



30 May 2017

The Resource Consents Planner
Dunedin City Council
PO Box 5045
Dunedin



Dear Sir / Madam

**PROPOSED RESIDENTIAL SUBDIVISION OF LOTS 10 AND 27 SUB-2017-32
94 HOLYHEAD STREET, OUTRAM
BALMORAL DEVELOPMENTS (OUTRAM) LTD**

Please find the following items attached-

1. Layout plan showing the proposed subdivision.
2. Layout plan with aerial photograph underlay.
3. Infrastructure plan showing proposed stormwater drainage.
4. Infrastructure plan with aerial photograph underlay.
5. Form 9 application.
6. Copy of Certificate of Title OT12B/346.
7. Foul effluent disposal information.
8. Stormwater drainage report (Fluent Solutions).
9. Infrastructure services report (CPG).
10. Landscape assessment report (Site Environmental Consultants).
11. Supplementary landscape notes (Site Environmental Consultants).
12. Contamination assessment report (Spiire).
13. HAIL property search – DCC records.
14. HAIL property search – ORC records.
15. Affected persons consent forms.
16. Copy of the consent under SUB-2017-32, inc. consent plan.
17. Dunedin City Council assessment of residential capacity report.
18. \$7,500.00 subdivision application fee (notified application).

Introduction & Objective

The objective of this application is to obtain resource consent (subdivision, land use and earthworks) for a proposed residential development of the land contained in Lots 10 and 27 of SUB-2017-32, at 94 Holyhead Street, Outram.

This application is made by Balmoral Developments (Outram) Limited (the applicant).

The applicant proposes a total of 15 new (vacant) residential sites along with several additional parcels to be created for public access and residual land purposes.

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Existing Site

Location

The application property comprises an area of 2.2750 hectares, being located at 94 Holyhead Street, Outram, Dunedin, and legally described as Lots 10 and 27 of SUB-2017-32 (part of Lot 2 DP 20759). The site is bordered by State Highway 87 (to the north-west), the ORC Taieri River stop bank (to the south-east), and residential activities (to the north-east and south-west).

The application property is currently part of the land held in Certificate of Title OT12B/346, although this title reference will change upon completion of the subdivision consented (but not yet effected) under SUB-2017-32. A copy of the current title is attached. It is relevant to note that there are no encumbrances registered on the title which might affect the processing of this application.

SUB-2017-32 was recently issued by Dunedin City Council (issued on 22 May 2017). This subdivision comprises a development to create 25 new vacant residential sites along with a site containing the existing historic dwelling and several infrastructure sites. A copy of the consented application plan for SUB-2017-32 is attached. The consent owner of SUB-2017-32 is the same as the current applicant (i.e. Balmoral Developments (Outram) Ltd), and as such the applicant has full control over all cross-consent issues between the two developments.

Zoning and District Plan Matters

The application land lies within the Rural Zone of the operative Dunedin City District Plan and the Rural Taieri Plains Zone of the proposed Dunedin City District Plan.

The existing residential activities to the south-west of the application land lie within the Residential 5 Zone of the operative District Plan and the Township and Settlement Zone of the proposed District Plan.

The existing residential activity to the north-east of the application land lies within the Rural Zone of the operative District Plan and the Rural Taieri Plains Zone of the proposed District Plan.

The operative District Plan shows Mountfort Street (State Highway 87) as a National Road and Holyhead Street as a Local Road on its road hierarchy map.

The District Plan recognises the application site as being subject to High Class Soils (refer District plan Map 75).

The District Plan recognises the south-east portion of the site as being subject to Ground water Protection Zone A.

Occupation, Topography and Land Use

The application land consists of several open paddocks that have traditionally been used for a combination of agriculture and grazing activities.

In terms of topography, the site is reasonably flat, although a slight crest in the natural form extends across the site from the north-east to the south-west, which separates the surface water flows into different catchment areas.

The land to the immediate north-east of the site is a small (0.3246 hectare) parcel of Rural Zone land, which is principally occupied by an existing residential activity.

The land to the immediate south-west of the site will become occupied by residential activities (in accordance with the Residential 5 Zone which applies to that region) as the development under SUB-2017-32 is progressively implemented.

The land to the north-west of the application site is operated by New Zealand Transport Agency (NZTA) as part of the state highway network, although it is relevant to note that there are two formed roads within the highway corridor, the closer of which is an access road currently servicing the application land and the residential activity to the north-east of the application land. This access road branches from the main state highway carriageway at an existing intersection located at the western corner of the subject land.

The land to the south-east of the application site is operated as a stop bank facility by Otago Regional Council (ORC). The purpose of this facility is to contain flows from the Taieri River in periods of extreme weather.

Access

The site is presently accessed from Mountfort Street (State Highway 87). The state highway access occurs at the intersection formation between the highway carriageway and the unnamed public road that then runs along the north-west boundary of the application land.

Services and Drainage

The application land presently has no reticulated water connection. Any rural activity within this land would typically rely on collection of rainwater to provide potable water supply. However, there is an existing 50mm dia public ridermain running within the Mountfort Street corridor to the north-west of the property, and it is anticipated that the consented subdivision under SUB-2017-32 will soon provide further public water infrastructure within the residential land to the south-west of the application site.

Electricity and telecommunications infrastructures similarly do not exist to the subject land. However, existing supply infrastructure is located within Mountfort Street and will also be installed as part of the SUB-2017-32 development.

Stormwater is presently drained from the site by way of two catchment flows. Approximately half of the site drains in a north-west direction to existing road swales in Mountfort Street. The remaining half of the site drains in a south-west direction to the existing stormwater depression near Holyhead Street within Lot 31 of SUB-2017-32, from which the water is currently managed in part by natural ground soakage and in part by a modest pump system from the depression area to the Taieri River. The residential development under SUB-2017-32 has proposed the installation of an upgraded public stormwater detention and discharge facility within Lot 31 of that consent, including a larger capacity pond and a new stormwater pumping station that will discharge water at a rate of 15 litres per second (l/s) across the stop bank and into the Taieri River. This infrastructure will be installed prior to the development proposed in this application being completed.

There is no foul sewage disposal infrastructure on-site at present. Any rural activity within this land would typically rely on a septic tank system to manage foul sewage discharge. Common practice within the Outram residential areas is to install individual on-site foul treatment facilities, often modern tank units that include advanced treatment methods. The consented subdivision under SUB-2017-32 has adopted this approach and has been approved by Dunedin City Council with this in mind.

Hazards

As part of the preparation of this application, Council's hazard database has been reviewed. The site is identified as being subject to four natural hazards, as discussed below.

Hazard #10100 relates to the Natural Hazards on the Taieri Plain. The associated report (2012) infers that the specific class of hazard identified relates to "Waterway" and "Overland Flow Path". The status of the hazard is recorded as "superseded".

Hazard #11582 appears to be the superseding record for the hazard discussed above. An ORC report dated June 2014 records the site as having been part of a historic "Overland Flow Path". This hazard was explored in the Plan Change 14 decision, in which it was acknowledged that the risk attached to this hazard was mitigated by the Taieri River stop bank structure. It is anticipated that appropriate building levels on the new vacant residential sites will be established through future building consent applications (the Building Act provides for protection from adjoining surface flows).

Hazard #10111 records that the area may be subject to increased shaking due to Earthquake Amplification. This is a relatively common and non-specific hazard annotation, and can be mitigated during the house design process. The effectiveness of any proposed mitigation can be assessed at the time that building consent is sought for new dwellings on the site.

#10407 records that the site has been mapped as having a potential liquefaction risk. The applicant does not consider that any specific natural hazard mitigation, to address this hazard, is required as part of the subdivision process, as this would again be best managed as part of the building consent processes for future residential dwellings.

Proposed Development

General

The attached subdivision scheme plan (comprising layout and infrastructure sheets) shows the nature and scale of the proposed development.

The principle features of the development include-

1. The development will create 15 new vacant residential sites (Lots 33-46 & 53), plus the proposed Legal Road (Lots 47-49), plus a new public pedestrian accessway (Lot 50), plus two residual allotments that will be amalgamated with separate adjoining land parcels (Lots 51-52).
2. Note, there are no Lots 1-31 contained in the proposed development (this has been designed to avoid confusion with the sites that will be created under SUB-2017-32).
3. All new vacant residential sites enjoy areas of greater than 1,000m².
4. The development will include a view space protection region, whereby amenity views of the historic dwelling within Lot 26 SUB-2017-32 will be protected in favour of observers from Mountfort Street and public passers through the public areas within the development site.

These principle features are discussed in further detail in later sections of this application below.

Subdivision Layout

The applicant proposes to subdivide the application site to create a total of 15 new vacant residential sites.

All of the 15 new vacant residential allotments are located within the Rural Zone of the operative Dunedin City District Plan. While these sites do not comply in with the District Plan provisions of the underlying zone, they have been instead designed to be consistent with the provisions of the adjacent Residential 5 Zone. Accordingly, all of these sites are 1,000m² or greater in nett area, and all are suitably shaped and dimensioned to provide an attractive building platform.

Proposed allotment sizes are shown below-

Lot 33:	1,510m ²
Lot 34:	1,470m ²
Lot 35:	1,380m ²
Lot 36:	1,550m ²
Lot 37:	1,520m ² (1,660m ² inc. access)
Lot 38:	1,050m ²
Lot 39:	1,050m ²

Lot 40:	1,160m ²
Lot 41:	1,210m ²
Lot 42:	1,110m ²
Lot 43:	1,160m ²
Lot 44:	1,010m ²
Lot 45:	1,030m ²
Lot 46:	1,240m ²
Lot 47:	740m ² (road – to vest in DCC as Legal Road)
Lot 48:	2,400m ² (road – to vest in DCC as Legal Road)
Lot 49:	140m ² (road – to vest in DCC as Legal Road)
Lot 50:	280m ² (road – to vest in DCC as 'pedestrian' Accessway)
Lot 51:	160m ² (to be amalgamated with Lot 11 SUB-2017-32)
Lot 52:	150m ² (to be amalgamated with Lot 11 SUB-2017-32)
Lot 53:	1,290m ²

Lots 47-49 will vest in Dunedin City Council as Legal Road. Of these, Lots 47 & 48 (the principal roadway) will have a legal corridor width of 16.0m, consistent with the operative District Plan. The formation that will be constructed within Lots 47 & 48 will also comply with operative District Plan. Lot 47 is the extension of the road new road that was consented under SUB-2017-32 through to the boundary of the Rural Zone land, while Lot 48 is the continuation of this road to provide access to the majority of the proposed vacant sites. A cul-de-sac head is proposed at the end of Lot 48. Lot 49 is a small portion of private land that is presently occupied by formed road (a turning area beside the intersection of the main state highway carriageway with the unnamed public road carriageway). The vesting of Lot 49 will formalise the public use of this infrastructure.

Lot 50 will vest in Dunedin City Council as Accessway. This site will be provided for pedestrian use only and will enable the passing of pedestrians, including cycles, from Holyhead Street through to Mountfort Street. The applicant believes that this accessway has the potential to be a convenient and well-utilised route for members of the public to move between the residential area and the Outram Glen. The new accessway will reduce the distance along the state highway that people would otherwise need to travel.

Lots 51 and 52 are narrow corridors of land that will be severed from the underlying property Lot 10 SUB-2017-32 as the proposed Lot 47 is vested as Legal Road. These will be amalgamated with the adjoining properties (Lots 11 and 9 SUB-2017-32 respectively), which will result in the adjoining residential sites becoming slightly larger in size. The applicant owns the adjoining properties, so this rearrangement can be readily achieved.

The layout plan also shows the 20m wide building restriction width along the edge of the stop bank structure. No excavation is permitted within this region without approval being firstly obtained by Otago Regional Council. This is to avoid any works being undertaken that might compromise the effectiveness of the stop bank. The subdivision layout has been designed to accommodate this restriction corridor and it is considered that none of the new site owners will have need to undertake excavations within this region.

The layout plan also shows a proposed building restriction corridor extending between the historic dwelling on Lot 26 SUB-2017-32 and the state highway. This corridor widens slightly as it moves in a north-west direction, starting at a width of 22.5m and reaching a greater width of 42.5m. This building restriction corridor is consistent with the findings of the attached landscape assessment report, in which a principal recommendation is the retention of a view shaft from the state highway to the historic dwelling. This building restriction area is discussed further below.

Other landscaping features have also been proposed in the attached landscape report and shown on the attached landscaping plan. These features are similarly discussed further below.

Earthworks

Earthworks will be required within the development in order to prepare the new public roads (Lots 47 & 48), private right-of-way (ROW 'D', over Lot 37), and access allotment (Lot 50) for construction of the proposed formations.

The volume of topsoil expected to be stripped from the site is 1,700m³. This will be taken from an area of 4,250m² at an average depth of 400mm. This stripping will occur from the road, right-of-way and accessway alignments. Approximately half of this topsoil volume is anticipated to be reinstated on-site once re-levelling has occurred. The remaining topsoil will be removed from the site to an approved location (yet to be confirmed).

Following topsoil stripping, cut-to-waste processes will occur in order to achieve the required subgrade level for the access alignments. These processes will involve removing clay material from the earthworks areas and carting this to waste. The total volume of clay material to be cut-to-waste within the development site is 1,275m³. This will occur over an area of 4,250m² (the same area as the topsoil stripping), and to an average depth of around 300mm. The greatest depth of clay excavation earthworks is expected to be in the order of 500mm. All batters will be constructed at shallow grade, less than 6:1 (6 horizontal to 1 vertical) or flatter, as these will generally consist of roadside berms.

There is no fill intended to be placed on-site as part of the earthworks program. However, should it become desirable for this to occur (for instance, in the event that a soft area of ground has to be removed and repaired), these fill processes shall be properly supervised and shall be certified by a suitably qualified engineer to appropriate standards.

Earthworks consent is sought as part of this application.

It is anticipated that Council will install a condition of consent that requires a Stormwater Management Plan (SMP) to be supplied to council for approval prior to any earthworks construction starting on-site. It is anticipated that this SMP will include a full assessment of calculated stormwater flows (pre-development and post-development), detailed design plans of the earthworks shape and form as required to satisfy the calculated flows, and details of the proposed sediment control measures to be implemented through the

construction phases of the development. Such a condition would be consistent with the consent decision for SUB-2017-32.

Access

Access will be achieved as to each of the new residential sites as follows.

Access to Lots 33-41, 43, 44 and 53 will occur directly from the new extension of the public road that will be created within Lot 29 SUB-2017-32 (that road in turn branching from Holyhead Street). Lots 36 & 38 will achieve this access by way of a new right-of-way, shown as ROW 'D', over Lot 37. This right-of-way will have a legal width of 3.5m wide and a formed width of 3.0m, in accordance with the operative District Plan.

A restriction will be placed over Lots 38-41 to ensure that no vehicle access to these sites shall occur from Mountfort Street. It is proposed that this restriction shall occur by way of a consent notice registered on each of the new titles for these sites. The proposed activity promotes that the only means of vehicle access to Lots 38-41 shall be by way of the new legal road within Lots 47 & 48. The purpose of this restriction is to minimise additional traffic movements onto the Mountfort Street (State Highway 87).

Access to Lots 42, 45 & 46 will occur from Mountfort Street (State Highway 87), via the unnamed public road carriageway. Lots 42 and 46 will be able to access Mountfort Street directly, although Lot 46 will also have the option of gaining access by way of the proposed right-of-way, shown ROW 'E', over Lot 30 SUB-2017-32. Lot 45 will achieve access by way of the proposed right-of-way, shown ROW 'E', over Lot 30 SUB-2017-32.

The legal width of ROW 'E' will 6.00m, with a formed width of 5.0m, in accordance with the operative District Plan. This right-of-way will be constructed as part of the Stage 2 development under SUB-2017-32, in which the accessway within Lot 30 of that development will initially service 7 sites (Lots 4-8, 24 & 25 of SUB-2017-32), later reduced to only 4 sites (Lots 1-4 of SUB-2017-32) as the Stage 2 development of that consent implements the new road from Holyhead Street (Lots 8, 24 & 25 are required to cease using the Lot 30 accessway once the new road has been established). With the current proposal to utilise this Lot 30 accessway for access to Lots 45 and 46, this will result in a total of 6 sites gaining access in this manner at the conclusion of both land developments. It is relevant to note that the periods of time through which Lot 30 will see the greatest volume of traffic will be between the Stage 1 and Stage 2 developments of SUB-2017-32, at which time a total of 7 sites will be making use of this formation.

Lots 47 & 48 will vest in Dunedin City Council as Legal Road. This corridor is 16.0m wide, consistent with the operative District Plan. The formation that will be constructed within Lots 47 & 48 will also comply with operative District Plan. Lot 48 includes a cul-de-sac head to facilitate vehicle turning. This feature will also be designed in accordance with the operative District Plan.

A new pedestrian only accessway, shown as Lot 50, is to be provided between the new road in Lot 48 and Mountfort Street. This accessway shall have a legal width of 4.0m, and shall be furnished with a 2.0m wide gravel path and a set of bollards to prevent vehicles from entering into this corridor. This accessway will enable members of the public to pass between the two road alignments, thereby providing an alternative route between Outram's urban area and the Outram Glen. It is anticipated that this alternative route might assist in reducing the volume of pedestrian traffic passing along the edge of the state highway corridor, along that portion of the corridor located to the southwest of proposed Lot 50. This pedestrian connection feature is proposed to vest with Dunedin City Council as legal accessway, which will ensure that it will remain part of the greater public pedestrian network.

We anticipate that a condition of consent will be established requiring design plans to be approved by Council prior to any construction of public infrastructure.

Water Supply

Water supply to the new vacant residential sites will be achieved through the installation of new infrastructure from the public reticulated supply that will be constructed within the new road proposed under SUB-2017-32 (Lot 29 of the consent).

While the detailed design of this infrastructure is yet to be finalised, it is anticipated that this will take the form of a new 150mm dia public water main constructed through Lots 47 & 48. Fire hydrants will be installed at suitable locations along the new alignment.

Domestic water supply connections, built to DCC standards, will be installed from the main infrastructure to each new residential sites.

We anticipate that a condition of consent will be established requiring design plans to be approved by Council prior to any construction of public infrastructure.

Foul Drainage

Foul drainage will be achieved by installation of new Hynds Lifestyle aerated wastewater systems on each of the new vacant residential sites. A copy of the specification for this system is attached. These systems are modern, include secondary treatment facilities, and can readily operate on sites that are as small as 1,000m².

The proposed Hynds system was proposed with the recent application under SUB-2017-32. The consent decision for that subdivision does not specify a particular foul sewage treatment system, but does recognise that approved septic tank systems are an acceptable form of foul sewage discharge. It is entirely appropriate for the same manner of foul treatment and disposal to apply to the activity now proposed.

As with SUB-2017-32, the applicant also proposes the use of low-flow devices to be fitted within new houses as part of the current development.

The applicant would not object to the installation of a condition of consent requiring installation of an appropriate foul sewage treatment system and low-flow devices within each of the new vacant residential sites.

The applicant recognises that resource consent from Otago Regional Council will be required in support of the installation of the new foul sewage treatment facilities within those new sites that fall within the Ground Water Protection Zone A, as shown on District Plan Map 7. On the reasoning that the majority of the Outram urban region also lies within this Protection Zone, and knowing that foul sewage treatment facilities are routinely installed within other 1,000m² sites within this region, it is not anticipated that there will be any difficulties in achieving these consents. As new owners will be required to install modern facilities with secondary treatment functions, it is expected that these will comply with Otago Regional Council discharge standards within the Protection Zone.

Stormwater Drainage

Stormwater drainage from the new sites, and from the new accessway areas, is proposed to be achieved by discharging flows to the detention pond approved under SUB-2017-32.

In support of this discharge method, the attached stormwater report by Fluent Solutions, which details a suitable preliminary stormwater management plan, has been provided. The Fluent Solutions report indicates a manner of discharge that is consistent with the applicant's attached infrastructure plan.

The Fluent Solutions report concludes the following-

1. That stormwater drainage from the new sites can be successfully managed by way of the detention pond structure to be developed as part of SUB-2017-32.
2. That an alternative to relying on the detention pond facility could be the implementation of individual on-site retention devices.
3. The size of the detention pond in Lot 31 of SUB-2017-32 needs to service a water storage capacity of 2,500m³. This is less than the volume previously assessed by CPG as part of the rezoning documentation (4,000m³). The reduction in storage volume required results from the improved modelling assessment that has been carried out by Fluent Solutions. The 2,500m³ storage capacity assessed will satisfy all of the local stormwater flows into the pond, including the application land, the land under SUB-2017-32, and the external contributing catchments.
4. The pump station proposed as part of SUB-2017-32, discharging to the Taieri River at a rate of 15 litres per second, will suitably manage the anticipated stormwater flows that are collected by the detention pond facility.

The internal reticulated stormwater drainage is indicatively shown on the applicant's infrastructure plan. This comprises a typical gravity reticulated network of pipes running

through the proposed accessway alignments and connecting to the public stormwater reticulation that will be installed under SUB-2017-32 (which then drains into the detention pond). The new reticulation network will be taken over by Dunedin City Council as public infrastructure once complete. From this new stormwater network, connections can be readily made to each of the new residential sites, and to suitable water collection facilities within the accessway alignments.

There will not be any need to upgrade the detention pond that is to be installed under SUB-2017-32. In fact, it is possible that the size of the detention pond will be reduced as part of the design approval process under SUB-2017-32 as a result of the recent findings by Fluent Solutions. In any case, the development under SUB-2017-32 will ensure that sufficient capacity is provided for the residential development proposed under this application.

The applicant anticipates that conditions of consent will be installed requiring i) a detailed stormwater management plan to be prepared by the applicant and approved by Council, and ii) a full set of construction plans showing the design of any proposed public stormwater infrastructure, also to be prepared by the applicant and approved by Council.

Electricity Supply

Electricity reticulation will be supplied to each of the new residential sites from the service infrastructure that will be installed to support the development under SUB-2017-32.

Telecommunications Supply

Telecommunications reticulation will be supplied to each of the new residential sites from the service infrastructure that will be installed to support the development under SUB-2017-32.

Bulk and Location

It is proposed that the new residential activities will adopt the bulk and location provisions of the Residential 5 Zone, thereby achieving a built form that is consistent with the anticipated residential character of the adjoining urban land (which will take shape as SUB-2017-32 is implemented).

Landscape

The attached landscaping report by Site Environmental Consultants Ltd and the attached supplementary report and landscaping plan by the same consultant, describe the landscape character of the site and suggest recommended actions that might be incorporated into the development proposal to mitigate landscape effects.

These reports highlighted the Balmoral Farmhouse as being the "main focus of passing views". Paragraph 3.11 of the main report states:

"Apart from its visual and aesthetic appeal the building [Balmoral Farmhouse] has historic significance in the area, as recognised by its listing by Heritage New Zealand, and is the element that requires protection if present amenity values are to be retained, albeit in a different form".

The landscape report concludes that the current site values and its contribution to Outram's setting are not sufficient to warrant preservation. However, the visual amenity value of the Balmoral Farmhouse should be retained in part for road users. The report supports the proposed view shaft that is shown on the subdivision scheme plan, and also recommends inclusion of planting along the development side of the site's shared boundary with Mountfort Street and the inclusion of a pedestrian connection between Holyhead Street and Mountfort Street.

The attached subdivision scheme plan shows the view shaft and pedestrian connection features that have been discussed in the landscape report. The plan notes that private owners of the land which is subject to the view shaft (Lots 42-46 and 53) will be restricted from-

1. Erecting any permanent or temporary structures within this area, except for fences less than 1.2m in height, and
2. Establishing any vegetation at a height of greater than 2.0m.

It is proposed that underground and on-surface structures will be permitted, which will not restrict these areas being used for foul sewage treatment facilities.

The supplementary landscape report, and its attached plan, show some additional elements of landscaping. These elements include plantings along the proposed pedestrian accessway, plantings along the site's boundary with Mountfort Street (running north-east from the pedestrian accessway), and street tree planting on both sides of the new internal development road. Note that the plan attached to the supplementary landscape report includes details of the proposed plantings, in particular tree species. These elements all form part of the proposed development.

The supplementary landscape report also recommends the preparation of a landscape management plan (and approval of the plan by Council's landscape architect prior to construction), and the restriction on reflectivity of new houses to 40% (roofs) and 50% (walls). The applicant is satisfied that these elements form part of the proposed development also.

It is proposed that the view shaft areas and the planting areas where these fall within private properties will be protected by way of a consent notice instrument, which will be registered on the titles of the applicable sites.

Hazard and HAIL Matters

The nature of existing hazards, as sourced from Council records, has been described above. None of these existing hazards are considered to be problematic in respect of implementation of the proposed activity. Furthermore, the proposed activity is not expected to introduce any new hazards to the site.

Some discussion occurs in the decision for SUB-2017-32 regarding the possibility of the existence of liquefaction-susceptible materials being present in parts of the site. As a result of this consideration, Council felt that it was appropriate to include conditions on the SUB-2017-32 consent for the applicant to confirm, through assessment and determination by a suitably qualified person, that the land within the development is 'good ground' in accordance with NZS3604 (or that the land is remedied to achieve a 'good ground' classification). It would be entirely appropriate for similar consent conditions to be applied to the current development application. It is likely that the assessment of 'good ground' would be carried out in a single process for all of the residential land under SUB-2017-32 and the new development region combined.

In regard to the Hazardous Activities and Industries List (HAIL), we have attached the following-

1. A PSI contamination report which was prepared by Spiire as part of the recent rezoning process.
2. HAIL search information sourced from Dunedin City Council records.
3. HAIL search information sourced from Otago Regional Council records.

The Spiire report describes the soil sampling process that was undertaken several years ago and concludes that the property is not a HAIL site (regardless of its historical usage as a market garden activity). The applicant has confirmed that there has not been any new HAIL activity introduced to the site since the Spiire report was commissioned, and it is accordingly considered that there are no HAIL matters that exist on the application land which would require any further investigation.

The consent decision for SUB-2017-32 discusses HAIL matters and in particular described a difference of opinion between Dunedin City Council's consulting engineer and Otago Regional Council in respect of the quality of the testing that was undertaken as part of the Spiire PSI report which was provided with that application. Ultimately, it was determined that the information provided by the applicant was satisfactory to achieve the purpose of the NES. The SUB-2017-32 consent does include a condition in relation to HAIL considerations, and this requires the applicant to arrange to have a Soil Management Plan prepared by a suitably qualified person to address the management of soils subject to the NES. This would appear to be a sensible approach to providing an acceptable level of quality-assurance around future soil disturbance processes. In respect of this application, it is proposed that the consent decision adopt the same approach as has been implemented with SUB-2017-32, resulting in similar conditions of consent being established to manage the new development.

Easements

New right-of-way easements will be created as indicated on the attached subdivision layout plan, and these will be contained in a Memorandum of Easements with the cadastral subdivision plans.

Right-of-way 'D' shall be formed over Lot 37 to provide legal access to Lots 36 and 38.

