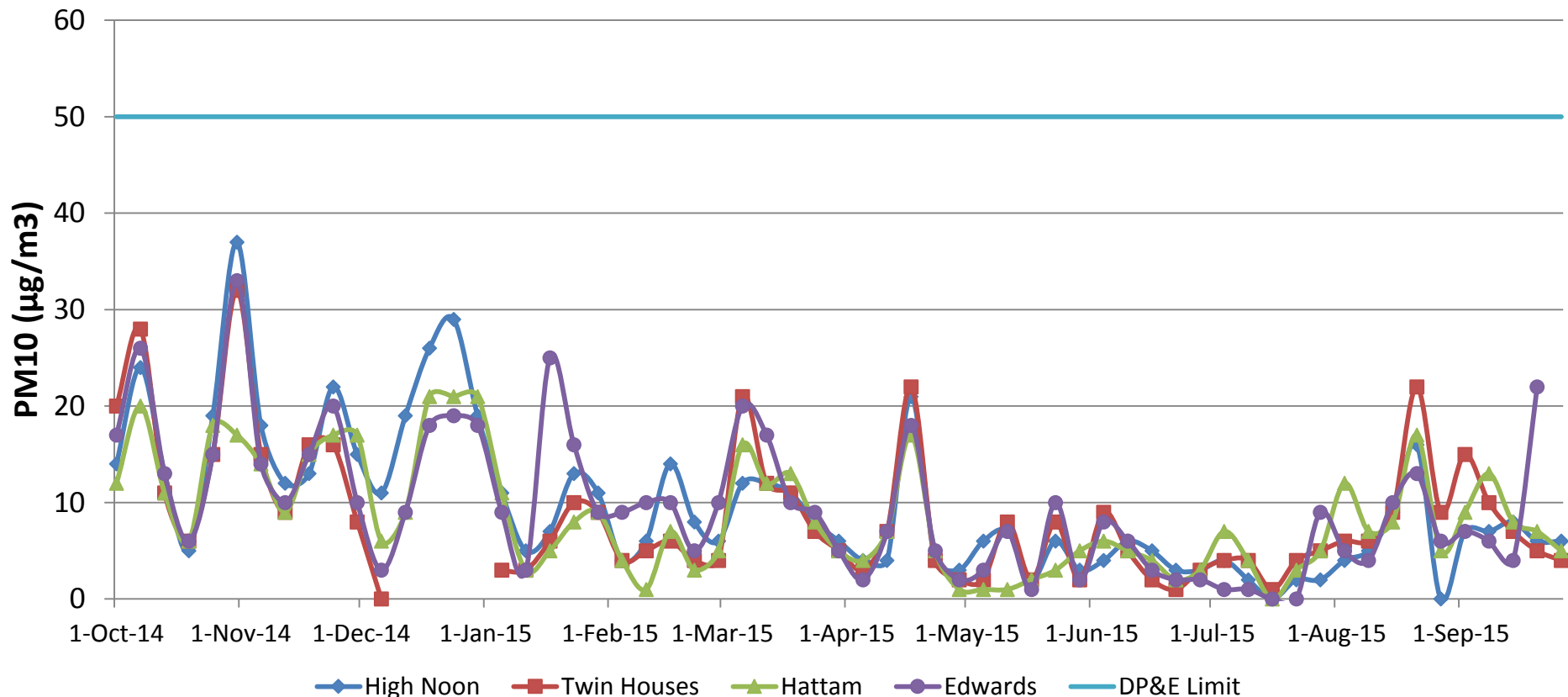
Contamination: Gelatinous material such as bird droppings

- Significant increase in D5 and D13 due to contamination of multiple samples from bird droppings.
- Due to frequent contamination of dust gauges the HVAS results should also be used when interpreting results.



