INFORMATION BULLETIN

Issue No. 47
February 2019

MINDARIE REGIONAL COUNCIL

G HOPPE
CEO

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RRF UPDATE REPORT

RESOURCE RECOVERY FACILITY UPDATE REPORT	
File No:	**WST/13-07**
Attachment/s:	**Nil**
Date:	**7 March 2019**
Prepared by:	**Director Corporate Services**

This report presents a summary of activities that have taken place in the reporting period covering 1 January 2019 to 28 February 2019.

OPERATIONAL MATTERS

The RRF closed on New Year's Day as planned.

On 21st January 2019 the City of Joondalup commenced the roll out of their 3 bin system. 55,400 140L red top bins will be distributed over a six-week period, along with the conversion of their existing household residues bin to a bin solely for greens waste. It is estimated that this new bin system will divert 19,000 tonnes of garden waste away from the RRF annually. Input tonnage quantities, effects on the RRF process, waste diversion and quality of final product will be monitored closely over the coming months.

OPERATIONAL INFORMATION

Waste Delivery

Waste Delivery Summary for Reporting Period

MONTH	SCHEDULED TONNES	DELIVERED TONNES	DIFFERENCE TONNES
January 2019	9,200	9,215	15
February 2019	8,000	8,004	4

For the 10th Contract Year, for the period to 28 February 2019, the RRF was 4,571 tonnes ahead of schedule as a result of additional throughput at the plant.

The RRF is operating as anticipated in the RRFA, with average availability of 107.25% over the past 12 months.

On a monthly basis, Additional Tonnes (those tonnes greater than the monthly scheduled tonnes) only incur the Variable Operating Cost charge, but not the Capital Cost or Fixed Operating Cost charges.

Unavailable Tonnes (those tonnes less than the monthly scheduled tonnes) are not paid for unless:

- Within the Contract Year there is a positive balance of Additional Tonnes, these Additional Tonnes can be off-set against the Unavailable Tonnes. In this case, the off-set Additional Tonnes incur the full gate fee cost less the Variable Operating Cost (which has already been paid on the Additional Tonnes); or

- If the RRF Availability for a month is less than 92% of the monthly Scheduled Tonnes and there are no accumulated Additional Tonnes remaining to be off-set, then the MRC is required to pay the Capital Cost on all Unavailable Tonnes up to 92% of the monthly Scheduled Tonnes.

At the end of the Contract Year, if 100,000 tonnes of waste have been delivered to the RRF then the above “overs and unders” system should balance out.

The exception to the above is the tonnes not processed during the composter replacement.

The MRC entered into a standstill deed with BioVision which deals with the operations of the plant during this period. The tonnes scheduled for processing but not processed during the shutdown have been recorded as Accrued Tonnes. The MRC has already paid the capital cost component of the RRF Gate Fee in relation to these tonnes and so the Accrued Tonnes will be processed for the MRC at the end of the RRFA contract with the MRC only have to pay the fixed and variable components of the RRF Gate Fee.

Waste Diversion

Waste Diversion for the contract year to date (February 2019) was 53.6% against a Waste Diversion Target of 51.3%.

Community Complaints

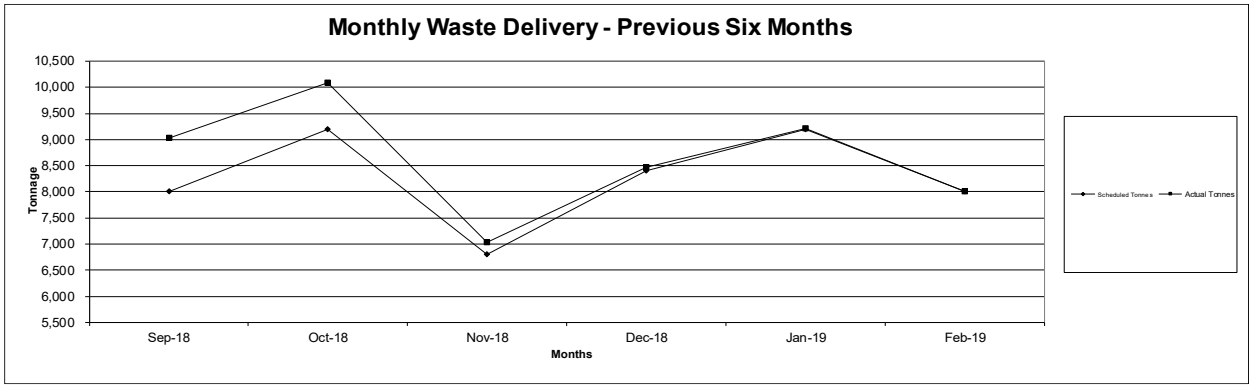
BioVision is continuing engagement with the selected key stakeholders, in particular the Banksia Grove development and the Wanneroo Golf Course.

COMMUNITY COMPLAINTS SUMMARY FOR THE REPORTING PERIOD

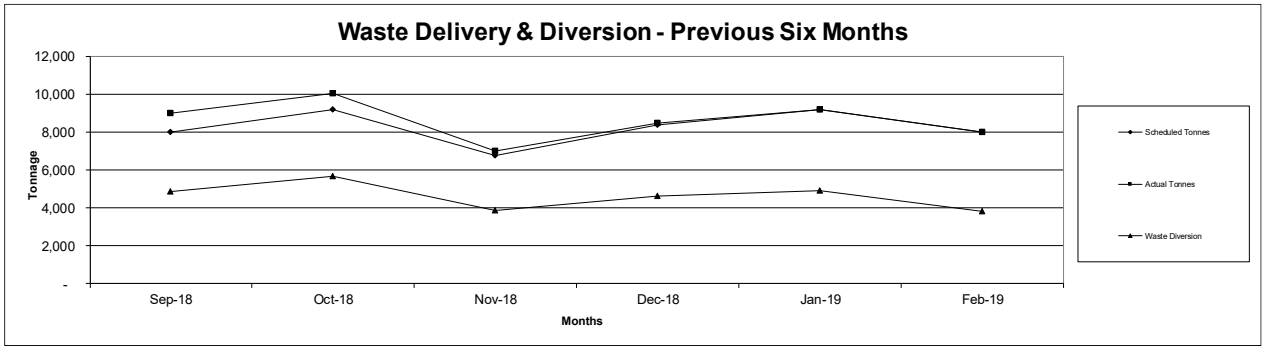
Date	Complaint	From	Outcome
Jan 19	None	N/A	N/A
Feb 19	None	N/A	N/A

The graphs below provide data up to ***28 February 2019.***

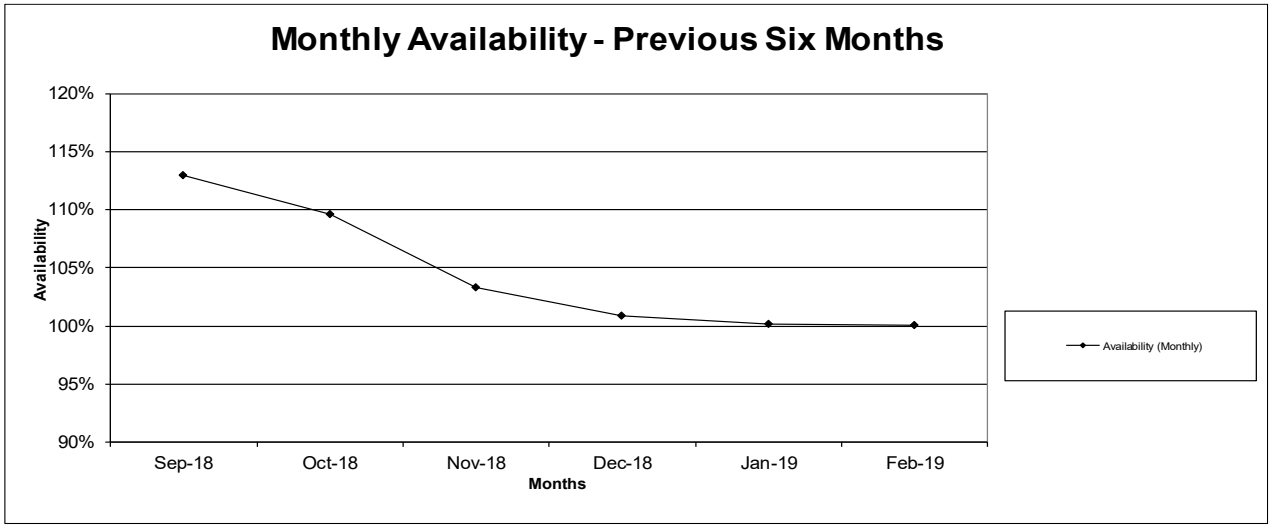
Graph No. 1 – Monthly Waste Delivery – Previous Six Months