Right-of-way 'E' shall be formed over Lot 30 of SUB-2017-32 to provide legal access to Lots 45 and 46.

New service and drainage easements will be created as required to protect new infrastructure in support of the various new residential sites. These will be contained in a Memorandum of Easements.

All public infrastructure that is to be accepted by Dunedin City Council, and which will exist in private property, will be protected by new easements, and these will be contained in a Memorandum of Easements in Gross.

All infrastructure that requires maintenance by various service authorities, such as Aurora Energy Limited and Chorus Limited, and which is to be located in private property will similarly be protected by way of new easements in gross.

Development Contributions

The applicant understands that development contributions will be payable on this development. Consideration is sought for partial reduction of these contributions in lieu of the proposed vesting of Lots 47-50 to Dunedin City Council, and the construction of public assets within these sites, the cost of which will be borne by the applicant.

Application Status

The application land is subject to a split zone arrangement. In respect of the operative Dunedin City District Plan, the portion of the application land that comprises Lot 10 of SUB-2017-32 lies within the Residential 5 Zone. The remaining portion of the application land, comprising Lot 27 of SUB-2017-32, lies within the Rural Zone. In respect of the proposed Dunedin City District Plan, the Lot 10 SUB-2017-32 block lies within the proposed Township and Settlement Zone and the Lot 27 SUB-2017-32 block lies within the Rural Taieri Plains Zone (the zone boundary is consistent between the Plan where it passes through the application site).

The application site contains a designated historical building (B651), as well as a region of land which is subject to 'Ground Water Protection Zone A'.

The application site contains High Class Soils, as depicted on District Plan Map 75.

The operative District Plan shows State Highway 87 (Mountfort Street) as a National Road and Holyhead Street as a Local Road on its road hierarchy map.

The bulk of the application land, including all 15 of the proposed residential sites, is located within the Rural Zone and Rural Taieri Plains Zone. The proposed residential activity does not comply with the density rules of the Rural Zone. Furthermore, the proposed residential

activity is expected to breach Rule 6.3.5(viii) relating to High Class Soils. With these matters in mind, the proposed land use activity is considered to be a **Non-Complying Activity**.

This application fails to comply with all of the provisions of Section 17.7 of the Dunedin City District Plan (Earthworks). The applicable non-compliance is breaches of Rule 17.7.3(ii): volume of earthworks. Therefore, in accordance with Rule 17.7.5(ii), the proposed earthworks is judged to be a **Discretionary (Restricted) Activity**.

This application fails to comply with all of the provisions of Section 18.5.1 and/or 18.5.1(A) of the Dunedin City District Plan (Subdivision), therefore, in accordance with Rule 18.5.2, the proposed subdivision is judged to be a **Non-Complying Activity**.

Overall, the application is judged to be a **Non-Complying Activity**. This is on the basis of the determinations relating to land use and subdivision noted above.

Given the scale of the non-complying elements it is anticipated that the proposed activity will require a public notification process. The applicant elects to seek notification of the application pursuant to section 95A(2)(b) Resource management Act 1991.

Affected Parties

It is considered that there are three specifically affected parties relevant to the proposed activity-

1. The landowner at 51 Mountfort Street, which borders the application site to the north-east.
2. New Zealand Transport Agency, which administers the land bordering the application site to the north-west.
3. Otago Regional Council, which administers the land bordering the application site to the south-east.

An affected owner's consent has been attached from the owners of the land at 51 Mountfort Street. This consent is attached.

The New Zealand Transport Agency (NZTA) has been consulted with in respect of the proposed activity. A response received from NZTA includes the following:

"As part of our assessment ... we would require receipt of the full application so the final access arrangements for the wider subdivision can be considered for cumulative effects. As a result if any of the existing or proposed accesses arrangements are considered to be unsafe, then it possible that the NZ Transport Agency will withhold written approval.

For any plantings with the State highway road reserve the following will be required:

- *Any plantings in the State highway should be low maintenance and not cause a safety issue to road users including restricting sight visibility or shading of the highway between 10am and 2pm on the shortest day of the year;*
- *Further information will be required at the time of the resource consent application such as a landscaping plan showing the proposed planting and an explanation of any shading effects to be submitted to NZTA for comment and approval prior to any planting being undertaken.*

Also a reverse sensitivity condition and the usual conditions for construction in the road reserve are likely to be requested. These conditions are likely to be:

- *Any room used for noise sensitive activities within 80m of the State highway should be designed, constructed and maintained to achieve a design noise level of 40 dB LAeq (24h).*
- *Prior to any works that may affect the State highway road reserve, an agreement to work on the State highway and a traffic management plan must be completed and submitted to the NZ Transport Agency's network management consultant at least seven working days before work commences;*
- *Once constructed the applicant shall supply the consent authority with written confirmation from NZ Transport Agency's network management consultant, that the works have been completed to meet the NZ Transport Agency requirements."*

For the sake of clarification, there are no plantings proposed within the State Highway road reserve at this time. In respect of the three bullet points relating to reverse sensitivity comments, the applicant is prepared to accept a suitable consent conditions to recognise these matters. The consent decision for SUB-2017-32 contains similar such conditions.

A copy of this application will be submitted to NZTA shortly following receipt by Dunedin City Council. It is anticipated that NZTA will be active in responding to the application through the public notification process.

No consultation has been undertaken with Otago Regional Council (ORC). It is anticipated that ORC will be active in responding to the application through the public notification process, should any concerns be found with the proposed activity.

Assessment of Effects

The following assessment of effects on the environment has been carried out in accordance with Schedule 4 of the Resource Management Act 1991. It includes those assessment matters listed in Sections 6.7, 14.7 and 20.6 of the District Plan considered relevant to the proposed activity.

Schedule 4 RMA

In accordance with section 6(1)(a) of Schedule 4, it is not considered that the proposed activity will result in any significant adverse effect on the environment.

In accordance with section 6(1)(b) of Schedule 4, an assessment of the actual or potential effects on the environment of the proposed activity is contained herein.

In accordance with section 6(1)(c) of Schedule 4, it is not considered that there are any residual contaminants from previously activities or installations within the site that would pose a risk to human health.

In accordance with section 6(1)(d) of Schedule 4, the applicant does not propose the discharge of any contaminant.

In accordance with section 6(1)(e) of Schedule 4, relevant mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effects are described below under the various assessment headings.

In accordance with section 6(1)(f) of Schedule 4, prior consultation has been undertaken with the following parties/organisations-

- Owners of the land at 51 Mountfort Street.
- New Zealand Transport Agency.

The nature of these consultations is described in the application sections above.

In accordance with section 6(1)(g) of Schedule 4, it is not considered that the scale and significance of the proposed activity will require monitoring beyond the normal subdivision certification and approval processes.

In accordance with section 6(1)(h) of Schedule 4, it is not considered that the proposed activity will have an adverse effect that is more than minor on the exercise of a protected customary right.

In accordance with section 6(2) of Schedule 4, the assessment of effects contained in this application has considered the applicable aspects of relevant policy statements and plans.

In accordance with section 7(1)(a) of Schedule 4, this application has considered the effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects, and has determined this effect to be less than minor.

In accordance with section 7(1)(b) of Schedule 4, this application has considered the effect on the locality, including any landscape and visual effects, and has determined this effect to be less than minor.

In accordance with section 7(1)(c) of Schedule 4, this application has considered the effect of the proposed activity on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity, and considers that this effect will be no more than minor.

In accordance with section 7(1)(d) of Schedule 4, this application considers that any effects on natural and physical resources (having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value) for present or future generations, will be less than minor.

In accordance with section 7(1)(e) of Schedule 4, it is not considered that the proposed activity will have an adverse effect in respect of release of contaminants into the environment.

In accordance with section 7(1)(f) of Schedule 4, it is not considered that the proposed activity will have an adverse effect in respect of natural hazards or the use of hazardous substances or hazardous installations.

Section 6.7 (Rural)

Sustainability Section (6.7.1):

The proposed activity is not considered to be inconsistent with the provisions in the Sustainability section of the Dunedin City District Plan. It is considered that the land in question will achieve a better overall use if a higher density form of residential activity is implemented. The location of the proposed activity is considered sustainable, due to its size and positioning within border constraints, and provision of residential capacity at this location will, to a modest degree, alleviate the demand for residential activity in other local environments where development may not be as sustainable.

The proposed activity is unlikely to result in the need for capital investment by the City into new public infrastructure.

Amenity Values (6.7.3):

Any effects of the proposed development on amenity values are anticipated to be less than minor. The landscape reports that has been prepared by Site Environmental Consultants Ltd identifies the visual amenity of the Balmoral Farmhouse, when viewed from Mountfort Street, as being the element of landscape amenity value that warrants protection. The proposed view shaft and associated building restriction will achieve this protection.

The landscape report also recommends the establishment of a pedestrian connection between the internal development road and Mountfort Street and the establishment of several forms of tree planting. The applicant has included these features in the proposed development.

As a result of the findings in the landscape reports and the mitigation elements proposed by the applicant, it is considered that the effect of the proposed activity on local amenity values will be less than minor.

Cumulative Effect (6.7.4):

It is not considered that the site and surrounding environment will be adversely affected by cumulative effects beyond a less than minor level as a result of this proposal. This is because the application site is small and confined within a discrete region of Rural Zone land, bordered by residential and infrastructure activities. Once the proposed development has been implemented, there will be no potential for further residential development within the surrounding region, and as such, very little potential for cumulative effects to be realised.

Intensity of Activities (6.7.5):

It is not considered that the site and surrounding environment will be adversely affected by the intensity of the proposed activity beyond a less than minor degree. Construction processes, will for a time be obvious on-site, and thereafter the new residential activities will be apparent as a sensible extension to the existing urban form in Outram.

Noise (6.7.6):

It is not considered that the site and surrounding environment will be adversely affected by noise from the proposed activity beyond a less than minor level. Construction processes, will for a time create noise, however this will be temporary and can be controlled to acceptable levels through routine consent condition methods. Once the proposed residential activities have been established there will be some ongoing noise resulting from these, however this noise will have the same character as the noise which is generated by the existing adjacent residential activities. It is relevant to note that the adjoining landowner to the north-east has provided written consent to the development, while the adjoining landowner to the southwest is the applicant and can be deemed to have consented. The closest residential activity to the site, where adjoining landowner consent has not been provided, is located some 180m to the south-west at 25 Mountfort Street.

Glare and Lighting (6.7.7):

It is not considered that the site and surrounding environment will be adversely affected by glare and lighting from the proposed activity, beyond a less than minor level. The same matters as discussed in the paragraph above apply in a similar fashion here.

Odour (6.7.8):

The proposed activity will take the form of a reasonably typical residential development. All anticipated effects relating to odour will be consistent with normal residential activities and are not expected to be offensive in any way. It is considered that these effects will be less than minor.

Bulk and Location (6.7.9):

The effects of bulk and location issues are anticipated to be less than minor. Clearly, the application seeks consent to undertake a number of new residential activities on sites that do not comply with the Rural Zone bulk and location (and density) provisions, however the actual effects arising from the proposed non-compliances, in terms of bulk and location, are themselves considered to be acceptable. The applicant has proposed that the new residential sites adopt the bulk and location provisions that apply to the Residential 5 Zone, which will maintain consistency with the urban form that is anticipated to occur on the south-west of the site. In respect of the adjoining residential activities, the landowners of these properties have either provided affected persons consent or can be deemed to have provided this (where the landowner is the applicant). In this regard, bulk and location effects from the new residential activities around the periphery of the application land are not expected to offend the adjoining owners.

Water and Effluent Disposal (6.7.10):

The supply of water and the discharge of effluent can be satisfactorily achieved by way of the proposed reticulation methods. Therefore no adverse effect is anticipated in this regard.

High Class Soils (6.7.11):

High Class Soils are shown on District Plan Map 75 to occur within the application site. The impact of residential development on High Class Soils was considered as part of the rezoning process that occurred in relation to the application property several years ago, and this was not found to be a cause for residential activity to be precluded from the land.

The rezoning process resulted in 2.19 hectares of land being left in the Rural Zone, however of this land some 1.07 hectares was set aside as a community foul sewage disposal field. This implies that little weight has been assigned to the presence, or future potential use, of High Class Soils at this location. It also confirms that residential activity is a preferred use of this land. The present application is consistent with that approach.

In consideration of the previous planning considerations in respect of High Class Soils, and also having regard to the relatively small size of the application site (in a rural land context), it is considered that the any potential effect in respect of loss of High Class Soils will be less than minor.

Visual Impact (6.7.13):

Perhaps the most obvious anticipated change to the environment, as a result of the proposed residential development, will be the transformation of the site, when viewed by passing motorists and pedestrians traveling along Mountfort Street, from its existing green paddock to a new urban form.

This has been addressed in the applicant's attached landscape assessment reports. It is concluded in those reports that the provision of some elements of mitigation, in particular the incorporation of a protected view shaft between the Balmoral Farmhouse and Mountfort Street, would satisfactorily address any adverse effects related to visual impact.

The applicant has adopted the mitigation measures recommended in the landscape reports, and accordingly it is considered that any potential effect in respect of visual amenity will be less than minor.

Residential Units (6.7.15):

It is anticipated that there will be very little potential for conflict between adjoining land use activities, as a result of the proposed residential development. The surrounding landscape is either already residential in nature, anticipated to become residential in nature, or is occupied by infrastructure activities. With this in mind, the 'in-fill' of the application land with new residential activities is considered to be a sensible and appropriate use of the land, which will essentially extend the existing urban form for the short distance necessary to achieve a complete and consistent use of the land which is presently constrained between the State Highway and the Taieri River stop bank. It is not considered that there will be any adverse effect, beyond a less than minor level, in respect of residential units.

Clearance of Vegetation (6.7.17):

No native bush is contained within the application site, and there is relatively little vegetation of any form. No adverse effects are anticipated in respect of clearance of vegetation.

Archeological Sites (6.7.20):

The applicant is not aware of any archeological sites that exist within the application property. Should any archeological sites be discovered during the course of the development, it is proposed that these will be protected and investigated in the proper manner. It is not considered that there will be any adverse effects in regard to archeological sites.

Indigenous Vegetation and Habitats (6.7.22):

The comments made under Clearance of Vegetation above apply equally to the consideration of indigenous vegetation and habitats.

Hazards (6.7.23):

Hazards have been discussed in the application above, and suitable methods of managing these have been proposed. Should the proposed methods be adopted, this would be consistent with the methods applied as part of SUB-2017-32. Accordingly, it is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in regard to hazards.

Conflict and Reverse Sensitivity (6.7.26):

The applicant has consulted with NZTA and has agreed to implement several consent conditions relating to reverse sensitivity between the proposed development and Mountfort Street (the State Highway). No other adjoining owners are anticipated to be affected in respect of reverse sensitivity matters. Accordingly, it is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in regard to conflict and reverse sensitivity.

Section 14.7 (Landscape)

Visibility (14.7.1):

This assessment matter has been fully described under the Visual Impact (6.7.13) section above. No further discussion is necessary.

Sympathetic Siting and Design (14.7.3):

No particular siting and design considerations are considered necessary for the proposed new residential activities. We do not expect there will be any adverse effects generated by the proposed activity in regard to siting and design that haven't already been assessed under the relevant sections above and below.

Landscape Features and Characteristics (14.7.4):

The application site does not exist within any protected landscape regions as shown in the District Plan.

The presence of significant landscape features and characteristics has been considered in the landscape assessment reports attached to this application. It is concluded in those reports that the provision of some elements of mitigation, in particular the incorporation of a protected view shaft between the Balmoral Farmhouse and Mountfort Street, would satisfactorily address any adverse effects related to landscape.

The applicant has adopted the mitigation measures recommended in the landscape reports, and accordingly it is considered that any potential effect in respect of landscape matters will be less than minor.

Compatibility of Scale and Character (14.7.5):

The scale and character of the proposed residential development are compatible with the surrounding land uses to the north-east and south-west of the application site. It is considered that the scale and character of the proposed development is compatible within the local environment. It is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in regard to compatibility of scale and character.

Section 20.6 (Transportation)

Parking and Loading (20.6.1):

Suitable parking and loading facilities will be provided as part of the proposed residential development. It is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in this regard.

On-Site Manoeuvring (20.6.5):

Suitable manoeuvring facilities will be provided as part of the proposed residential development. It is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in this regard.

Vehicle Crossings (20.6.7 to 20.6.10):

Suitable formation and placement of vehicle crossings will be available as part of the proposed residential development. It is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in this regard.

Road Construction (20.6.12):

Suitable road construction can be achieved as part of the proposed residential development. It is not considered that there will be any adverse effects generated by the proposed activity, beyond a less than minor level, in this regard.

Assessment of Effects - Overall

When considered in an overall manner, it is considered that there are no adverse effects likely to be generated by implementation of the proposed activity that would exceed a less than minor level.

District Plan Objectives and Policies

In accordance with section 104(1)(b) of the Resource Management Act 1991, the objectives and policies of the District Plan have been taken into account when assessing the application. The objectives contained in the relevant sections of the Plan (and their associated policies) have been evaluated and we comment below on these matters.

We note that the assessment below focuses on the objectives and policies of the operative District Plan. The proposed District Plan provisions are deemed to be largely uncertain due to the submission that has been made in respect of the application land (this submission seeks residential zoning). The submission is yet to be heard by the Committee overseeing the District Plan implementation process. With the outcome of the proposed District Plan being difficult to predict, it is considered that the provisions of the proposed Plan cannot be

heavily weighted in respect of this application. With this in mind, no assessment of the proposed activity against the objectives and policies of the proposed District plan has been undertaken as part of this application.

Sustainability

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 4.2.1	Enhance the amenity values of Dunedin.	The proposed subdivision and residential use of the land is not considered to maintain the amenity values of the Rural zone. However, the Rural-zoned land at this location is already been compromised by the relatively small size of the property and its isolation from other rural land. The proposal is considered to be inconsistent with this objective and policy.
Policy 4.3.1	Maintain and enhance amenity values.	
Objective 4.2.2	Ensure that the level of infrastructural services provided is appropriate to the potential density and intensity of development and amenity values.	The applicant proposes constructing new water, stormwater and foul sewer infrastructure. The proposal is considered to be a sustainable use of the new, and the existing, services infrastructure. Access from the State Highway is required to be upgraded under SUB-2017-32, and the current proposal will not increase traffic at this location beyond the maximum traffic volume that has already been accepted under SUB-20117-32. It is a sustainable use of Holyhead Street as this road is believed to have the capacity to manage the increased traffic. The proposal is considered to be consistent with these objectives and policies.
Policy 4.3.2	Avoid developments which will result in the unsustainable expansion of infrastructure services.	
Objective 4.2.3	Sustainably manage infrastructure.	
Policy 4.3.5	Require the provision of infrastructure at an appropriate standard.	
Objective 4.2.4	Ensure that significant natural and physical resources are appropriately protected.	There are no significant natural or physical resources associated with the application land. The proposal is considered to be consistent with this objective and policy.
Policy 4.2.4	Provide for the protection of the natural and physical resources of the City commensurate with their local, regional and national significance.	
Policy 4.3.7	Use zoning to provide for uses and development which are compatible within identified areas.	Residential activity is a component of the Rural zone, and therefore cannot be considered incompatible with rural land

Policy 4.3.8	Avoid the indiscriminate mixing of incompatible uses and developments.	use. However, the density of residential development could introduce reverse sensitivity issues simply because there are so many residences intended for this land. The proposal is considered to be inconsistent with these policies because it is not rural use of rural land, and is within a mixed use area.
Policy 4.3.9	Require consideration of those uses and developments which: a. Could give rise to adverse effects. b. Give rise to effects that cannot be identified or are not sufficiently understood at the time of preparing or changing the District Plan.	Adverse effects have been considered earlier in this application. The proposal is considered to be consistent with this policy.

Manawhenua

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 5.2.1	Take into account the principles of the Treaty of Waitangi in the management of the City's natural and physical resources.	The proposal is considered to be consistent with this objective and policy.
Policy 5.3.2	Advise Manawhenua of application for notified resource consents, plan changes and designations.	

Rural

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 6.2.1	Maintain the ability of the land resource to meet the needs of future generations.	The proposed subdivision and residential development does not intend to create sites for rural activity. There is limited productive capacity associated with the current land due to its small size, however there will be less opportunity for productive use of the land once the proposed development is complete. The application land contains High Class Soils. The proposal is considered to be contrary to this objective and policy.
Policy 6.3.1	Provide for activities based on the productive use of land.	
Objective 6.2.2	Maintain and enhance the amenity values associated with the character of the rural area.	The proposed subdivision will create a development which is not rural in character and which will not maintain or enhance the amenity values associated

Policy 6.3.5	Require rural subdivision and activities to be of a nature, scale, intensity and location consistent with maintaining the character of the rural area and to be undertaken in a manner that avoids, remedies or mitigates adverse effects on rural character. Elements of the rural character of the district include, but are not limited to: a) A predominancy of natural features over human made features, b) High ration of open space relative to the built environment, c) Significant areas of vegetation in pasture, crops, forestry and indigenous vegetation, d) Presence of large numbers of farmed animals. e) Noises, smells and effects associated with the use of rural land for a wide range of agricultural, horticultural and forestry purposes, f) Low population densities relative to urban areas, g) Generally unsealed roads, h) Absences of urban infrastructure.	with the rural zone. This is not to say that the proposed residential use will not be an appropriate or sustainable use of this land, but it will not reflect the present Rural zoning. The rural character of the land has already been changed by the recent rezoning of the block to the south-west of the application site (and the subsequent resource consent SUB-2017-32). This rezoning has resulted in the reduction of the rural block to a size of 2.17ha. Furthermore, the development land does not adjoin other rural activities (instead it is bordered by residential and infrastructure activities). Amenity values of the proposed development have been assessed in relation to landscaping matters by the attached landscaping reports. The applicant has proposed to protect the key landscape feature, being the Balmoral Farmhouse, by way of a building restriction view shaft. Overall, in respect of the amenity values associated with the character of the rural area, the proposal is considered to be inconsistent with this objective and policy.
Policy 6.3.6	Avoid, remedy or mitigate the adverse effects of buildings, structures and vegetation on the amenity of adjoining properties.	Residential activity is an expected component of the Rural zone, but at a density of not less than 15.0ha per dwelling. The proposed residential activity will have a significantly greater density of development. The new properties are not suitable for rural use themselves, although it is noted that this is the urban/rural fringe of the City and that that the residential neighbours have either provided an affected persons consent or can be deemed to have provided this (where adjoining residential land is owned by the applicant). The proposal is considered to
Policy 6.3.11	Provide for the establishment of activities that are appropriate in the Rural zone if their adverse effects can be avoided, remedied or mitigated.	

		be inconsistent with these policies.
Objective 6.2.4	Ensure that development in the rural area takes place in a way which provides for the sustainable management of roading and other public infrastructure.	The proposal is considered to be sustainable use of the surrounding roading infrastructure. No additional accesses beyond what has been previously allowed for in SUB-2017-32 are proposed from Mountfort Street. The additional traffic movements along Holyhead Street are considered to be acceptable. There is reticulated water supply available for the new lots, and foul sewage and stormwater drainage is achievable in the manner proposed by the applicant. The proposal is considered to be consistent with this objective and policy.
Policy 6.3.8	Ensure development in the Rural and Rural Residential zones promotes the sustainable management of public services and infrastructure and the safety and efficiency of the roading network.	
Policy 6.3.14	Subdivision or land use activities should not occur where this may result in cumulative adverse effects in relation to: a) Amenity values, b) Rural character, c) Natural hazards, d) The provision of infrastructure, roading, traffic and safety, or e) Landscape management areas or Areas of Significant Conservation Values. Irrespective of the ability of a site to mitigate adverse effects on the immediately surrounding environment.	The proposed subdivision will have some level of adverse cumulative effects on the amenity values of the Rural zone simply because the development will not be at all rural in nature, however these effects are considered to be less than minor due to the size of the land, the relationship of the land to adjoining non-rural land use activities, and the landscape mitigation proposed by the applicant. There are not expected to be any cumulative effects on the operation of the local roading network that are unacceptable. There are not expected to be any cumulative effects on the operation of Council's reticulated services. The proposal is considered to be consistent with this policy.
Objective 6.2.5	Avoid or minimise conflict between different land use activities in rural areas.	The situation in this case is somewhat unusual in that the subject sites form the full extent of the residual Rural-zoned land that is located between the two major infrastructure corridors (Mountfort Street and the Taieri River stop bank), and between the residential zone to the south-west and the residential activity to the north-east. The subject sites do not share a boundary with any anticipated rural activities. Furthermore, the application land is relatively small and the opportunity for this land to be put to an economical productive rural use is low. The proposed residential development will not create
Policy 6.3.3.	To discourage land fragmentation and the establishment of non-productive conflict between incompatible and sensitive land uses by limiting the density of residential development in the Rural zone.	
Policy 6.3.11	Provide for the establishment of activities that are appropriate in the Rural zone if their adverse effects can be avoided, remedied or mitigated.	

Policy 6.2.13	Avoid or minimise conflict between differing land uses which may adversely affect rural amenity, the ability of rural land to be used for productive purposes, or the viability of productive rural activities.	conflict with productive rural activities because there are none in the vicinity. The development will not cause any conflict with the residential activities established to the north-east and consented to the south-west as the density of the proposed development is consistent with those residential areas. The proposal is considered to be consistent with this objective and these policies.
Objective 6.2.6	Maintain and enhance the life supporting capacity of land and water resources.	The proposal is not considered to maintain the life supporting capacity of the rural land resource as the development is residential in nature and will reduce the potential for any future productive use. However, there is limited productive value to the land currently anyway because of the existing land size. The new lots will not be self-sufficient in terms of water supply but adequate reticulated services are available. The proposal is considered to be inconsistent with this objective and policy.
Policy 6.3.9	Ensure residential activity in the rural area occurs at a scale enabling self-sufficiency in water supply and on-site effluent disposal.	

Hazards

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 17.2.1	Ensure that the effects on the environment of natural and technological hazards are avoided, remedied or mitigated.	The applicant has considered hazards and has promoted management methods that are consistent with the conditions applied to the adjoining residential development under SUB-2017-32. The proposal is considered to be consistent with this objective and policy.
Policy 17.3.3	Control development in areas prone to effects of flooding.	

