BEFORE INDEPENDENT HEARING COMMISSIONER APPOINTED BY WAIKATO DISTRICT COUNCIL

IN THE MATTER	of the Resource Management Act 1991 (Act)
AND	
IN THE MATTER	of an application by McPherson Resources Limited to expand the existing McPherson quarry at McPherson Road, Mangatawhiri.
BETWEEN	**McPherson Resources Limited**
	Applicant
AND	**WAIKATO DISTRICT COUNCIL**
	Consent Authority

STATEMENT OF EVIDENCE OF DAVE MANSERGH
Dated 16 November 2020

INTRODUCTION

1. My full name is David Mansergh. I am a qualified Landscape Architect and Recreation Planner. I am a Registered Member of the New Zealand Institute of Landscape Architects (NZILA). My qualifications include a Dip P&RM (Diploma in Parks and Recreation Management with Distinction) completed in 1988, a BLA Hons (Bachelor of Landscape Architecture with Honours) completed in 1990 and an MLA (Master of Landscape Architecture) completed in 1992, all from Lincoln University, Canterbury.

2. I have been a Director of Mansergh Graham Landscape Architects Ltd since 1996. Prior to this, I was employed by the company as a landscape architect (1992 - 1996). I have also worked for the Department of Conservation (1986 – 1988) and before that, the Department of Lands and Survey (1985).

3. During my career I have been involved in the preparation of and/or the peer review of a significant number of visual and landscape assessments for a wide range of activities and developments. These include other quarries (hard rock and sand), mines (coal and gold) and landfills; residential, commercial and industrial buildings within the urban and rural environment; power stations, hydro dams, wind farms, power transmission lines, and substations; marine farms, major port facilities, coastal developments, canal housing and marinas; telecommunication masts; ski fields, gondolas and ziplines; dairy factories and poultry farms; and major roading infrastructure projects. Of relevance, I also have considerable experience in the preparation of visual simulations and photomontages.

4. I was involved in the NZILA Landscape Planning Initiative, tasked with developing the 'best practice' approach for landscape and visual assessment in New Zealand.

5. I have presented evidence at Resource Management hearings before Council, the (then) Planning Tribunal and the Environment Court. I acted as an Independent Commissioner at the Rangitikei District Plan hearings.

Code of Conduct

6. I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2014. I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving evidence.

7. Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

PURPOSE AND SCOPE OF EVIDENCE

8. I have been retained by the applicant to provide expert landscape evidence in relation to effects of the proposed quarry expansion, landscape, and visual amenity.

9. In preparing my evidence I have read the s42A report prepared by Council and the evidence prepared by the following witnesses:

   (a) Mr Michael McPherson (Applicant)
   (b) Ms Eloise Lonnberg-Shaw (Planner)
   (c) Mr Marc Choromanski (Ecologist).

10. I have undertaken the following site inspections in association with this application:

   (a) Inspection of the application site on 17 September 2019;
   (b) Fieldwork associated with the assessment of visual effects on 22 October 2019; and
   (c) Private properties surrounding the application site (submitters) with the Council Planner and Landscape Architect on 6 August 2020.

11. In my evidence I will:

(a) Provide an overview of my involvement in the application and discuss the assessment of the landscape and visual effects reporting and responses to the s92 requests for additional information;

(b) Outline the approach that will be taken in the development of the quarry and identify the key factors that will affect existing landscape and visual amenity values.

(c) Provide a summary of the findings of my assessment of landscape and visual effects from surrounding public locations;

(d) Discuss the landscape and visual effects of the quarry expansion on surrounding properties;

(e) Discuss the submissions received;

(f) Discuss relevant parts of the s42a Report;

(g) Discuss the recommended mitigation measures.

SITE LOCATION

12. The McPherson Quarry is located on McPherson Road, Mangatawhiri, approximately 3.5km north-east of Pokeno, at the base of the Bombay Hills.

13. I understand that the existing quarry has been operating for approximately 60 years and is estimated to contain sufficient resource for a further 30 – 40 years operation.

14. McPherson Resource Limited (the Applicant) is seeking resource consent to continue and expand the existing quarry operation.

BACKGROUND INVOLVEMENT & S92 REQUEST

15. The assessment of landscape and visual effects report lodged with the original application, was prepared by P. Murphy of WSP Opus in 2018. This report, titled '*McPhersons Quarry Expansion Proposal Landscape and Visual Assessment*' (The Opus LVA), was reviewed by Mr. O. May from Boffa Miskell Ltd on behalf of Waikato District Council in 2019.

16. An s92 request for additional information was issued by the Waikato District Council, requesting the following information:

> *13.1 Further information is sought for the following matters:*
> - *Overall the assessment needs to consider separately the sensitivity of the receptor (receiving audience) and the significance of visual effect separately for each viewpoint with a greater analysis of the magnitude of change experienced. These should be outlined clearly to describe the effect against the attributes and baseline and the significance of those effects.*
> - *The baseline for the landscape character assessment needs to be clearly established in order for the proposed changes in the landscape to be given context. Reference should be made to the Waikato District Landscape Study and existing analysis of the landscape character and sensitive features.*
> - *Specified links reference to heights, assumed time scales and areas regarding the overburden area, vegetation clearance, mitigation planting etc. would give a clearer impression in the scale of the proposals.*
> - *Further explanation should be given to the exclusion of viewpoints from the Mt William walkway and sufficient weight to how significant this is in relation to the number of users, proximity to the proposal and scenic quality of the view.*
> - *Visual simulations should be provided to demonstrate the expected level of impact or change in the view. This would help to confirm the changes described in the visual assessment and the level of effects.*
> - *Further information regarding the proposed development is required to clearly outline all of the elements that will be introduced into the landscape including, vehicles plant and machinery required in the expansion areas.*
> - *Refinement of illustrative material is required to support the report text including the Visual Catchment Plan and a landscape character area plan.*

17. Due to WSP Opus being unable to provide continued expert advice to the applicant, Mansergh Graham Landscape Architects Ltd (MGLA) was engaged by McPherson Resources Ltd to review and respond to the s92 request for additional information.

18. Because MGLA did not have any involvement in the preparation of the original landscape and visual effects report (WSP Opus VLA report), I undertook an independent landscape and visual assessment to:

(a) Satisfy myself that findings of the Opus report were supportable; and
(b) Respond to the above, as mentioned in the s92 request.

19. A further request for additional information was issued by Council, requesting the following:

- *It is recognised in the MGLA analysis that there is an Identified Significant Natural Feature (SNA) and Schedule 5A Site of Special Wildlife interest at Mt William Walkway within proximity of the proposal. Can it be confirmed what the expected landscape effects are expected to be?*

- *The Visual Absorption Capability (VAC) was used within the original Opus assessment as a descriptor for visual audiences. This methodology is also included in Appendix Three of the MGLA report. However, VAC does not appear to be used in the MGLA visual assessment. Does the MGLA assessment rely on the Opus VAC descriptions and how has this been considered in the MGLA assessment?*

- *Considering the additional information provided in the landscape character baseline, is the Opus landscape character sensitivity rating of "low" relied upon?*

- *Has the Overburden Disposal Area (ODA) been modelled in the Visual Simulation? The ODA is described as partially visible in the assessment but cannot be seen in the Visual Simulation.*

- *Is it concluded that the overall visual effects will be less than minor, as concluded in the Opus assessment? The increased level of effects experienced in the VP4, VP6 and VP7 to moderate and high would suggest that this may have changed. Could MGLA confirm how the additional viewpoints are considered in the round for the overall conclusions?*

20. The responses to the above requests are appended to my evidence in chief as Attachment A & B.

REVIEW OF THE OPUS LANDSCAPE AND VISUAL ASSESSMENT REPORT

21. My review of the Opus VLA report found:

(a) The visual catchment identified on the *Visual Catchment Plan, (Attachment A)* appeared to be inaccurate and not consistent with the findings of the report;

(b) Viewpoint (VP) locations 3, 5 & 6 do not appear to represent worst-case scenario views, and/or represent an appropriate viewing audience. The VP locations on the attached map are not consistent with the photographs contained within the report;

(c) Effects on natural character features such as the SNA, Mt. William Scenic Reserve, Pouraureroa Stream Bush (ONF) and ponds within the application site were not considered in sufficient detail;

(d) Effects from the Mt. William Walkway were not considered;

(e) Effects on the properties to the north of the application site and along Pinnacle Hill Road were not considered in sufficient detail;

(f) The graphic material supporting the visual assessment report was not sufficiently accurate or detailed.

(g) Mitigation (over and above the mitigation of the SNA areas) was limited to overburden areas only.

(h) Adverse effects appeared to have been slightly underestimated.

22. My review of the Opus report appeared to reach similar conclusions to that of the peer reviewers, and therefore consider the request for additional information warranted.

SITE LOCATION AND EXISTING LANDSCAPE CONTEXT

23. The wider surrounding environment is characterised by a combination of its topography and land use. The application site sits at the juncture of the low lying flat - gently undulating alluvial plains, wetlands and valley floors associated with the Waikato River and its tributaries in the south, and the steep undulating terrain associated with the southern extent of the Hunua Range in the north.

24. The application site itself is characterised by the existing quarry, which visually contrasts the rural and conservation land use immediately surrounding the site. The wider surrounding environment is dominated by a mixture of pastoral development, influencing the area's distinctive rural appearance to the north and south, and conservation, large tracts of native bush and productive forestry to the east and west. Sitting adjacent to the SH1 and NZMTR corridor to the west, is the township of Pokeno, characterised by its mix of industrial and residential development. Between Pokeno and the application site, development patterns follow a typical town-country transect, with the higher density residential development giving way to large lot and lifestyle lots, rural industry, and productive rural land.

25. Several significant natural areas surround the site and extend into it in places. These features are discussed in greater detail in the ecological evidence of Mr Choromanski.

26. The application site is identified as being in the Eastern Hills unit in the Waikato District Landscape Study 2017[1] (WDLS) and is described as

> *The landscape of this region, formed mainly by late Cenozoic block faulting and volcanicity, has four major geomorphic elements. Mesozoic and Cenozoic highlands form elevated blocks of the Henua apuakohe and Taupiri ranges in south Auckland and north Waikato (DOC, 2016c). Sandstones and siltstone comprise the dominant underlying substrate with some andesitic volcanics and sediments and coal seams.*[2]

27. The site is not located within an identified Outstanding Natural Feature of Landscape (ONFL) within the Operative or Proposed Waikato District Plan.

28. The closest ONFL is the Pouraureroa Stream Bush, located approximately 1km east of the application site and is not affected by this application.

[1] Waikato District Landscape Study 2017, Boffa Miskell Ltd.
[2] IBID

29. From a landscape perspective, the key features and attributes that contribute to existing landscape character and visual amenity include:

(a) Dominant ridgelines, spurs rolling topography and gentle foot slopes associated with the western extent of the Hunua Ranges;
(b) Existing SNA area, including native and exotic mature planting understorey growth;
(c) Clusters of forestry;
(d) Pastoral grazing land;
(e) Clusters of rural and rural residential dwellings, scattered farm utility buildings/sheds.
(f) Pinnacle Hill & Mt. William Summit, 2.5km gravel bush walk, including footbridges and stiles for access to the trig/summit;
(g) Panoramic Views over southern Auckland and Northern Waikato; and
(h) The existing quarry.

30. A landscape context plan, showing the relationship between the site and key landscape features surrounding the site, can be found on page 2 (attachment 1) of my graphic evidence.

PROPOSED EXPANSION

31. The proposed quarry expansion would occur in three continuous stages over the following timeframes, with the duration of each stage dependent on resource demand:

(a) Stage 1 = Approximately 10 - 15 years
(b) Stage 2 = Approximately 5 – 10 years
(c) Stage 3 = Approximately 15 – 20 years.

32. A set of plans showing the proposed quarry areas and staging can be found on pages 3-6 of my graphic evidence (attachment 2, 2A, 2B & 2C).

33. An interactive 3D model, showing the existing landscape and the various stages at completion can be found at the following link:

34. https://www.mgla.co.nz/webviewer/ceviewer.html?3dWebScene=webscenes/McPherson.3ws

35. The model shows how the development of the quarry will change the surrounding landscape and has been used to help determine how much of the quarry will be visible from submitter's houses and the effect of the proposed screen and mitigation planting.

