3rd March 2021

For the attention:
Phillip Zappala
Senior Planner – Major Assessment
City Development Branch
Council of City of Gold Coast

Dear **Phillip Zappala,**

Objection submission COM/2019/81 - Separation Buffers, the David Kershaw report and Council agreement to 350 metre buffer

Please accept this objection as it highlights that the proposed development application seeks to compromise the 350 metre buffer established with consultation with the Council back in 1988 at the initial approval of the quarry.

Was the agreed 350 metre buffer a good idea?

It can be seen from enclosed documentation that the Council required a reduced buffer (from the 1000m required by DES guidelines) of 500 metres from the boundary of the quarry. But, this was successfully vetoed by the David Kershaw report and a case was made for a 350 metre buffer which was duly accepted as per (Attachment A1).

The proposed quarry footprint is shown in Attachment A2 (from the David Kershaw report).

If you superimpose the proposed quarry footprint (Attachment A2) onto Attachment A1 you can begin to see the glaring problem with the agreement made (Attachment A3).

The council correctly proposed a separation buffer based on the quarry boundary, however, they seem to eventually agree to a buffer based, incorrectly, upon the quarry's epicentre. Apparently not realising this would move as the blasting proceeded throughout the quarry. Unfortunately, as can be seen in Attachment A4, when the quarry activity is in the northeast or eastern side the 350 metres agreed separation buffer is severely compromised. Resulting in approximately twenty or so homes in the area being within this 350 metre separation buffer.

Therefore, the agreement reached appears to have been incorrectly applied resulting in homes, already well within the 1000m blast exclusion zone, now even closer than the agreed compromise of a 350 m separation buffer.

It would appear the council were misled into accepting a vastly reduced separation buffer clearly at the detriment to surrounding homes.

The new buffer suggested

The proposed extraction footprint can be seen in Attachment B1 along with an indication as to where a 350 metre separation buffer would be.

It can be seen that approximately one hundred and fifty homes would now be encompassed in that area.

Not only would more homes be affected but it must be recalled what was said in the David Kershaw report to justify the 350 metre limit: *"worst case situation of 350 metres distance is approximately 250 kg. This is up to four times more explosive than used in normal quarry blasts"* (Attachment C1). Since this report was written the average blast size has been 90kg (see Attachment C2 from main DA). This is 50% higher than the envisaged blasting at Oxenford which helped to justify the severely reduced boundary down to 350 metre boundary however the proposed buffer has now been reduced down to a couple of hundred metres.

Clearly the justification for the 350 metre separation buffer has been discredited by the average blast being far bigger than claimed and the buffer being far smaller than claimed. Therefore, there can be no justification for reducing these buffers even further as proposed by this development application.

<u>Is compromising the 1000 metres separation buffer (that Nucrush specifically helped establish) acceptable?</u>

The current Queensland state guideline of 1000m separation buffer required for blasting quarries was established by a report commissioned for Nucrush and Prodap Services in 1999.

This is confirmed in the current Queensland 'State Planning Policy' guidelines (December 2013) for 'State Interest - Mining and extractive resources' state: "Section 3.8 - The dimensions of the separation area for the resource/processing area are based upon the following minimum distances-

(a) 1000 metres where the extraction or processing of the extractive resource involves blasting or crushing (namely rock); or
(b) 200 metres for any other extractive resource not involving blasting or crushing (namely sand, gravel, clay and soil). [2] "

Where: [2] states: "These separation distances are based on the accumulated wisdom of other jurisdictions around Australia and overseas but more specifically the following sources. The 1000 metres separation distance for blasting operations is based

on - Blastronics Pty Ltd, 1999: Impact of Proposed Coomera Island Development on Nucrush Quarry. Report for Nucrush and Prodap Services. September 1999. Blastronics Systems and Services, Pty. Ltd., Brisbane, #C99084 Blasting Impact Report".