Subdivision

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 18.2.1	Ensure that subdivision activity takes place in a coordinated and sustainable manner throughout the City.	The proposal is considered to be consistent with this objective and policy. Despite the fact that it intends to subdivide land in a manner not anticipated by the zoning, the

Policy 18.3.1	Avoid subdivisions that inhibit further subdivision activity and development.	subject sites are located at the edge of the urban environment where residential expansion of the City could be expected. The subdivision proposal will not inhibit further subdivision activity and development.
Objective 18.2.2	Ensure that the physical limitations of land and water are taken into account at the time of the subdivision activity.	The proposed activity is not considered to present any challenge to the physical limitations of land and water. The proposal is considered to be consistent with this objective.
Policy 18.3.5	Require subdividers to provide information to satisfy the Council that the land to be subdivided is suitable for subdivision and that the physical limitations are identified and will be managed in a sustainable manner.	This application has provided suitable information in support of the proposed subdivision and development activity. The proposal is considered to be consistent with this objective.
Objective 18.2.3	Ensure that the potential uses of land and water are recognised at the time of the subdivision activity.	The application is for residential use of Rural zoned land. In this regard, the proposal does not recognise the potential use of the land for a permitted activity, although the recent rezoning of the land to the south-west of the application site, leaving a small area of residual rural land, has already limited the potential significantly. The proposal is inconsistent with this objective.
Policy 18.3.4	Subdivision activity consents should be considered together with appropriate land use consent and be heard jointly.	The subdivision consent application is being heard with the associated land use application for residential activity. The proposal is consistent with this objective.
Policy 18.3.6	Control foul effluent disposal and adequately dispose of stormwater to avoid adversely affecting adjoining land.	The foul effluent can be drained to ground within each site. Stormwater is to be drained into the detention pond that will be built as part of the development under SUB-2017-32, and then discharged into the Taieri River. The proposal is considered to be consistent with this policy.
Objective 18.2.7	Ensure that subdividers provide the necessary infrastructure to and within subdivisions to avoid, remedy or mitigate all adverse effects of the land use at no cost to the community while ensuring that the future potential of the infrastructure is sustained.	The applicant proposes creating access lots, and installing services for the new residential lots. The proposal is considered to be consistent with this objective and these policies.

Policy 18.3.7	Require the provision of all necessary access, infrastructure and services to every allotment to meet the reasonably foreseeable needs of both current and future development.	
Policy 18.3.8	Control foul effluent disposal and adequately dispose of stormwater to avoid adversely affecting adjoining land.	

Transportation

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 20.2.1	Avoid, remedy, or mitigate adverse effects on the environment arising from the establishment, maintenance, improvement and use of the transportation network.	The proposal intends to create 3 new residential sites that will achieve access from Mountfort Street, through the existing intersection with the unnamed road. These 3 accesses will effectively replace 3 accesses that will be provided under Stage 1 of SUB-2017-32 and later removed under Stage 2 of SUB-2017-32. The remaining 12 sites under this proposal will all be accessed from Holyhead Street. The proposal is considered to be consistent with this objective and these policies.
Policy 20.3.1	Avoid, remedy or mitigate the adverse effects on the environment of establishing, maintaining, improving or using transport infrastructure.	
Policy 20.3.2	Provide for the maintenance, improvement and use of public roads.	
Objective 20.2.2	Ensure that land use activities are undertaken in a manner which avoids, remedies or mitigates adverse effects on the transportation network.	The proposed residential activity will avoid, remedy or mitigate the adverse effects on the transportation networks. The proposal is considered to be consistent with this objective and policy.
Policy 20.3.4	Ensure traffic generating activities do not adversely affect the safe, efficient and effective operation of the roading network.	
Objective 20.3.5	Ensure safe standards for vehicle access.	The existing intersection between Mountfort Street and the unnamed road is required to be upgraded to NZTA standards as part of SUB-2017-32. The need for further upgrades to this intersection is not anticipated. The existing formation at Holyhead Street is considered suitable to accommodate the proposed development. The proposal is considered to be consistent with these objectives.
Objective 20.2.4	Maintain and enhance a safe, efficient and effective transportation network.	

Policy 20.3.8	Provide for the safe interaction of pedestrians and vehicles.	The new road will be designed to meet Council's required standards. The provision of a pedestrian linkage from Holyhead Street to Mountfort Street is expected to remove some pedestrians from the State Highway corridor south-west of the development land, and this will enhance pedestrian safety within the transportation network. The proposal is considered to be consistent with this policy.
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Environmental Issues

Provision	Objective/Policy	Consistent, Inconsistent or Contrary?
Objective 21.2.2	Ensure that noise associated with the development of resources and the carrying out of activities does not affect public health and amenity values.	The proposed residential activity is not expected to have adverse noise effects over and above those reasonably anticipated for residential activities generally. While there will be an increase in residential noise associated with the development, it will not affect public health. The proposal is considered to be generally consistent with this objective
Objective 21.2.4	Ensure the disposal of wastes is undertaken in a manner that avoids, remedies or mitigates adverse effects on the health and amenity of people and communities within the City and on their environment.	The new lots are able to dispose of foul sewage waste through individual on-site treatment facilities. The proposal is considered to be consistent with this objective.
Policy 21.3.7	Encourage the establishment of buffer areas around activities giving risk to adverse effects on adjoining areas.	The proposed subdivision provides recognition of the 20m building restriction along the bank of the Taieri River stop bank. It also proposes a landscape management corridor along much of the land's boundary with Mountfort Street. These features will act as a buffer between the new residential activity and the adjoining infrastructure features. The proposal is considered to be consistent with this policy.

Overall, the application is considered to be contrary to Objective 6.2.1 and Policy 6.3.1 (Rural Section), which seek to maintain the ability of the land resource to meet the needs of future generations and to provide for activities based on the productive use of the land.

NES on Urban Development Capacity

The National Policy Statement on Urban Development Capacity 2016 sets out the responsibilities of Local Authorities to provide for sufficient residential land to meet future urban capacity demands.

The NES has been recently been considered by Dunedin City Council, which resulted in the release of a report into the City's available residential capacity (copy attached). Of relevance to this application, the capacity report concluded the following demand surplus / shortfall levels-

Region	2018	2023	2028	2033	2038	2043	2048
Outram	-5	-24	-38	-62	-78	-98	-116
Dunedin overall	1198	255	-610	-1152	-1976	-2704	-3505

It is apparent that the capacity assessment identifies Outram as have a shortfall of residential availability presently, and that this is only going to become worse over the foreseeable future. Furthermore, the Dunedin overall picture shows a similar trend, albeit starting with a surplus and turning to a shortfall somewhere between 2023 and 2028.

In consideration of the NES objectives and the capacity shortfalls that already exist in the local region and are predicted to occur in the greater Dunedin region, it is considered that the proposed activity is consistent with the NES regulation.

Section 104D

Section 104D of the Resource Management Act specifies that resource consent for a non-complying activity must not be granted unless the proposal can meet at least one of two limbs. The limbs of section 104D require that the adverse effects on the environment will be less than minor, or that the proposal will not be contrary to the objectives and policies of the District Plan. It is considered that the proposal most clearly achieves compliance with the former of these limbs, and as such the application cannot be declined as a consequence of not passing the section 104D test.

Precedent and True Exception

Section 104(1)(c) requires the Council to have regard to any other matters considered relevant and reasonably necessary to determine the application. The matter of precedent has been previously addressed by the Environment Court and case law now directs the Council to consider whether approval of a non-complying activity will create an undesirable example. Where the Plan's integrity is at risk by virtue of such a precedent the Council is required to apply the 'true exception test'. This is particularly relevant where the proposed activity is contrary to the objectives and policies of the District Plan.

In this case, the application is non-complying principally because the proposed residential activity is significantly undersized when measured against the District Plan provisions for a residential activity in the Rural Zone.

Due to the particular character the existing subject property and the nature of the proposed residential development it is not considered that approval of this application will undermine the integrity of the District Plan.

In particular, the context of the development site, being a small site that is tightly confined between existing residential activities to the north-east and south-west and between the infrastructure activities of the State Highway to the north-west and the Taieri River to the south-east, confirms the circumstances necessary to pass the true exception test. The fact that the site has been subject to a rezoning process several years ago that resulted in a small residual portion of land existing within the Rural Zone, without any substantive measure of merit for this land to be occupied by an independent rural activity, is further support for the recognition of exceptional circumstances.

It is therefore considered that a true exception case has been established and that as a consequence this application, if consent is granted, will not establish an undesirable precedent that might undermine the integrity of the District Plan.

Part 2 Matters

It is considered that the proposal is consistent with the provisions contained in Part 2 of the Resource Management Act 1991.

Draft Conditions

The following provision are suggested as being appropriate condition of consent:

1. *The proposal shall be given effect to generally in accordance with the plan prepared by Paterson Pitts Group entitled, 'Lots 33-53 Being a Proposed Subdivision of Lots 10 and 27 SUB-2017-32,' dated 29 May 2017, and the accompanying information submitted as part of received at Council on, except where modified by the following:*
2. *That prior to certification of the survey plan pursuant to section 223 of the Resource Management Act 1991, the applicant shall ensure the following:*
 - a) *That if a requirement for any easement for services is incurred during the survey, then those easements shall be granted or reserved and included in a Memorandum of Easements.*

- b) *That a right of way shall be created over Lot 37 in favour of Lots 36 and 38, and shall be shown on the survey plan in a Memorandum of Easements. This right of way shall have a minimum legal width of 3.5m.*
 - c) *That a right of way shall be created over Lot 30 SUB-2017-32 in favour of Lots 45 and 46, and shall be shown on the survey plan in a Memorandum of Easements. This right of way shall have a minimum legal width of 3.5m.*
 - d) *That easements in gross in favour of the Dunedin City Council shall be created as required over any foul sewer, stormwater sewer or water main which is to be vested with the Council. The easements in gross shall be made in accordance with Sections 4.3.9, 5.3.4, or 6.3.10.3, as appropriate, of the Dunedin Code of Subdivision and Development 2010. The easement documentation shall be prepared in consultation with the Asset Manager, Water and Waste Services Business Unit, to ensure an appropriate maintenance agreement is obtained over the access lots and services.*
 - e) *That the following amalgamation conditions shall be imposed on the survey plan:*
 - 'That Lot 51 hereon be amalgamated with Lot 11 SUB-2017-32, and that a new computer register be issued for both parcels together (see CSN Request).'*
 - 'That Lot 52 hereon be amalgamated with Lot 9 SUB-2017-32, and that a new computer register be issued for both parcels together (see CSN Request).'*
 - f) *That Lots 47, 48 and 49 shall be shown on the survey plan as vesting with Council as road.*
 - g) *That Lot 50 shall be shown on the survey plan as vesting with Council as accessway.*
3. *Prior to the commencement of earthworks approved by this subdivision consent, the consent holder shall:*
- a) *Before any construction works commence, the consent holder shall provide notice to the Resource Consent Monitoring team by email to rcmonitoring@dcc.govt.nz advising who the supervisor shall be for the design and supervision of the earthworks.*
 - b) *Advise the Council, in writing, of the start date of the works. The written advice shall be provided to Council at least five (5) working days before the works are to commence.*

- c) *Advise all neighbouring property owners and residents of the proposed works at least five (5) working days prior to works commencing.*
 - d) *That, if any earthworks fill processes occur on any of the new residential sites, that these earthworks shall be designed and supervised by an appropriately qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development.*
 - e) *That detailed engineering design of all earthworks, including long-sections and cross-sections of the roads, shall be submitted to the Council for approval prior to physical works commencing on-site.*
 - f) *That, if the earthworks construction period requires heavy vehicles to use the State highway for access to and/or from the subject site, the consent holder shall consult with the NZ Transport Agency. A Construction Traffic Management Plan shall be completed and submitted to the NZ Transport Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days prior to truck movements commencing.*
 - g) *That a Soil Management Plan prepared by a suitably qualified person shall be submitted to the Council for approval prior to subdivision earthworks commencing, in order to address the management of soils subject to the NES.*
4. *While undertaking earthworks approved by this subdivision consent, the consent holder shall ensure that:*
- a) *The earthworks shall be undertaken in accordance with the approved detailed engineering design of condition 3(e) and the Soil Management Plan of condition 3(g).*
 - b) *Any excavation works shall be inspected by an appropriately qualified person who must certify that the proposed construction or earthwork does not create or exacerbate instability on this or any adjacent property.*
 - c) *All practicable measures (including dampening of loose soil) shall be undertaken to ensure that dust, resulting from the proposed earthworks, does not escape the property boundary.*
 - d) *All practicable measures are used to mitigate erosion and to control and contain sediment-laden stormwater run-off from the site during any site disturbance that may be associated with this subdivision. To ensure effective management of erosion and sedimentation on the site during earthworks and as the site is developed, measures are to be taken and devices are to be installed, where necessary, to:*
 - *divert clean runoff away from disturbed ground;*

- control and contain stormwater run-off;
 - avoid sediment laden run-off from the site'; and
 - protect existing drainage infrastructure sumps and drains from sediment run-off.
- e) *Sediment fencing shall be utilised to catch all sediment runoff from the area of the proposed earthworks. This fencing shall remain in place until all exposed surfaces are in an erosion-proof state.*
- f) *No soil disturbance or soil shifting, unloading, loading will take place if wind speed is higher than 14 metres per second if the soil is dry and prone to becoming airborne, unless a dust suppressant is applied.*
- g) *All loading and unloading of trucks with excavation or fill material is to be carried out within the subject site.*
- h) *Any earth fill over 0.6m thick supporting foundations shall be specified and supervised by a suitably qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development.*
- i) *Any areas of certified or uncertified fill within the new lots shall be identified on a plan, and the plan and certificates submitted to Council for Council records.*
- j) *Cartage of any surplus excavated soil from the site must be to an approved clean fill site (i.e. where dumping of fill is permitted or authorised by consent). The consent holder shall advise any contractor accordingly. The contractor shall be responsible for keeping the roads clean of material.*
- k) *Any material trafficked onto the road carriageway shall be removed as soon as possible at the consent holder's expense.*
- l) *The consent holder shall:*
- *be responsible for all contracted operations relating to the exercise of this consent; and*
 - *ensure that all personnel (contractors) working on the site are made aware of the conditions of this consent, have access to the contents of consent documents and to all associated erosion and sediment control plans and methodology; and*
 - *ensure compliance with the consent conditions.*
- m) *Should the consent holder cease, abandon, or stop work on site for a period longer than six weeks, the consent holder shall first take adequate preventative and remedial measures to control sediment discharge/run-off and dust emissions, and shall thereafter maintain these measures for so long as necessary to prevent sediment discharge or dust emission from*

the site. All such measures shall be of a type and to a standard which are to the satisfaction of the Resource Consent Manager.

- n) If at the completion of the earthworks operations, any public road, footpath, landscaped areas or service structures that have been affected/damaged by contractor(s), consent holder, developer, person involved with earthworks or building works, and/or vehicles and machineries used in relation to earthworks and construction works, shall be reinstated to the satisfaction of Council at the expense of the consent holder.*
- o) All construction noise shall comply with the following noise limits as per New Zealand Standard NZS 6803:1999.*

<i>Time of Week</i>	<i>Time Period</i>	<i>Leq (dBA)</i>	<i>L max(dBA)</i>
<i>Weekdays</i>	<i>0730-1800</i>	<i>75</i>	<i>90</i>
	<i>1800-2000</i>	<i>70</i>	<i>85</i>
	<i>2000-0730</i>	<i>45</i>	<i>75</i>
<i>Saturdays</i>	<i>0730-1800</i>	<i>75</i>	<i>90</i>
	<i>1800-2000</i>	<i>45</i>	<i>75</i>
	<i>2000-0730</i>	<i>45</i>	<i>75</i>
<i>Sundays and public holidays</i>	<i>0730-1800</i>	<i>55</i>	<i>85</i>
	<i>1800-2000</i>	<i>45</i>	<i>75</i>
	<i>2000-0730</i>	<i>45</i>	<i>75</i>

Note: the lower limits for Sundays and public holidays will likely prevent the operation of heavy machinery.

- p) If the consent holder:*
- (a) discovers koiwi tangata (human skeletal remains), waahi toaka (resources of importance), waahi tapu (places or features of special significance) or other Maori artefact material, the consent holder should, without delay:*
- (i) notify the Consent Authority, Tangata whenua and Heritage New Zealand and in the case of skeletal remains, the New Zealand Police.*
- (ii) stop work within the immediate vicinity of the discovery to allow a site inspection by the Heritage New Zealand and the appropriate runanga and their advisors, who shall determine whether the discovery is likely to be extensive, if a thorough site investigation is required, and whether an Archaeological Authority is required.*
- Any koiwi tangata discovered should be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to its removal or preservation.*

Site work should recommence following consultation with the Consent Authority, the Heritage New Zealand, Tangata whenua, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.

- (b) discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder should without delay:
 - (i) stop work within the immediate vicinity of the discovery or disturbance; and*
 - (ii) advise the Consent Authority, the Heritage New Zealand, and in the case of Maori features or materials, the Tangata whenua, and if required, should make an application for an Archaeological Authority pursuant to the Historic Places Act 1993; and*
 - (iii) arrange for a suitably qualified archaeologist to undertake a survey of the site.**

Site work should recommence following consultation with the Consent Authority.

- 5. Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the applicant shall complete the following:*

- a) The subdividing owner of the land shall provide notice to the Resource Consent Monitoring team by email to rcmonitoring@dcc.govt.nz advising who their representative shall be for the design and execution of the engineering works required in association with this subdivision and shall confirm that this representative will be responsible for all aspects of the works covered under NZS4404:2004 "Code of Practice for Urban Land Subdivision" in relation to this development.*

Engineering Design:

- b) That detailed engineering plans, long-sections, and associated calculations for the water, wastewater and stormwater infrastructure shall be submitted to the Asset Planning Engineer, Water and Waste Services Business Unit, for approval prior to any works commencing on the site. The engineering plans and associated calculations shall meet the requirements of the Construction Plan Check List, the Dunedin Code of Subdivision and Development 2010, and the NZS4404:2004 standard.*
- c) All work associated with installing the Council-owned infrastructure shall be undertaken in accordance with the approved engineering plans, The Dunedin Code of Subdivision and Development 2010, and the NZS4404:2004 standard.*

- d) *On completion of construction of the servicing infrastructure, as-built plans shall be submitted to the Asset Planning Engineer, Water and Waste Services Business Unit, for approval. The as-built plans shall be accompanied by a quality assurance report of the installed infrastructure to be vested in Council.*

Stormwater Services:

- e) *That a Stormwater Management Plan for the entire subdivision shall be provided to Water and Waste Services for approval prior to construction commencing. The Stormwater Management Plan must outline:*
- Outline stormwater calculations which state the difference between the pre-development flows and post-development flows and how to manage any difference in flow;*
 - Clearly detail the stormwater management systems proposed for the development to accommodate for any runoff;*
 - Clearly detail impervious surfaces;*
 - Design drawings;*
 - Plans indicating secondary overland flow paths;*
 - Details of ownership and management arrangements;*
 - Evidence that the systems meets the requirements of NZS4404:2010 and the Dunedin Code of Subdivision and Development 2010.*
- f) *That stormwater management of the development shall be undertaken in accordance with the approved Stormwater Management Plan of condition 5(e) above.*
- g) *That, if the Stormwater Management Plan requires individual on-site stormwater retention to be installed within any of the lots, a consent notice shall be prepared for registration on the title of that lot for the following on-going condition:*

'Prior to residential activity being established on this site, a stormwater retention tank to retain stormwater run-off from this site, shall be installed. The tank shall have a minimum storage capacity of [volume] litres, or another volume as agreed with the Water and Waste Services Business Unit at the Dunedin City Council. Primary discharge shall be through a restricted aperture located near the invert of the tank, which shall be specifically designed to pass 0.5 litres per second. Secondary discharge shall be by way of a standard 100mm diameter drain installed at the top of the tank which shall provide an escape route for water during extreme rainfall events.'

The word [volume] in the above consent notice shall be replaced with an appropriate storage capacity, as determined by the Stormwater Management Plan of condition 3(c).

- h) That the stormwater management shall be undertaken in accordance with the approved Stormwater Management Plan of condition 5(e) above.*
- i) That any earthworks for stormwater management purposes shall be undertaken in accordance with the Soil Management Plan required under condition 3(g) above. There shall be no excavation occurring within the 20m building restriction area as shown on the application plan except superficial grading to improve natural surface run-off.*

Services:

- j) An "application for Water Supply - New Service" shall be submitted to the Water and Waste Services Business Unit for approval to establish a new water connection to each un-serviced new lot. Details of how each lot is to be serviced for water shall accompany the application.*
- k) Upon approval by Water and Waste Services Business Unit, water service connections shall be installed in accordance with the requirements of Section 6.6.2 of the Dunedin Code of Subdivision and Development 2010.*

Roading:

- l) That, if any earthworks or other subdivision construction occurring on-site require heavy vehicles to use the State highway for access to and/or from the subject site, the consent holder shall consult with the NZ Transport Agency. A Construction Traffic Management Plan shall be completed and submitted to the NZ Transport Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days prior to truck movements commencing.*
- m) The applicant is required to provide formal road engineering plans to Transport for consideration, for the road to vest (Lots 47-49). The plans shall be submitted to, and approved by, Transport prior to construction.*
- n) Upon completion of construction of the all roading works, the roading infrastructure shall be tested to demonstrate that it meets the acceptance requirements of the Dunedin City Council.*
- o) Upon completion of all of roading works, the works shall be certified as having been constructed in accordance with the approved plans and specifications, and as-built plans shall be supplied to Transport.*

- p) *That any tree planting to be undertaken in road reserve shall be determined in consultation with Transportation Operations and the Parks Officer – Trees. Species and location of trees shall be approved by the Transportation Operations manager prior to planting commencing.*
- q) *That Right of Way D shall be formed to a minimum width of 3.0m, and be hard surfaced and adequately drained for its duration.*
- r) *That the public accessway within Lot 50 shall include a 2.0m wide gravel path. Detail of this path shall be included with the engineering plans submitted to Council under condition 5(m).*

General:

- s) *That a suitably qualified person shall determine if the land of the entire development is 'good ground' in accordance with NZS3604, Section 3.1. This verification will require site investigation in accordance with the standard, potentially including dynamic cone testing to 10m depth to quantify the potential for liquefaction for each dwelling. A report detailing the findings of this investigation shall be provided to Council for its records.*
- t) *That, if the site investigations of condition 5(r) above determines that the assessed potential movement of the ground is likely to be significant during a seismic event, and that ground remediation works are required, these ground remediation works shall be undertaken by the consent holder in accordance with condition 3(g) above.*
- u) *That electricity and telecommunications shall be supplied to the net area of each allotment. These shall be installed underground from any existing reticulation.*
- v) *The subdivider shall provide to Council for approval 'as-built' plans and information detailing all engineering works completed in relation to or in association with this subdivision. The as-built plans shall be accompanied by a quality assurance report of the installed infrastructure to be vested in Council.*

Such "as-built" plans of:

- (i) *the water reticulation pipes laid within the subdivision shall include the locations of hydrants, valves, pipelines, service connections and manifold box installations and details of the pipeline materials and depth of cover over the pipelines. Written confirmation shall also be given that only approved materials have been used in the construction of the water reticulation in the subdivision.*
- (ii) *the foul and stormwater system shall show laterals for each lot.*

- w) *That a Landscape Management Plan shall be prepared and submitted to the Council for approval by Council's landscape architect prior to subdivision earthworks commencing, in order to i) address the management of soils subject to the NES, and ii) provide detail of how the new landscape areas shall be established to achieve the proposed landscape mitigation objectives. The second part of this Plan shall include details on-*

- *Plant and tree species.*
- *Planting density and spacings.*
- *Ground treatments.*
- *Maintenance requirements.*

Consent notices:

- x) *A consent notice shall be prepared for registration on the titles of Lots 43-45 and 53 for the following on-going conditions:*

'There is a building restriction area over part of the site, as depicted on the attached plan. Within this area the property owner shall not i) erect any permanent or temporary structures within this area, except for fences less than 1.2m in height and/or structures that are at ground level or below ground level, and ii) establish any vegetation at a height of greater than 2.0m.'

'Any new residential activity established on this site shall be fitted with a suitable on-site foul waste treatment facility, which includes secondary treatment functions. Sufficient information of this facility shall be included in any new building consent application to demonstrate how the proposed treatment facility will successfully treat and dispose of foul waste on-site.'

'That any new residential structures established within this site shall have a reflectivity value of no more than 40% for roofs and 50% for walls.'

- y) *A consent notice shall be prepared for registration on the titles of Lots 38 to 41 for the following on-going conditions:*

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40 dBL Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to

the Dunedin City Council as part of the building consent application.'

'There shall be no direct vehicle access to State Highway 87 from this site. All vehicle access shall be obtained via the site's internal access through to Holyhead Street.'

'The property owner is responsible for maintaining the line of planted trees along the north-west boundary of the site. In the event that any of these trees die, the owner shall replace the tree with a new tree of the same species.'

'Any new residential activity established on this site shall be fitted with a suitable on-site foul waste treatment facility, which includes secondary treatment functions. Sufficient information of this facility shall be included in any new building consent application to demonstrate how the proposed treatment facility will successfully treat and dispose of foul waste on-site.'

'That any new residential structures established within this site shall have a reflectivity value of no more than 40% for roofs and 50% for walls.'

- z) *A consent notice shall be prepared for registration on the titles of Lot 42 for the following on-going conditions:*

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40 dBL Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to the Dunedin City Council as part of the building consent application.'

'The property owner is responsible for maintaining the line of planted trees along the north-west boundary of the site. In the event that any of these trees die, the owner shall replace the tree with a new tree of the same species.'

'There is a building restriction area over part of the site, as depicted on the attached plan. Within this area the property owner shall not i) erect any permanent or temporary structures within this area, except for fences less than 1.2m in height and/or structures that are at ground level or below ground level, and ii) establish any vegetation at a height of greater than 2.0m.'

'Any new residential activity established on this site shall be fitted with a suitable on-site foul waste treatment facility, which includes secondary treatment functions. Sufficient information of this facility shall be included in any new building consent application to demonstrate how the proposed treatment facility will successfully treat and dispose of foul waste on-site.'

'That any new residential structures established within this site shall have a reflectivity value of no more than 40% for roofs and 50% for walls.'

- aa) A consent notice shall be prepared for registration on the titles of Lot 46 for the following on-going conditions:

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40 dBL Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to the Dunedin City Council as part of the building consent application.'

'There is a building restriction area over part of the site, as depicted on the attached plan. Within this area the property owner shall not i) erect any permanent or temporary structures within this area, except for fences less than 1.2m in height and/or structures that are at ground level or below ground level, and ii) establish any vegetation at a height of greater than 2.0m.'

'Any new residential activity established on this site shall be fitted with a suitable on-site foul waste treatment facility, which includes secondary treatment functions. Sufficient information of this facility shall be included in any new building consent application to demonstrate how the proposed treatment facility will successfully treat and dispose of foul waste on-site.'

'That any new residential structures established within this site shall have a reflectivity value of no more than 40% for roofs and 50% for walls.'

bb) A consent notice shall be prepared for registration on the titles of Lots 33 to 37 for the following on-going conditions:

'Any new residential activity established on this site shall be fitted with a suitable on-site foul waste treatment facility, which includes secondary treatment functions. Sufficient information of this facility shall be included in any new building consent application to demonstrate how the proposed treatment facility will successfully treat and dispose of foul waste on-site.'

'That any new residential structures established within this site shall have a reflectivity value of no more than 40% for roofs and 50% for walls.'