Air Quality – High Volume Air Sampler

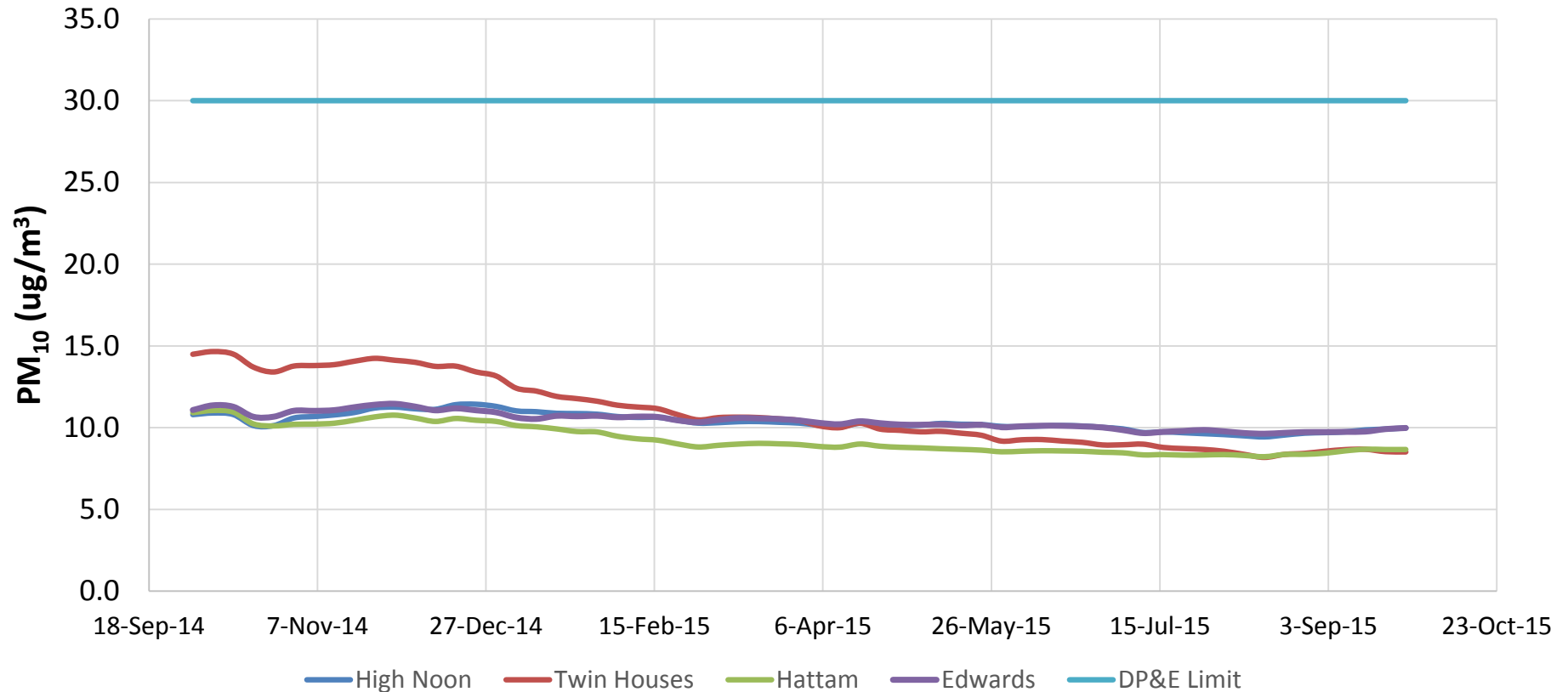
Duralie HVAS Monitoring (PM10) 12 Months to September 2015



- All sites below DP&E limit. Typically low results during winter and higher during spring.
- HVAS results provide more reliable data compared to dust deposition results and should be referred to when interpreting dust emissions.