This clearly shows that the Queensland state separation buffer requirement of 1000 metres was actually based specifically on the requirements of the Nucrush Quarry along with "the accumulated wisdom of other jurisdictions around Australia and overseas". It would therefore seem incredulous that this particular quarry operator, that helped establish the required separation buffer for the state now seeks to reduce this buffer to a mere 150 metres with every radial direction from the quarry compromising the 1000m required separation buffer by an extensive margin. Utterly incomprehensible.

Conclusion

I believe it is ridiculous to even contemplate permitting the extractive footprint to expand as proposed considering the implications this will have on local residents in the area when the separation area is reduced significantly.

Please do not forget the 'Blast Exclusion Zone' required is 1000 metres also. This is the area workers are not permitted within unless they are suitably qualified and wearing the appropriate personal protection equipment (PPE). It is not even contemplated members of the public will be within this area in DES guidelines. Therefore, to have hundreds of homes and thousands of people within this area is downright ludicrous and extremely dangerous.

It would seem the 350 metre separation buffer was accepted erroneously. The council requested an already compromised five hundred metre from quarry boundary that would have been more appropriate (But it should be remembered the DES guidelines for separation buffers for blasting quarries are 1000m as established by Nucrush and Prodap services). This is for a multitude of reasons, not least for safety and personal amenity).

This agreed compromise of 350m was further compromised by the Council failing to observe this was based on the proposed original quarry epicentre and it was not based on blasting at the extremities of the extractive footprint thus reducing this 350m separation buffer to residential homes significantly.

The safety of the area has been further compromised by statements in the David Kershaw report stating blasting would be in the region of 60 kg (to justify the 350m buffer) which has proved incorrect as the average blasting size has been 90 kg (Attachment C2).

Clearly the Oxenford Quarry is no longer appropriate, if it ever was, in its current environment, which is a local suburb, with hundreds of homes, thousands of people, schools, shops, restaurants, churches, medical centres, aged care communities, kindergartens and all that comes with a vibrant community. And, all within the required 1000m separation buffer and 1000m 'Blast Exclusion Zone'.

The original agreement has been compromised in a number of ways. It is therefore clear the Council should not risk minimising the separation buffers, as requested, to local residents to their barest minimum as it is clear to see the quarry cannot, in my opinion, be trusted to observe its agreements in the longer term and the proposed separation buffers are both outrageous and downright dangerous.

It must also be remembered Nucrush quarry had an intrinsic hand in establishing the required 1000 metre separation buffer. So how can it now convince us that any less than this is acceptable especially considering this separation buffer was also the result of: "the accumulated wisdom of other jurisdictions around Australia and overseas". Does Nucrush just expect the Council Planners to ignore these clear requirements and the reasoning behind them?