36. I discuss this in more detail later in my evidence.

Development Sequence

37. The quarry will generally develop in accordance with the following sequence.

Ecological & Visual Mitigation Planting

38. In the first year of the consent the ecological mitigation and visual mitigation (screen) planting will begin along the northern boundary of the site and around the overburden disposal area.

39. The location of this planting is shown on the Mitigation Plan on page 7 of my graphic evidence (attachment 3).

40. The ecological planting will be undertaken in accordance with the ecological mitigation plan. Species will include:

(a) Kānuka (Kunzea robusta)
(b) Mānuka (Leptospermum scoparium)
(c) Māhoe (Melicytus ramiflorus)
(d) Karamū (Coprosma robusta)
(e) Māpou (Myrsine australis)
(f) Five-finger (Pseudopanax arboreus)
(g) Hangehange (Geniostoma ligustrifolium var. ligustrifolium)
(h) Koromiko (Veronica stricta var. stricta)
(i) Mingimingi (Leucopogon fasciculatus)
(j) Lemonwood (Pittosporum eugenioides)
(k) Toetoe (Austroderia fulvida)

(l) Flax (Phormium tenax)

41. The screen planting will comprise fast growing evergreen exotics and will be located adjacent to the northern boundary of the stage 2 extraction area. Suitable species for this area include:

(a) Eucalypts (Eucalyptus sp.); and/or
(b) Tasmanian Blackwood (Acacia melanoxylon),

42. These species can achieve growth rates of up to 1m per year meaning that by the time overburden stripping occurs within stage 2, the screen planting will have had 10-15 years growth.

Vegetation Removal in Areas to be Quarried

43. For each new stage, the existing vegetation cover will need to be removed before overburden stripping and quarrying commences. For stage 1, this will result in the removal of approximately 2.31ha[3] of native bush and vegetation within the areas of SNA on the existing eastern ridgeline and in areas to the west.

Overburden Stripping

44. Earthmoving machinery will then be used to strip back the overburden materials (topsoil, subsoils, and weathered rock/brown rock) within each stage and battered back above the blue rock for stability. Battered slopes will be grassed for stability and landscape rehabilitation purposes.

45. Recoverable topsoil will be stored on-site for future rehabilitation use. To ensure the health of the topsoil, stockpile heights will be below 2m and the stockpiles will be grassed and protected from compaction. Some topsoil will be used to cap overburden material in the disposal site.

46. Overburden material will be carted down the haul road and placed in the overburden disposal area to the south of the quarry. Material will be placed in lifts of no greater than 5m high at a gradient of 1V:3H (28 degree). A 5m wide

[3] Ecological Management Plan. Ecology New Zealand Ltd. 12 September 2019.

bench will separate each lift. All work will be carried out in accordance with the geotechnical recommendations contained within the HD Geo Report.

47. Overburden will be stockpiled to a maximum height of up approximately 40m above existing ground level and shaped to integrate with the surrounding natural landform. Each rise will be progressively grassed for sediment control and visual mitigation purposes.

48. The location and extent of the overburden site is identified on the mitigation plan in my graphic evidence (attachment 3). Preliminary overburden volume calculations are appended to my evidence of chief as attachment C.

49. It is expected that a small percentage of the overburden material and a high percentage of the underlying brown rock will be sold as product and exported off-site.

Rock Extraction

50. Rock will be removed from the quarry pit by creating a series of benches, along which successive quarry faces are worked. The more weathered brown rock, along the upper benches, will be extracted by ripping, and the harder blue rock will be shattered by blasting, to loosen it within the working face. The rock will then be carted along the internal haul roads to the processing area where it will be crushed, screened, and washed, before being carted to designated stockpiles. In some instances, the rock is crushed with portable crushers but most of the time, the crushing takes place within the processing area.

51. The finished product will then be loaded for sale and transported off site. Rock resources can be expected to be stockpiled on site or until the product is dispatched/transported offsite. Some material (typically more than 50%) may be sold as pit run, meaning that it will not be put through the crusher or washed on site.

Existing Facilities

52. No changes to on site facilities are proposed for the moment and no new facilities are required within the quarry area. In saying that, at some future stage it is

possible that a new workshop and office will be required, which would be located within the same area as the existing facilities. The same equipment as the current operation will continue to be used (and replaced and upgraded over time as per normal operational requirements).

SUMMARY OF LANDSCAPE AND VISUAL EFFECTS FROM PUBLIC LOCATIONS

53. I have assessed the effects of the proposed quarry expansion on landscape character and visual amenity against the baseline of the physical environment as it existed at the time of the assessment.

<u>Key Components Which Have the Potential to Affect Landscape Character and Visual Amenity</u>

54. Key components of the application that have the potential to effect landscape and visual amenity derived from the site and surrounding area include:

(a) Removal of vegetation within the site;
(b) Overburden stripping and removal of underlying brown rock material;
(c) Overburden stockpiling;
(d) Changes to the size and appearance of the benches within the quarry;
(e) Movement of machinery within the site (including the visual intrusion from flashing safety beacons); and
(f) Ecological restoration and mitigation planting.

55. In my opinion, the existing landscape features in and around the application site, and the nature of the activity itself will influence the extent to which the proposed quarry expansion will affect the existing landscape character and visual amenity. These include:

(a) The extent to which the existing topography and vegetation surrounding the site, screen the expansion from view from surrounding locations;
(b) The sensitivity of the landscape to change;
(c) The design and location of the of the pits and overburden disposal site;
(d) Staging and the direction of quarrying; and
(e) The proposed mitigation and restoration approach adopted.

Summary of Analysis

56. In this section of my evidence I provide a summary of the analysis I undertook from surrounding public view locations and provided to Council within the s92 responses.

Findings

57. The application site is located within a rural landscape. The character of the site is influenced by the existing quarry, the SNA and rural pastoral land which borders the application site.

58. The existing quarry is visible from main roads and local roads such as SH2, Irish Road, Pinnacle Hill Road, and Baird Road. The existing pit and lower benches are not visible from surrounding locations.

59. Mature vegetation within the SNA (insofar as it is located outside of the quarry footprint) and a row of existing pine trees along the northern boundary will be retained and will aid in screening the proposed expansion from view from neighbouring private properties.

60. Each stage will affect a different part of the visual catchment for the duration of that stage. This means that over the operational life of the quarry, different areas will be affected in different ways. The entirety of the proposed expansion will not be visible from any one location within the visual catchment.

61. Several private properties to the south and to the north of the application site will be adversely affected by the proposed expansion.

62. The proposed expansion will be highly visible from Mt. William. Effects will be heightened from the telecommunication repeater.

63. Due to the nature of the quarry expansion and surrounding topography, the upper overburden stripping, benches, and faces will be more visible than the lower benches and quarry pits.

64. Machinery will be more visible when working along the upper benches. No new machinery will operate because of the proposed expansion.

65. The proposed mitigation/rehabilitation approach will mean that, following extraction, while there will still be evidence that quarrying has occurred within the site, the site will be restored to rural character, allowing it to visually integrate into the surroundings as much as possible. Topsoil will be spread over benches and grassed or planted once no longer in use. The proposed overburden site will be shaped to integrate with the surrounding natural landform, topsoil will be progressively spread and re-grassed to reduce the extent of uncapped overburden material visible.

66. The proposed quarry expansion is consistent with the various landscape and visual amenity provisions of the Operative District Plan. The site is not an identified outstanding natural feature of landscape or an area of outstanding natural character.

Landscape and Visual Effects Ratings

67. The following table summarises the visual absorption capability and effects ratings likely to occur.

No.	Name	VAC Rating	Effects Rating
VL1	SH2, Southern Palms (Public)	Stage 1= *Good* Stage 2= *Good* Stage 3= *Neutral*	Stage 1= *Very Low* Stage 2= *Very Low* Stage 3= *Low*
VL2	233 Pinnacle Hill Road (Public)	Stage 1= *Very Good* Stage 2= *Neutral* Stage 3= *Very Good*	Stage 1= *Negligible* Stage 2= *Low* Stage 3= *Negligible*
VL3	93 Irish Road (Public)	Stage 1= *Neutral* Stage 2= *Good* Stage 3= *Very Good*	Stage 1= *Low-Moderate* Stage 2= *Very Low* Stage 3= *Negligible*
VL4	SH2, outside 286 (Public)	Stage 1= *Neutral* Stage 2= *Neutral-Poor* Stage 3= *Good*	Stage 1= *Low-Moderate* Stage 2= *Moderate* Stage 3= *Low*
VL5	113 Baird Road (Public)	Stage 1= *Neutral* Stage 2= *Very Good* Stage 3= *Good*	Stage 1= *Low-Moderate* Stage 2= *Low* Stage 3= *Low*
VL6	Hitchens Road, Pokeno (Public)	Stage 1= *Very Good* Stage 2= *Very Good* Stage 3= *Good*	Stage 1= *Very Low* Stage 2= *Low* Stage 3= *Moderate*
VL7	Mt. William Summit (Public)	Stage 1= *Neutral* Stage 2= *Very Good* Stage 3= *Poor*	Stage 1= *Low-Moderate* Stage 2= *Moderate* Stage 3= *High*

68. A VAC rating definition table is found in attachment D. Effect rating definitions are found in attachment E.

69. These locations are identified on the *View Location Plan – public locations* in my graphic evidence on page 8 (attachment 4).

70. Further detail is included in the s92 responses in attachment A.

EFFECTS ON PRIVATE PROPERTY

71. In response to the submissions received, a site visit to the following properties was agreed with Council. The purpose of the site visit was to meet with submitters (where available) to discuss their concerns relating to visual and landscape effects, and to assess the effects on existing visual amenity from these locations.

72. Properties visited on 6 August 2020 are as follows:

(a) 40 McPherson Road (Submission 30)
(b) 219 State Highway 2, Heartland Farm (Submission 29)
(c) 209 Pinnacle Hill Road (Submission 33). Photo from the driveway to represent views from 211.
(d) 215 Pinnacle Hill Road (Submission 22)
(e) 217 Pinnacle Hill Road (Submission 21)
(f) 231 Pinnacle Hill Road (Submission 18)
(g) 231B Pinnacle Hill Road (Submission 24). Representative of views from 231A, 233A, 233B, 233C, 233D, 233E, 233F and 235.
(h) 247 Pinnacle Hill Road (Submission 15)

73. I was accompanied on this site visit by Mr May (Landscape Architect for Council) and Ms Majoor (Council's Planner).

74. The location of these view locations are identified on the View Location Plan – Submitter Properties (Private Locations) in my graphic evidence on page 9 (attachment 5). Photographs from submitter properties can be found on pages 10 to 48 of my graphic evidence (attachment 6).

Effects on Submitters Properties

75. I will not present a detailed analysis of the effects from each location, rather I will discuss the key effects associated with the proposal in the following section of my evidence, highlighting those submitters most affected.

76. In general, views from submitter's properties towards the quarry fall into one of two categories:

(a) The quarry is clearly visible and influences existing landscape character and visual amenity; or
(b) The quarry is not visible and is screened by intervening vegetation and/or landforms.

77. In general category (a) applies to locations to the south of the quarry and includes submitters located at:

(a) 219 SH2 (Submitter 29); and
(b) 40 McPherson Rod (Submitter 30).

78. From these locations, effects on landscape character and visual amenity will be influenced by an increase in the amount of the quarry visible. While the proposed expansion will change the ratio of the various landscape features present, it will not change the overall landscape characteristics of the surrounding area. The existing quarry is already a visually dominant feature within the wider landscape.

79. Category (b) applies to the more elevated locations to the north and east of the quarry, from where the existing quarry is largely screened from view by intervening topography, which screens the working benches and faces from surrounding submitters.

80. While some of the haul roads can be seen, these do not influence wider landscape character to a notable extent.

81. From these locations the most obvious effect associated with the proposed expansion will be the lowering of key ridgelines within the extraction area. These

are ridgelines A and C shown in the following figure. While the lowering of ridgelines B, D and E will affect the ridgeline profile, they will not have the same level of effect.

82.