Conclusion

The applicant seeks consent for the following activities:

1. Subdivision consent for the proposed subdivision.
2. Earthworks consent for the proposed earthworks, in support of the residential development described.
3. Land use consent for the proposed residential activity, including breaches to density provisions and bulk and location provisions.

We detect no issues arising from the proposal which are in conflict with Part 2 of the Resource Management Act 1991.

An assessment of effects, in accordance with the Forth Schedule of the Act, and in terms of the matters over which Council has discretion, has indicated that any adverse effects arising from the proposal will be less than minor.

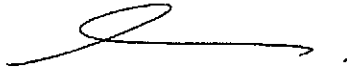
The proposed activity is contrary to Objective 6.2.1 and Policy 6.3.1 (Rural Section) of the Dunedin City District Plan. However, the applicant submits that when the application is considered in its entirety the benefits to the local environment and to the wider City, in respect of additional residential capacity in an appropriate location, outweigh the site-specific values attached to these provisions.

In full consideration of the relevant matters, it is considered that the proposed activity is not only acceptable in its particular setting, but that it offers a credible initiative in support of Council's residential capacity obligations.

We have attached a cheque for \$7,500.00 to cover the applicable notified consent processing fee. Please feel free to contact the author below should any additional information be required.

Yours faithfully

PATERSON PITTS PARTNERS LTD

A handwritten signature in black ink, consisting of a stylized 'K' followed by a horizontal line that tapers to a point.

Kurt Bowen

Registered Professional Surveyor



Proposed Building Restriction Area
> No permanent or temporary structures except for fences to 1.2m in height.
> No vegetation allowed to grow to more than 2.0m in height.

NOTES:

1. Lot 51 is to be amalgamated with Lot 11 of SUB-2017-32
2. Lot 52 is to be amalgamated with Lot 9 of SUB-2017-32
3. ROW 'D' is an easement for access and services over Lot 37 in favour of Lots 36 & 38.
4. ROW 'E' is an easement for access and services over Lot 30 SUB-2017-32 in favour of Lots 45 & 46
5. All sites have rectangular building platforms in excess of 300m² available.



Existing structures



Zone Boundary

LAYOUT PLAN

PATERSONPITTSGROUP
Surveying • Planning • Engineering
Your Land Professionals
www.ppgroup.co.nz
0800 PPGROUP

DUNEDIN:
229 Moray Place,
PO Box 5933,
Dunedin 9058.
T 03 477 3245
F 03 474 0484
E dunedin@ppgroup.co.nz

Client/Location
Balmoral Developments (Outram) Ltd
94 Holyhead Street, Outram

Purpose/Drawing Title
**Lots 32-52 Being a Proposed Subdivision
of Lots 10 and 27 SUB-2017-32**

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Surveyed by	---	Original Size	Scale	1:1,500
Designed by	KAB	A3	DO NOT SCALE	
Drawn by	KAB			
Checked by	KAB			
Approved by	KAB	Sheet No	Revised by	Date Created
Job Ref	D15829	1 of 1	C	29/05/2017



-  Proposed Building Restriction Area
- > No permanent or temporary structures except for fences to 1.2m in height.
 - > No vegetation allowed to grow to more than 2.0m in height.
-  Proposed stormwater pump station and discharge main.
-  Existing stormwater pipe or stormwater pipe proposed under SUB-2017-32.
-  Proposed stormwater pipe.

INFRASTRUCTURE PLAN

PATERSONPITTS GROUP Surveying • Planning • Engineering Your Land Professionals www.ppgroup.co.nz 0800 PPGROUP	DUNEDIN: 229 Moray Place, PO Box 5933, Dunedin 9058. T 03 477 3245 F 03 474 0484 E dunedin@ppgroup.co.nz	Client/Location: Balmoral Developments (Outram) Ltd 94 Holyhead Street, Outram	Purpose/Drawing Title: Lots 32-52 Being a Proposed Subdivision of Lots 10 and 27 SUB-2017-32	© COPYRIGHT. This drawing, content and design remains the property of Paterson Pitts Partners Limited and may not be reproduced in part or full or altered without the written permission of Paterson Pitts Partners Limited. This drawing and its content shall only be used for the purpose for which it is intended. No liability shall be accepted by Paterson Pitts Partners Limited for its unauthorized use.				
				Surveyed by: —	Original Size: A3	Scale: 1:1,500	DO NOT SCALE	
				Designed by: KAB	Sheet No: 1 of 1	Revision No: C		Date Created: 29/05/2017
				Drawn by: KAB				
Job Ref: D15829								



Proposed Building Restriction Area
 > No permanent or temporary structures except for fences to 1.2m in height.
 > No vegetation allowed to grow to more than 2.0m in height.

- Proposed stormwater pump station and discharge main.
- Existing stormwater pipe or stormwater pipe proposed under SUB-2017-32.
- Proposed stormwater pipe.

INFRASTRUCTURE PLAN

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 229 Moray Place,
 PO Box 5933,
 Dunedin 9058.
T 03 477 3245
F 03 474 0484
E dunedin@ppgroup.co.nz

Client/Location

Balmoral Developments (Outram) Ltd
 94 Holyhead Street, Outram

Purpose/Drawing Title

Lots 32-52 Being a Proposed Subdivision
of Lots 10 and 27 SUB-2017-32

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Surveyed by	KAB	Original Size	Scale
Designed by	KAB	A3	1:1,500
Drawn by	KAB		
Checked by	KAB		
Approved by	KAB		
Job Ref	D15829	Sheet No	1 of 1
		Revision No	C
		Date Created	29/05/2017

APPLICATION FORM FOR RESOURCE CONSENT

APPLICATION DETAILS

We Balmoral Developments (Outram) Limited hereby apply for

Land Use Consent

☒ Subdivision Consent

☐ Other Earthworks (select one)

Brief description of proposed activity: Subdivision of part of the land at 94 Holyhead Street, Outram into 15 new vacant residential sites plus ancillary allotments.

(eg Alter house, construct garage, establish a commercial activity, subdivide the site, remove a tree etc)

Have you applied for a building consent? ☐ Yes, Building Consent Number: ABA _____ ☒ No

The following additional resource consents are required and have/have not (delete one) been applied for:

☐ Water Permit

☐ Discharge Permit

☐ Coastal Permit

☒ Not applicable

SITE DESCRIPTION/LOCATION

We are the Owners of the site (owner, occupier, lessee, prospective purchaser etc)

Street address of site: Part of 94 Holyhead Street, Outram, Dunedin

Legal description: Part of Lot 2 DP 20759 (also refer Lots 10 and 27 of resource consent SUB-2017-32).

Certificate of title: OT12B/346 Valuation No. _____ Property No. _____

ADDRESS FOR CORRESPONDENCE

Name (agent) Attention: Kurt Bowen

Address: C/- Paterson Pitts Group

P.O. Box 5933, Dunedin

Phone: Daytime: (03) 477-3245

Fax: (03) 474-0484

E-mail: kurt.bowen@ppgroup.co.nz

OWNERSHIP OF THE SITE

Who is the current owner of the subject site? The Applicant

If the applicant is not the site owner, please provide the site owner's contact details:

Address: _____

Phone: _____

MONITORING OF YOUR RESOURCE CONSENT

What is your best estimate of the date of completion of the work for which this resource consent is required?

Your resource consent will be monitored for compliance with any conditions at the completion of the work. (If you do not specify an estimated time for completion, your resource consent will be monitored six months before it is due to expire, which is normally 18 months after the date the consent is granted.)

July 2020

(month and year)

DETAILED DESCRIPTION OF PROPOSED ACTIVITY

Describe your proposal in detail, including reference to the rules in the District Plans that the proposal does not comply with. _____

Refer to separate sheets attached.

(Continue on a separate sheet if necessary)

AFFECTED PERSONS' APPROVALS

I/We have obtained the written approval of the following people/organisations and they have signed the plans of the proposal:

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

Please Note: You must submit the completed written approval form(s), and the plans of the proposed activity signed by affected persons, with this application for resource consent, *unless* it is a notified application in which case affected persons' approvals need not be provided with the application.

ASSESSMENT OF EFFECTS ON ENVIRONMENT

What effects will the proposed activity have on the environment? Discuss both positive and adverse (negative) effects. Effects could include things such as the generation of noise or odour, positive and/or negative visual effects, shading, loss of sunlight or privacy, traffic/car parking effects, earthworks, effects on the landscape or townscape etc. The extent of the assessment must be proportional to the degree of potential effects of the proposed activity.

Refer to separate sheets attached.

(Continue on a separate sheet if necessary)

DECLARATION

I certify that, to the best of my knowledge and belief, the information given in this application is true and correct.

I accept that I have a legal obligation to comply with any conditions imposed on the resource consent should this application be approved.

I agree to pay all the fees and charges levied by the Dunedin City Council for processing this application, including a further account if the application is notified and the cost of processing it exceeds the deposit paid.

Signature of Agent

Date:



29 May 2017

Have you read the notes on the following page?

PRIVACY – Local Government Official information and Meetings Act 1987

Under this Act, any person can request applications lodged with Council. Council is obliged to make available the information requested unless there are grounds under the above Act that justify withholding it. While you may request that it be withheld, Council will make a decision, following consultation with you. If Council decides to withhold an application, or part of it, that decision can be reviewed by the Office of the Ombudsmen.

Please advise if you consider it necessary to withhold your application, or parts of it, from any persons (including the media) to: (tick those that apply)

- ☐ Avoid unreasonably prejudicing your commercial position
- ☐ Protect information you have supplied to Council in confidence
- ☐ Avoid serious offence to tikanga Maori or disclosing location of waahi tapu

WHAT HAPPENS WHEN FURTHER INFORMATION IS REQUIRED?

If an application is not in the required form or does not include adequate information, the Council may not accept the application. In addition, section 92 of the Resource Management Act 1991, allows the Council to request further information from an applicant at any stage through the process where it is considered necessary to better understand the nature of the activity, the effects it may have on the environment, or the ways in which adverse effects may be mitigated.

FEES

The Council has set application fees. These may be subject to change by resolution of the Council and will be publicly notified. Enquire at the planning enquiries counter for the details.

FURTHER ASSISTANCE

If you require any further help, please contact:

Planning Enquiries
First Floor, Civic Centre
50 The Octagon
PO Box 5045
Dunedin

Phone 477 4000
Fax 474 3523

This is also where you can lodge your resource consent application. We are there to provide you with planning information. If you consider you need further planning advice, you may wish to discuss your application with an independent planning consultant.

INFORMATION REQUIREMENTS

OFFICE USE

- ☐ Completed and Signed Application Form
 - ☐ Description of Activity and Assessment of Effects
- ☐ Plans
 - ☐ Site Plan and Elevations
- ☐ Certificate of Title (less than 3 months old)
- ☐ Written Approvals
 - ☐ Forms and Plans signed by Affected Persons
- ☐ Application Fee

☐
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☐

In order to ensure your application is not rejected or delayed through requests for further information, please make sure you have included all of the necessary information. A full list of the information required for resource consent applications is in the Information Requirements Section of the Proposed District Plan.

OFFICE USE ONLY

Has the application been completed appropriately (including necessary information and adequate assessment of effects) Yes ☐ No ☐

Application: Received ☐ Rejected ☐ Received by: Counter / Post / Courier / Other

Comments:

.....

Include reasons for rejection and/or notes to handling officer.

Planning Officer: Date:



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R. W. Muir
Registrar-General
of Land

Identifier **OT12B/346**
Land Registration District **Otago**
Date Issued 06 September 1988

Prior References

OT321/43 OT6A/223 OT8C/254

Estate Fee Simple
Area 6.3518 hectares more or less

Legal Description Lot 2 Deposited Plan 20759

Proprietors

Balmoral Developments (Outram) Limited

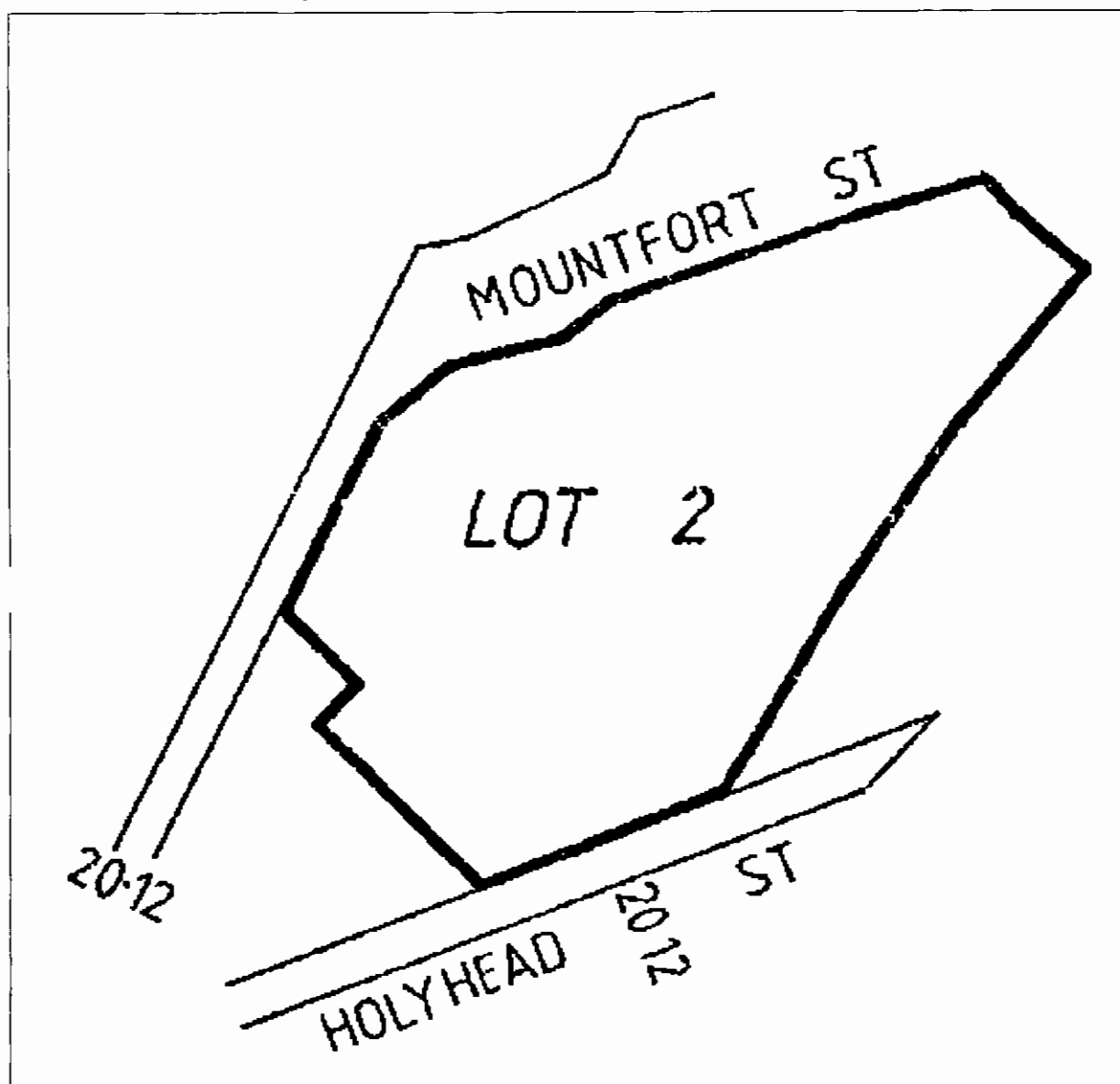
Interests

720000 Mortgage to The National Bank of New Zealand Limited - 24.1.1989 at 11.00 am

936412.1 Variation of Mortgage 720000 - 12.9.1997 at 11.56 am

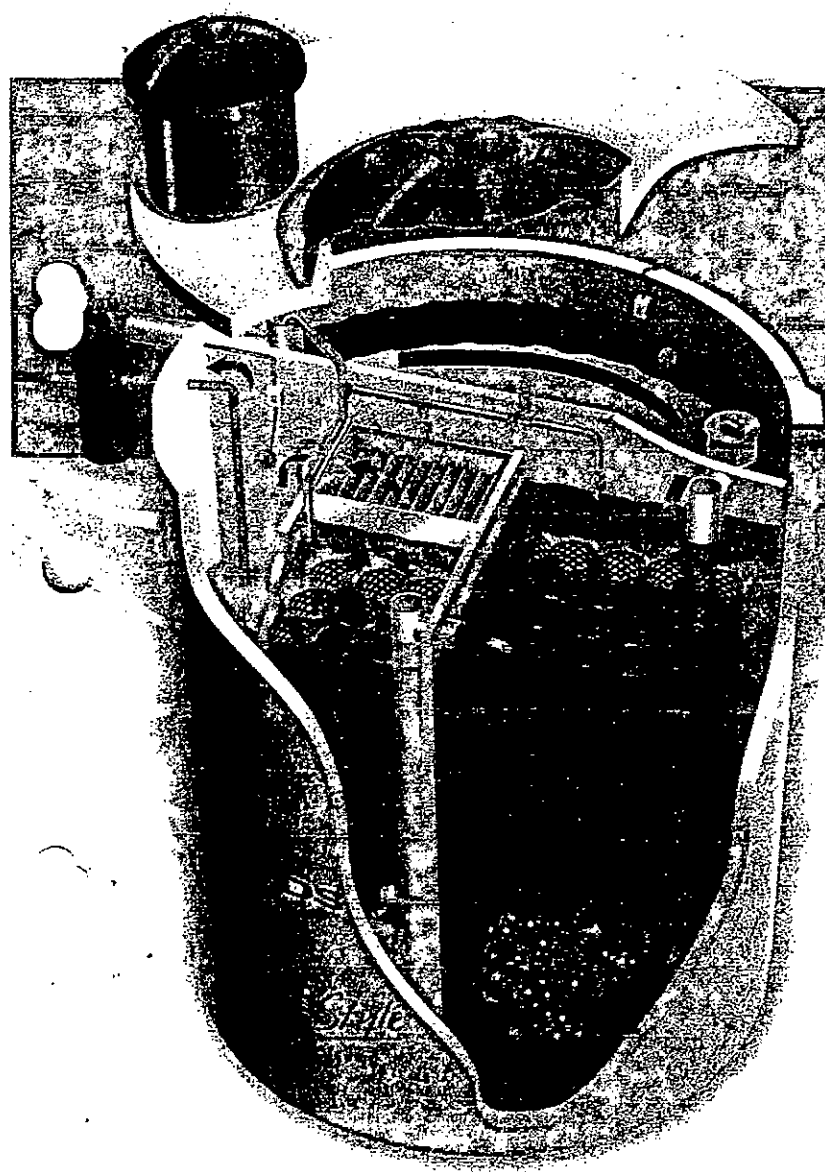
Identifier

OT12B/346



HYNDS
ENVIRONMENTAL

ENVIRONMENTAL
PROTECTION
SYSTEMS



DOMESTIC WASTEWATER SYSTEMS

*Highest quality
sewage
treatment
systems from
the name
you can trust*

protecting our environment



2

Hynds aerated systems utilise proven Submerged Aerated Filtration (SAF) technology. This advanced process produces a clear, odourless liquid suitable for sustainable irrigation of landscaped gardens, bushes or trees.

Several models of Hynds Lifestyle Systems are available to offer an optimal solution for your property. Hynds Environmental engineers design each system to suit the application with assurance of superior wastewater treatment and land application. Hynds Lifestyle Systems are modular and can be sized for any application. The system can also be expanded at a later date, if required.

Once installed, Hynds Lifestyle Systems can be easily landscaped to blend in to the surrounding environment.

High performance, low running costs and superior service make Hynds Lifestyle Systems a compact and economical solution for all household wastewater treatment.

Hynds Environmental is part of the Hynds Group of companies, providing quality products to New Zealand homes since 1973. Hynds is a family owned company with branches throughout New Zealand. With superb technical support and dedicated sales staff, Hynds offer quality, service and guaranteed backup for your Hynds Lifestyle System.

Highest quality concrete construction

Independently tested and certified to exceed all New Zealand Standards

Manufactured to ISO9001 quality standards

Genuine 24-hour emergency capacity

No cross contamination of chambers

Simple IP rated control and alarm system

Quiet and economic operation

Visually unobtrusive

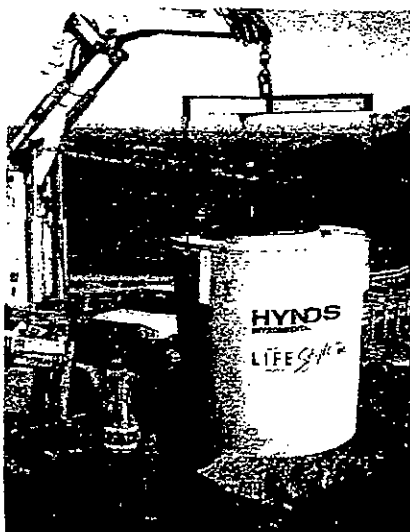
Low maintenance

Internal recycling process increases the performance and extends the pump-out frequency of the system.

24-hour backup service

Typical sites for Hynds Lifestyle Systems include rural or residential areas not connected to the sewer mains. The use of drip line irrigation make Hynds Lifestyle Systems perfect for areas with poorly draining soils, high water tables, limited space and steeply sloping sites. Failed septic tanks or trenches can also be replaced or enhanced with a Hynds Lifestyle System to prevent further damage to the environment.

The installation of a Hynds Lifestyle System will be completed by a trained Hynds Environmental technician or licensed installer. Installation of the treatment system and irrigation field is typically completed within day.



The unique design of Hynds Lifestyle Systems gives a level of performance unrivalled by traditional disposal methods. All Hynds Lifestyle Systems are designed to exceed New Zealand Standards for disposal of wastewater and are guaranteed to meet the following criteria:

BOD₅ : Suspended Solids

< 20 : 20 mg/l

Ammonia < 5 mg/l

> 99% faecal coliform removal.

Total Nitrogen < 25 mg/l

(Lifestyle 'Advanced')

Total Nitrogen < 15 mg/l

(Lifestyle 'Ultimate')

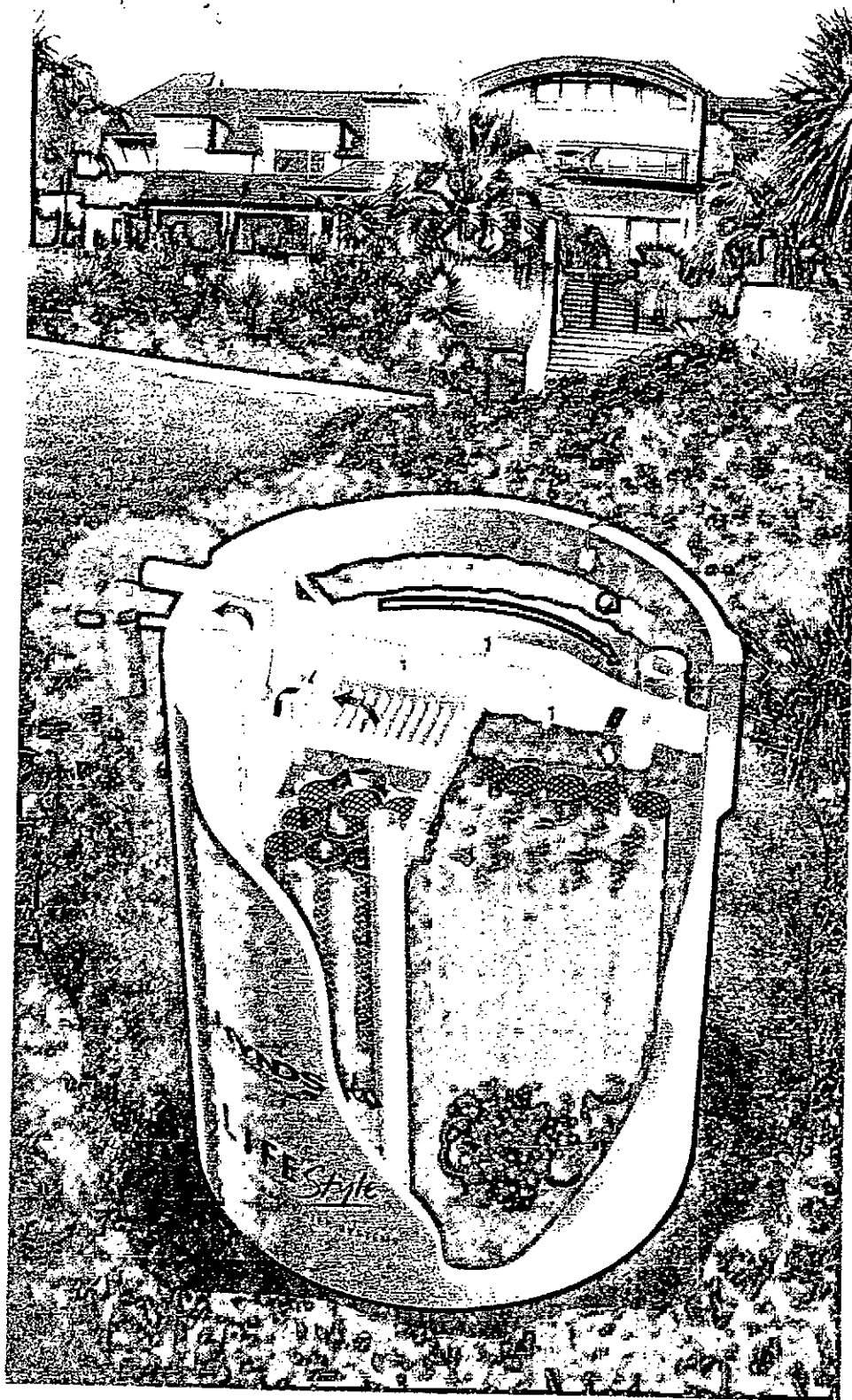
New Zealand houses are unique.

To ensure maximum performance, a wastewater system must be designed to suit the specific site conditions and the household's lifestyle.

Hynds Environmental offers a free site visit to assess the requirements of the homeowner and develop an understanding of the location, landscaping, and drainage requirements. An accurate quotation can then be provided for the recommended Hynds wastewater system based on this design information.

Hynds Environmental offers a service contract to homeowners to ensure the ongoing performance of all Hynds Lifestyle Systems. Two visits per annum are recommended to ensure compliance with resource consent requirements.