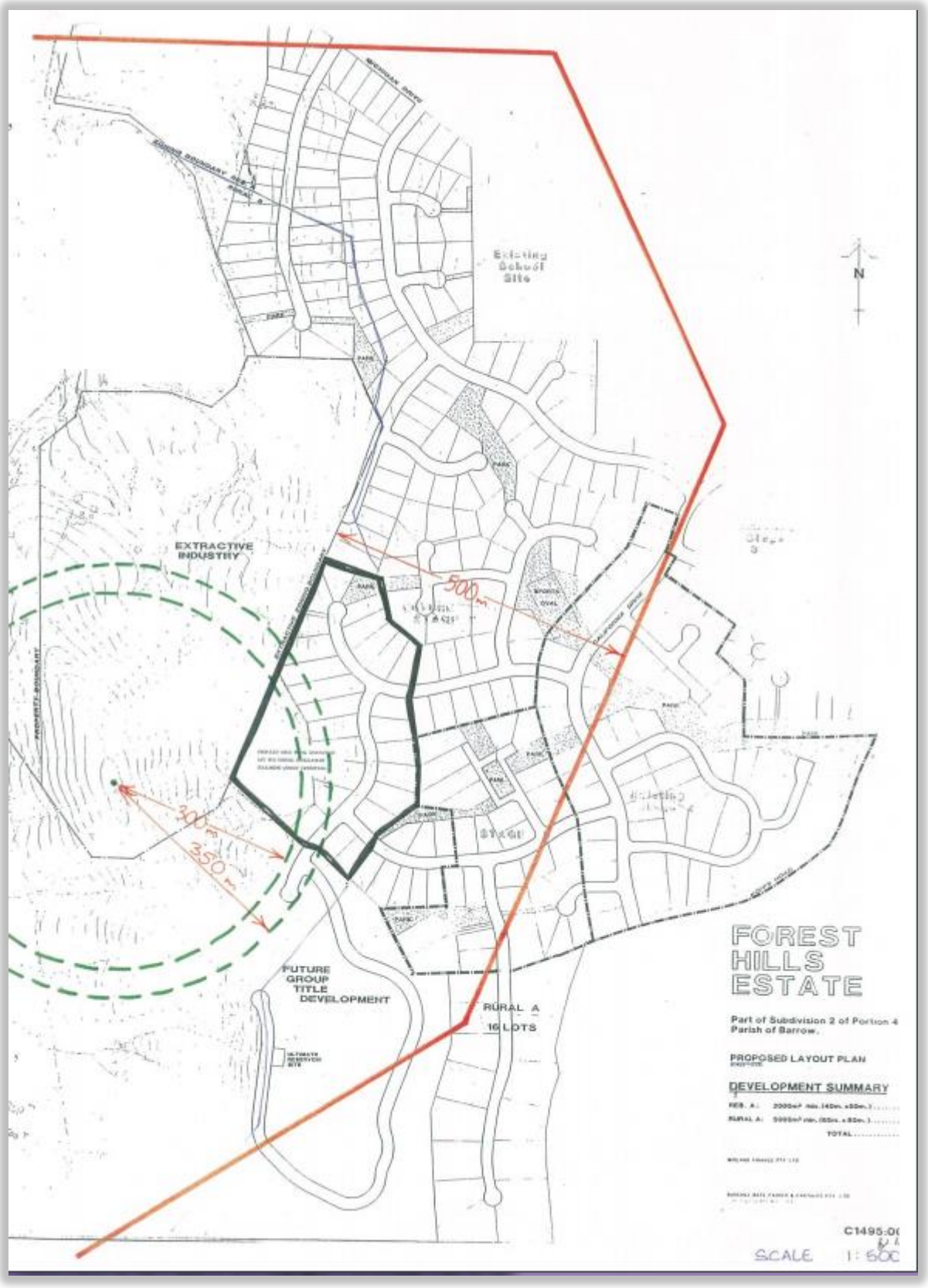
It would therefore be inconceivable to accept a buffer of a couple of hundred metres to residential homes and a mere forty metres alongside the Tamborine Oxenford Road and the Maudsland Road for a blasting quarry that now finds itself completely engulfed by suburbia.