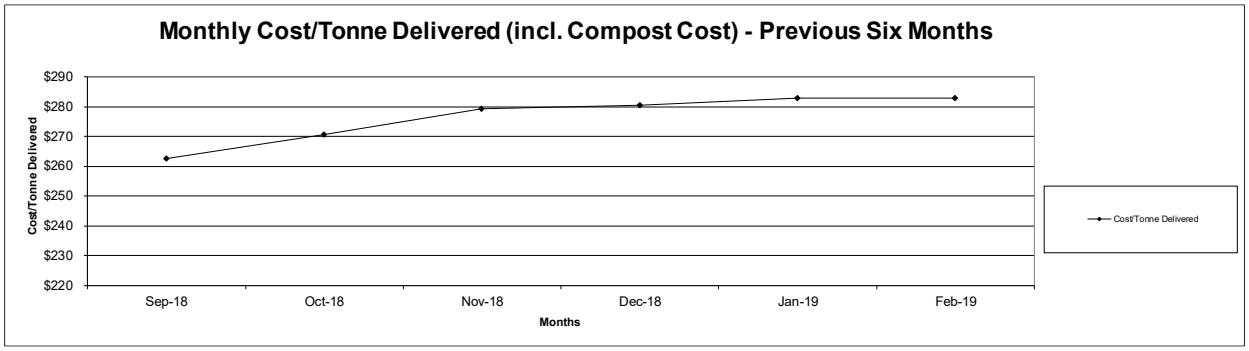
Graph No. 2 – Waste Delivery & Diversion – Previous Six Months



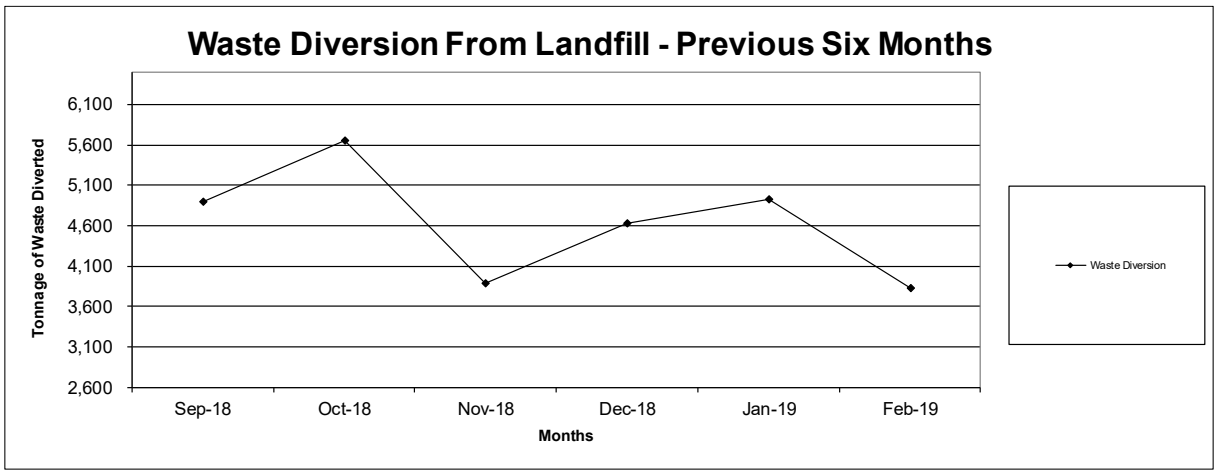
Graph No. 3 – Monthly Availability – Previous Six Months



Graph No. 4 – Monthly Cost/tonne Delivered (incl. Compost Cost) – Previous Six Months



Graph No. 5 – Waste Diversion from Landfill – Previous Six Months



Performance Indicators

KPI's as per the RRFA are as follows:

Table No. 1 – KPI Summary (to 28 February 2019)

KPI	Target	Previous six months	Jan	Feb
Availability*	95%	104.5%	100%	100%
Environmental Standard - Number of Breaches	0	0	0	0
Waste Diversion	51.3%	53.6%	53.5%	47.8%
Quality of Compost - Number of Breaches**	0	0	0	0
Quantity of Recyclable Packaging ***	1.2%	1.7%	1.7%	1.6%
Health and Safety - Number of LTI's	0	0	0	0
Community Acceptance - Number of Complaints ****	0	0	0	0
Project Culture - PAG Chairperson Score	100%	100%	100%	100%

* The Target Availability during the Initial Operating Period is to achieve an Availability of greater than 95% over a six-month period.

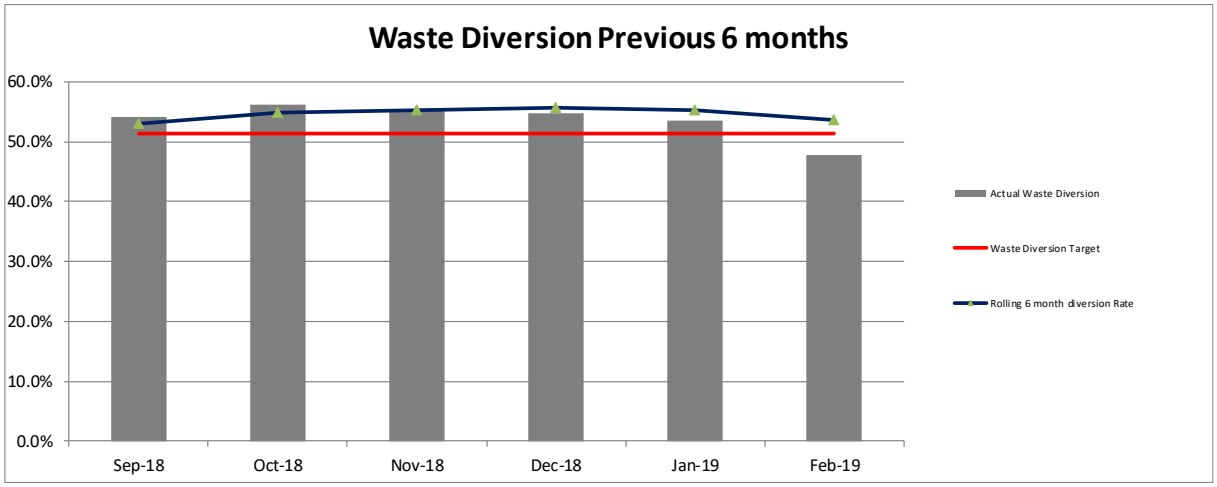
** The compost standard within the RRFA was amended by the revisions to the RRFA approved by Council at its meeting of 6 December 2012 and signed under common seal in May 2013.

*** Financial impacts of the KPI were removed by the revisions to the RRFA approved by Council at its meeting of 6 December 2012 and signed under common seal in May 2013. Ferrous diversion has recommenced.

**** Numerous complaints relating to a single event are treated as a single complaint. Biofilter odour is not registered as a complaint as this is seen as a normal operating odour condition.

Waste Diversion

The average waste diversion for the past six months (September 2018 to February 2019) has been 53.6%.



Project Advisory Group (PAG)

MRC Representatives:
Cr Frank Cvitan
Gunther Hoppe (CEO)
Andrea Slater (DCS)
Cr Russel Driver (alternative)

BioVision Representatives:
Craig Barker
Daniel van Veen
Frank Sciarrone
Alan Turner
Emmanuel Vivant
Ian Hunter (alternative)

Chairperson:
Ian Watkins

The PAG last met on 28 February 2019.

Items dealt with by the group included:

- Maintenance deed update
- BioVision Monthly Report/Update
- FOGO Trial
- Impact - 3 bin system

Copies of the meeting minutes are distributed to the Strategic Working Group members and all MRC Councillors following the meetings.

FINANCIAL IMPLICATIONS

Operational Expenditure

The Project Operational Summary below sets out the 2018/19 facility operating budget against which operational costs are tracked throughout the year. The variance over budget is as a result of the additional tonnes put through the facility during the year.

