

From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Tuesday, 10 March 2009 3:49 PM
To: Benny Asirvatham
Subject: EE Mareeba Landfill- additional info request
Hi Benny

I am trying to forward a response to you that I have received from Maunsells and it has returned undelivable to me 5 times now so I am wondering why it won't go through. If you receive this email can you please reply with a confirmation email.

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414444444 (6) Personal information

From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Monday, 2 March 2009 1:27 PM
To: Kirsty Lamperd
Subject: (DWS Doc No 1814039) RE: (DWS Doc No 1813727) EE Mareeba Landfill- additional info request

Hi Kirsty,
The decision date for TRC landfill (IPDE00493906) EE report is extended and the administering authority will now decide the application by 17th April 2009. You are required to provide the additional information by 20th March 2009.

Regards
Benny Asirvatham
Senior Environmental Officer
Environmental Protection Agency
Cairns QLD 4870
Tel No: 40466739

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Monday, 2 March 2009 1:18 PM
To: Benny Asirvatham
Subject: RE: (DWS Doc No 1813727) EE Mareeba Landfill- additional info request

Dear Benny

As per telephone discussion, I request an extension of time to respond to the information request until 20 March, 2009.

Regards

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PO Box 3
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From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]

Sent: Monday, 2 March 2009 10:11 AM
To: Kirsty Lamperd
Cc: Steve Smith
Subject: (DWS Doc No 1813727) EE Mareeba Landfill- additional info request

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Good Morning. The due date to receive additional information for Mareeba Landfill EE is today and the EPA hasn't received any additional information till today. EPAct1994 s329 states that if the administering authority fails to take a decision on the report within the timeframe, the failure is taken as a decision by the authority to refuse to accept the report at the end of the time. Could you please let me know whether the TRC will require further extension of time to provide additional information or not? Please be advised that the additional info due date was originally due on 16th January 2009 and then extended to 2nd of March 2009. If you want further extension, please let me know.

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From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Monday, 2 March 2009 11:37 AM
To: 'Jones, Mal'
Cc: Benny Asirvatham
Subject: FW: EE Mareeba Landfill- additional info request
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RTI DL RELEASE -EHP

From: Ingrid Fomiatti Minnesma
Sent: Tuesday, 17 June 2008 11:40 AM
To: Chris Buckingham
Subject: FW: Mareeba Landfill - Rectification works

Attachments: 60040718-001 A.PDF; 60040718-002 A.PDF

From: Steve Ripper [mailto:stever@eachamshire.qld.gov.au]
Sent: Saturday, 14 June 2008 9:04 AM
To: Ingrid Fomiatti Minnesma
Cc: Zoe Williams
Subject: FW: Mareeba Landfill - Rectification works

Ingrid -

I will phone you 8:30am Monday 16Jun08, as planned, but as you can see from Mal Jones's email, we won't have his report. But we will have the attached plans.

regards
Steven

From: Jones, Mal [mailto:Mal.Jones@maunsell.com]
Sent: Friday, 13 June 2008 5:26 PM
To: Steve Ripper; Zoe Williams
Cc: Kasie Loccisano
Subject: Mareeba Landfill - Rectification works

Zoe and Steve.

I will send a draft report by separate email. I'm sorry that this has not been sent earlier. Attached are two plans that would serve well to form the basis of discussions with the EPA on the rectification works required to the landfill cell.

Regards

Mal Jones
Principal Engineer - Environment, Water and Civil Infrastructure
MAUNSELL | AECOM
12 Cribb Street, Milton Qld 4064, Australia
Tel +61 7 3858 6700 Fax +61 7 3858 6705
mal.jones@maunsell.com



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From: Benny Asirvatham
Sent: Monday, 16 February 2009 9:05 AM
To: Ingrid Fomiatti Minnesma; Steve Smith
Subject: FW: MAREEBA LANDFILL DECISION NOTICE
FYI

Thanks
Benny

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Saturday, 14 February 2009 11:18 AM
To: Benny Asirvatham
Subject: RE: MAREEBA LANDFILL DECISION NOTICE

Hi Benny

In 2008 it is estimated approximately 30,000,000 litres of leachate was pumped to council sewers.

Regards

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414 4043 4390
Mobile 4043 (6) Personal information

From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Monday, 9 February 2009 2:09 PM
To: Kirsty Lamperd
Subject: RE: MAREEBA LANDFILL DECISION NOTICE

Hi Kirsty,
Could you please give me a rough estimate of the volume of leachate pumped into council sewers during 2008?

Thanks
Benny

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Monday, 9 February 2009 1:31 PM
To: Benny Asirvatham; Steve Smith
Subject: MAREEBA LANDFILL DECISION NOTICE

Dear Steve & Benny

As per telephone conversation today regarding the request for further information on the Mareeba landfill. Consultants Maunsell have been requested by Council to provide further information which has not as yet been received. I therefore request an extension of time for the EPA to decide on the matter for a further 3 weeks expiring 2 March, 2009.

Attached are analysis results for the leachate quality at the landfill. Further analysis will be conducted in February and half yearly from then on.

Council has conducted major works to the landfill in the past 6 months. A pioneer layer has been placed with stormwater diversion and catchment measures put in place. During January, 373mm of rainfall was recorded with 2,724,000 litres of leachate pumped to

sewer.

Further Information will be forwarded as soon as it is available.

Regards

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Mob: 0414 444 444 (6) Personal information

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RTI DL RELEASE - ENP

From: Kirsty Lamperd [kirstyl@eachamshire.qld.gov.au]
Sent: Thursday, 3 July 2008 12:17 PM
To: Benny Asirvatham
Subject: MAREEBA LANDFILL
Hi Benny

I managed to gain your email address through my contacts as I want to confirm your verbal advices from yesterday's meeting at the Mareeba landfill that we are able to resume operations at the landfill. Pushing and compacting of the waste has recommenced and I have advised CEC/SITA that they can also recommence delivering waste to the landfill. Please confirm that operations can recommence or advise otherwise.

I shall forward water quality results as soon as they become available to me.

Cheers

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4096 7660
Mob: 0414p4(6) Personal information

RTI DL RELEASE -EHP

From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Monday, 2 March 2009 11:41 AM
To: Benny Asirvatham
Subject: RE: EE Mareeba Landfill- additional info request
Hi Benny

My apologies for the delay. As you can tell I am having trouble gaining information on the liner from Mal Jones of Maunsell, who conducted the liner investigation for Council. I have no option but to request a further extension of time.

Regards

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son4p4(6) Personal information

From: Kirsty Lamperd
Sent: Monday, 2 March 2009 11:37 AM
To: 'Jones, Mal'
Cc: 'Benny.Asirvatham@epa.qld.gov.au'
Subject: FW: EE Mareeba Landfill- additional info request

Hi Mal

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From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Monday, 2 March 2009 10:11 AM
To: Kirsty Lamperd
Cc: Steve Smith
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Environmental Protection Agency

Cairns, QLd 4870

Tel No: 07 40466739

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RTI DL RELEASE - CLIP

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Sent: Tuesday, 10 March 2009 4:15 PM
To: Benny Asirvatham
Subject: RE: EE Mareeba Landfill- additional info request
Benny, Can you forward your fax number please.
Thanks.

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Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414p4(6) Personal information

From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Tuesday, 10 March 2009 4:12 PM
To: Kirsty Lamperd
Subject: RE: EE Mareeba Landfill- additional info request

Hi Kirsty,
If you can fax it to me, that will be alright.
Regards
Benny

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Sent: Tuesday, 10 February 2009 3:10 PM
To: Benny Asirvatham
Cc: Crystal Whittaker
Subject: RE: MAREEBA LANDFILL DECISION NOTICE
Benny if we need to extend you will need to prepare an extensions notice.
Thank you'
Ingrid

Ingrid Fomiatti Minnesma
Manager - Far Northern Region
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6737 Fax: (07) 4046 6606
Email: Ingrid.Minnesma@epa.qld.gov.au
You can visit us online at www.epa.qld.gov.au

From: Benny Asirvatham
Sent: Monday, 9 February 2009 1:59 PM
To: Ingrid Fomiatti Minnesma; Tristan Roberts
Cc: Crystal Whittaker
Subject: FW: MAREEBA LANDFILL DECISION NOTICE

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Monday, 9 February 2009 1:31 PM
To: Benny Asirvatham; Steve Smith
Subject: MAREEBA LANDFILL DECISION NOTICE

Dear Steve & Benny

As per telephone conversation today regarding the request for further information on the Mareeba landfill. Consultants Maunsell have been requested by Council to provide further information which has not as yet been received. I therefore request an extension of time for the EPA to decide on the matter for a further 3 weeks expiring 2 March, 2009.

Attached are analysis results for the leachate quality at the landfill. Further analysis will be conducted in February and half yearly from then on.

Council has conducted major works to the landfill in the past 6 months. A pioneer layer has been placed with stormwater diversion and catchment measures put in place. During January, 373mm of rainfall was recorded with 2,724,000 litres of leachate pumped to sewer.

Further Information will be forwarded as soon as it is available.

Regards

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: (07) 4043 4390
cc: 4p4(6) Personal information

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RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Wednesday, 2 July 2008 8:53 AM
To: Benny Asirvatham
Subject: RE: Mareeba Landfill visit
No worries Benny. FYI the EE for the landfill liner issue will be received this week I am told.

Regards...
Chris

From: Benny Asirvatham
Sent: Wednesday, 2 July 2008 8:43 AM
To: Chris Buckingham
Subject: Mareeba Landfill visit

Hi Chris,

This e-mail is intended to let you know that Warwick Fegan is coming with me to Mareeba landfill site. I already spoke to Silvana and she is ok. Is it ok for you?

Thanks
Benny

RTI DL RELEASE - EPR

From: Benny Asirvatham
Sent: Monday, 6 April 2009 2:00 PM
To: Kirsty Lamperd
Subject: RE: MAREEBA LANDFILL

Yes Kirsty, I received that. I will look into it and contact you if we need further information.

Regards
Benny Asirvatham

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Monday, 6 April 2009 1:50 PM
To: Benny Asirvatham
Subject: MAREEBA LANDFILL

Hi Benny

Just checking that you received the response to your further info request. Let me know if any problems.

Thanks.

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414 444 444 (6) Personal information

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From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Monday, 2 March 2009 1:18 PM
To: Benny Asirvatham
Subject: RE: (DWS Doc No 1813727) EE Mareeba Landfill- additional info request
Dear Benny

As per telephone discussion, I request an extension of time to respond to the information request until 20 March, 2009.

Regards

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0444 444 444 (6) Personal information

From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Monday, 2 March 2009 10:11 AM
To: Kirsty Lamperd
Cc: Steve Smith
Subject: (DWS Doc No 1813727) EE Mareeba Landfill- additional info request

Hi Kirsty,

Good Morning. The due date to receive additional information for Mareeba Landfill EE is today and the EPA hasn't received any additional information till today. EPAct1994 s329 states that if the administering authority fails to take a decision on the report within the timeframe, the failure is taken as a decision by the authority to refuse to accept the report at the end of the time. Could you please let me know whether the TRC will require further extension of time to provide additional information or not? Please be advised that the additional info due date was originally due on 16th January 2009 and then extended to 2nd of March 2009. If you want further extension, please let me know.

Regards

Benny Asirvatham

Senior Environmental Officer

Environmental Protection Agency

Cairns, QLD 4870

Tel No: 07 40466739

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RTI DL RELEASE -EHP

From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Monday, 9 February 2009 1:31 PM
To: Benny Asirvatham; Steve Smith
Subject: MAREEBA LANDFILL DECISION NOTICE

Attachments: Leachate analysis Nov 08.PDF; Leachate analysis Nov 08-2.pdf; Leachate analysis 17 July 08.pdf; Leachate analysis 17 July 08-2.pdf

Dear Steve & Benny

As per telephone conversation today regarding the request for further information on the Mareeba landfill. Consultants Maunsell have been requested by Council to provide further information which has not as yet been received. I therefore request an extension of time for the EPA to decide on the matter for a further 3 weeks expiring 2 March, 2009.

Attached are analysis results for the leachate quality at the landfill. Further analysis will be conducted in February and half yearly from then on.

Council has conducted major works to the landfill in the past 6 months. A pioneer layer has been placed with stormwater diversion and catchment measures put in place. During January, 373mm of rainfall was recorded with 2,724,000 litres of leachate pumped to sewer.

Further Information will be forwarded as soon as it is available.

Regards

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414 444 444 (6) Personal information

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From: Chris Buckingham
Sent: Tuesday, 17 November 2009 2:17 PM
To: Kirsty Lamperd
Cc: Benny Asirvatham
Subject: RE: ERA 53 - Mareeba landfill

Attachments: gl_bi_ipa_odour_impact_assessment.pdf; image001.png

Hi Kirsty

A development application will need to be lodged. The activity as you mentioned being ERA53 Soil conditioner manufacturing has an annual fee of \$3600 which will have to be paid along with an application fee of \$500.

These operations have the potential to generate significant odour when inappropriately managed. In this regard we would be requesting an odour impact assessment which should include odour dispersion modelling. What is the distance to the nearest receptors. I have attached our guidelines for odour impact assessment which should be used as a guide.

Leachate generation – how is this to be managed? Will it be reused in the process? Will it be sent for treatment? How will it be collected and where.

How will leakage of leachate to groundwaters be prevented? Will there be an impervious pad upon which the compost is made/matured?

The forms required are the IDAS form 1, form G and referrals checklist which are found on the IPA website. A registration certificate will be required once the DA has been approved.

Regards...
Chris

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Tuesday, 17 November 2009 1:13 PM
To: Chris Buckingham
Subject: ERA 53 - Mareeba landfill

Hi Chris

As discussed briefly last week, Dr Daniel Handley and others have approached Council with a composting trial proposal. They have identified Mareeba Landfill as the ideal site due to the climate, proximity to farms, land availability and product availability. Products in mind to be composted include the mulch at the transfer station, biosolids, cardboard and agricultural products brought in. I am currently working on putting together a business plan for the project and we hope to present it to Council in December.

To gain a reasonable result from the trial it is proposed to process greater than 200t per annum and therefore an ERA 53 would need to be obtained. I am meeting with Daniel at the Mareeba landfill on Friday to assess the site's suitability. Are you able to provide me with requirements that would need to be met to gain the ERA eg. site preparation, leachate collection, sensitive receptors. Also can you please forward through the appropriate application forms and fees.

I have attached an overview of the trial written by Daniel.

Let me know if you have any queries.

Regards

Kirsty Lamperd
Senior Advisor Environmental Planning
Corporate Planning Performance and Risk Group, Planning and Development
Tablelands Regional Council



Phone: 07 4043 4000 | **Direct:** 07 4043 4390 | **Fax:** 07 4096 5086

Email: kirstyl@trc.qld.gov.au | **Website:** www.trc.qld.gov.au

31 James Street | PO Box 3, Malanda, Queensland, Australia, 4885

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RTI DL RELEASE -EHP

From: Kirsty Lamperd [KirstyL@trc.qld.gov.au]
Sent: Monday, 9 February 2009 2:18 PM
To: Benny Asirvatham
Subject: RE: MAREEBA LANDFILL DECISION NOTICE

Attachments: Groundwater Nov08.pdf; Groundwater Nov 08-2.pdf
Hi Benny

Do you require results from prior to Nov 08? I shall get you the annual leachate figures.

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3
Malanda Qld 4885
Ph: (07) 4043 4390
Mob: 0414 4043 4390
Section 4(6) Personal information

From: Benny Asirvatham [mailto:Benny.Asirvatham@epa.qld.gov.au]
Sent: Monday, 9 February 2009 2:06 PM
To: Kirsty Lamperd
Cc: Tristan Roberts
Subject: RE: MAREEBA LANDFILL DECISION NOTICE

Hi Kirsty,
Thanks for your mail. Do you have any recent ground water sample results? If so could you please e mail me?
Thanks
Benny

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Monday, 9 February 2009 1:31 PM
To: Benny Asirvatham; Steve Smith
Subject: MAREEBA LANDFILL DECISION NOTICE

Dear Steve & Benny

As per telephone conversation today regarding the request for further information on the Mareeba landfill. Consultants Maunsell have been requested by Council to provide further information which has not as yet been received. I therefore request an extension of time for the EPA to decide on the matter for a further 3 weeks expiring 2 March, 2009.

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Council has conducted major works to the landfill in the past 6 months. A pioneer layer has been placed with stormwater diversion and catchment measures put in place. During January, 373mm of rainfall was recorded with 2,724,000 litres of leachate pumped to sewer.

Further Information will be forwarded as soon as it is available.

Regards

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 3

Malanda Qld 4885
Ph: (07) 4043 4390
Mobile: (07) 4043 4390
Section 4(6) Personal information

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RTI DL RELEASE - EHP

Chris Buckingham

CWS 6564-2

From: Zoe Williams [zoew@eachamshire.qld.gov.au]
Sent: Monday, 2 June 2008 1:47 PM
To: Chris Buckingham
Subject: RE: Environmental assessment

Thanks Chris,

I've recieved your letter. I've drafted a response to the items raised in the third party audit and have put this in the Council meeting agenda for this week along with the report and your letter. Assuming its approved by Council it will be forwarded to you as our official responce, but as I won't be in next week you probably won't get it until the week after next (week beginning 16/06). You'll be pleased to know that some of the items have already been actioned, however obviously those things requiring significant capital injection will take a bit longer to go through the budget processes.

Zoe Williams

sch4p4(6) Personal information

4885

Please note new email address: zoew@trc.qld.gov.au

From: Chris Buckingham [mailto:Chris.Buckingham@epa.qld.gov.au]
Sent: Monday, 2 June 2008 1:37 PM
To: Zoe Williams
Cc: Dean Sharpe; Steve Smith; Ingrid Fomiatti Minnesma
Subject: RE: Environmental assessment

Hi Zoe

We look forward to receiving the draft next week from you. I will arrange for all involved to be available at 8.30 on 16th.

Have you also received the letter requesting advice on how Council is to deal with all of the non-compliances that were identified in the third party audit?

Regards...
Chris

From: Zoe Williams [mailto:zoew@eachamshire.qld.gov.au]
Sent: Monday, 2 June 2008 12:54 PM
To: Steve Smith; Ingrid Fomiatti Minnesma; Chris Buckingham

Cc: Dean Sharpe

Subject: Environmental assessment

We've received the Environmental Assessment notice for the Mareeba Landfill. Mal Jones has been working on a report that addresses your concerns and gives us some recommendations for improved operations as well. We hope to have a draft of this report early next week. Assuming its acceptable to us we can then send it straight on to you. We'd like to teleconference with you early the week after to get your views and any feedback so that Mal can then incorporate this in the final version which will be formally submitted as the response to your notice. Is it possible to do a phone link up with the relevant people from your office at 8.30 on Monday 16th June to get any feedback you might have?

PS I'm now working parttime until the new manager is able to start which we expect to be 30 June. In the interim you may find it easier to get me on the mobile if you need me as I won't be in the office much.

Regards,

Zoe Williams

Acting Manager Waste Services
Tablelands Regional Council

phone: (07) 4096 7660

mobile: 0414 4096 7660 (6) Personal information

Malanda Service Centre

31 James Street

PO Box 3

MALANDA QLD 4885

Please note new email address: zoe.williams@trc.qld.gov.au

RTI DL RELEASE -EHP

From: Ingrid Fomiatti Minnesma
Sent: Tuesday, 17 June 2008 11:40 AM
To: Chris Buckingham
Subject: FW: Mareeba Landfill - Rectification works

Attachments: 60040718-001 A.PDF; 60040718-002 A.PDF

From: Steve Ripper [mailto:stever@eachamshire.qld.gov.au]
Sent: Saturday, 14 June 2008 9:04 AM
To: Ingrid Fomiatti Minnesma
Cc: Zoe Williams
Subject: FW: Mareeba Landfill - Rectification works

Ingrid -

I will phone you 8:30am Monday 16Jun08, as planned, but as you can see from Mal Jones's email, we won't have his report. But we will have the attached plans.

regards
Steven

From: Jones, Mal [mailto:Mal.Jones@maunsell.com]
Sent: Friday, 13 June 2008 5:26 PM
To: Steve Ripper; Zoe Williams
Cc: Kasie Loccisano
Subject: Mareeba Landfill - Rectification works

Zoe and Steve.

I will send a draft report by separate email. I'm sorry that this has not been sent earlier. Attached are two plans that would serve well to form the basis of discussions with the EPA on the rectification works required to the landfill cell.

Regards

Mal Jones
Principal Engineer - Environment, Water and Civil Infrastructure
MAUNSELL | AECOM
12 Cribb Street, Milton Qld 4064, Australia
Tel +61 7 3858 6700 Fax +61 7 3858 6705
mal.jones@maunsell.com



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Ph: (07) 3225 8765
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Email: elizabeth.roubin@epa.qld.gov.au

[Visit](http://www.epa.qld.gov.au) us online at www.epa.qld.gov.au

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RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Tuesday, 17 April 2007 8:12 AM
To: Fred Fabris
Subject: FW: Mareeba landfill

Importance: High
Hi Fred

Can you please liaise with Yvonne and send a copy of the latest version of the Mareeba Landfill development approval to Elizabeth. (we made a change to it last week)

thanks

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

From: Elizabeth Roubin
Sent: Monday, 16 April 2007 12:26 PM
To: Chris Buckingham
Subject: RE: Mareeba landfill
Importance: High

Hi Chris

Has the amended decision been delivered to MSC yet? If so, could you please send me a signed copy.

Thanks

Elizabeth

From: Chris Buckingham
Sent: Thursday, 22 March 2007 8:50 AM
To: Elizabeth Roubin
Subject: RE: Mareeba landfill

Hi Elizabeth

A decision was made yesterday afternoon to approve the application. I will send a signed copy through to you in the mail.

Cheers

Chris Buckingham
Principal Environmental Officer

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RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Thursday, 4 January 2007 2:19 PM
To: Jenny Keys; Ingrid Fomiatti Minnesma
Subject: FW: Mareeba STP Meeting minutes

Attachments: Record of Meeting (3) (2).doc
Fyi – I have placed a hard copy on file

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

From: Jentz, James [mailto:james.jentz@maunsell.com]
Sent: Wednesday, 20 December 2006 4:50 PM
To: Chris Buckingham
Subject: Mareeba STP Meeting minutes

Chris,

Please find attached a copy of minutes from our meeting regarding the Mareeba STP. Please advise if you have any comments.

It would be appreciated if you could pass these on to Ingrid.

<<Record of Meeting (3) (2).doc>>

Regards,

James Jentz
Principal Engineer

Maunsell Australia Pty Ltd
124 Spence Street, Cairns
PO Box 5971 CMC, Cairns, QLD 4870
Australia

ABN 20 093 846 925
Tel +61 7 4051 8666
Fax +61 7 4051 7871
james.jentz@maunsell.com
www.maunsell.com

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RECORD OF MEETING

SUBJECT: Mareeba STP Upgrade - EPA Meeting

ATTENDEES: HWA (Clara Laydon, Craig White); Maunsell (James Jentz); Mareeba Shire Council (Patrick O'Flaherty); Qld EPA (Ingrid Minnesma-Formosa, Chris Buckingham)

DATE: 14 November 2006

TIME: 3 pm

Meeting Opened

During the meeting with Maunsell, HWA, Mareeba Shire Council and EPA representatives on the 14/11/06 the following items were discussed in relation to the Mareeba STP upgrade:

- Project Objectives
- Overview of STP
- Receiving Water Review
- Reuse Targets
- STP Quality Targets

1. Project Objectives

An Environmental Management Plan (EMP) for upgrades to Mareeba STP had previously been put together by Maunsell. The deliverables from this plan was to cater for growth in Mareeba, encourage sustainable beneficial reuse and protect receiving water biodiversity. A reuse target was set based on achieving 85% reuse in the 90%ile annual rainfall year.

2. Overview of STP

Currently the STP is using ammonia stripping in an attempt to reduce ammonia levels in the discharged effluent. The ammonia stripping is labour intensive and requires pH correction using acid.

Current median NH₃ concentration is ~6 mg/L, with median TN concentrations at ~13 mg/L and median TP concentrations at ~6 mg/L.

3. Upper Mitchell River System Review

A review of the conditions of the Upper Mitchell River System was undertaken using quality data from the report *Environmental Condition of the Upper Mitchell River System Water Quality and Ecology*, National Heritage Trust Qld Dept of NRM and Qld Dept of Primary Industries, February 2002, and flow data from Natural Resources Mines & Water.

From the results of the river systems review it was concluded that:

1. There is little to no impact from the STP on the river system down stream of Lake Mitchell.
2. The STP discharges have the greatest impact on the local receiving water Two Mile Creek. These impacts are the most significant during low flow conditions during the dry season.

3.1 Outcome - EPA Comment

EPA was in agreement with these findings.

4. Effluent Management Strategy

It was noted that within the Mareeba area there are a number of opportunities for sustainable beneficial reuse. The major opportunity for reuse was identified as irrigation of surrounding cane farms (the majority is 500m from the STP) which have a high dry weather water demand.

Local cane farms currently use controlled flood irrigation practices, by releasing waters and using natural contours and channels to collect tail waters into collection dams. This recycles irrigation water on site and keeps runoff to a minimum.

Due to the farms high demand during the dry season it is theoretically possible to reuse 100% of effluent. However, due to the need to store effluent during the wet season this would require a large storage facility and the size of the storage has practical limitations.

5. Storage Implications

As storage volume increases:

- Surface evaporation reduces dry season yield
- Evaporation increases effluent TDS
- Higher detention time increases risk of algal blooms which results in:
 - Odour potential
 - Elevated pH
 - Toxin potential.
- Construction costs increase

During the storage investigation it was found that a volume which could sustain a reuse target of 70% during the 90%ile wet year was optimal in terms of cost and operational issues.

6. 70% Reuse Target Benefits

With a 70% reuse target during the dry season there would be approximately zero discharge to Two Mile Creek for the 90%ile rainfall year. This would result in a 100% reduction in nutrient loads during the period of low flows in the creek.

When discharge is likely to occur, towards the end of the wet season the creek will be experiencing high flow conditions which will dilute nutrient loads and further reduce impacts. It will also improve effluent quality in the storage ponds by reducing detention times, TDS and algal risks.

6.1 Outcome - EPA Comment

EPA was in agreement with the proposed 70% reuse target (based on 90%ile rainfall year).

6.2 Outcome - Action

Maunsell will update the EMP in accordance with the agreed 70% reuse target.

7. Effluent Quality

7.1 Ammonia

HWA/Maunsell recommended that the ammonia levels in the effluent be reduced to limit the environmental impacts on Two Mile Creek. A median of 1 mg/L was proposed.

7.1.1 Outcome - EPA Comment

EPA was accepting of the ammonia target, however they advised that they would also require a maximum ammonia limit. It was indicated that 3 mg/L was likely to be the requirement.

7.2 Nutrient Targets

HWA noted that the nutrient requirements for the cane farms are 60 and 13 mg/L for nitrogen and phosphorus respectively based on advised irrigation area and farming practices. Median targets of 15 and 6 mg/L for nitrogen and phosphorus respectively were recommended by HWA/Maunsell as they represent less than 50% of the annual nutrient requirements.

This approach would also allow retention of the existing trickling filter technology which is capable of producing a higher level of nitrogen for reuse. New activated sludge technology will also be used to allow the production of lower nitrogen levels for discharge during the wet season.

7.2.1 Outcome - EPA Comment

EPA was accepting of these targets, however they advised a maximum total nitrogen limit would be required. EPA is yet to advise on a maximum total nitrogen target.

Meeting Closed

From: Chris Buckingham
Sent: Thursday, 29 March 2007 9:35 AM
To: pto@msc.qld.gov.au
Subject: Mareeba landfill EMP

Hi Patrick

Can you please confirm that all of the milestones of your landfill EMP have been completed. The EMP finishes on 1 April 2007 and a final report is due to be submitted to EPA before 1 April 2007.

Cheers

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Tuesday, 27 March 2007 4:01 PM
To: Nicole Wells
Subject: mareeba landfill replacement document

Hi Nicole

I have made the change to the decision notice and it can be found on buckinc/licences/2007/Mareeba/conditions.

DLGP have advised that we can make the change for a minor administrative change by just a covering letter and the issue of a replacement decision notice.

I have drafted the covering letter.

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Wednesday, 21 March 2007 2:39 PM
To: Rob Lawrence
Subject: Mareeba landfill

Rob

The simple answer to the question "can they operate under the old permit?" is no as they have exceeded the tonnage limit for that permit - hence the need for this new approval.

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Thursday, 12 April 2007 9:13 AM
To: Dean Sharpe
Subject: mareeba shire landfill meeting

Dean Sharpe

There is a small caste expected for this meeting - Mick Borzi, Trevor Adil, Michael Ari of Maunsells and Aden Padgett of Kern Consulting. I believe they want to discuss the asbestos issue, putrescibles wastes and Bedminster waste. Sounds to me like either Patrick O'Flaherty has not been communicating with his council or they are just trying it on us again.

Ingrid is also coming along.

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Chris Buckingham
Sent: Monday, 15 January 2007 4:25 PM
To: Ingrid Fomiatti Minnesma
Subject: mareeba shire landfill

Ingrid

Ian met with Patrick today. Patrick delivered the additional information, but it has not included all of the information that we need (missing the information on buffer distances which is contrary to our policy).