Air Quality – HVAS Rolling Average

Duralie HVAS Monitoring (PM₁₀)
Annual Rolling Average - 12 Months to September 2015



• All site averages well below DP&E Limit

Blasting

Date	Time	Schultz (AB1)		Fisher-Webster (AAAB3)		Moylan (AAAB4)		Weismantel Inn		Overpressure Site Exceedance ¹	Overpressure "Cumulative Exceedance" ¹	Ground Vibration Site Exceedance ¹	Ground Vibration "Cumulative Exceedance" ¹	Monitored Blasts ¹	Fume Rating
		mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s		%		%			
17-Jul-15	12:37:00	<0.22	<110.0	0.43	89.0	0.48	101	2.01		1.6%	1	0.0%	0	64	Nil
24-Jul-15	16:43:00	0.37	99.8	0.41	89.0	0.7	106.4	3.4		1.5%	1	0.0%	0	65	1A
29-Jul-15	12:38:00	0.29	92.2	0.35	89.0	0.46	98.3	1.2		1.5%	1	0.0%	0	66	Nil
03-Aug-15	12:39:00	0.33	92.2	0.35	89.0	0.51	102.6	0.99		1.5%	1	0.0%	0	67	Nil
05-Aug-15	12:40:00	<0.22	<110.0	0.41	89.0	0.58	99.8	1.95		1.5%	1	0.0%	0	68	Nil
12-Aug-15	12:41:00	0.26	102.8	0.43	89.0	0.36	103.5	1.74		1.4%	1	0.0%	0	69	1A
14-Aug-15	12:44:00	<0.22	<110.0	<0.22	<110.0	0.23	101.6	0.46		1.4%	1	0.0%	0	70	Nil
19-Aug-15	12:45:00	0.33	90.2	0.27	89.0	1.01	109.1	5.73		1.4%	1	0.0%	0	71	Nil
27-Aug-15	12:43:00	<0.22	<110.0	0.49	89.0	0.5	105.8	1.25		1.4%	1	0.0%	0	72	1B
04-Sep-15	12:43:00	<0.22	<110.0	0.49	89.0	0.61	101.6	2.17		0.0%	0	0.0%	0	1	1A
10-Sep-15	12:40:00	<0.22	<110.0	0.49	89.0	2.08	106.1	3.4		0.0%	0	0.0%	0	2	1A
16-Sep-15	12:39:00	<0.22	<110.0	0.41	89	0.66	96.6	2.46		0.0%	0	0.0%	0	3	Nil
22-Sep-15	12:36	<0.22	<110.0	<0.22	<110.0	0.27	98.3	0.82		0.0%	0	0.0%	0	4	Nil
25-Sep-15	12:35:00	0.30	92.2	0.62	89	0.45	89.5	2.63		0.0%	0	0.0%	0	5	1A
02-Oct-15	13:07:00	0.31	90.2	0.32	89	0.38	102.1	1.05		0.0%	0	0.0%	0	6	2B
12-Oct-15	16:45:00	0.27	90.2	0.35	89	0.41	99.8	0.94		0.0%	0	0.0%	0	7	Nil

- Note: Blast Compliance: No more than 5% of total blasts for annual monitoring period to exceed an overpressure of 115 dBL or ground vibration of 5 mm/s. No blast is to exceed an overpressure of 120 dBL or ground vibration of 10 mm/s.
- During 2014/15 reporting period one blast exceed 115dB(L)
- Reporting period re-started 04-Sep-2015.

4. Community Complaints

Duralie Complaint Summary

Period: 1/07/2015 - 30/09/2015

Total No. of Complaints: 6 (5 noise, 1 blast, 0 other)