Project Operational Costs Summary for 2018/19 Financial Year – for the period ended 28 February 2019

OPERATING STATEMENT
For the month ended 28 February 2019

Description	Adopted Budget	Revised Budget	YTD Budget	YTD Actual	$ Remaining Bal of Budget	% Balance	Note
Resource Recovery Facility							
Operating Expenditure							
Employee Costs							
Salaries	-	-	-	-	-		
Allowances	-	-	-	-	-		
Workers Compensation Premium	-	-	-	-	-		
	-	-	-	-	-		
Consultants and Contract Labour							
Consultancy	-	1,340	1,340	4,370	(3,030)	(226.12%)	
Contract Labour External	-	-	-	-	-		
	-	1,340	1,340	4,370	(3,030)	(226.12%)	
Office Expenses							
Cleaning of Buildings							
General cleaning (Enviro Care)	10,600	10,600	7,064	7,400	3,200	30.19%	
Window cleaning	2,000	2,000	816	-	2,000	100.00%	
	12,600	12,600	7,880	7,400	5,200	41.27%	
Information System Expenses							
Computer System Maintenance							
ICT contractors costs	2,000	2,000	-	-	2,000	100.00%	
Newcastle Weighing Services-Gen Maintenance	11,500	11,500	7,664	6,950	4,550	39.57%	
Vertical Telecom P/L-Maint of Microwave Ant	6,000	6,000	4,000	3,481	2,519	41.99%	
	19,500	19,500	11,664	10,431	9,069	46.51%	
Building Maintenance							
Building Maintenance							
Airconditioning Maintenance	3,000	3,000	683	683	2,317	77.23%	
Community Education Centre	2,000	3,646	2,646	2,646	1,000	27.42%	
Weighbridge and Calibration	7,500	7,500	220	220	7,280	97.07%	
Building Security							
Security - Monitoring	-	-	-	82	(82)		
Security - Alarm maintenance	-	-	-	-	-		
Security - call out	-	-	-	-	-		
	12,500	14,146	3,549	3,631	10,515	74.33%	
RRF Operation Expenses							
Fencing and Gate Maintenance							
Fencing and Gate Maintenance	9,000	9,000	920	920	8,080	89.78%	
Repair of Boom Gate	-	-	-	-	-		
Road Maintenance	5,000	5,000	-	-	5,000	100.00%	
Bores and Pipework							
Bore maint/calibration/electronics	4,500	4,500	3,210	3,210	1,290	28.66%	
Groundwater sampling	2,500	3,801	3,801	3,801	-	0.00%	
Bacteria sampling	1,000	1,000	-	-	1,000	100.00%	
Vermin control	500	500	-	-	500	100.00%	
Spills/leaks/incident management	500	500	-	-	500	100.00%	
Vehicle Wash Facility Operations	-	-	-	-	-		
Landscaping and Gardens	6,000	6,000	1,050	1,050	4,950	82.50%	
Compost Disposal	433,500	433,500	302,647	302,647	130,853	30.19%	
Contractor's Fees	28,338,000	28,338,000	19,269,840	19,627,417	8,710,583	30.74%	
RRF Maintenance Funding	250,000	250,000	-	-	250,000	100.00%	
	29,050,500	29,051,801	19,581,468	19,939,044	9,112,757	31.37%	
Utilities							
Electricity	15,800	15,800	2,940	3,360	12,440	78.73%	
Rates	108,894	108,894	72,596	71,359	37,535	34.47%	
	124,694	124,694	75,536	74,719	49,975	40.08%	
Insurance							
Municipal Property Insurance	3,500	3,500	2,333	2,346	1,154	32.96%	
Public Liability Insurance	5,650	5,650	3,766	3,548	2,102	37.20%	
	9,150	9,150	6,099	5,894	3,256	35.58%	
Cost of Borrowings							
Interest on Loans							
Loan 10A	56,088	56,088	38,153	38,152	17,936	31.98%	
Loan Expenses	-	-	-	-	-		
	56,088	56,088	38,153	38,152	17,936	31.98%	
Amortisations							
Amortisation Pre-operating Costs	104,784	133,501	98,573	98,573	34,928	26.16%	
Amortisation Costs	358,007	362,051	242,715	266,684	95,367	26.34%	
	462,791	495,552	341,288	365,257	130,295	26.29%	
Depreciation							
Depreciation on Building	25,124	168,129	157,661	159,755	8,374	4.98%	
Depreciation on Infrastructure	26,697	186,257	171,727	174,633	11,624	6.24%	
	51,821	354,386	329,388	334,388	19,998	5.64%	
Total Operating Expenditure	29,799,644	30,139,257	20,396,365	20,783,286	9,344,347	31.00%	
Net Total	(29,799,644)	(30,139,257)	(20,396,365)	(20,783,286)	(9,344,347)	31.00%	

COMMUNICATIONS AND EDUCATION UPDATE REPORT

Communications and Education Report

January and February 2019

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1. Introduction

The Mindarie Regional Council's (MRC) Education Team's focus is on Winning Back Waste through community engagement within the region. The main objectives are to:

- act as an advocate for waste behaviour change at all levels,
- improve community awareness and understanding of waste issues,
- encourage a reduce, reuse, recycle and dispose wisely ethos and behaviours associated with this,
- encourage engagement on many levels to have waste dealt with as high on the waste hierarchy as is practicable,

This is largely done through the provision of:

- a Regional community engagement and waste education campaign, Face Your Waste
- the Earth Carer community outreach program,
- facility tours,
- visits to schools and community groups to deliver workshops and talks,
- displays within the community (including shopping centres, libraries, fairs and events),
- messaging through a broad range of communications and advertising channels, and
- special projects/programs to facilitate greater community participation in recycling and waste disposal initiatives.

The Team works closely with:

- the Member Councils through the region's Waste Education Strategic Steering Group (WESSG) to support the councils by assisting them in delivering their waste messages and in providing programs to enable improved recycling and waste disposal outcomes to the community, and,
- the State and National Waste Educator Groups (WMAA-WA WEWG / WENG and NWED) which include representatives from the other Regional Councils, Local Governments, WALGA, Waste Wise Schools, KABWA, Waste Authority and a variety of other members (government/community/business) interested in waste issues.

This report will look to summarise MRC's education activity for the period of January and February 2019.

2. Strategic Projects

2.1 Face Your Waste

Regional Education Campaign to engage with and improve the community's awareness of waste and waste issues and drive behavioural change.

April 2018 saw the Face Your Waste campaign launched. The central engagement piece was 20 clear bins to be deployed around the suburbs to get people to see their waste and to act as conversation starters…and that they did.

In support was a number of advertising channels - outdoor, print and digital media, to promote the campaign. This to engage and capture peoples interest then direct them to a dedicated Face Your Waste website, www.faceyourwaste.com.au, and social media platforms to gain further information, education and tips on how to change behaviour.

The clear bins were initially very much the face of the campaign; we knew we had something special with everyone getting very excited by them. The campaign exceeded expectations, gaining considerable local and worldwide attention.

The Campaign reached 2 million people with 300,000 impressions on Facebook alone in the first couple of months. Everyone wanted to talk about FYW, the clear bins especially. Engagement is what we wanted and that's what we achieved.

The clear bins though have also shown themselves to be significant drivers of good waste behaviours. Everywhere the bins have been located have seen people taking care and actively trying to sort waste into the right bin. Responses have also included people looking at their waste and making conscious decisions to purchase differently. Positive results for the campaign moving forward.

Face Your Waste won, Waste Innovation of the Year, at the **Infinity Awards**, the annual waste industry awards held by the Waste Authority

Face Your Waste also won 6 awards at the Perth Advertising and Design Awards, for the campaign concept, radio adverts and the clear bins as a promotional concept.

January/February

After a successful launch and 2018 Face Your Waste has made a positive start to 2019.

Following on from the deployment of the clear bins and the impactful 'Óne Family, One Year' graphic the next phase of the campaign saw **Famous Sharon – the Face of WA become the new Face of Waste.** This campaign has proved to be very popular with there being big increases seen in the following of Face Your Waste.

Images of Famous Sharon shown in shopping centre, on trains and in a number of print publications. Videos where Sharron give waste reduction tips have been screened into cinemas, over Facebook and with the full collection housed on the Face Your Waste website.

