

3/2/2016
Drusilla Bremner
325 Booley Rd

Gheringhap, VIC 3331

Golden Plains Shire
2 Pope Street
Bannockburn Vic, 3331

Dear Sir/Madam,

RE: Objection to P15-191 the proposed transfer station, refuse disposal and materials recycling, construct buildings and works (including earthworks) and alter access to a road in a road zone, category 1

Golden Plains Shire Council	
BluePoint	
File No(s)	
PROCESSED 9 FEB 2016	
Owner	23600850
Manager	
Prop	
Doc Ref	

I am submitting my objection to P15-191 the proposed Landfill/Resource Recovery facility at 1560 Hamilton Highway, Stonehaven from Geelong Resource Recovery Facility Pty Ltd.

The provision of a planning permit for the above application should be denied for the following key reasons:

Resource Recovery

1. Visual Impact – no bunding or tree planting will be able to conceal the view of the resource recovery centre or the landfill operation that currently exists from our property. We live on a rise and should this proposal go through we would be looking directly at piles of car bodies, tyres, chemical drums, green waste, composting rows and all the comings and goings of trucks/vehicles dumping their loads. Not to mention the rubbish piles building to a height of 30m above the current surface levels of the basalt plain.
2. Noise impact – The applicant has admitted they cannot meet the required levels of noise at sensitive sites. They have stated they need to rely on impractical mitigation methods between the two conflicting uses of a basalt quarry and resource recovery.
3. Council strategic planning – The Golden Plains Planning Scheme 21.07-3 covers the South East Area of the shire. It specifically references strategy 4.5 "Avoid sales or public access directly from the Highways". This is referring to both Hamilton Highway and Midland Highway. In addition strategy 7.1 states "Minimise entrance points from the Midland and Hamilton Highways". Therefore, the council cannot support a facility that will be accessed by the public 7 days a week.

Landfill

1. Buffers – The planning application only refers to a 500m buffer from the composting pad however the applicant actually requires a 500m buffer zone from the edge of the landfill cells (EPA). The application indicates that landfills cells will occur throughout out the quarry extraction area which is as close as 30m from neighbouring properties. Therefore the buffer extends up to 470 metres into neighbouring properties to the north and east of the landfill site. The use of our property as part of the buffer will adversely impact our ability to use the land due to forced planning controls. We will be unable to erect shedding for farming activities or subdivide. The buffer is a safety requirement to protect from gases that can be

PLANNING

- 8 FEB 2016

Obj 21 - Part 2 1/32

explosive or cause asphyxiation and odour, not in replacement of replacement of good landfill management practices. It is also required to protect from fire, litter, noise and safety risks. Our property and my family should not be forced to bear the burden of the safety risk.

2. Groundwater – The local community surrounding the site relies heavily on the groundwater. The reports provided (Hydrogeological Assessment, pg 44) states that “There is no known groundwater users within three kilometres of the site”. The applicants ignorance of surrounding properties gives an unreasonable impression of offsite impacts.
3. Capacity to service the landfill - the application requires 142,000cm³ of air space per annum to accommodate the kerbside rubbish. If the quarry removes 150,000tpa (current planning limit) of rock that is only about 60,000cm³ (conservative estimate) of space. The issue is that if the quarry exceeds 150,000tpa according to their current permit then Clause 17 requires further acoustic, traffic, blasting, and air quality assessments as the impact to surrounding land uses will increase further. This resource recovery/landfill application only takes into account current quarry activity levels.

Please find below my specific concerns regarding the application

Buffer Requirements

Reference -EPA Siting, design, operation and rehabilitation of landfills - Publication 788.2* October 2014 (Appendix A)

The measurement of an appropriate buffer for a landfill is outlined in EPA 788. The applicant acknowledges a 500m buffer is appropriate but this should not simply be measured from the composting pad or recovery center but as stated in EPA 788, ‘buffers are measured from the sensitive land use to the edge of the closest cell. All cells, including closed cells, need to be considered in calculating buffers.’p14 I have contacted the EPA and they confirmed that the buffer will need to be over our land.

Buffers are set to manage odour (of most concern during a landfill operation) and landfill gas impacts, including the risk of explosion and/or asphyxiation. Other impacts such as fire, litter, noise and safety risks exist but fall within the buffers required for odour and gas.

According to the EPA document ‘Buffer areas are not an alternative to providing appropriate management practices, but provide for contingencies that may arise with typical management practices’p13. **The buffer area is specifically in place for additional safety, that is, over and above normal landfill management practices.**

The proposed landfill cells extend to the edge of the quarry extraction boundaries which are in particular, according the current permit, 30m from the property boundaries to the north and east. **This will result in the buffer extending 470m into neighbouring properties on the North and East sides.** (See diagram provided of extent of buffer over neighboring properties. Appendix F).