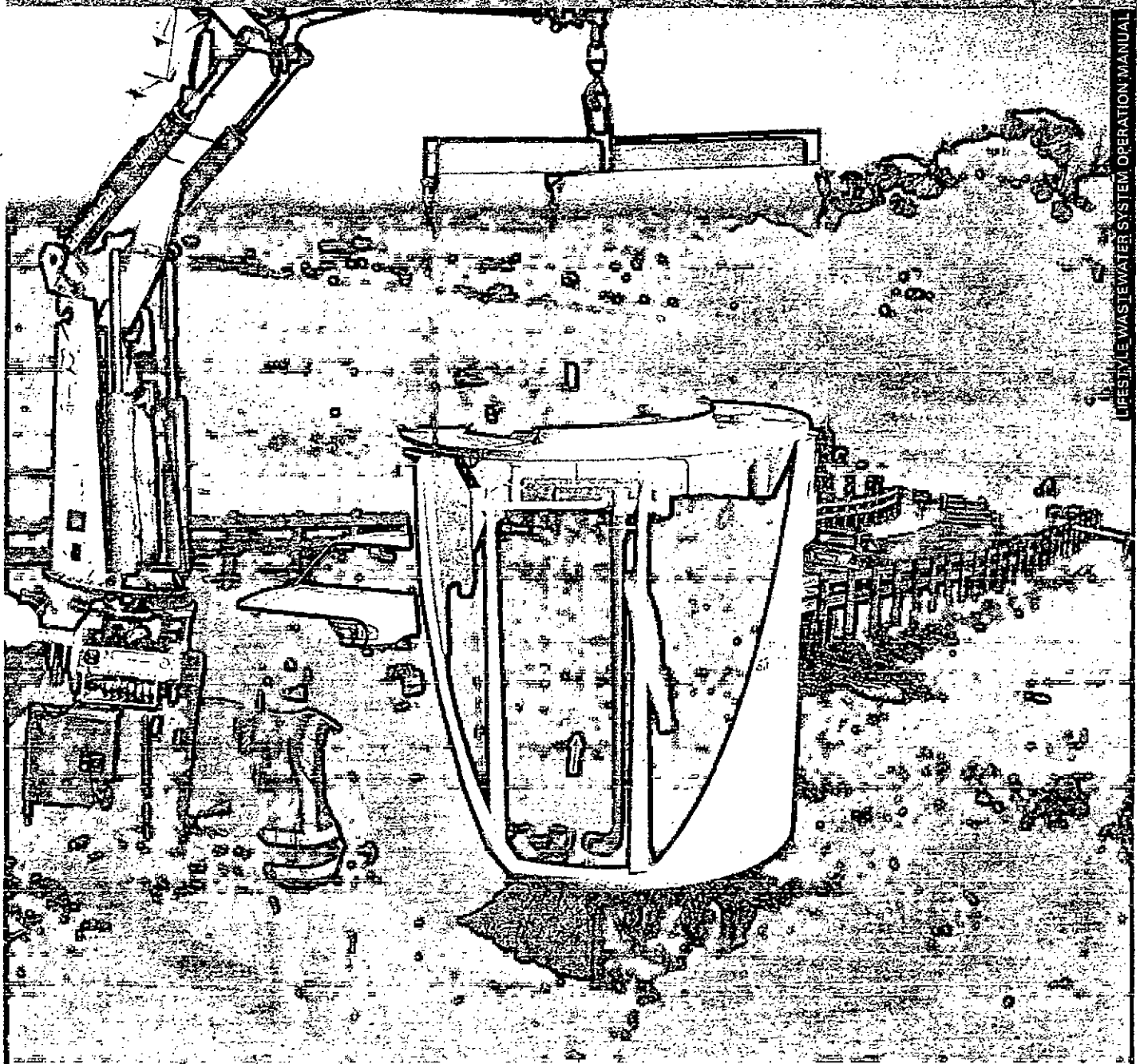
24-hour back-up support is offered with each service contract to ensure the homeowner's peace of mind.



OPERATION & MAINTENANCE MANUAL

HYNDS LIFESTYLE

WASTEWATER SYSTEM



LIFESTYLE WASTEWATER SYSTEM OPERATION MANUAL

+64 9 271 9503
www.hyndsenvironmental.co.nz

HYNDS
ENVIRONMENTAL

OPERATION & MAINTENANCE MANUAL

HYNDS LIFESTYLE WASTEWATER SYSTEM

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The Hynds Lifestyle Wastewater System is a technologically advanced wastewater treatment system.

Using aeration technology, the naturally occurring aerobic organisms in the tank accelerate the digestion to treating the wastewater from the household to a clear odourless liquid for irrigating the landscaped garden, bush or tree stand.

1 INTRODUCTION

This manual contains important information on how to care for the system.

Understanding and following this manual will not only ensure the system achieves a high level of treatment, it will also help the system run trouble free and achieve the longest possible life span for the electrical components in the system.

2 IMPORTANT INFORMATION

Most important sections are five and six of this manual which explain the maintenance requirements and offer tips and advice on how to care for the Lifestyle system. If a problem does occur in the system, the first step is to clean the irrigation filter to ensure it is not blocked.

Secondly, check the electricity supply to the system (you should be able to hear the blower working in the tank). If you are unable to rectify the problem, please call Hynds Environmental on 0800-4 A Lifestyle (0800 425 433).

3 INTENDED USE

The Hynds Lifestyle treatment plant is designed to treat wastewater from a domestic dwelling with a maximum flow design of 1800 litres per day. The performance and health of the naturally occurring microbiological bacteria that live in the tank rely on the home occupiers attention to ensure no harmful products are inserted into the system...

The Lifestyle system has been designed for a maximum daily flow of 1800 litres of domestic wastewater. Any additional volume will be deemed to be contrary to the intended purpose and design of the system. The manufacturer assumes no liability for damages resulting from this.

3.1 Harmful products

Bleaches	Harsh cleaning products
Milk	Coffee grounds
Fat, grease or oil	Acids or caustics
Paints	Condoms
Sanitary products	Cigarettes
Photographic chemicals	Poisons
Blood, meat flesh or skins	Medication (such as antibiotics)
Pharmaceutical drugs	Spa or swimming pool backflush

- Table 1: Prohibited Products to Enter Sewer Connection.
- It is recommended to use products that are labelled bio-degradable such as the Eco Store range which are available in most supermarkets.

4 TECHNICAL DATA

Description: Hynds Lifestyle Domestic Treatment Plant
Maximum Flow: 1.8 m³ per day
Designer: Hynds Environmental
Manufacturer: Hynds Environmental

Expected effluent characteristics:

Treatment Option	cBOD (g/m ³)	TSS (g/m ³)	NH ₃ (g/m ³)	TN (g/m ³)
SAF	< 20	< 20	< 5	< 15-25

Air blower

Manufacturer: Rietschle
Type: LP80HN
Connection: 230 V, 50 Hz
Power: 0.12 kW
Number: 1 unit

Irrigation Pump

Manufacturer: Davey
Type: D42 A/B
Connection: 220-240 V, 50 Hz
Power: 0.6 kW
Number: 1 unit
Max. total head: 32 m

Irrigation filter

Manufacturer: Amiad
Type: 25mm Diameter with 130 micron screen
Number: 1 unit

5 SAFETY INSTRUCTIONS

This operating manual contains basic information that should be observed when operating and servicing the plant. This manual should be read before operating, maintaining or repairing the system.

This operating manual must be kept accessible at the premises where the tank has been installed. Installation and servicing of the Hynds plant and electrical componentry is to be carried out in accordance with best practice and applicable guidelines.

5.1 Maintenance and repair work

Only the manufacturer or an approved contractor may carry out maintenance and repair work (except filter cleaning) on the system. A service contract should be in place with an authorised service agent. Any work carried out by unauthorised organization or person may result in the warranties for the system becoming invalid.

5.2 Owner Responsibility

The plant runs automatically and requires no special knowledge on the part of the owner / user.

However an irrigation filter may require cleaning on a routine basis. (see filter cleaning instructions)

Irrigation Cleaning Instructions

- Unscrew the filter housing (placed outside the tank before the irrigation field).
- Remove the cartridge.
- Loosen the ends of the filter to loosen the disks and proceed to clean with a hosepipe.
- Replace cartridge and filter base.



5.3 Basic information about safety

Potential risks when operating, checking or maintaining sewage treatment plants may be:

- Inflammations and infections
- Falling into the empty or filled tank chamber
- Suffocation
- Electrocution

5.4 Care

Wastewater can contain harmful bacteria such as infectious pathogens. When carrying out any maintenance, servicing of the system or filter cleaning, the following should be observed.

- Thoroughly clean your hands with soapy water and disinfect. Always wear rubber gloves,
- If eye or mouth contact occurs, flush with plenty of water and seek medical advice if any irritation occurs.

5.5 Danger of falling into the empty or full tank

To avoid falling into an empty or filled tank and/or chamber you should:

- Always have a firm foothold
- Wear safety footwear
- Cover access holes when not in use

5.6 Danger of suffocation

Do not enter the inside of the tank under any circumstances.

The production of toxic gases in sewage treatment plants can occur. If the tank is to be entered by a contractor, standard confined space procedures must be followed and the relevant safety equipment must be utilised (includes gas detector, breathing apparatus, tripod and winch).

No smoking in the vicinity of the sewage treatment plant is allowed.

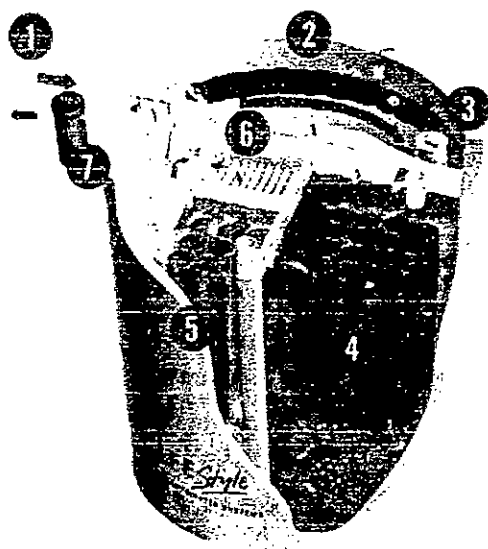
5.7 Risk of electrocution

Before entering any part of the sewage treatment plant, making contact with the water or working on or near motorised equipment, ensure the power to the relevant components are switched off and safely isolated using standard isolation procedures. (see irrigation cleaning instructions)

6 TREATMENT PROCESS

The treatment process occurs through a series of treatment chambers within the system before disposal via a network of self-compensating drip irrigation.

Treatment Stages of a Hynds Lifestyle Wastewater System



1. Wastewater enters from dwelling.
2. Primary treatment tank.
3. Biological filter.
4. First stage aeration chamber.
5. Second stage aeration chamber.
6. Hammer plate clarification.
7. Pump out/irrigation.

6.1 Chamber Functions

For specific chamber capacities refer to Table 1.

6.2 Pretreatment Chamber (Anaerobic)

The primary (anaerobic chamber) is designed to retain wastewater where solids matter settle at the bottom of the chamber. Floating solids combine to form a thick biological layer at the top of the tank. Natural occurring anaerobic organisms work to break down the sludge.

Any suspended solids are captured in a biological filter situated at the outlet of the pretreatment chamber.

6.3 Biological Disc Filter

The biological filter on the outlet assists in surge reduction and retain any indigestible solids in the tank for potential anaerobic breakdown or eventual pump out.

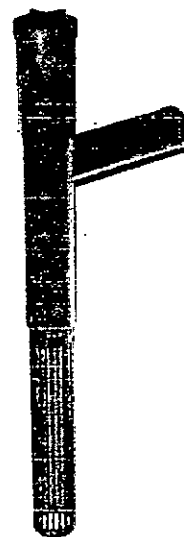


Figure 3: Biological Disc Filter

6.4 Submerged Aerated Filtration Chambers (Aerobic Digestion) – Stage 1

The aerated filtration chamber is a two-stage process. Wastewater is initially infused with finely diffused oxygen bubbles from the base of the chamber. A biomass filter media is situated to allow the aerobic bacteria to rapidly multiply on this surface and roam to digest the suspended waste particles.

System Type	Pre-treatment Volumes (Litres)	Aeration Volumes (Stage 1) (Litres)	Aeration Volumes (Stage 2) (Litres)	Irrigation Volume (Litres)	Total System Working Volume (Litres)	Emergency Capacity (Litres)	Total System Capacity (Litres)	Standard System Surge Capacity	Standard System Treatment Capacity
Advanced	3,000	1530	1530	1000	7,200	1,770	8,450	600 litres per hour	2,000 litres per day
Compact	3,000	1500	1250	1500	6,500	2,300	7,500	600 litres per hour	2,000 litres per day
Elite	Stage 1 4,500 Stage 2 3000	1530	1530	1000	11,200	3,020	12,950	800 litres per hour	3,000 litres per day

Table 1: Lifestyle Wastewater Treatment Systems chamber capacities

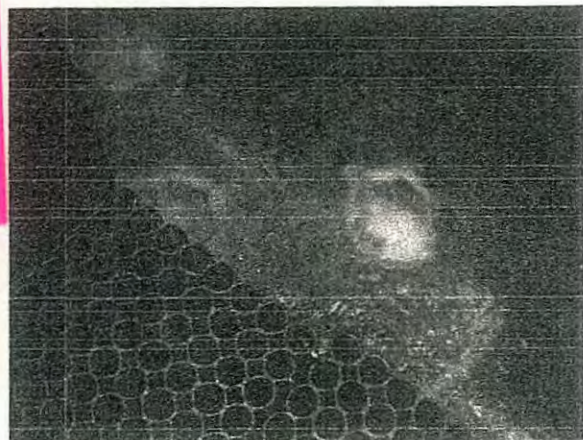


Figure 4: Submerged Aerated Filtration

6.5 Submerged Aerated Filtration Chambers (Aerobic Digestion) – Stage 2

The aerated filtration process is repeated in a second chamber, to further improve the quality of the treatment.

6.6 Laminar Plate Separator and Sludge Return System

The final clarification of effluent occurs through the liquid passing through a laminar plate separator, located at the end of the stage 2 aeration chamber. The laminar plates remove any fine suspended particles remaining in the effluent. Any fine slurry falling to the base of the hopper shaped chamber is transferred by a venturi system back to the primary chamber to recycle once again through the system. This high energy activated slurry assists break down the anaerobic sludge in the primary chamber, thereby reducing the frequency that this chamber will require to be pumped out.

6.7 Irrigation Pump Chamber

The final chamber (irrigation chamber) pumps the treated effluent into the irrigation lines at regular intervals during the day, set off by a float switch which operates at an activation level. The tank has an emergency capacity of 1770 litres (a full day usage)

7 MAINTENANCE

This section deals with maintenance issues only and does not include any requirements stipulated in the resource consent.

Please note: Hynds Environmental Technicians will require foot access to your Lifestyle system every six months. The green lids on the tank will need to be removed and it is therefore essential that access is not restricted due to excess landscaping by the landowner.

7.1 Preventative Maintenance

The Hynds Lifestyle Domestic Wastewater Treatment system operates automatically however as with any high performing product, preventative maintenance is required to ensure your system continues to perform to its peak performance. Irrigation cleaning will be required by the owner on a regular basis (minimum frequency bi-monthly). The procedure for this operation is included in Appendix B.

7.2 General Servicing

The treatment system requires specialised periodic servicing, performed by a suitably trained technician. The general servicing will include:

- Checking and cleaning all filters including blower filter
- Checking and flushing irrigation lines as per manufacturer's instructions and recording pressure in lines
- Checking all pumps and the blower as per manufacturer's instructions
- Checking controller operation
- Test all alarms
- Check aeration of Aeration Tank
- Monitor sludge build up
- General inspection of site condition
- Taking samples for testing (if applicable)
- On completion of the service, a service report is completed and sent to both the homeowner and the required council(s).

7.3 Trouble Shooting and Call Outs

The custom built controller identifies faults within the treatment system. If a fault does occur, an alarm is activated on the control panel. Once a fault occurs there will be 24 hours emergency storage before the system starts to overflow therefore it is recommended the fault is addressed immediately.

If the fault is not diagnosed and remedied by a simple irrigation service, phone your service agent and/or Hynds Environmental.

8 TIPS AND ADVICE

Only domestic wastewater should be inserted into the treatment system. Below is a list of helpful points that should be observed and followed:

- Do not allow any rainwater, groundwater, swimming or spa pool backflush enter the system.
- Ensure no large objects such as toys or nappies are put down the drains.
- Food scraps and leftovers should be composted or put in the rubbish bin.
- Distribute your washing machine loads over the week. This is to prevent surge loading which affect the performance of the bacteria.
- Use biodegradable and water soluble products for cleaning and washing such as the Eco-Store range available in supermarkets or on the web.



Photo 1: Cleaning of irrigation filter – refer Appendix B

Solid or liquid substances not to be disposed of through sink and/or toilet

Substances	What they cause	Where they belong
Wastes (also when reduced in size), e.g. ash, tins, fibres, glass, sweepings, cork, trash, cloths, sand, sludge, rubble, stones, wallpaper residues, textiles, cigarette stubs	Clog the pipes, deposit and do not decompose, Block the filter	Waste bin
Aggressive or toxic substances, e.g. acids (sulphuric acid), Dyes (caustic-soda solution) and salts, agricultural biocides, herbicides and pesticides	Intoxicate the sewage, damage the biomass and can cause concrete corrosion, foaming	Municipal collecting points
Hardening substances, e.g. cement, lime, lime wash, gypsum, mortar, carbides, synthetic resins, bitumen, tar	Clog the pipes, damage the biomass, block the filter	Waste bin, Municipal collecting points
Substances forming flammable, explosive mixtures, solvent residues, e.g. petrol, heating oil, lubes, thinners, spirit, paints, varnishes, phenols	Intoxicate the sewage, damage the biomass, destroy the filter	Municipal collecting points
Fatty or oily substances, e.g. edible fat, deep-fry fat	Deposit in the pipes, cause plugging	Put this in the waste bin when cold
Photo-chemicals, e.g. developer fluids, fixer, etc.	Intoxicate the sewage, damage the biomass	Municipal collecting points
Hygiene articles, e.g. cotton-wool balls, sanitary towels, nappies, dressings, paper towels, cotton swabs, plaster, razor blades	Clog the pipes, deposit and do not decompose, Block the filter	Waste bin
Cats' litter	Deposits in the pipes	Waste bin
Soldering fluid	Intoxicate the sewage	Municipal collecting points
Medicines and drug residues (antibiotics, etc.),	Intoxicate the sewage	Municipal collecting points, chemists
Motor oil, oil-containing wastes, e.g. cloths, oil filters, cans, etc.	Intoxicate the sewage, clog the pipes	Municipal collecting points, motor repair shops and petrol stations

Branches Nationwide

Refer to www.hynds.co.nz for further branch details

Support Office & Technical Services 09 274 0316

- **Northland** Whangarei • **Auckland** Warkworth, Albany, Avondale, Penrose, Manukau, Pukekohe • **Waikato** Hamilton, Te Kuiti, Taupo
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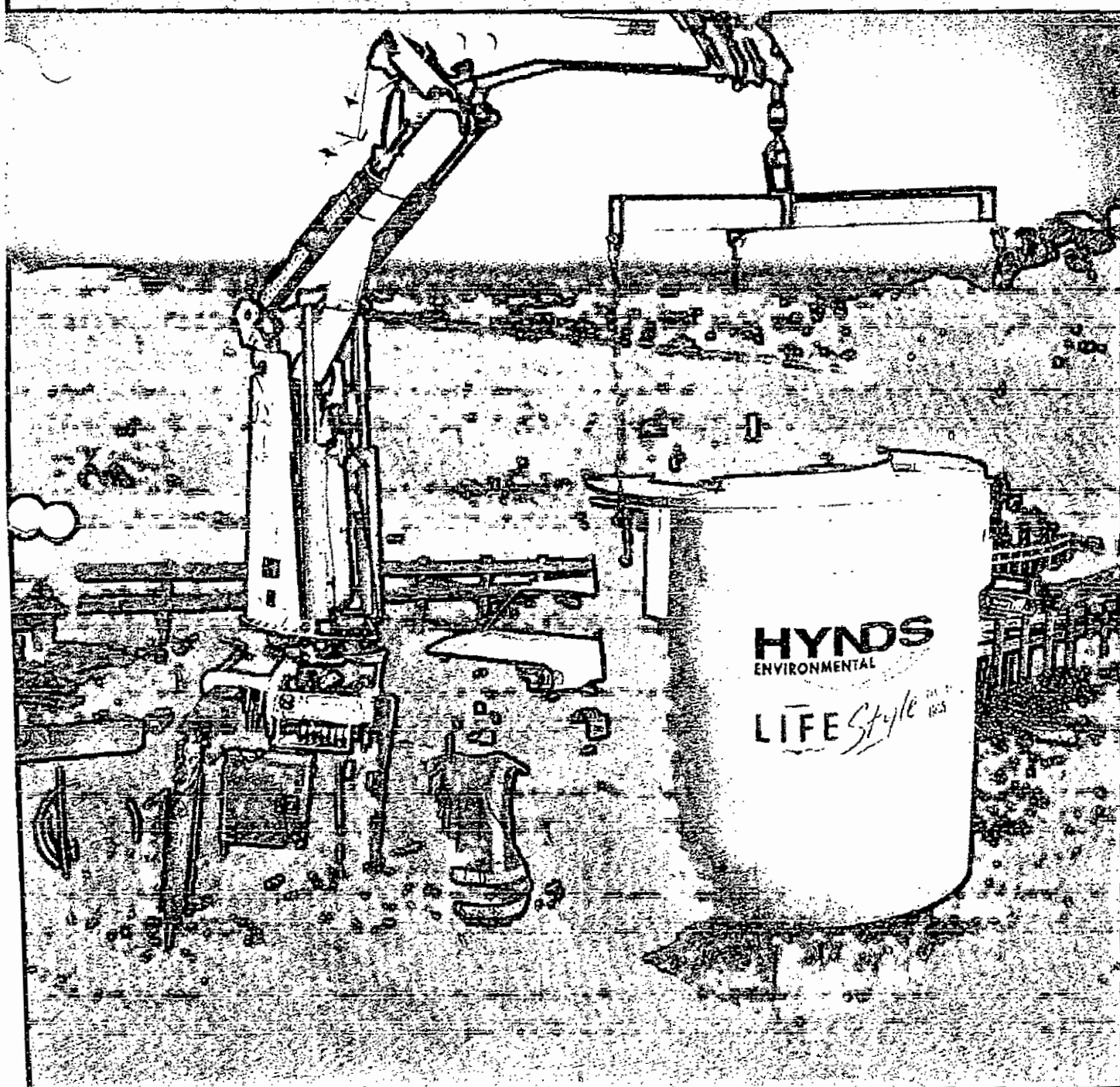
Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Products shown are not for sale, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.

0800 WE PIPE (937473)
www.hynds.co.nz

HYNDS
ENVIRONMENTAL

Installation Information

Hynds Domestic Wastewater System



A Hynds Lifestyle Wastewater Treatment System should only be installed by an authorised installer.

Installers should take note of the following information:

Tank Access

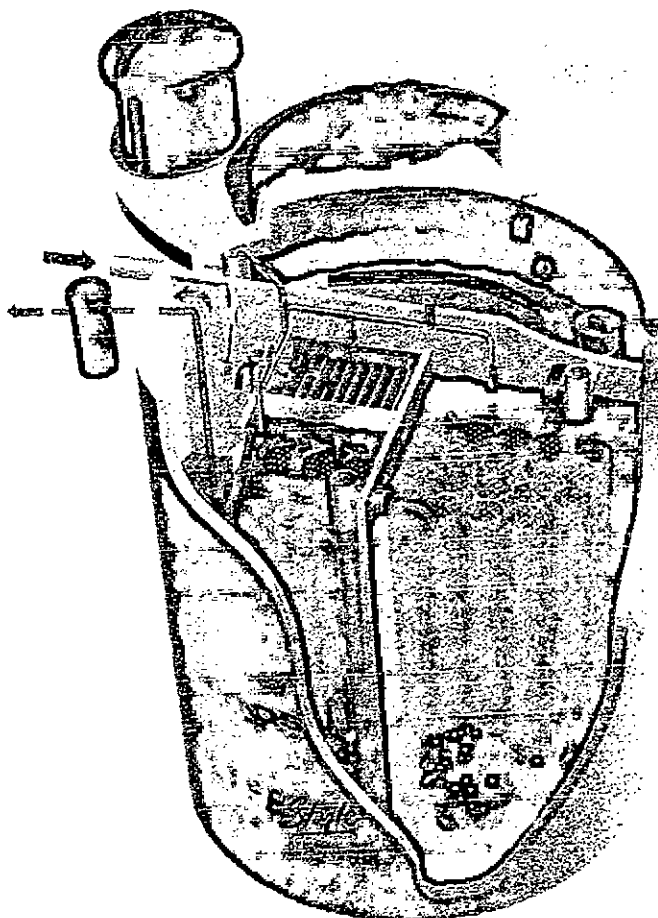
There must be sufficient access on the site for the delivery truck to reverse up to the edge of the excavation. The overall height of the truck is 4.3m and the weight is approximately 22 Tonne. Overhead power lines, steep slopes and other obstructions must be noted. If insufficient access is not available, other installation methods must be considered.

Excavation Requirements

(see diagram on page 2)

If the homeowner is making arrangements for the excavation, a 5 Tonne excavator is generally the minimum requirement. The excavator must be reliably maintained and should remain available until completion of the installation for backfilling and compacting. To avoid the excavation filling with rainwater and / or collapsing, the hole should only be dug on the day of installation. Excavation should be completed under the supervision of an authorised Hynds Environmental installer to ensure that the excavation is in the correct position and to the correct dimensions.

Note: if risers are required (see point 3 below), the hole will need to be deeper and a larger excavator may be required. Scoria, sand or GHP? (about 1/2 m³) must be available as bedding for the tank.



The sewage network is connected into the tank with a normal 100mm PVC stub fitting as shown in the diagram.

A minimum fall of 1:60 is required from the house to the Lifestyle tank. If this cannot be achieved using a standard excavation depth – either due to the site's geography or due to existing sewer lines – the tank must be lowered and risers fitted (normally at extra cost). The risers are necessary to ensure protection of electrical components and access to the tank for servicing purposes. It must be ensured that new sewer lines are not installed unnecessarily steep and / or deep, as this may cause extra expense. Hynds Environmental installers can provide full drainage services and carry out the final sewage connection.

2. *Results*

The area designated for disposal of the treated wastewater will need to be prepared. Before irrigation can be laid, the grass must be cut short or ideally the area should be rotary hoed. Once the irrigation has been laid, the area must be planted and mulched or barked. This must be completed before the Producer Statement can be supplied. Once prepared, livestock and vehicles must be kept off the area.

For surface irrigation systems, suitable trees and shrubs must be planted over the land application area to ensure adequate evapo-transpiration. Hynds Environmental can provide further information on suitable plants. In addition, unless sufficient leaf litter is present to naturally cover the irrigation lines (e.g. in native bush), a 75-100mm thick layer of bark or mulch must be laid over the lines. This acts as a barrier to suppress weeds and to protect the lines from UV rays and disturbance.

Planting and barking must be completed before the Designer can sign off the installation and before a Code of Compliance certificate can be issued by the local authority.