Shopping centres

Digital and static images of the FYW Famous Sharon advert where shown on display boards at the following shopping centres:

Dianella Plaza, Dog Swamp Shopping Centre, Floreat Forum Shopping Centre, Karrinyup Shopping Centre, Lakeside Joondalup, Ocean Keys Shopping Centre, Victoria Park Central, Warwick Grove, Watertown Brand Outlet and West Leederville Shopping Centre

Due to the popularity of these shopping centres potentially these adverts were viewed 10 million times. It is estimated that 22% of Perth's 22 – 64yo would have been exposed to these adverts.

Cinema

65,000 people have sat in the audience while FYW adverts were screened in the following cinemas:

Belmont, Raine Square, Leederville, Warwick, Innaloo, Currambine and Joondalup.

This form of advertising is considered very impactful as the audience is sitting in a darkened room with very few other distractions. This advert was shown to audiences watching a wide variety of movies but 50% shown before the popular movies including:

- Wreck it Ralph 2
- How to Train Your Dragon 2
- Bohemian Rhapsody
- Aquaman
- Grinch
- Fantastic Beasts – Crimes of Grindelwald

These adverts will be shown until the end of May.

Trains

February saw FYW adverts featuring Famous Sharon be installed on all lines across the TransPerth network but with 50% of the adverts on the Butler – Mandurah line.

Facebook

Apart from being a significant advertising medium, it is where a lot of the FYW engagement is occurring.

Over 1 million impressions of FYW Famous Sharon adverts were posted, returning nearly 40,000 clicks and a high 20% completion rate of those who watched the videos.

These posts have recorded a high level of engagement with increasing numbers of comments, reactions, likes and shares being made.

February was Face Your Wastes biggest month indicating that it is gaining significant following.

Website

Much of the advertising directs people to the website making this an important element of the campaign. Here there is video showing things people can do at all levels of the Waste Hierarchy, range of tips to help reduce waste and sign up to become bin ambassadors. Nearly 400 people have registered to become clear bin ambassadors.

The site is performing well with over 23, 000 users, 7,000 who joined in February.

Next

Moving forward the clear bins will continue to be deployed and Famous Sharron will be delivering messages. A new engagement piece will be launched to maintain the interest supported by high profile advertising. Research will be undertaken to measure the effectiveness of the campaign in delivering behaviour change.

3. Community Engagement

During the January/February period all of the Education team took leave at one time or another. As a result, while Face Your Waste was hard at work other parts of the MRC community engagement program were a bit quieter.

The team also participated in all MRC staff training workshops – Bullying and Harassment and Frontline customer service – along with assorted other additional training for individual staff members

A planning day was held for the entire education team including casual pool staff to ensure alignment with MRC culture and messaging plus to review the education program with the view of updating and improving the MRC offerings.

3.1 Tours

The tours of the MRC facilities (Tamala Park and Resource Recovery Facility) are run on request Monday to Saturday and are popular with people of all age groups and from all walks of life. The duration of each tour ranges from one to three hours depending on the requirement of the group attending.

During January and February only 2 tours took place with 10 people. One group from the Town of Victoria Park visited the RRF and the other group, new employees of the MRC, went to both Tamala Park and the RRF.

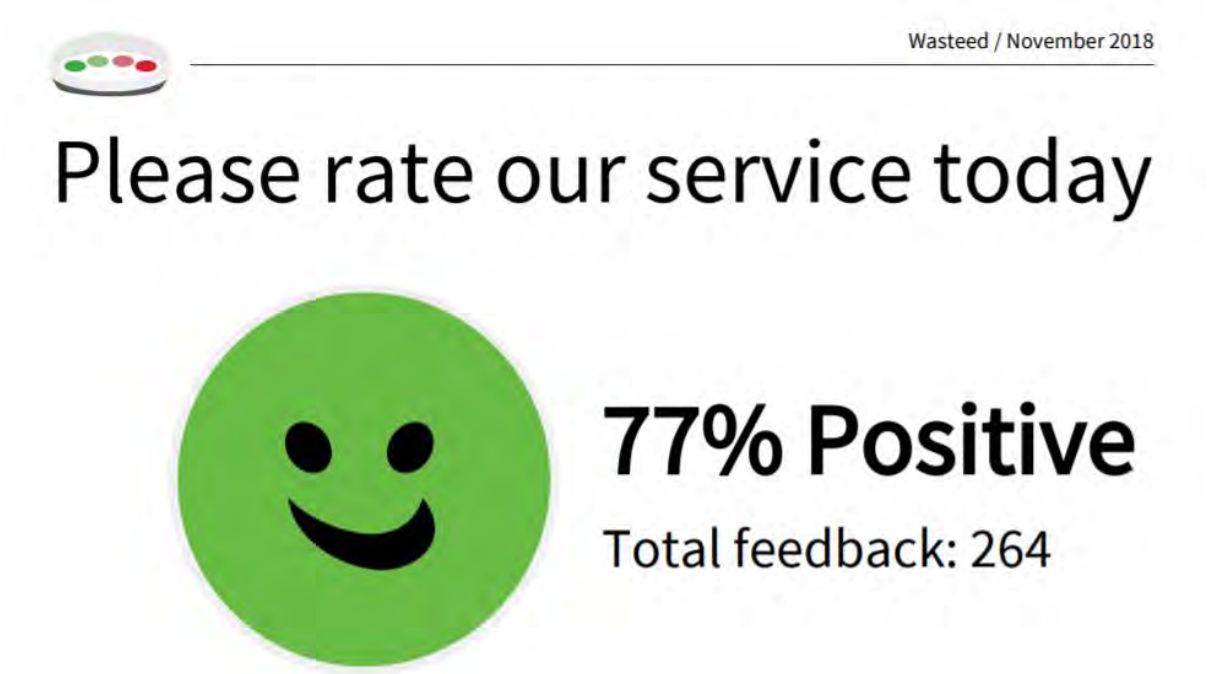
In preparation for the school year:

- cleaning of the education centre grounds at Tamala Park took place.
- A disabled toilet installed
- A review of the tour route was undertaken to include visiting the Reuse Shop and returning to the landfill to see operations close up.
- The online booking system showing available tour timeslots and providing automatic confirmations and feedback was updated.

Tour bags given away after tour with the aim of getting information home to parents, additional information, feedback and MRC/Tamala Park memento were also reviewed. Looking at being more targeted about the information given and directing people more to the information provided on the website.

The feedback given about these tours continues to report a high level of participant satisfaction with them being described as very informative. The tours don't just point out operational aspects of the sites but discuss the 'story of waste', engaging people in how the Waste Hierarchy works and discuss behaviours that create the best outcomes. People are continually amazed at how a 'trip to the tip' can be such an eye opener and be very enjoyable.

A Happy or Not unit is being used to gain immediate feedback from visitors while a more specific feedback is attained from the online feedback.



Ed centre garden bed before garden makeover …

After…

3.2 Visits, Talks & Workshops

Talks and visits to community groups is also a focus of the MRC education team.

Only two visits were made in the January/February period.

Name of schools visited: St Luke's Catholic School for a series of composting workshops

Name of Early Learning Centres visited: Banksia Montessori School for a talk on what goes into what bin.

The duration of the sessions ranges from an hour through to a full day and, in the case of schools, may be for single classes or for the whole school.

The topics of these talks and visits vary according to the group but the sessions mainly focus on three main areas:

- Organics – composting and worm farming
- The bin system – what goes in what bin
- Waste Hierarchy – reduce, reuse, recycle and dispose wisely.

Talks and visits to schools is a focus of the MRC education team. The MRC provides a number of services to enhance a school's curriculum, these include: tours, talks, workshops and activities can be tailored to meet the individual requirements of the school.

The MRC Education Team have continued to developing a closer working relationship with Waste Wise Schools with the purpose of delivering a broader and more consistent waste education program into schools throughout the region.

Visits to Child Care/Early Learning Centres have increased in the last year with the Centres looking to enhance the environmental and sustainability education programs they do with the children.

These visits aim to not only foster an interest in waste for the youngsters but also to connect with educators and to a different parent group. Many of these visits discuss bin systems but often it is to set up and help maintain worm farms or composting systems to help the Centres deal with the organic waste that they produce.

Due to the time commitment involved with these groups the MRC is reviewing its offerings to these groups in order to ensure all parties are getting maximum value from these visits.
Visits to early learning centres has been put on hold until this review is complete, expected Term 2 2019.