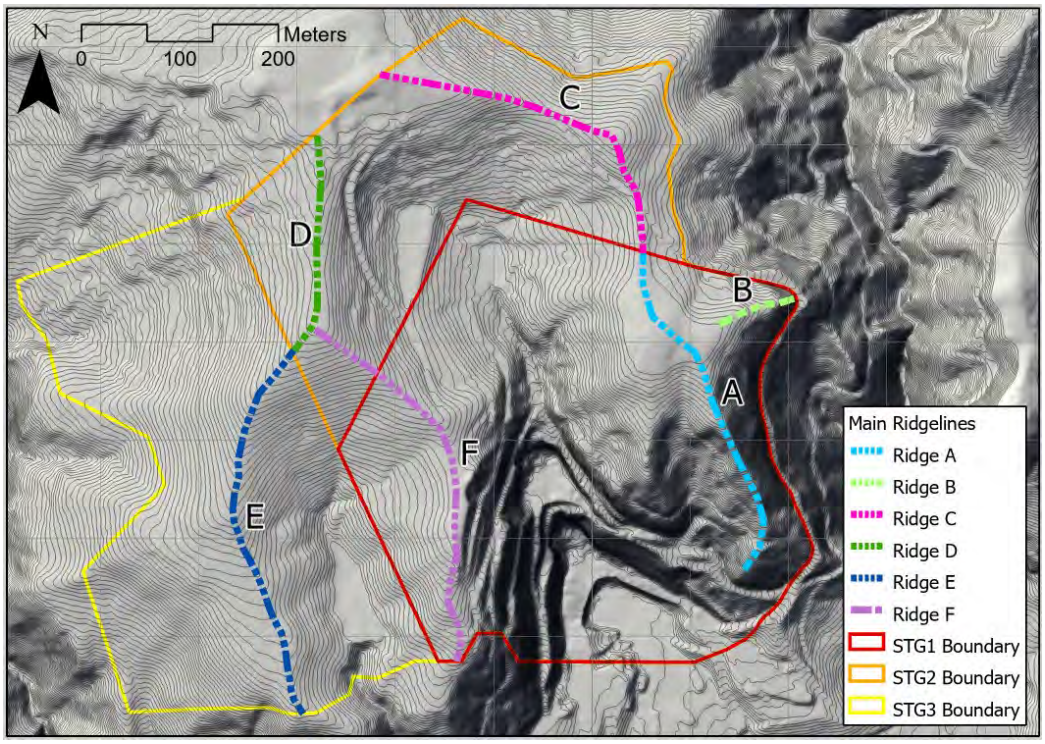

Figure 1 Main Ridgelines

83. The lowering of ridge lines A and C will:

(a) Change the appearance of ridgeline profiles within the site.
(b) Change the appearance of the skyline (when seen from below).
(c) Expose parts of the working quarry, where none were previously visible.

84. In general, while the extent of the working faces exposed by the removal of these ridgelines is small in relation to the overall extent of the quarry expansion, where these introduce a new element into the view, the effect is just over the minor threshold of the RMA.

Analytical Model

85. I have used a combination of GIS analysis and a 3D interactive model to understand the extent of change likely to occur and what will be seen from each of the Submitter properties visited.

86. Beginning on page 10 of my graphic evidence (attachment 6) is a set of images, taken from the 3D model, which show the changes that will occur to the view from each of the submitter properties that I visited.

87. Each set of images contains a map showing the location and direction of the view, a photograph from the site and two model images for each stage (with and without vegetation). To assist with orientation, key features that are easily seen in the photograph have been labelled on the images (i.e. reference trees, Mt William, and the main ridges within the site).

88. The purpose of these images is to help communicate the type and extent of the change to the landform within the site and the effectiveness of the proposed mitigation planting.

89. Mitigation planting within the model is shown at the following heights:

(a) Stage 1: Mitigation planting: 11m – 13m (~12 years growth)
Ecological corridor: 2m – 4m

(b) Stage 2: Mitigation planting: 18m – 22m (~20 years growth)
Ecological corridor: 6m – 8m

(c) Stage 3: Mitigation planting: 29m – 34m (~30 years growth)
Ecological corridor: 8 – 10m

Assessment Factors

90. From an assessment perspective, the ability to see parts of the quarry from locations where it was previously hidden from view, does not necessarily correspond to an excessive level of effect on landscape character and visual amenity. Consideration of several factors specific to the viewer location must be taken into consideration. These include:

(a) How are the existing valued views over the landscape composed and framed by the features within it?

(b) To what extent will the introduction of the quarry into the view affect the characteristics of the view. For example, will it be subservient to the main character drivers within the vista, or will it become the dominant visual feature and a focal attraction in itself?

(c) Will the removal of terrain expose views of other parts of the wider landscape that have a lower visual amenity values than what currently exist?

(d) What effects do features and artifacts in the landscape have on existing view shafts and visual amenity?

Summary of Effects on Submitters Properties

91. I have assessed the effects of the proposed quarry on existing landscape character and visual amenity from each of the submitter's properties visited. A detailed assessment and effects ratings from each location visited is appended to my evidence as attachment F. A summary of the effect ratings is as follows:

SUBMISSION NO. & LOCATION	EFFECT RATINGS (UNMITIGATED)	EFFECT RATINGS (MITIGATED)
Submission 33 209 Pinnacle Hill Road	Stage 1: *Low - Moderate* Stage 2: *Moderate* Stage 3: *Low*	Stage 1: *Low* Stage 2: *Low* Stage 3: *Very Low*
Submission 29 219 SH2 (Location 1)	Stage 1: *Very Low* Stage 2: *Very Low* Stage 3: *Negligible*	Stage 1: *Very Low* Stage 2: *Very Low* Stage 3: *Negligible*
Submission 29 219 SH2 (Location 2)	Stage 1: *Low-Moderate* Stage 2: *Low* Stage 3: *Negligible*	Stage 1: *Low-Moderate* Stage 2: *Low* Stage 3: *Negligible*
Submission 18 231 Pinnacle Hill Road	Stage 1: *Negligible* Stage 2: *Moderate* Stage 3: *Negligible*	Stage 1: *Negligible* Stage 2: *Low* Stage 3: *Negligible*
Submission 24 231B Pinnacle Hill Road	Stage 1: *Negligible* Stage 2: *Very Low* Stage 3: *Negligible*	Stage 1: *Negligible* Stage 2: *Negligible* Stage 3: *Negligible*
Submission 31 – Community Submission 233C Pinnacle Hill Road	Stage 1: *Negligible* Stage 2: *Low* Stage 3: *No effect*	Stage 1: *Negligible* Stage 2: *Very Low* Stage 3: *No effect*
Submission 15	Stage 1: *Low*	Stage 1: *Low*

247 Pinnacle Hill Road	Stage 2: *Low-Moderate* Stage 3: *Low*	Stage 2: *Low* Stage 3: *Low*
Submission 21 217 Pinnacle Hill Road	Stage 1: *Negligible* Stage 2: *Low-Moderate* Stage 3: *Low*	Stage 1: *Negligible* Stage 2: *Low* Stage 3: *Low*
Submission 22 215 Pinnacle Hill Road	Stage 1: *Low* Stage 2: *Low-Moderate* Stage 3: *Low*	Stage 1: *Low* Stage 2: *Low* Stage 3: *Low*
Submission 17 211 Pinnacle Hill Road	Stage 1: *No effect* Stage 2: *No effect* Stage 3: *No effect*	Stage 1: *No effect* Stage 2: *No effect* Stage 3: *No effect*
Submission 30 40 McPherson Road (Location 1)	Stage 1: *Low-Moderate* Stage 2: *Very Low* Stage 3: *Low*	Stage 1: *Low-Moderate* Stage 2: *Very Low* Stage 3: *Low*
Submission 30 40 McPherson Road (Location 2)	Stage 1: *Moderate* Stage 2: *Very Low* Stage 3: *Low-Moderate*	Stage 1: *Moderate* Stage 2: *Very Low* Stage 3: *Low-Moderate*

92. In general, these ratings are consistent with the those identified (in the previous table) from nearby public locations assessed in the s92 response.

93. Review of this table shows that the three most affected properties are those located closest to the quarry. These are:

(e) 209 Pinnacle Hill Road;

(f) 231 Pinnacle Hill Road; and

(g) 40 McPherson Road.

94. Unmitigated, from these locations the effects of the quarry on existing landscape character and visual amenity will be *moderate* with the introduction of new views into the quarry from nearby, or in the case of 40 McPherson Road, a significant increase in the extent of quarry visible.

95. Partial screening of the quarry site afforded by intervening vegetation and/or existing landforms outside of the quarry site means that only a relatively small proportion of the overall quarry will be visible.

96. The proposed mitigation for the above properties on Pinnacle Hill Road will reduce effects levels to *low* once it has reached a height of between 10m-14m. Due to the expected timing of the extraction process, the screen planting should achieve these heights before stage 2 extraction begins.

97. Effects on 40 McPherson Road cannot be mitigated within the site. Views of the site are currently screened by existing planting within the property and the removal of these trees would afford more open views of the quarry.

RECOMMENDED MITIGATION

98. In response to my assessment, the mitigation proposed in the Opus report has been revised to address effects associated with the overburden disposal area and from submitter properties.

99. An updated version of the proposed mitigation plan (Revision R3 dated October 2020) is found on page 7 of my graphic evidence, attachment 3, (not to be confused with the previous version that is contained in the s92 response).

100. The purpose of the updated mitigation planting plan is to identify areas where planting is required to:

(a) Screen most of the working faces and stripped batter slopes above the quarry from view from dwellings located to the north and east of the application site (accessed from Pinnacle Hill Road).
(b) Screen the leading edge of the overburden disposal area from view from residential dwellings and SH2 to the south using fast growing exotic species;
(c) Ensure that overburden is shaped to integrate with the adjacent natural landform and progressively re-grassed; and
(d) Provide a landscaped buffer between the overburden disposal area and the stream (riparian and native planting).

101. The plan also shows areas to be shaped to integrate with the surrounding natural contours and grassed for stabilisation/visual integration.

102. As identified in the s92 response, visual mitigation from the Mount William walkway is not practically achievable due to the elevated viewing angle involved.

103. In my opinion, a quarry closure plan should be prepared at least 10 years prior to the end of quarrying within the site. This plan should indicate how the completed quarry will be treated to integrate it with the surrounding landscape. The plan should identify:

(a) Treatment of the worked quarry benches and faces;
(b) Treatment of the quarry pit;
(c) Treatment of all other areas of disturbance within the site (stockpile areas etc).

104. As part of this process, material from the overburden disposal area may be used to establish a growing medium within excavated area. If this occurs, consideration should also be given to the rehabilitation of the disposal area.

REVIEW OF SUBMISSIONS RECIEVED

105. I have reviewed the submissions against the proposed expansion and address those within my area of expertise. Submissions that relate to landscape and visual effect can be broken down into one or more of the following categories:

(a) Effects on private property
    i. No assessment of effects has been undertaken from private property (Submission 17, 21, 31)
(b) Effects on existing visual amenity:
    i. Views of the quarry (Submission 15, 16, 17, 21, 22, 24, 29, 33)
    ii. Loss of vegetation (Submission 2, 15, 17, 19, 22, 24, 29, 30, 33, 36)
    iii. Views of the overburden disposal area (Submission 15)
    iv. Loss of dark sky environment (due to lowering of terrain that will expose views of Pokeno at night) (Submission 22, 33)
(c) Effects on existing landscape character

i. Loss of rural amenity (Submission 15, 29, 30, 33)

ii. Loss of vegetation (Submission 2, 15, 17, 19, 22, 30, 33, 36)

(d) Effects on natural character

i. Loss of indigenous vegetation within the SNA (Submission 17, 19, 30, 33, 36)

ii. Earthworks within the SNA (Submission 36)

(e) Effects on the Mt Williams walkway (Submission 15, 21, 22, 31, 33)

106. As previously identified, I visited several of the Submitter's properties with the Council's representative. The purpose of this visit was to identify if the effects of the quarry expansion on a representative selection of Submitter properties was likely to differ significantly from the representative view locations.

107. I have assessed the effects on landscape and visual amenity from the properties visited and have concluded that, in general, the level of effects experienced from these locations are consistent with those that are able to be experienced from adjacent public areas or are able to be predicted through a combination of viewshed analysis, site inspection and experience.

108. The exception to this is 209 Pinnacle Hill Road, which is located away from the nearest road within the visual catchment.

<u>Opus Report, s92 Requests and Response.</u>

109. During discussions with several submitters during my visit, I became aware that some submitters had relied upon the Opus landscape and visual assessment report and were not aware of the additional information request from Council and the associated response.

110. In my s92 response to Council I have assessed the landscape and visual effects from Mt William walkway, and from the telecommunication repeater near the summit. This location was selected because it provides the most extensive view of the site available.