EPA 788 states ‘Land within buffer areas may be used for non-sensitive uses provided that the use is not adversely affected by landfilling. Therefore, it is better that this is owned or at least under the control of the landfill operator.’p14

PLANNING

- 2 FEB 2016

The use of our land within the buffer areas for lifestyle and farming will be adversely affected by the landfill odour, gas and planning restrictions. **The applicant has not addressed in their application how the use of neighbouring properties in the buffer areas will be protected or controlled from noise, odour and the risk of explosion and/or asphyxiation.**

Noting also that our stock dams will fall within the buffer zone. These dams are recharged from seasonal surface water collected specifically from what would become buffer areas. As mentioned in EPA 788 'Features that could be adversely affected by landfilling operations include surface water.' p14.

We consider the planned proposal unacceptable for both safety reasons and due to planning restrictions that will be placed on landholders. **As these buffers adversely impact the amenity of our land the application fails under 52.45-3 Decision Guidelines.** This proposal should be rejected on the grounds that it adversely effects neighbouring properties.

Given that buffers for landfill are 'not an alternative to providing appropriate management practices' (EPA 788) there is no mitigation plan that can be accepted in place of having ownership or control of the land within 500m of the furthest the landfill cells.

It should be noted further that the landfill buffer actually applies to the quarry activities. That is a 500m buffer should be maintained between quarry activities and landfill cells (including closed cells that can emit gas for up to 30 years). This is how other quarry landfill sites currently operate. The proposal does not address how the applicant intends to separate the two dangerous activities on the site and remain compliant with the buffer.

Traffic

The Golden Plains Planning Scheme 21.07-3 covers the South East Area of the shire. It specifically references strategy 4.5 "Avoid sales or public access directly from the Highways". This is referring to both Hamilton Highway and Midland Highway. In addition strategy 7.1 states "Minimise entrance points from the Midland and Hamilton Highways".

The proposal creates a significant additional volume of traffic at a single intersection on the Hamilton highway. The conflict of high traffic volumes, entering and exiting the highway at a single point for public and commercial purposes is in contrast to the stated strategies of the Golden Plains Planning Scheme.

Other concerns:

1. The increase in traffic movements at the Pollocksford Road intersection will cause safety issues with slow moving trucks and domestic vehicles merging onto a highway
2. Polluted materials carried by vehicle wheels into surrounding areas, surface debris from loads and an increase in roadside rubbish and materials fallen from vehicles.

PLANNING

- 8 FEB 2016

Visual Impact

The application provides an artist impression of the visual impact. However, there is no mention of where the view is taken from and the VPP Section 52.45 states as a requirement that the application must provide **"Plans or other media showing anticipated views of the facility from sensitive use locations."** The application fails to provide such aspects.

Given that our property adjoins the proposed landfill and is sited on a rise overlooking the entire extraction area, particularly the proposed site of the recovery centre, the loss of visual amenity will be substantial. The views will be of an industrial site including composting, car parks, tyres, chemical drums, car bodies, chain mail fences and landfill mounds. If the landfill mounds reach the proposed heights outlined in the application of 30m, no amount of bunding or tree planting will obscure the views of the rubbish piles. A landform of such height will even obscure our views of the Barrabool Hills!

The proposal should be rejected on the basis of the extremely negative visual impacts from surrounding sensitive uses, this is both immediately neighbouring properties, the Hamilton Highway and the Barrabool Hills.

We are all aware of the Wyndham mountain tip and the awful visual aspects of the physical tip mountain, the rubbish omitted from the site, the rubbish that is dislodged from vehicles, lighting operating 24/7 and seagulls. A landfill that will form to 30 metres above the natural basalt plains of Stonehaven cannot be considered anything other than a materially adverse visual impact.

The Golden Plains Planning Scheme 21.07-3 covers the South East Area of the shire. It specifically references strategy 4.6 "Require treatment of the interfaces between business development and existing residential uses to minimise adverse visual impacts"

See Appendix B Photos taken from 325 Booley Road showing our visual view of the existing quarry operations as perspective.

PLANNING

- 8 FEB 2016

Odour

The modeling results, provided in support of the application, state that odour will be contained within the 500m buffer zone taken as a measurement from the composting pad. There are issues with the report only generating the model conditions from the composting pad site, **EPA 788 clearly indicates that odour and amenity is to be measured from the edge of closest landfill cell to sensitive uses.** This results in the buffer extending over my property (and neighbouring properties).

Neighbouring properties to the North and East of the site will experience a higher negative effect of odour emissions, reducing amenity. Section 3.3.2 Climate (pg 21) indicates that winds are predominantly from the South West and Westerly directions.