3.3 Events and Displays

Events and displays are a means of delivering waste messages to large numbers of people and often broader audience many of whom when visiting community events find themselves engaging with the waste messaging.

ROAMING RECYCLER EVENTS	
	No Days Out
Cambridge	0
Joondalup	6
Perth	1
Stirling	1
Vic Park	0
Vincent	1
Wanneroo	0
Other	0
TOTAL	**9**

Total number of events = 9

Name of Events: Joondalup 3 bin roll out events, Concert in the Park, Catchment, Corridor and Coasts Display, Sky show, Leedy Palooza – Unfair day, Summerxsalt Markets.

Skyworks

MRC and its Earth Carer volunteers again assisted the City of Perth in staffing the recycling compounds, promoting and sorting recyclables to aid in the diversion of waste from landfill.

This year saw 14.1 tonnes of waste collected of which 9.75 tonnes (69%) was diverted from landfill.

Display used at the Leedy Palooza – Unfair day (CoV)

The MRC bin mascots attended a number of events helping CoJ promote to staff of the CoJ and residents the upcoming roll out of three bins into the city. The mascots prove a popular drawcard promoting engagement and discussion about how the three bin system works.

During the roll out MRC casual pool staff assisted the CoJ by recording the bin numbers of the nearly 60,000 yellow lid recycling bins found throughout the City. The bin presentation rate in most suburbs exceeding 90% during this period

3.4 Earth Carers

The MRC community outreach program, Earth Carers, has been an itegral part of the education program. Earth Carers are seen as long term valued people interested in waste and spreading a 'Waste Less' message. Since 2008 over 540 people have completed the MRC Earth Carer training courses and most of them are still active, a good retention rate.

Two **training courses** are held each year, one in March and the other in August. On completion of the course the MRC Earth Carers continue to meet and engage with the community. A number of Earth Carers link in with Community Garden groups, Transition Towns and other groups of like minded people. These provide very fertile grounds for information exchange and promoting waste wise messages. The MRC maintains contact after the course, with Earth Carers assisting at events on an MRC stall, in schools, and through on going workshops we offer.

Earth Carers are regularly sent newsletters and emails full of stories and updates of Earth Carer activity, information about waste issues and tips on how to live with less waste.

A Facebook Page, **Earth Carers North**, provides a convenient forum for Earth Carers and others to exchange ideas and discuss the wonderful world of waste. This page was originally set up as an Advanced Earth Carer project. Earth Carers are very important ambassadors for a responsible waste message as they have credibility with friends and neighbours we could not hope to maintain. Over 886 followers currently engage with the Earth Carers North page.

To further keep the Earth Carer group engaged a variety of activities are held to enable Earth carers to network, up skill and learn new ways of living with less waste.

A Earth Carer busy bee to assist in the clean-up of the education centre gardens at Tamala Park took place in February.

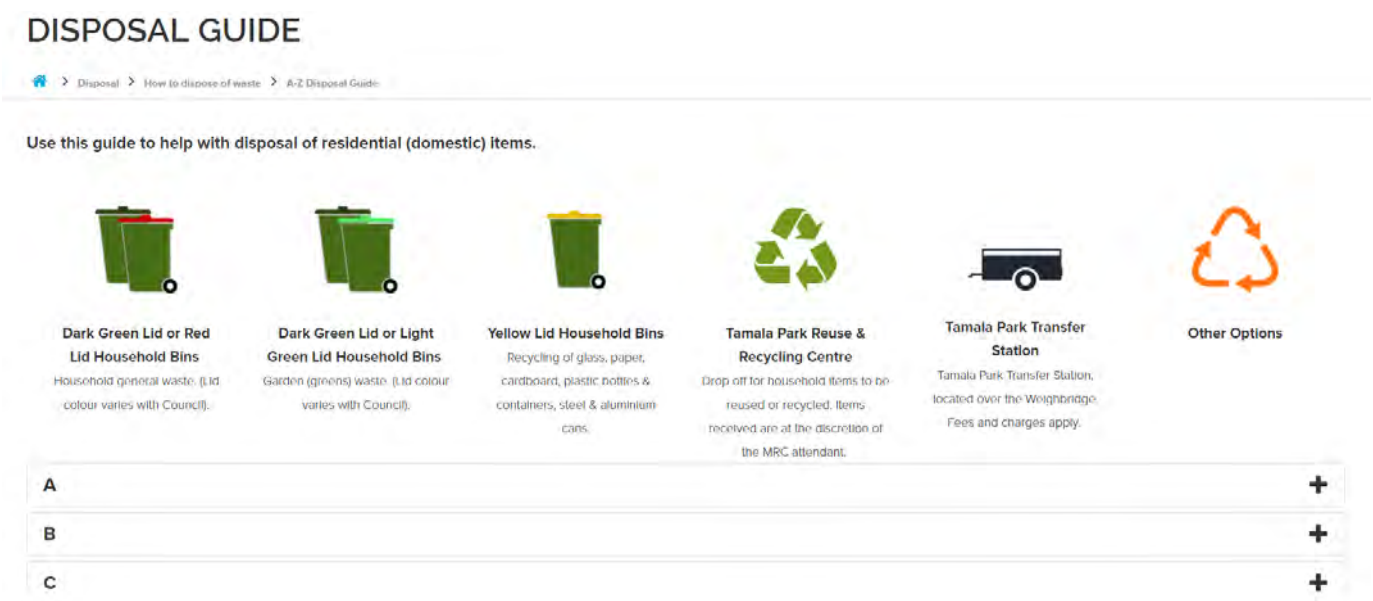
3.5 Community Engagement

A number of other have been used to communicate with the MRC community.

The **Pylon Sign** at the entrance to Tamala Park has been a very effective in conveying information to passing traffic about changes in opening hours and the services offered at Tamala Park. New tiles featuring improved graphics and colouring have been produced to provide clear eye-catching messages to passersby.

Two Digiboards that were dropped off to be recycled have been refurbished and put to good use within the shop and at the weighbridge to advertise services to customers, to perhaps inform them of other services of which they were unaware.

An **A – Z disposal guide** has been placed on the MRC website to provide a comprehensive guide of where residents across the region can dispose of an extensive range of items. This guide is continually being updated and can be found at:
https://www.mrc.wa.gov.au/Waste-Disposal-recycling/Disposal-guide/A-Z-Disposal-Guide