111. In describing the changes to the landscape that will be experienced I stated:

> *All 3 stages will be clearly visible from this location due to the elevated terrain which affords a bird's eye view over the application site. The proposed overburden site will only be partially visible from this location due to the undulating terrain in the foreground and SNA.*
>
> *Stage 1 will result in very little change from this location, with only a small part of the quarry visible. From here, a thin strip of the eastern SNA between the upper quarry access track and the existing quarry face will be removed, overburden will be stripped from the ridge and the ridgeline lowered to the level of the track. The balance of the stage one extraction area will be screened by the foreground topography.*
>
> *The stage 2 works will be more evident than stage 1, with the removal of the norther ridge opening views into the upper benches. The lower benches and pit floor will remain screened by the foreground vegetation.*
>
> *Stage 3 will see the quarry break through the western ridge, opening views of the eastern benches and the pit floor. The western benches will be screened from view by the intervening landform. Earthmoving machinery and plant will be visible in the pit floor, as will any product stockpiles.*
>
> *The proposed ecological corridor will visually link the SNA areas on either side of the quarry but screen the quarry from view.*

112. A copy of this report is appended to my evidence in chief in attachment A.

113. In my opinion the effects of these changes on landscape character and visual amenity will be as follows:

(a) Stage 1 will have a ***Low-Moderate*** adverse effect;
(b) Stage 2 will have a ***Moderate*** adverse effect; and
(c) Stage 3 will have a ***High*** adverse effect.

114. As with the other view locations assessed, the rate of change to the landscape and views from this location will be a gradual.

115. In my opinion, it is also likely, over the operational life of the quarry, the vegetation within the Mt. William Reserve may grow to a height that blocks all views from the walkway, significantly reducing the overall effects from this location from those identified above.

116. A set of photomontages prepared from this location can be found on pages 49 to 55 of my graphic evidence (attachment 7).

S42a REPORT

117. I have read the s42A report prepared by Council's Planner and the report prepared by Council's landscape consultant.

118. I note that, in general the Council Planner and Landscape Consultant appear to concur with my analysis of effects.

119. At [255] of the s42A report, the Council Planner identifies that the WSP Opus and MGLA analysis do not take the existing baseline into consideration. This is correct.

120. I note that paragraph [255] includes the following extract from the Boffa Miskell report, which indicates that the level of effect from the statutory baseline is likely to be moderate.

> ***BML response – against the statutory baseline environment:***
> *With consideration of the 1997 baseline environment, the expected sensitivity of the receiving environment has the potential be greater than when assessed against only the existing environment (at the time of application).*
>
> *When applying the statutory baseline of annual extraction rate, and then assessing the proposed expansion of the quarry, the extent of modification and magnitude of change is substantially greater than what exists on site today. By this we mean that had the quarry operated within it's permitted extraction rate the existing environment would be substantially less modified than what currently exists.*
>
> *As noted above MGLA have not undertaken an assessment against the statutory baseline and we acknowledge that there are complexities to applying this when it is difficult to determine the likely landform a permitted extraction rate would have resulted in.*
>
> *It is considered the sensitivity of this landscape remains consistent with what has been assessed by WSP Opus and MGLA. However, when considering the scale and volume of extraction and applying the statutory baseline, the magnitude of change is increased to a moderate degree. As a result, the potential degree of adverse landscape effect are likely to be moderate.*

121. Table 1 of the Boffa Miskell report compares the effect ratings of the WSP Opus analysis and the MGLA analysis and identifies the potential visual effects against the statutory baseline (Page 431 of the compiled s42A report).

122. I note that at section 2.6 of the Boffa Miskell report (Page 431 of the compiled s42A report), the report states:

> *It should be noted that BML have not undertaken a fully landscape visual effects assessment and the potential visual effects below are in correlation with increase audience sensitivity and the 'theoretical' magnitude of change expected from each vantage point.*

123. In my opinion, without detailed knowledge of the existing physical and experiential environment that existed at the time, care needs to be taken when extrapolating a theoretical magnitude of change in such situations.

124. While I acknowledge that this has not been undertaken by either WSP Opus or myself, this is because of the paucity of information relating to the landscape at the time.

125. I have however reviewed the historical aerial photography contained on the Retrolens website and the Google Earth platform and note that digital aerials are not available for 1997. The closest aerial photograph that I could find was taken in 2001. A copy of this aerial is appended to my evidence of chief as attachment G.

126. Review of the historical aerial photography indicates that construction of the dwellings within the subdivision to the north of the application site began in 2012.

127. With reference to [229] of the s42A report, I have addressed the views from private residences, including those that are not represented by the public view locations in my evidence.

128. At [252], Council's Planner recommends that, should consent be granted, further mitigation planting is undertaken to the west of the stage 3 extraction area to address the visual effects from the Mount William walkway.

129. As outlined in my assessment of effects, due to the oblique viewing angle and distance involved, additional mitigation planting in this area is not likely to be effective. This can be seen in the photomontages on pages 49 to 55 of my graphic evidence (attachment 7) and the model.

130. It is however unclear why the Council Planner has recommended that additional mitigation planting as this does not appear to be a recommendation of the Consultant Landscape Architect.

131. Except for the requirement for additional mitigation for the reasons outlined previously, I concur with the findings of the s4aA report where it states as [253]:

> *Overall, subject to a satisfactory response from MGLA, additional mitigation measures and conditions of consent, I conclude that the potential adverse visual and landscape effects of the proposal will be acceptable.*

RECOMMENDED CONDITIONS

132. I have reviewed the suggested consent conditions contained in appendix L of the s42A report (Page 469) and make the following comments.

133. I support the condition requiring the preparation of a Landscape Mitigation and Management Plan (LMMP), Conceptual Site Closure Plan (CSCP) and Site Rehabilitation Plan (SRP). I do not support the timing requirements around the preparation of these plans or the requirement for additional mitigation planting to the west of the stage 3 extraction area.

134. The conditions require many management and mitigation plans to be prepared concurrently within 2 months of the commencement of consent. In my opinion, this will be difficult to achieve.

135. I consider that the conditions need to be carefully tailored to ensure that mitigation and restoration works are properly planned and implemented at the appropriate time. This requires consideration of several factors, including how overburden and clean fill will be managed within the site, site logistics and ecological management.

136. In my opinion, the LMMP should not be finalised until the sufficient certainty exists around the following plans:

(a) Quarry extraction areas including alignment, maximum quarry face length and approximate RL, and approximate maximum depth RL;
(b) Aggregate processing areas including site locations and areas;
(c) Stockpile areas including site locations and areas;
(d) Drainage plans for the areas identified in a) to c) above;
(e) Erosion and Sediment Control Plan (ESCP);
(f) Overburden Management Plan (OMP);
(g) Cleanfill Management Plan (CMP); and
(j) Ecological Mitigation and Monitoring Plan (EMMP);

137. With reference to condition 28(a)(ii), as previously stated, I do not consider that planting to the west of the stage 3 extraction area will provide any effective mitigation.

138. With reference to 28(d), the purpose of this requirement within the landscape mitigation condition is unclear as no associated effect has been identified.

139. In my opinion condition 28 should be amended to read (~~*deletions*~~ / ***insertions***):

> *28. Within ~~two (2)~~ **six (6)** months of the commencement of this consent, the Consent Holder shall submit to Waikato District Council's Monitoring Team Leader for certification, a Landscape Mitigation and Management Plan (LMMP) prepared by a suitably qualified landscape architect.*
>
> *The objective of the LMMP is to identify those landscape features and attributes of the site which are to be maintained, and the finished form of the site to manage the visual and landscape effects of the quarrying and filling activities to an acceptable level.*
>
> *The LMMP shall include, but not be limited to the following matters:*
> *(a) An annotated planting plan(s) which outlines the proposed location and extent of all areas of planting, including any revegetation, reinstatement planting, mitigation planting and natural revegetation. Location of planting shall be in general accordance with the mitigation plan prepared by Mansergh Graham Landscape Architects and the updated ecological corridor planting plan dated 21 September 2020, and shall also include additional planting to:*
> *(i) Mitigate the landscape and visual amenity effects of the proposal from the dwelling at 209 Pinnacle Hill Road.*

~~*(ii) Mitigate landscape and visual amenity effects of the proposal from views from Mt William Summit by planting to the west of stage 3.*~~

(b) A plant schedule based on the submitted planting plan(s) which details specific plant species, plant sourcing, the number of plants, height and/or grade (litre) / Pb size at time of planting, and estimated height / canopy spread at maturity.

*(c) ~~Details of draft~~ **Draft** specification documentation for **the implementation of landscape mitigation works including, but not limited to,** ~~any specific drainage, soil preparation, tree pits, staking, irrigation and mulching requirements.~~*

(i) Clearance of weeds and grasses
(ii) Topsoil care
(iii) Unsuitable topsoil and subsoils
(iv) Topsoil stripping and stockpiling
(v) Topsoil placement
(vi) Topsoil depths
(vii) Disposal of unwanted materials to waste
(viii) Plant size and quality requirements
(ix) Supply and possession of plants
(x) Delivery and temporary storage
(xi) Timing of planting
(xii) Planting
(xiii) Fertiliser requirements
(xiv) Watering
(xv) Mulch
(xvi) Maintenance (during establishment)
(xvii) Record keeping

~~*(d) An annotated pavement plan and related specifications, detailing proposed site levels and the materiality and colour of all proposed hard surfacing.*~~

*(e) A **long-term** landscape maintenance plan (report) and related drawings and specifications for all aspects of the finalised landscape design, including in relation to the following requirements:*
*(i) ~~Irrigation~~ **Watering requirements**;*
(ii) Weed and pest control;
(iii) Plant replacement;
(iv) Inspection timeframes; and
(v) Contractor responsibilities.

(f) A detailed staging maintenance plan prepared by a landscape architect or suitably qualified person. The staged maintenance plan should outline performance targets for proposed screening planting and should include but not be limited to:
(i) Minimum heights of trees;
(ii) Planting density; and
(iii) Screening requirements.

140. Due to the long timeframe over which quarrying will occur, a short delay in the timing requirements around the mitigation plan will be immaterial in terms of the effectiveness of the mitigation.

141. In terms of the requirement to prepare a conceptual site closure plan and a site rehabilitation plan (conditions 30 , 31, and 32), a sensible design for the conceptual closure plan is unlikely to be able to be developed without a clear understanding of the final shape of the extraction area and overburden volumes available for use in the restoration process. This information is unlikely to be available until well into stage 2 or possibly stage 3. For this reason, I recommend the conditions be amended as follow:

> *Conceptual Site Closure Plan 30.*
> ~~*Within two (2) months of*~~ ***At least ten years prior to the completion of quarrying operations*** ~~*the commencement of this consent*~~*, the Consent Holder shall submit to the Waikato District Council's Monitoring Team Leader for certification a Conceptual Site Closure Plan (CSCP). As a minimum, the Conceptual Site Closure Plan shall address the following:*
> *(a) Future landforms following all quarrying activities at the site;*
> *(b) Future groundcover following all quarrying activities at the site;*
> *(c) Reporting procedures; and,*
> *(d) Review procedures. 31.*
>
> *The Consent Holder shall review and update the CSCP* ~~*every five years and*~~ *within six months of any decision to cease quarrying at the site. The Consent Holder shall submit any revised CSCP to the Waikato District Council's Monitoring Team Leader for certification.*

CONCLUSIONS

142. Overall, the proposed expansion will result in a change in the appearance of the topography in and around the application site. From most locations, the proposed development will not result in a dramatic increase in the extent of the quarry visible, rather it will change in its appearance. The exception to this is from the elevated viewpoints to the west (VP6 and 7) and from submitter properties to the east (209 Pinnacle Hill Road, 231 Pinnacle Hill Road, and 40 McPherson Road).

143. I considered that mitigation is required and can be successfully implemented to reduce the level of effect on adjacent property owners. I do not consider that the recommended mitigation for views from the Mount William walkway will be effective.

144. I concur with the s42A repost where it concludes:

> *[271] ….visual landscape effects can be managed and mitigated to acceptable levels subject to compliance with robust consent conditions. Considering these effects cumulatively, along with the mitigation measures proposed and robust conditions of consent, my view is that that the potential adverse effects on the character and amenity will be acceptable.*

Attachment A: s92 Report

McPherson Quarry, Mangatawhiri

Response to the s92 Request for Additional Information

This s92 response has
been prepared as part of the consent application for
the proposed expansion of McPherson Quarry, Mangatawhiri.