Thank you in anticipation,

Kind regards

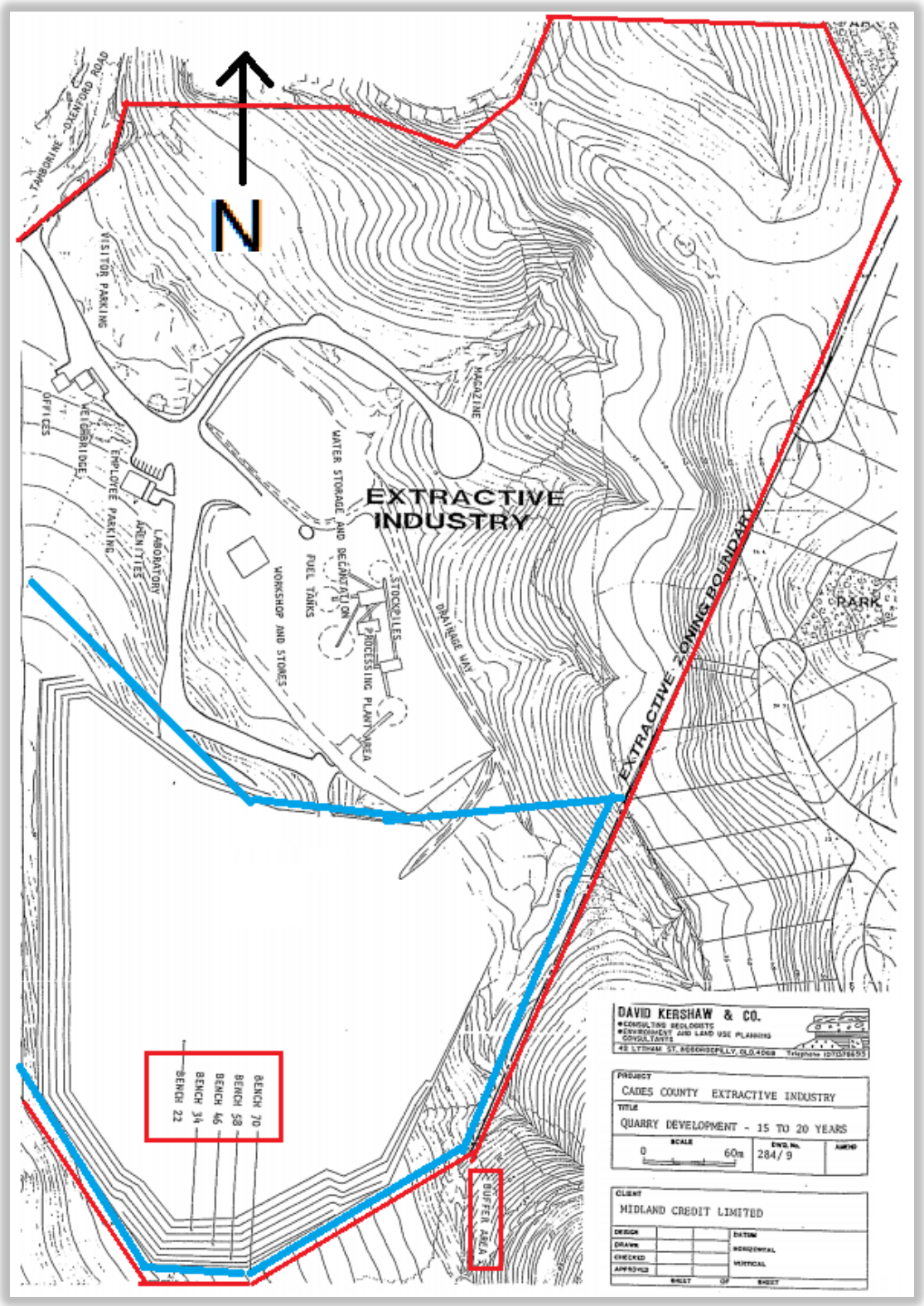
Tony Potter

Attachment A1 - The council requested 500m buffer (red line) and the agreed 350 metre separation buffer (green outer dotted line)