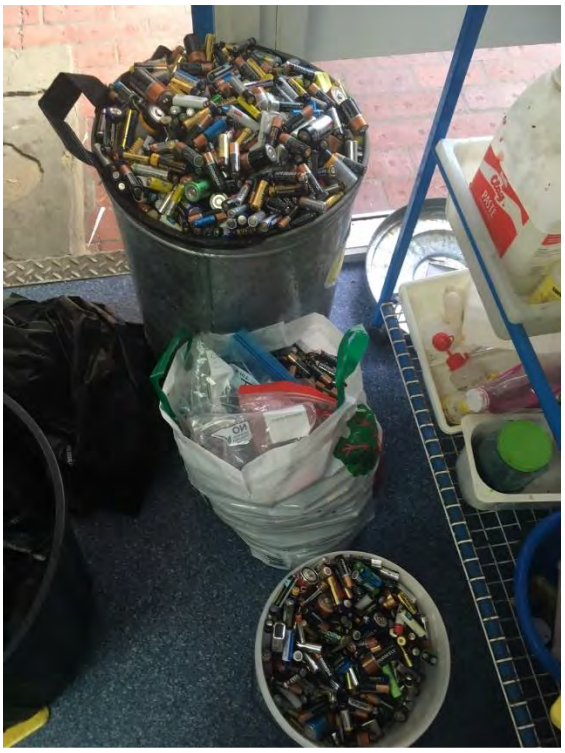


4. Community Programs

4.1 Battery Program

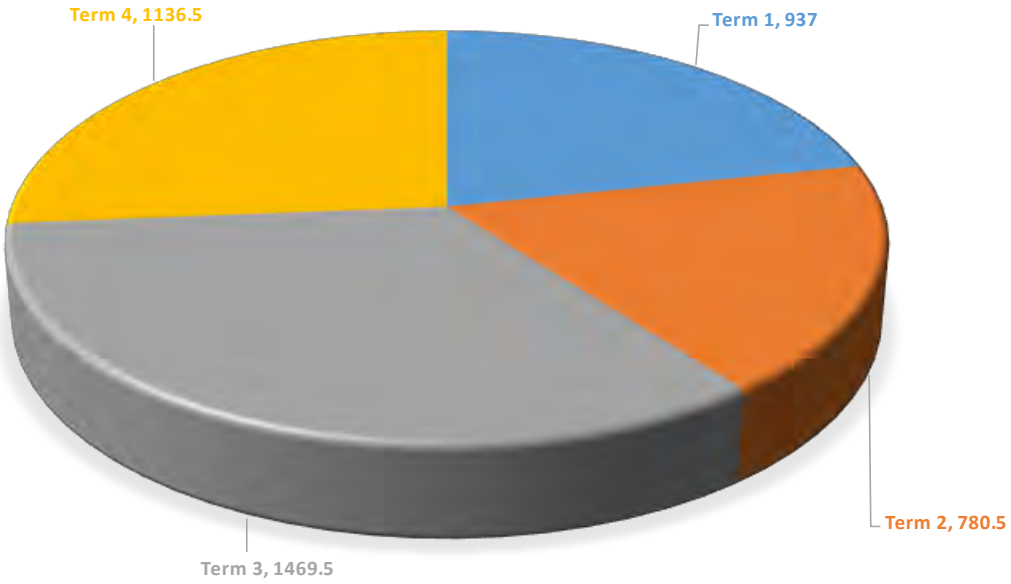
Batteries from school and community bins continued to be collected in large numbers. Importantly most of these batteries previously would have gone into the household green top wheelie-bin then to the RRF and the chemicals contained within ultimately into the compost. However large quantities of batteries are bought and disposed of and although the MRC is collecting and recycling tonnes of batteries it is only the tip of the iceberg.

The battery program is particularly inportant to MRC operations in that batteries have shown themselves to be the cause of many of the landfill fires at Tamala Park and they are still a significant problem at the RRF – providing a source of metals contamination.



Currently 156 schools in the region take part in the battery program. The schools find it is a good way to engage students in a meaningful recycling program. From an MRC point of view it offers collection sites throughout the community and unlike the public battery collection bins the school ones are generally free of contamination.

Schools Termly Battery Collections for 2018
Yearly total: 4323.5 kg



A full list of all participating schools and their 2018 ranking can be found on the MRC website.

Details of the 2019 program will be publish in the next Members Information Bulletin.

4.2 Other Community Recycling Programs

In addition to dry cell batteries there are a number of community recycling stations located throughout the region. These collect a range of problematic wastes, common household products that can't be disposed on in residential bins, like fluorescent globes, mobile phones and ink cartridges.

Details of the 2019 collects on these items will be published in the next Members Information Bulletin.

E-waste

MRC councils are active in the collection and recycling of e-waste. February 2019 saw MRC and its councils prominent in Total Green Recycling's leader board.

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5. Waste Educator Groups

5.1 Waste Education Strategic Steering Group (WESSG)

The Waste Education Strategic Steering Group (WESSG) meets at the end of each month. A meeting to start the year was held in February.
These meetings continue to be an important forum for exchanging ideas and keeping everyone updated on happenings associated with waste within the MRC and its Member Councils. The main issues discussed in this period were:

- 3 bin systems, implementation
- FOGO
- Yellow lid recycling, consistent messaging
- Illegal dumping

The Group has been invaluable in providing networking opportunity for its participants. People aren't confined to council boundaries so being aware of what is happening elsewhere is important in delivering messages to the community

The importance of Regional messaging remains on the agenda as does the Groups role in dealing with regional waste issues. Many events and activities within the Region occur regularly with WESSG playing an important role in streamlining communications, messaging and coordination between both the MRC and the Member Councils and the Member Councils themselves. These include:

- Compost in May
- Plastic Free July
- Garage Sale Trail

The MRC also attends events in support of and/or on behalf of member councils. With displays at these events, shows, fairs within the different member council areas it is important that MRC education staff are informed of the different council's waste issues to ensure accurate information is passed onto residents.

The monthly meetings saw discussions on MRC's strategic direction and included how the 'Face Your Waste' campaign fits in with this. These discussions included looking how this campaign could be used within individual councils and how it aligned with council waste management/minimisation plans. The Group provided both content and feedback on elements of the campaign.

5.2 Waste Educators Working Group & Networking Groups (WEWG/WENG)

Meetings were held at the end of each month. Apart from providing networking opportunities and the sharing of resources and ideas, topics of discussion included:

- State Waste Strategy
- Plastic Bag Ban
- Yellow lid recycling consistent communications
- Container Deposit Scheme

Brief activity reports from those in attendance are also made, this giving the group a good overview of what is happening in the waste education field across the State.

Report

Resource Recovery Facility (RRF) 12-month Dieback Sampling

Natural Area
CONSULTING MANAGEMENT SERVICES

Mindarie Regional Council

BioVision 2020 Pty Ltd Advanced Resource Recovery Facility 12-month Dieback Sampling

Natural Area Holdings Pty Ltd
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Ph: (08) 9209 2767
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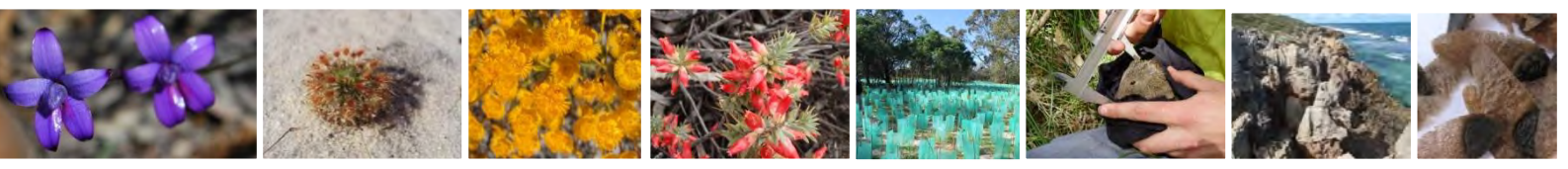
www.naturalarea.com.au



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Document Title	MRC-R-Biovision Dieback testing final report
Location	https://naturalarea-my.sharepoint.com/personal/luke_naturalarea_com_au/Documents/NACMS Master Drive/Client Folders GPB/Mindarie Regional Council/RFQ Dieback sampling 2017/Monitoring/MRC-R-Biovision Dieback testing final report.docx

Draft/Version No.	Date	Changes	Prepared by	Approved by	Status
V1	24/01/2019	New document	CW	LP	Released
V2	1/02/2019	Minor edits	CW	LP	Released

Contents

1.0 Introduction

Natural Area Consulting Management Services (Natural Area) was contracted by the Mindarie Regional Council (MRC) to implement a 12-month testing regime of soil conditioner produced by the BioVision 2020 Pty Ltd Advanced Resource Recovery Facility (ARRF) in Neerabup. Testing commenced in January 2018 and was completed in December 2018, with a total of 24 sampling visits. The purpose of this report is to outline the methodology of the sampling and provide a summary of the results.

Phytophthora, commonly known as Dieback, is water mould (oomycete); there are more than 100 species worldwide and around 20 are currently described as causing disease in Australian (Pegg *et al* 2015). The pathogen generally acts by infecting the roots of susceptible host species, absorbing the carbohydrates and nutrients from the plants and causing the roots to rot. This diminishes the plants ability to absorb nutrients and water from the soil; infection leads to the death of the plant in most cases.

The BioVIsion ARRF facility produced a soil conditioner product from the compositing of waste material collected from MRC member municipalities (Town of Cambridge, City of Joondalup, City of Perth, City of Stirling, Town of Victoria Park, City of Vincent and City of Wanneroo). MRC request regular testing of the soil conditioner produced at the Neerabup ARRF to provide long term data on the *Phytophthora* clean status of the final product.

2.0 Methodology

Sampling was undertaken twice a month from the BioVision ARRF soil conditioner holding zone (Figure 1) for the duration of 2018; 24 samples were collected in total with each sample being approximately 500 grams. The sampling was undertaken from different times and locations within the holding zone during each event, and the GPS location of the sample location recorded. A sampling sheet was maintained detailing the date, time, and characteristic of the product at the time of sampling.

Each sample was then sent to Grow Help Australia for laboratory testing via a lupin baiting test. Results from each sampling event were provided to MRC and have been summarised in this report.