We are concerned that the odour impact assessment is not indicative of the site conditions. As the prevailing winds blow directly towards our property, carrying odour and litter. We also live next to a Broiler farm and although they generally do not omit a lot of odour there are days, when for example, they have done a big clean out of manure that we are effected by their smell. The odour impact report did not take these intermittent issues into account but council should. Noting the buffer zone for the Broiler farm will overlap the buffer required for the landfill site and this intersection has not been addressed at all in the report. This produces an untenable situation for the use of our land as this buffer is considered an area of safety risk by the EPA.

We find that given the most sensitive and highly invasive nature of the potential odour impact the report produced in the application is deficient and not comprehensive enough to cover the real conditions at this site or the true impact of the planning proposal.

The State Planning Policy Framework requires in 52.45.2 Application requirements - An assessment of: Potential amenity impacts such as noise, odour, emissions to air, land or water, vibration, dust, light spill, visual impact. Due to deficiencies identified in the odour modeling documentation provided the proposal should be rejected.

Noise

The applicant states in the Noise Report (Appendix K – NOISE EMISSION ASSESSMENT) that it will not be possible to meet the 45dB limit at sensitive sites (our homes) with the proposed operations.

Some mitigation options have been outlined, such as mysterious 'technology advancements' in the future and to limit the use of equipment to only certain machinery at a time. This process is flawed and not practical to implement.

It should be made clear that the Quarry and Resource Recovery/Landfill operations are separate uses (separate activities) competing on the same site with conflicting interests.

The noise assessment indicates in Stage 1 the different operators will need to ensure that a number of pieces of equipment do not operate at the same time to meet noise level requirements. The mitigation suggested by the applicant is to disrupt the operation of both sites. Compactors (there are 2 proposed for the site), green waste processing and composting operations, and rock drilling cannot occur simultaneously, (see pg 31 Application) such that they do not breach the 45dB(A) limit at sensitive sites.

In relation to Stage 3, not only does it rely on machines not operating at the same time between the two different operators but it still requires technological advancements (not yet invented!). It is unrealistic to grant a permit today hoping that advances in technology will be made. The applicant has failed to prove it can meet required noise limits.

These are two different organisations running competing businesses on the same site. Which operation will shut down equipment to ensure that they don't exceed noise thresholds?

Who will monitor the two operations to ensure that only one machine is operational and ensure that noise levels are not exceeded? Is this EPA or Golden Plains? Which of the two users will be held to account in the event of a breach?

The suggested mitigation options are of little comfort as they are reliant on technology that is not available today and uncontrollable practices.

Note the documentation provided indicates that the Resource Recovery Centre is making provisions in the plans for future expansion, this has not been factored and will effect the noise levels further. In the event that the rate of basalt extraction increases noise levels will also rise.

In conclusion the application does not meet the requirements of the 52.45-3 Decision Guidelines - The impact of the proposal on the amenity of the surrounding area. The noise levels will exceed 45dB at sensitive sites.

We also hold concerns regarding the public use of the resource recovery centre on Saturdays and in particular Sundays. This is an unacceptable impost on neighbouring properties and hours of operation for this activity should not be so broad in a farming zone.

PLANNING

- 8 FEB 2016
6

Ground water

In the Groundwater report provided by the applicant Appendix H pg44 simply describes the groundwater level as 'relatively deep', which is not an acceptable measurement or means of assessing the proposed activity.

Appendix H p48 - The conclusion and recommendations section states in Table 6.1 - Assessment of compliance

Requirement - Must be more than 2 meters above the regional watertable.

Comment – **Any excavations below watertable** will be filled with clean fill to an elevation more than 2 meters above regional watertable.

The documents submitted by the applicant indicates that the depth of quarrying is to approximately 13m and their assessment of the watertable depth is stated as 'relatively deep' from the Hydrological Assessment (appendix H p44) or approx. 14m taken from the Environmental Management Plan (p13 appendix M).

These comments are alarming as it indicates that the proposed landfill site will be at times excavating below the watertable. This is totally unacceptable for a landfill, EPA 788 p12 'landfills must not be located: below the regional watertable. A new landfill below the regional watertable should not be considered as it would place the landfill with the groundwater segment of the environment, which must be protected. Below-groundwater landfills are strongly discouraged due to the continual and additional operational requirements,' none of the type of requirements needed have been addressed at any stage in the documentation provided.