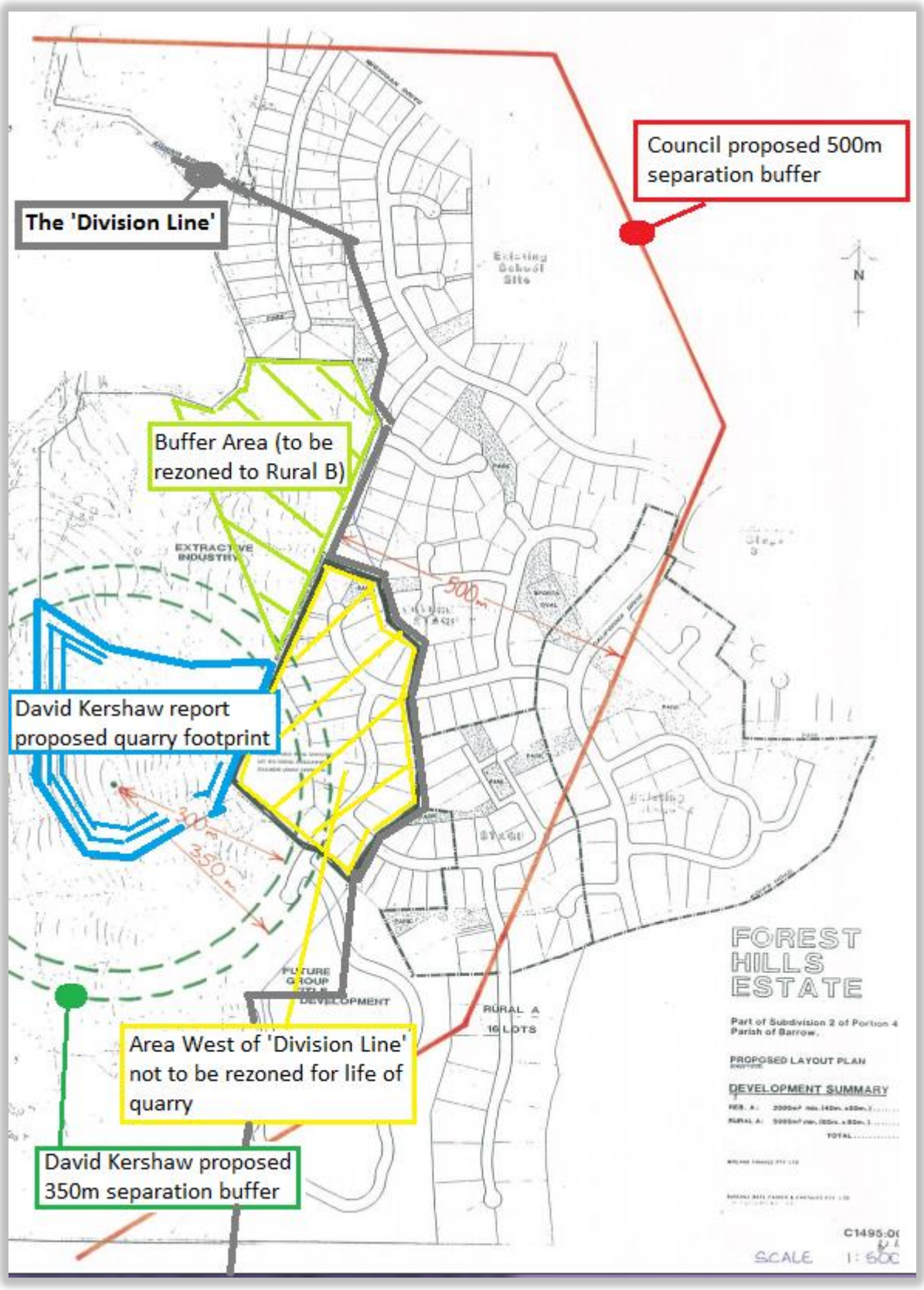


Attachment A2 - Proposed quarry pit from the David Kershaw Report (Dated 20th July 1988)