So Yes we received the info and the clock will restart, but we will be seeking more information along the lines of what Ian emailed to Patrick last Friday.

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Warren Muller
Sent: Thursday, 25 January 2007 2:11 PM
To: Chris Buckingham
Subject: RE: assistance with landfill DA

Chris

Happy for Luke to assist. However, his time may be constrained depending on whether an issue he is working on goes to Court.

Regards

=====

Warren Muller
Manager, Operational Support
Environmental Operations
Environmental Protection Agency
PO Box 15155
CITY EAST QLD 4002

Tel: (07) 3227 8920
Fax: (07) 3225 1316
E-mail: warren.muller@epa.qld.gov.au <mailto:warren.muller@epa.qld.gov.au>

visit us online at <http://www.epa.qld.gov.au>

-----Original Message-----

From: Chris Buckingham
Sent: Thursday, 25 January 2007 11:09 AM
To: Warren Muller
Subject: assistance with landfill DA

Hi Warren

We are in receipt of an application from the Mareeba Shire Council for the expansion of the Mareeba Landfill up to 100,000 tpa. Gary O'Connor was originally assisting us with the assessment process, however he is now unable to do so with his Mt Isa lead commitments. Are you able to provide an officer with landfill expertise to assist us in this matter? (Luke Zanbelli?)

We have now received the additional information from Council.

Cheers

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

From: Chris Buckingham
Sent: Thursday, 25 January 2007 2:22 PM
To: Warren Muller
Subject: RE: assistance with landfill DA

Thanks for that Warren. Should we deal directly with Luke or would you prefer that all dealings are through you?

Cheers

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

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Warren Muller
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PO Box 15155
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Tel: (07) 3227 8920
Fax: (07) 3225 1316
E-mail: warren.muller@epa.qld.gov.au <mailto:warren.muller@epa.qld.gov.au>

visit us online at <http://www.epa.qld.gov.au>

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Cheers

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

RTI DL RELEASE -EHP

From: Zoe Williams [zoew@eachamshire.qld.gov.au]
Sent: Tuesday, 24 June 2008 3:23 PM
To: Chris Buckingham
Subject: FW: Draft Mareeba Report

Attachments: 080602_mareeba landfill liner investigation 130608.pdf

Chris,

Unfortunately I can't get hold of Mal. I remain hopeful that he will manage to get the report completed today so we can send it to you tomorrow. However in the meantime I've attached the draft of the report that we received last week. We have asked Mal to include a few more things and to expand on some of his points which is why we don't have the finished report as yet, however this will provide you with some information to start with. I will get you the final report as soon as possible.

Regards,

Zoe Williams

Acting Manager Waste Services
Tablelands Regional Council

phone: (07) 4096 7660
mobile: 0414 404444 (6) Personal information
Malanda Service Centre
31 James Street
PO Box 3
MALANDA QLD 4885

Please note new email address: zoew@trc.qld.gov.au

From: Jones, Mal [mailto:Mal.Jones@maunsell.com]
Sent: Monday, 16 June 2008 9:20 AM
To: Steve Ripper; Zoe Williams
Subject: Draft Mareeba Report

Regards

Mal Jones
Principal Engineer - Environment, Water and Civil Infrastructure
MAUNSELL | AECOM
12 Cribb Street, Milton Qld 4064, Australia
Tel +61 7 3858 6700 Fax +61 7 3858 6705
mal.jones@maunsell.com



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RTI DL RELEASE -EHP

CNS 1294

✓ CARMS

CNS 1294.4

Chris Buckingham

From: Chris Buckingham
Sent: Tuesday, 17 November 2009 2:17 PM
To: 'Kirsty Lamperd'
Cc: Benny Asirvatham
Subject: RE: ERA 53 - Mareeba landfill
Attachments: gl_bi_ipa_ odour_impact_assessment.pdf; image001.png



Hi Kirsty

A development application will need to be lodged. The activity as you mentioned being ERA53 Soil conditioner manufacturing has an annual fee of \$3600 which will have to be paid along with an application fee of \$500.

These operations have the potential to generate significant odour when inappropriately managed. In this regard we would be requesting an odour impact assessment which should include odour dispersion modelling. What is the distance to the nearest receptors. I have attached our guidelines for odour impact assessment which should be used as a guide.

Leachate generation – how is this to be managed? Will it be reused in the process? Will it be sent for treatment? How will it be collected and where.

How will leakage of leachate to groundwaters be prevented? Will there be an impervious pad upon which the compost is made/matured?

The forms required are the IDAS form 1, form G and referrals checklist which are found on the IPA website. A registration certificate will be required once the DA has been approved.

Regards...
Chris

From: Kirsty Lamperd [mailto:KirstyL@trc.qld.gov.au]
Sent: Tuesday, 17 November 2009 1:13 PM
To: Chris Buckingham
Subject: ERA 53 - Mareeba landfill

Hi Chris

As discussed briefly last week, Dr Daniel Handley and others have approached Council with a composting trial proposal. They have identified Mareeba Landfill as the ideal site due to the climate, proximity to farms, land availability and product availability. Products in mind to be composted include the mulch at the transfer station, biosolids, cardboard and agricultural products brought in. I am currently working on putting together a business plan for the project and we hope to present it to Council in December.

To gain a reasonable result from the trial it is proposed to process greater than 200t per annum and therefore an ERA 53 would need to be obtained. I am meeting with Daniel at the Mareeba landfill on Friday to assess the site's suitability. Are you able to provide me with requirements that would need to be met to gain the ERA eg. site preparation, leachate collection, sensitive receptors. Also can you please forward through the appropriate application forms and fees.

I have attached an overview of the trial written by Daniel.

Let me know if you have any queries.

Regards

Kirsty Lamperd

Senior Advisor Environmental Planning

Corporate Planning Performance and Risk Group, Planning and Development

Tablelands Regional Council



Phone: 07 4043 4000 | Direct: 07 4043 4390 | Fax: 07 4096 5086

Email: kirstyl@trc.qld.gov.au | Website: www.trc.qld.gov.au

31 James Street | PO Box 3, Malanda, Queensland, Australia, 4885

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RTI DL RELEASE -EHP

Composting Demonstration Facility - Draft proposal for discussion

**Prepared by Dr. Daniel Handley
for meeting with Tablelands Regional Council
Wednesday 11th November 2009**

A proposal is presented to council to establish a demonstration compost making facility on a Council landfill or waste transfer station. Mareeba landfill has been identified as the preferred site. The objective of the project is to demonstrate the multiple economic, environmental and social benefits of closing the loop on organic waste streams and converting this to a high value, biologically active, inoculum compost for use in local agriculture.

The facility will demonstrate a method of open wind-row composting that is simple yet effective, requiring minimal capital investment, which can be applied to multiple transfer stations across the region. This sort of distributed system can process organic waste in close proximity to both the sources of waste and the demand for the end product, thus minimising transport costs and impacts. This is particularly suited to rural communities that are agricultural hubs. The facility will produce high value inoculum compost that is increasingly sought after by the local agricultural community but is not currently widely available.

All Councils in the region have expressed interest in such a proposal and therefore this demonstration facility can provide a working example for all Councils. It is anticipated that following the successful demonstration of the concept other sites will be established across the region and the method developed can serve as a model. The demonstration site should operate at full-scale capacity as this will demonstrate the economic viability and maximise the likelihood of paying back the investment within the trial period.

This initiative has the in principle support of a wide range of organisations. This support will be sought in writing. These organisations include; Councils, FNQROC, Northern Gulf NRM Group, GBRMPA, TERRAIN, WTMA and Sustainable TNQ.

Benefits to Council:-

- Demonstrating social and environmental responsibility.
- Turning the waste into a valuable commodity can generate an income, rather than waste handling being an expense.
- The long-term sustainability of our region is dependant on a profitable and productive agricultural sector. The long-term health of our agricultural soils is the foundation of this desired outcome and this initiative can assist farmers to restore the health of their soils.
- The aerobic composting of organic waste can help to reduce greenhouse emissions from landfill, the most significant source of Council emissions.
- Transport cost and emissions can be reduced by handling organic waste on local sites for use by local agriculture.
- Supporting the community:
 - Council can provide local farmers with a much-needed alternative to fertilisers that will support them to be financially viable while also improving the fertility of their soils. This can help ensure the sustained viability of rural communities. The use of compost and compost tea has been demonstrated to reduce fertiliser use by at least 30% in the first year with further reductions in subsequent years.
 - The compost produced can also be used to benefit the local community, for example in local parks and land restoration.
 - Reduced use of chemical fertilisers and pesticides (due to increased soil health) will improve the health of farmers and reduce the burden on the health system.
 - Creating a closed loop system will allow money to be retained within the regional economy.

- A number of additional local industries can be established to support the production of compost and compost teas. This can offer the potential to generate employment opportunities in innovative and emerging industries.
- The social value nourished within the local community of feeling part of a worthwhile local project.
- This initiative can support the growth of a new and improved agricultural industry. There is an urgent need for the diversification of the regional economy, as highlighted by the recent world wide financial crisis and its impact on the regional economy.
- New agricultural practices that use less fertiliser and pesticide can provide the community with healthier and more nourishing food, providing many health benefits.
- The catchment water quality can be improved:
 - Fertiliser and pesticide use can be reduced, while improved soil structure reduces top-soil loss. These benefits can reduce run-off in the catchment, improving the health of the Reef, and the entire catchment. This has significant benefits to everyone in this region.
 - The quality of drinking water supplied by Council will be improved and the need for high-level water treatment can be reduced. This may reduce Council's operating costs.
 - Healthy agricultural soils have lower irrigation requirements while an increased level of soil carbon increases the soils ability to hold water. Therefore this initiative can help reduce water pumping costs, CO₂ emissions and reduce the need for further expensive water infrastructure.
- The use of inoculum compost and compost teas in conjunction with other farming practices such as 'Keyline Design' has been demonstrated to significantly increase the carbon content of the soil. The potential for sequestering atmospheric CO₂ in agricultural soils is now being recognised internationally. This can play a crucial role in the global effort to sequester CO₂. Furthermore, under an emissions trading scheme 'soil carbon' may become a tradable commodity and may provide farmers with an additional source of income, while also providing the Council with a local means to off-set emissions.
- When the urban population recognises the links between their waste and the farming community it will provide an incentive for them to become more diligent with the separation of waste. This would facilitate the feasibility of providing street level organic waste collection bins so that domestic waste can be separated at source. Similar projects currently underway in Australia have achieved consistent contamination rates of only 0.2%.
- Excellent public exposure. The Council can be recognised as leaders supporting a regional initiative to become a sustainable region.

Council landfills and transfer stations can provide the perfect locations for composting facilities because:-

- Sites can provide adequate area
- Organic waste is already collected there
- ERA permit should be obtainable with little additional site preparation
- Most required plant, such as loaders, is already on site
- Water is available on site
- Transfer stations are well distributed in close proximity to both the source of waste and the agricultural market
- A positive project on site would be highly visible to the public
 - A garden growing vegetables adjacent to the site and green walls around the site would beautify the landfill/transfer stations and provide an excellent educational example.

The Council is invited to become a key partner in this initiative. The Council would be required to provide in-kind support consisting of:

- Sufficient space at a land-fill or transfer station, with access to water
- No cost access to green waste and bio-solids
- Application for ERA 53 permit

RTI DL RELEASE -EHP

is

sch4p4(6) Personal Information

From: Tristan Roberts [Tristan.Roberts@ehp.qld.gov.au]

Sent: Monday, 9 March 2009 11:53 AM

To: Dean Sharpe

Subject: RE: Updated: TRC and SITA - Mareeba Landfill - TRC wants to discuss approvals for the construction of the new cell

No problem

Tristan Roberts

Environmental Officer

Environmental Services, EPA

Ph: (07) 40466 721

-----Original Appointment-----

From: Dean Sharpe

Sent: Monday, 9 March 2009 11:40 AM

To: Tristan Roberts

Subject: Accepted: Updated: TRC and SITA - Mareeba Landfill - TRC wants to discuss approvals for the construction of the new cell

When: Monday, 16 March 2009 1:00 PM-2:00 PM (GMT+10:00) Brisbane.

Where: Wet tropics Room

Tristan

Can you dig out the EMP and corro highlighting issues with the first cell so we can highlight to TRC.

Thanks

Anici Damian

Subject: Updated: TRC and SITA - Mareeba Landfill - TRC wants to discuss approvals for the construction of the new cell
Location: Wet tropics Room
Start: Mon 16/03/2009 1:00 PM
End: Mon 16/03/2009 2:00 PM
Show Time As: Tentative
Recurrence: (none)
Meeting Status: Accepted
Required Attendees: Tristan Roberts; Dean Sharpe; Benny Asirvatham; Ingrid Fomiatti Minnesma; Andrew Date; Steve Smith

Hi Guys,

Kirsty Lampard wants to meet regarding the following:

"With regards to the Mareeba landfill, Council has met with SITA-CEC regarding construction of the next cell of the landfill. I am wanting to touch base with the EPA on any approvals, requirements, conditions, etc, that need to be fulfilled in this regard. I'm not sure of your familiarity with the Mareeba landfill however the landfill will be developed over 5 stages (6 cells). We are currently in cell 1A & 2 and expect to have approximately 15 months of space left so need to commence construction of the new cell this year prior to the wet season. Can you please provide me with advices in regards to new cell construction or pass this message onto the appropriate that I need to deal with."

She has noted that her manager from TRC and SITA will be attending the meeting.

The Wet Tropics room has been booked from 1 - 3PM

Thanks,
Tristan

From: Ian Florence
Sent: Friday, 26 October 2007 2:23 PM
To: tsa@msc.qld.gov.au
Subject: Mareeba Landfill
Attachments: MareebaLandfill_DraftEMP_Appendix D.DOC

Trevor,

Please find attached the relevant part of the draft EMP from Patrick.

As discussed I'll be in touch shortly about a site visit and meeting. Also, I forgot to mention during our conversation - as you won't be able to provide the third party audit report within the requested time, could you please respond by email and request to extend this date to reflect the actual timing of the audit & report.

Regards

Ian Florence

Environmental Operations

Northern Region

Telephone 07 40466727

Facsimile 07 40466606

<<...>>

RTI DL RELEASE -EHP

Appendix D – Issues & Action

RTI DL RELEASE -EHP

Licence Condition	Issue	Action
1.D3	Stormwater captured within bunds required by this environmental authority was not free from contaminants or wastes prior to release to the environment	<p>A full review of site drainage is being undertaken as part of proposed amendments to the Mareeba landfill site usage.</p> <p>To mitigate the migration of stormwater offsite, current remedial actions include the filling and compaction of the open excavation on the eastern boundary. The excavation previously breached the eastern boundary. This was a directed undertaking as part of the new compositely lined landfill cell construction.</p> <p>A swale drain running along the eastern boundary is to be provided to maintain the site amenity of the golf course and a provide a directed flow path south for stormwater. This will alleviate stormwater entering from the golf course onto the landfill site.</p> <p>An in-cell leachate sump will be constructed in the new compositely lined landfill cell construction which is currently being constructed and is scheduled for completion by early 2007.</p> <p>Overflow and wet season excesses will be directed to a lined evaporative pond which is currently being construction.</p> <p>Construction of the pond is scheduled for completion in early 2007.</p> <p>This will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.D1	Diversion drains or embankments were not constructed and maintained to divert surface waters away from all areas where contact with wastes or contaminants may occur	A review of existing site contours and drainage was undertaken prior to the current new cell construction. The design contours address site use changes and the delineation of stormwater and potential leachate generation. The implementation is currently underway as an integral part of the new cell construction program.
3.G5	All reasonable and practical measures were not being taken to ensure all waste disposal cells are operated and managed so as to prevent or minimize the generation of leachate	As above - 3.D1 A working face of no greater than 30 metres will be enforced immediately and cover will be implemented and maintained on all non working areas.

Licence Condition	Issue	Action
3.G10	The leachate storage pond is not constructed and managed so that a freeboard capable of preventing overspill is maintained at all times.	<p>A revised process of evaporative ponding and leachate recirculation and has been included in the design into the current cell construction. This is proposed to improve drainage issues, segregation of stormwater and leachate and to provide a directed control of excesses.</p> <p>Overflow and wet season excesses will be directed to a lined evaporative pond which is currently being construction.</p> <p>Construction of the pond is scheduled for completion in early 2007.</p> <p>This will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.G16	The leachate evaporation pond is not operated and managed so as to prevent overflow occurring at any time when leachate is being evaporated	<p>A pond is currently under construction and is scheduled for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pond will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis. These will be transported to the Mareeba septic drop off facility for processing through the Mareeba Sewerage Treatment plant.</p> <p>The pond will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.G18	Effective measures to ensure that all wastes accepted for disposal at the licensed place are not disposed of into water or leachate collected at the base of any active waste disposal cell have not been taken	<p>Minimisation of leachate generation is being addressed as part of the site use planning (plan provided). Diversion drains, containment/evaporative ponds and overflow redundancy are integral to the design. The construction of this plan is currently underway and Stage 1 completion is programmed for early 2007.</p> <p>Disposal of waste into water or collected leachate will be addressed in the new landfill cell where a profiled composite liner will direct leachate through drainage media to a leachate collection sump.</p> <p>Construction of an overflow pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p>
3.G25	Used wet cell batteries were not stored in a fully bunded covered enclosure	A covered location will be provided for battery storage and bunded palettes will be sourced for future storage.
3.G39	There is no firebreak established around the waste disposal facility to prevent the spread of fire to adjoining property.	<p>A firebreak was established in June 2006 in conjunction with preparations for a full security fence to be erected around the entire site.</p> <p>The fencing of the landfill site was completed in September 2006.</p>

Licence Condition	Issue	Action
3.H6	No measurement of leachate head in any future waste disposal cell has been undertaken, as no leachate sump wells have been installed in the active waste disposal cell	<p>Leachate head measurements will begin when landfilling commences into the new landfill cell currently under construction. The cell is programmed for completion in early 2007.</p> <p>The revised operational plan at the Mareeba landfill site incorporates the reprocessing of the area that has been used historically as the waste disposal area. This reprocessing will occur into the new compositely lined cell and is proposed to occur at an approximate rate of 10,000 tonnes per year.</p> <p>The processing will begin with the most recently processed wastes and work back through the landfill chronologically.</p> <p>An additional consultant's study has been approved for engagement by Mareeba Shire Council to determine an environmental baseline for the site. This is proposed for completion by March 2006. A copy of the report findings will be forwarded to the EPA once completed.</p>

From: Ian Florence
Sent: Thursday, 25 October 2007 11:19 AM
To: dean.sharpe@epa.qld.gov.au
Subject: Mareeba landfill - keeping up the pressure on compliance concerns.
Attachments: Warning letter - Mareeba landfill Oct 07.doc

Attached – FYI.

Letter went out today, contents as discussed.

Thought I'd give you a heads up as, considering the content and tone, it may result in a reaction from MSC that goes straight to the DM.

Cheers <<...>>

RTI DL RELEASE -EHP

Enquiries Ian Florence
Telephone (07) 40466727
Your reference
Our reference CNS 1294

24 October 2007

Chief Executive Officer
Mareeba Shire Council
PO Box 154
Mareeba QLD 4880

Dear Sir/Madam

Mareeba Landfill – Compliance with EPA Permit Number IPDE00493906A11

I write with reference to our correspondence of the 30 July 2007 and Mareeba Shire Council's response dated 10 September 2007 in relation to various compliance issues at the Mareeba Shire Council landfill facility, Mareeba.

In order to allay the concerns of the Environmental Protection Agency (EPA) in relation to the final construction and operation of the landfill and compliance with the associated Permit conditions, the Mareeba Shire is required to submit the auditor's report as required in Condition G16 of Permit Number IPDE00493906A11. Conditions G14 – G17 requires that a Third Party Environmental Audit be conducted within 28 days of commencement of the activity and that the resultant report be submitted to the EPA within 28 days of the inspection. At the time of writing no such report has been received by the EPA. Accordingly a copy of this report shall be forwarded to this office by the **8 November 2007**.

In respect to the Mareeba Shire Council's response regarding the reprocessing of waste from the existing landfill:

- The condition was included in the EPA's initial draft of the Permit, however at the request of the Mareeba Shire Council it was removed from the final issued Permit.
- It was removed as the requirement was clearly included in Mareeba Shire Council's approved Environmental Management Program (EPA Number MAN5133).
- This EMP was submitted by the Mareeba Shire Council to address significant ongoing non-compliances identified by the EPA at the existing landfill site.
- The Mareeba Shire Council gave a written undertaking in this EMP to reprocess 10,000t of waste into the new cell **annually** from completion of the new landfill cell, and not at a time of Council's choosing.
- Reports on the progress of works required by the EPA's approval Certificate (MAN1533) due in February and April 2007 have not been provided.

Please be advised that wilful non-compliance with an approved Environmental Management Program is viewed as a serious offence and carries a maximum penalty of 1,665 penalty units or 2 years imprisonment.

With reference to those issues identified above the EPA would like to invite you or the Manager Civil Works to this office for a meeting to discuss the Permit Conditions, EMP and Site Based Management Plan pertaining to the operation of the Mareeba landfill site.

For further information regarding this matter or to arrange a meeting please contact Ian Florence on (07) 4046 6602.

Yours faithfully

Chris Buckingham
Principal Environmental Officer

RTI DL RELEASE -EHP

13/4/07 Meet with Trevor Adit + Mike Borzi
- Manelsa Landfill

IM JS CB

EPA 75avii not EPA 75aviii - Done ✓

WT3

- Want specific reference to Bedminster
Plant - residue
(D) - Can amend definition in the DA to
clarify that industrial waste includes
Bedminster process residue waste.

WT4 - WT6

- Existing licence for Manelsa developed
at a time when options were not
available.

EPA

No - Looking to delete 3, 4, 5, 6, in WT6

- potential kitchen waste from commercial
premises - wanted to delete.
EPA No - Bedminster - higher in waste man-
agement hierarchy.

TA

Asbestos in the landfill - want to be
able to dispose of it to landfill -
wonder about inappropriate disposal.

IM

Asbestos - public consultation needed before
can amend the DA. Not saying no
but need to have public consultation
before EPA will be able to amend DA.

TA

If waste cannot be processed at
Bedminster would EPA allow all
wastes into Manelsa Landfill.

IM

EMPs would be able to be lodged
to cover this eventuality.

JS

Obviously original proposal - incinerate waste
no gas generation - if possible waste
may need to resist 1st management.

16/3.

Mareeba Landfill - TRC.

Kirsty Lampard
Steve Lepper
Ian Andrew

IFM, AD, OS, BA SS.

Development of new cell at Mareeba Landfill.

- Cell 2 location.

- Issues - w/ cell 1 - apply to Cell 2.

- Put all old landfill waste → Cell 1

" better opportunity to rehab earth
+ shed rainfall - put all waste → Cell 1.

DS - Concerns about integrity of cell 1
line after it filled - Munnell letter
saying it is acceptable?

TG - Has letter from Munnell saying it
is OK - proceed on this basis.

DS - Talk to Munnell on detail design criteria

TG - front with landfill - consistency needed

DS - Lapping requirements will not standard
for other landfills.

IFM - Facilities licensed to accept C+I waste
letter to commercial operators.

From: Ingrid Fomiatti Minnesma [Ingrid.FomiattiMinnesma@ehp.qld.gov.au]
Sent: Friday, 23 February 2007 9:51 AM
To: Ian Florence; Chris Buckingham; Dean Sharpe
Subject: RE: Mareeba Landfill Conditions (draft v1).doc

Hi Ian

I would like to discuss this with you. I have given you guidance and standard conditions on the ANZECC stuff, however to fully assess your consideration we all do need an AR report. An AR report is not a waste of time as it is our justification and defence in case the decision gets appealed, as discussed it really should be done in tandem when you are drafting the EA conditions. I really can not give you further guidance without that as we have talked the ANZECC stuff through on at least 4 occasions, so in general terms I know you are on the right track.

I take on board your concern re workload and encourage you to talk to Chris to prioritise your workload today (as he will be away most of next week) as an high quality AR report for the landfill is certainly one of them.

Maybe the most fruitful way is to have a quick meeting with all concerned if you just after some preliminary feedback rather than continuing e-mailing. I am available this afternoon and so is Chris, I am sure Dean will be able to make himself available later on this afternoon for half an hour as well.

From your e-mail I sense that your workload is an issue for you and you may require guidance on that. Therefore I think it is crucial that you and Chris work out your workload for the coming 3 -4 weeks before you go as I would prefer the 2 major projects you are working on to be finished and the minor projects to be put on hold or re- assigned. I leave that in both your capable hands.

regards

Ingrid

Ingrid Fomiatti Minnesma

District Manager

Environmental Operations

Cairns District Northern Region

Environmental Protection Agency

Phone: (07) 4046 6737 Fax: (07) 4046 6606

Email: Ingrid.Minnesma@epa.qld.gov.au

You can visit us online at www.epa.qld.gov.au

From: Ian Florence
Sent: Friday, 23 February 2007 9:13 AM
To: Ingrid Fomiatti Minnesma; Chris Buckingham; Dean Sharpe
Subject: RE: Mareeba Landfill Conditions (draft v1).doc

Ingrid,

I don't need a detailed critique, as this is the first license of this type that I've drafted (including the ANZECC) and its been done

pretty much on my own, I'd just like an indication that I'm on the right track.

As I have a great deal of other issues to get done in the few weeks (please see the task list on the board – includes a number of other stat stuff) I don't really want to be wasting time drafting paragraphs for the AR for conditions that are off the mark and won't be used.

Chris shouldn't need an AR for the odour condition as he's familiar with the problem I'm seeking to address. I've already discussed most of the waste acceptance stuff with Dean and I've been advised that you have very specific ideas on how you like the ANZECC conditions done.

So comments, no matter how brief, would be greatly appreciated. I think open communication throughout the process, if not overly onerous, will be more valuable than the stress that would be caused if I get the whole package ready to go in a week and find I have re assess the whole thing.

Regards

Ian

From: Ingrid Fomiatti Minnesma
Sent: Thursday, 22 February 2007 4:49 PM
To: Ian Florence; Chris Buckingham; Dean Sharpe
Subject: RE: Mareeba Landfill Conditions (draft v1).doc

Ian

I really need an assessment report to see how you have considered things before I can give you my advice. I think this would be the same for Dean and Chris

Cheers

Ingrid

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District Manager

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From: Ian Florence
Sent: Thursday, 22 February 2007 3:54 PM
To: chris.buckingham@epa.qld.gov.au; ingrid.minnesma@epa.qld.gov.au; dean.sharpe@epa.qld.gov.au
Subject: Mareeba Landfill Conditions (draft v1).doc

<< File: Mareeba Landfill Conditions (draft v1).doc >>

Afternoon fellas,

Could you please pass your collective experienced eyes over the attached draft conditions. The formatting is compliments of Eco Track and Yvonne has kindly offered to sort that out for me.

In the spirit of Project management:

Chris could you have a closer look at the odour part, Dean the waste part and Ingrid the water part.

I'll start on the AR tomorrow.

Cheers

Ian

RTI DL RELEASE -EHP

From: Ingrid Fomiatti Minnesma [Ingrid.FomiattiMinnesma@ehp.qld.gov.au]
Sent: Thursday, 22 February 2007 4:48 PM
To: Ian Florence; Chris Buckingham; Dean Sharpe
Subject: RE: Mareeba Landfill Conditions (draft v1).doc

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From: Ian Florence
Sent: Thursday, 22 February 2007 3:54 PM
To: chris.buckingham@epa.qld.gov.au; ingrid.minnesma@epa.qld.gov.au; dean.sharpe@epa.qld.gov.au
Subject: Mareeba Landfill Conditions (draft v1).doc

<< File: Mareeba Landfill Conditions (draft v1).doc >>

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Cheers

Ian

NS 6564.2

Yvonne Dent

From: Ian Florence
Sent: Tuesday, 13 March 2007 9:26 AM
To: nicole.wells@epa.qld.gov.au; yvonne.dent@epa.qld.gov.au
Subject: FW: Mareeba Landfill - DA

See below.
Can you please extend the decision date accordingly?
Cheers
Ian

From: Patrick O'Flaherty [mailto:pto@msc.qld.gov.au]
Sent: Tuesday, 13 March 2007 8:52 AM
To: Ian Florence
Cc: Ingrid Fomiatti Minnesma
Subject: Mareeba Landfill - DA

Ian,
I have been asked by the Noel Briggs the CEO of Mareeba Shire Council to request an extension of the DA time by a further 7 days until 21 March 2007. This will give Councillors an opportunity to review the conditions at the General Council Meeting on 20 March 2007.

Please advise as to this request.