Here is a breakdown of each stage and the comparison between the natural surface level to ground water level, taken from Appendix H of the application fig2-6 and fig4-7:

(RL levels are taken from the Australian Height Datum AHD they measure the height above sea level)

Stage 1

Natural surface level around RL71-RL75

Ground water level RL60 rising towards RL62

Therefore depth of quarry will range from 9m to 12/13m

Stage 2

Natural surface level RL71-RL75

Ground water level RL60-RL62

Therefore depth of quarry could only be 7m up to a max of 12m

Stage 3

PLANNING

- 8 FEB 2016

Natural surface level RL72-RL80

Ground water level RL62-64

Therefore the quarry would be approx. 8m in depth to 14m

Stage 4

Natural surface level RL80

Ground water RL64

Therefore this is the first stage that can consistently have a depth of 13m

Stage 5

Natural surface level RL74-RL78

Ground water level RL62

Therefore quarry level could range from 10m to 14m

Stage 6

Natural surface level RL71-RL75

Ground water level RL60-RL68

Therefore the quarry depth could only be 2m to 13m

Stage 7

Natural surface level RL72-RL78

Ground water level RL60-RL62

Therefore the quarry depth from 10m to 14m

Stage 8

Natural surface level RL77-RL80

Ground water level RL62

Therefore the quarry depth could be at the 13m consistently

We can then note that in stages 1,2,3,5,6,7 will all have issues with the watertable before they reach the desired depth of 13m. The landfill will, in places, have only a depth of 7m available.

Stage 6 is very important the water table is only 3/4m below the natural surface and the plan indicates a storage lagoon at this point. The water table is so high if they dig a lagoon here they will hit the watertable. This is totally unacceptable as stormwater collection off the site will contain contaminants. EPA 788 states 'the pollution to groundwater by leachate is very difficult to remediate, and hence, landfills should be sited in areas where impacts, on beneficial uses of groundwater, can be minimised.'

Appendix H p48 - The conclusion and recommendations section states in Table 6.1 - Assessment of compliance

Requirement - Must not be in a groundwater recharge area.

Comment - Site is not in a ground water recharge area.

PLANNING

- 8 FEB 2016

Yet their report Appendix H pg44 states - 'Ground water flows in a generally southerly direction although there is evidence of seasonal recharge/discharge into Bruce's Creek to the West of the site.'

Appendix H pg44 states there are 'no known users of groundwater within 3km, of this site.' Provided is a photo (appendix C) of the Guinane's windmill (north of applicants property) and tank on the boundary of the extraction zone, note the bund is visible. Geoff Menzel has 2 bores to the Geelong or East side of the site and the homes at Murgheboluc also use the ground water. Please note that the council also has a bore along Booley Road in front of our property. Residents in the area rely on the ground water and any leakage of contaminants would be devastating for the surrounding region.

In conclusion, the affect on groundwater is significant on the local area. Given the height of the watertable is in most stages above or precariously close to the extraction depth, the residents reliance on ground water, and it being part of recharge/discharge area for the Bruce Creek, the proposed land use should be rejected. This is an unacceptable risk of adverse effect on the amenity of the area. (Clause 52.10 and 52.45.)

EPA 788 states that the most preferred site for a landfill is one that minimizes the risk of groundwater pollution. The risk is too high at this site.

Landfill Construction

Application for Permit pg 26

4.3 Landfill – The landfill will be constructed, filled and rehabilitated in a sequence of cells that will follow the quarrying staging plan of the approved quarry extraction area. The existing extraction area is made up of 8 stages, or 75 cells. Staging plans for the quarry and landfill use are located at Appendix B. At any one time it is expected that there will be one cell being constructed, one cell being filled and one cell being rehabilitated.

I have reservations over the structural design as per the application above. Referencing the EPA 788 publication Buffer distances between landfill and other sensitive uses must be 500m.

EPA – PUB-788 Landfills BPEM

5.1.5 Buffer distances

Appropriate buffer distance must be maintained between the landfill and sensitive land uses (receptors) to protect those receptors from any impacts resulting from a failure of landfill design or management or abnormal weather conditions. These failures might constitute discharge from the site of potentially explosive landfill gas, offensive odours, noise, litter and dust. Features that could be adversely affected by landfilling operations include surface waters, buildings and structures and airports.

PLANNING

- 8 FEB 2016

Buffer areas are not an alternative to providing appropriate management practices, but provide for contingencies that may arise with typical management practices.

Table 5.2 Buffer required for siting for amenity and safety, is 500m for building and structures.

Buffers and measurement

Buffer distances are set to reflect the potential impacts from landfilling activities. Generally, the buffers are set to manage:

- odour, which is of most concern during landfill operation
- **landfill gas impacts, including the risk of explosion and/or asphyxiation.**

Landfill gas potential risk remains post closure and for at least 30 years post-closure.

While other potential impacts such as fire, litter, noise and safety risks exist, the buffers required for protection from these impacts fall within the buffer required for odour and landfill gas.

Buffers are measured from the **sensitive land use to the edge of the closest cell**. All cells, including closed cells, need to be considered in calculating buffers. For sites where there is uncertainty in the location of landfill cells, the boundary of the landfill premises is the point of measurement.

Buffer measurement also needs to consider other activities capable of causing a nuisance, such as the leachate ponds, to the nearest sensitive land use.