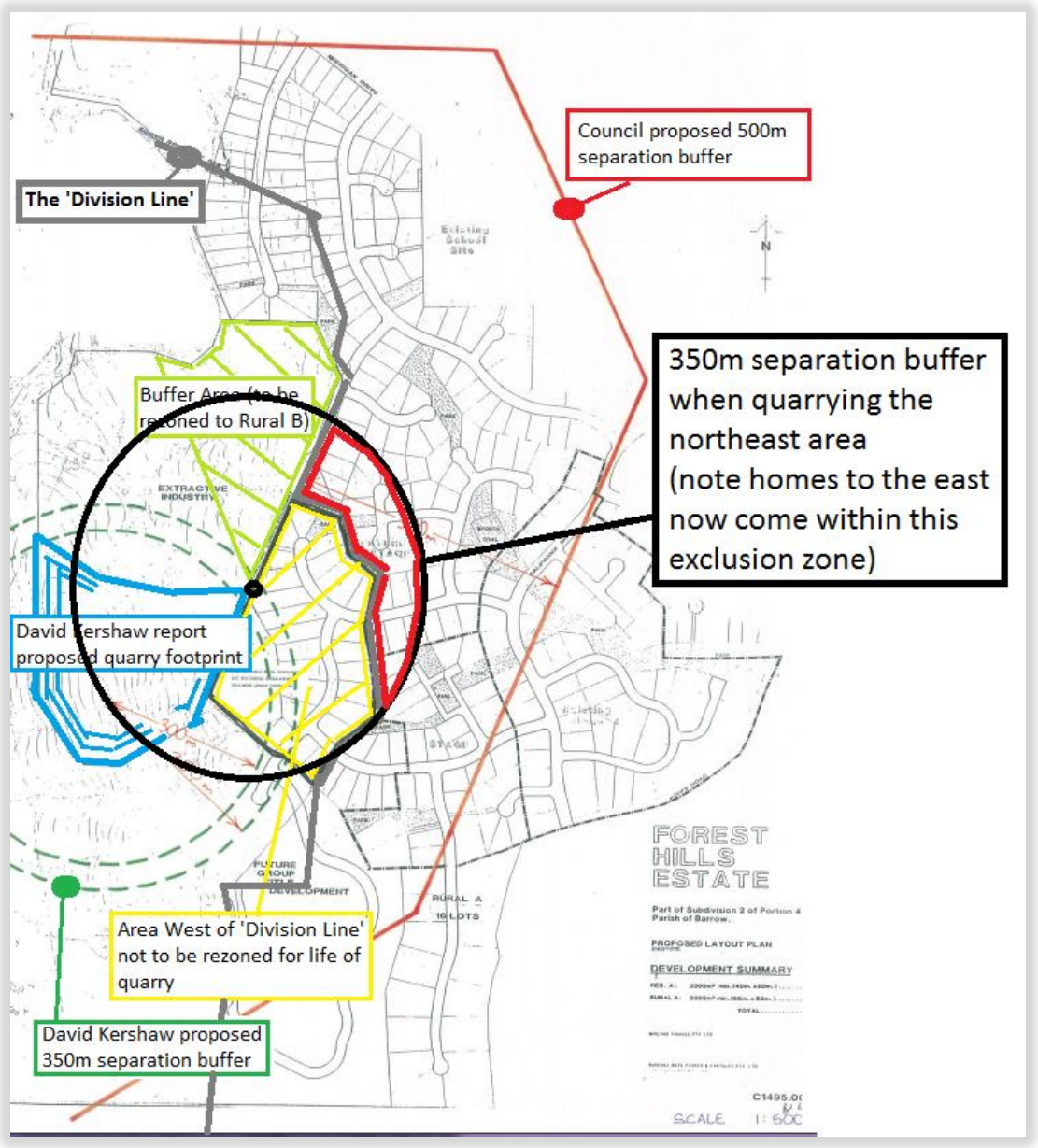
(Plan 284-9 on page 33 of 33)