Regards

Patrick O'Flaherty
Manager, Water & Waste
Mareeba Shire Council
Phone: (07) 4030 3984 Fax: (07) 4092 5138
Mobile: 0414p4(6) Personal information
E-mail: pto@msc.qld.gov.au
Web: www.msc.qld.gov.au

305 420 (1P0200493906A14)

Enquiries Benny Asirvatham
Telephone (07) 40466739
Your reference WAS-DEP
Our reference CNS6465

07 November 2008

Kirsty Lamperd
Manager Waste Services
Mareeba Shire Council
PO Box 154
MAREEBA QLD 48880

Dear Ms.Lamperd,

Environmental Investigation Report

We reviewed your report submitted to us in response to our notice issued under section 323 of the Environmental Protection Act 1994 to conduct an environmental investigation at the Mareeba Landfill on land described as Lot 517 on Plan CP851523, located at Mareeba. While the cause of the landfill liner displacement was addressed, it seems that the information about the integrity of the HDPE liner was based on some assumptions. The EPA would like to be informed how the council officers estimated that the liner rose by approximately 500mm and the methods employed to estimate that. In the report It has been suggested that a non destructive inspection should be carried out without removing the HDPE by feeling for any folds in the GCL laps between the roles and further information in this regard is warranted.

Further details of how the elongation at yield for the 1.5 mm thick HDPE liner was calculated and also the factors and the methods used to comprehend that the HDPE is not overstressed by stormwater pockets underneath are required. The report also indicated that the ground water and surface water monitoring by Golder Associates doesn't indicate any contamination, however information about Conductivity, Polycyclic Aromatic Hydrocarbon, Pesticides and Total Petroleum hydrocarbon is essential to assess the ground water quality as mentioned in the development permit.

The EPA has concerns over the ability of the landfill operation to effectively in compliance with the licence conditions during the wet season. In this regard I wish to advise you to take all necessary action including compacting and capping the waste materials before the onset of the wet season and also to strengthen the bund walls if necessary to avoid storm water collected at the site overflows into the storm water drain any further inundation of stormwater under the HDPE layer.

Should you have any questions concerning this matter, please telephone Benny Asirvatham

on (07) 4046 6739.

Yours sincerely

Ingrid Fomiatti Minnesma
District Manager

RTI DL RELEASE -EHP

Landfill Staging and Final Landform

The application is for a waste disposal facility receiving and disposing of 75,000t or more, but less than 100,000t of general waste per year on land parcel Lot 517 on CP851523. The application includes details in relation to Stage 1 and in part Stage II. Details of the proposed landfill footprint, further staging and final landform are not provided.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
1. A drawing showing the landfill footprint over the estimated 25 year life of the landfill.	With the IRD and population growth factored in the estimated life of the site is estimated at 20 years	Maunsell – Mal Jones
2. A drawing(s) showing the stages of the landfill over the life of the landfill including stormwater and leachate management.	The revised drawings will show the landfill footprint development at the start 0 years, 5 years, 10 years, 15 years and 20 years. Each plan will provide a snap shot and will show the relevant leachate and stormwater management for that stage of the operation.	Maunsell – Mal Jones
3. A drawing(s) showing the final landform including landform heights.	The landfill final height is set to the underside of the landfill cap at contour (RL 427) the 20 year development is expected to represent the final landform. This is due to the provided IRD, achievable compaction and volume of cover to be used, current airspace calculations do show a reduction from 25 years to 20 years of airspace based on the current 2% population growth, due to current trends in recycling reduction and reuse of materials it is expected to increase which imply that the site life may well be further extended in years to come.	Maunsell – Mal Jones

Waste Acceptance Criteria:

The applicant has advised in the Site Based Management Plan (SBMP) that much of the wastes to be received at the landfill will be inert (for example in s6.5 and 6.7). However the application lacks sufficient detail to support this conclusion. It is requested that the following information be provided to clarify the types of wastes to be received.

	RESPONSE	TO BE ACTIONED BY
4. It is requested that the applicant provide: The annual quantities of the following types of waste that the applicant anticipates will be received for disposal at the landfill: a. CEC Resource and Recovery Plant residual waste; b. Domestic sourced general waste; c. Vegetation and garden waste; d. Commercial and industrial waste; e. Construction and demolition waste; f. Animal carcasses; and g. Asbestos;	<p>a. 50,000 tonnes per year (approx)</p> <p>b. 5,000 tonnes per year (approx) - it is intended that this will be received and transported to CEC Resource Recovery plant in Cairns for processing. This waste stream will not be landfilled.</p> <p>c. 1,000 tonnes per year (approx) - chipped onsite and purchased for local area use. This waste stream will not be landfilled.</p> <p>d. 2,500 tonnes per year limited - historically this waste stream involved matter from agricultural processing and packaging. It is intended that this waste stream will not be landfilled and will be directed to the CEC Resource Recovery plant with the Domestic General Wastes for processing. Only the residual/non putrescible fraction will be landfilled.</p> <p>e. 2,500 tonnes per year. Considered predominantly inert and directed to the landfill.</p> <p>f. < 100 tonnes (approx). Directed to the landfill as a Special Burial and covered as soon as is practicable.</p> <p>g. < 100 tonnes per year (approx). Directed to a separate asbestos burial area which is identifiable by a surveyed location within the landfill cell.</p>	MSC / CEC – Patrick O’Flaherty, Roy Lavis

<p>5. Details of the practices and procedures proposed to segregate recyclable materials from materials to be received at the landfill. Recyclable materials would include:</p> <ul style="list-style-type: none"> a. Green waste b. Cardboard c. Paper d. Concrete e. Bricks f. Plastics g. Glass h. Metal i. Foodstuffs (It is stated in the SBMP that condemned foodstuff will be accepted at the site. This waste is accepted at the composting facility). 	<ul style="list-style-type: none"> a. directed to a designated disposal area where which is supervised by the landfill operations staff. b. Currently no separation. c. Currently no separation. d. Currently no separation. e. Currently no separation. f. CEC Resource Recovery, Cairns g. CEC Resource Recovery, Cairns h. directed to a designated disposal area where which is supervised by the landfill operations staff. CEC Resource Recovery, Cairns. i. Condemned foodstuffs will be accepted to the Mareeba landfill site as part of the putrescible waste stream and transported to the CEC Resource Recovery plant in Cairns for reprocessing. 	<p>MSC – Patrick O’Flaherty</p>
<p>6. Details of the monitoring program for the recyclable materials segregation, practices and procedures (including those at regional transfer stations) and corrective actions proposed to ensure that recyclable materials are not disposed to landfill.</p>	<p>Monitoring of metal recycling is undertaken by weighing the recycled metals that are removed from the site by the recycling contractor.</p> <p>Processed greenwaste is recorded by weight by the mulching contractor and is recorded as part of the waste collection software.</p> <p><u>Need procedures for checking incoming loads (those not going to CEC) and removing identified recyclables. It would be good if this could be provided in the updated SBMP if possible.</u></p> <p><u>Details of how separation of recyclables at WTSS will be facilitated is requested.</u></p>	<p>MSC – Patrick O’Flaherty</p>

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7. Details of its contingency plans for circumstances where the CEC Resource and Recovery Plant is not operational.	<p>What needs to occur?</p> <ol style="list-style-type: none"> 1. Contractor needs to use source segregation. OK for kerbside but what about other? <u>No kerbside recycling for domestic waste in Mareeba – so it would need to go through a MRF before disposal.</u> 2. Need to condition contractors supplying waste. (same condition as Springmount) 3. Contingency plan for impact of cyclone. <p><u>What needs to occur has been identified, we would like to see the results of this work if possible.</u></p>	<p>MSC – Patrick O’Flaherty, CEC – Roy Lavis</p>
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Impacts upon Sensitive Receptors

The application involves the substantial increase in volume of waste at an existing landfill. Landfills have the potential to cause adverse impacts on sensitive receptors through odour, dust, noise and litter. The application has advised that sensitive receptors will not be impacted. However the details of the assessment that resulted in this conclusion are not provided.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
8. A drawing showing the location of sensitive receptors in relation to the landfill.	<u>Drawing still to be to be provided</u>	Maunsell – Mal Jones

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<p>9. Distances of the sensitive receptors from the landfill during the progressive stages of the landfill. Please include details of any planned future sensitive land uses that are relevant to the site.</p>	<p>The residential development appears to be on the southern side of the site. Based on the cell development sequence, cells 1,2,3 and 5 will be situated outside of the 500m buffer area, while cells 4 and 6 are situated within the 500mm buffer area and as a result will require the construction of screening berms on the cell perimeter in order to screen daily landfill operations from the public view. Currently the remaining land within the buffer area is crown land and as a result will not be developed thus creating a reasonable natural buffer zone.</p> <p><u><i>Is there any supporting information, etc to indicate that current operations at the site have not resulted in impacts on, or complaints from, the residents within this critical 500m buffer?</i></u></p>	<p>Maunsell – Mal Jones</p>
<p>10. An assessment of potential dust impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development and will require the management of dust during construction within and outside of the 500m buffer area. With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years) care will have to be taken to stockpile the various material at selected locations so as to ensure easy access and maintenance of the stockpiles during the life of the site. Adequate dust suppression during construction coupled to seeding and re-vegetation of long term stockpiles and completed side slopes ie cells 4 and 6 as a potential screen berm (rising green wall).</p>	<p>Maunsell – Mal Jones</p>

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<p>11. An assessment of potential noise impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Predicted noise limits should be discussed with reference to the EPA Guideline, Planning for noise control. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development 1 to 20 years and will require the management of noise during construction and landfill operations within and outside of the 500m buffer area.</p> <p>With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years). Additional noise suppression can be generated by construction a suitable screen berm during the early stages of operation prior to developing cells 4 and 6, this coupled to seeding and re-vegetation of long term slopes and completed side slopes will reduce the noise levels. Contractors will be required to ensure the construction and landfill operating equipment is of good operating condition and meets all relevant noise requirements.</p> <p><u><i>The EPA Guideline mentioned specifies that background noise monitoring should be done at affected residences – is this the case? Noise impacts in relation to residences within the 500m is a concern – conditions must be set at an achievable level – has any noise modeling been done to estimate levels at these residences during development and operation of cells 4 and 6?</i></u></p>	<p>Maunsell – Mal Jones</p>
<p>12. An assessment of potential odour impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Predicted odour impacts and mitigation measures should be discussed with reference to the EPA Guideline, Odour impact assessment from developments. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development 1 to 20 years and will require the management of odour during construction and landfill operations within and outside of the 500m buffer area.</p> <p>With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years). Additional odour suppression can be generated by more frequent covering of waste during the early stages of operation prior to developing cells 4 and 6, these cells may require more control on the working face with the incremental placement of cover if required. It should be noted that as the bulk of the waste is being received from the CEC recycling plant and enters the landfill as treated waste the potential for odour problems is greatly reduced.</p>	<p>Maunsell – Mal Jones</p>
<p>13. Details of proposed litter management practices and procedures should be provided.</p>	<p>The Contractor will have mobile litter fences on the working face of the landfill at all times, litter picking will be under taken on a regular basis. Where necessary the placement of day cover or alternative will be put down to prevent wind scatter. Vehicles transporting waste accessing the site will be required to have covers over the waste loads to prevent wind scatter.</p>	<p>MSC – Patrick O’Flaherty Maunsell – Mal Jones</p>

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14. Practices and procedures to be employed to manage greenwaste and mulch stockpiles on site to prevent combustion, odour problems and stormwater contamination.	<p>The site is fully fenced to prevent access by unauthorised intruders.</p> <p>The stockpiles are in an area which is regularly monitored by site operations staff.</p> <p>Drainage plan for the re-contoured landfill site provides for stormwater segregation.</p> <p><u>Are there any plans to monitor temperature, turn over stockpiles, etc?</u></p>	MSC – Patrick O’Flaherty
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Liner and Final Cap

The protection that the landfill provides to the environment is significantly dependent on the performance of the landfill liners, capping and final cover. Sufficient details of quality control and assurance and cover availability are not provided for assessment.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
15. Details of the quality control and quality assurance for the landfill liner and cover systems. The applicant should be referred to the EPA Guideline Landfill siting, design, operation and rehabilitation for guidance.	<p>The QA procedures, test results, etc need to be compiled and provided to EPA.</p> <p><u>Have specs been provided for cover systems or capping at this stage? Capping specs not critical at this point, however if they’ve been provided could we receive a copy?</u></p>	<p>Maunsell – Michael Arri, CEC – Ravi Pillay</p>

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<p>16. Details should be provided of the availability of intermediate and final cover material through the stages of the landfill.</p>	<p>Based on the staged development of the site in 5,10 15 and 20 years from start up.</p> <p>The estimated cumulative cover requirements by volume are as follows:</p> <ul style="list-style-type: none"> • 0-5 years – 80 900m³ • 5-10 Years – 83 600m³ • 10-15 years – 86 500m³ • 15-20 years – 88 500m³ <p>The total volume of cover generated from out of the landfill cell footprint totals 431 000m³ which is adequate for the full operational life of the site. There is also adequate volume of capping material from out of cell footprint to cap the final landform with a 500mm clay cap.</p> <p>The introduction of alternate day cover on cells 1,2,3and 5 (cells outside of the 500m buffer area) reduces the overall cover requirement by as much as 90 000m³ the cells within the 500m buffer area will require cover to be placed daily or the use of alternatives to manage odour, and rodents as well as other such nuisances.</p> <p>The topsoil from cells 1 through to 6 will need to be stockpiled for future use in the capping phase of the site.</p> <p>Topsoil volume required is as follows:</p> <ul style="list-style-type: none"> • Cells 1 to 6 is 30 000m³ <p>Total capping requirement based on the available geotechnical investigation indicates that adequate volume is available on site within cell 6.</p> <ul style="list-style-type: none"> • Total volume for Capping for cells 1to 6 of 48 400m³ <p>This approach allows the site to operate for the full life of the footprint without having to buy in cover daily, intermediate or capping providing the on site cover is correctly managed during the daily operations of the cells 1 through to 6.</p>	<p>MSC – Patrick O’Flaherty</p>
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<p>17. Details of monitoring of waste loads and controls to be in place to prevent damage to the liner from large and/or rigid items.</p>	<p>The placement of the pioneered layer of selected waste (Soft layer for initial placement) above the drainage layer is key to ensuring the operational integrity of the drainage layer. A pioneered layer of selected waste will be end tipped on to the drainage layer of each of the newly constructed cells from 1 to 6. The selected waste will be provided directly from the CEC recycling plant, this will ensure that the selected waste is free of items which could damage the liner during placement and would not add to premature clogging of the separation medium or the drainage layer.</p>	<p>Maunsell – Mal Jones</p>
<p>18. Practices and procedures to be employed to ensure the integrity and maintenance of 1 in 4 batters on the flanks of the landfill. 1 in 5 batters are recommended.</p>	<p>Concern over effectiveness of compaction of clay at slopes of 1 in 4.</p> <p>The long term maintenance of the batters at a 1:4 slope would not be problematic for the following reasons:</p> <ul style="list-style-type: none"> • Slope lengths on site as per the SBMP will not exceed 30 linear meters. • Benching will be provided where slopes would exceed this length, benching will further assist with access and operation of equipment during the maintenance period. • Construction equipment can operate effectively and safely on up to 1:3 slopes (including compaction rollers, graders etc) • Erosion will be managed with side slope drains and diversion bunds where appropriate. • Maintenance of grassed slopes (motorized slashes) can operate on 1:3 slopes safely. 	<p>Maunsell – Mal Jones</p>

<p>19. Specifications for the passive venting system to be utilised at the site where required. Passing venting would be seen as favourable in comparison to the absence of a venting system at a site of this size.</p>	<p>Landfill gas management infrastructure aims to reduce the uncontrolled release of methane and other landfill gases to the atmosphere. Due to the site containing pretreated waste and that the land fill will contain a lining system which will prevent migration outside of the landfill footprint it is envisaged that the landfill will not generate significant amounts of landfill gas. Where there may be an uncontrolled release of methane and other landfill gases to the atmosphere this is generally achieved by oxidation of methane and other components. Oxidation will be achieved by:</p> <ul style="list-style-type: none"> • Dispersing LFG through the final capping layer, micro-organisms within the soil oxidise methane to form carbon dioxide; this can be enhanced by the addition of organic matter to the cap; or • Install LFG collection networks in the form of a number of linked gravel filled trenches under the capping, consolidate and vent. • Monitoring will be carried out at the required locations including bores once in three months to access compliance with methane limits. 	<p>Maunsell – Mal Jones</p>
<p>20. Details of any spike testing to be conducted to monitor the sub-surface presence of methane and/or any methane testing of service conduits.</p>	<p>Fugitive LFG emissions will be tested once in every three months through surface emission testing conducted by a suitably qualified person. Testing points will be located on a 50m grid across the landfill surface with testing of cracks and fissures where noted undertaken in addition to the grid-based sampling regime. Testing should be undertaken on a dry day between the months of October and March with wind speeds lower than 5km/hr by holding an LFG meter or TLV “sniffer” 5cm above each monitoring point and a stabilised reading taken before moving to the next point. Trigger values for remedial measures to be implemented will be 25% of the lower explosive limit for methane.</p>	<p>Maunsell – Mal Jones</p>
<p>21. Details of the type of vegetation proposed for the final cover to the landfill cap.</p>	<p>Vegetation on the landfill cap prevents surface erosion and batter slope instability by protecting the final capping layer. Vegetation used on landfill caps will be local (native) grass or turf common to the area, as this has relatively low maintenance requirements and the shallow root system does not affect the compacted low permeability soil layer. Vegetation assists in protection of the low permeability soil layer to prevent desiccation or excessive drying.</p>	<p>Maunsell – Mal Jones</p>

Some concern of perched leachate from plastics

Leachate Management

It is noted that the applicant has advised that it may recirculate leachate into the landfill or discharge to sewer, by tanker initially and later by sewer connection. The effectiveness of these options is dependent upon the volume of leachate generated and the control practices used to manage leachate generation and treatment.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
22. An estimate of the volume of leachate generated based on a 1-in-20 year storm event.	<p>Leachate generation volumes were calculated based on the following:</p> <ul style="list-style-type: none">• 1 in 20 year storm event• 24 hour intensity• Required removal to less than 300mm above the drainage layer in less than 24 hours of pumping. <p>The Leachate sump has storage for approximately half this volume and EPA guidelines allow the head to exceed 300mm for extended periods. In order to pump all the Leachate out of the sump and drainage layer within 24hrs, there would need to be a pump flow rate of 13.3 l/s.</p> <p>If we were to pump out only Leachate in the drainage layer within 24 hrs the flow rate would be approx half this – say 8l/s. <u><i>Is this achievable with proposed pump set-up?</i></u></p>	Maunsell – Mal Jones

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23. Contingency plans where leachate generated is in volumes or at a rate in excess of recirculation or treatment capabilities.	<p>The leachate management plan to addresses the period between startup and when the new STP is in operation comprises of two options namely to remove the leachate using a tanker and to dispose of it to sewer or to remove the leachate by tanker and redistribute it over the existing waste body through irrigation and or trenching into the existing waste itself. All waste removed from the trench will be placed at the working face and covered over. The trench will then be backfilled and covered using selected waste and cover material, this process must be completed within 48 hours of initial trenching.</p> <p>Approximate leachate volumes for the site over the years 1,2 and 3 when managed through tanker and disposal to sewer or trenching with an exposed area of ranging from 0.75ha to 0.35 ha would result in a total potential out flow for year 1 of 0.04l/s, for year 2 of 0.02 l/s and for year three of 0.015l/s.</p> <p>The total leachate out flow for the final landform with an exposed area of 0.5 ha would result in a total potential out flow of 0.24l/s</p>	Maunsell – Mal Jones MSC – Patrick O’Flaherty
24. A drawing showing the location of leachate collection pipework in the base of the landfill showing the pipework at the proposed 25m spacing.	Drawing still to be provided	Maunsell – Mal Jones
25. Practices and procedures to be employed to ensure that the head of leachate in the collection sump is maintained at a height of less than 300mm above the liner.	<p>Leachate pump stations will have pump failure alarms included to warn of overflow. Back up pumps are to be available on site in the event of a pump failure. All alarms are to be able to operate without mains power in the event of a power failure. <i>Are suitable generators available to council in the event of a prolonged power failure?</i></p>	Maunsell – Mal Jones
26. Details of the leachate re-injection mechanisms.	<p>Leachate re-injection is to take place in existing waste on site through trenching into the waste body, all waste removed from the trench is to be disposed of immediately at the working face and is to be covered with fresh waste. Trenches are to be no deeper than 3m and no longer than 6m (to prevent side collapse), trenches are to be backfilled within 48 hours of use. Leachate is to be discharged into the trench using a flexible hose with working couplings to prevent discharge on to the surface of the site as well as to reduce vehicle movements too close to the excavations.</p>	Maunsell – Mal Jones

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27.	Details of how the geotextile separation layer will be installed and managed to prevent the possibility of biofouling.	<p>The geotextile is required to ensure the integrity of the drainage layer is maintained when placing selected waste on the base of the cell. The waste placed over the base of the cell will comprise of selected treated waste from the CEC recycling plant. This will ensure that there are no excessive fines or possible items that could damage or puncture the separation layer, further to this is the fact that the waste is treated means the possibility of biofouling is also reduced. With the layer end tipped and pioneered in, contact resulting from plant and equipment is also greatly reduced.</p> <p>Most separation layers are capable of functioning adequately even with excessive clogging (reference to a paper supporting this to be provided by Mal)</p>	Maunsell – Mal Jones
28.	Details of any pre-treatment of wash down waters before they are released to the leachate collection system. E.g. to remove hydrocarbons, etc.	Wash down bay not connected.	MSC – Patrick O’Flaherty
29.	The current date for installation of the sewer line to the landfill site.	Mid February 2007 - construction has begun.	MSC – Patrick O’Flaherty
30.	Details of any investigation that has been carried out to ensure that the Mareeba sewage treatment plant can effectively treat the expected volumes and concentration of leachate and associated contaminants.	Designed into planning for STP. Mal needs to provide leachate volumes for storm and throughout the year.	Maunsell – James Jentz
31.	Details of any testing or supporting evidence to verify that the suggested compaction rate is achievable using the specified practices on the residual waste material provided by the CEC Resource and Recovery Plant.	Latest work by CEC at CCC	CEC – Roy Lavis
32.	Practices and procedures to ensure that intermediate cover is effectively managed between lifts to prevent generating perched leachate.	Detail is provided in the SBMP under the waste deposition and compaction Item d, page 11	Maunsell – Mal Jones
33.	Verification of how often waste will be covered – conflicting advice is present in the SBMP with every second day specified in most cases and daily in another (6.1.1.h).	<p>Waste landfilled will be covered every alternate day while operating in cells 1,2,3 and 5. While cells 4 and 6 will require the placement of cover on a daily basis due to the cells positioning being within the 500meter buffer area relative to the surrounding housing development. The relevant sections (6.1.1.h) will be amended accordingly. <u>Please provide amended SBMP as part of add info response.</u></p>	Maunsell – Mal Jones

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34.	Details of the type of cover sheet to be used in lieu of cover material (6.1.1.j).	Some of the options currently available on the market in the form of alternate cover are (examples) reusable woven and or woven coated cover sheets, biodegradable cover sheets, foam based alternate cover and organic alternative cover, to list a few options for the site. The selected option will require discussion and possibly some site specific field testing to be carried out in conjunction with the EPA prior to final acceptance.	Maunsell – Mal Jones
35.	Details of how compaction rates will be calculated.	Quarterly for first year & then 6 monthly if consistent results.	Maunsell – Mal Jones
36.	Details of any gas venting for the leachate collection sump.	See attached PDF sketch	Maunsell – Mal Jones
37.	Practices and procedures to be employed in the maintenance of leachate pumps and monitoring probes.	Duty & standby pump. Routine checking of probes. <u>Please add to SBMP and provide.</u>	Maunsell – Mal Jones MSC – Patrick O'Flaherty

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Groundwater Protection

The applicant has referenced a groundwater assessment conducted more than 10 years ago. A landfill has operated on the site in the intervening period and some groundwater monitoring occurring but has not been included in the application.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
38.	Further assessment of the groundwater, including a review of groundwater monitoring data collected since 1993 and updating the assessment as appropriate.	<div>Water quality as well as height <u>Please provide details.</u></div> <div>Maunsell – Mal Jones</div> <div>MSC – Patrick O'Flaherty</div>

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<p>39. A drawing showing groundwater contours.</p>	<p>Groundwater contours based upon 1993 data is presented within the Golder Geotechnical/Hydrogeological Investigation (refer attached Golder report). Groundwater contours post 1993 cannot be developed as data for only two wells (BH2 and BH7) has been provided since 1999. Between 1993 and 1999, no groundwater level data has been provided.</p> <p>BH7 was not monitored as part of the original investigation (hence BH7 was not used for the development of the original groundwater contours) and details of this bore's construction have not been provided. Groundwater level within this bore remained relatively consistent in the period from April 1999 until July 2005 (levels fluctuated between 12 and 13mBGL); however, in October 2005 a marked rise in the water level to 8.7mBGL was noted.</p> <p>BH2 was included as part of the original investigation and recorded a standing water level at approximately 10.6mBGL. Since April 1999, the standing water level within this bore has fluctuated markedly generally between approximately 7mBGL to 12.9mBGL.</p> <p>Updated groundwater contours will be produced after the installation of additional groundwater monitoring bores (refer response 40).</p>	<p>Maunsell – Mal Jones</p>
<p>40. Details of proposed groundwater monitoring network for the landfill.</p>	<p>Considering the staged process of landfill development, it is recommended that a staged monitoring program be initiated in response to the landfill development. As a result the following stages are proposed:</p> <p>Stage 1/2</p> <ul style="list-style-type: none"> – Reinstall groundwater monitoring wells in the positions formerly occupied by BH6 and BH4 and level to site datum. – Level BH7 to the site datum and obtain construction details. Reinstall if construction is deemed inadequate. <p>Stage 3</p> <ul style="list-style-type: none"> – Remove BH7 as part of Cell 3 construction. – Reinstall groundwater monitoring well in the position formerly occupied by BH5 and level to site datum. <p>Stage 4</p> <ul style="list-style-type: none"> – Reinstall groundwater monitoring well in the position formerly occupied by BH1 and level to site datum. <p>Additional groundwater monitoring wells may be required should data obtained indicate impact to groundwater may be occurring.</p> <p><u>Please provide plans</u></p>	<p>Maunsell – Mal Jones</p>

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<p>41. Provide supporting information or evidence to verify the statement that the perched water table at the north east of the site is recharged by the reclaimed sand depression.</p>	<p>The water levels in the groundwater monitoring bores show the groundwater table to be approximately 8m below ground level at BH2 with the depth greater at other locations. During the geotechnical investigations into sourcing a suitable clay liner for the landfill a total of 13 test pits were dug to depths of up to 3m as per the attached report from CETS. It is noted that free ground water was not observed in a single pit. However, no pits were dug in the north west area of the landfill where the perched ground water table was encountered.</p> <p>During excavation of the cell groundwater was encountered in the north west corner as well as the western end of the sediment pond. The water was observed to seep into the open excavation through a sand lense running generally in a north south direction. The free groundwater was observed to be as close as 500mm below the natural surface. The cell was excavated to a depth of approximately 4m below ground level and free groundwater was not evident throughout the construction period except in several areas where the sand lense was encountered. In the sediment pond which was excavated to approximately 3m depth free ground water was observed at the western end so a 10m section of the excavation was reinstated and no water ponded, or was observed weeping into the sediment pond.</p> <p>It is considered that the sand lenses dissecting the clay stratum in the north west area of the site act as a reservoir for a perched water table due to the impermeability of the clayey material. In areas outside of the sand lense no free groundwater was observed during the two month construction period. Furthermore, dipping of the groundwater observation bores confirmed that the groundwater table was approximately 8m below the surface and in some places in excess of 12m below the surface.</p> <p><u>As discussed please include monitoring of water from perched groundwater table in monitoring program and provide.</u></p>	<p>Maunsell – Michael Arri</p>
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Stormwater Quality

Landfills have the potential to cause adverse impacts on receiving waters through stormwater contamination. The application has advised that stormwater will be managed to ensure that contaminants will be controlled to prevent any adverse environmental impacts. However several issues require clarification.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
42. Details of the completion date for installation of the sediment pond/s and specifications for their construction.	Sedimentation Dam 1 was constructed in December 2006. Specification is contained within a standard Maunsell earthworks specification requiring removal of unsuitable material and compaction of walls. A rock lined spillway is specified on the detail construction drawings. The second Sedimentation Dam is not required until the construction of cells 1B and 3.	Maunsell – Mal Jones
43. Details of the end location of the overflow channel from the sediment pond and the receiving environment.	The receiving environment is gently sloping to the north and is grassed.	Maunsell – Mal Jones MSC – Patrick O’Flaherty
44. An amended Table 7 for water quality monitoring in the sediment pond that includes testing for the presence and concentration of ammonia.	<p>On-site drainage has been designed so that only clean run-off will be channeled through the sedimentation dam. Runoff that comes into contact with waste within the active landfill areas will be collected via the leachate collection system and the leachate sump. The presence of ammonia within the sedimentation dam may arise from batter seeps that can occur post closure of the facility and as a result should be managed through the post closure provisions and ultimately the conditions specified within a site management plan.</p> <p>The measurement of conductivity and dissolved oxygen are considered appropriate indicators for the presence of leachate within the sedimentation dam as conductivity is a conservative indicator (i.e is not subject to chemical transformation/degradation). Once exposed to the environment, ammonia can be oxidized to nitrate and nitrite thus rendering the testing for ammonia redundant. It is not considered appropriate to test for ammonia within the sedimentation pond until post closure provisions have been implemented for closed landfill cells.</p>	Maunsell – Mal Jones

Environmental Management Program Compliance

An Environmental Management Program (MAN5133) in place for the current site requires the reprocessing of waste from the existing waste pile at a rate of no less than 10,000tonne per year. No reference is made to this in the application or Site Based Management Plan.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
45. Practices and procedures to be employed to ensure that the reprocessing of the existing waste pile is carried out to comply with Mareeba Shire Council's Environmental Management Program MAN5133.	<p>Under the contractual arrangements between CEC Resource Recovery and Mareeba Shire Council (MSC), a 10,000 tonne per year allocation has been allocated for MSC use. MSC arranged this to provide for the reprocessing of the existing landfill cell waste into the new engineered cell which has now been constructed. The 10,000 tonnes per year includes wastes that will be accepted to the Mareeba landfill site for landfilling which is projected to be approximately 3,000 tonnes per year leaving 7,000 tonnes available for waste reprocessing from the existing cell.</p> <p>It is proposed that the landfill staff will undertake the reprocessing as an ongoing part of their daily duties which will be resourced by MSC.</p> <p><u>As discussed - the EMP provided by MSC and approved by the EPA specifies that approximately 10,000t/yr is to be reprocessed. The discrepancy will need to be rectified.</u></p>	MSC – Patrick O'Flaherty

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Emergency Response

A recent fire at the existing site highlighted the problem associated with the current water supply's inability to effectively extinguish a large fire in the waste pile.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
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46. Details of any upgrade to the existing water supply to the site to ensure an effective fire fighting capability.	<p>A water tanker is currently permanently stationed adjacent to the tip face. A fast fill connection to the existing 50 mm supply is being investigated and is programmed for installation completion by March 2007.</p> <p>A further upgrade with the installation of a 100mm water line has been planned for the 2007-8 capital program year. The district fire officer has been consulted and has agreed with this project. The installation will be undertaken as a priority project in 2007-8 with an expected completion before December 2007.</p>	MSC – Patrick O’Flaherty
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Staff Responsibilities

It is stated in 7.2 of the Site Based Management Plan that responsibilities for particular tasks are set out in section 6.0. However it is not clearly stated in section 6.0 which staff members are assigned the specified duties and responsibilities – i.e. for site construction, verification of works, sampling, inspections, monitoring of waste loads, compliance control, complaint response, etc.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
47. Details of responsibilities for particular tasks identified within the Site Based Management Plan. Please include reference to any internal or 3 rd party environmental audits to be conducted.	<p>A current review of the staff establishment is being undertaken as part of the new operating protocols. One additional plant operator has been included onto the site and a newly created position of the Landfill leading hand has also been filled.</p> <p><u><i>We’d like to see the SBMP updated to include these staff responsibilities (as specified in 7.2).</i></u></p>	MSC – Patrick O’Flaherty

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Financial Assurance

It is understood that the construction and operation of the landfill is a joint venture between the Mareeba Shire Council and CEC. The EPA needs to ensure that the site will be effectively rehabilitated both progressively and at the end of its life and that appropriate funds and resources are available for this costly process.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
48. Details of which entity will assume the long term responsibility for the final rehabilitation and post closure care for the landfill site. If this is to be Mareeba Shire Council please provide details of contractual obligations and agreements in this respect. If final rehabilitation is to be the responsibility of CEC then a financial assurance may be required.	The ERA licence, operational administration and post closure site responsibility are those of the Mareeba Shire Council. Closure of the site – <i>sentence not finished.</i>	

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From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:23 PM
To: Smith Kelsey
Subject: FW: Draft Conditions - Mareeba landfill site

Importance: High

Attachments: Mareeba Landfill Conditions (draft v5).doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance
Northern Region
Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937
Cairns QLD 4870
Telephone: 07 4222 5337
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Email: Ingrid.FomiattiMinnesma@ehp.qld.gov.au
You can visit us online at www.ehp.qld.gov.au

From: Ian Florence
Sent: Friday, 9 March 2007 12:05 PM
To: Patrick O'Flaherty
Cc: ingrid.minnesma@epa.qld.gov.au; chris.buckingham@epa.qld.gov.au
Subject: Draft Conditions - Mareeba landfill site
Importance: High

Patrick,

Please find attached the draft conditions for approval of the Mareeba landfill site. Can you please ensure that they are reviewed and notify us as soon as possible if council is satisfied with them or would like to discuss any concerns.