All work has been undertaken and/or reviewed
by a Registered NZILA Landscape Architect.

Report prepared by:

Natalie Buhler
BLA, MLA

&

Dave Mansergh
Dip. P&R (Dist), BLA (Hons), MLA
Registered NZILA Landscape Architect
Director

Registered Member
of the
New Zealand Institute of Landscape Architects.

Report Version: R2

Date: November 2019

mansergh graham
LANDSCAPE ARCHITECTS

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INTRODUCTION

1 Mansergh Graham Landscape Architects Ltd (MGLA) have been engaged to review and respond to a s92 request for additional information around the expected landscape and visual effects associated with an application to expand the McPherson Quarry at Mangatawhiri.

2 This report has been prepared in response to the peer review of the '*McPhersons Quarry Expansion Proposal Landscape and Visual Assessment'* (The Opus LVA) prepared by P. Murphy of Opus in 2018. The report was peer reviewed by Mr. O. May from Boffa Miskell Ltd on behalf of Waikato District Council in 2019.

THE PURPOSE OF THE REVIEW

3 The purpose of this review is to determine the following:

a. To review and verify the findings identified in the Opus LVA (2018);
b. To respond to the s92 request for additional information.

4 This report does not alter or revise the Opus LVA, rather it is to provide a response to the information requested by the peer reviewer under s92 of the RMA. MGLA has independently reviewed the Opus LVA and undertaken a site visit to verify the findings of the Opus LVA. Where the findings of the Opus Report are not supported by MGLA, information is provided to the peer reviewer explaining the difference between effects ratings/findings. Where MGLA is in concurrence with the findings of the Opus LVA, no background information is provided, and the response is limited to the information requested in Section (13) of the s92 request.

MGLA Analysis

5 The following section provides an overview of the review of the Opus report undertaken by MGLA and provides the context against which the s92 response is framed.

Opus Report

6 The MGLA review of the Opus LVA within the context of the proposed amended quarry staging/pit design and site investigation has found that:

a. The original visual catchment identified on the *Visual Catchment Plan, (Attachment A)* appears to be inaccurate and not consistent with the findings of the report;
b. VP locations 3,5 & 6 do not appear to represent worst-case scenario views, and/or represent an appropriate viewing audience. The VP locations on the map were also not consistent with the photographs supplied;
c. The report needed further detail of the natural character features such as the SNA, Mt. William Scenic Reserve, Pouraureroa stream bush (ONF) and ponds on the existing site and the associated adverse effects as a result of the proposed expansion;
d. Effects were not considered from Mt. William Walkway;
e. Further consideration was needed of the effects on the clustering of properties directly north of the application site and a selection of properties along Pinnacle Hill Road;
f. Although it was mentioned that the proposed expansion will be incremental, the adverse effects of the overall land change (over the 3 stages) was not considered;
g. More consideration was needed on mitigating the resulting adverse effects.
h. The original LVA suggests that the adverse effects range from ***Very Low*** to ***Moderate***, which seem to be underestimated.

7 These findings appear consistent with the general findings of the peer reviewer.

MGLA Findings

8 A number of existing landscape features in and around the application site, and the nature of the activity itself will influence the extent to which the proposed quarry expansion will affect the existing landscape character and visual amenity. These include:

a) The extent to which the existing topography and vegetation surrounding the site, screen the expansion from view from surrounding locations;
b) The sensitivity of the landscape to change;
c) The design and location of the of the pits and overburden disposal site;
d) Staging and the direction of quarrying; and
e) The proposed mitigation and restoration approach adopted.

9 Analysis of the proposal found that:

i. The application site is located within a rural landscape. The character of the site is influenced by the existing quarry, the SNA and rural pastoral land which borders the application site.
j. The existing quarry is visible from main roads and local roads such as SH2, Irish Road, Pinnacle Hill Road, and Baird Road. The existing pit and lower benches are not visible from surrounding locations.
k. Mature vegetation within the SNA and a row of existing pine trees along the northern boundary will be retained and will aid in screening the proposed expansion from view from neighbouring private properties.
l. Each stage will affect a different part of the visual catchment for the duration of that stage. This means that over the operational life of the quarry, different areas will be affected in different ways. The entirety of the proposed expansion will not be visible from any one location within the visual catchment.
m. A number of private properties to south and to the north of the application site will be adversely affected by the proposed expansion.
n. The proposed expansion will be highly visible from Mt. William. Effects will be heightened from the telecommunication repeater.
o. Due to the nature of the quarry expansion and surrounding topography, the upper overburden stripping, benches and faces will be more visible than the lower benches and quarry pits.
p. Machinery will be more visible when working along the upper benches. No new machinery will operate as a result of the proposed expansion.
q. The proposed mitigation/rehabilitation approach will mean that, following extraction, while there will still be evidence that quarrying has occurred within the site, the site will be restored to rural character, allowing it to visually integrate into the surroundings as much as possible. Topsoil will be spread over benches and grassed or planted. The proposed overburden site will be shaped to integrate with the surrounding natural landform, topsoil will be progressively spread and re-grassed to reduce the extent of uncapped overburden material visible.
r. The proposed quarry expansion is consistent with the various landscape and visual amenity provisions of the Operative District Plan. The site is not an identified outstanding natural feature of landscape or an area of outstanding natural character.

AMENDMENT TO THE STAGING PLAN

10 As part of the review process it was identified that the staging plan contained within the Opus LVA would not work from a quarrying perspective. An amended staging plan and additional plans for each stage has been prepared and is appended to this report (appendix 4).

11 All responses to the s92 request, address the amended plan.

S92 REQUEST

12 The following additional information was sought by the peer reviewer in the s92 request. A telephone conversation with Mr O. May confirmed that the information required was limited to that requested in section (13) of the s92 request and as identified below.

> ***13.0 Recommendations***
> *13.1 Further information is sought for the following matters:*
>
> - *Overall the assessment needs to consider separately the sensitivity of the receptor (receiving audience) and the significance of visual effect separately for each viewpoint with a greater analysis of the magnitude of change experienced. These should be outlined clearly to describe the effect against the attributes and baseline and the significance of those effects.*
> - *The baseline for the landscape character assessment needs to be clearly established in order for the proposed changes in the landscape to be given context. Reference should be made to the Waikato District Landscape Study and existing analysis of the landscape character and sensitive features.*
> - *Specified links reference to heights, assumed time scales and areas regarding the overburden area, vegetation clearance, mitigation planting etc. would give a clearer impression in the scale of the proposals.*
> - *Further explanation should be given to the exclusion of viewpoints from the Mt William walkway and sufficient weight to how significant this is in relation to the number of users, proximity to the proposal and scenic quality of the view.*
> - *Visual simulations should be provided to demonstrate the expected level of impact or change in the view. This would help to confirm the changes described in the visual assessment and the level of effects.*
> - *Further information regarding the proposed development is required to clearly outline all of the elements that will be introduced into the landscape including, vehicles plant and machinery required in the expansion areas.*
> - *Refinement of illustrative material is required to support the report text including the Visual Catchment Plan and a landscape character area plan.*

13 Telephone Conversation DM/OM (21/10/19), further clarification and/or additional requests:

a. MGLA to produce photomontage from the telecommunication tower at Mt William summit and not at the trig station.

b. The residential housing, north of the application site (most notably 215 & 231 Pinnacle Hill Road), should be further considered and more weight should be put on the effects.

c. To explicitly state that there will be no new machinery as a result of the proposed expansion. To include a list of plant and machinery.

d. MGLA to produce visual catchment map and verify existing visual catchment and viewpoints to ensure high visibility locations have not been missed out of the original assessment.

e. It was agreed that a clear localised labelled aerial photo should be included in the assessment.

f. MGLA to review and verify Opus LVA effects ratings following a site inspection.

g. MGLA to produce a cross-section if required showing the effectiveness of the mitigation shown on the Opus mitigation planting. MGLA to make other mitigation recommendations as appropriate.

DOCUMENTS REVIEWED

14 As part of the review proceed the following documents have been examined:

a. McPhersons Quarry Ltd, McPhersons Quarry Expansion Proposal. Landscape and Visual Assessment. Opus. 31 August 2018. Issue 1.
b. McPhersons Quarry Expansion Visual Assessment Attachment A. Opus. 31 August 2018.
c. McPhersons Quarry Expansion Proposal Landscape and Visual Assessment: Peer Review. Boffa Miskell. 28 June 2019.
d. Operative Waikato District Plan (Franklin Section).
e. Operative Waikato District Plan (Waikato Section).
f. Proposed Waikato District Plan.

s92 RESPONSE

15 The following response is provided to the s92 request:

Proposed Expansion

16 This section responds to the following s92 request:

> *Specified links reference to heights, assumed time scales and areas regarding the overburden area, vegetation clearance, mitigation planting etc. would give a clearer impression in the scale of the proposals.*

17 The Opus LVA identifies that the existing quarry has been operating for approximately 60 years. At current and predicted rates of extraction, it is estimated that the resource will last approximately 30-40 years. Extraction rates are dependent on resource demand and may fluctuate on a yearly basis. The following time scales are estimated for each stage:

Stage 1 = Approximately 10 - 15 years
Stage 2 = Approximately 5 – 10 years
Stage 3 = Approximately 15 – 20 years

18 Volumes have been calculated using TIN modelling, with the differences between the existing landform and extraction staged identified. Design volumes are rounded to the nearest 1000m^3. No allowance has been made for bulking. Overburden average depth is assumed to be 15m. Preliminary volume calculations are as follows:

TABLE A - OVERBURDEN CALCULATIONS USING STRIPPING ABOVE RL118				
	Stage 1 (m^3)	**Stage 2 (m^3)**	**Stage 3 (m^3)**	**Total (m^3)**
Total Volume of Design (m^3)	10495000	8251000	12124000	***30870000***
Volume above 118RL (Stripping)(m^3) (Total A)	2477000	3700000	1853000	***8030000***
Overburden disposal onsite (approx. 70% of max overburden)	1733900	2590000	1297100	***5621000***
Volume below 118RL (m^3)	8018000	4551000	10271000	***22840000***

TABLE B - OVERBURDEN CALCULATIONS USING AVERAGE STRIPPING DEPTH OF 15M				
	Stage 1 (m^3)	**Stage 2 (m^3)**	**Stage 3 (m^3)**	**Total (m^3)**
Total Volume of Design (m^3)	10495000	8251000	12124000	***30870000***
Surface Area*	109332	142590	183010	***434932***
Volume if Calculated as average depth	1639980	2138850	2745150	***6523980***
Overburden disposal onsite (approx. 70% of max overburden)	1147986	1497195	1921605	***4566786***

* Assume 60% of 273330m2 already stripped for Stage 1

19 The extent of the overburden site is outlined on the attached plan in appendix 4. Overburden will be stockpiled to a height of up to 40m above existing ground level and shaped to integrate with the surrounding natural landform. Slopes will vary between approximately 28^{o} batter slopes with an average overall gradient of 18^{0}. The leading face will be planted to screen the works beyond.

Machinery

20 This section responds to the following s92 request:

> *Further information regarding the proposed development is required to clearly outline all of the elements that will be introduced into the landscape including, vehicles plant and machinery required in the expansion areas.*

21 A combination of Loaders, Dozers, Excavators, Dump Trucks, a Rock Drill, a Grader, a Water Cart, a Screen, Crushers and Road Trucks and Trailers will operate on site.

Full list of plant and machinery is listed below:

McPherson Quarry - Plant and Machinery	
Cat 980H Loader	Rock Drill
Cat 980G Loader	Mitsubishi HD550 Grader
Cat D10N Dozer	Mack Metroliner Water Cart
Cat D8L Dozer	Finlayson 883 Screen
Cat 336FL Excavator	Terex Finlay Jaw Crusher
Cat 350A Excavator	Sandvik QH331 Cone Crusher
Cat 769D Dump Truck	Road trucks and trailers

22 The above list of machinery is currently employed on site. The proposed expansion does not create a requirement for additional machinery to be used on the site.

Existing Landscape and Visual Character

23 This section responds to the following s92 request:

> *The baseline for the landscape character assessment needs to be clearly established in order for the proposed changes in the landscape to be given context. Reference should be made to the Waikato District Landscape Study and existing analysis of the landscape character and sensitive features.*

24 Although the Opus LVA introduces the site and its surroundings (wider context and immediate), the following additional information is provided in support of the assessment of the natural character features, physical and biological processes and values.