I have spoken to the EPA and they told me that there are active quarries that are blasting at the same site as active landfills. I then spoke to a representative of the Hanson Landfill site, Wollert, they run a quarry and landfill at this site. It is important to note this group have a **500m buffer** between landfill and quarrying operations as set out by the EPA requirements above. They consider this buffer essential to operations.

Under clause 52.10 Uses with adverse amenity potential, the current design proposed for the operation of a landfill site adjacent to a blasting quarry would be considered an 'unacceptable risk to the neighbourhood.' They will be blasting along side the sensitive landfill that can produce explosive gases (for up to 30 years from closed cells). Also they would be creating a seismic event next to the liner of the rehabilitation cell and the landfill cell. The risk of fly rock puncturing and damaging the most critical protection requirement from future toxic leachate is unacceptable.

Non Compliance issues

Non compliance at the quarry site is most evident in the Landscaping requirements in the permit P10-076.

Clause 25 -Before the use commences the landscaping proposed in the 30m wide buffer zone between the Work Authority area and adjoining properties as endorsed on the approved site plans must be planted with native species appropriate to the area to the satisfaction of the Responsible Authority.

PLANNING
- 8 FEB 2016

Clause 26 -The landscaping areas must be maintained to the satisfaction of the Responsible Authority for the duration of the use.

Refer to Appendix D this shows an extract from the operators town planning report of what the buffer should look like, I have then included photos taken in Jan2016 of the actual site. The plan supplied indicated rows of tree plantings the bund 2m high to have topsoil and have grasses then planted. As you can see the current situation is actually no trees, the bund has no topsoil or grasses. Given they rely heavily on this buffer zone for protection from the landfill/recovery centre the current situation is not good enough. We have not been given the appropriate protection from the quarry and unfortunately the Responsible Authority appears to be supporting these actions through lack of enforcement.

Appendix E of my report deals with the representation by the applicant of the current situation at the quarry buffer. In Appendix B of their application the Landscape Master Plan shows EXISTING Screen Planting along the north east boundaries. I have supplied photos taken in Jan2016 of the actual view (Appendix E).

There are also issues with the representation on the Landscape Master Plan detail as section B-B describes and shows a 'Typical Section through Existing Bund and Screen Planting', provided in appendix E of my report is the actual situation at this area. There are NO TREES and the bund is not 3m high and 3m wide at the top. The applicant is not representing the current situation, producing and endorsing documents that have been presented to councils and ministers who do not know the site and are relying on this documentation to make decisions.

There are also major concerns about the toxic weeds not being dealt with onsite. Clause 23 of their current permit states – the use and development must be managed so that the amenity of the area is not detrimentally affected through the: (d) presence of vermin and use of chemicals to eradicate pest animals and plants. They may also be in breach of the Work Authority 7.11 Vermin and Noxious Weeds – Weeds and vermin will be controlled to the satisfaction of DPI, DSE and council using approved methods.

I have sent in a letter to council outlining questions and concerns I have with non compliance at the current quarry site and am awaiting a response.

Air Emissions

We live on a rise to the north east looking over the resource recovery/landfill purposed site. The prevailing winds blow from the south west and we will be directly effected by flying litter and airborne particles. Also we have rainwater tanks with potable water and they will be adversely impacted by this proposal.

Endorsements and Community needs

The applicant has supplied letters of endorsement from three councils including Golden Plains, Geelong and the Surf Coast. Have these matters been discussed with the council, is it endorsed by Councillors or is it just the opinion of the letter writer. Under what authority of council were the letters issued prior to the hearing of a planning application?

PLANNING

- 8 FEB 2016

I have spoken with both the Grampians West and Barwon South Resource Recovery Groups. Both have indicated that their current plans are not to tender for any **potential** landfill sites for 10 years. This planning proposal is not a critical need for the community. It does represent a net community benefit.

Volumes

What are the current volumes of rock leaving the site at the moment? It is a critical aspect to understand the demand for the rock being extracted/produced and how much space there is for landfill use. The rate of extraction and refill.

For 100,000t of kerbside rubbish to be dumped, they need 142,000m³ of space in the pit (see Appendix D, 4.6.1). What are the current quarry extraction rates? Will they be able to take out enough rock to meet the needs of the kerbside rubbish volumes?

If they take out 150,000t of basalt that equates (using a conversion factor of 2.5) to approximately only 60,000m³, given that the landfill cells will also be above ground how much basalt must be removed to fit the rubbish?

If the quarry requires more than 150,000tpa to be extracted to meet landfill needs the current permit P10-076 will need to be updated, Clause 17 states - Output must not exceed 150,000tpa unless further acoustic, traffic, blasting and air quality assessments have been undertaken in accordance with current standards, protocols and requirements applicable at any time. Any assessment must be undertaken at the cost of the permit holder and to the satisfaction of the responsible authority.