The current decision date, when we legally have to issue the notice, is the 14th of March. We will proceed to issue the approval in its current form on that date unless we have already negotiated any changes or the council has elected to extend the decision date. If we've not heard back by then we will take that as the council accepting the conditions.
Can you please copy Chris in on any email correspondence

sch4p4(6) Personal information

Don't hesitate to call me if you would like to discuss any of the above issues.

Regards

Ian Florence
Senior Environmental Officer
40466727

Section 3.5.15 Integrated Planning Act 1997

EPA Permit¹ number: IPDE00493906A11

EPA Permit¹ number:	IPDE00493906A11
Assessment Manager reference:	as above
Date application received by EPA:	13-OCT-2006
Permit¹ Type:	Development Approval for a MCU involving an ERA
Date of Decision:	14 March 2007
Decision:	Approval with conditions
Relevant Laws and Policies:	<i>Environmental Protection Act 1994</i> and any subordinate legislation

Development Description

Property

Mareeba Landfill Site

Lot/Plan

Lot 517 Plan CP851523

Aspect of Development

ERA 75(a)(vii) Waste disposal - operating a facility for - disposing of only general waste or limited regulated waste, if the facility is designed to receive waste at the rate of more than 75 000 t but not more than 100 000 t a year.

Additional information for applicants

The standard currency periods stated in section 3.5.21 of the *Integrated Planning Act 1997* or the nominated currency period, apply to each aspect of development in this permit¹. For information on when this permit¹ takes effect and the relevant currency periods, please see point 3 in the Notice of Decision.

Contaminated Land

It is a requirement of the *Environmental Protection Act 1994* that if an owner or occupier of land becomes aware a Notifiable Activity (as defined by Schedule 2 of the *Environmental Protection Act 1994*) is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 30 days after becoming so aware, give notice to the Environmental Protection Agency.

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service

EPA Permit number: IPDE00493906A11

Environmentally Relevant Activities

The aforementioned description of any environmentally relevant activity (ERA) for which this permit is issued is simply a restatement of the ERA as prescribed in the legislation at the time of issuing this permit. Where there is any conflict between the abovementioned description of the ERA for which this permit is issued and the conditions specified herein as to the scale, intensity or manner of carrying out of the ERA, then such conditions prevail to the extent of the inconsistency.

This permit authorises the ERA. It does not authorise environmental harm unless a condition within this permit explicitly authorises that harm. Where there is no such condition, or the permit is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

In addition to this permit, the person to carry out the ERA must be a registered operator under the *Environmental Protection Act 1994*. For the person to become a registered operator, they must apply for a registration certificate under section 73F of the *Environmental Protection Act 1994*.

Ingrid Fomiatti Minnesma
District Manager
Cairns District, Northern Region
Environmental Protection Agency
Delegate
Environmental Protection Agency

14 March 2007

RTI DL RELEASE -EHP

CONDITIONS OF APPROVAL

ERA 75(a)(viii) Waste disposal - operating a facility for - disposing of only general waste or limited regulated waste, if the facility is designed to receive waste at the rate of more than 75 000 t but not more than 100 000 t a year.

Agency Interest: General

(G1) Prevent and/or Minimise Likelihood of Environmental Harm

In carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and / or to minimise the likelihood of environmental harm being caused.

(G2) Maintenance Of Measures, Plant and Equipment

The operator of an ERA to which this approval relates must:
install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval; and
maintain such measures, plant and equipment in a proper and efficient condition; and
operate such measures, plant and equipment in a proper and efficient manner.

(G3) Site Based Management Plan

From commencement of an ERA to which this approval relates, a site based management plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all ERAs that are carried out.

The SBMP must address the following matters:

- (a) Environmental commitments - a commitment by senior management to achieve specified and relevant environmental goals.
- (b) Identification of environmental issues and potential impacts.
- (c) Control measures for routine operations to minimise likelihood of environmental harm, including the following:
 - (i) diverting upstream stormwater away from disturbed or contaminated areas and any ponds or other structures used for the storage or treatment of contaminants or wastes;
 - (ii) containing contaminated stormwater on site;
 - (iii) minimising the size of contaminated areas;
 - (iv) provision of stormwater settling ponds and rubbish traps;
 - (v) minimising the size of disturbed areas by measures such as progressive restoration of disturbed areas;
 - (vi) a waste sampling and monitoring program to detect any prohibited wastes received at the site and to ensure that the wastes received for disposal or treatment at the site comply with the waste acceptance criteria stated in this approval.
- (d) Contingency plans and emergency procedures for non-routine situations including:
 - (i) fires;
 - (ii) cyclonic conditions;
 - (iii) the recovery and removal from the site for proper disposal of any prohibited wastes received at the site which cannot be accepted for storage, treatment or disposal at the site.
- (e) Organisational structure and responsibility.
- (f) Effective communication.
- (g) Monitoring of contaminant releases.
- (h) Conducting environmental impact assessments.

- (i) Staff training.
- (j) Record keeping.
- (k) Periodic review of environmental performance and continual improvement.
- (l) Leachate management
- (m) Identifying and monitoring a reference site that establishes background values for surface and ground waters.

(G4) The site based management plan must not be implemented or amended in a way that contravenes any condition of this approval.

(G5) Records

Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.

(G6) Waste Records

A record of all regulated waste accepted at and removed from the site must be kept detailing the following information:

- (a) date of receipt of the waste;
- (b) description of waste;
- (c) quantity of waste;
- (d) origin of the waste; and
- (e) destination of the waste.

(G7) Site Development Plan

All works at the site must be undertaken in accordance with a Site Development Plan. A Site Development Plan, identifying all activities to be carried out on the site during the period of the plan, must be prepared for each cell subject to this development permit. Each Site Development Plan must be finalised at least three (3) months before the expiry of the previous plan and must include details of at least the following:

- (a) dimensions of landfill units used for waste disposal or storage;
- (b) an accurate level survey of any area to be utilised for the disposal or storage of wastes. The levels must be reduced to a common datum and related to contour plans;
- (c) the dimensions of the active waste disposal face;
- (d) location of any new site infrastructure or extensions, such as a new leachate dam, pond, or pump well to be used or other plant and equipment, required to the leachate collection, storage and recirculation infrastructure to serve the new cell;
- (e) location of any new stormwater drains, diversion embankments or settling ponds required to serve the new cell;
- (f) location of any areas to be capped (both final and interim capping where the next stage on the completed cell will not commence within 12 months), the proposed capped surface levels and contours, surface drainage system and species of vegetation to be planted as part of a rehabilitation program;
- (g) location of any new groundwater and gas monitoring or collection bores required to serve the new cell; and
- (h) progressive recording of waste deposition such that the location of a deposited load can be readily identified.

(G8) Closure and Post-Closure Care

When the deposition of waste to the landfill unit ceases, a final cover system to the landfill unit must be installed which minimises:

- (a) infiltration of water into the landfill unit;
- (b) the likelihood of any erosion occurring to either the final cover system or the landfilled materials; and
- (c) uncontrolled release of landfill gas.

The specifications for the final cover system must be submitted to the Administering Authority at least 12 months prior to closure. The specifications and method used in the final cover system must meet the approval of the Administering Authority.

(G9) Post-closure care of the landfill unit must be conducted following deposition of waste in the landfill unit, for:

- (a) a period of 30 years; or
- (b) such shorter period until the landfill unit and surrounding site are geotechnically stable and that no release of waste materials, leachate, landfill gas or other contaminants to the environment is likely.

The post closure care element of the Closure and Post Closure Care Plan must include at least the following:

- (1) monitoring of:
 - (a) the leachate collection and recirculation system;
 - (b) the groundwater monitoring network;
 - (c) any installed landfill gas management system;
 - (d) leachate quality;
 - (e) groundwater quality;
 - (f) surface water quality;
 - (g) landfill gas;
- (2) maintenance of:
 - (a) the leachate collection and recirculation system
 - (b) the groundwater monitoring network;
 - (c) any installed landfill gas management system;
 - (d) the integrity and effectiveness of final cover systems

(G10) A site management plan pursuant to Chapter 7, Part 8, Division 5 of the *Environmental Protection Act 1994* must be developed and provided to the administering authority at least 12 months before the expected final receipt of waste in the landfill unit. The site management plan must include, but is not to be limited to, the future land use and actions you intend to take for compliance with the closure and post-closure care requirements of this approval. In accordance with G8 the plan must include specifications for the final cover system for assessment by the Administering Authority.

(G11) Security

Measures must be taken to prevent unauthorised access to the site to which this approval relates.

(G12) Fire-Fighting Access

Clear access to the water supply for fire-fighting vehicles must be provided at all times and the water supply must be suitable and sufficient for the control of a large fire within the landfill and in accordance with the recommendations of the Queensland Fire Service.

(G13) An effective fire break must be provided and maintained around the landfill site and all waste disposal and processing areas.

(G14) Third Party Environmental Auditing

Compliance with the conditions of this approval must be audited within 28 days of commencement of the activity and be carried out at least every two years thereafter.

(G15) The audit detailed in condition G14 must be conducted by a suitably qualified third party auditor, nominated by the approval holder and accepted by the administering authority.

(G16) In relation to the audit required by condition G14, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.

(G17) The total financial cost of the audit(s) will be the responsibility of the holder of this approval.

(G18) Notification.

Telephone the EPA's Pollution Hotline or local office as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.

(G19) Investigation Into Alternative Waste Management Practices

For the purpose of minimising the disposal of recyclable waste to landfill, in accordance with the waste management hierarchy and principles of the Environmental Protection (Waste Management) Policy 2000, you must implement a Waste Management Plan that addresses at least the following matters:

- (a) waste management practices that will ensure that recyclables are diverted from landfill;
- (b) procedures for identifying and implementing opportunities to improve the waste management practices employed including information and education packages for waste generators to assist in maximising the diversion of recyclable materials from landfill;
- (c) details of any accredited management system employed, or planned to be employed, to implement the waste management practices;
- (d) training programs and guidance for waste transport contractors in the identification and source separation of recyclable materials;
- (e) procedures for auditing waste loads to identify material to be removed for recycling;
- (f) how often the performance of the waste management practices will be assessed (at least annually);
- (g) the indicators or other criteria, taking into account economic, social and environmental factors on which the performance of the waste management practices will be assessed;
- (h) the recovery of energy from any methane collected in a landfill gas collection system; and
- (i) annual reporting by 31 August each year any new measures adopted or materials newly diverted from landfill disposal. This report must include the following:
 - (i) any new measures adopted or materials newly diverted from landfill disposal;
 - (ii) a summary (expressed in tonnes/year wherever appropriate) of the following information including wastes received, recyclable material recovered, fate of recyclables (e.g. transported off site for reuse/recycling, reused/recycled on site or stored on site) and calculated percentage diversion rate for the materials specified.
 - (1) Total amount of waste converted to useable energy;
 - (2) Amount of green and organic waste collected and recycled;
 - (3) Amount of green and organic waste disposed to landfill;
 - (4) Amount of green and organic waste recovered for energy;
 - (5) Amount of construction and demolition waste collected and recycled;
 - (6) Amount of construction and demolition waste disposed to landfill;
 - (7) Amount of commercial and industrial waste (including agricultural) recycled;
 - (8) Amount of commercial and industrial waste (including agricultural) disposed to landfill;
 - (9) Number of scrap tyres collected for recycling (Equivalent Passenger Units - EPUs);
 - (10) Amount of waste oil recycled;
 - (11) Total amount of paper, white office, newsprint and mixed paper waste recycled;
 - (12) Total amount of cardboard recycled;
 - (13) Total amount of mixed plastics recycled;
 - (14) Total amount of other plastics (please specify) recycled;
 - (15) Total amount of aluminium cans recycled;
 - (16) Total amount of steel cans & tins recycled;
 - (17) Other types and quantities of recyclables (please specify) recycled;
 - (18) Amount of waste disposed to landfill;
 - (19) Amount domestic waste disposed to landfill; and
 - (20) Total amount of landfill cover material used.

NOTE: The development of the local government's waste management strategic plan in accordance with the Environmental Protection (Waste Management) Policy 2000 which addresses the above matters will be deemed to satisfy the requirements of this condition.

(G20) Spill Kit

An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes and chemicals associated with the ERA must be kept at the site.

(G21) Spill Kit Training

Anyone operating under this approval must be trained in the use of the spill kit.

Agency Interest: Air

(A1) Nuisance

The release of noxious or offensive odours or any other noxious or offensive airborne contaminants resulting from the activity must not cause a nuisance at any nuisance sensitive or commercial place.

(A2) Cells 4 and 6 are only to be used for non-putrescible waste until the time that the approval holder submits results of comprehensive odour modelling and evidence of the lack of previous odour complaints that demonstrates to the satisfaction of the Administering Authority that an odour nuisance is unlikely at nearby nuisance sensitive or commercial places.

(A3) Dust Nuisance

The release of dust and/or particulate matter resulting from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.

(A4) Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place:

- (a) Dust deposition of 120 milligrams per square metre per day, when monitored in accordance with Australian Standard AS 3580.10.1 of 2003 (or more recent editions); OR
- (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM₁₀) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with:
 - Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air - Particulate matter - Determination of suspended particulate PM₁₀ high-volume sampler with size-selective inlet - Gravimetric method'; or
 - any alternative method of monitoring PM₁₀ which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

(A5) When requested by the administering authority, dust and particulate monitoring must be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and must include:

- (a) for a complaint alleging dust nuisance, dust deposition; and
- (b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM₁₀) suspended in the atmosphere over a 24hr averaging time.

(A6) Management of Landfill Gas

The release of landfill gas must not cause environmental harm.

- (A7)** Landfill gas is not considered to cause environmental harm if:
- (a) a landfill gas collection system is installed and maintained when the landfill unit is sufficiently elevated to allow adequate drainage of gas lines; and/or
 - (b) landfill gas monitoring shows that the release of methane does not exceed the following limits:
 - (i) 500 parts per million at a height of 50mm above the final and intermediate cover surface including the batter slopes of the landfill unit;
 - (ii) 25 percent of the lower explosive limit when measured in facility structures (but excluding facility structures used for landfill gas control and landfill gas recovery system components); and
 - (iii) the lower explosive limit at the landfill facility boundary.
- (A8)** Where landfill gas monitoring shows the release of methane as being above 500 parts per million at a height of 50mm, an effective landfill gas collection system must be designed, installed, operated and maintained on all landfill areas. Any gas collected in this system should, if it all possible, be reused in an energy recovery system, otherwise it must be actively vented or flared using only enclosed flares.
- (A9) Landfill Gas Monitoring**
- The assessment of compliance with the methane limit at a height of 50mm above the final and intermediate cover surface of the landfill unit prescribed by A7 must be undertaken at the following locations:
- (a) on a grid pattern where the grid lines are no more than 50 metres apart; and
 - (b) at any other locations where visual observations indicate potentially elevated concentrations of landfill gas, for example cracks, seeps in cover and distressed vegetation.
- (A10)** A landfill gas monitoring network must be installed for each landfill unit to assess compliance with methane limits for facility structures and at the boundary. The network must consist of gas monitoring devices, such as monitoring bores and be developed by a person possessing appropriate qualifications and experience in the fields of hydrogeology and landfill gas monitoring program design to be able to competently make recommendations about these matters.
- (A11)** Conduct and keep records of landfill gas monitoring which is performed at the following frequencies:
- (a) at least every three months to assess compliance with the methane limit at a height of 50mm above the cover surface of the landfill unit prescribed by A7; and
 - (b) at least every three months to assess compliance with methane limits for facility structures and at the boundary prescribed by A7.
- (A12)** Landfill gas monitoring referred to in the above conditions must be undertaken for at least the following parameters:
- (a) methane;
 - (b) oxygen;
 - (c) carbon dioxide;
 - (d) hydrogen sulphide; and
 - (e) atmospheric pressure.

Agency Interest: Land

- (L1)** Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.

NOTE: All petroleum product storage's must be designed, constructed and maintained in accordance with AS 1940 - Storage and Handling of Flammable and Combustible Liquids.

- (L2) Land Rehabilitation**

The site must be rehabilitated (including all disturbed areas associated with waste storage, treatment, disposal and borrow pits and any stockpile and screening areas) in a manner such that:

- (a) suitable native species of vegetation are planted and established that are compatible with the vegetation community of the adjacent remnant regional ecosystem;
- (b) potential for erosion of the site is minimised;
- (c) the quality of stormwater, water and seepage released from the site is such that releases of contaminants are not likely to cause environmental harm;
- (d) the likelihood of environmental nuisance being caused by release of dust is minimised;
- (e) the final landform is stable and not subject to slumping.

(L3) Rehabilitation of disturbed areas must take place progressively as waste disposal cells are completed, areas of borrow pits are worked out and new areas for waste disposal or borrow pits are developed.

(L4) Access to areas awaiting rehabilitation or being rehabilitated must be restricted by suitable barriers to prevent disturbance of these areas.

(L5) Waste Disposal Cell Interim Cover and Rehabilitation

You must implement an interim cover and rehabilitation program for waste disposal cells not forming part of the final surface level of the site and not likely to receive their next layer of waste within 12 months. This program must include at least the following:

- (a) the installation of an interim cover system:
 - (i) of at least an additional 300 mm of compacted clayey material;
 - (ii) with a maximum permeability of 4×10^{-6} metres per second;
 - (iii) designed with effective surface water management systems to prevent water ponding; and
- (b) a stabilisation program including measures such as revegetation and or mulching to prevent erosion.

Agency Interest: Noise and Vibration

(N1) Noise Nuisance

Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place

(N2) All noise from activities must not exceed the levels specified in Table One - Noise limits at any nuisance sensitive or commercial place.

Table One - Noise limits

Noise level dB(A) measured as	Monday to Saturday			Sundays and public holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
	Noise measured at a 'Noise sensitive place'					
L _{A10} , adj, 10 mins	55	50	40	55	50	40
L _{A1} , adj, 10 mins	60	55	45	60	55	45
	Noise measured at a 'Commercial place'					
L _{A10} , adj, 10 mins	60	55	45	60	55	45
L _{A1} , adj, 10 mins	65	60	50	65	60	50

(N3) Noise Monitoring

When requested by the administering authority, noise monitoring must be undertaken to investigate any

complaint of noise nuisance, and the results notified within 14 days to the administering authority.

Monitoring must include:

[- airblast overpressure (dB (Lin) Peak);]

- LA 10, adj, 10 mins

- LA 1, adj, 10 mins

- the level and frequency of occurrence of impulsive or tonal noise;

- atmospheric conditions including wind speed and direction;

- effects due to extraneous factors such as traffic noise; and

- location, date and time of recording.

(N4) The method of measurement and reporting of noise levels must comply with the latest edition of the Environmental Protection Agency's Noise Measurement Manual.

(N5) Vibration emitted from activities must not cause a nuisance at any vibration sensitive place.

Agency Interest: Social

(S1) Complaint Response

The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request:

(a) Time, date, name and contact details of the complainant;

(b) reasons for the complaint;

(c) any investigations undertaken;

(d) conclusions formed; and

(e) any actions taken.

Agency Interest: Waste

(WT1) Waste Records

Records of the source, volumes and composition of all waste materials accepted at the landfill facility, recyclable materials recovered, fate of recyclable materials (e.g. transported off site for reuse / recycling, reused / recycled on site or stored on site), calculated percentage diversion rates for the materials must be kept and maintained and reported, in a specified format, to the administering authority by 31 August each year.

Note: The submission of these values in an annual report for the local government's waste management strategic plan or otherwise required by the administering authority will be deemed to satisfy the reporting requirement of this condition.

(WT2) Site Control

At all times while the ERA is operating, at least one person must be present who is responsible for the control and operation of the facility and whose duties must include but not be limited to:

(a) controlling the reception, storage and removal of waste;

(b) maintaining the facility;

(c) controlling all employees working in the facility; and

(d) supervising all persons entering the facility.

(WT3) Waste Acceptance

The following wastes may be received at the site:

(a) domestic waste;

(b) commercial waste;

(c) industrial waste;

(d) construction and demolition waste;

(e) solid inert waste; and

(f) limited regulated waste (except those prohibited in WT6).

- (WT4) Waste received at the site for disposal must have had recyclable materials either segregated at the source or have been processed in a materials recovery facility to remove reusable and recyclable materials.
- (WT5) Segregated recyclable materials, including wastes such as tyres, must not be disposed of in the landfill area but should be dealt with in accordance with the following hierarchy with the preference reducing down the list:
- (a) reuse;
 - (b) recycling;
 - (c) energy recovery; and
 - (d) recoverable buried storage in a separate portion of the site, but only where such burial and subsequent recovery is unlikely to cause any environmental harm.
- (WT6) Notwithstanding any condition of this approval, the following waste materials are not permitted or allowed to be deposited in the landfill unit:
- (a) regulated waste (other than limited regulated waste);
 - (b) liquid or semiliquid waste other than liquid or semiliquid waste which has been produced in carrying out the ERA;
 - (c) hot ash;
 - (d) material that is smouldering or aflame;
 - (e) material containing a substance which is ignitable, corrosive, reactive or toxic (other than materials containing a toxic substance from domestic premises) unless this material is to be deposited into a dedicated monocell approved in writing by the administering authority;
 - (f) all radioactive wastes, unless otherwise approved under the *Radiation Safety Act 1999*;
 - (g) an explosive;
 - (h) Soils contaminated with regulated waste;
 - (i) ammunition, other than ammunition that no longer contains explosives, pyrotechnics or propellants apart from trace residues that are no longer capable of supporting combustion or an explosive reaction;
 - (j) fish processing waste;
 - (k) food processing waste;
 - (l) poultry processing waste;
 - (m) tallow;
 - (n) vegetable oils;
 - (o) putrescible kitchen wastes from commercial operations;
 - (p) liquid or semi-liquid waste other than liquid or semi-liquid waste which has been generated
 - (q) any substance listed under Schedule 8 of the Poisons Regulation 1978;
 - (r) tyres;
 - (s) filled or partly filled drums containing liquid wastes;
 - (t) car bodies;
 - (u) waste paints and solvents;
 - (v) gas bottles;
 - (w) green waste;
 - (x) Biosolids
 - (y) Asbestos
- (WT7) If a waste load is contaminated with any waste type listed in WT6 you must take all possible steps to identify the source of the contaminated load and implement the necessary practices and procedures to minimise the potential for a reoccurrence, including but not necessarily limited to:
- (a) providing written advice to transporters on the requirement to collect appropriate loads;
 - (b) providing information sheets to generators on the segregation of recyclable wastes;
 - (c) monitoring and audit procedures for loads received at site; and

- (d) review data to identify particular industries or locations which are prone to delivering contaminated loads, taking appropriate measures as outlined in a), b) and c) above to address the problem.

Should the measures outlined in a) to d) above prove unsuccessful in preventing contamination, further deliveries of waste from the same source must not be accepted on site.

(WT8) Burning of Waste

You must not:

- (a) burn waste at or on the site; nor
- (b) allow waste to burn or be burnt at or on the site; nor
- (c) remove waste and burn such waste elsewhere unless the burning is carried out at a facility appropriately licensed under the provisions of the *Environmental Protection Act 1994*.

(WT9) Vector Control

You must take all measures necessary to ensure that operations on the site do not cause environmental nuisance in relation to nuisance vectors, including fly breeding, mosquito breeding, and harbourage and/or breeding of rats and other pest organisms.

- (WT10)** In the event of environmental nuisance from nuisance vectors due to operations on the site, you must do all such acts and things and carry out any such works as may be necessary to:

- (a) abate such adverse effects and such nuisance; and
- (b) prevent the likelihood of any recurrence of the circumstances which gave rise to such adverse effects and/or nuisance.

(WT11) Active Waste Disposal Cell Management

You must ensure that waste disposal activities do not extend beyond the boundary of the site.

- (WT12)** You must take effective measures to ensure that all wastes accepted for disposal at the site are not disposed of:

- (a) outside any active waste disposal cell; and
- (b) beyond the catchment of any leachate collection drains installed as part of a leachate collection system, except for the separate disposal of asbestos waste.

- (WT13)** All wastes must be deposited in lifts not exceeding a vertical height of 2 metres after initial compaction.

- (WT14)** Every lift of waste deposited in the active waste disposal cell must be evenly and properly consolidated by mechanical plant to a density of at least 0.7 tonnes per cubic metre.

- (WT15)** Large items for disposal, must be compacted before and/or after being deposited to minimise residual void space in the landfill.

- (WT16)** Wastes deposited in any active waste disposal cell must be consolidated, compacted and covered with a layer of inert earthen material, biodegradable plastic sheeting or shredded green wastes as often as is necessary, but at least daily, to effectively minimise the quantity of wind blown litter, odour and fly nuisance resulting from exposure of putrescible waste.

(WT17) Cover material

Cover material must be stored and be readily available at the site in a quantity sufficient for not less than two weeks normal operation of the site.

(WT18) Litter Management

Where litter is blown or washed from the site you must:

- (a) retrieve the litter and ensure that it is disposed of in an appropriate manner; and
- (b) implement measures to prevent a recurrence of litter being blown or washed from the site.