Location

25 The McPherson Quarry is located approximately 3.5km north-east of Pokeno township, at the base of the Bombay Hills. The McPherson Quarry can be accessed from McPherson Road, Mangatawhiri. The wider surrounding environment is characterised by a combination of its topography and land use. The application site sits at the juncture of the low lying flat - gently undulating alluvial plains, wetlands and valley floors associated with the Waikato River and its tributaries in the south, and the steep undulating terrain associated with the southern extent of the Hunua Range in the north.

26 The application site itself is characterised by the existing quarry, which visually contrasts the rural and conservation land use immediately surrounding the site. The wider surrounding environment is dominated by a mixture of pastoral development, influencing the area's distinctive rural appearance to the north and south, and conservation, large tracts of native bush and productive forestry to the east and west. Siting adjacent to the SH1 and NZMTR corridor to the east is the township of Pokeno, characterised by its mix of industrial and residential development. Between Pokeno and the application site, development patterns follow a typical town-country transect, with the higher density residential development giving way to large lot and lifestyle lots, rural industry and productive rural land.

27 A **landscape context plan** is included in appendix 5.

SNA

28 The adjacent SNA and parts of the existing application site is habitat rich.

29 Key features:

a. SNA is a Kanuka dominated forest.
b. Provides high-quality habitat for herpetofauna and avifauna within the SNA but limited quality within the other scattered areas.
c. Specimen trees including along the northern boundary of the existing site, provides moderate quality habitat for bats.
d. Waterbodies such as on-site ponds, provides novel habitat for waterfowl and shag species however the ecological function of the three ponds on site is expected to be low.
e. Pasture provides little habitat for native bats, birds and herpetofauna.

30 The dominant plant species[1] found within the SNA include:

Dominant Plant Species List – SNA	
Agathis australis	Kauri
Kunzea ericoides	Kanuka
Leptospermum scoparium	Manuka
Nothofagus truncata	Hard Beech
Ptisana salicina	King Fern

Waikato District Landscape Study 2017

31 The Waikato District Landscape Study 2017, prepared by Boffa Miskell Ltd, was prepared in support of the Waikato District Plan (WDP) review process. As stated in the WDLS[2], "*the landscape review has been prepared to provide consistency throughout the District Plan and to give effect to the Waikato Regional Policy Statement."* The general purpose of this review, as stated on pg. 9 of the WDLS, is to '*review the existing landscape characterisation and classifications and to re-evaluate the landscapes in line with current methods and case law.'*

32 The application site is located within the Eastern Hills unit identified in the Waikato District Landscape Study (WDLS). "*The landscape of this region, formed mainly by late Cenozoic block faulting and volcanicity, has four major geomorphic elements. Mesozoic and Cenozoic highlands form elevated blocks of the Henua apuakohe and Taupiri ranges in south Auckland and north Waikato (DOC, 2016c). Sandstones and siltstone comprise the dominant underlying substrate with some andesitic volcanics and sediments and coal seams*." The Eastern Hills unit overall is generally influenced by the southern extent of the Henua Ranges (Sic) and the large runs of grazing and dairying blocks with pockets of exotic forest on steep slopes.

33 Pouraureroa Stream Bush is identified as an outstanding natural feature within the WDLS and is located approximately 1km east of the application site. "*Pouraureroa Stream Bush forms a remnant stand of native bush surrounded by agricultural land use."* Earthworks, quarrying and excavation has been noted as one of the possible threats to this outstanding natural feature. "*Earthworks, quarrying and excavation that results in large scale scarring of the landscape and features, resulting in loss of legible landform, ridgelines and native vegetation cover."* The WDLS noted that scarring from earthworks carried out on slopes can be visually prominent with an adverse effect on the surrounding landscape. "*The location, shape, volume and size of earthworks generally determine their visual impact, but other factors, such as extent and treatment of cut, batter and spill on slopes are also important aspects that can influence the landscape outcomes of larger-scale earthworks."*

34 The site is not contained within an identified Outstanding Natural Landscape within the Operative Waikato District Plan nor does it directly affect Pouraureroa Stream Bush or any other identified outstanding natural feature or of significant amenity landscapes.

Further Analysis of Effects on Existing Landscape Character

35 In order to understand how the proposal will affect amenity values derived from existing landscape character and the natural character of the locality, it is necessary to identify the attributes of the key landscape elements that influence the character and amenity of the site and its surroundings.

36 These key landscape features work together in influencing perceptions of landscape character; and as such should be considered in isolation with caution. In this regard; the "whole" can be considered as

[1] https://www.doc.govt.nz/parks-and-recreation/places-to-go/auckland/places/mount-william-area/tracks/mount-william-walkway/ and Ecological Impact Assessment - McPherson Quarry 15 October 2019. Report Number 1708203-001 V5. Ecology New Zealand Ltd.

[2] Waikato District Landscape Study. Revision 01. November 2017. Boffa Miskell.

being “greater than the sum of its component parts”. However, a reductionist approach to character assessment is useful in that it allows the relationship between the various component features to be explored, their sensitivity to change identified, and their relative importance within the “whole” considered.

37 The effect of the proposed quarry expansion on the following features has been assessed against the key landscape elements identified during site investigations, analysis of aerial photography, and other relevant background information.

	Landscape Feature	Scale	Key Features & Attributes that contribute to the Existing Character (in order of degree of influence)	Potential Effect on Existing Landscape Character / Sensitivity to Change
1	Steep hill country, ridgelines and valleys associated with the south eastern extent of the Hunua Ranges (including Mt. William).	Very Large	• Dominant ridgelines, spurs rolling topography and gentle foot slopes; • Existing SNA area, including native and exotic mature planting understorey growth; • Clustering of forestry; • Pastoral grazing land; • Existing ponds within the application site; • Occasional dwellings; and scattered farm utility buildings; • Pinnacle Hill & Mt. William Summit, 2.5km gravel bush walk, including footbridges and stiles for access to the trig/summit; and • Panoramic Views over southern Auckland and Northern Waikato.	• Modification to the existing natural landform. • Loss of approximately 2.08ha of the SNA. • Loss of rural character and expansion of the extractive industry. • Due to the scale of the proposed activity, the landscape is less able to absorb large scale land use changes.
	Valley Floor/lowlands/ Alluvial Plain associated with the Waikato River	Very Large	• Mostly flat in the south to slightly undulating terrain towards the surrounding hills; • Rural pastoral grazing and mixed cropping; • Patches of mature indigenous vegetation (including deciduous), Shelterbelts and hedgerows; • SH1, SH2 and local roads; • Pokeno Township located south-west of the proposed expansion; and • Clustering of rural dwellings, scattered farm utility buildings/sheds.	• Further loss of rural character and expansion of the extractive industry (limited to minor cumulative effects in and around the application site).

Visual Catchment and Landscape Character

38 This section responds to the following s92 request:

> *Refinement of illustrative material is required to support the report text including the Visual Catchment Plan and a landscape character area plan.*

39 The Opus LVA report has included a visual catchment plan which dictates where the proposed expansion will be visible. As part of the verification process and a further investigation into the

potential visibility of the quarry expansion, a Zone of Theoretical Visibility (ZTV) analysis was carried out.

40 In order to determine the ZTV, a digital terrain model was created from the 0.5m lidar contour data set. The ZTV does not take into consideration above ground objects such buildings or vegetation that will potentially screen the quarry from view. The ZTV therefore represented worst-case scenario.

41 A series of ZTV maps were produced to identify the visual catchment within which the proposed quarry expansion would be potentially visible. The ZTV maps show the potential visibility of the site before overburden stripping and after the extraction, for each stage. It should be noted that different areas of the expansion become visible at different times throughout the process (incrementally) and this can be seen throughout the ZTV maps.

42 A site visit was carried out on the 22nd October 2019 to verify the findings of the Opus LVA, the ZTV analysis and to assess the effects of the proposed development from viewpoints representative of the range and types of views available from within the surrounding landscape (a **landscape context plan** is included in appendix 5). Six of the previously selected viewpoints (VP) were identified, visited and verified. An additional VP was also identified and included as part of this assessment.

43 In general, a combination of the landform and location of the existing quarry and proposed extension, the surrounding topography and vegetation will ensure that the visual catchment within which the quarry will be seen and will be restricted to:

a. Mt. William Walkway and summit;
b. Private rural land and a selected few rural dwellings to the north of the site;
c. Residential property to the south of the site; and
d. Motorists travelling along SH2 and local roads (including SH2, McPherson Road, Irish Road, Baird Road, Pinnacle Hill Road, Dean Road, Hitchen Road & SH1.)

44 The key findings from the ZTV analysis and site investigation are:

a. The theoretical visual catchment to the north of the application site is constrained by the location of the quarry and surrounding topography such as Mt. William;
b. That existing vegetation surrounding the quarry, such as the SNA and vegetation surrounding roads and dwellings, plays an important role in further restricting views into the quarry;
c. Views of the quarry will be restricted to 4km radius and available from roads such as SH2, McPherson Road, Irish Road, Baird Road, Pinnacle Hill Road, Dean Road, Hitchen Road & SH1.
d. The proposed quarry expansion cannot be seen in its entirety from any one location;
e. The lowest benches and working faces (views into the pit) of the various stages will be screened from many surrounding locations by existing topography;
f. Mt. William Summit will have the greatest proportion of the overall quarry visible at the one time.
g. Private locations immediately to the south and immediately north will have an increased visibility of the proposed expansion;
h. The expansion of stage 1 will be most visible from SH2 and Mt. William Summit;
i. The expansion of stage 2 will be most visible from SH2, Mt. William Summit and houses to the north;
j. The expansion of stage 3 will be most visible from Mt. William Summit and houses to the north.

45 Although the ZTV maps appear to suggest that the Quarry will become less visible as expansion occurs, it means that as quarrying progresses, some parts of the quarry will become hidden from view by the intervening landform, as the pit depth increases. Levels of disturbance to the original land surface will remain relatively constant within each stage. ZTV comparison between the existing landform and the proposed quarry landform takes the preceding stage excavation into account. Only the upper faces and benches of the quarry will be visible from outside the site.

46 The **ZTV analysis maps** are included in appendix 6, showing the visibility of the proposed expansion pre and post excavation.

47 A **landscape context plan** is included in appendix 5.

Analysis of Visual Effects: Separation of Viewer Sensitivity and Magnitude of Effect

48 This section responds to the following s92 request:

> *Overall the assessment needs to consider separately the sensitivity of the receptor (receiving audience) and the significance of visual effect separately for each viewpoint with a greater analysis of the magnitude of change experienced. These should be outlined clearly to describe the effect against the attributes and baseline and the significance of those effects.*
>
> *Further explanation should be given to the exclusion of viewpoints from the Mt William walkway and sufficient weight to how significant this is in relation to the number of users, proximity to the proposal and scenic quality of the view.*

49 The visual effect of the proposed expansion has been assessed from viewpoints surrounding the application site. The viewpoints (VP) identified in the Opus LVA were investigated along with viewpoints requested in the s92 or any other locations found to be relevant. A VP location plan is included in appendix 7.

50 Each VP is representative of the public views within the rural landscape surrounding the McPherson Quarry and within the residential area of Pokeno. In many instances the viewpoints are also representative of the views from private property adjacent to the VP.

51 An independent effect rating has been provided from each VP. Where ratings differ from the original Opus ratings, an explanation is provided. The view from each viewpoint (VP) was analysed within the methodological framework and rated using a standardised rating system (refer appendix 1 & 2 respectively). Ratings are provided for the effects at the completion of each stage. It must be recognised however that extraction will occur incrementally and at a relatively slow rate, meaning that while the appearance of the quarry may change over time, the effect it will have on landscape character and visual amenity will remain constant.

52 All ratings are based on the effects viewed from each VP (site visit) as opposed to the analysis of photographs.

53 The site visit found that some VP's identified by Opus did not represent either an occupied dwelling and/or other viewing audience or the worst-case scenario from that location. Where this occurs, MGLA has identified alternative VP's differ to give a better representation of the effects from that location.

Viewpoint 1: SH2, Southern Palms

54 VP 1 is representative of motorists travelling along SH2 and the first opportunity to view the application site while approaching from the east. While the existing quarry is visible from this VP, visibility of the quarry is limited to the upper benches due to the undulating terrain which screens most of the existing pit, northern and eastern benches from view. Although the existing quarry is clearly visible from this location, due to the soil colour contrast, the view is dominated by rural pastoral land and Mt. William which becomes the focal point of the view.