If it is deemed that more than 150,000tpa is required to be removed the proposal would not reflect the conditions required for example; the traffic report is based on current volumes at the site plus those predicted for the new project. If the threshold of 150,000tpa extraction rate needs to be breached for the landfill, these requirements then would change the traffic volumes for the increased volume for the quarry. This would also have a significant affect on the noise generated by the site.

Does the quarry have the demand for their rock to be able to satisfy the landfill requirements?

There is a complete disconnect between the uses on this property in the form proposed. In particular the current extraction volume is not reflective of what the landfill operation requires.

Further concerns

- The significant negative impact on the visual experience for residents and visitors to the Golden Plains both now and for future generations.
- As stated in councils land use strategy the area acts as a thoroughfare to the Western plains, Colac region and the visual aspects will detract from the current rural aspect of the area. Particularly a 30 metre high mountain on a basalt plain.
- Application of buffers on neighbouring properties adversely impacts amenity and council needs to consider the long term impact of surrounding land uses for a 150 year operation (and 30 years post closure of landfill for gas levels to recede from closed landfill cells).
- The quarry has accepted responsibility for rehabilitation of the site and it appears that this obligation will now pass to the landfill operator. The permit application for the quarry would not have passed without such an obligation previously. They should not be relieved of their obligation to rehabilitate.
- Council has previously cited its obligation to protect stone resources but this proposal will prevent basalt extraction once a landfill cell is in place.
- The proposal will prevent future land use in the Gheringhap and Murgheboluc townships. The applicant has failed to address the impact to the Murgheboluc township in its application.
- The Golden Plains Shire Land Use Strategy Plan

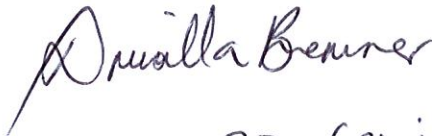
"The Golden Plains Shire, in partnership with the community, and through its decisions and actions, will work for the sustainable development of the Shire based on:

- *Planning for the strategic growth of towns and focusing urban development into existing townships; **How will council support the strategic growth of Murgheboluc and Gheringhap townships with this landform visible for miles around? The 30m mountain will be visible from the Southern and Western ends of the Gheringhap township. It may even be visible from Bannockburn, where is the applicants visual impacts study.***
- *Sustainable management and protection of natural resources of soil, water, flora, fauna and eco-systems; **The proposal does not achieve this as it will disrupt animal migration across the plain and threatens groundwater.***
- *Facilitating productive agricultural, forestry and mining activities and protecting rural areas; **Buffers over neighbouring properties will not facilitate agricultural activities and will fail to protect the rural area.***
- *Protection and enhancement of items, places and areas of natural and cultural heritage; **This proposed development will change***

the natural basalt plain environment with a 30m hill. The dry stone wall on the East side of the extraction area is of heritage inventory significance "Moderate to high archaeological significance and regional (possibly state) historical significance. How will a 2 metre high mesh fence look up against this heritage site?

- *Supporting sustainable economic development; This will destroy the economic development of surrounding rural lands as people leave the area and fail to reinvest in the maintenance of their properties.*
- *Supporting quality tourist development; and Such an adverse visual impact will detract from tourist development, particularly in the south east area of the shire*
- *Efficient and environmentally sensitive provision of essential infrastructure." A landfill and resource recovery centre could not be described as environmentally sensitive (they cannot even meet noise levels) and given there is currently no demand for additional landfill sites it cannot be described as essential infrastructure.*

Yours sincerely,



Drusilla Bremner BEng(Civil)

PLANNING

14 - 8 FEB 2016

APPENDIX A

Extract from

Publication 788.2

Siting, design, operation, and
rehabilitation of landfills

PLANNING

- 8 FEB 2016

Siting, design, operation and rehabilitation of landfills

5.1.2 Landfill types

An important aspect of screening for potential landfill sites is the type of landfill to be developed. The four basic methods of landfilling and the hierarchy of their preference for use are discussed below:

- the area method, where an existing hole such as a former quarry is filled
- the trench-and-fill method, where a hole is dug and backfilled with waste using the excavated material as cover
- the mound method, where most of the landfill is located above the natural ground level
- the valley or change of topography fill method, where a natural depression is filled.

The most appropriate landfill type for a region will be determined based on local conditions as identified in the environmental assessment. The area method and the trench-and-fill method are, however, preferred.

The area method is preferred, as it achieves an additional outcome of rehabilitating an existing hole. It is also generally easier to manage litter and leachate (contaminated water that has percolated through or drained from a landfill) within the site.

Trench-and-fill landfills are favoured where there are no suitably located holes, or where the trench-and-fill alternative achieves better environmental outcomes. They also enable the operator to configure the excavation to provide the best possible design.