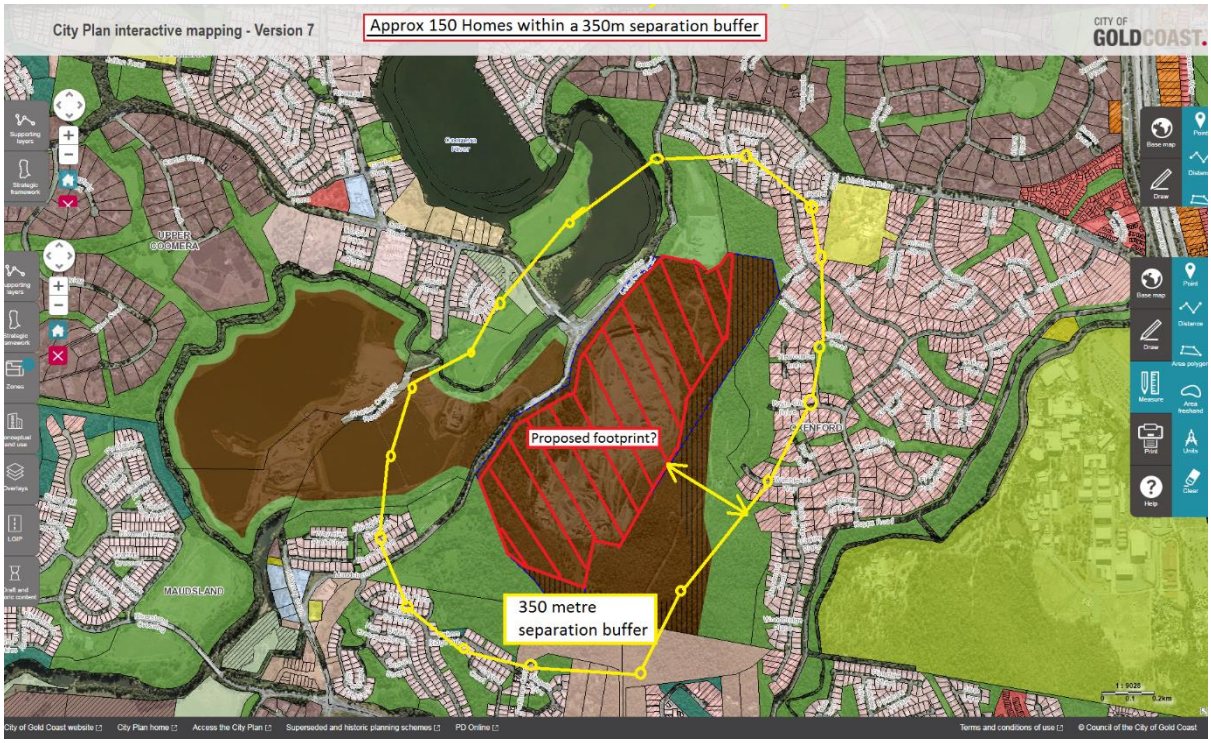
Attachment A3 - Council proposed 500m separation buffer (red line) and the agreed (350m green dotted line) alongside the proposed quarry footprint.



Attachment A4 -Showing Blast exclusion zone for blasting in northeast of the extractive footprint (black line)



Attachment B1 - The proposed new buffer showing the 350 metre separation buffer formerly agreed



Attachment C1 - David Kershaw report 250kg at 350 metres

During the life of the project the closest distance between a possible residence and a blast will be 350 metres. The maximum charge weight per delay for producing a peak particle velocity of less than 10 mm/sec at the worst case situation of 350 metres distance is approximately 250 kg. This is up to four times more explosive than used in normal quarry blasts.

Although this technique for assisting the ground vibration effects is only approximate, ground vibrations due to blasting at the site will be well below the levels required to cause damage or nuisance. Nonetheless initial blasts should be carried out with conservative charges and the levels of vibration monitored.

Attachment C2 - Blast sizes at Oxenford Quarry

6. OXENFORD QUARRY BLASTING PRACTICES

Based on records reviewed as part of this study, which include extremely detailed blasting records prepared by the quarry's explosive supplier Maxam (Aust) Explosives, the quarry blasting practices can be summarised as shown in *Table 4*.

Table 4. Current blast design practices at Oxenford Quarry.

Blast Design Parameter	Value
Maximum bench height	15 metres
Blasthole diameter	89 mm
Explosive type and density	Riogel TTX, 1.2 g/cc avg
Chg wt per blasthole, single deck	70 – 100 kg (90 kg nominal)
Average size of blast	90,000 tonnes
Stemming type and length	Aggregate, 3 m avg., 2.7 metres min.
Delay system	Non-electric
Frequency of current blasting	Approx. 12 times per year