(WT19) Access roads

You must ensure all weather access roads are installed and maintained so that, at all times whilst the site is open for receiving wastes, vehicles have access to any areas required for the normal operation of the site.

(WT20) Removal of intermediate cover

You must ensure that any intermediate cover on a cell is removed immediately prior to any subsequent waste disposal on top of that cell and exposed compacted waste is ripped to allow percolation of leachate through the full depth of waste deposited in the landfill.

(WT21) Waste Handling, Storage, Treatment and Reprocessing

In the event of you becoming aware of any prohibited waste being received at the site you must:

- (a) cease depositing such waste if it is still occurring;
- (b) remove the prohibited waste and store in a covered and bunded area; and
- (c) arrange for a person who can lawfully transport such waste to collect it within 24 hours of it being identified and remove it to a facility that can lawfully accept it.

(WT22) All storage, treatment and reprocessing of wastes, including green waste, must only be carried out on a hard stand area(s):

- (a) constructed of compacted clay or other low permeable material to minimise soil infiltration;
- (b) graded to prevent rainwater ponding;
- (c) bunded to contain the materials stored; and
- (d) graded to facilitate collection of leachates and contaminated stormwater runoff for discharge to the leachate collection system or Council sewer.

(WT23) Tyre Storage

Waste tyres may be stored:

- (a) by recoverable burial in cells in a designated area of the site with any cell containing no more than 500 equivalent passenger-tyre units (EPU); or
- (b) in temporary above ground heaps on the site provided that there are no more than 500 equivalent passenger-tyre units (EPU) at any time in any one heap.

(WT24) Where there is more than one heap or buried cell of waste tyres, a separation distance between the cells or heaps must be established and maintained so as to effectively prevent fire from spreading:

- from one tyre storage cell or heap or to another; and
- to other waste stored or disposed of at the site.

(WT25) Battery Storage

Waste wet cell batteries may only be temporarily stored on the site in a covered enclosure that has been bunded to contain spillages and leakages.

(WT26) Waste Oil Storage

Waste oil may be temporarily stored in drums or other containers at the site, provided that the drums or containers are:

- (a) stored in a roofed area designated for this purpose;
- (b) bunded to contain spillages and leakages; and
- (c) securely sealed when full to prevent spillage if knocked over.

(WT27) Equipment Containing Ozone Depleting Gases

Waste refrigerators, freezers, air conditioners or any other equipment containing ozone depleting gases received at the site must be either degassed by an appropriately qualified person at the site or, if degassed off the site, accompanied by a degassing certificate signed by a qualified person.

(WT28) Car Bodies

Car bodies stored at the site must be drained of all oils, fuels and hydraulic fluids prior to compaction.

(WT29) In accordance with Mareeba Shire Council's approved Environmental Management Program (EPA Reference: MAN 5133): a minimum of 10,000tonnes per year of waste material from the pre-existing landfill area must be disposed of into the new lined cells.

Agency Interest: Water

(W1) Sediment Management

Prevent the release of sediment to waters or a build up of sediment in any stormwater drain.

(W2) Control of Off-Site Movement of Mud and Waste on Vehicles

Prevent vehicles from carrying waste, mud or dirt off the site and depositing these materials on any road or in any location likely to be washed into waters.

Release of Contaminants to Surface Waters

(W3) Authorised release point.

Contaminants must only be released to surface waters at a discharge point from the sedimentation ponds to the grassed area north of the site via a spillway constructed to prevent erosion at the discharge point.

(W4) The sediment pond must be monitored for the parameters contained in Tables Two and Three not less frequently than monthly and releases to waters from authorised release point must be monitored at the discharge location for the parameters contained in Tables Two and Three not less frequently than once per day whilst discharging for all parameters except suspended solids which must be measured at commencement of discharge and weekly thereafter.

(W5) All determinations of the quality of contaminants released must be:

- (a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; and
- (b) made in accordance with methods prescribed in the latest edition of the Environmental Protection Agency Water Quality Sampling Manual; and
- (c) carried out on samples that are representative of the discharge.

(W6) If discharge waters from the sediment pond exceed any of the contaminant trigger levels stated in Table Two, the environmental authority holder must:

- (a) complete an investigation in accordance with the ANZECC (2000) methodology, or any updated ANZECC guidelines, into the potential for environmental harm; and
- (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - details of the investigations carried out; and
 - actions taken to prevent environmental harm.

Table Two – Sediment Pond Discharge Water Contaminant Trigger Levels

Parameter	Unit	Trigger Levels	Level Type
Turbidity	NTU	80 th percentile ¹ of reference ² or 6NTU ³ , whichever is higher.	Median ⁵
pH	pH units	Minimum – 6.0 ³ or 20 th percentile ¹ of reference ² whichever is lower. Maximum 7.5 ³ or 80 th percentile ¹ of reference ² whichever is higher.	Median ⁵
Dissolved oxygen	Percentage saturation	80 th percentile ¹ of reference ² or 90% ³ saturation, whichever is lower	Median ⁵
Electrical conductivity	µS/cm	80 th percentile ¹ of reference ² or 250µS/cm ⁴ , whichever is higher	Median ⁵

¹Trigger levels based on the 80th or 20th percentile are derived using ANZECC (2000) and QWG methodology and are based on the reference sites defined in 2 below.

² Reference sites must:

- be from the same biogeographic and climatic region; and
- have similar geology, soil types and topography; and
- contain a range of habitats similar to those at the test sites; and
- a similar flow regime; and
- not be so close to the test sites that any disturbance at the test site also results in a change at the reference site.
- refer to QWG guidelines page 76 for further guidance

³ Limits based on values contained in the Queensland Water Quality Guidelines - Table 2.5.3.1 Regional guideline values for physio-chemical indicators – Wet Tropics Region

⁴ Limits based on ANZECC Table 3.3.5 – upper salinity limits for upland rivers of slightly disturbed ecosystems in tropical Australia.

⁵ The median must be determined based on a maximum of ten (10) consecutive samples.

- (W7)** The discharge waters from the sediment pond must not exceed any of the contaminant limits defined in Table Three

Table Three – Sediment Pond Discharge Contaminant Limits

Parameter	Units	Limit	Limit Type
EC	µS/cm	1000	Maximum
pH	pH units	4 - 9 ¹	Range
Total suspended solids	mg/L	50	Maximum

¹ Limits set for parameters using ANZECC Guidelines 2000 (Chapter 4) for water use by Primary Industries. Where limits for irrigation and livestock drinking water differ the most stringent value has been selected.

(W8) Management of Sedimentation Ponds

The sedimentation pond installed as part of the stormwater diversion system must be maintained in an effective operating condition and managed so that stored stormwater volumes are minimised following each rainfall event to reinstate holding capacity in readiness for the next rainfall event. The size of any sedimentation pond must be sufficient to contain the run-off expected from a 24 hour storm with an average recurrence interval of 1 in 10 years.

(W9) Landfill Liner Construction

Waste may only be disposed of in areas that have been prepared and constructed in accordance with Section 6.4 of the submitted Mareeba Landfill Site Based Management Plan and specifications of drawing numbers 60018386-101 to 60018396-108 prepared by Maunsell Australia Pty Ltd and dated September 2006. This landfill liner system must be installed and maintained at the site to effectively:

- (a) prevent any release of contaminants to groundwaters; and
- (b) prevent subsurface migration of landfill gas from the landfill.

(W10) Leachate Management

You must operate the site in a manner that minimises the generation of leachate.

(W11) Leachate Collection

A leachate collection system must be installed and maintained at the site to effectively and efficiently:

- (a) collect any leachate generated in the landfill;
- (b) convey the collected leachate to Mareeba Shire Council's sewage treatment plant or recirculate it within the landfill at the working face; and
- (c) control the leachate head on any leachate collection sump serving the landfill so that it does not exceed 0.3 metres, except during a pump failure, when it may exceed 0.3 metres for a period not exceeding 12 hours, but must not exceed 1.5 metres at any time.

(W12) Leachate Disposal

Leachate or contaminated stormwater intercepted by the leachate collection system may only be disposed of:

- (a) by recirculation back into the landfilled waste ; or
- (b) by irrigation over exposed wastes on the site that have not received their final cover; or
- (c) to a sewage treatment plant.

(W13) Landfill Gas Condensate Disposal

Any landfill gas condensate collected must be treated as leachate.

(W14) Leachate Pumping Stations

Leachate pumping stations must be fitted with pump-failure alarms as well as high-level alarms to warn of imminent pump station overflow. Suitably sized backup pumps must be readily available on site in the event of pump system failure. All alarms must be able to operate without mains power if such power failure occurs and, when in operation, must notify the appropriate person to respond to the alarm.

(W15) Leachate Management and Monitoring

You must develop and implement a leachate quality and quantity management and monitoring program for the leachate generated at the site that includes at least:

- (a) daily rainfall or rainfall events (if an event is longer than daily) must be measured and recorded for the site;
- (b) the quantity of leachate extracted must be calculated and recorded daily;
- (c) weekly calculation of the volume of leachate in the landfill based on monitoring of the level of the leachate at any leachate collection sump or monitoring well, correlated to both AHD (Australian

- Height Datum) and the level of the top of the closest perimeter bund to the sump or monitoring well;
- (d) calculation of weekly water balances for the landfill to include, but to not necessarily be limited to, incident rainfall and leachate extraction rate;
 - (e) a sufficient number of monitoring locations to establish the composition and volume of leachate generated within the landfill; and
 - (f) sampling of leachate from the landfill at least in April and October of each year; and
 - (g) analysis of leachate samples for the quality characteristics identified in Table Four.

Table Four - Monitoring Requirements

Quality Characteristic	Leachate	Surface Water	Groundwater
pH	X	X	X
electrical conductivity	X	X	X
Total dissolved solids	X	X	X
dissolved oxygen	X	X	
bicarbonate (HCO_3)	X		X
oxidised nitrogen	X	X	X
ammonia	X	X	X
calcium	X	X	X
sulphate	X	X	X
chloride	X		X
hexavalent chromium	X	X	
cadmium	X	X	
manganese	X	X	X
total iron	X	X	X
copper	X	X	X
lead	X	X	X
zinc	X	X	X
pesticides (organochlorines and organophosphates)	X	X	X
Polycyclic Aromatic Hydrocarbons (PAHs)	X	X	X
Total Petroleum Hydrocarbons	X	X	X
BTEX (Benzene, Toluene, Ethyl Benzene and Xylene)	X	X	X
Chemical Oxygen Demand (COD)	X	X	X
5-Day Biological Oxygen Demand (BOD_5)	X	X	
Total Organic Carbon (TOC)	X		

(W16) Surface Water Monitoring

An effective surface water monitoring program must be developed and implemented for the site. The program must include, but not be limited to, a sufficient number of monitoring locations to:

- (a) establish the reference quality of surface waters upstream from the landfill; and
- (b) detect any impact on surface waters as a consequence of landfill operation.

(W17) The surface water monitoring program specified in condition number (W16) must monitor and record the quality of surface water for at least the quality characteristics identified in Table Four.

(W18) Surface water quality samples must be collected from sample points in accordance with the surface water monitoring program at least in January, April, July and October of each year, or, in the event of no sample being obtainable in ephemeral systems at this time, during the next period of flow of the watercourse.

(W19) Groundwater Monitoring

An effective groundwater monitoring program must be developed and implemented for the site. The program must include:

- (a) installation of a groundwater monitoring network which:
 - (i) establishes the background quality of groundwater upgradient and downgradient of the landfill site;

- (ii) are installed and maintained by a person possessing appropriate qualifications and experience in the fields of hydrogeology and groundwater monitoring program design to be able to competently make recommendations about these matters;
 - (iii) include a sufficient number of "bore(s) of compliance" to detect any impact on groundwater as a consequence of landfill operation, constructed in accordance with the "Minimum Construction Requirements for Water Bores in Australia" (Agricultural and Resource Management Council of Australia and New Zealand 1997), that are located not more than 150 metres from the landfill area or at the boundary of the landfill facility whichever is the closer; and
 - (iv) provides representative groundwater samples for the aquifers being sampled;
 - (v) includes monitoring of water from the perched groundwater found in the sand lens in the North west corner of the site identified during cell construction and situated beneath the landfill liner
- (b) analysis of groundwater samples for at least the quality characteristics identified in Table Four;
 - (c) collection of groundwater quality samples from groundwater at least in January, April, July and October of each year; and
 - (d) assessment of monitoring results to determine whether or not there has been any adverse change for each groundwater quality characteristic at locations hydraulically down gradient of the landfill unit above when compared to background values.

(W20) Groundwater Quality

If groundwater monitored under condition W19 for parameters specified in Table Four, exceed any of the contaminant trigger levels stated in Table Five, the environmental authority holder must:

- (a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm;
- (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - (i) details of the investigations carried out; and
 - (ii) actions taken to prevent environmental harm.

Table Five - Groundwater Contaminant Trigger Levels - Unfiltered

Parameter	Unit	Limit	Limit Type
EC	µS/cm	80 th percentile of reference or 250 ¹ , whichever is higher.	Median ³
pH	pH units	Minimum – 6.0 ³ or 20 th percentile of reference whichever is lower.	Median ³
		Maximum 7.5 ³ or 80 th percentile of reference whichever is higher.	Median ³
Ammonia N	µg/L	80 th percentile of reference or 6 ² , whichever is higher.	Median ³
Total N	µg/L	80 th percentile of reference or 250 ² , whichever is higher.	Median ³
Copper	µg/L	1.4 ⁴	95 th percentile ³
Lead	µg/L	3.4 ⁴	95 th percentile ³
Zinc	µg/L	8 ⁴	95 th percentile ³
Manganese	µg/L	1900 ⁴	95 th percentile ³
Benzene	µg/L	950 ⁴	95 th percentile ³
Polycyclic Aromatic Hydrocarbons (PAHs)		Above limit of detection	95 th percentile ³

pesticides (organochlorines and organophosphates)		Above limit of detection	95 th percentile ³
Total Petroleum Hydrocarbons		Above limit of detection	95 th percentile ³

¹ Trigger levels based on ANZECC Table 3.3.5 – upper EC limit for upland rivers of slightly disturbed ecosystems in tropical Australia

² Trigger levels based on values contained in the *Queensland Water Quality Guidelines - Table 2.5.3.1 Regional guideline values for physio-chemical indicators – Wet Tropics Region*

³ The median and the 95th percentile must be determined based on a maximum of ten (10) consecutive samples.

⁴ ANZECC (2000) trigger levels for aquatic ecosystems of slightly – moderately disturbed systems – table 3.4.1 level of protection 95% - tropical Australian upland rivers.

- (W21)** The groundwater monitored under condition W19 for parameters specified in Table Four must not exceed any of the contaminant limits defined in Table Six

Table Six - Groundwater Contaminant Limits - Unfiltered

Parameter	Units	Limit	Limit Type
EC	µS/cm	1000	Maximum
pH	pH units	4 - 9 ¹	Range
Total N	mg/L	5 ¹	Maximum
Sulphate	mg/L	1000 ¹	Maximum
Copper	mg/L	0.2 ¹	Maximum
Lead	mg/L	0.1 ¹	Maximum
Zinc	mg/L	2 ¹	Maximum

¹ Limits set for parameters using ANZECC Guidelines 2000 (Chapter 4) for water use by Primary Industries. Where limits for irrigation and livestock drinking water differ the most stringent value has been selected.

- (W22)** Notwithstanding the above conditions, should groundwater monitoring show a statistically significant adverse change of levels of contaminants over background values at locations hydraulically down gradient of the landfill unit then the Environmental Protection Agency must be notified within 14 days. (Information on the interpretation of groundwater monitoring data at landfills can be found in the EPA's *Guideline - Recording, interpretation & analysis of monitoring results. ERA 75 – Waste disposal*).

DEFINITIONS

Words and phrases used throughout this permit¹ are defined below. Where a definition for a term used in this permit¹ is sought and the term is not defined within this permit¹ the definitions provided in the relevant legislation shall be used.

"administering authority" means the Environmental Protection Agency or its successor.

"annual return" means the return required by the annual notice (under section 316 of the *Environment Protection Act 1994*) for the section 73F registration certificate that applies to the development approval.

"approval" means 'notice of development application decision' or 'notice of concurrence agency response' under the *Integrated Planning Act 1997*.

"approved plans" means the plans and documents listed in the approved plans section in the notice attached to this development approval.

"artificial waterway" means an artificial channel, lake or other body of water. Artificial waterway includes –

- an artificial channel that is formed because the land has been reclaimed from tidal water and is intended to allow boating access to allotments on subdivided land;
- other artificial channels subject to the ebb and flow of the tide; and
- any additions or alterations to an artificial waterway.

"authorised place" means the place authorised under this development approval for the carrying out of the specified environmentally relevant activities.

"clinical waste" means waste that has the potential to cause disease including, for example, the following:

- animal waste;
- discarded sharps;
- human tissue waste;
- laboratory waste.

"commercial place" means a place used as an office or for business or commercial purposes.

"dwelling" means any of the following structures or vehicles that is principally used as a residence –

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"Environmental Protection Agency" means the department or agency (whatever called) administering the *Coastal Protection and Management Act 1995* or the *Environmental Protection Act 1994*.

"infectious waste" means waste containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration –

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.
- In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 – 1997 Acoustics – Description and Measurement of Environmental Noise Part 2 – Application to Specific Situations.

" $L_{A 10, \text{adj}, 10 \text{ mins}}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A 1, \text{adj}, 10 \text{ mins}}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response.

" $L_{A, \text{max adj}, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"NTU" means nephelometric turbidity units.

"nuisance sensitive place" includes –

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or
- a public thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes –

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"site" means land or tidal waters on or in which it is proposed to carry out the development approved under this development approval.

"watercourse" means a river, creek or stream in which water flows permanently or intermittently-

- in a natural channel, whether artificially improved or not; or
- in an artificial channel that has changed the course of the watercourse.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

"works" or "operation" means the development approved under this development approval.

"you" means the holder of this development approval or owner / occupier of the land which is the subject of this development approval.

"50th percentile" means not more than three (3) of the measured values of the quality characteristic are to exceed the stated release limit for any six (6) consecutive samples for a release/monitoring point at any time during the environmental activity(ies) works.

"80th percentile" means not more than one (1) of the measured values of the quality characteristic is to exceed the stated release limit for any five (5) consecutive samples for a sampling point at any time during the environmental activity(ies) works

END OF CONDITIONS

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:19 PM
To: Smith Kelsey
Subject: FW: contentious issues BN for Atherton meeting

Attachments: Atherton-Contentious Request Memo (2).doc; mareeba landfill plan.pdf

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
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You can visit us online at www.ehp.qld.gov.au

-----Original Message-----

From: Chris Buckingham
Sent: Tuesday, 23 January 2007 12:17 PM
To: Hollie Wakefield
Cc: Ingrid Fomiatti Minnesma
Subject: contentious issues BN for Atherton meeting

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

MAREEBA LANDFILL

RESPONSE

The Environmental Protection Agency is currently assessing a development application lodged by the Mareeba Shire Council for an expansion of the Mareeba landfill. This expansion will accommodate an increase in waste disposal capacity from 20,000 tonne per year to 100,000 tonne per year.

– Mareeba Shire Council has determined that the expansion of this landfill is not assessable development under the Council's planning scheme.

– FGF/Theiss who are the operators of the nearby Springmount Landfill have mounted a legal challenge alleging that the expansion of the landfill is assessable under the planning scheme. The decision of the Court is pending.

BACKGROUND

- The Mareeba Shire Council has entered into a joint venture with Cairns Earthmoving Contractors to dispose of residual waste from their Cairns Composting Facility at the Mareeba landfill.
- The waste from the Cairns Composting Plant will result in an additional 50,000 tonnes per year being received at the Mareeba Landfill.
- The Mareeba Shire Council is operating the Mareeba landfill under a recently approved Environmental Management Program(EMP). One of the elements of the EMP is the construction of new waste disposal cells which meet the Environmental Protection Agency's latest design criteria.
- Conditioning of the Springmount Landfill approval established best practice in the operation of landfill sites in Queensland. Conditioning of the Mareeba Landfill application will need to reflect the requirements of the Springmount landfill approval.
- A map showing the location of the site and the proposed expansion is attached.

RTI DL RELEASE -EHP

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:18 PM
To: Smith Kelsey
Subject: FW: Mareeba landfill - Project management

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937

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Facsimile: 07 4222 5070
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From: Ian Florence
Sent: Monday, 22 January 2007 11:34 AM
To: ingrid.minnesma@epa.qld.gov.au
Cc: chris.buckingham@epa.qld.gov.au
Subject: Mareeba landfill - Project management

Ingrid,
I've contacted Gary O'Connor about using him for some assistance on certain aspects of the Mareeba landfill application. Unfortunately he's unavailable for some time as he's acting Director of IA and then he's working on the Lead in Mt Isa project. He couldn't nominate another person from his department to do the work either.

I was therefore hoping to get someone else, but obviously need to go through the right channels. Could you please facilitate the provision of someone with expertise in waste management to assist with this project? I've used Luke Zambelli in the past and he's been very good, I believe he's now under Warren Muller in Systems and Support.

Thanks

Ian

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:24 PM
To: Smith Kelsey
Subject: FW: Mareeba landfill Add Info

Attachments: EPA additional info responsibilities (4)& Comments IF.doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance
Northern Region
Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937
Cairns QLD 4870
Telephone: 07 4222 5337
Facsimile: 07 4222 5070
Email: Ingrid.FomiattiMinnesma@ehp.qld.gov.au
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From: Ian Florence
Sent: Friday, 12 January 2007 11:33 AM
To: Patrick O'Flaherty
Cc: chris.buckingham@epa.qld.gov.au; dean.sharpe@epa.qld.gov.au; ingrid.minnesma@epa.qld.gov.au
Subject: Mareeba landfill Add Info

Patrick,
I've had a look through the emailed draft of the information to be provided. As discussed, there are still a few things mentioned in the table that need to be produced and sent through.

In an attempt to make the assessment as smooth as possible I've flicked through the table and highlighted the information yet to be provided and given feedback on the info I believe is still lacking. As you'd know MSC are able to provide the amount of additional information they see fit, and we must assess the application based on that info. However, the more clarification and detail we have up front, the easier and quicker it will be for us to make our assessment and decision when the add info is formally sent through.

Don't hesitate to call if you want to discuss anything.

Regards

Ian Florence
40466727.

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:23 PM
To: Smith Kelsey
Subject: FW: Mareeba Landfill Conditions (draft v1).doc

Attachments: Mareeba Landfill Conditions (draft v1).doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937

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From: Ian Florence
Sent: Thursday, 22 February 2007 3:54 PM
To: chris.buckingham@epa.qld.gov.au; ingrid.minnesma@epa.qld.gov.au;
dean.sharpe@epa.qld.gov.au
Subject: Mareeba Landfill Conditions (draft v1).doc



Mareeba Landfill
Conditions (d...

Afternoon fellas,
Could you please pass your collective experienced eyes over the attached draft conditions. The formatting is compliments of Eco Track and Yvonne has kindly offered to sort that out for me.

In the spirit of Project management:

Chris could you have a closer look at the odour part, Dean the waste part and Ingrid the water part.

I'll start on the AR tomorrow.
Cheers
Ian

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:23 PM
To: Smith Kelsey
Subject: FW: mareeba Landfill EE report - assessment

Attachments: Mareeba landfill EE review.doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
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Facsimile: 07 4222 5070
Email: Ingrid.FomiattiMinnesma@ehp.qld.gov.au

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From: Ingrid Fomiatti Minnesma
Sent: Friday, 7 November 2008 10:44 AM
To: Dean Sharpe; Steve Smith
Subject: FW: mareeba Landfill EE report - assessment

Is there an assessment report as well? did you review this already?
cheers
Ingrid

Ingrid Fomiatti Minnesma
Manager - Far Northern Region
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6737 Fax: (07) 4046 6606
Email: Ingrid.Minnesma@epa.qld.gov.au
You can visit us online at www.epa.qld.gov.au

From: Benny Asirvatham
Sent: Thursday, 6 November 2008 5:44 PM
To: Ingrid Fomiatti Minnesma
Cc: Steve Smith; Dean Sharpe
Subject: mareeba Landfill EE report - assessment

Hi Ingrid,

Attached is my letter to TRC for the Mareeba Landfill EE report. Amend it if



Mareeba landfill EE
review.do...

required.

Thanks

Benny

RTI DL RELEASE -EHP

Enquiries Benny Asirvatham
Telephone (07) 40466739
Your reference WAS-DEP
Our reference CNS6465

07 November 2008

Kirsty Lamperd
Manager Waste Services
Mareeba Shire Council
PO Box 154
MAREEBA QLD 48880

Dear Ms.Lamperd,

Environmental Investigation Report

We reviewed your report submitted to us in response to our notice issued under section 323 of the Environmental Protection Act 1994 to conduct an environmental investigation at the Mareeba Landfill on land described as Lot 517 on Plan CP851523, located at Mareeba. While the cause of the landfill liner displacement was addressed, it seems that the information about the integrity of the HDPE liner was based on some assumptions. The EPA would like to be informed how the council officers estimated that the liner rose by approximately 500mm and the methods employed to estimate that. In the report It has been suggested that a non destructive inspection should be carried out without removing the HDPE by feeling for any folds in the GCL laps between the roles and further information in this regard is warranted.

Further details of how the elongation at yield for the 1.5 mm thick HDPE liner was calculated and also the factors and the methods used to comprehend that the HDPE is not overstressed by stormwater pockets underneath are required. The report also indicated that the ground water and surface water monitoring by Golder Associates doesn't indicate any contamination, however information about Conductivity, Polycyclic Aromatic Hydrocarbon, Pesticides and Total Petroleum hydrocarbon is essential to assess the ground water quality as mentioned in the development permit.

The EPA has concerns over the ability of the landfill operation to effectively in compliance with the licence conditions during the wet season. In this regard I wish to advise you to take all necessary action including compacting and capping the waste materials before the onset of the wet season and also to strengthen the bund walls if necessary to avoid storm water collected at the site overflows into the storm water drain any further inundation of stormwater under the HDPE layer.

Should you have any questions concerning this matter, please telephone Benny Asirvatham

on (07) 4046 6739.

Yours sincerely

Ingrid Fomiatti Minnesma
District Manager

RTI DL RELEASE -EHP

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:23 PM
To: Smith Kelsey
Subject: FW: mareeba Landfill EE report - assessment

Attachments: Mareeba landfill EE review.doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937

Cairns QLD 4870

Telephone: 07 4222 5337

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From: Benny Asirvatham
Sent: Thursday, 6 November 2008 5:44 PM
To: Ingrid Fomiatti Minnesma
Cc: Steve Smith; Dean Sharpe
Subject: mareeba Landfill EE report - assessment

Hi Ingrid,

Attached is my letter to TRC for the Mareeba Landfill EE report. Amend it if



Mareeba landfill EE
review.do...

required.
Thanks
Benny

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:23 PM
To: Smith Kelsey
Subject: FW: mareeba Landfill EE report - assessment

Attachments: Mareeba landfill EE review.doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
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Telephone: 07 4222 5337
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Email: Ingrid.FomiattiMinnesma@ehp.qld.gov.au

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From: Ingrid Fomiatti Minnesma
Sent: Friday, 7 November 2008 12:36 PM
To: Steve Smith
Subject: FW: mareeba Landfill EE report - assessment

please have a look at suggestions and provide an AR report for assessment Ingrid

Ingrid Fomiatti Minnesma
Manager - Far Northern Region
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6737 Fax: (07) 4046 6606
Email: Ingrid.Minnesma@epa.qld.gov.au
You can visit us online at www.epa.qld.gov.au

From: Dean Sharpe
Sent: Friday, 7 November 2008 12:03 PM
To: Ingrid Fomiatti Minnesma
Subject: RE: mareeba Landfill EE report - assessment

Yes I did – my ten bob is attached.

Dean Sharpe
Principal Environmental Officer
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6725 Fax: (07) 4046 6606
E-mail: dean.sharpe@epa.qld.gov.au

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Mareeba landfill EE
review.do...

From: Ingrid Fomiatti Minnesma
Sent: Friday, 7 November 2008 11:23 AM
To: Dean Sharpe
Subject: RE: mareeba Landfill EE report - assessment

did you see letter?

Ingrid Fomiatti Minnesma
Manager - Far Northern Region
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6737 Fax: (07) 4046 6606
Email: Ingrid.Minnesma@epa.qld.gov.au
You can visit us online at www.epa.qld.gov.au

From: Dean Sharpe
Sent: Friday, 7 November 2008 11:22 AM
To: Ingrid Fomiatti Minnesma
Subject: RE: mareeba Landfill EE report - assessment

Not seen an AR.