Total No. of Complainants: 3

Date/Time of Complaint	Complainant Location	Method of Complaint	Nature of Complaint	Investigation/Outcome
10/07/2015 16:45hrs	Approx. 2.6km SW of blast	Direct to mobile	Blast and Vibration	Complaint received direct to DCPL mobile advising the complainant had just felt the blast. DCPL representative returned call and discussed the blast location and the blast results recorded at the monitor located at the residence, 1.09mm/s ground vibration, 104.0dB(L) overpressure. The complainant stated new chouse damage had been observed. DCPL representative advised a building inspection could be undertaken. The complainant accepted and DCPL will have the inspection arranged. The report will be provided to the complainant.
23/07/2015 12:00hrs	Approx. 2.6km SW of blast	Direct to phone	Mine Noise	DCPL called complainant to make arrangements for a building inspection following a previous complaint. The complainant advised they wanted to record a noise complaint and stated there had been general noise non-stop for the last few days. No other specifics were advised, just general noise from the mine. DCPL advised operations have been generally unchanged and in the same areas in recent times. Noise monitoring results haven't indicated any elevated noise levels. The complainant didn't request any further response however DCPL advised they would follow up the matter.
29/07/2015 9:42hrs	4.5km NE of noise source	Community hotline	Evaporative fan noise	DCPL contacted the complainant following receipt of complaint at 9:42am. The complainant advised the evaporative fan noise had been particularly bad this morning (29/7) and over the past few days and the noise was clearly audible inside the complainants house. At the time of the call the noise levels had eased so no operational change was made. DCPL representative advised since previous complaints the waste dump evaporators had been relocated to the west and new bunding constructed. The operational hours had also been reduced during the winter months. DCPL will continue to monitor the performance of the evaporative sprays and make changes as required. DCPL advised the complaint they would continue to monitor his situation if he felt the noise levels were unacceptable.
5/08/2015 12:00hrs	Approx. 5km SE of mine	Email	Evaporative fan noise	Email received from complainant regarding noise from evaporative sprays two weeks prior to the date of writing (25th and 26th July). Review of evaporative fan operational times noted were started at approximately 8:30am and turned off 9:30pm, with operational times on Sunday 26 July from 8:30am to 9:00pm. This is part of an ongoing investigation including an email to the landholder, subsequent correspondence with manufacturer and site visit to assess fans, and assessment by an acoustics consultant on potential relocation options for two units near the Main Dam.
5/08/2015 12:00hrs	Approx. 5km SE of mine	Email	Evaporative fan noise	Email received from complainant regarding noise from evaporative sprays the weekend prior to the date of complaint (1st and 2nd of August 2015). Review of evaporative fan operational times noted were started at approximately 6:00am and turned off 12:30am, with operational times on Sunday 26 July from 7:00am to 12:3am. This is part of an ongoing investigation, refer to comments above.
7/08//2015 9:43hrs	4.5km NE of noise source	Community hotline	Evaporative fan noise	Contacted complainant to discuss the complaint received. A visit was offered to the resident by the Operations Manager and E&C Superintendent which was accepted. Yancoal representatives visited the landholders property and discussion held including operation of the units and current operations of the pit. Outlined existing and planned controls.

Duralie Water Quality trigger levels

- Trigger levels developed for sampling sites on MJR, CSC and Unnamed Tributary.
- 80th percentile trigger levels for pH, EC and TSS developed using methodology in ANZECC/ARMCANZ (2000) are based on the site specific baseline/pre-irrigation data.

Monitoring Site (Figure 9b)		Period of Record	Proposed Water Quality Trigger Level (80 th %ile)		
			pH (20 th %ile)	pH (80 th %ile)	EC (µS/cm)
MJR	Site 11	7/95 – 28/12/11	7.1	7.6	370
CSC	SW2 (RC)	22/3/04 – 28/12/11	7.1	7.9	544
UT	SW9	7/95 – 28/12/11	6.4	7.1	461

Monitoring Site (Figure 9b)		Period of Record	Proposed Water Quality Trigger Level (80 th %ile)
			Total Suspended Solids (mg/L) (80 th %ile)
MJR	Site 11	7/95 – 28/12/11	15
CSC	SW2 (RC)	22/3/04 – 28/12/11	80
UT	SW9	7/95 – 28/12/11	57

- Assessment of the monitoring data against the water quality triggers considers external environmental factors, upstream and downstream observations and long-term trending.
- Further detail refer SWMP Attachment B.