Figure 1: Sample location at BioVision ARRF Neerabup facility outlined in red

3.0 Results

Results of sampling are outlined in Table 1 below; laboratory reports have been provided in Attachment 1. All samples tested negative for *Phytophthora cinnamomi*; though during the majority of tests the lupin sprouts were showing stunted growth. The factor affecting the lupin growth appeared to be non-pathogenic and was potentially the result of phytotoxicity due to the artificial testing conditions (see Report 4923, Attachment 1). When a smaller volume of media was used in the testing, no unusual symptoms were seen in the lupins (see Report 4969, Attachment 1).

Table 1: Soil conditioner sampling

Test #	Date	Time	GPS location of sample		Comments on sample	Dieback testing result
1	9/01/2018	11:45	-31.6775126	115.8065830	Brown compost product, minor inorganic component	Negative
2	29/01/2018	10:05	-31.6775190	115.8066490	Brown compost product, minor inorganic component	Negative
3	16/02/2018	10:05	-31.6773790	115.8066220	Brown compost product, minor sand fines inorganic component	Negative
4	28/02/2018	10:05	-31.6775170	115.8066590	Brown compost product, minor sand fines inorganic component	Negative
5	15/03/2018	10:05	-31.6775530	115.8066100	Brown compost product, minor sand fines inorganic component	Negative
6	29/03/2018	10:10	-31.6776030	115.8065920	Brown compost product, minor sand fines inorganic component	Negative
7	9/04/2018	10:05	-31.6774550	115.8066170	Brown/grey compost product, minor inorganic component	Negative
8	17/04/2018	10:05	31.6775120	155.0659500	Brown/grey compost product, minor inorganic component	Negative
9	11/05/2018	10:05	-31.6773910	115.8066030	Brown/grey compost product, minor inorganic component	Negative
10	23/05/2018	10:05	-31.6775510	115.8065860	Brown/grey compost product, minor inorganic component	Negative
11	11/06/2018	10:05	-31.6776730	115.8065910	Brown/grey compost product, minor inorganic component	Negative
12	29/06/2018	10:10	-31.6774480	115.8065750	Dark brown compost product, hot, some inorganic components	Negative
13	18/07/2018	10:05	-31.6775120	115.8065790	Dark brown compost product, hot, some inorganic components	Negative
14	30/07/2018	10:05	-31.6776900	115.8065840	Dark brown compost product, hot, some inorganic components	Negative
15	13/08/2019	10:05	-31.6776000	115.8065860	Brown compost product, minor sand fines inorganic component	Negative
16	27/08/2018	10:05	-31.6772960	115.8066120	Brown compost product, minor sand fines inorganic component	Negative
17	14/09/2018	10:10	-31.6776360	115.8065790	Dark brown compost product, hot (some ash), some inorganic components	Negative
18	28/09/2018	10:05	-31.6774780	115.8065860	Dark brown compost product, hot (some ash), some inorganic components	Negative
19	9/10/2018	10:05	-31.6775170	115.8065820	Dark brown compost product, hot (some ash), some inorganic components	Negative

Test #	Date	Time	GPS location of sample		Comments on sample	Dieback testing result
20	24/10/2018	10:05	-31.6777010	115.8065620	Dark brown compost product, hot (some ash), some inorganic components	Negative
21	9/11/2018	10:10	-31.6773610	115.8065690	Brown compost product, minor sand fines inorganic component	Negative
22	22/11/2018	10:05	-31.6775500	115.8065590	Brown compost product, minor sand fines inorganic component	Negative
23	11/12/2018	10:05	-31.67755	115.8065810	Brown compost product, minor sand fines inorganic component	Negative
24	21/12/2018	10:05	-31.677421	115.8065750	Dark brown compost product, hot (some ash), some inorganic components	Negative

References

Pegg K., Forsberg L., Cooke T. and Coates L. (2015) *Phytophthora diseases – [problematic in the nursery and beyond* Agri-science Queensland, Department of Agriculture, Fisheries and Forestry.

Attachment 1: Laboratory Results

Final Diagnostic Report

Client:	Mr Shi Wei Sia - Natural Area Management Systems 99c Lord Street Whitman Park WA 6068	**Date:**	29/01/2018
		Job Number:	4795
		Your Reference:	
Contact Phone:			
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	17/01/2018

Sample 3

Your Identifier:	Biovision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4795-3		
Host Details:	(Soil) -		

Tests

Test Name	Result	Comments
Lupin Baiting	Negative	Phytophthora was not detected from media.
General fungal isolation	Negative	No pathogens were isolated from necrotic, cracked and cankered areas on tips of radicle.
Lab observations		Media failed to settle, even after a number of days. By the end of the lupin bait test (5 days), the cups had a very strong rotting odour, as if the cups had become anoxic.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Lupin baits after 3 days

Rotting lupins after 3 days

Stunted growth of lupin baits after 3 days

Close up of cracked and rotting lupins
Stunted growth of lupin baits after 3 days

Diagnosis

No pathogens were detected, but media appeared to have properties that may be adverse to plant growth, causing a phytotoxic reaction to the lupins. This may have been caused by a low oxygen environment or some other property of the media, e.g. pH, EC nutrient toxicity, etc.

Recommendations

It is recommended to investigate media properties and ensure that it is suitable for use growing nursery plants; sensitive plants (like lupins) may have difficulty growing in this media.

Final Diagnostic Report

Client:	Mr Shi Wei Sia - Natural Area Management Systems	**Date:**	01/03/2018
	99c Lord Street	**Job Number:**	4819
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:			
Sample Submitted By:	Mr Shi Wei Sia - Natural Area Management Systems	**Date Arrived:**	08/02/2018

Sample 1

Your Identifier:	Good29/1 BioVision ARRT	**Arrival Condition:**	
Our Identifier:	4819-1		
Host Details:	(Growing media) -		

Tests

Test Name	Results	Comments
Lab Observations		
Lupin Baiting	Negative	Lupins showed cracking and slight rotting of the root tip. Further testing of the lupins indicated that Phytophthora was not present.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Lupins at 5 days, necrosis at root tip

Diagnosis

Phytophthora was not detected from the growing media. However, some property of the media did cause cracking and slight rot of the lupins. It is not known what factor might have been responsible.

Recommendations

none required.

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems 99 Lord St Whitman Park WA 6068	**Date:** **Job Number:** **Your Reference:**	03/04/2018 4836
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	26/02/2018

Sample 1

Your Identifier:	BioVision ARRT Facility 16/02/2018	**Arrival Condition:**	Good
Our Identifier:	4836-1		
Host Details:	(Soil) - Soil		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Lupin roots cracked and had necrotic lesions. Lupin roots were tested on Phytophthora selective media, Phytophthora was not detected.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

As per previous samples of the Biovission AART media, some factor appears to be negatively effecting the growth of lupins that is non-pathogenic.

Recommendations

It is recommended to trial the growth of very sensitive plants to ensure that it does not negatively impact on plant growth. When doing so, plant the same species in the Biovission and a conventional media simultaneously to compare growth.

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growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	27/03/2018
	99 Lord St	**Job Number:**	4847
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	12/03/2018

Sample 1

Your Identifier:	Biovision AART	**Arrival Condition:**	Good
Our Identifier:	4847-1		
Host Details:	(Growing media)		

Tests

Test Name	Results	Comments
Lab Observations		The media is dry and fluffy, similar to previous media which yielded stunted lupins.
Phytophthora baiting	Negative	No *Phytophthora* sp. was detected from the media.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No Phytophthora was detected from the media. However Lupins in the Phytophthora bait appear stunted and cracked. Lupins may be intolerant to some aspect of the the growing media; no pathogen was detected.

Recommendations

As per previous reports, it is recommended to test the growth of sensitive plants in the media to confirm that a phytotoxicity will not occur under normal growing conditions. If possible, please inform us of the results.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	03/04/2018
	99 Lord St	**Job Number:**	4855
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	21/03/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4855-1		
Host Details:	(Soil) - Soil		

Tests

Test Name	Results	Comments
Selective fungal isolations - Phytophthora/Pythium	Negative	No pathogen was detected from unhealthy Lupins.
Phytophthora baiting	Negative	Phytophthora was not detected from growing media.
General fungal isolation	Negative	No pathogen was detected from unhealthy Lupins

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Necrosis on lupins (not Phytophthora)

Diagnosis

No Pathogen was detected. Some non-pathogenic factor appears to affect the roots of Lupin.