Dean Sharpe
Principal Environmental Officer
Environmental Services
Environmental Protection Agency
Phone: (07) 4046 6725 Fax: (07) 4046 6606
E-mail: dean.sharpe@epa.qld.gov.au

Visit us online at www.epa.qld.gov.au

From: Ingrid Fomiatti Minnesma
Sent: Friday, 7 November 2008 10:44 AM
To: Dean Sharpe; Steve Smith
Subject: FW: mareeba Landfill EE report - assessment

Is there an assessment report as well? did you review this already?
cheers
Ingrid

Ingrid Fomiatti Minnesma
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Email: Ingrid.Minnesma@epa.qld.gov.au
You can visit us online at www.epa.qld.gov.au

From: Benny Asirvatham
Sent: Thursday, 6 November 2008 5:44 PM
To: Ingrid Fomiatti Minnesma
Cc: Steve Smith; Dean Sharpe
Subject: mareeba Landfill EE report - assessment

Hi Ingrid,

Attached is my letter to TRC for the Mareeba Landfill EE report. Amend it if required. <<
File: Mareeba landfill EE review.doc >>

Thanks
Benny

Enquiries Benny Asirvatham
Telephone (07) 40466739
Your reference WAS-DEP
Our reference CNS6465

07 November 2008

Kirsty Lamperd
Manager Waste Services
Tablelands Regional Council
PO Box 154
MAREEBA QLD 4880

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Dear Ms.Lamperd,

Mareeba Landfill Environmental Report

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The EPA has reviewed your Environmental Report submitted in response to the notice issued under section 323 of the Environmental Protection Act 1994 to conduct an Environmental Investigation at Mareeba Landfill on land described as Lot 517 on Plan CP851523.

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e...i...the ..., located at M... [1]

The EPA is concerned that investigation of the HDPE liner integrity was based on a number of assumptions. The EPA wishes to clarify how the estimate of approximately 500mm rise in the HDPE liner was established. The Environmental Report suggests that non destructive testing should be carried out, without removing the HDPE by feeling for any folds in the GCL. Further clarification of the methodology to be employed and the efficacy of this technique is required.

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The EPA is unclear how the elongation at yield for the 1.5 mm thick HDPE liner was calculated and in addition the factors and methods used to establish that the HDPE was not overstressed by groundwater upwelling beneath the liner. The Environmental Report also indicates that groundwater and surface water monitoring undertaken by Golder Associates does not indicate any contamination, however data relating to Electrical Conductivity, Polycyclic Aromatic Hydrocarbon, Pesticides and Total Petroleum hydrocarbon is essential to establishing possible groundwater impacts as identified in Development Approval XXXXXXXX???.
XXXXXXX???

Deleted: Further details of also ... the...comprehend ...is stormwater ...pockets underneath are required...r...d...the ... n't...information about...assess the ground water quality mentioned ...the ...d...per [3]

The EPA has concerns in relation to the ability of the landfill to be operated in compliance with Development Approval XXXXXXXX???, during the wet season. In this regard I wish to advise you to take all necessary action including effective compaction and cover of waste, and stormwater drainage to prevent surface water run off reporting to the cell or beneath the HDPE liner prior to onset of the wet season.

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Should you have any questions concerning this matter, please telephone Benny Asirvatham

on (07) 4046 6739.

Yours sincerely

Ingrid Fomiatti Minnesma

Manager – Far North Region
Environmental Services

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and also to strengthen the bund walls if necessary to avoid storm water collected at the site overflows into the storm water drain any further inundation of stormwater under the HDPE layer.

RTI DL RELEASE -EHP

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:25 PM
To: Smith Kelsey
Subject: FW: mareeba shire landfill

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
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-----Original Message-----

From: Chris Buckingham
Sent: Monday, 15 January 2007 4:25 PM
To: Ingrid Fomiatti Minnesma
Subject: mareeba shire landfill

Ingrid

Ian met with Patrick today. Patrick delivered the additional information, but it has not included all of the information that we need (missing the information on buffer distances which is contrary to our policy).

So Yes we received the info and the clock will restart, but we will be seeking more information along the lines of what Ian emailed to Patrick last Friday.

Chris Buckingham
Principal Environmental Officer
Environmental Operations
Northern Region
Environmental Protection Agency
5B Sheridan Street
CAIRNS QLD 4870
ph 07 4046 6736

From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:25 PM
To: Smith Kelsey
Subject: FW: Proposed Mareeba Shire Landfill

Attachments: EPA additional info responsibilities (4) Comments IF.doc

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

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From: Ingrid Fomiatti Minnesma
Sent: Monday, 15 January 2007 5:57 PM
To: Les Bevis
Cc: Hollie Wakefield; Chris Buckingham; Ian Florence
Subject: RE: Proposed Mareeba Shire Landfill

Hi Les

We received the additional information last Friday and the clock will restart. However it should be noted that we will be seeking more information as the additional information did include all of the information that we need / asked for (missing the information on buffer distances which is contrary to our policy). Ian Florence wrote a detailed e-mail on Friday to Patrick O'Flaherty regarding exactly what was missing in the additional information (highlighted yellow in the attached document.)

So we have 20 business days from last Friday 12/1/06 to decide, with an option to extend for 20 business day if required, after that it would need to be by agreement with MSC.

We will be aiming to have in done within the prescribed period and have been working closely with council on this project.

Cheers

Ingrid



EPA additional info
responsibi...

Ingrid Fomiatti Minnesma

District Manager

Environmental Operations

Cairns District Northern Region

Environmental Protection Agency

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From: Les Bevis

Sent: Monday, 15 January 2007 10:25 AM

To: Ingrid Fomiatti Minnesma

Cc: Hollie Wakefield; Chris Buckingham; Hollie Wakefield

Subject: Proposed Mareeba Shire Landfill

Hi Ingrid

Mick Borzi Mayor of Mareeba Shire rang today (6) Personal information wanting to know if we have all of the info to assess the application and if not could we let him know what is missing. Can you let me know so that I can ring him back.

Thanks

Les

Landfill Staging and Final Landform

The application is for a waste disposal facility receiving and disposing of 75,000t or more, but less than 100,000t of general waste per year on land parcel Lot 517 on CP851523. The application includes details in relation to Stage 1 and in part Stage II. Details of the proposed landfill footprint, further staging and final landform are not provided.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
1. A drawing showing the landfill footprint over the estimated 25 year life of the landfill.	With the IRD and population growth factored in the estimated life of the site is estimated at 20 years	Maunsell – Mal Jones
2. A drawing(s) showing the stages of the landfill over the life of the landfill including stormwater and leachate management.	The revised drawings will show the landfill footprint development at the start 0 years, 5 years, 10 years, 15 years and 20 years. Each plan will provide a snap shot and will show the relevant leachate and stormwater management for that stage of the operation.	Maunsell – Mal Jones
3. A drawing(s) showing the final landform including landform heights.	The landfill final height is set to the underside of the landfill cap at contour (RL 427) the 20 year development is expected to represent the final landform. This is due to the provided IRD, achievable compaction and volume of cover to be used, current airspace calculations do show a reduction from 25 years to 20 years of airspace based on the current 2% population growth, due to current trends in recycling reduction and reuse of materials it is expected to increase which imply that the site life may well be further extended in years to come.	Maunsell – Mal Jones

Waste Acceptance Criteria:

The applicant has advised in the Site Based Management Plan (SBMP) that much of the wastes to be received at the landfill will be inert (for example in s6.5 and 6.7). However the application lacks sufficient detail to support this conclusion. It is requested that the following information be provided to clarify the types of wastes to be received.

	RESPONSE	TO BE ACTIONED BY
4. It is requested that the applicant provide: The annual quantities of the following types of waste that the applicant anticipates will be received for disposal at the landfill: a. CEC Resource and Recovery Plant residual waste; b. Domestic sourced general waste; c. Vegetation and garden waste; d. Commercial and industrial waste; e. Construction and demolition waste; f. Animal carcasses; and g. Asbestos;	a. 50,000 tonnes per year (approx) b. 5,000 tonnes per year (approx) - it is intended that this will be received and transported to CEC Resource Recovery plant in Cairns for processing. This waste stream will not be landfilled. c. 1,000 tonnes per year (approx) - chipped onsite and purchased for local area use. This waste stream will not be landfilled. d. 2,500 tonnes per year limited - historically this waste stream involved matter from agricultural processing and packaging. It is intended that this waste stream will not be landfilled and will be directed to the CEC Resource Recovery plant with the Domestic General Wastes for processing. Only the residual/non putrescible fraction will be landfilled. e. 2,500 tonnes per year. Considered predominantly inert and directed to the landfill. f. < 100 tonnes (approx). Directed to the landfill as a Special Burial and covered as soon as is practicable. g. < 100 tonnes per year (approx). Directed to a separate asbestos burial area which is identifiable by a surveyed location within the landfill cell.	MSC / CEC – Patrick O’Flaherty, Roy Lavis

<p>5. Details of the practices and procedures proposed to segregate recyclable materials from materials to be received at the landfill. Recyclable materials would include:</p> <ul style="list-style-type: none"> a. Green waste b. Cardboard c. Paper d. Concrete e. Bricks f. Plastics g. Glass h. Metal i. Foodstuffs (It is stated in the SBMP that condemned foodstuff will be accepted at the site. This waste is accepted at the composting facility). 	<p>a. directed to a designated disposal area where which is supervised by the landfill operations staff.</p> <p>b. Currently no separation.</p> <p>c. Currently no separation.</p> <p>d. Currently no separation.</p> <p>e. Currently no separation.</p> <p>f. CEC Resource Recovery, Cairns</p> <p>g. CEC Resource Recovery, Cairns</p> <p>h. directed to a designated disposal area where which is supervised by the landfill operations staff. CEC Resource Recovery, Cairns.</p> <p>i. Condemned foodstuffs will be accepted to the Mareeba landfill site as part of the putrescible waste stream and transported to the CEC Resource Recovery plant in Cairns for reprocessing.</p>	<p>MSC – Patrick O’Flaherty</p>
<p>6. Details of the monitoring program for the recyclable materials segregation, practices and procedures (including those at regional transfer stations) and corrective actions proposed to ensure that recyclable materials are not disposed to landfill.</p>	<p>Monitoring of metal recycling is undertaken by weighing the recycled metals that are removed from the site by the recycling contractor.</p> <p>Processed greenwaste is recorded by weight by the mulching contractor and is recorded as part of the waste collection software.</p> <p><u>Need procedures for checking incoming loads (those not going to CEC) and removing identified recyclables. It would be good if this could be provided in the updated SBMP if possible.</u></p> <p><u>Details of how separation of recyclables at WTSS will be facilitated is requested.</u></p>	<p>MSC – Patrick O’Flaherty</p>

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7. Details of its contingency plans for circumstances where the CEC Resource and Recovery Plant is not operational.	<p>What needs to occur?</p> <ol style="list-style-type: none"> 1. Contractor needs to use source segregation. OK for kerbside but what about other? <u>No kerbside recycling for domestic waste in Mareeba – so it would need to go through a MRF before disposal.</u> 2. Need to condition contractors supplying waste. (same condition as Springmount) 3. Contingency plan for impact of cyclone. <p><u>What needs to occur has been identified, we would like to see the results of this work if possible.</u></p>	<p>MSC – Patrick O’Flaherty, CEC – Roy Lavis</p>
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Impacts upon Sensitive Receptors

The application involves the substantial increase in volume of waste at an existing landfill. Landfills have the potential to cause adverse impacts on sensitive receptors through odour, dust, noise and litter. The application has advised that sensitive receptors will not be impacted. However the details of the assessment that resulted in this conclusion are not provided.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
8. A drawing showing the location of sensitive receptors in relation to the landfill.	<u>Drawing still to be to be provided</u>	Maunsell – Mal Jones

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<p>9. Distances of the sensitive receptors from the landfill during the progressive stages of the landfill. Please include details of any planned future sensitive land uses that are relevant to the site.</p>	<p>The residential development appears to be on the southern side of the site. Based on the cell development sequence, cells 1,2,3 and 5 will be situated outside of the 500m buffer area, while cells 4 and 6 are situated within the 500mm buffer area and as a result will require the construction of screening berms on the cell perimeter in order to screen daily landfill operations from the public view. Currently the remaining land within the buffer area is crown land and as a result will not be developed thus creating a reasonable natural buffer zone.</p> <p><u><i>Is there any supporting information, etc to indicate that current operations at the site have not resulted in impacts on, or complaints from, the residents within this critical 500m buffer?</i></u></p>	<p>Maunsell – Mal Jones</p>
<p>10. An assessment of potential dust impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development and will require the management of dust during construction within and outside of the 500m buffer area. With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years) care will have to be taken to stockpile the various material at selected locations so as to ensure easy access and maintenance of the stockpiles during the life of the site. Adequate dust suppression during construction coupled to seeding and re-vegetation of long term stockpiles and completed side slopes ie cells 4 and 6 as a potential screen berm (rising green wall).</p>	<p>Maunsell – Mal Jones</p>

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<p>11. An assessment of potential noise impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Predicted noise limits should be discussed with reference to the EPA Guideline, Planning for noise control. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development 1 to 20 years and will require the management of noise during construction and landfill operations within and outside of the 500m buffer area.</p> <p>With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years). Additional noise suppression can be generated by construction a suitable screen berm during the early stages of operation prior to developing cells 4 and 6, this coupled to seeding and re-vegetation of long term slopes and completed side slopes will reduce the noise levels. Contractors will be required to ensure the construction and landfill operating equipment is of good operating condition and meets all relevant noise requirements.</p> <p><u><i>The EPA Guideline mentioned specifies that background noise monitoring should be done at affected residences – is this the case? Noise impacts in relation to residences within the 500m is a concern – conditions must be set at an achievable level – has any noise modeling been done to estimate levels at these residences during development and operation of cells 4 and 6?</i></u></p>	<p>Maunsell – Mal Jones</p>
<p>12. An assessment of potential odour impacts from the operation of the landfill, including waste and cover material transport activities, on sensitive receptors through the progressive stages of the landfill. Predicted odour impacts and mitigation measures should be discussed with reference to the EPA Guideline, Odour impact assessment from developments. Details of proposed mitigation measures should also be provided as relevant for the various stages.</p>	<p>The cell development and operation will follow the same sequence indicated in the staged development 1 to 20 years and will require the management of odour during construction and landfill operations within and outside of the 500m buffer area.</p> <p>With the landfill footprint containing adequate cover capping and topsoil volumes (based on the IRD and growth) to take the site to the final landform (20 years). Additional odour suppression can be generated by more frequent covering of waste during the early stages of operation prior to developing cells 4 and 6, these cells may require more control on the working face with the incremental placement of cover if required. It should be noted that as the bulk of the waste is being received from the CEC recycling plant and enters the landfill as treated waste the potential for odour problems is greatly reduced.</p>	<p>Maunsell – Mal Jones</p>
<p>13. Details of proposed litter management practices and procedures should be provided.</p>	<p>The Contractor will have mobile litter fences on the working face of the landfill at all times, litter picking will be under taken on a regular basis. Where necessary the placement of day cover or alternative will be put down to prevent wind scatter. Vehicles transporting waste accessing the site will be required to have covers over the waste loads to prevent wind scatter.</p>	<p>MSC – Patrick O’Flaherty Maunsell – Mal Jones</p>

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14. Practices and procedures to be employed to manage greenwaste and mulch stockpiles on site to prevent combustion, odour problems and stormwater contamination.	<p>The site is fully fenced to prevent access by unauthorised intruders.</p> <p>The stockpiles are in an area which is regularly monitored by site operations staff.</p> <p>Drainage plan for the re-contoured landfill site provides for stormwater segregation.</p> <p><u>Are there any plans to monitor temperature, turn over stockpiles, etc?</u></p>	MSC – Patrick O’Flaherty
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Liner and Final Cap

The protection that the landfill provides to the environment is significantly dependent on the performance of the landfill liners, capping and final cover. Sufficient details of quality control and assurance and cover availability are not provided for assessment.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
15. Details of the quality control and quality assurance for the landfill liner and cover systems. The applicant should be referred to the EPA Guideline Landfill siting, design, operation and rehabilitation for guidance.	<p>The QA procedures, test results, etc need to be compiled and provided to EPA.</p> <p><u>Have specs been provided for cover systems or capping at this stage? Capping specs not critical at this point, however if they’ve been provided could we receive a copy?</u></p>	Maunsell – Michael Arri, CEC – Ravi Pillay

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<p>16. Details should be provided of the availability of intermediate and final cover material through the stages of the landfill.</p>	<p>Based on the staged development of the site in 5,10 15 and 20 years from start up.</p> <p>The estimated cumulative cover requirements by volume are as follows:</p> <ul style="list-style-type: none"> • 0-5 years – 80 900m³ • 5-10 Years – 83 600m³ • 10-15 years – 86 500m³ • 15-20 years – 88 500m³ <p>The total volume of cover generated from out of the landfill cell footprint totals 431 000m³ which is adequate for the full operational life of the site. There is also adequate volume of capping material from out of cell footprint to cap the final landform with a 500mm clay cap.</p> <p>The introduction of alternate day cover on cells 1,2,3and 5 (cells outside of the 500m buffer area) reduces the overall cover requirement by as much as 90 000m³ the cells within the 500m buffer area will require cover to be placed daily or the use of alternatives to manage odour, and rodents as well as other such nuisances.</p> <p>The topsoil from cells 1 through to 6 will need to be stockpiled for future use in the capping phase of the site.</p> <p>Topsoil volume required is as follows:</p> <ul style="list-style-type: none"> • Cells 1 to 6 is 30 000m³ <p>Total capping requirement based on the available geotechnical investigation indicates that adequate volume is available on site within cell 6.</p> <ul style="list-style-type: none"> • Total volume for Capping for cells 1to 6 of 48 400m³ <p>This approach allows the site to operate for the full life of the footprint without having to buy in cover daily, intermediate or capping providing the on site cover is correctly managed during the daily operations of the cells 1 through to 6.</p>	<p>MSC – Patrick O’Flaherty</p>
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<p>17. Details of monitoring of waste loads and controls to be in place to prevent damage to the liner from large and/or rigid items.</p>	<p>The placement of the pioneered layer of selected waste (Soft layer for initial placement) above the drainage layer is key to ensuring the operational integrity of the drainage layer. A pioneered layer of selected waste will be end tipped on to the drainage layer of each of the newly constructed cells from 1 to 6. The selected waste will be provided directly from the CEC recycling plant, this will ensure that the selected waste is free of items which could damage the liner during placement and would not add to premature clogging of the separation medium or the drainage layer.</p>	<p>Maunsell – Mal Jones</p>
<p>18. Practices and procedures to be employed to ensure the integrity and maintenance of 1 in 4 batters on the flanks of the landfill. 1 in 5 batters are recommended.</p>	<p>Concern over effectiveness of compaction of clay at slopes of 1 in 4.</p> <p>The long term maintenance of the batters at a 1:4 slope would not be problematic for the following reasons:</p> <ul style="list-style-type: none"> • Slope lengths on site as per the SBMP will not exceed 30 linear meters. • Benching will be provided where slopes would exceed this length, benching will further assist with access and operation of equipment during the maintenance period. • Construction equipment can operate effectively and safely on up to 1:3 slopes (including compaction rollers, graders etc) • Erosion will be managed with side slope drains and diversion bunds where appropriate. • Maintenance of grassed slopes (motorized slashes) can operate on 1:3 slopes safely. 	<p>Maunsell – Mal Jones</p>

<p>19. Specifications for the passive venting system to be utilised at the site where required. Passing venting would be seen as favourable in comparison to the absence of a venting system at a site of this size.</p>	<p>Landfill gas management infrastructure aims to reduce the uncontrolled release of methane and other landfill gases to the atmosphere. Due to the site containing pretreated waste and that the land fill will contain a lining system which will prevent migration outside of the landfill footprint it is envisaged that the landfill will not generate significant amounts of landfill gas. Where there may be an uncontrolled release of methane and other landfill gases to the atmosphere this is generally achieved by oxidation of methane and other components. Oxidation will be achieved by:</p> <ul style="list-style-type: none"> • Dispersing LFG through the final capping layer, micro-organisms within the soil oxidise methane to form carbon dioxide; this can be enhanced by the addition of organic matter to the cap; or • Install LFG collection networks in the form of a number of linked gravel filled trenches under the capping, consolidate and vent. • Monitoring will be carried out at the required locations including bores once in three months to access compliance with methane limits. 	<p>Maunsell – Mal Jones</p>
<p>20. Details of any spike testing to be conducted to monitor the sub-surface presence of methane and/or any methane testing of service conduits.</p>	<p>Fugitive LFG emissions will be tested once in every three months through surface emission testing conducted by a suitably qualified person. Testing points will be located on a 50m grid across the landfill surface with testing of cracks and fissures where noted undertaken in addition to the grid-based sampling regime. Testing should be undertaken on a dry day between the months of October and March with wind speeds lower than 5km/hr by holding an LFG meter or TLV “sniffer” 5cm above each monitoring point and a stabilised reading taken before moving to the next point. Trigger values for remedial measures to be implemented will be 25% of the lower explosive limit for methane.</p>	<p>Maunsell – Mal Jones</p>
<p>21. Details of the type of vegetation proposed for the final cover to the landfill cap.</p>	<p>Vegetation on the landfill cap prevents surface erosion and batter slope instability by protecting the final capping layer. Vegetation used on landfill caps will be local (native) grass or turf common to the area, as this has relatively low maintenance requirements and the shallow root system does not affect the compacted low permeability soil layer. Vegetation assists in protection of the low permeability soil layer to prevent desiccation or excessive drying.</p>	<p>Maunsell – Mal Jones</p>

Some concern of perched leachate from plastics

Leachate Management

It is noted that the applicant has advised that it may recirculate leachate into the landfill or discharge to sewer, by tanker initially and later by sewer connection. The effectiveness of these options is dependent upon the volume of leachate generated and the control practices used to manage leachate generation and treatment.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
22. An estimate of the volume of leachate generated based on a 1-in-20 year storm event.	<p>Leachate generation volumes were calculated based on the following:</p> <ul style="list-style-type: none">• 1 in 20 year storm event• 24 hour intensity• Required removal to less than 300mm above the drainage layer in less than 24 hours of pumping. <p>The Leachate sump has storage for approximately half this volume and EPA guidelines allow the head to exceed 300mm for extended periods. In order to pump all the Leachate out of the sump and drainage layer within 24hrs, there would need to be a pump flow rate of 13.3 l/s.</p> <p>If we were to pump out only Leachate in the drainage layer within 24 hrs the flow rate would be approx half this – say 8l/s. <u>Is this achievable with proposed pump set-up?</u></p>	Maunsell – Mal Jones

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23. Contingency plans where leachate generated is in volumes or at a rate in excess of recirculation or treatment capabilities.	<p>The leachate management plan to addresses the period between startup and when the new STP is in operation comprises of two options namely to remove the leachate using a tanker and to dispose of it to sewer or to remove the leachate by tanker and redistribute it over the existing waste body through irrigation and or trenching into the existing waste itself. All waste removed from the trench will be placed at the working face and covered over. The trench will then be backfilled and covered using selected waste and cover material, this process must be completed within 48 hours of initial trenching.</p> <p>Approximate leachate volumes for the site over the years 1,2 and 3 when managed through tanker and disposal to sewer or trenching with an exposed area of ranging from 0.75ha to 0.35 ha would result in a total potential out flow for year 1 of 0.04l/s, for year 2 of 0.02 l/s and for year three of 0.015l/s.</p> <p>The total leachate out flow for the final landform with an exposed area of 0.5 ha would result in a total potential out flow of 0.24l/s</p>	Maunsell – Mal Jones MSC – Patrick O’Flaherty
24. A drawing showing the location of leachate collection pipework in the base of the landfill showing the pipework at the proposed 25m spacing.	Drawing still to be provided	Maunsell – Mal Jones
25. Practices and procedures to be employed to ensure that the head of leachate in the collection sump is maintained at a height of less than 300mm above the liner.	<p>Leachate pump stations will have pump failure alarms included to warn of overflow. Back up pumps are to be available on site in the event of a pump failure. All alarms are to be able to operate without mains power in the event of a power failure. <u>Are suitable generators available to council in the event of a prolonged power failure?</u></p>	Maunsell – Mal Jones
26. Details of the leachate re-injection mechanisms.	<p>Leachate re-injection is to take place in existing waste on site through trenching into the waste body, all waste removed from the trench is to be disposed of immediately at the working face and is to be covered with fresh waste. Trenches are to be no deeper than 3m and no longer than 6m (to prevent side collapse), trenches are to be backfilled within 48 hours of use. Leachate is to discharged into the trench using a flexible hose with working couplings to prevent discharge on to the surface of the site as well as to reduce vehicle movements too close to the excavations.</p>	Maunsell – Mal Jones

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27.	Details of how the geotextile separation layer will be installed and managed to prevent the possibility of biofouling.	<p>The geotextile is required to ensure the integrity of the drainage layer is maintained when placing selected waste on the base of the cell. The waste placed over the base of the cell will comprise of selected treated waste from the CEC recycling plant. This will ensure that there are no excessive fines or possible items that could damage or puncture the separation layer, further to this is the fact that the waste is treated means the possibility of biofouling is also reduced. With the layer end tipped and pioneered in, contact resulting from plant and equipment is also greatly reduced.</p> <p>Most separation layers are capable of functioning adequately even with excessive clogging (reference to a paper supporting this to be provided by Mal)</p>	Maunsell – Mal Jones
28.	Details of any pre-treatment of wash down waters before they are released to the leachate collection system. E.g. to remove hydrocarbons, etc.	Wash down bay not connected.	MSC – Patrick O’Flaherty
29.	The current date for installation of the sewer line to the landfill site.	Mid February 2007 - construction has begun.	MSC – Patrick O’Flaherty
30.	Details of any investigation that has been carried out to ensure that the Mareeba sewage treatment plant can effectively treat the expected volumes and concentration of leachate and associated contaminants.	Designed into planning for STP. Mal needs to provide leachate volumes for storm and throughout the year.	Maunsell – James Jentz
31.	Details of any testing or supporting evidence to verify that the suggested compaction rate is achievable using the specified practices on the residual waste material provided by the CEC Resource and Recovery Plant.	Latest work by CEC at CCC	CEC – Roy Lavis
32.	Practices and procedures to ensure that intermediate cover is effectively managed between lifts to prevent generating perched leachate.	Detail is provided in the SBMP under the waste deposition and compaction Item d, page 11	Maunsell – Mal Jones
33.	Verification of how often waste will be covered – conflicting advice is present in the SBMP with every second day specified in most cases and daily in another (6.1.1.h).	<p>Waste landfilled will be covered every alternate day while operating in cells 1,2,3 and 5. While cells 4 and 6 will require the placement of cover on a daily basis due to the cells positioning being within the 500meter buffer area relative to the surrounding housing development. The relevant sections (6.1.1.h) will be amended accordingly. <u>Please provide amended SBMP as part of add info response.</u></p>	Maunsell – Mal Jones

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34.	Details of the type of cover sheet to be used in lieu of cover material (6.1.1.j).	Some of the options currently available on the market in the form of alternate cover are (examples) reusable woven and or woven coated cover sheets, biodegradable cover sheets, foam based alternate cover and organic alternative cover, to list a few options for the site. The selected option will require discussion and possibly some site specific field testing to be carried out in conjunction with the EPA prior to final acceptance.	Maunsell – Mal Jones
35.	Details of how compaction rates will be calculated.	Quarterly for first year & then 6 monthly if consistent results.	Maunsell – Mal Jones
36.	Details of any gas venting for the leachate collection sump.	See attached PDF sketch	Maunsell – Mal Jones
37.	Practices and procedures to be employed in the maintenance of leachate pumps and monitoring probes.	Duty & standby pump. Routine checking of probes. <u>Please add to SBMP and provide.</u>	Maunsell – Mal Jones MSC – Patrick O'Flaherty

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Groundwater Protection

The applicant has referenced a groundwater assessment conducted more than 10 years ago. A landfill has operated on the site in the intervening period and some groundwater monitoring occurring but has not been included in the application.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
38.	Further assessment of the groundwater, including a review of groundwater monitoring data collected since 1993 and updating the assessment as appropriate.	<div>Water quality as well as height <u>Please provide details.</u></div> <div>Maunsell – Mal Jones</div> <div>MSC – Patrick O'Flaherty</div>

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<p>39. A drawing showing groundwater contours.</p>	<p>Groundwater contours based upon 1993 data is presented within the Golder Geotechnical/Hydrogeological Investigation (refer attached Golder report). Groundwater contours post 1993 cannot be developed as data for only two wells (BH2 and BH7) has been provided since 1999. Between 1993 and 1999, no groundwater level data has been provided.</p> <p>BH7 was not monitored as part of the original investigation (hence BH7 was not used for the development of the original groundwater contours) and details of this bore's construction have not been provided. Groundwater level within this bore remained relatively consistent in the period from April 1999 until July 2005 (levels fluctuated between 12 and 13mBGL); however, in October 2005 a marked rise in the water level to 8.7mBGL was noted.</p> <p>BH2 was included as part of the original investigation and recorded a standing water level at approximately 10.6mBGL. Since April 1999, the standing water level within this bore has fluctuated markedly generally between approximately 7mBGL to 12.9mBGL.</p> <p>Updated groundwater contours will be produced after the installation of additional groundwater monitoring bores (refer response 40).</p>	<p>Maunsell – Mal Jones</p>
<p>40. Details of proposed groundwater monitoring network for the landfill.</p>	<p>Considering the staged process of landfill development, it is recommended that a staged monitoring program be initiated in response to the landfill development. As a result the following stages are proposed:</p> <p>Stage 1/2</p> <ul style="list-style-type: none"> – Reinstall groundwater monitoring wells in the positions formerly occupied by BH6 and BH4 and level to site datum. – Level BH7 to the site datum and obtain construction details. Reinstall if construction is deemed inadequate. <p>Stage 3</p> <ul style="list-style-type: none"> – Remove BH7 as part of Cell 3 construction. – Reinstall groundwater monitoring well in the position formerly occupied by BH5 and level to site datum. <p>Stage 4</p> <ul style="list-style-type: none"> – Reinstall groundwater monitoring well in the position formerly occupied by BH1 and level to site datum. <p>Additional groundwater monitoring wells may be required should data obtained indicate impact to groundwater may be occurring.</p> <p><u>Please provide plans</u></p>	<p>Maunsell – Mal Jones</p>