55 **Change Experienced:** Although not the primary feature within the view, the western faces of each stage, will be visible. While western faces will become more defined in stages 1 & 2, stage 3 will see the faces recede away from the viewer as extraction occurs. The skyline formed by the main ridgeline within the quarry will be incrementally removed revealing more of the SNA around the base of Mt.

William beyond. The pit, and the northern and eastern sides of the quarry, will be screened from view throughout all stages. Due to vegetative screening and the undulating topography in the foreground, the proposed overburden site will not be visible from this location.

56 Earthmoving machinery will be visible along the top benches of the western boundaries when overburden stripping and extraction occurs; however, the frequency and type of machinery will not change as a result of this expansion.

57 **Effects:** The effects associated with the proposed extraction include the ongoing change in the appearance of the landscape and frequent movement of machinery. From this location, because of the direction of the quarry, particularly in stage 3, the landform may look different (field of depth and definition of benches), however, the effects on the surrounding landscape will be the same. Although the size and shape will be significantly different, the proposed expansion will be seen in the context of an already existing quarry. Because of this, viewers should already expect machinery operating in this area. As extraction progresses to the west, more machinery will be seen along the secondary skyline, which will interrupt views of the SNA and Mt. William.

58 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as *Low*. The MGLA review rates the adverse effect as being *Very Low* for stage 1, *Very Low* for stage 2 and *Low* for stage 3. It should be noted that the level of effect will be a gradual/incremental change. Post closure, once mitigation has been established effects will reduce.

59 Because the level of effect is below the minor threshold of the RMA, mitigation is not considered necessary from this location.

60 **Sensitivity:** When considered from the perspective of motorists travelling along SH2, drivers and passenger have a transient view of the landscape. Because the landscape is generally experienced from a moving vehicle, the orientation and focus of the views experienced changes frequently. It also means that because the proposed quarry is only experienced for a relatively short period of time (within the context of the overall drive), the level of effects associated with landscape and visual change are limited to a relatively short duration. The change will also be experienced periodically (dependant on trip frequency) meaning that for some motorists, changes in the landscape will be less apparent and for other, more apparent. In general, this viewer group is not considered to be as sensitive as permanent residents around the site, whose every day amenity is affected to a greater extent by a static view.

Viewpoint 2: 233 Pinnacle Hill Road

61 With reference to a telephone conversation with the peer reviewer, further consideration has been given to the dwellings north of the application site (most notably 215 & 231 Pinnacle Hill Road). This VP differs to the original VP in the Opus LVA.

62 VP 2 is representative of a clustering of residential housing along Pinnacle Hill Road, directly north-east of the application site. Although the VP is taken from a public location, the analysis also takes into consideration the effects on the cluster of houses in the Pinnacle Hills subdivision at 233 Pinnacle Hills Road. These dwellings are located along a long private right of way and were not visited during the site inspection.

63 From the identified viewpoint, only a very small portion of the existing quarry is visible above the eastern SNA and over the foreground topography. From this location, the pastoral landscape in the foreground and the industrial area of Pokeno form the focus of the view in the middle distance. The view is directed and contained by the Pinnacle Hill road ridgeline to the east and the SNA including Mt. William Scenic Reserve.

64 Views of the existing quarry are screened from dwelling at 211, 213, & 215 Pinnacle Hill Road by intervening vegetation. The clustered dwellings located at 233, directly north of the site, are expected to have slightly more direct views into the application site, the most affected being 231 (the southernmost dwelling).

65 **Change Experienced:** While all stages will be partially visible from this location, stage 2 & 3 will be the most notable. Although the overburden site will not be visible through stage 1, stage 2 works are likely to open views up into the pit and the proposed overburden site. The ridgeline located within the mid-ground of this view will be removed as a result of stage 2. Stage 2 & 3 will see the expansion of the extent of exposed soil/bedrock visible, which will contrast with the surrounding pastoral land.

66 More of the quarry is expected to be visible from the identified VP on Pinnacle Hill Road, than from the dwelling at 231 Pinnacle Hill Road due to the higher elevation and shape of the foreground topography.

67 It was noted in the Opus LVA that there will be enough vegetative screening for these houses [to the north of the application site]. *"…these houses are mostly visually screened from the subject site by an existing exotic evergreen shelter belt*."[3] Although the shelterbelt along the northern boundary will provide some screening from the dwellings to the north, the majority of the quarry expansion will be hidden from view below the crest of northern ridgelines . This can be seen in the attached ZTV maps included in appendix 6.

68 Earthmoving machinery will be visible along the top benches, more notably in stage 2, however, the frequency and type of machinery will not change significantly as a result of this expansion.

69 **Effects:** The effects associated with the proposed extraction include the frequent movement of machinery and the ongoing change in the landscape. The effect on the landscape character and visual amenity include the loss of rural land pasture and the alteration of the foreground topography.

70 While proposed quarry expansion will result in a slight greater extent of the quarry being visible from these locations, most of the quarry will be screened from view by the foreground topography. Visible parts of the quarry expansion will include the initial overburden stripping associated with stage 2, and a small portion of the eastern benches, as the northern ridgeline within stage 2 is cut away and lowered. Machinery will only be noticeable along upper benches when overburden is stripped, and bedrock excavated. Machinery will not be visible as pit deepens.

71 As mentioned in the Opus LVA report, section (7.1)[4], "*The noticeable differences from the surrounding landscape are the variation in colour, with the quarry face ranging from the yellow/ brown soils to the dark grey/ blue rock, will contrast with the varying shades of green found in the pasture and bush cover*." As the bedrock weathers the extracted areas will become less notable.

72 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as ***Low***. The MGLA review rates the adverse effect as being ***Negligible*** for stage 1, ***Low*** for stage 2 and ***Negligible*** for stage 3. It should be noted that the level of effect will be a gradual/incremental change.

73 **Sensitivity:** Viewer sensitivity is expected to be greater where existing amenity derived from views over the rural landscape will be encroached upon by the introduction of partial views of the quarry. It should be noted that, only a relatively small portion of the quarry will be visible from these locations.

[3] Page 21. McPherson's Quarry Expansion Proposal -Landscape and Visual Assessment. Opus

[4] Page 23. McPherson's Quarry Expansion Proposal -Landscape and Visual Assessment. Opus

Viewpoint 3: 93 Irish Road

74 VP 3 is representative of the views from dwellings along Irish Road, approximately 200m from the overburden disposal area. The existing quarry is clearly visible beyond the scattered mature trees surrounding the dwelling within the midground. The SNA encroaches on the existing quarry either side which dominates the view.

75 From this location a direct view of the quarry and overburden disposal site is attainable. While the quarry faces, the stockpile area and the overburden disposal site are all visible from this location, there are only a few viewing opportunities from the road itself, with existing mature vegetation screening direct views of the quarry.

76 **Change Experienced:** Stage 1 will be clearly seen, with a direct line of sight towards the eastern benches from this location. The quarry landform will gradually take on a more defined benched appearance and the existing vegetation above the highwall access road (to the east) will be removed. While the appearance of the quarry will change gradually, the extent of quarry visible will remain constant and as a result the overall effect on landscape character and visual amenity from this location will not change.

77 While filtered views, through the trees, of the overburden area will be obtained from dwellings along Irish Road, the effects of the overburden stockpile, on landscape character and visual amenity will be mitigated by the proposed restoration planting ('Screen Planting, Fast growing Mix', as seen on the mitigation plan included in appendix 8). The rate of change in the overburden are will tied to the initial stripping associated with each stage. Mitigation planting will soften the appearance of the leading edge of the overburden until area is grassed.

78 While stage 2 will alter the appearance of the skyline by lowering the skyline ridge, due to the intervening landform within the SNA and surrounding vegetation, the majority of stages 2 & 3 will be screened from view.

79 **Effects:** The effects associated with the proposed extraction include the ongoing change in the landscape and the frequent movement of machinery. As stage 1 will be seen within the context of the existing quarry, the land change will not be notable to viewers. As the overburden is stripped, the frequency of machinery within the overburden site will increase. The overburden site will be progressively shaped to integrate with the surrounding natural landform, topsoil returned and grassed to reduce the extent of uncapped overburden material visible. Until it is capped and grassed, the overburden material will visually contrast the textures and colours of the surrounding pastoral land, affecting existing visual amenity derived from views of the existing rural landscape. As the quarry pit deepens, bedrock is extracted and machinery work out of sight, the adverse effects will lessen.

80 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as *Moderate*. The MGLA review rates the adverse effect as being *Low-Moderate* for stage 1, *Very Low* for stage 2 and *Negligible* for stage 3. This is because the visual characteristics of the existing landscape is heavily influenced by the existing quarry. It should be noted that because of the staged approach, landscape change will be gradual. Therefore, the rate at which effect levels change will also be gradual. Post closure, once mitigation has been established effects will reduce.

81 **Sensitivity:** The occupants of the dwelling represented by this viewpoint have provided written approval to the application. It is therefore assumed that they are not sensitive to landscape or visual change. The effects on this property can therefore not be taken into consideration.

Viewpoint 4: SH2, outside 286

82 This viewpoint is representative of motorists and passengers travelling along SH2 and dwellings to the south of the application site. The existing quarry is the dominant visual feature within the view and

clearly visible beyond the flat - undulating terrain in the foreground. The view is backdropped by steeply undulating terrain associated with the Hunua Range and the Mt. William Scenic Reserve in the background. Almost all the existing quarry can be seen above the existing overburden stockpile, with the working faces of the quarry benches creating a visual contrast from the surrounding SNA and rural environment.

83 **Change Experienced:** Stages 1 and 2 will be clearly seen, with a direct line of sight towards the northern, eastern and western benches from this location. The landform inside the quarry will gradually take on a more benched appearance and the existing vegetation above the highwall access road (to the east) will be removed. As stage 2 progresses and the northern ridge within the quarry is lowered, views to the rural landscape beyond will open. While the appearance of the quarry will change gradually, the extent of quarry visible will remain constant and as a result the overall effect on landscape character and visual amenity from this location will not change. Stage 3 will be screened from view by the vegetated hillside (SNA) to the west of the existing quarry void.

84 Direct views of the overburden area will be obtained from SH2 for motorists travelling east and west. During stripping and overburden disposal operations, overburden will be placed in a series of lifts and will take on a brownish appearance, as material is placed and spread. Following placement and contouring to integrate into the surrounding natural landform, each area will be grassed, restoring its appearance, like the surrounding pastoral landscape. The rate and frequency of change in the overburden are will tied to the initial stripping associated with each stage. Mitigation planting will soften the appearance of the leading edge of the overburden until it is grassed.

85 **Effects:** Although the proposed expansion will be seen in the context of the existing quarry, the shape and colour will be significantly different to the existing quarry. The effects associated with the proposed extraction include the frequent movement of machinery and the ongoing change in the landscape. Once the mid to upper benches have been extracted and machinery will not be visible (as pit deepens), the adverse effects associated with this will lessen.

86 The overburden site will be progressively shaped to integrate with the surrounding natural landform, topsoil returned and grassed to reduce the extent of uncapped overburden material visible. Until it is capped and grassed, the overburden material will visually contrast the textures and colours of the surrounding pastoral land, affecting existing visual amenity derived from views of the existing rural landscape.

87 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as V*ery Low* (from SH2) and M*oderate* (from residential). The MGLA review rates the adverse effect as being *Low - Moderate* for stage 1, *Moderate* for stage 2 and *Low* for stage 3. It should be noted that the level of effect will be a gradual/incremental change. Post closure, once mitigation has been established effects will reduce.

88 **Sensitivity:** As from VP 1, when considered from the perspective of motorists travelling along SH2, drivers and passenger have a transient view of the landscape. Because the landscape is generally experienced from a moving vehicle, the orientation and focus of the views experienced changes frequently. Because the proposed quarry is only experienced for a relatively short period of time (within the context of the overall drive), the level of effects associated with landscape and visual change are limited to a relatively short duration. The change will also be experienced periodically (dependant on trip frequency) meaning that for some motorists, changes in the landscape will be less apparent and for other, more apparent. In general, this viewer group is not considered to be as sensitive as permanent residents around the site, whose every day amenity is affected to a greater extent by a static view.