Recommendations

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health. When doing so, plant the same species in the Biovission and a conventional media simultaneously to compare root health. Please inform us of the results if this is completed.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	19/04/2018
	99 Lord St	**Job Number:**	4863
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	09/04/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4863-1		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from growing media. However lupin roots appeared stunted and deformed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No Pathogen was detected. However, as per previous samples, some non-pathogenic factor appears to affect the roots of lupins.

Recommendations

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	27/04/2018
	99 Lord St	**Job Number:**	4871
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	17/04/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4871-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from growing media. However lupin roots appeared stunted and rotten.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Unhealthy lupin after a baiting within the media

Diagnosis

No Pathogen was detected. However, as per previous samples, some non-pathogenic factor appeared to affect the roots of lupins.

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	04/05/2018
	99 Lord St	**Job Number:**	4878
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	24/04/2018

Sample 1

Your Identifier:		**Arrival Condition:**	Good
Our Identifier:	4878-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from growing media. However lupin roots appeared stunted and rotten.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Healthy lupin compared to unhealthy lupin after a baiting within the BioVision media

Diagnosis

No Pathogen was detected. However, as per previous samples, some non-pathogenic factor appeared to affect the roots of lupins.

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	19/06/2018
	99 Lord St	**Job Number:**	4903
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	21/05/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4903-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora sp. was not detected from growing media. However lupin roots appeared stunted and deformed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Stunted lupins from baiting

Stunted lupins from baiting

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	19/06/2018
	99 Lord St	**Job Number:**	4909
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	29/05/2018

Sample 1

Your Identifier:		**Arrival Condition:**	Good
Our Identifier:	4909-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora sp. was not detected from growing media. However lupin root appeared stunted and deformed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Unhealthy lupins after baiting

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	27/06/2018
	99 Lord St	**Job Number:**	4923
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	18/06/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4923-1		
Host Details:	(Soil) - Soil		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora sp. was not detected from growing media. However lupin roots appeared stunted and deformed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Unhealthy lupins after baiting

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to assess if this component could negatively affect root health of plants being grown. This could involve growing sensitive plants with and without the media component in a small trial. Keep in mind that the conditions that lupins were grown to bait for Phytophthora are quite artificial (i.e. in a cup of water) and can produce phytotoxicity in the lupins where none may be observed in a normal production nursery situation.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	18/07/2018
	99 Lord St	**Job Number:**	4940
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	10/07/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	4940-1		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from growing media. However lupin roots appeared stunted and deformed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to assess if this component could negatively affect root health of plants being grown. This could involve growing sensitive plants with and without the media component in a small trial. Keep in mind that the conditions that lupins were grown to bait for Phytophthora are quite artificial (i.e. in a cup of water) and can produce phytotoxicity in the lupins where none may be observed in a normal production nursery situation.

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	03/08/2018
	99 Lord St	**Job Number:**	4953
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	24/07/2018

Sample 1

Your Identifier:		**Arrival Condition:**	Good
Our Identifier:	4953-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from media and roots.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Unhealthy lupins after baiting

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to assess if this component could negatively affect root health of plants being grown. This could involve growing sensitive plants with and without the media component in a small trial. Keep in mind that the conditions that lupins were grown to bait for Phytophthora are quite artificial (i.e. in a cup of water) and can produce phytotoxicity in the lupins where none may be observed in a normal production nursery situation.

Queensland Government

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Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	16/08/2018
	99 Lord St	**Job Number:**	4959
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	07/08/2018

Sample 1

Your Identifier:		**Arrival Condition:**	Good
Our Identifier:	4959-1		
Host Details:	(Soil)		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	*Phytophthora* sp. was not detected from growing media. However lupin roots appeared decayed.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Unhealthy lupins after baiting

Diagnosis

No pathogen was detected, however some non-pathogenic factor appeared to have affected the roots of lupins.

Recommendations

It is recommended to trial some sensitive plants to ensure that it does not negatively impact on root health.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	30/08/2018
	99 Lord St	**Job Number:**	4969
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	21/08/2018

Sample 1

Your Identifier:	BioVision ARRT 13/8/2018	**Arrival Condition:**	
Our Identifier:	4969-1		
Host Details:	(Growing media) - N/A on N/A -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	No Phytophthora was detected. A smaller volume of media was placed in double the number of cups - no unusual symptoms were observed on the lupins.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

Phytophthora was not detected from the media.

Recommendations

None required.

Queensland Government

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growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	24/09/2018
	99 Lord St	**Job Number:**	4981
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	05/09/2018

Sample 1

Your Identifier:	BioVision ARRT Facility – sent 27/08/2018	**Arrival Condition:**	Good
Our Identifier:	4981-1		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora was not detected from media sample.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

Phytophthora was not detected from media sample

Recommendations

None required.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	03/10/2018
	99 Lord St	**Job Number:**	4999
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	24/09/2018

Sample 1

Your Identifier:	BioVision AART Facility	**Arrival Condition:**	
Our Identifier:	4999-1		
Host Details:	(Growing media) - N/A on N/A -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora was not detected from baits set up at 18 C and 23 C.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

Phytophthora was not detected from the growing media sample.

Recommendations

None required.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	23/10/2018
	99 Lord St	**Job Number:**	5016
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	10/10/2018

Sample 1

Your Identifier: **Arrival Condition:** Good
Our Identifier: 5016-1
Host Details: (Growing media) - N/A on N/A -

Tests

Test Name	Results	Comments
Lab Observations		
Lupin Baiting	Negative	No Phytophthora detected in soil at either 18 ˚C or 23 ˚C baiting temperatures

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

Phytophthora was not detected from the growing media.

Recommendations

None required.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	26/10/2018
	99 Lord St	**Job Number:**	5021
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	15/10/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	5021-1		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Lupin Baiting	Negative	No Phytophthora detected from lupin baits set up at 18 and 23 C

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogens were detected in the growing medium sample supplied. Lupin baits were, however, stunted in growth, indicating a phytotoxic factor may be present.

Recommendations

Review practices in relation to the possibility of introducing phytotoxic factors to the growing medium.

Queensland Government

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growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	09/11/2018
	99 Lord St	**Job Number:**	5030
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	30/10/2018

Sample 1

Your Identifier: **Arrival Condition:**
Our Identifier: 5030-1
Host Details: (soil) - N/A on N/A -

Tests

Test Name	Results	Comments
Lab Observations		
Lupin Baiting	Negative	

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogens were detected in the soil lupin bait test.

Recommendations

None required

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	04/12/2018
	99 Lord St	**Job Number:**	5045
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	19/11/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	5045-1		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	No Phytophthora isolated from soil baited with lupin and incubated at 18 C and 23 C.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No Phytophthora detected in soil sample sent.

Recommendations

None required.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	07/12/2018
	99 Lord St	**Job Number:**	5053
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	28/11/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	
Our Identifier:	5053-1		
Host Details:	(Soil) - N/A - Soil		

Tests

Test Name	Results	Comments
Lupin Baiting		Phytophthora was not detected from soil baited with lupin and incubated at 18 and 23 C.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogen detected.

Recommendations

None required.

Queensland Government

GROW HELP

growhelp@daf.qld.gov.au

Final Diagnostic Report

Client:	Ms Caitlyn White - Natural Area Management Systems	**Date:**	10/01/2019
	99 Lord St	**Job Number:**	5073
	Whitman Park WA 6068	**Your Reference:**	
Contact Phone:	(08) 9209 2767		
Sample Submitted By:	Ms Caitlyn White - Natural Area Management Systems	**Date Arrived:**	19/12/2018

Sample 1

Your Identifier:	BioVision ARRT Facility	**Arrival Condition:**	Good
Our Identifier:	5073-1		
Host Details:	(Soil) - N/A -		

Tests

Test Name	Test Result	Test Comment
Phytophthora baiting	Negative	No Phytophthora detected in the soil.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogen detected.

Recommendations

None required.

Sample 2

Your Identifier:	Biovision ARRT	**Arrival Condition:**	Good
Our Identifier:	5078-2		
Host Details:	(Soil) -		

Tests

Test Name	Results	Comments
Phytophthora baiting	Negative	Phytophthora was not detected in the soil sample.

Pests / Pathogens Detected

Common Name	Scientific Name
No pathogen detected	

Diagnosis

No pathogens were detected.

Recommendations

None required.