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<p>41. Provide supporting information or evidence to verify the statement that the perched water table at the north east of the site is recharged by the reclaimed sand depression.</p>	<p>The water levels in the groundwater monitoring bores show the groundwater table to be approximately 8m below ground level at BH2 with the depth greater at other locations. During the geotechnical investigations into sourcing a suitable clay liner for the landfill a total of 13 test pits were dug to depths of up to 3m as per the attached report from CETS. It is noted that free ground water was not observed in a single pit. However, no pits were dug in the north west area of the landfill where the perched ground water table was encountered.</p> <p>During excavation of the cell groundwater was encountered in the north west corner as well as the western end of the sediment pond. The water was observed to seep into the open excavation through a sand lense running generally in a north south direction. The free groundwater was observed to be as close as 500mm below the natural surface. The cell was excavated to a depth of approximately 4m below ground level and free groundwater was not evident throughout the construction period except in several areas where the sand lense was encountered. In the sediment pond which was excavated to approximately 3m depth free ground water was observed at the western end so a 10m section of the excavation was reinstated and no water ponded, or was observed weeping into the sediment pond.</p> <p>It is considered that the sand lenses dissecting the clay stratum in the north west area of the site act as a reservoir for a perched water table due to the impermeability of the clayey material. In areas outside of the sand lense no free groundwater was observed during the two month construction period. Furthermore, dipping of the groundwater observation bores confirmed that the groundwater table was approximately 8m below the surface and in some places in excess of 12m below the surface.</p> <p><u><i>As discussed please include monitoring of water from perched groundwater table in monitoring program and provide.</i></u></p>	<p>Maunsell – Michael Arri</p>
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Stormwater Quality

Landfills have the potential to cause adverse impacts on receiving waters through stormwater contamination. The application has advised that stormwater will be managed to ensure that contaminants will be controlled to prevent any adverse environmental impacts. However several issues require clarification.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
42. Details of the completion date for installation of the sediment pond/s and specifications for their construction.	Sedimentation Dam 1 was constructed in December 2006. Specification is contained within a standard Maunsell earthworks specification requiring removal of unsuitable material and compaction of walls. A rock lined spillway is specified on the detail construction drawings. The second Sedimentation Dam is not required until the construction of cells 1B and 3.	Maunsell – Mal Jones
43. Details of the end location of the overflow channel from the sediment pond and the receiving environment.	The receiving environment is gently sloping to the north and is grassed.	Maunsell – Mal Jones MSC – Patrick O’Flaherty
44. An amended Table 7 for water quality monitoring in the sediment pond that includes testing for the presence and concentration of ammonia.	<p>On-site drainage has been designed so that only clean run-off will be channeled through the sedimentation dam. Runoff that comes into contact with waste within the active landfill areas will be collected via the leachate collection system and the leachate sump. The presence of ammonia within the sedimentation dam may arise from batter seeps that can occur post closure of the facility and as a result should be managed through the post closure provisions and ultimately the conditions specified within a site management plan.</p> <p>The measurement of conductivity and dissolved oxygen are considered appropriate indicators for the presence of leachate within the sedimentation dam as conductivity is a conservative indicator (i.e is not subject to chemical transformation/degradation). Once exposed to the environment, ammonia can be oxidized to nitrate and nitrite thus rendering the testing for ammonia redundant. It is not considered appropriate to test for ammonia within the sedimentation pond until post closure provisions have been implemented for closed landfill cells.</p>	Maunsell – Mal Jones

Environmental Management Program Compliance

An Environmental Management Program (MAN5133) in place for the current site requires the reprocessing of waste from the existing waste pile at a rate of no less than 10,000tonne per year. No reference is made to this in the application or Site Based Management Plan.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
45. Practices and procedures to be employed to ensure that the reprocessing of the existing waste pile is carried out to comply with Mareeba Shire Council's Environmental Management Program MAN5133.	<p>Under the contractual arrangements between CEC Resource Recovery and Mareeba Shire Council (MSC), a 10,000 tonne per year allocation has been allocated for MSC use. MSC arranged this to provide for the reprocessing of the existing landfill cell waste into the new engineered cell which has now been constructed. The 10,000 tonnes per year includes wastes that will be accepted to the Mareeba landfill site for landfilling which is projected to be approximately 3,000 tonnes per year leaving 7,000 tonnes available for waste reprocessing from the existing cell.</p> <p>It is proposed that the landfill staff will undertake the reprocessing as an ongoing part of their daily duties which will be resourced by MSC.</p> <p><u>As discussed - the EMP provided by MSC and approved by the EPA specifies that approximately 10,000t/yr is to be reprocessed. The discrepancy will need to be rectified.</u></p>	MSC – Patrick O'Flaherty

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Emergency Response

A recent fire at the existing site highlighted the problem associated with the current water supply's inability to effectively extinguish a large fire in the waste pile.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
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46. Details of any upgrade to the existing water supply to the site to ensure an effective fire fighting capability.	<p>A water tanker is currently permanently stationed adjacent to the tip face. A fast fill connection to the existing 50 mm supply is being investigated and is programmed for installation completion by March 2007.</p> <p>A further upgrade with the installation of a 100mm water line has been planned for the 2007-8 capital program year. The district fire officer has been consulted and has agreed with this project. The installation will be undertaken as a priority project in 2007-8 with an expected completion before December 2007.</p>	MSC – Patrick O’Flaherty
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Staff Responsibilities

It is stated in 7.2 of the Site Based Management Plan that responsibilities for particular tasks are set out in section 6.0. However it is not clearly stated in section 6.0 which staff members are assigned the specified duties and responsibilities – i.e. for site construction, verification of works, sampling, inspections, monitoring of waste loads, compliance control, complaint response, etc.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
47. Details of responsibilities for particular tasks identified within the Site Based Management Plan. Please include reference to any internal or 3 rd party environmental audits to be conducted.	<p>A current review of the staff establishment is being undertaken as part of the new operating protocols. One additional plant operator has been included onto the site and a newly created position of the Landfill leading hand has also been filled.</p> <p><u><i>We’d like to see the SBMP updated to include these staff responsibilities (as specified in 7.2).</i></u></p>	MSC – Patrick O’Flaherty

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Financial Assurance

It is understood that the construction and operation of the landfill is a joint venture between the Mareeba Shire Council and CEC. The EPA needs to ensure that the site will be effectively rehabilitated both progressively and at the end of its life and that appropriate funds and resources are available for this costly process.

It is requested that the applicant provide:

	RESPONSE	TO BE ACTIONED BY
48. Details of which entity will assume the long term responsibility for the final rehabilitation and post closure care for the landfill site. If this is to be Mareeba Shire Council please provide details of contractual obligations and agreements in this respect. If final rehabilitation is to be the responsibility of CEC then a financial assurance may be required.	The ERA licence, operational administration and post closure site responsibility are those of the Mareeba Shire Council. Closure of the site – <u>sentence not finished.</u>	

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From: Fomiatti Minnesma Ingrid
Sent: Tuesday, 23 April 2013 2:25 PM
To: Smith Kelsey
Subject: FW: Update - Assessment of Mareeba Landfill DA

Ingrid Fomiatti Minnesma
Acting Regional Manager Mining and Compliance

Northern Region

Department of Environment and Heritage Protection
5b Sheridan Street
GPO Box 937

Cairns QLD 4870

Telephone: 07 4222 5337
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You can visit us online at www.ehp.qld.gov.au

From: Ian Florence
Sent: Wednesday, 7 February 2007 10:30 AM
To: ingrid.minnesma@epa.qld.gov.au; chris.buckingham@epa.qld.gov.au; Luke Zambelli
Subject: FW: Update - Assessment of Mareeba Landfill DA

The below email is forwarded FYI.

From: Ian Florence
Sent: Wednesday, 7 February 2007 10:27 AM
To: Patrick O'Flaherty
Subject: Update - Assessment of Mareeba Landfill DA

Patrick,
Good morning, I'd just like to keep you in the loop with how things are going with the assessment of the landfill DA. The information that you submitted last week has been sent down to Brisbane for review by one of our waste specialists down there. He will be getting back to me with his feedback in the next week or two.

However, there are a few pieces of information previously requested from Mareeba SC that we are still waiting on. The outstanding information will be needed for us to be able to fully assess the application against all our assessment criteria. This includes:

- Provision of the groundwater monitoring data (No 38 of add info request).
- An updated groundwater monitoring plan that includes monitoring of the perched lens of groundwater beneath the newly constructed cell.
- Background noise monitoring data for the nearest affected residences.

- Updating the SBMP/application to include reprocessing of 10,000t/yr of waste from the old landfill (in line with requirements of the approved EMP).

Due to the above, it looks as though I will be extending the decision date by the permitted 20 business days.

If possible I'd also like to see a bit more history or information than currently provided on the number of, or lack of, complaints from nearby residents in relation to previous operations at the site. The submitted plans that illustrate the 500m buffer shows that cells 4 and 6 will in fact be closer to those residences than the previously operated cell.

Do Bedminster have any data, or is there any research data to show their residual waste is significantly less odorous than normal putrescible waste. For example any volatile solids reduction testing or specific oxygen uptake rate (SOUR) testing that's been carried out could be invaluable in demonstrating that the lack of the usual buffer distance shouldn't be a problem.

As discussed previously, this buffer issue is critical and for the purposes of my assessment I'd like to see as much evidence as possible from MSC that there haven't been problems in the past and there's not likely to be problems in the future. If that isn't clearly demonstrated we could run into problems with approval or conditioning of cells 4 & 6.

Don't hesitate to call if you want to discuss.

Regards

Ian Florence
40466727

RTI DL RELEASE - EMP

Section 3.5.15 Integrated Planning Act 1997

EPA Permit¹ number: IPDE00493906A11

EPA Permit¹ number:	IPDE00493906A11
Assessment Manager reference:	as above
Date application received by EPA:	13-OCT-2006
Permit¹ Type:	Development Approval for a MCU involving an ERA
Date of Decision:	
Decision:	
Relevant Laws and Policies:	<i>Environmental Protection Act 1994</i> and any subordinate legislation

Development Description

Property

Mareeba Landfill Site

Lot/Plan

Lot 517 Plan CP851523

Aspect of Development

ERA 75(a)(vii) Waste disposal - operating a facility for - disposing of only general waste or limited regulated waste, if the facility is designed to receive waste at the rate of more than 75 000 t but not more than 100 000 t a year.

Additional comments or advice about the application

<Insert additional comments or advice about the application>

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Environmental Protection Agency and the Queensland Parks and Wildlife Service

EPA Permit number: IPDE00493906A11

Additional information for applicants

The standard currency periods stated in section 3.5.21 of the Integrated Planning Act 1997 or the nominated currency period, apply to each aspect of development in this permit¹. For information on when this permit¹ takes effect and the relevant currency periods, please see point 3 in the Notice of Decision.

Contaminated Land

It is a requirement of the *Environmental Protection Act 1994* that if an owner or occupier of land becomes aware a Notifiable Activity (as defined by Schedule 2 of the *Environmental Protection Act 1994*) is being carried out on the land or that the land has been affected by a hazardous contaminant, they must, within 30 days after becoming so aware, give notice to the Environmental Protection Agency.

Environmentally Relevant Activities

The aforementioned description of any environmentally relevant activity (ERA) for which this permit is issued is simply a restatement of the ERA as prescribed in the legislation at the time of issuing this permit. Where there is any conflict between the abovementioned description of the ERA for which this permit is issued and the conditions specified herein as to the scale, intensity or manner of carrying out of the ERA, then such conditions prevail to the extent of the inconsistency.

This permit authorises the ERA. It does not authorise environmental harm unless a condition within this permit explicitly authorises that harm. Where there is no such condition, or the permit is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

In addition to this permit, the person to carry out the ERA must be a registered operator under the *Environmental Protection Act 1994*. For the person to become a registered operator, they must apply for a registration certificate under section 73F of the *Environmental Protection Act 1994*.

<Insert Delegate Name>
Delegate
Environmental Protection Agency
20-FEB-2007

CONDITIONS OF APPROVAL

ERA 75(a)(viii) Waste disposal - operating a facility for - disposing of only general waste or limited regulated waste, if the facility is designed to receive waste at the rate of more than 75 000 t but not more than 100 000 t a year.

Agency Interest: General

(G1) Prevent and/or minimise likelihood of environmental harm.

In carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and / or to minimise the likelihood of environmental harm being caused.

(G2) Maintenance Of Measures, Plant and Equipment.

The operator of an ERA to which this approval relates must:

- (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval; and
- (b) maintain such measures, plant and equipment in a proper and efficient condition; and
- (c) operate such measures, plant and equipment in a proper and efficient manner.

(G3) Site Based Management Plan.

From commencement of an ERA to which this approval relates, a site based management plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all ERAs that are carried out.

The SBMP must address the following matters:

- (a) Environmental commitments - a commitment by senior management to achieve specified and relevant environmental goals.
- (b) Identification of environmental issues and potential impacts.
- (c) Control measures for routine operations to minimise likelihood of environmental harm, including the following:
 - (i) diverting upstream stormwater away from disturbed or contaminated areas and any ponds or other structures used for the storage or treatment of contaminants or wastes;
 - (ii) containing contaminated stormwater on site;
 - (iii) minimising the size of contaminated areas;
 - (iv) provision of stormwater settling ponds and rubbish traps;
 - (v) minimising the size of disturbed areas by measures such as progressive restoration of disturbed areas;
 - (vi) a waste sampling and monitoring program to detect any prohibited wastes received at the site and to ensure that the wastes received for disposal or treatment at the site comply with the waste acceptance

criteria stated in this approval.

(d) Contingency plans and emergency procedures for non-routine situations including:

- i. fires;
- ii. cyclonic conditions;
- iii. the recovery and removal from the site for proper disposal of any prohibited wastes received at the site which cannot be accepted for storage, treatment or disposal at the site

(e) Organisational structure and responsibility.

(f) Effective communication.

(g) Monitoring of contaminant releases.

(h) Conducting environmental impact assessments.

(i) Staff training.

(j) Record keeping.

(k) Periodic review of environmental performance and continual improvement.

(l) Leachate management

(G4) The site based management plan must not be implemented or amended in a way that contravenes any condition of this approval.

(G5) Records.

Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.

(G6) Waste Records.

A record of all regulated waste accepted at and removed from the site must be kept detailing the following information:

- a) date of receipt of the waste;
- b) description of waste;
- c) quantity of waste;
- d) origin of the waste; and
- e) destination of the waste.

(G7) Site development Plan

A Site Development Plan, identifying all activities to be carried out on the site during the period of the plan, must be prepared for each cell subject to this development permit. Each Site Development Plan must be finalised at least three (3) months before the expiry of the previous plan and must include details of at least the following:

- (a) dimensions of landfill units used for waste disposal or storage;
- (b) an accurate level survey of any area to be utilised for the disposal or storage of wastes. The levels must be reduced to a common datum and related to contour plans;
- (c) the dimensions of the active waste disposal face;
- (d) location of any new site infrastructure or extensions, such as a new leachate dam, pond, or pump well to be used or other plant and equipment, required to the leachate collection, storage and recirculation infrastructure to serve the new cell;
- (e) location of any new stormwater drains, diversion embankments or settling ponds required to serve the new cell;
- (f) location of any areas to be capped (both final and interim capping where the next stage on the completed cell will not commence within 12 months), the proposed capped surface levels and contours, surface drainage

- system and species of vegetation to be planted as part of a rehabilitation program;
- (g) location of any new groundwater and gas monitoring or collection bores required to serve the new cell; and
- (h) progressive recording of waste deposition such that the location of a deposited load can be readily identified.

(G8) Closure And Post-Closure Care.

When the deposition of waste to the landfill unit ceases, a final cover system to the landfill unit must be installed which minimises:

- a) infiltration of water into the landfill unit;
- b) the likelihood of any erosion occurring to either the final cover system or the landfilled materials; and
- c) uncontrolled release of landfill gas.

(G9) Post-closure care of the landfill unit must be conducted following deposition of waste in the landfill unit, for:

- a) a period of 30 years; or
- b) such shorter period until the landfill unit and surrounding site are geotechnically stable and that no release of waste materials, leachate, landfill gas or other contaminants to the environment is likely.

The post closure care element of the Closure and Post Closure Care Plan must include at least the following:

- (1) monitoring of:
 - (a) the leachate collection and recirculation system;
 - (b) the groundwater monitoring network;
 - (c) the landfill gas management system;
 - (d) leachate quality;
 - (e) groundwater quality;
 - (f) surface water quality;
 - (g) landfill gas;
- (2) maintenance of:
 - (a) the leachate collection and recirculation system
 - (b) the groundwater monitoring network;
 - (c) the landfill gas management system;
 - (d) the integrity and effectiveness of final cover systems

(G10) A site management plan pursuant to Chapter 7, Part 8, Division 5 of the Environmental Protection Act 1994 must be developed and provided to the administering authority at least 12 months before the expected final receipt of waste in the landfill unit. The site management plan must include, but is not to be limited to, the future land use and actions you intend to take for compliance with the closure and post-closure care requirements of this approval.

(G11) Security.

Measures must be taken to prevent unauthorised access to the site to which this approval relates.

(G12) Fire-Fighting Access.

Clear access to the water supply for fire-fighting vehicles must be provided at all times and the water supply must be suitable and sufficient for the control of a large fire within the landfill and in accordance with the recommendations of the Queensland Fire Service.

(G13) An effective fire break must be provided and maintained.

(G14) Third Party Environmental Auditing.

Compliance with the conditions of this approval must be audited within 28 days of commencement of the activity.

(G15) The audit detailed in condition G14 must be conducted by a suitably qualified third party auditor, nominated by the approval holder and accepted by the administering authority.

(G16) In relation to the audit required by condition G14, the auditor must submit a final version of the auditor's report to the administering authority within 28 days of completing the audit.

(G17) The total financial cost of the audit(s) will be the responsibility of the holder of this approval.

(G18) Notification.

Telephone the EPA's Pollution Hotline or local office as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.

(G19) Investigation Into Alternative Waste Management Practices.

For the purpose of minimising the disposal of recyclable waste to landfill, in accordance with the waste management hierarchy and principles of the Environmental Protection (Waste Management) Policy 2000, you must implement a Waste Management Plan that addresses at least the following matters:

- a) waste management practices that will ensure that recyclables are diverted from landfill;
- b) procedures for identifying and implementing opportunities to improve the waste management practices employed including information and education packages for waste generators to assist in maximising the diversion of recyclable materials from landfill;
- c) details of any accredited management system employed, or planned to be employed, to implement the waste management practices;
- d) training programs and guidance for waste transport contractors in the identification and source separation of recyclable materials;
- e) procedures for auditing waste loads to identify material to be removed for recycling;
- f) how often the performance of the waste management practices will be assessed (at least annually);
- g) the indicators or other criteria, taking into account economic, social and environmental factors on which the performance of the waste management practices will be assessed;
- h) the recovery of energy from any methane collected in a landfill gas collection system; and
- i) annual reporting by 31 August each year any new measures adopted or materials newly diverted from landfill disposal. This report must include the following:
 - i) any new measures adopted or materials newly diverted from landfill disposal;
 - ii) a summary (expressed in tonnes/year wherever appropriate) of the following information including wastes received, recyclable

material recovered, fate of recyclables (e.g. transported off site for reuse/recycling, reused/recycled on site or stored on site) and calculated percentage diversion rate for the materials specified.

- (1) Total amount of waste converted to useable energy;
- (2) Amount of green and organic waste collected and recycled;
- (3) Amount of green and organic waste disposed to landfill;
- (4) Amount of green and organic waste recovered for energy;
- (5) Amount of construction and demolition waste collected and recycled;
- (6) Amount of construction and demolition waste disposed to landfill;
- (7) Amount of commercial and industrial waste (including agricultural) recycled;
- (8) Amount of commercial and industrial waste (including agricultural) disposed to landfill;
- (9) Number of scrap tyres collected for recycling (Equivalent Passenger Units - EPUs);
- (10) Amount of waste oil recycled;
- (11) Total amount of paper, white office, newsprint and mixed paper waste recycled;
- (12) Total amount of cardboard recycled;
- (13) Total amount of mixed plastics recycled;
- (14) Total amount of other plastics (please specify) recycled;
- (15) Total amount of aluminium cans recycled;
- (16) Total amount of steel cans & tins recycled;
- (17) Other types and quantities of recyclables (please specify) recycled;
- (18) Amount of waste disposed to landfill;
- (19) Amount domestic waste disposed to landfill; and
- (20) Total amount of landfill cover material used.

NOTE: The development of the local government's waste management strategic plan in accordance with the Environmental Protection (Waste Management) Policy 2000 which addresses the above matters will be deemed to satisfy the requirements of this condition.

(G20) Spill Kit.

An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes and chemicals associated with the ERA must be kept at the site, and in each vehicle used if the activity is a mobile ERA.

(G21) Spill Kit Training.

Anyone operating under this approval must be trained in the use of the spill kit.

Agency Interest: Air

(A1) Nuisance.

The release of noxious or offensive odours or any other noxious or offensive airborne contaminants resulting from the activity must not cause a nuisance at any nuisance sensitive or commercial place.

(A2) Cells 4 and 6 are only to be used for non-putrescible waste until the time that the

approval holder submits results of comprehensive odour modelling that demonstrates to the satisfaction of the Administering Authority that an odour nuisance is unlikely at nearby nuisance sensitive or commercial places.

(A3) Dust Nuisance.

The release of dust and/or particulate matter resulting from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.

(A4) Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place:

- a) Dust deposition of 120 milligrams per square metre per day, when monitored in accordance with Australian Standard AS 3580.10.1 of 2003 (or more recent editions); OR
- b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM10) suspended in the atmosphere of 150 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with:
 - Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air - Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet -Gravimetric method'; or
 - any alternative method of monitoring PM10 which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

(A5) When requested by the administering authority, dust and particulate monitoring must be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and must include:

- a) for a complaint alleging dust nuisance, dust deposition; and
- b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM10) suspended in the atmosphere over a 24hr averaging time.

(A6) Management Of Landfill Gas.

The release of landfill gas must not cause environmental harm.

(A7) Landfill gas is not considered to cause environmental harm if:

- a) a landfill gas collection system is installed and maintained when the landfill unit is sufficiently elevated to allow adequate drainage of gas lines; and
- b) landfill gas monitoring shows that the release of methane does not exceed the following limits:
 - i. 500 parts per million at a height of 50mm above the final and intermediate cover surface including the batter slopes of the landfill unit;
 - ii. 25 percent of the lower explosive limit when measured in facility structures (but excluding facility structures used for landfill gas control and landfill gas recovery system components); and
 - iii. the lower explosive limit at the landfill facility boundary.

(A8) Landfill Gas Monitoring.

The assessment of compliance with the methane limit at a height of 50mm above the final and intermediate cover surface of the landfill unit prescribed by A7 must be undertaken at the following locations:

- a) on a grid pattern where the grid lines are no more than 20 metres apart; and
- b) at any other locations where visual observations indicate potentially elevated concentrations of landfill gas, for example cracks, seeps in cover and distressed vegetation.

(A9) A landfill gas monitoring network must be installed for each landfill unit to assess compliance with methane limits for facility structures and at the boundary. The network must consist of gas monitoring devices, such as monitoring bores and be developed by a person possessing appropriate qualifications and experience in the fields of hydrogeology and landfill gas monitoring program design to be able to competently make recommendations about these matters.

(A10) Conduct and keep records of landfill gas monitoring which is performed at the following frequencies:

- a) at least every three months to assess compliance with the methane limit at a height of 50mm above the cover surface of the landfill unit prescribed by A7; and
- b) at least every three months to assess compliance with methane limits for facility structures and at the boundary prescribed by A7.

(A11) Landfill gas monitoring referred to in the above conditions must be undertaken for at least the following parameters:

- (a) methane;
- (b) oxygen;
- (c) carbon dioxide;
- (d) hydrogen sulphide; and
- (e) atmospheric pressure.

Agency Interest: Land

(L1) Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.
NOTE: All petroleum product storage's must be designed, constructed and maintained in accordance with AS 1940 - Storage and Handling of Flammable and Combustible Liquids.

(L2) Land rehabilitation

The site must be rehabilitated (including all disturbed areas associated with waste storage, treatment, disposal and borrow pits and any stockpile and screening areas) in a manner such that:

- (a) suitable native species of vegetation are planted and established that are compatible with the vegetation community of the adjacent remnant regional ecosystem;
- (b) potential for erosion of the site is minimised;
- (c) the quality of stormwater, water and seepage released from the site is such that releases of contaminants are not likely to cause environmental harm;
- (d) the likelihood of environmental nuisance being caused by release of dust is minimised;
- (e) the final landform is stable and not subject to slumping.

(L3) Rehabilitation of disturbed areas must take place progressively as waste disposal cells are completed, areas of borrow pits are worked out and new areas for waste disposal or borrow pits are developed.

- (L4) Access to areas awaiting rehabilitation or being rehabilitated must be restricted by suitable barriers to prevent disturbance of these areas.
- (L5) Waste Disposal Cell Interim Cover and Rehabilitation. You must implement an interim cover and rehabilitation program for waste disposal cells not forming part of the final surface level of the site and not likely to receive their next layer of waste within 12 months. This program must include at least the following:
- a) the installation of an interim cover system:
 - i) of at least an additional 300 mm of compacted clayey material;
 - ii) with a maximum permeability of 4×10^{-6} metres per second;
 - iii) designed with effective surface water management systems to prevent water ponding; and
 - b) a stabilisation program including measures such as revegetation and/or mulching to prevent erosion.

Agency Interest: Noise and Vibration**(N1) Noise Nuisance.**

Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place

(N2) All noise from activities must not exceed the levels specified in Table One - Noise limits at any nuisance sensitive or commercial place.

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Table One - Noise limits **AWAITING BACKGROUND READINGS FROM MSC**

Noise level dB(A) measured as	Monday to Saturday			Sundays and public holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
	Noise measured at a 'Noise sensitive place'					
L _{A10} , adj, 10 mins	Bkg + 5	Bkg + 5	Bkg + 0	Bkg + 5	Bkg + 5	Bkg + 0
L _{A1} , adj, 10 mins	Bkg + 10	Bkg + 10	Bkg + 5	Bkg + 10	Bkg + 10	Bkg + 5
	Noise measured at a 'Commercial place'					
	L _{A10} , adj, 10 mins	Bkg + 10	Bkg + 10	Bkg + 5	Bkg + 10	Bkg + 10
	L _{A1} , adj, 10 mins	Bkg + 15	Bkg + 15	Bkg + 10	Bkg + 15	Bkg + 10

(N3) Noise Monitoring.

When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within 14 days to the administering authority. Monitoring must include:

- [- airblast overpressure (dB (Lin) Peak);]
- LA 10, adj, 10 mins
- LA 1, adj, 10 mins
- the level and frequency of occurrence of impulsive or tonal noise;
- atmospheric conditions including wind speed and direction;
- effects due to extraneous factors such as traffic noise; and
- location, date and time of recording.

(N4) The method of measurement and reporting of noise levels must comply with the latest edition of the Environmental Protection Agency's Noise Measurement Manual.

(N5) Vibration emitted from activities must not cause a nuisance at any vibration sensitive place.

Agency Interest: Social
(S1) Complaint Response.

The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request:

- a) Time, date, name and contact details of the complainant;
- b) reasons for the complaint;
- c) any investigations undertaken;
- d) conclusions formed; and
- e) any actions taken.

Agency Interest: Waste**(WT1) Waste Records.**

Records of the source, volumes and composition of all waste materials accepted at the landfill facility, recyclable materials recovered, fate of recyclable materials (e.g. transported off site for reuse / recycling, reused / recycled on site or stored on site), calculated percentage diversion rates for the materials must be kept and maintained and reported, in a specified format, to the administering authority by 31 August each year.

Note: The submission of these values in an annual report for the local government's waste management strategic plan or otherwise required by the administering authority will be deemed to satisfy the reporting requirement of this condition.

(WT2) Site Control.

At all times while the ERA is operating, at least one person must be present who is responsible for the control and operation of the facility and whose duties must include but not be limited to:

- a) controlling the reception, storage and removal of waste;
- b) maintaining the facility;
- c) controlling all employees working in the facility; and
- d) supervising all persons entering the facility.

(WT3) Waste acceptance

The following wastes may be received at the site:

- (a) domestic waste;
- (b) commercial waste;
- (c) industrial waste;
- (d) construction and demolition waste; and
- (e) solid inert waste.

(WT4) Waste received at the site for disposal must have had recyclable materials either segregated at the source or have been processed in a materials recovery facility to remove reusable and recyclable materials.

(WT5) Segregated recyclable materials, including wastes such as tyres, must not be disposed of in the landfill area but should be dealt with in accordance with the following hierarchy with the preference reducing down the list:

- (a) reuse;
- (b) recycling;
- (c) energy recovery; and
- (d) recoverable buried storage in a separate portion of the site, but only where such burial and subsequent recovery is unlikely to cause any environmental harm.