Viewpoint 5: 113 Baird Road

89 The location of the VP on the attached map, attachment A, within the Opus LVA[5], differed to the VP represented in the photograph supplied. The quarry was not visible from the VP5 located on the map and the photograph supplied was also not representative of the worst-case scenario within the general vicinity. MGLA has selected a VP representative of a nearby permanent dwelling with a clear view of the quarry.

90 The existing quarry is clearly visible along Baird Road between shelterbelts, specimen trees, beyond dwellings, cultivated land and associated development and pastoral paddocks. While there are clean direct views along Baird Road, there is a large amount of intervening vegetation along the road, accessways and surrounding dwellings.

91 While most of the overburden disposal area is screened from view, during placement the overburden disposal area at the base of the quarry will take on a brownish appearance, as material is placed and spread. Following placement and contouring to integrate into the surrounding natural landform, each area will be grassed, restoring its appearance to like the surrounding pastoral landscape. The rate and frequency of change in the overburden are will tied to the initial stripping associated with each stage. Mitigation planting will soften the appearance of the leading edge of the overburden until it is grassed.

92 **Change Experienced:** The viewpoint is at sufficient distance that the quarry will only form part of the range of views available, including that towards Mt William. All stages will be visible beyond development within the foreground. Due to the vegetation screening within the mid-ground, the proposed overburden is only partially visible from this location. Following the completion of stage 1, the stage 2 overburden stripping will be clearly visible above the existing quarry. As quarrying progresses, the northernmost ridge within the site will be lowered, leaving a stepped appearance in the skyline profile. Stage 3 will be partially visible above the remnant landform and SNA to the west of the existing quarry, resulting in the visibility of the upper overburden stripping and benches. Once stage 3 breaks through the western ridgeline, the upper benches will be visible on either side of the SNA in the foreground. The pit floor will not be visible from this location.

93 Overall, the extent of quarry visible from this location will not increase dramatically due to the remnant ridge and SNA in the foreground.

94 **Effects:** Due to the distance from the application site and the ability to view the proposed expansion, effects associated with the land use change that will result in a loss of rural landscape character and views of open green space and vegetation, will be minimised. The proposed extraction will create an increased contrasting appearance to the surrounding bush cover and pastoral land uses. Stage 3 will expose bedrock directly behind the SNA which will form a contrast between that and the surrounding SNA and pastoral land.

95 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as *Low*. The MGLA review rates the adverse effect as being a *Low-Moderate* adverse effect for stage 1, a *Low* adverse effect for stage 2 and a *Low* adverse effect for stage 3. It should be noted that the rate of change between these effect ratings will be a gradual and incremental.

96 **Sensitivity:** From private dwelling in this location, viewer sensitivity is considered to be higher than for road users and/or transitory viewers. This is because visual amenity may be derived from permanent (north facing) views across the landscape from within the dwelling and associated outdoor living areas. It should be noted however that the existing quarry already influences visual amenity from this location and although the appearance of the quarry will change, the overall extent visible will not increase dramatically.

[5] Page 12. McPherson's Quarry Expansion Visual Assessment, Attachment A. Opus

Viewpoint 6: Hitchens Road, Pokeno

97 The location of the VP on the attached map, attachment A, within the Opus LVA[6],differed to the VP represented in the photograph supplied (Opus LVA). MGLA has supplied an updated photograph from the VP identified in the Opus LVA.

98 This VP is representative of the view from the Hitchens Estate, an elevated residential area in Pokeno. The view is characterised by Pokeno township and resent residential development in the foreground, rural pastoral land and lifestyle block development in the middle distance and the Hunua Ranges in the background. The existing quarry is visible at the base of the ranges, nestled into the steeply undulating terrain. The visual contrast between the exposed rock within the quarry, the adjacent pastoral grassland and the darker toned bush backdrop highlights the presence of the quarry site. The Mt. William summit forms the focal attraction within the view and is the visually dominant landscape feature.

99 **Change Experienced:** From this VP, all 3 stages of the quarry development will be visible at a distance over the undulating terrain and scattered vegetation in the foreground. The proposed overburden site will not be visible from this location.

100 Stage 1 & 2 will see the expansion of the pit to the west and an alteration to the profile of northern ridgeline within the site. The stage 1 and 2 pits will be largely screened from view behind the remnant ridge and SNA in the foreground. Only the upper benches will be visible above this feature, with the pit floor screened from view by intervening topography.

101 Stage 3 will see the stripping of overburden and the pit breaking through the western ridge behind the SNA. At this point, the extent of quarry visible will increase substantially, taking on the appearance of two separate quarries joined by a narrow band of benching above the SNA. While this change will be backdropped by the major skyline ridge beyond the site, it will alter the appearance of the pastoral landscape to the west of the existing quarry.

102 **Effects**: Similar to that of VP 5, due to the distance at which this VP is located away from the application site, effects will be minimised compared to the other viewpoints closer to the site. Due to the steeply undulating terrain backdropping the application site and the nature of the proposed quarry extraction, there will be no new skyline as a result. As stage 3 expands to the west, in the latter part of stage 3, once stage 3 breaks throughout the ridgeline, the pit will be seen on either side of the SNA in the foreground. Extent visible will increase as stage progresses. The proposed extraction will create an increased contrasting appearance to the surrounding bush cover and pastoral land uses.

103 The Opus report rates the adverse effect on the landscape character and visual amenity from this location as *Very Low*. During operational life stage 1 will have a *Very Low* adverse effect, stage 2 will have a *Low* adverse effect and stage 3 will have a *Moderate* adverse effect. It should be noted that the level of effect will be a gradual/incremental change. Post closure, once mitigation has been established effects will reduce.

104 **Sensitivity:** From this location, viewer sensitivity is considered to be higher than for road users and/or transitory viewers. This is because visual amenity may be derived from permanent (north east facing) views across the landscape. The change will be seen within the context of the existing quarry.

105 The viewpoint is at enough distance that the quarry will only form part of the range of views available, including that towards Mt William.

[6] Page 13. McPherson's Quarry Expansion Visual Assessment, Attachment A. Opus

Viewpoint 7: Mt William Summit

106 This section responds to the following s92 request:

> *Further explanation should be given to the exclusion of viewpoints from the Mt William walkway and sufficient weight to how significant this is in relation to the number of users, proximity to the proposal and scenic quality of the view.*

107 An additional VP located at the telecommunications repeater on Mt William (below the trig) has been included in this assessment. This VP is representative of people using the Mt. William Walkway. The VP was selected as it is the most exposed view of the application site from the walkway (worst case scenario). While the quarry will be partially visible from other sections of the track, it is often partially screened by foreground vegetation (within the reserve) or intervening landforms. The track opens out into pastoral land near the summit, where views of the quarry gradually increase with elevation. It should be noted that there are limited viewing opportunities from the lower part of the walkway due to the dense canopy cover.

The elevated terrain affords panoramic views across the wider rural landscape including large tracts of native bush (including Mount William reserve and SNA), pockets of production forestry, pastoral development, market gardens, the Waikato River and river delta to the west, industrial and residential development within Pokeno to the south, SH1 and SH2, lifestyle blocks and the quarry to the east. From the summit, Auckland City is visible to the north.

108 From this VP the existing upper half of the quarry is clearly visible beyond pastoral land and the SNA. It is seen within the context of existing excavated works and existing quarries within the wider landscape. Only a small portion of the proposed overburden disposal area is visible beyond the ridgeline in the foreground.

109 **Change Experienced:** All 3 stages will be clearly visible from this location due to the elevated terrain which affords a bird's eye view over the application site. The proposed overburden site will only be partially visible from this location due to the undulating terrain in the foreground and SNA.

110 Stage 1 will result in very little change from this location, with only a small part of the quarry visible. From here, a thin strip of the eastern SNA between the upper quarry access track and the existing quarry face will be removed, overburden will be stripped from the ridge and the ridgeline lowered to the level of the track. The balance of the stage one extraction area will be screened by the foreground topography.

111 The stage 2 works will be more evident than stage 1, with the removal of the norther ridge opening views into the upper benches. The lower benches and pit floor will remain screened by the foreground vegetation.

112 Stage 3 will see the quarry break through the western ridge, opening views of the eastern benches and the pit floor. The western benches will be screened from view by the intervening landform. Earthmoving machinery and plant will be visible in the pit floor, as will any product stockpiles.

113 The proposed ecological corridor will visually link the SNA areas on either side of the quarry but screen the quarry from view.

114 **Effects:** Adverse effects from the Mt. William trig station are lower than from the nearby telecommunications repeater, where the quarry is most visible and views over the quarry are expansive. The effects from this VP will be influenced by a combination of the extent of the quarry visible, the visual contrast between the quarry pit and the adjacent rural and perceptions associated with extractive industries.

115 The quarry will become increasingly visible as extraction expands to the west and the opens views into the pit floor. This is likely to change the existing characteristics of the view across the landscape, with the quarry becoming the dominant visual element within the vista. The rural characteristics of the view will change to that of an extractive industry.

116 Section (7.1) of the Opus LVA[7] identifies that *"The noticeable differences from the surrounding landscape are the variation in colour, with the quarry face ranging from the yellow/ brown soils to the dark grey/ blue rock, with contrasts with the varying shades of green found in the pasture and bush cover."* Although other quarries and excavated works can be seen from this VP, due to the proximity to the application site from Mt. William, the adverse effect on the surrounding landscape character and amenity will be considerable. The machinery movement and safety beacons will draw attention to their presence during stripping and excavation operations.

117 Stage 1 will have a *Low-Moderate* adverse effect, stage 2 will have a *Moderate* adverse effect and stage 3 will have a *High* adverse effect. It should be noted that the rate at which effects change will be a gradual. It should also be noted that, over the operational life of the quarry, the vegetation within the Mt. William Reserve may grow to a height that blocks all views to the east [of the proposed expansion] from the walkway, significantly reducing the overall effects from this location.

118 **Sensitivity:** Viewing opportunities between the summit and the start of the Mount William Track (McMillan Road) are limited. While track users are considered to be less sensitive to change than other viewer types (e.g. permanent residents), visual amenity expectations are likely to be high, with many track users seeking views over the surrounding landscape from the vantage points along the track.

Summary

119 Overall, while the proposed expansion will result in a change in the appearance of the topography in and around the application site. From most locations, the proposed development will not result in a dramatic increase in the extent of the quarry visible, rather it will change in its appearance. The exception to this is from the elevated viewpoints to the west (VP6 and 7) where the effect of the stage 3 expansion will be more overt on existing landscape character and visual amenity.

120 The overall adverse effects ratings will range between *Negligible* and *Low-Moderate* for stage 1, *Very Low* and *Moderate* for stage 2 and *Negligible* and *High* for stage 3. The overall effects therefore range between *Negligible-Very Low* and *High*.

Photomontage from Mt. William

121 This section responds to the following s92 request:

> *Visual simulations should be provided to demonstrate the expected level of impact or change in the view. This would help to confirm the changes described in the visual assessment and the level of effects.*

122 In addition to this, it was requested (via telephone) that the photomontage will be produced from the telecommunication repeater at Mt William summit and not the trig station.

123 A set of photomontages has been prepared from viewpoint VP7 and is included with the VP photographs in appendix 7.

[7] Page 23. McPherson's Quarry Expansion Proposal -Landscape and Visual Assessment. Opus

RECOMMENDED MITIGATION AND QUARRY CLOSURE PLAN

Landscape and Visual Mitigation

124 As a consequence of the proposed amendment to the staging and overburden disposal area boundaries, and the MGLA review of the effect ratings, the proposed mitigation has been updated to address effects associated with the overburden disposal area when seen from viewpoints in and around SH2 and Irish Road. Visual mitigation from the Mount William walkway is not practically achievable. The mitigation plan combines the proposed ecological mitigation with the recommended landscape and visual mitigation plantings. The amended mitigation plan is appended in appendix 8.

125 The purpose of the proposed mitigation plan is to:

a) Screen the leading edge of the overburden disposal are from view from residential dwellings and SH2 to the south using fast growing exotic species;
b) Ensure that overburden is shaped to integrate with the adjacent natural landform and progressively re-grassed;
c) Provide a landscaped buffer between the overburden disposal area and the stream (riparian and native planting);
d) Screen the quarry pit from view from the dwelling at 231 Pinnacle Hill Road using the ecological mitigation planting along the northern boundary of the site; and

Quarry Closure Plan

126 A quarry closure plan will be produced at least 10 years prior to end of works.