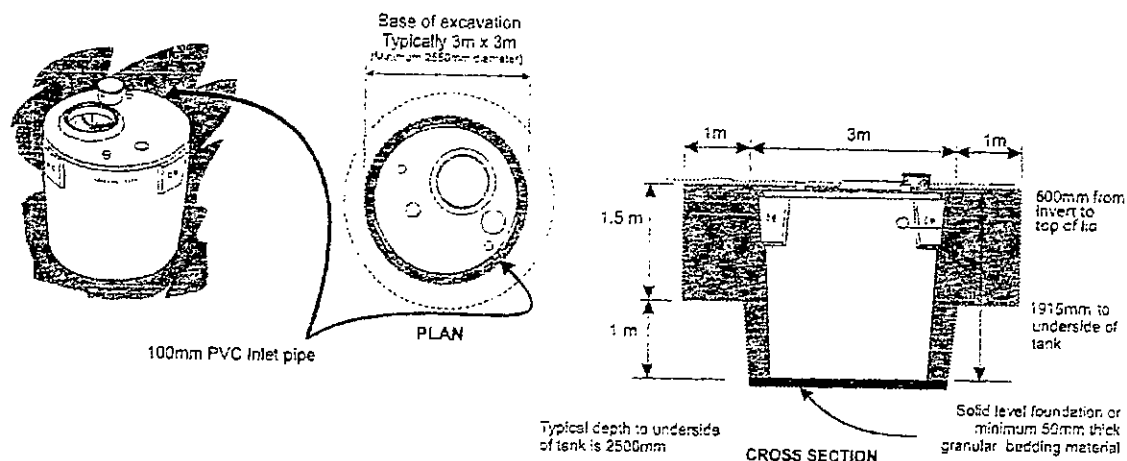
For bark gardens, we recommend the use of aeratable bark (grade 4 or larger). This will not be blown around and allows good airflow to the ground. Weed matting is not recommended as it 'suffocates' the soil (even in non-irrigated situations).

Buried irrigation lawn areas will need final preparation before sowing the grass seed. These areas should not be driven on by anything heavier than a ride-on mower.

• *Journal of the American Medical Association*, 1997; 277: 1033-1038

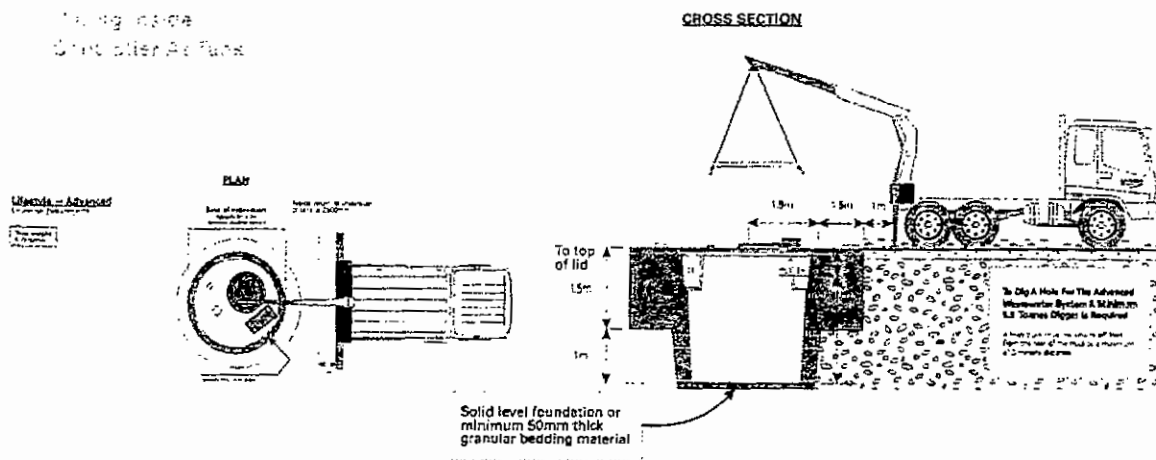
Arrangements must be made for the construction of any cut-off/swale drains if specified in the Engineer's wastewater design report. These drains prevent any surface run-off water flowing on or over the area and ensure compliance with consent conditions. This construction can be contracted to Hynds Environmental.

Excavation Requirements



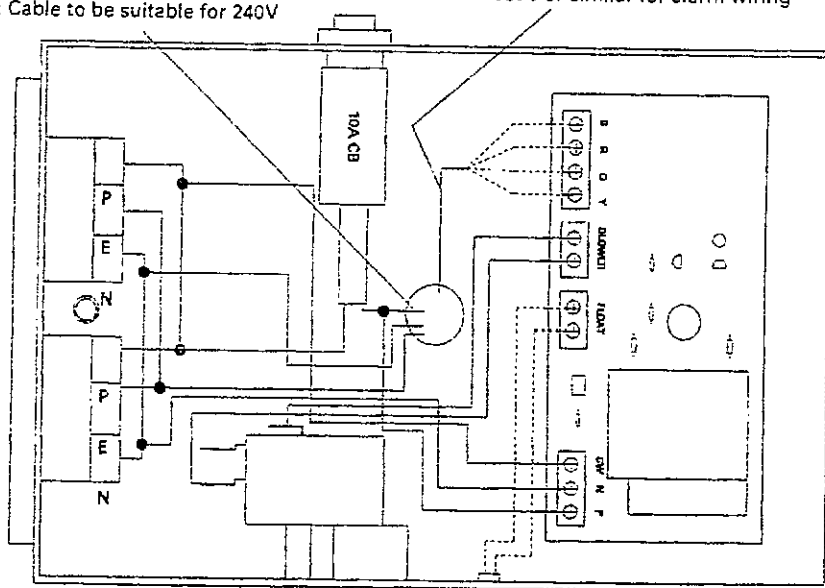
Planning	To assist in planning of the installation, the Building Consent Number and proposed date of installation must be advised as soon as possible. Any changes to the installation date must be advised immediately as the earliest possible notification will help ensure that the tank is installed when the homeowner is ready for it.
Electrical	A certified electrician must complete the electrical connections to the system. To save additional trenching cost, the electrical cables conduit can be laid in the drainage trench (to the tank) while it is still open. The system's alarm plate will be found inside the electrical control unit by removing the face cover. The alarm needs to be installed inside a building, in a position where it can be easily heard and accessed.
Electrical Requirements	A registered electrician should perform the electrical connection of a Hynds Lifestyle Wastewater Treatment System on-site. All electrical work must be carried out in accordance with NZS 3000:1997 and NZECP2: 1993. A 2.5mm (twin and earth) cable from the switchboard to the tank, protected by its own dedicated 16 Amp 30mA RCD. For the homeowner / occupier's benefit, the cable should be labeled appropriately. In addition, a twin P&N cable is required from the controller (on the tank) to the alarm plate (inside the building).
Electrical Power and Alarm Cables	These cables can be laid in the drainage line trench going out to the tank, to save additional trenching cost. The wiring conduit needs to be fully sealed (including a the ends) to ensure storm / ground water cannot enter the system's electrical housing via water ingress into and tracking down inside the conduit.
Alarm & Mute Switch	The audio-visual alarm is similar to a light switch (using the same type of flush box) and will be with the electrical controller, which is in the chamber on top of the tank. The alarm should be installed inside the building and positioned where it can be heard and accessed in order to view the warning light and, if necessary, the alarm muted once Hynds Environmental has been contacted). On living of the circuit, the alarm may activate. This is caused by a high water level from the initial inactive period and may last up to 30 minutes depending on the water level. During this period, the alarm can be switched to the 'MUTE' (up) position. Once the water level has been pumped down to the tank's normal operating level, the light will automatically extinguish and the switch must be reset to its 'NORMAL' (down) position in order to provide the audible warning.

Fig. 10 Inside
Control Unit At Tank



2.5mm twin and earth or as deemed required due to length of cable run.

Cat 5 or similar for alarm wiring



Wires to be connected on site.
For tanks out of the Takanini (Auck) land)
factory, the float will all ready be installed.

SUPPORT INFORMATION



Installation Information

Hynds Domestic Wastewater System

Hynds Environmental Systems Limited

North Island

PO Box 58142, Botany 2163,
Auckland, New Zealand
T +64 9 271 9503
F +64 9 272 7485
ni.sales@hyndsenvironmental.co.nz

South Island

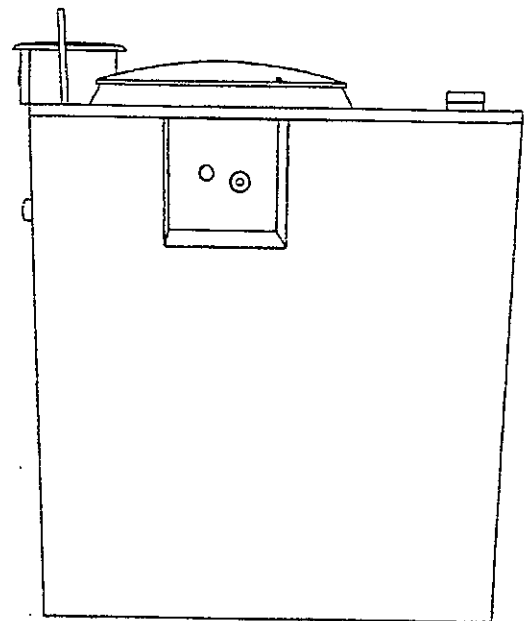
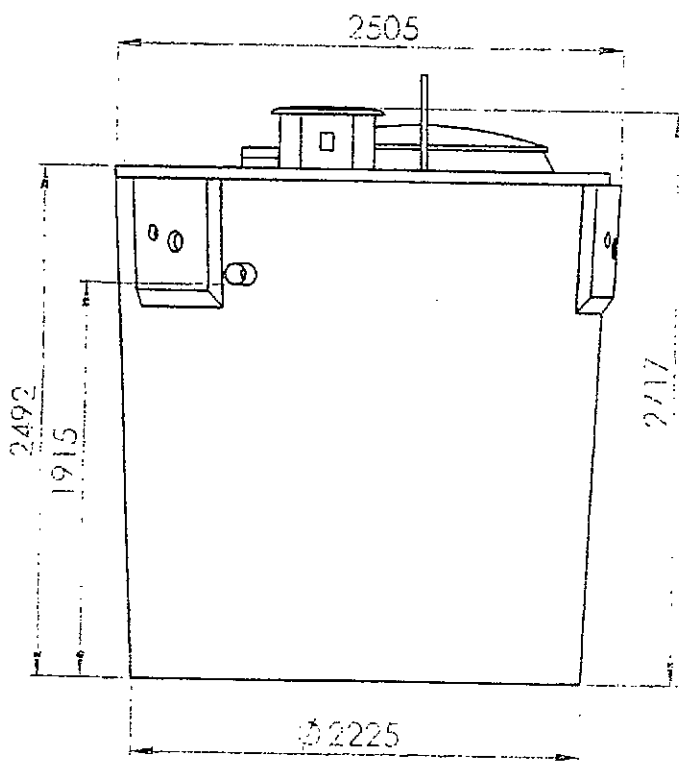
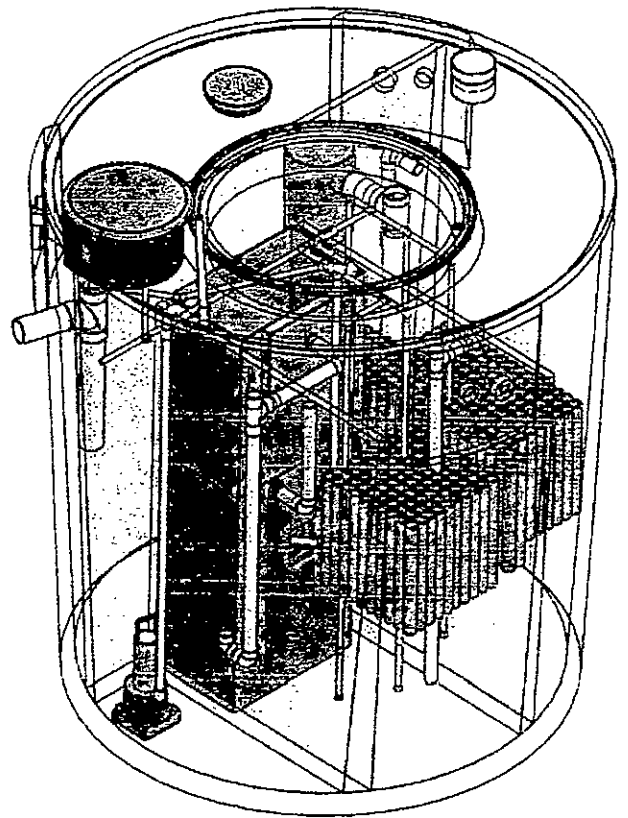
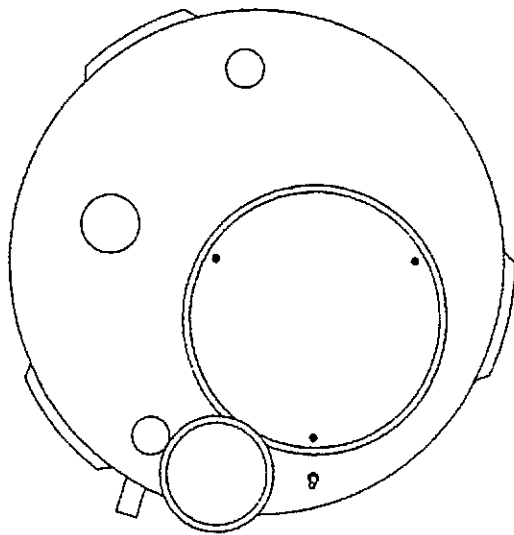
PO Box 16552, Hornby 8441,
Christchurch, New Zealand
T +64 3 344 1370
F +64 3 344 1375
si.sales@hyndsenvironmental.co.nz

0800 425 433

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Lifestyle Advanced Tank



DATA SHEET

2012-03-01

Page 3 / 5

Receiver

Society
Reference
Address
Telephone
Fax
E-mail

From

White International NZ Ltd
Clark, Mike
138 Hugo Johnston Drive
+64 9 579 9777
+64 9 579 7775
mike.clark@whiteint.co.nz

Item no. 60122635

Pump data :**Model :**

AB DIVER 6 800 M-A

Pressure rating :

Min. fluid temperature : 0 °C

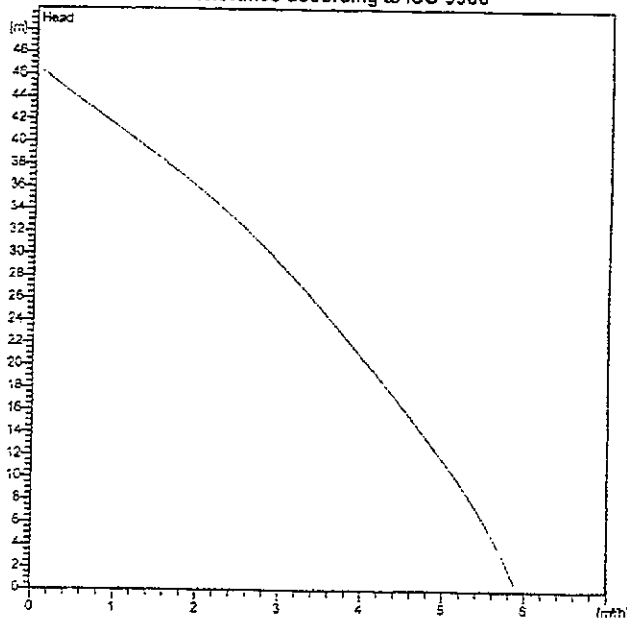
Max. fluid temperature : 35 °C

Max. Temperature operating :

Requested data :

Flow 0 m³/h
Head 0 m
Fluid : Water
Fluid Temperature : 20 °C
Density : 0.9983 kg/dm³
Kinematic viscosity 1.005 mm²/s
Vapor pressure : 2.337 kPa

Curve tolerance according to ISO 9906

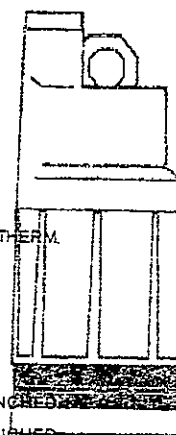
**Hydraulic data (duty plant)**

Flow

Head

Materials :

Pump body PP OMO 30% FVAC NAT GRADE 6 STAB. THERM.
Impeller PPO/PPE 20% FV
Diffuser PPO/PPE 20% FV
OR ring NBR 70
Motor casing SHEET METAL Fe P01 0.65mm
Motor shaft DRAWN BARS STEEL INOX AISI 416 QUENCHED
Ceramic bushing DRAWN BARS STEEL INOX AISI 416 QUENCHED

**Motor data :**

Trade mark : DAB
Nominal power P2: 0.75 kW
Rated speed: 2800 1/min
Rated voltage : 1~ 230 V 50 Hz
Nominal current : 4.8 A
Degree of protection : IP 68

Weight :

On demand kg

Dimension

mm

d 15
l 15

Pump connection

Suction side

Discharge side



PERFORMANCE CURVES

2012-03-01

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Receiver

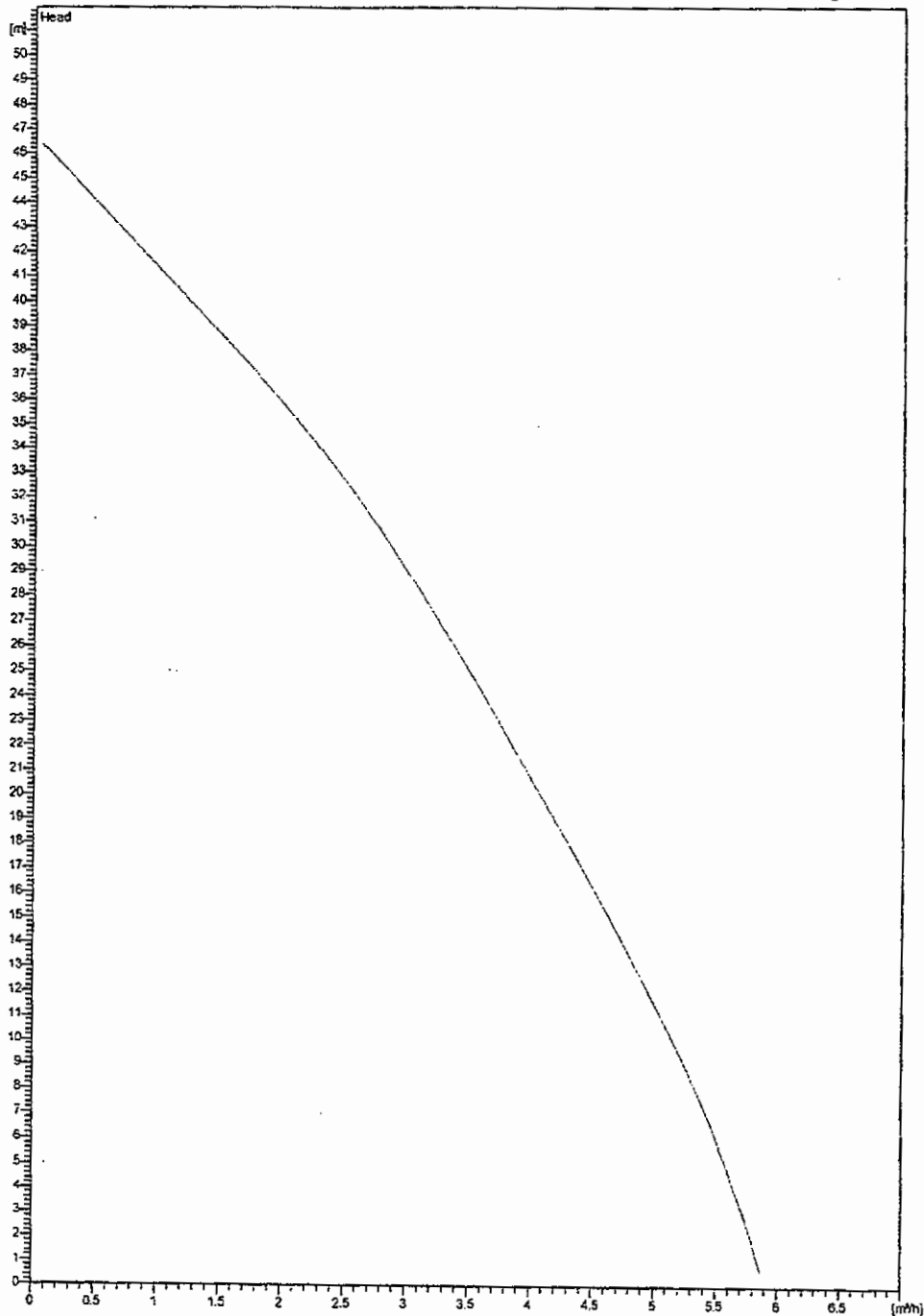
From

Society
Reference
Address
Telephone
Fax
E-mail

White International NZ Ltd
Clark, Mike
138 Hugo Johnston Drive
+64 9 579 9777
+64 9 579 7775
mike.clark@whiteint.co.nz

AB DIVER 6 800 M-A

Curve tolerance according to ISO 9906



Hydraulic data (duty point)

Suction side	Discharge side	Flow	Head	Speed
/	/	0 m³/h	0 m	2600 1/min
Project	Project ID	Created by	Created on	
		Clark, Mike	2012-03-01	

DAB PUMPS reserves the right to make modifications without notice

DAB**DIMENSIONAL DRAWING**

2012-03-01

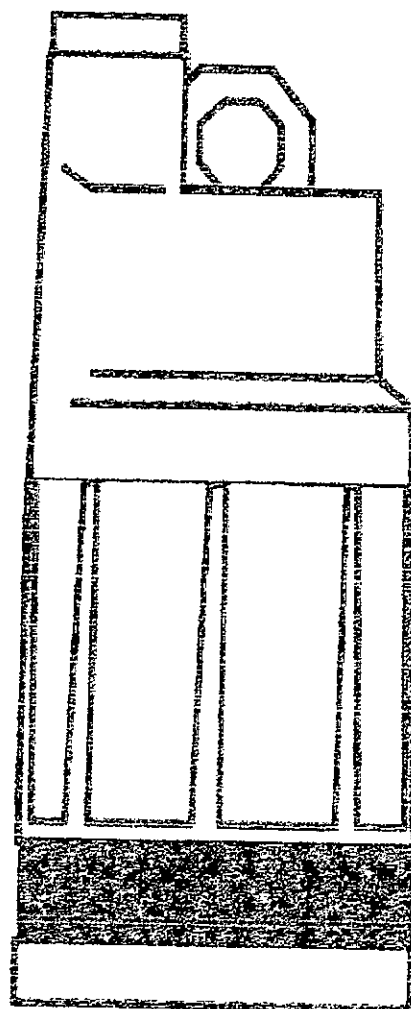
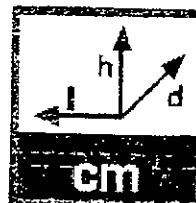
Page 5 / 5

Receiver

From

Society
Reference
Address
Telephone
Fax
E-mailWhite International NZ Ltd
Clark, Mike
138 Hugo Johnston Drive
+64 9 579 9777
+64 9 579 7775
mike.clark@whiteint.co.nz

AB DIVER 6 800 M-A

 $l \times d \times h$

Dimensions in mm

	1	2
d	15	
l		15

Pump connection

Suction

Discharge

Project

Project ID

Created by
Clark, Mike

Created on

2012-03-01



HYNDS LIFESTYLE ADVANCED TANK CONTROLLER & ALARM PANEL INSTALLATION GUIDE

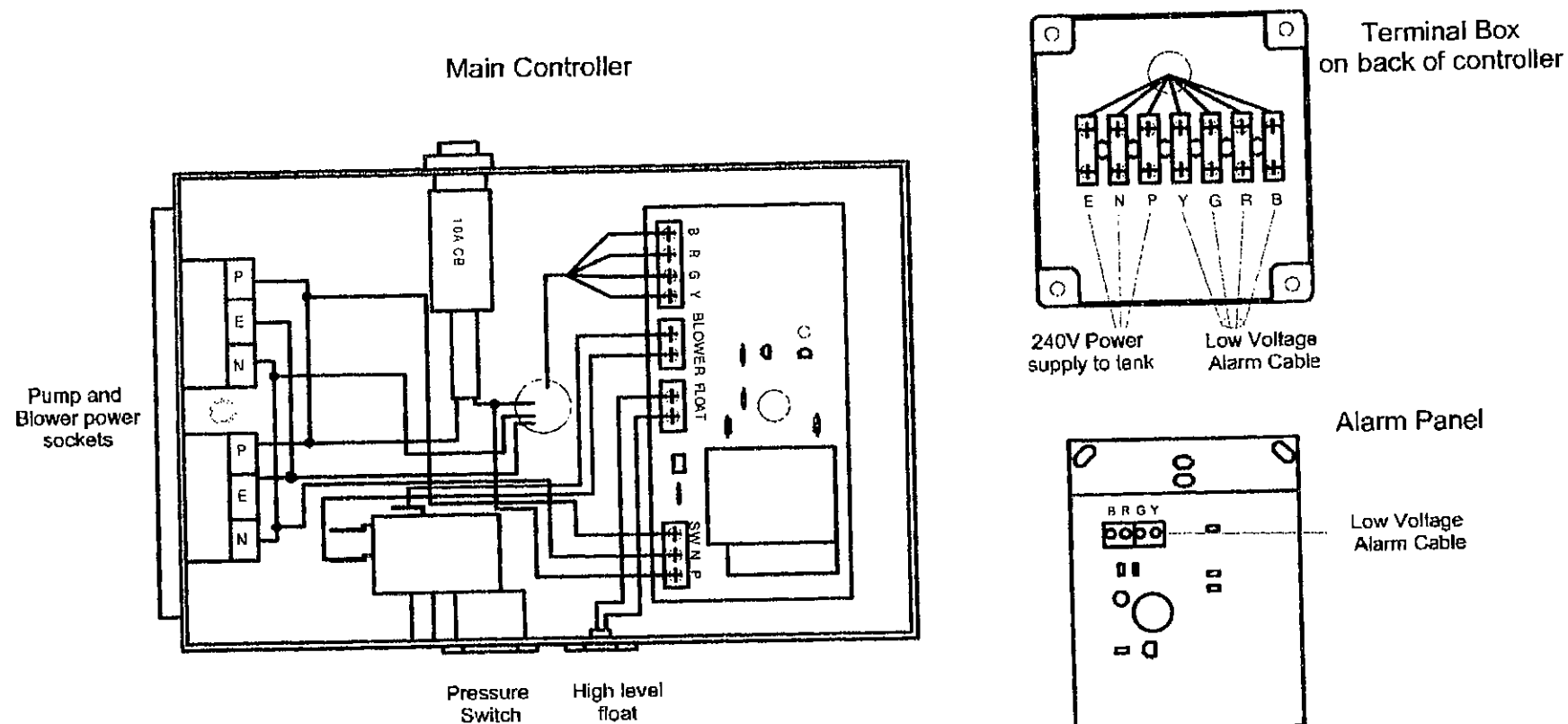
Refer to attached wiring and circuit diagram when installing the controller. All electrical work must be carried out as per NZS 3000:2007 and NZECP2:1993. Any questions during installation please contact N2P Controls on 09 570 1919.