Mound landfills are to be avoided as their exposed nature requires significant litter controls and present a significant visual impact on the landscape. Further difficulties attached to these landfills are leachate seeps from the side of the landfill and the stability of the landfill cap.

Valley fill landfills are to be avoided as they have inherent environmental problems such as unstable slopes, water infiltration and leachate seepage. Due to the open nature of these landfills and shallow placement of waste, they consume a greater amount of soil for cover and capping than an equivalent volume landfill in a disused quarry.

Furthermore, because a valley fill landfill is located in a drainage line, extensive management is required to control surface run-off water ingress into the landfill, potential planes of geotechnical weakness from leachate flows within the landfill, and leachate seeping from the landfill. This type of landfill should be limited to select solid inert wastes that are part of an engineered solution for an erosion problem.

5.1.3 Groundwater

Pollution of groundwater by leachate is very difficult to remediate, and hence, landfills should be sited in areas where impacts on beneficial uses of groundwater can be minimised. In particular, **landfills must not be located:**

- in areas of potable groundwater, groundwater recharge areas or in areas identified by the Water Act 1989 as a Groundwater Supply Protection Area
- or
- **below the regional watertable.**

The Department of Sustainability and Environment administers a groundwater database containing information on locations of bore holes, water levels and some chemical analysis on groundwater quality. These data can be used to understand regional and localised groundwater characteristics and to estimate the depth to and quality of groundwater, its general flow direction and utilisation. Groundwater information for a proposed landfill site must be verified by local field testing.

A new landfill below the regional watertable should not be considered as it would place the landfill within the groundwater segment of the environment, which must be protected. The risks of significant impacts on beneficial uses of groundwater in this situation would be substantially greater.

Typically, installation of a groundwater extraction system would be required to keep the groundwater level to below the landfill (see section 6.3). Hence, **below-groundwater landfills are strongly discouraged** due to the continual and additional operational requirements to:

- maintain and operate pumps
- manage an increased volume of groundwater or leachate
- intensively monitor both groundwater and leachate quality and levels.
- New landfills must deposit waste at least two metres above the long-term undisturbed depth to groundwater unless:
- additional design and management practices to protect groundwater quality will be implemented
- regional circumstances exist that warrant the development of a landfill in this manner.

If the most appropriate site for a landfill is in an area where regional groundwater is elevated, the base of the landfill should be raised to a level above the watertable using a sub-base material designed to attenuate contaminants.

The sub-base material between the base of the liner and the watertable (that is, in the unsaturated zone) should be made of a natural or imported fine-grade soil with a cation exchange capacity of about 10 mEq/100g. This cation exchange capacity allows the sub-base to remove some

PLANNING

- 8 FEB 2015

Siting, design, operation and rehabilitation of landfills

contaminants from leachate seeping through the base of the liner, and further minimises the risk of groundwater pollution from the landfill.

Recommended minimum requirements for separation of the wastes from the long term groundwater level are tabulated in Table 5.1.

The most preferred site for a landfill is one that minimises the risk of groundwater pollution by providing a natural, unsaturated attenuation layer beneath the liner for contaminants that may leach through the liner. This means that sites with naturally attenuating soils, such as those in clayey areas, are preferred to those that do not have such soils, such as in sandy areas.

Table 5.1: Minimum separation of wastes from watertable

Waste accepted	Minimum separation of wastes to watertable
Municipal (putrescible) waste (Type 2 landfill)	2 metres
Solid inert waste (Type 3 landfill)	2 metres
Fill material and potential waste acid sulfate soil	Below watertable

5.1.4 Alternative potential uses

For sites other than former extractive sites, alternative land uses may be preferable that use as a landfill. For example, the value of the land for farming or future development may indicate that alternative sites should be considered.

For former extractive industry sites, alternative potential uses can be difficult to identify. Public open space as an end use without a need for public open space or a likely long-term custodian of the open space can be problematic as an end use. End use concepts may not be able to be adequately addressed in the landfill schedule stage and require the development of a total proposal during the works approval/planning permit stage

The rehabilitation of an extractive industry site by landfill is not in itself sufficient justification for a landfill, however, the benefits that may accrue to the community in rehabilitation should be considered.

5.1.5 Buffer distances

Appropriate buffer distance must be maintained between the landfill and sensitive land uses (receptors) to protect those receptors from any impacts resulting from a failure of landfill design or management or abnormal weather conditions. These failures might constitute discharge from the site of potentially explosive landfill gas, offensive

odours, noise, litter and dust. Features that could be adversely affected by landfilling operations include surface waters, buildings and structures and airports.

Buffer areas are not an alternative to providing appropriate management practices, but provide for contingencies that may arise with typical management practices.