(WT6) Notwithstanding any condition of this approval, the following waste materials are not permitted or allowed to be deposited in the landfill unit:

- 1) regulated waste (other than limited regulated waste);
- 2) liquid or semiliquid waste other than liquid or semiliquid waste which has been produced in carrying out the ERA;
- 3) hot ash;
- 4) material that is smouldering or aflame;
- 5) material containing a substance which is ignitable, corrosive, reactive or toxic (other than materials containing a toxic substance from domestic premises) unless this material is to be deposited into a dedicated monocell approved in writing by the administering authority;
- 6) all radioactive wastes, unless otherwise approved under the Radiation Safety Act 1999;
- 7) an explosive;
- 8) Soils contaminated with regulated waste;
- 9) ammunition, other than ammunition that no longer contains explosives, pyrotechnics or propellants apart from trace residues that are no longer capable of supporting combustion or an explosive reaction;

- 10) fish processing waste;
- 11) food processing waste;
- 12) poultry processing waste;
- 13) tallow;
- 14) vegetable oils;
- 15) putrescible kitchen wastes from commercial operations;
- 16) liquid or semi-liquid waste other than liquid or semi-liquid waste which has been generated
- 17) any substance listed under Schedule 8 of the Poisons Regulation 1978;
- 18) tyres;
- 19) filled or partly filled drums containing liquid wastes;
- 20) car bodies;
- 21) waste paints and solvents;
- 22) gas bottles;
- 23) green waste.

(WT7) If a waste load is heavily contaminated with any waste type listed in WT6 you must take all possible steps to identify the source of the contaminated load and implement the necessary practices and procedures to minimise the potential for a recurrence, including but not necessarily limited to:

- (a) providing written advice to transporters on the requirement to collect appropriate loads;
- (b) providing information sheets to generators on the segregation of recyclable wastes;
- (c) monitoring and audit procedures for loads received at site; and
- (d) review data to identify particular industries or locations which are prone to delivering contaminated loads, taking appropriate measures as outlined in a), b) and c) above to address the problem.

Should the measures outlined in a) to d) above prove unsuccessful in preventing contamination, further deliveries of waste from the same source must not be accepted on site.

(WT8) Burning of waste

You must not:

- (a) burn waste at or on the site; nor
- (b) allow waste to burn or be burnt at or on the site; nor
- (c) remove waste and burn such waste elsewhere unless the burning is carried out at a facility appropriately licensed under the provisions of the Environmental Protection Act 1994.

(WT9) Vector control

You must take all measures necessary to ensure that operations on the site do not cause environmental nuisance in relation to nuisance vectors, including fly breeding, mosquito breeding, and harbourage and/or breeding of rats and other pest organisms.

(WT10) In the event of environmental nuisance from nuisance vectors due to operations on the site, you must do all such acts and things and carry out any such works as may be necessary to:

- (a) abate such adverse effects and such nuisance; and
- (b) prevent the likelihood of any recurrence of the circumstances which gave rise

to such adverse effects and/or nuisance.

(WT11) Active waste disposal cell management

You must ensure that waste disposal activities do not extend beyond the boundary of the site.

(WT12) You must take effective measures to ensure that all wastes accepted for disposal at the site are not disposed of:

- (a) outside any active waste disposal cell;
- (b) into waters or leachate collected at the base of any active waste disposal cell; and
- (c) beyond the catchment of any leachate collection drains installed as part of a leachate collection system, except for the separate disposal of asbestos waste.

(WT13) All wastes must be deposited in lifts not exceeding a vertical height of 4 metres.

(WT14) Every lift of waste deposited in the active waste disposal cell must be evenly and properly consolidated by mechanical plant to a density of at least 0.7 tonnes per cubic metre.

(WT15) Large items for disposal, must be compacted before and/or after being deposited to minimise residual void space in the landfill.

(WT16) Wastes deposited in any active waste disposal cell must be consolidated, compacted and covered with a layer of inert earthen material, biodegradable plastic sheeting, shredded green wastes or aged biosolids as often as is necessary, but at least daily, to effectively minimise the quantity of wind blown litter, odour and fly nuisance resulting from exposure of putrescible waste.

(WT17) Cover material must be stored and be readily available at the site in a quantity sufficient for not less than two weeks normal operation of the site.

(WT18) Where litter is blown or washed from the site you must:

- (a) retrieve the litter and ensure that it is disposed of in an appropriate manner; and
- (b) implement measures to prevent a recurrence of litter being blown or washed from the site.

(WT19) You must ensure all weather access roads are installed and maintained so that, at all times whilst the site is open for receiving wastes, vehicles have access to any waste storage or treatment area or any active waste disposal area.

(WT20) You must ensure that any interim cover on a cell is removed immediately prior to any subsequent waste disposal on top of that cell to allow percolation of leachate through the full depth of waste deposited in the landfill.

(WT21) Waste handling, storage, treatment and reprocessing

In the event of you becoming aware of any prohibited waste being received at the site you must:

- (a) cease depositing such waste if it is still occurring;

- (b) remove the prohibited waste and store in a covered and bunded area; and
- (c) arrange for a person who can lawfully transport such waste to collect it within 24 hours of it being identified and remove it to a facility that can lawfully accept it.

(WT22) All storage, treatment and reprocessing of wastes must only be carried out on a hard stand area(s):

- (a) constructed of compacted clay or other low permeable material to minimise soil infiltration;
- (b) graded to prevent rainwater ponding;
- (c) bunded to contain the materials stored; and
- (d) graded to facilitate collection of leachates and contaminated stormwater runoff for discharge to leachate collection.

(WT23) Asbestos waste

All asbestos waste must be:

- a) disposed to a designated asbestos landfill area:
 - i) that is separate to other waste disposal areas;
 - ii) where no excavation will take place following the disposal of asbestos waste;
- b) immediately covered after disposal with a minimum of 200 mm of consolidated earth or equivalent cover material; and
- c) placed to ensure that a minimum distance of two (2) metres is achieved from both the surface and flanks of the landfill, excluding any final cover system required by this approval.

(WT24) Tyre storage

Waste tyres may be stored:

- (a) by recoverable burial in cells in a designated area of the site with any cell containing no more than 500 equivalent passenger-tyre units (EPU); or
- (b) in temporary above ground heaps on the site provided that there are no more than 500 equivalent passenger-tyre units (EPU) at any time in any one heap.

(WT25) Where there is more than one heap or buried cell of waste tyres, a separation distance between the cells or heaps must be established and maintained so as to effectively prevent fire from spreading:

- (a) from one tyre storage cell or heap or to another; and
- (b) to other waste stored or disposed of at the site.

(WT26) Battery storage

Waste wet cell batteries may only be temporarily stored on the site in a covered enclosure that has been bunded to contain spillages and leakages.

(WT27) Waste oil storage

Waste oil may be temporarily stored in drums or other containers at the site, provided that the drums or containers are:

- (a) stored in a roofed area designated for this purpose;
- (b) bunded to contain spillages and leakages; and
- (c) securely sealed when full to prevent spillage if knocked over.

(WT28) Equipment Containing Ozone Depleting Gases

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Waste refrigerators, freezers, air conditioners or any other equipment containing ozone depleting gases received at the site must be either degassed by an appropriately qualified person at the site or, if degassed off the site, accompanied by a degassing certificate signed by a qualified person.

(WT29) Car bodies

Car bodies stored at the site must be drained of all oils, fuels and hydraulic fluids prior to compaction.

(WT30) In accordance with Mareeba Shire Council's approved Environmental Management Program (EPA Reference: MAN 5133) a minimum of 10,000tonnes per year of waste material from the pre-existing landfill area must be reprocessed into the new cells until the expiration of the Environmental Management Program.

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Agency Interest: Water**(W1) Sediment Management**

Prevent the release of sediment to waters or a build up of sediment in any stormwater drain.

(W2) Control of Off-Site Movement of Mud and Waste on Vehicles

Prevent vehicles from carrying waste, mud or dirt off the site and depositing these materials on any road or in any location likely to be washed into waters, including the irrigation channel adjacent to the site.

(W3) Release to surface waters

Contaminants other than discharges from stormwater sedimentation ponds must not be directly or indirectly released from the site to which this development approval relates to any waters (including groundwater) or the bed and banks of surface waters.

(W4) Discharge from any stormwater sedimentation pond on the site must comply with the release limits listed in Table Three at the point of discharge from the pond.

Table Three (Release Limits)

Release Limit		
Quality Characteristics	Minimum	Maximum
Turbidity	N/A	The greater of 15 NTU ¹ or background ² + 10 NTU
pH	6.0 ³	7.5 ³
Dissolved oxygen	90% ³ sat	N/A
Electrical Conductivity	N/A	250 ¹ µS/cm

1. Limits based on ANZECC Table 3.3.5 – upper salinity and turbidity limits for upland rivers of slightly disturbed ecosystems in tropical Australia.
2. “Background” means the value of the quality characteristic when measured in a nearby creek at a location unaffected by runoff from the site.
3. Limits based on values contained in the Queensland Water Quality Guidelines - Table 2.5.3.1 Regional guideline values for physio-chemical indicators – Wet Tropics Region

(W5) Management of Settling Ponds

Any settling pond installed as part of the stormwater diversion system must be maintained in an effective operating condition and managed so that stored stormwater volumes are minimised following each rainfall event to reinstate holding capacity in readiness for the next rainfall event. The size of any sedimentation pond must be sufficient to contain the run-off expected from a 24 hour storm with an average recurrence interval of 1 in 5 years.

(W6) Landfill Liner Construction

Waste may only be disposed of in areas that have been prepared and constructed in accordance with Section 6.4 of the submitted Mareeba Landfill Site Based Management Plan and specifications of drawing numbers 60018386-101 to 60018396-108 prepared by Maunsell Australia Pty Ltd and dated September 2006. This landfill liner system must be installed and maintained at the site to effectively:

- (a) prevent any release of contaminants to groundwaters; and
- (b) prevent subsurface migration of landfill gas from the landfill.

(W7) Leachate Management

You must operate the site in a manner that minimises the generation of leachate.

(W8) Leachate Collection

A leachate collection system must be installed and maintained at the site to effectively and efficiently:

- (a) collect any leachate generated in the landfill;
- (b) convey the collected leachate to Mareeba Shire Council's sewage treatment plant; and
- (c) control the leachate head on any leachate collection sump serving the landfill so that it does not exceed 0.3 metres, except during a pump failure, when it may exceed 0.3 metres for a period not exceeding 12 hours, but must not exceed 1.5 metres at any time.

(W9) Leachate Disposal

Leachate or contaminated stormwater intercepted by the leachate collection system may only be disposed of:

- (a) by recirculation back into the landfilled waste ; or
- (b) by irrigation over exposed wastes on the site that have not received their final cover; or
- (c) to a sewage treatment plant.

(W10) Landfill Gas Condensate Disposal

Any landfill gas condensate must be intercepted and either:

- (a) disposed of by recirculation back into the landfill; or
- (b) conveyed to a sewage treatment plant.

(W11) Leachate Pumping Stations

Leachate pumping stations must be fitted with pump-failure alarms as well as high-level alarms to warn of imminent pump station overflow. Backup pumps must be readily available on site in the event of pump system failure. All alarms must be able to operate without mains power if such power failure occurs and, when in operation, must notify the appropriate person to respond to the alarm.

(W12) Leachate Management and Monitoring

You must develop and implement a leachate quality and quantity management and monitoring program for the leachate generated at the site that includes at least:

- (a) daily rainfall or rainfall events (if an event is longer than daily) must be measured and recorded for the site;
- (b) the quantity of leachate extracted must be calculated and recorded daily;
- (c) weekly calculation of the volume of leachate in the landfill based on monitoring of the level of the leachate at any leachate collection sump or monitoring well, correlated to both AHD (Australian Height Datum) and the level of the top of the closest perimeter bund to the sump or monitoring well;
- (d) calculation of weekly water balances for the landfill to include, but to not necessarily be limited to, incident rainfall and leachate extraction rate;
- (e) a sufficient number of monitoring locations to establish the composition and volume of leachate generated within the landfill; and
- (f) sampling of leachate from the landfill at least in April and October of each year; and
- (g) analysis of leachate samples for the quality characteristics identified in Table Four.

Table Four (Monitoring Requirements)

Quality Characteristic	Leachate	Surface Water	Groundwater
pH	X	X	X
electrical conductivity	X	X	X
Total dissolved solids	X	X	X
dissolved oxygen	X	X	
bicarbonate (HCO ₃)	X		X
oxidised nitrogen	X	X	X
ammonia	X	X	X
calcium	X	X	X
sulphate	X	X	X

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chloride	X	X	X
hexavalent chromium	X	X	
cadmium	X	X	
manganese	X	X	X
total iron	X	X	X
copper	X	X	X
lead	X	X	X
zinc	X	X	X
pesticides (organochlorines and organophosphates)	X	X	X
Polycyclic Aromatic Hydrocarbons (PAHs)	X	X	X
Total Petroleum Hydrocarbons	X	X	X
BTEX (Benzene, Toluene, Ethyl Benzene and Xylene)	X	X	X
Chemical Oxygen Demand (COD)	X	X	X
5-Day Biological Oxygen Demand (BOD ₅)	X	X	
Total Organic Carbon (TOC)	X		

(W13) Surface Water Monitoring

An effective surface water monitoring program must be developed and implemented for the site. The program must include, but not be limited to, a sufficient number of monitoring locations to:

- (a) establish the background quality of surface waters upstream from the landfill; and
- (b) detect any impact on surface waters as a consequence of landfill operation.

(W14) The surface water monitoring program specified in condition number (W13) must monitor and record the quality of surface water for at least the quality characteristics identified in Table Four.

(W15) Surface water quality samples must be collected from sample points in accordance with the surface water monitoring program at least in January, April, July and October of each year, or, in the event of no sample being obtainable in ephemeral systems at this time, during the next period of flow of the watercourse.

(W16) Groundwater Monitoring

An effective groundwater monitoring program must be developed and implemented for the site. The program must include:

- a) installation of a groundwater monitoring network which:
 - i) establishes the background quality of groundwater upgradient of the landfill site;
 - ii) are installed and maintained by a person possessing appropriate qualifications and experience in the fields of hydrogeology and groundwater monitoring program design to be able to competently make recommendations about these matters;
 - iii) include a sufficient number of "bore(s) of compliance" to detect any impact on groundwater as a consequence of landfill operation, constructed in accordance with the "Minimum Construction Requirements for Water Bores in Australia" (Agricultural and Resource Management Council of Australia and New Zealand 1997), that are located not more than 150 metres from the landfill area or at the boundary of the landfill facility whichever is the closer; and
 - iv) provides representative groundwater samples for the aquifers being sampled;
 - v) includes monitoring of water from the perched groundwater found in the sand lens in the North west corner of the site identified during cell construction and situated beneath the landfill liner
- b) analysis of groundwater samples for at least the quality characteristics identified in Table Four;
- c) collection of groundwater quality samples from groundwater at least in January, April, July and

October of each year; and

- d) assessment of monitoring results to determine whether or not there has been any adverse change for each groundwater quality characteristic at locations hydraulically down gradient of the landfill unit above when compared to background values.

(W17) Sampling and Monitoring Methods

All sampling and analysis to determine the level of contaminants in leachate or waters must be carried out:

- (a) in accordance with methods prescribed in the latest edition of the Environmental Protection Agency Water Quality Sampling Manual; and
- (b) on representative samples.

(W18) Groundwater Quality

If groundwater monitored under condition W16 for parameters specified in table Four, exceed any of the contaminant trigger levels stated in Table Five, the environmental authority holder must:

- (a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm;
- (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - (i) details of the investigations carried out; and
 - (ii) actions taken to prevent environmental harm.

Table Five (Groundwater contaminant trigger levels - unfiltered)

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Parameter	Unit	Limit	Limit Type
EC	µS/cm	250 ¹	Mean ³
pH	pH units	Min 6 ² Max 7.5 ²	Mean ³ Mean ³
Ammonia N	µg/L	6 ²	Mean ³
Total N	µg/L	250 ²	Mean ³
Copper	µg/L	1.4 ⁴	95 th percentile ³
Lead	µg/L	3.4 ⁴	95 th percentile ³
Zinc	µg/L	8 ⁴	95 th percentile ³
Manganese	µg/L	1900 ⁴	95 th percentile ³
Benzene	µg/L	950 ⁴	95 th percentile ³
Polycyclic Aromatic Hydrocarbons (PAHs)		Above limit of detection	95 th percentile ³
pesticides (organochlorines and organophosphates)		Above limit of detection	95 th percentile ³
Total Petroleum Hydrocarbons		Above limit of detection	95 th percentile ³

¹ Trigger levels based on ANZECC Table 3.3.5 – upper EC limit for upland rivers of slightly disturbed ecosystems in tropical Australia

² Trigger levels based on values contained in the *Queensland Water Quality Guidelines - Table 2.5.3.1 Regional guideline values for physio-chemical indicators – Wet Tropics Region*

³ The mean and the 95th percentile must be determined based on a maximum of ten (10) consecutive samples.

⁴ ANZECC (2000) trigger levels for aquatic ecosystems of slightly – moderately disturbed systems – table 3.4.1 level of protection 95% - tropical Australian upland rivers.

(W19) The groundwater monitored under condition W16 for parameters specified in table Four must not exceed any of the contaminant limits defined in Table Six.

Table Six (Groundwater contaminant limits - unfiltered)

Parameter	Units	Limit	Limit Type
EC	µS/cm	1000	Maximum
pH	pH units	5.5 – 8.5	Range
Total N	mg/L	5 ¹	Maximum
Sulphate	mg/L	1000 ¹	Maximum
Copper	mg/L	0.2 ¹	Maximum

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Lead	mg/L	0.1 ¹	Maximum
Zinc	mg/L	2 ¹	Maximum

¹ Limits set for parameters using ANZECC Guidelines 2000 (Chapter 4) for water use by Primary Industries. Where limits for irrigation and livestock drinking water differ the most stringent value has been selected.

(W20) Notwithstanding the above conditions, should groundwater monitoring show a statistically significant adverse change of levels of contaminants over background values at locations hydraulically down gradient of the landfill unit then the Environmental Protection Agency must be notified within 14 days. (Information on the interpretation of groundwater monitoring data at landfills can be found in the EPA's *Guideline - Recording, interpretation & analysis of monitoring results. ERA 75 – Waste disposal*).

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DEFINITIONS

Words and phrases used throughout this permit¹ are defined below. Where a definition for a term used in this permit¹ is sought and the term is not defined within this permit¹ the definitions provided in the relevant legislation shall be used.

"administering authority" means the Environmental Protection Agency or its successor.

"annual return" means the return required by the annual notice (under section 316 of the *Environment Protection Act 1994*) for the section 73F registration certificate that applies to the development approval.

"approval" means 'notice of development application decision' or 'notice of concurrence agency response' under the *Integrated Planning Act 1997*.

"approved plans" means the plans and documents listed in the approved plans section in the notice attached to this development approval.

"artificial waterway" means an artificial channel, lake or other body of water. Artificial waterway includes –

- an artificial channel that is formed because the land has been reclaimed from tidal water and is intended to allow boating access to allotments on subdivided land;
- other artificial channels subject to the ebb and flow of the tide; and
- any additions or alterations to an artificial waterway.

"authorised place" means the place authorised under this development approval for the carrying out of the specified environmentally relevant activities.

"clinical waste" means waste that has the potential to cause disease including, for example, the following:

- animal waste;
- discarded sharps;
- human tissue waste;
- laboratory waste.

"commercial place" means a place used as an office or for business or commercial purposes.

"dwelling" means any of the following structures or vehicles that is principally used as a residence –

- a house, unit, motel, nursing home or other building or part of a building;
- a caravan, mobile home or other vehicle or structure on land;
- a water craft in a marina.

"Environmental Protection Agency" means the department or agency (whatever called) administering the *Coastal Protection and Management Act 1995* or the *Environment Protection Act 1994*.

"infectious waste" means waste containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

"intrusive noise" means noise that, because of its frequency, duration, level, tonal characteristics, impulsiveness or vibration –

- is clearly audible to, or can be felt by, an individual; and
- annoys the individual.
- In determining whether a noise annoys an individual and is unreasonably intrusive, regard must be given to Australian Standard 1055.2 – 1997 Acoustics – Description and Measurement of Environmental Noise Part 2 – Application to Specific Situations.

"L_{A 10, adj, 10 mins}" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response.

" $L_{A\ 1, \text{adj}, 10 \text{ mins}}$ " means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response.

" $L_{A, \text{max adj}, T}$ " means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

"mg/L" means milligrams per litre.

"noxious" means harmful or injurious to health or physical well being.

"NTU" means nephelometric turbidity units.

"nuisance sensitive place" includes –

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or
- a public thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

"regulated waste" means non-domestic waste mentioned in Schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes –

- for an element - any chemical compound containing the element; and
- anything that has contained the waste.

"site" means land or tidal waters on or in which it is proposed to carry out the development approved under this development approval.

"watercourse" means a river, creek or stream in which water flows permanently or intermittently-

- in a natural channel, whether artificially improved or not; or
- in an artificial channel that has changed the course of the watercourse.

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

"works" or "operation" means the development approved under this development approval.

"you" means the holder of this development approval or owner / occupier of the land which is the subject of this development approval.

"50th percentile" means not more than three (3) of the measured values of the quality characteristic are to exceed the stated release limit for any six (6) consecutive samples for a release/monitoring point at any time during the environmental activity(ies) works.

"80th percentile" means not more than one (1) of the measured values of the quality characteristic is to exceed the stated release limit for any five (5) consecutive samples for a sampling point at any time during the environmental activity(ies) works

END OF CONDITIONS

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Appendix D – Issues & Action

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Licence Condition	Issue	Action
1.D3	Stormwater captured within bunds required by this environmental authority was not free from contaminants or wastes prior to release to the environment	<p>A full review of site drainage is being undertaken as part of proposed amendments to the Mareeba landfill site usage.</p> <p>To mitigate the migration of stormwater offsite, current remedial actions include the filling and compaction of the open excavation on the eastern boundary. The excavation previously breached the eastern boundary. This was a directed undertaking as part of the new compositely lined landfill cell construction.</p> <p>A swale drain running along the eastern boundary is to be provided to maintain the site amenity of the golf course and a provide a directed flow path south for stormwater. This will alleviate stormwater entering from the golf course onto the landfill site.</p> <p>An in-cell leachate sump will be constructed in the new compositely lined landfill cell construction which is currently being constructed and is scheduled for completion by early 2007.</p> <p>Overflow and wet season excesses will be directed to a lined evaporative pond which is currently being construction.</p> <p>Construction of the pond is scheduled for completion in early 2007.</p> <p>This will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.D1	Diversion drains or embankments were not constructed and maintained to divert surface waters away from all areas where contact with wastes or contaminants may occur	A review of existing site contours and drainage was undertaken prior to the current new cell construction. The design contours address site use changes and the delineation of stormwater and potential leachate generation. The implementation is currently underway as an integral part of the new cell construction program.
3.G5	All reasonable and practical measures were not being taken to ensure all waste disposal cells are operated and managed so as to prevent or minimize the generation of leachate	As above - 3.D1 A working face of no greater than 30 metres will be enforced immediately and cover will be implemented and maintained on all non working areas.

Licence Condition	Issue	Action
3.G10	The leachate storage pond is not constructed and managed so that a freeboard capable of preventing overspill is maintained at all times.	<p>A revised process of evaporative ponding and leachate recirculation and has been included in the design into the current cell construction. This is proposed to improve drainage issues, segregation of stormwater and leachate and to provide a directed control of excesses.</p> <p>Overflow and wet season excesses will be directed to a lined evaporative pond which is currently being construction.</p> <p>Construction of the pond is scheduled for completion in early 2007.</p> <p>This will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.G16	The leachate evaporation pond is not operated and managed so as to prevent overflow occurring at any time when leachate is being evaporated	<p>A pond is currently under construction and is scheduled for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pond will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis. These will be transported to the Mareeba septic drop off facility for processing through the Mareeba Sewerage Treatment plant.</p> <p>The pond will be connected through an overflow structure to a constructed pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p> <p>Excesses occurring prior to the commissioning of the pipeline will be monitored on a daily basis and will be pumped out by identified local liquid waste contractors on a needs basis.</p>

Licence Condition	Issue	Action
3.G18	Effective measures to ensure that all wastes accepted for disposal at the licensed place are not disposed of into water or leachate collected at the base of any active waste disposal cell have not been taken	<p>Minimisation of leachate generation is being addressed as part of the site use planning (plan provided). Diversion drains, containment/evaporative ponds and overflow redundancy are integral to the design. The construction of this plan is currently underway and Stage 1 completion is programmed for early 2007.</p> <p>Disposal of waste into water or collected leachate will be addressed in the new landfill cell where a profiled composite liner will direct leachate through drainage media to a leachate collection sump.</p> <p>Construction of an overflow pipeline directing excesses to the Mareeba Sewerage Treatment Plant for processing in extreme events.</p> <p>Construction of the pipeline is currently programmed for completion in early 2007.</p>
3.G25	Used wet cell batteries were not stored in a fully bunded covered enclosure	A covered location will be provided for battery storage and bunded palettes will be sourced for future storage.
3.G39	There is no firebreak established around the waste disposal facility to prevent the spread of fire to adjoining property.	<p>A firebreak was established in June 2006 in conjunction with preparations for a full security fence to be erected around the entire site.</p> <p>The fencing of the landfill site was completed in September 2006.</p>

Licence Condition	Issue	Action
3.H6	No measurement of leachate head in any future waste disposal cell has been undertaken, as no leachate sump wells have been installed in the active waste disposal cell	<p>Leachate head measurements will begin when landfilling commences into the new landfill cell currently under construction. The cell is programmed for completion in early 2007.</p> <p>The revised operational plan at the Mareeba landfill site incorporates the reprocessing of the area that has been used historically as the waste disposal area. This reprocessing will occur into the new compositely lined cell and is proposed to occur at an approximate rate of 10,000 tonnes per year.</p> <p>The processing will begin with the most recently processed wastes and work back through the landfill chronologically.</p> <p>An additional consultant's study has been approved for engagement by Mareeba Shire Council to determine an environmental baseline for the site. This is proposed for completion by March 2006. A copy of the report findings will be forwarded to the EPA once completed.</p>

① IF
② File

WS 1294.4

Rob Lawrence

From: Noel Briggs [Noel.Briggs@msc.qld.gov.au]
Sent: Friday, 9 February 2007 9:44 AM
To: Rob Lawrence
Subject: RE: Update - Assessment of Mareeba Landfill DA

Thanks Rob
I will follow up.

Noel Briggs

Chief Executive Officer

Mareeba Shire Council

07 4030 3900

Visit us: www.msc.qld.gov.au

From: Rob Lawrence [mailto:Rob.Lawrence@epa.qld.gov.au]
Sent: Friday, 9 February 2007 9:25 AM
To: Noel Briggs
Cc: Hollie Wakefield
Subject: FW: Update - Assessment of Mareeba Landfill DA

Noel

Attached is an email that Ian Florence sent to Patrick O'Flaherty on 7 February which identifies what information we are waiting on in order to complete our assessment.

Please give me a call on 40466338 if you need to discuss.

Regards

Rob

From: Ingrid Fomiatti Minnesma
Sent: Friday, 9 February 2007 9:17 AM
To: Rob Lawrence
Subject: FW: Update - Assessment of Mareeba Landfill DA

Ingrid Fomiatti Minnesma

District Manager

Environmental Operations

Cairns District Northern Region

Environmental Protection Agency

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The below email is from info@nexus.com.

Subcategory - **Landfill**

assessment

a.

- **Stress** is a response to a stimulus that is perceived as a threat or challenge.
- **Stressors** are the external factors that trigger the stress response.

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From: Gilpin, Colin [Colin.Gilpin@maunsell.com]
Sent: Friday, 16 November 2007 11:07 AM
To: Teale McFarlane
Subject: Auditor selection for the Mareeba landfill - Permit no IPDE 00493906A11

Importance: High

Dear Teale

Good morning, please find attached the CV of the two Auditors for your perusal and comment WRT suitability as we would like to use either of the two for the compliance audit of the above site (Mareeba landfill, Permit no IPDE 00493906A11), we would like to know if they would meet your requirements in terms of item G14, page 5 of 21.

Regards

Colin Gilpin
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Tel +61 7 3858 6700 Fax +61 7 3858 6705
colin.gilpin@maunsell.com

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RTI DL RELEASE EHP

From: Gilpin, Colin [Colin.Gilpin@maunsell.com]
Sent: Friday, 16 November 2007 11:20 AM
To: Teale McFarlane
Subject: FW: Auditor selection for the Mareeba landfill - Permit no IPDE 00493906A11

Importance: High

Attachments: CV Wenig David.pdf; CV Jamon Pool.pdf
Dear Teale

Good morning, sorry about that, please find attached the CV of the two Auditors for your perusal and comment WRT suitability as we would like to use either of the two for the compliance audit of the above site (Mareeba landfill, Permit no IPDE 00493906A11), we would like to know if they would meet your requirements in terms of item G14, page 5 of 21.

Regards

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