1. Remove the cover from isolation switch on back of controller.
2. Wire power supply (phase/mains, neutral, earth) as shown on wiring diagram (red for phase/mains, black for neutral, green/yellow for earth) to the strip connectors on back of controller. The size of cable used is to be determined by the electrician and will be a function of distance. Typically 2.5mm diameter (twin and earth) cable is used. This should be protected by its own dedicated 16Amp 30mA RCD. Ensure this RCD is labelled as *Wastewater Tank* or similar.
3. A separate low voltage cable (cat 5 or similar) is required for the alarm panel. Connect a different wire from the cat 5 cable to the B, R, G and Y terminals respectively on the strip connectors on back of the controller.
4. The alarm panel is shipped inside the main electrical controller housing. The alarm panel should be mounted where the alarm can be heard and the power light visible.
5. Connect the wires from the B, R, G and Y terminals at the tank to the corresponding B, R, G, and Y terminals on the back of the alarm panel.
6. All conduit should be sealed at both ends to stop any ground/stormwater ingress into conduit.
7. Test that the controller and alarm panel is wired correctly by;
 - Ensuring the power light is illuminated when power is supplied to the controller.
 - Ensure the alarm light is illuminated and the buzzer sounds if the high level alarm is activated (raise high level alarm float at tank).
 - Press the mute button to ensure alarm is muted.
7. Place alarm panel into standard light switch flush box and ensure secured in place.

Note: The high level alarm float is wired as Normally Closed (Black and Blue wires).
The controller and alarm panel are tested prior to delivery.



HYNDS LIFESTYLE ADVANCED TANK WIRING DIAGRAM



0800 425 433
www.hyndsenv.co.nz

Controller By **N2P Controls**
www.n2pcontrols.co.nz



J G Smaill Ltd
PLUMBING & DRAINAGE

J G Smaill Limited
37 Severn Street
Abbotsford
Dunedin 9018
Email office@smaillplumbing.co.nz
Phone 03 489 1802 or 027 221 9486
Fax 03 742 1182

19 September 2016

Proposed new septic tank and effluent dispersal field for


Orme Street
OUTRAM

SYSTEM DESIGN AND SPECIFICATIONS

1. Septic tank will be Hynds Environmental Lifestyle secondary treatment system.
2. The sewage system will be gravity fed to septic tank. From septic tank effluent will be pumped to distribution box that feeds three 90mm distribution pipes.
3. Disposal field will be 40 square metres dug to a depth no greater than 900mm to 1200mm. Bottom of disposal pit lined with 250mm x 20mm clean blue chip, dispersal pipes laid on top of clean chip on top of pipes, then filter cloth laid on clean chips, then backfilled with soil.
4. Dispersal pipes to be brought to the surface and capped at ground level.

DESIGN CRITERIA

General

The degree of wastewater treatment and the nature of the receiving soils govern the area of land required for effluent dispersal. The design of both the proposed wastewater treatment system, and proposed effluent dispersal field are based on challenges raised by the characteristics of this site, in addition to the estimated peak wastewater flow created by the proposed development

Water Conservation Criteria

The use of water reduction fixtures and appliances in households which are serviced by on-site wastewater systems has significant potential to reduce the effluent flow volume for treatment and dispersal. This has particular benefits for larger than normal dwellings, small lot sizes or where ground conditions have limited permeability, by allowing smaller dispersal systems to be installed compared to what may otherwise be required.

Water reduction measures include the use of:

1. 11/5.5 litre dual flush toilet cisterns (6/3 litre flush cisterns are even better)
2. Low-flow shower heads, or restricted flow rate shower heads, delivering 6-9l/min
3. Front loading washing machines
4. Single lever mixer taps with adjustable flow control – adjusted to minimum acceptable flow rate, hand basin taps typically 5-6l/min, and bath taps 15-18l/min.

The client has expressed a preference for water reduction features in the proposed development, and this has been assumed in the effluent flow assessment calculations.

Flow Assessment

The water supply will be an on site storage, and will include water reduction features. Flow calculations for wastewater have been based on this assumption, giving a flow of 115 litres per person per day (l/p/day) in accordance with NZS 1547:2000.

Commissioning and As-Built Information

Once commissioning is complete it is important that as-built measurements are plotted in relation to where the soakage field is located in relation to the boundary of section and clean points are accurately plotted for future location.

Operating Procedures

1. Wherever practical, water conservation measures should be practiced. These include the controlled use of water by installing water reduction plumbing fittings and appliances, e.g. dual-flush toilets, "sud-saver" washing machines, needle spray shower heads.
2. Use biodegradable detergents and household-grade cleaners, in moderate amounts.
3. Do not pour toxic chemicals e.g. paints, thinners, oils, pesticides, down the drain.
4. An under-sink garbage grinder should not be used, as this will load the system with solids, requiring the tank to be cleaned out more often and increasing the risk of failure.
5. The pumped system should be fitted with a high-level alarm, such as a flashing light in an obvious location. If the alarm indicated a problem, have the pump serviced promptly, to avoid flooding the wastewater treatment system and drains.
6. Keep vehicles off the dispersal field.
7. Provide and maintain effective means for excluding stormwater and run-off from the effluent dispersal system.
8. Avoid disposing of grease, coffee grounds, bones, cooking fat, cigarette filter butts, disposable diapers or paper towels into the wastewater system.
9. In relation to gardening around the dispersal field area, care will always need to be taken when digging in planted areas with drip line.

Operation and Maintenance

Maintenance of the on-site treatment and dispersal system is the responsibility of the home owner/occupier. An operation and maintenance manual for the treatment plant must be supplied by the installer. Regular servicing is required to ensure that the system continues to operate in a safe and effective manner. It is recommended that a maintenance contract with the supplier of the wastewater treatment system be entered into upon installation.

The householder should keep written maintenance records of the wastewater system. It is recommended that these records include plans of the layout, notes (and dates) of such events as inspections, de-sludging and stoppages.

Maintenance Schedule

1. Clean the Bio filter every six to nine months by removing filter from septic tank and hosing until tubes are clean, replace in tank and note date of cleaning.
2. Clean out septic tank every three to four years by an approved vacuum tank cleaning firm. Arrangement can be made with the approved firm who will notify you when the time is due for cleaning.
3. For above ground discharge effluent pipe, the maintenance of wood chips is important, e.g. the moulding up of the chips over the pipe. The maintenance of the plantings etc, should be done at least once a year.

Drainage plan.



Orme Street

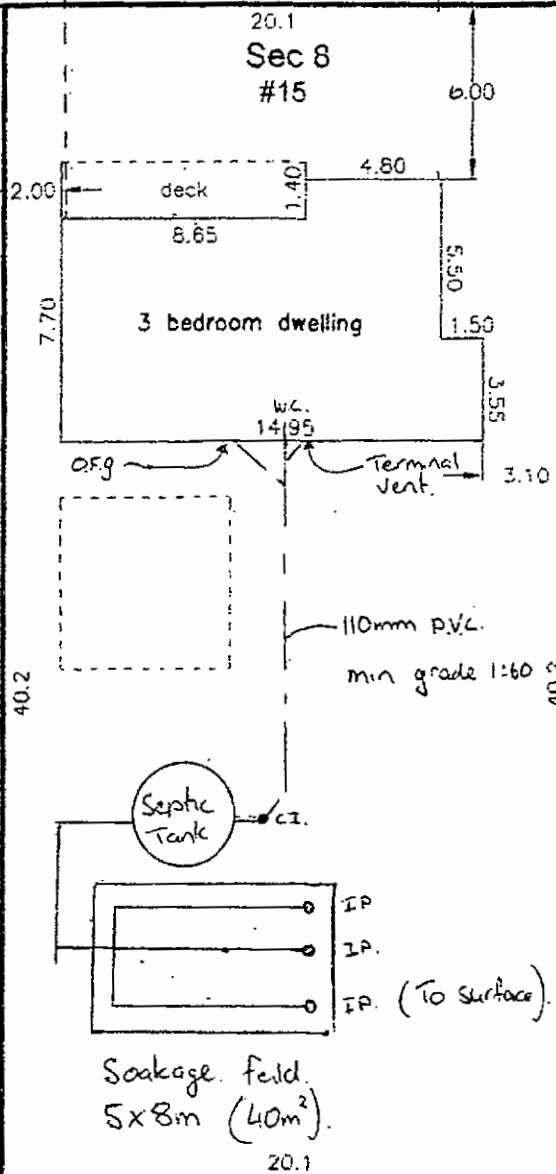
Stormwater to
kerb & channel.

Existing
Entrance

"Notes"
Stormwater to be
clipped under house
then drained to
kerb & channel.

Sec 7

20.1
Sec 8
#15



Sec 9

Pt Sec 2

Proposed Dwelling on
Sec 8 Blk XII Town of Outram
15 Orme Street, Outram

CRAIG HORNE Registered Surveyor
P.O. BOX 56 MOSGIEL PH (03) 4847008 FAX (03) 4847009

Scale 1:250

Ref: 061

Drawn CH

ORIGINAL PLAN FORM SIZE A4

Septic layout.

Orme Street

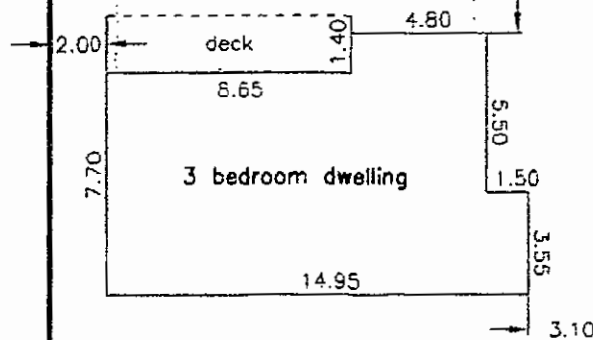


Existing
Entrance

Sec 7

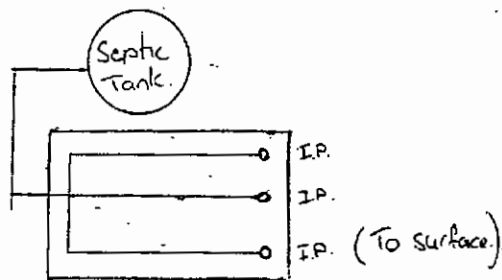
Sec 9

20.1
Sec 8
#15



40.2

40.2



Soakage field.
5x8m.

20.1

Pt Sec 2

Proposed Dwelling on
Sec 8 Blk XII Town of Outram

15 Orme Street, Outram

CRAIG HORNE Registered Surveyor
P.O. BOX 55 MOSGIE PH (03) 4847008 FAX (03) 4847000

Scale 1:250

Ref: 061

ORIGINAL PLAN FORM SIZE A4

Drawn CH

Bring To Surface and Cap off

10mm holes

110

110

110

← lay pipe
1-200

Tee Lay Level

reduce to
40mm pump
line from
Septic Tank.

Cap hole with
25mm PVC Pressure
Cap about 50mm long
and Tape or
Cable Tie to 110mm
pipe



DUNEDIN CITY

Kaitiaki Take Kōwhiri o Dunedin

DUNEDIN CITY COUNCIL BUILDING CONTROL

**SITE EVALUATION INFORMATION TO ACCOMPANY AN APPLICATION FOR BUILDING
CONSENT IN AN UNSEWERED AREA, TO SUPPORT THE DESIGN OF AN ON-SITE
WASTEWATER DISPOSAL SYSTEM**

Name of Applicant: C.C. Otago LTD (Purchaser)
Daytime Telephone Number: 027 479-2382
Address of Building Site: 15 Orme St Outram
Legal Description: Lot DP Section 8 BIK XI Block SD
Building Consent or PIM Reference Number (if known): ABA
Area of Section: 0.0809 ha
Area of Land Available for Effluent Disposal 40 m²

A site plan attached, and any other plans or photographs necessary to show the location of the proposed septic tank and effluent disposal area on the section, alternative areas if any, contour lines, watercourses, existing and planned vegetation and landscaping, and North direction.

Slope of Proposed Disposal Area: minimum 5° Nil (flat) / Gentle / Moderate / Steep

Any Indications or known History of Instability? Yes ☒ No ☐ If "yes", an Engineer's report from (name) is attached.

Types of Soil (show depth of each kind of soil below surface, down to a depth of 4 metres or to a type 7 soil or to groundwater, whichever is found first. See Appendix Three, *The Feel of Soil*, in Dunedin City Council's *Guidelines to On-site Wastewater Disposal*, third edition, March 2001).

- | | |
|---|----------------------------------|
| 1. Gravel or coarse sand, rapid draining: | from to m |
| 2. Coarse to medium sand, free draining: | from to m |
| ③ Medium fine and loamy sand, good drainage: | from <u>0.35</u> to <u>0.5</u> m |
| 4. Sandy loam, silt loam, and loam, moderate drainage: | from to m |
| 5. Sandy clay-loam, silty clay-loam and clay-loam, moderate to slow drainage: | from to m |
| 6. Sandy clay, silty clay and non-swelling clay, slowly draining: | from to m |
| 7. Swelling clay, grey clay, rock, poorly or non-draining: | from to m |
- Depth of Groundwater Table below Ground Surface (winter, or high-tide in coastal areas): m.

RESULT OF SIMPLE MINIMUM PERCOLATION TEST (see attached info sheet)

Depth of test hole 400 x 400 x 500 Size of hole

Drop in 1minute 25mm 10 minutes 80mm 30minutes 200mm

Proposed Source of Household Water Supply: Town supply

Name of Designer: J. G. Small LTD

Signature of Designer: [Signature]

Ref: GL 17-05-25 AOP Q000356.Docx

29 May 2017

By Email: kurt.bowen@ppgroup.co.nz

Paterson Pitts Partners Limited
DUNEDIN

Attention: Kurt Bowen - Director

Dear Kurt

**Balmoral Developments (Outram) Ltd Subdivision Consent Application
Preliminary Stormwater Management Plan**

1.0 Introduction

Fluent Solutions has been engaged by Balmoral Developments (Outram) Limited to develop a stormwater management plan for the proposed subdivision at 94 Holyhead Street, Outram. This report presents a preliminary stormwater management plan assessment for the site as support for an application for resource consent.

2.0 Background

2.1 Site Location

The proposed subdivision site is located between Holyhead Street and SH 87 in Outram. For the location of the site and related features refer to Figure 2.1 below. To the west of the site, and west of SH87, is an Otago Regional Council (ORC) scheduled drain which conveys water to the West Taieri drainage network. On the southeastern boundary of the site a flood bank separates the proposed development from the Taieri River.

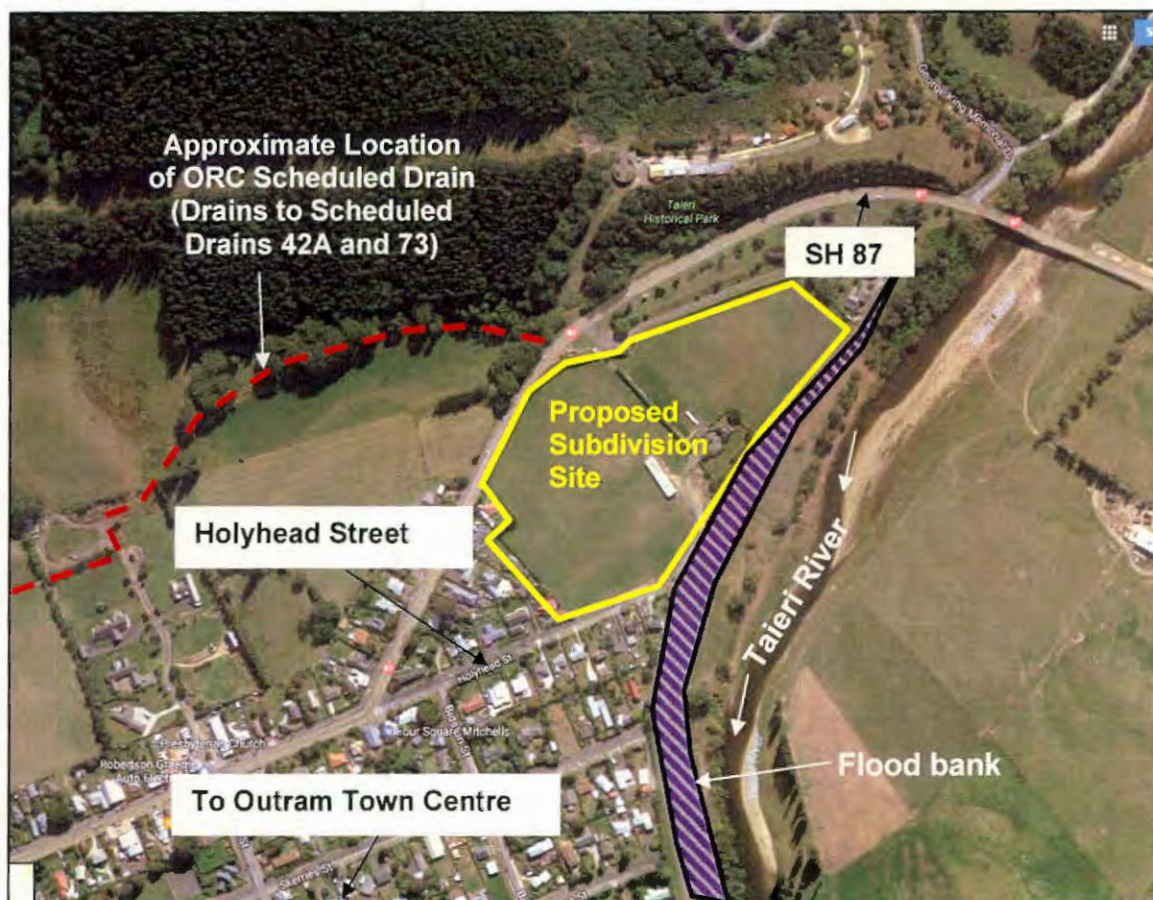


Figure 2.1: Locality and Features Plan

2.2 Proposed Development Plan

We have based our proposed stormwater management concept on Paterson Pitts Group (PPG) drawing dated 24 April 2017 (PPG Ref. D15829 / Sheet 1, Rev B). The development provides for a total of approximately 39 residential lots plus a main access way lot off of Holyhead Street at the southeastern corner of the site.

Note that the development plan includes a building restriction area which is in reference to the 2nd Schedule plan of Lower Taieri Defences Against Water included in the ORC "Flood Protection Management Bylaw 2012" (Bylaw) which refers to these zones as excavation sensitive areas.

2.3 Existing Stormwater Drainage

Stormwater drainage from the eastern area of the site drains to a natural depression adjacent to the flood bank at the southeast corner of the site. Stormwater that enters the depression infiltrates the ground surface and flows under the flood bank to the Taieri River. Lot 31 in the PPG subdivision layout plan is the current location of an existing natural detention area. The natural detention pond area would be retained and used as part of the stormwater management for the eastern area of the site.

The western area of the site drains under SH87 to the ORC schedule drain network.

3.0 Stormwater Flow Analysis

3.1 Flow Assessment Methodology

To establish the basis for stormwater management planning, the hydraulic and hydrological modelling software Infoworks ICM (ICM) was used to estimate stormwater runoff flows and detention volumes.

Within ICM, a 2-dimensional hydraulic model was developed using 3D LiDAR data representing the pre-development topography for the site, see Figure 3.1 below. Rainfall and soil characteristics were applied to the 2D grid to provide an estimate of the runoff across the ground surface. The resulting flow pattern from the model was used to estimate the design flows and provide an indication of detention volumes for the site.

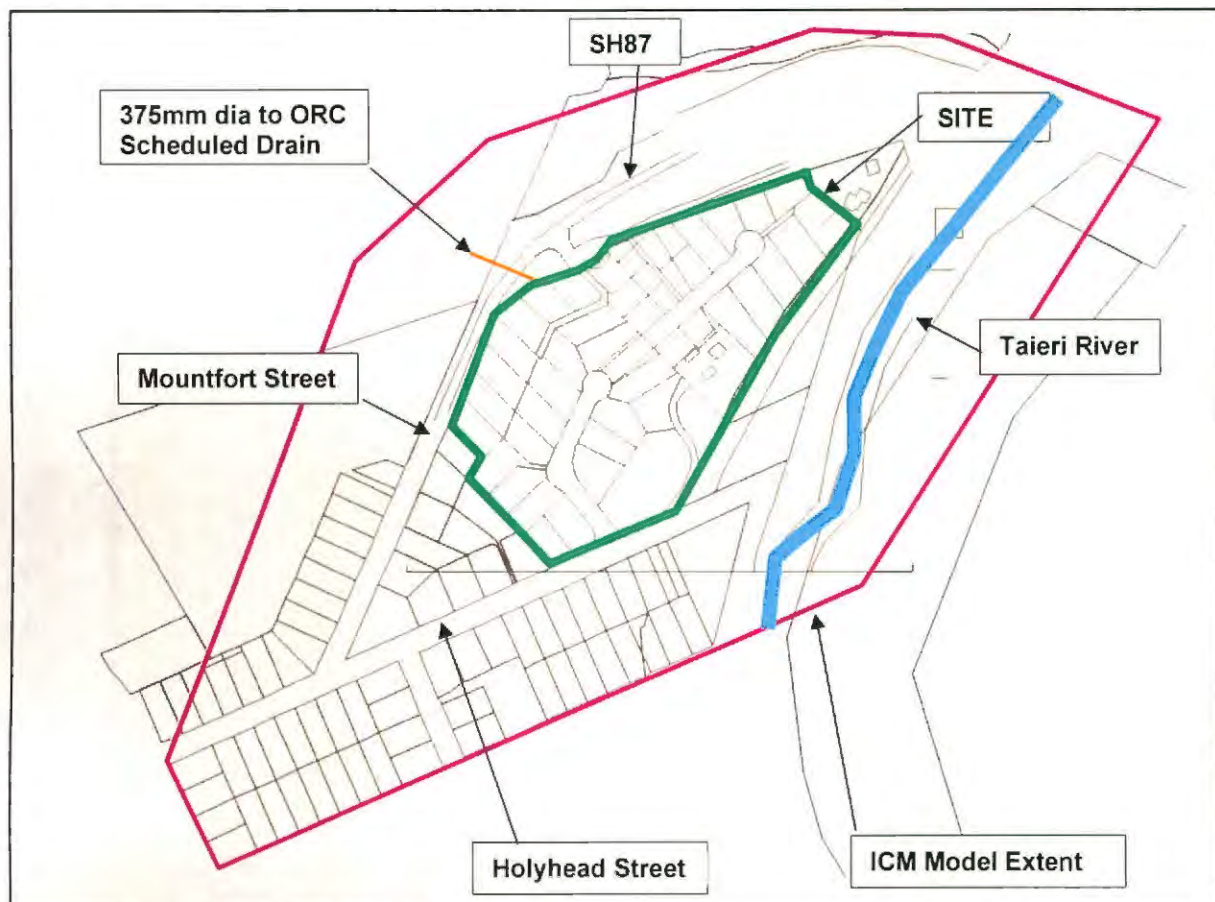


Figure 3.1: Model Area

The ICM model includes an allowance for a pipe the under SH 87 at the existing entrance to the site that discharges into the ORC scheduled drain on the opposite side of SH87. According to the DCC Water and Waste Services online maps, there is a 375mm diameter pipe along Mountfort Street. For the purposes of this preliminary model assessment, the size of the pipe under SH 87 is assumed to be 375mm diameter. This will need to be confirmed at the detailed design stage.

3.2 Rainfall Hyetographs

Flows were calculated based on the Dunedin Integrated Catchment Management Plans, Rainfall and Tidal Analysis Report, prepared by URS (August 2011) used for stormwater management planning by the DCC. Rainfall information for the site was derived from rainfall depth-duration-frequency data specified for Dunedin. A series of rainfall hyetographs (rainfall intensity versus time graph) were developed for a range of storm durations for the 10yr and 100yr ARI events. Included in the hyetographs is an 11% increase in rainfall depth to allow for climate change. Triangular rainfall hyetographs were developed and imported to the Infoworks ICM modeling program, and runoff flows and volumes were calculated.

3.3 Soil Characteristics

The general classification of soils within the site are moderately well drained silty loam soils with grass cover. This soil classification provided the basis for choosing the Horton soil loss values used for the preliminary pre- and post-development runoff flow analysis.

As described above, the pre-development flow (and preliminary post-development results) were modelled using a 2D surface based on LiDAR information.

In order to provide a preliminary assessment of the post-development condition an approximation of the ratio of pervious to impervious area was used. Based on the proposed average lot area a 50% / 50% pervious and impervious ratio was used to estimate runoff.

4.0 Pre- and Post-Development Stormwater Management Scenarios

Pre- and post-development stormwater management scenarios were defined and modelled using ICM.

4.1 Pre-development Stormwater Management

Figure 4.1 below illustrates the pre-development stormwater runoff scenario and illustrates the pre-development model results for the 100yr, 12hr storm (critical storm). Note that other than the flow through the pipe discharging to the ORC Scheduled Drain, the runoff flows within the site are largely contained. The results show ponding on the northwestern boundary and the southeastern corner of the site. As noted above, the latter is an existing natural depression. There is an internal flow path from the northeast corner of the site which drains to the natural depression.