Table 5.2 summarises the buffer required for siting different types of landfills. Refer to section 8.2 for buffer requirements for closed landfills.

Table 5.2: Siting buffer distances required for landfill gas migration, safety and amenity impacts

	Type of landfill site	Part of site selection and during operation
Buffer distance	Type 2	100 metres from surface waters. 500 metres from building or structures. 1500 metres from an aerodrome for piston-engine propeller-driven aircraft ¹ . 3000 metres from an aerodrome for jet aircraft ¹ .
	Type 3	100 metres from surface waters. 200 metres from buildings and structures. 1500 metres from an aerodrome for piston-engine propeller-driven aircraft ¹ . 3000 metres from an aerodrome for jet aircraft ¹ .

1 A lesser distance may apply subject to the approval of the relevant aviation authority.

Subject to an evaluation demonstrating that the environment will be protected and the amenity of the sensitive areas will not be adversely affected, lesser buffer distances may be applied subject to a risk assessment that considers design and operational measures. As part of a risk management approach, additional design or operational measures will be required to ameliorate the risks associated with a reduction of the buffer distances identified in Table 5.2.

Siting, design, operation and rehabilitation of landfills

Buffers and measurement

Buffer distances are set to reflect the potential impacts from landfilling activities. Generally, the buffers are set to manage:

- odour, which is of most concern during landfill operation
- landfill gas impacts, including the risk of explosion and/or asphyxiation. Landfill gas potential risk remain post closure and for at least 30 years post-closure.

While other potential impacts such as fire, litter, noise and safety risks exist, the buffers required for protection from these impacts fall within the buffer required for odour and landfill gas.

Buffers are measured from the sensitive land use to the edge of the closest cell. All cells, including closed cells, need to be considered in calculating buffers. For sites where there is uncertainty in the location of landfill cells, the boundary of the landfill premises is the point of measurement.

Buffer measurement also needs to consider other activities capable of causing a nuisance, such as the leachate ponds, to the nearest sensitive land use.

Buffer distances and encroachment

Where this buffer has been or is proposed to be encroached, design and management practices need to be significantly increased to provide the same level of protection to sensitive land uses. In considering any planning scheme amendment or planning permit applications, in accordance with the *Planning and Environment Act 1987*, the planning or responsible authority must have regard for the effects of the environment, including landfill gas, on the development. Responsible planning authorities must also ensure planning scheme amendments or any review of a municipal strategic statement are consistent with the provisions of Waste Management Policy (Siting, Design and Management of Landfills) and with the relevant regional waste management plan.

Proposed developments and any works within the recommended landfill buffer can pose a safety risk by potentially providing preferential pathways for landfill gas migration, or providing an environment where landfill gases can accumulate to dangerous levels. All buildings and structures should be considered, including:

- buildings and structures used for sensitive or non sensitive uses
- change of use
- infrastructure installation
- installation of pipelines.

Responsible planning authorities need to be provided with sufficient information by the proponent to satisfy them that the proposed development or rezoning will not be adversely impacted by its proximity to the landfill site.

Where the proposed development or planning scheme amendment would have the effect of allowing development that encroaches into the recommended landfill buffer area or increases the extent of development within the already encroached buffer area, EPA recommends that the planning or responsible authority require an environmental audit be conducted under Section 53V of the EP Act. The audit must assess the risk of harm to the proposed development posed by the potential offsite migration of landfill gas and amenity impacts resulting from the landfill. Where a planning or responsible authority has relevant and sufficient information from previous assessments or audits, then this may be relied on in making a decision

Land within buffer areas may be used for non-sensitive uses provided that the use is not adversely affected by landfilling. Therefore, it is better that this land is owned or at least under the control of the landfill operator, maximising control over the maintenance of an appropriate buffer. Landfill operators should develop contingency plans to show how the landfill could be developed and operated to ensure that the safety and amenity of the affected land would still be preserved, should the buffer be encroached. Encroachment may affect the future development of the landfill.

For landfills with an anticipated lifespan exceeding 10 years, an analysis should be conducted of the anticipated changes in the zoning or land use of the surrounding area during the life of the facility. Guidance on future land use intentions can often be found in the municipal strategic statement prepared by the local municipality.

Failure to preserve an appropriate buffer and maintain compatible land uses within the buffer may result in unacceptable offsite impacts that limit future development of the landfill.

Buffer distances – buildings and structures

The buildings and structures buffer distance applies to any building or structure (including subsurface structures such as stormwater drains or service trenches) located near a landfill and is there to provide a protection zone around a landfill for subsurface landfill gas migration.

In the event that a building or structure is located within the recommended buffer, monitoring will be required in accordance with EPA landfill gas risk assessment requirements. An environmental audit is recommended where buildings with enclosed spaces that people will enter are proposed to be constructed within the buffer.