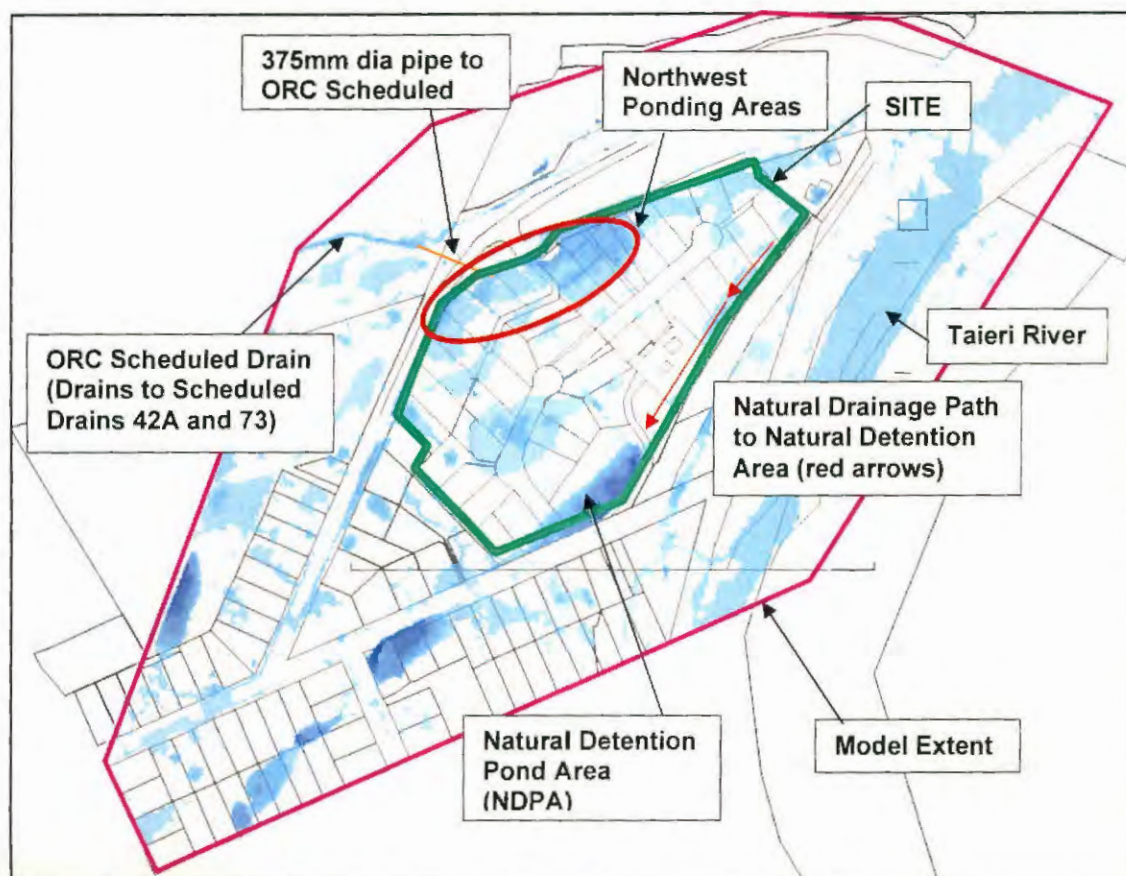


Figure 4.1: Pre-development Model Results

The model confirms the primary flow path from the site is the pipe draining the western part of the site to the ORC scheduled drain. The flow discharged through this pipe was estimated to be 185 l/s for the pre-development stormwater management scenario. Further confirmation of pipe sizes and levels for the existing pipe alignments remain to be confirmed before the pre-development discharge estimate(s) can be confirmed.

4.2 Proposed Post Development Model Scenario

Figure 4.2 shows the proposed preliminary post-development stormwater management plan.

The proposed post-development stormwater management concept relies on provision of the following:

- The site is designed to drain to a stormwater detention facility at the southeastern corner of the site at Lot 31. Modelling results indicate a volume of approximately 2,500m³. This differs to the previous estimate of 4,000m³.
- To manage the flood level in the detention pond, stormwater would be pumped over the flood bank to the Taieri River. The pump station would include a diesel generator as a back-up power source for the normal mains power supply.
- The collection system in the site would be a combination of swales, natural overland flow and conventional stormwater pipe reticulation.

Balmoral Developments (Outram) Ltd Subdivision Consent Application
Preliminary Stormwater Management Plan

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- Subject to subdivision consent approval, a final Stormwater Management Plan would be prepared to define stormwater detention volumes and pumping rates necessary for the site.

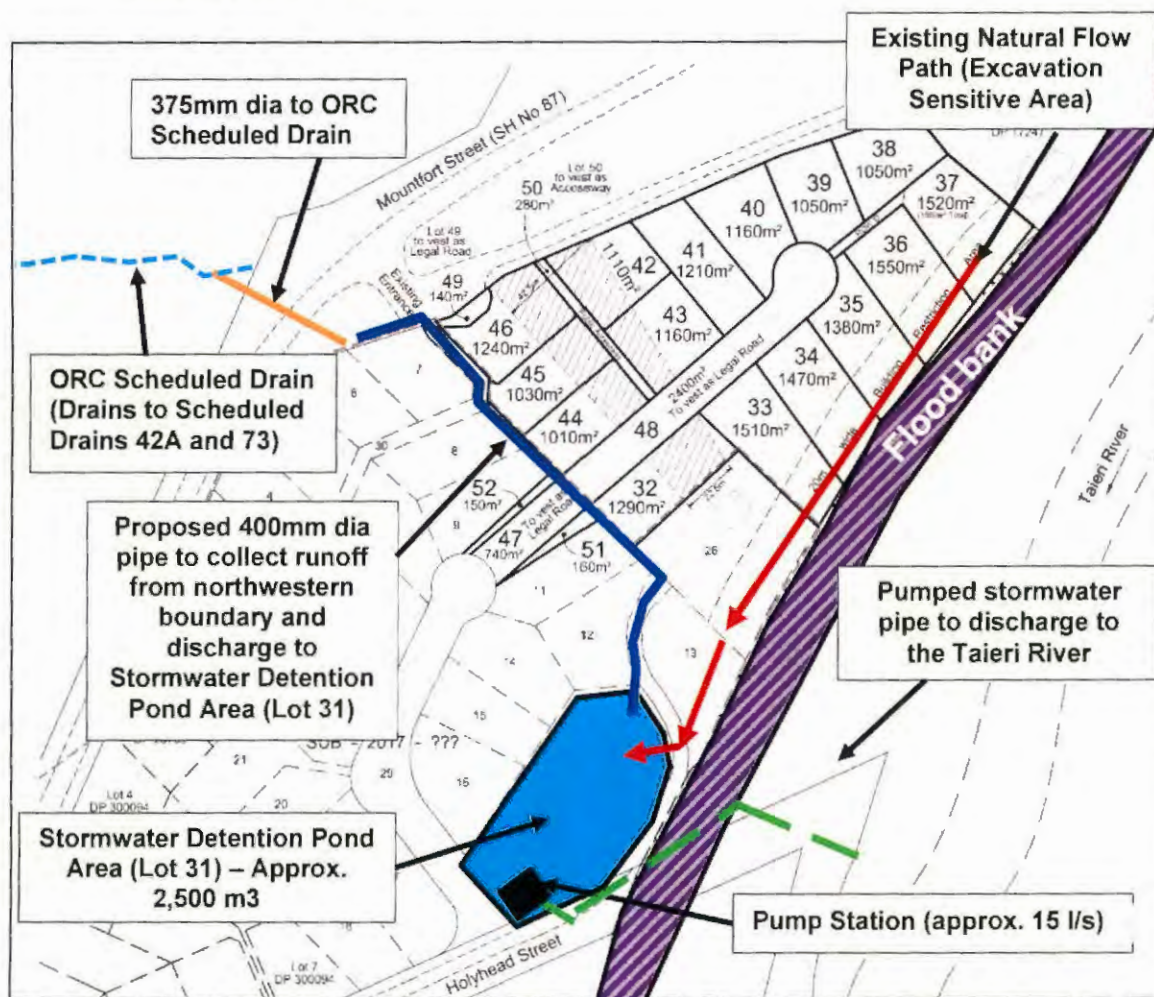


Figure 4.2: Preliminary Stormwater Management Plan

It was assumed that for the post-development situation, flows leaving the site would need to be mitigated to pre-development levels. From the preliminary model results, with drainage to the Natural Detention Pond Area (NDPA), the flow leaving the site was estimated to be 174l/s compared to 185l/s for the pre-development scenario.

The post-development model was also used to provide an indicative volume required in the NDPA assuming a pumping capacity from the NDPA to the Taieri River of 15 litres per second (l/s). The preliminary model results indicate that the NDPA can be further developed to comfortably accommodate the stormwater detention volume required for the development within the assumed pre-development discharge to the Scheduled Drain to the west and the assumed pump discharge to the Taieri River.

The site is relatively flat and therefore there is flexibility to adjust the sub-catchment boundaries draining either to the northwest ORC Scheduled Drain or Natural Detention Pond

**Balmoral Developments (Outram) Ltd Subdivision Consent Application
Preliminary Stormwater Management Plan**

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Area (Lot 31) to ensure that an optimal solution is identified for implementation at the engineering approval and building consent stages of the subdivision development.

The proposed plan would not require earthworks in the excavation sensitive area along the toe of the flood bank on the eastern boundary other than minor regrading of the natural drainage pathway, which may be desirable (shown in Figure 4.2).

4.3 Alternative Post Development Scenario

As considered previously for this site, another stormwater management option is to use individual lot stormwater detention systems for the western portion of the site. The individual lot systems would be designed to collect runoff from the roof and other impervious areas and store it to limit the rate of runoff to the Schedule Drain to the west under SH87. The post-development runoff flow rate would be limited to the pre-development flow rate (with allowance for climate change). The alternative post-development scenario may have a benefit for staging the development.

5.0 Recommended Stormwater Management Plan

Based on the preliminary stormwater management assessment work completed for this report it is recommended that the proposed stormwater management plan scenario with capability directing stormwater from the western portion of the site to the natural ponding area on Holyhead Street with pumping to the Taieri River be pursued.

For further clarification on matters presented in this report please contact the undersigned.

Yours faithfully

FLUENT INFRASTRUCTURE SOLUTIONS LTD

Per:



Gary Dent

Director / Senior Environmental Engineer



Appendices B1-5

CPG Infrastructure Reports

Balmoral Developments (Outram) Ltd

Balmoral Subdivision Development
Infrastructure Services Report
Wastewater, Water and Stormwater

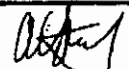
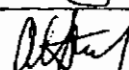
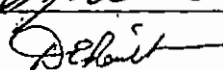
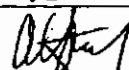
December 2011



Balmoral Developments (Outram) Ltd
Balmoral Subdivision Development Infrastructure Services Report
Water, Wastewater and Stormwater

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Balmoral Developments (Outram) Ltd

Balmoral Subdivision Development Infrastructure Services Report Water, Wastewater and Stormwater

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APPENDIX 1

Soil Test Pit Profiles, Permeability Test Results and Photos

APPENDIX 2

Wastewater Treatment Technologies

APPENDIX 3

Water Supply Concept Plan

APPENDIX 4

Stormwater Management Concept Plan

APPENDIX 5

Selected Stormwater Treatment and Disposal Practice Components

1.0 DESCRIPTION OF THE ENVIRONMENT

1.1 Location and Site Description

Balmoral Developments Ltd is investigating the option of developing Lot 2 DP 20759 north east of the Outram Township into a 24 lot residential subdivision.

The proposed development site borders State Highway 87 and is adjacent to the upper end of the Taieri Plain Flood Protection Scheme stopbanking and flood management network as shown in Figure 1.1 below.

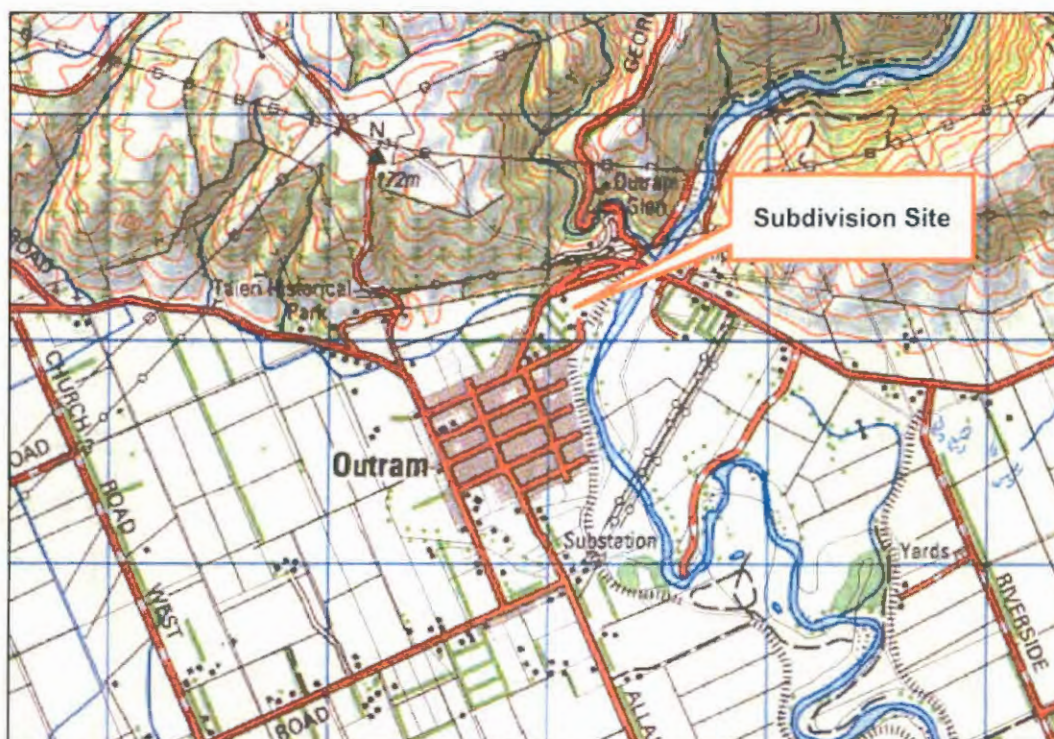


Figure 1.1: Location of Proposed Subdivision

The majority of the site is currently grassed with small outcrops of willows in places. There is a hedge running alongside the existing house access road and a small market garden north of the hedge. The site is bordered by trees and hedges along the northern, south western and eastern boundaries. The elevated Taieri River flood bank runs along the eastern boundary in adjacent land.

1.2 Current Land Use

The current land use of the site is a single historic farm house, a farm shed, a small market garden and the remainder of the site is currently in pasture for grazing.

1.3 Topography

The topography of the land is generally flat. There is however a slight crown to the land in that the western half of the site falls slightly to the west and the eastern half of the site falls slightly towards the south east corner. A difference of 2.73m in elevation was observed across the site.

Water was ponded in the low lying area adjacent to the Holyhead St entrance (Figure 1.2) and according to local residents this area is typically flooded after a heavy rainfall event.



Figure 1.2: View of Holyhead Street entrance and ponded area

1.4 Soils

1.4.1 Overview

Under the Otago Regional Council (ORC) Flood Protection Management Bylaw 2008 the site lies partly within an *Excavation Sensitive Area*. This bylaw prohibits excavation within 20m of the stopbank and the area of the subdivision affected by this rule is identified on the plan in Appendix 4.

The site is also located partly within the Regional Plan: Water for Otago *Groundwater Protection Zone A*. The ORC monitors groundwater levels at Outram, and the levels in the Outram monitoring bore show a rapid response to the Taieri River flows. That is, recharge in this area is predominantly from river recharge rather than rainfall percolating down through the soil profile as is seen in the Mosgiel area.

CPG visited the site on 10 May 2011 to review the site topography and subsoil characteristics. The findings of this investigation are described below.

1.4.2 Site Investigations

Six test pits were excavated across the site to review the subsoil characteristics. Soil profiles are provided in Table 1.1 and illustrated on the layout plan in Appendix 1. Test pit photographs are also provided in Appendix 1.

Table 1.1: Soil Characteristics

Test Pit No.	Level (m) Note: Reference point (100.00) taken at driveway entrance by SH87	Depth below ground level (mm)	Description
1	99.91	0-750	Topsoil
		750-1700	Silty loam (Light brown silty soil with finely grained sand)
		1700-2000	Silty loam with well graded coarse gravels (20-60mm)
2	100.52	0-425	Topsoil
		425-650	Sandy loam (Fine to medium grained sand layer)
		650-2900	Silty loam (Light brown silty soil with finely grained sand)
3	100.460	0-580	Topsoil
		580-2600	Silty loam (Light brown silty soil with finely grained sand) Ksat = 0.2m/day
4	100.09	0-550	Topsoil
		550-800	Silty loam (Light brown silty soil with finely grained sand) Ksat = 0.15m/day
		800-2500	Fine to medium grained sand layer
5	99.61	0-600	Topsoil
		600-1400	Silty loam (Light brown silty soil with finely grained sand)
		1400-2900	Clay "pug" layer (wet grey clay) Patches of silty sandy soil
6	97.79	0-700	Topsoil
		700-1700	Sandy loam (Fine to medium grained sand layer)
		1700-3200	Clay "pug" layer (wet grey clay) Patches of silty loam soil Note: Water drained into test pit from surrounding saturated soil and/or local drain

Key Observations

1. Some gravel and sand lenses were present.
2. Deep topsoil layer (range 550-750mm).
3. The silty sandy layer observed across over the site, but present at varying depths (550-2900mm below ground level).
4. Clay "pug" layer not uniform across the site.
5. Moderate permeability at the two locations tested – classed as Category 4 soil in accordance with the Australian/New Zealand Standard *On-site Domestic Wastewater Management* (AS/NZS 1547: 2000).



Given the soil variability discovered during the site inspection, it is recommended that for treated wastewater dispersal design, the Soil Category is confirmed for each property, noting that the lot sizes proposed are sufficiently sized to accommodate a larger dispersal fields if required.

1.4.3 Groundwater

As previously described, the site is located partly within the Regional Plan: Water for Otago *Groundwater Protection Zone A*. The extent of the groundwater protection zone on the site is illustrated on the located on the plan in Appendix 4. Groundwater is protected in this area due the potential risk of surface runoff infiltrating through the alluvial soils into the groundwater.

Groundwater was not encountered in any of the test pits excavated during the site assessment. Local information suggests groundwater is at depths of 5-8m below ground level. It is generally understood that the groundwater in the area flows to the southwest along the river alignment.

1.4.4 Surface Water

The Taieri Rivers runs adjacent to the site and is contained within stopbanks that are part of the local flood protection scheme.

As described above, the topography of the site currently dictates that any surface runoff in the western half of the site falls slightly to the west and is collected by the State Highway water tables and feeds in to the existing Outram stormwater control network. Rainfall falling on the eastern half of the site gradually flows towards the south east corner to the ponding area as shown in Photograph 1.1 above. The water then evaporates or percolates into the ground. During extreme events the water can build up and flow over Holyhead Street into the natural drainage path south of Holyhead Street.

1.5 Climate

1.5.1 Rainfall and Evapotranspiration

Table 1, below presents rainfall data provided by the NIWA Cliflo database. From the climate record, it can be seen that rainfall is relatively constant throughout the year. Potential evapotranspiration (PET) rates are highest in the summer, with the highest monthly average at 155 mm for the month of January.

The data for mean monthly rainfall was taken from the closest recorded meteorological station which is at the Dunedin Airport (NIWA Meteorological Station Network Number I50921 (1971 - 2009)), located approximately 9 km from the site.

Evapotranspiration is the transfer of water to the atmosphere by evaporation and plant transpiration. Potential evapotranspiration occurs when evapotranspiration is at its maximum, in conditions of unlimited moisture supply.

Table 1.2: Climate Statistics at Dunedin Airport (Momona)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Mean Total Rainfall (1961 – 1990) (mm)	70	50	64	47	61	51	47	45	44	60	51	72	662
Evapo-Transpiration (1971 – 1991) (mm)	126.2	94.6	70.6	41.8	24.8	13.6	16.7	31.5	55.8	82.4	107.6	122.1	787.6
Mean Temperature 1961 – 1990 (°C)	14.9	14.7	13.2	10.6	7.5	5.2	5	6.5	8.6	10.4	12.1	13.8	10.2
Mean Wind Speed (1971 -2011 – 25years of data) (m/s)	4.3	3.8	3.7	3.5	3.8	3.4	3.3	3.5	4.2	4.3	4.4	4.3	3.9

Notes:

Values have been rounded

Units = mm/month

Soil temperature data from Dunedin Airport is presented in Table 1.3 below:

Table 1.3: Soil Temperature

Parameter	Minimum	Average
Monthly Mean Temperature at 50mm	1.3	8.5
Monthly Mean Temp @ 300mm	3.9	11.0

1.5.2 Wind

The mean annual wind speed is 3.9m/s or 14km/hr. The mean monthly wind speed does not vary significantly from month to month with the maximum of 4.4m/s in November and a minimum of 3.3m/s in July.



2.0 WASTEWATER

2.1 Background

The proposed development is located on the edge of the Outram township. Currently all Outram residences dispose of their wastewater via on-site septic tanks and disposal fields as there is no reticulated wastewater system.

In discussions with Dunedin City Council staff there is currently no intention to build a reticulated sewerage system for Outram in the near future. As a result it is intended that the proposed Balmoral development follow a similar approach to the treatment and disposal of their wastewater.

2.2 Wastewater Flows

Each property (Lot) has been conservatively assessed in terms of a 4 bedroom dwelling and maximum 6 person occupancy. The design wastewater flow has been calculated as shown in Table 2.1 below.

Table 2.1: Design Flows

Maximum Occupants	Per Person Design Flow Allowance	Design Flow
6	180Litres/day	1080Litres/day

Note that wastewater flows can be reduced significantly if water conservation measures are adopted within households.

2.3 Wastewater Treatment

Given the site lies partly within a groundwater protection zone, conventional primary wastewater systems (septic tank only and soakage trenches) are not considered suitable. Additionally, discharge of sewage onto land within a groundwater protection zone is a discretionary activity under the Regional Plan: Water for Otago and therefore requires an approved resource consent application. It is expected that the ORC will likely require all wastewater to be treated to an advanced secondary standard prior to dispersal into the receiving environment.

Given the likely ORC requirements, and for sustainable long term performance of wastewater dispersal systems, advanced secondary treatment of the wastewater is therefore recommended. It is further recommended that recirculating packed bed reactor (PBR) technology, such as recirculating textile filters (e.g. Advantex™ and Texass™), be used.

It is intended that all lot owners be required to install wastewater treatment systems with secondary treatment prior to dispersing the treated effluent to land. Examples (brochures) of possible secondary wastewater treatment plants are provided in the Appendix 2.

2.4 Treated Effluent Dispersal

As noted above, test pits were dug on site to assess the soils. Two plate permeameter tests were also performed in two of the test pits on the silty layer immediately below the topsoil layer to assess the permeability of the soils that would be receiving the treated wastewater. Copies of the permeability test results are presented in Appendix 1.



The permeability test results indicate that the Ksat of the receiving layer to be between 0.15m/day and 0.21m/day. This equates to a Category 4 soil – clay loam, under the classification system set out in AS/NZS1547:2000 - On-site domestic wastewater management.

It is recommended that pressurised drip lines laid approximately 200mm below the ground surface be used in each of the lots for treated effluent dispersal. Dripper irrigation is considered the most suitable option in this environment for the following reasons:

- Slow rate irrigation in the topsoil promotes Nitrogen uptake by plants;
- Irrigation lines can be placed within garden areas;
- Promotes even distribution of effluent across the site.

Based on the adoption of a pressurised drip line system of dispersal and taking into consideration the requirements under AS/NZS1547:2000, the size of the recommended dispersal field area for each lot has been calculated as shown in Table 2.2 below.

Table 2.2: Dispersal Field Size

Effluent Dispersal System	Design Flow (L)	Loading Rate (mm/day)	Nominal Design Area (m ²)	Add Reserve Area (m ²) ⁽¹⁾	Total Effluent Dispersal Area (m ²)
Drip line	1080	3.6	300	90	390

(1) A reserve area (usually equivalent to 30% of the design dispersal area) that is suitable for effluent dispersal should be site aside for future expansion of the dispersal field.

It should be noted that the size of the treated wastewater effluent dispersal areas has influenced the size of the lots proposed in this development to ensure that wastewater systems will provide sustainable long term performance.

As the lots on the eastern side of the development will encroach onto the Groundwater Protection Zone A, it is fully expected that they will require resource consents for discharge of treated wastewater to land.

Furthermore as the same lots along the eastern boundary also encroach within 20m of the stopbank and being within an "excavation-sensitive area" they may also be restricted from any excavation under the Otago Regional Council (ORC) Flood Protection Management Bylaw 2008, Section 3.2 (g). In order to excavate for installation of a dispersal field authority would be required from the ORC. As a result they may elect to place their on-site wastewater treatment and disposal systems outside the 20m zone. ***The size and location of the proposed lots has taken this into consideration.***

2.5 Assessment of Environmental Effects

2.5.1 Assessment of Alternatives

The following options have been considered as alternatives to the proposed on-site wastewater treatment systems including:

1. Primary Treatment of Effluent Only

Due to the proximity of protected groundwater zone primary treatment is not considered acceptable and thus a secondary treatment and dispersal to land is deemed the most appropriate option for this site.

2. Connection to Outram's Municipal Sewerage System

There is no such facility available.

3. Combined On-site Wastewater Systems for Entire Development

Based on the requirement to use one of the lots at the lowest point to collect and buffer stormwater flows it is considered that a combined wastewater treatment and disposal field could be compromised and would not make best use of the land available for development. The size of the lots proposed has taken a long term sustainable approach to the implementation of wastewater treatment and disposal.

No significant environmental effects have been identified and therefore alternative locations or treatment methodologies have not been investigated further. The proposed system is considered to be the best practicable option for the site.

2.5.2 Assessment of Environmental Effects

The Fourth Schedule of the Resource Management Act sets down matters that should be included in the assessment of effects on the environment. Matters relevant to the Balmoral Development site include:

- **Description of the Proposal**

A description of the proposal is presented earlier in this document.

- **Significant Environmental Effects and Alternatives**

There are a number of feasible options for treatment and dispersal of wastewater; the focus has been on achieving the most sustainable approach.

- **Assessment of Actual or Potential Effects**

No potential environmental effects have been identified.

- **Community and Cultural Effects**

No effects have been identified in relation to neighbouring properties or the community; no cultural effects have been identified.

- **Physical Effects**

No physical effects on the locality or landscape, including visual effects (the system will be below ground) have been identified. The dispersal areas will be constructed to blend sympathetically with the surrounding landscape, and the dispersal systems will enhance vegetated areas by providing irrigation.

- **Ecosystems**
No adverse effects on ecosystems, including plants and animals living in this habitat, have been identified in this assessment.
- **Natural Physical Resources**
No adverse effects have been identified in this assignment regarding the natural and physical resources present in the vicinity of the development.
- **Risk Management**
Under this assessment, no risks have been identified that will affect the neighbours or the wider community, and no hazardous installations are proposed.
- **Discharge**
No adverse effects have been identified in the proposed discharge of treated effluent.
- **Mitigation Measures**
Mitigation measures to protect against failure of the system or discharge of wastewater contaminants to the environment will include the following:
 - Requirement for regular servicing to ensure the systems continue to operate in a safe and effective manner.
 - A minimum of 24 hour emergency storage at peak flows within the treatment tank.
 - Low effluent loading.
 - No construction of wastewater systems within restricted excavation areas as described above.
- **Consultation**
No consultation has been undertaken at this point, as it is considered that there are no potentially affected parties, due to the mitigation measures described above.
- **Monitoring**
No monitoring is considered necessary.

2.6 Wastewater Infrastructure Summary

A summary of the wastewater concept for the proposed development is presented below.

- (i) Each house is to have a wastewater treatment plant complete with secondary treatment.
- (ii) Each house is to have a dispersal field with an area of at least 390m² with subsurface dripper irrigation.
- (iii) Wastewater treatment and dispersal systems for each property should be designed and consented.



3.0 WATER SUPPLY

3.1 Water Supply System Design

The sizing and layout of the water supply network depends on the number of houses that are to be built on the site. The following aspects relating to the water supply have been investigated to determine the required water supply system:

- Population (i.e. number of dwellings and population figures)
- Water demands – both peak and fire fighting requirements
- Water storage
- Quality of the water
- Reticulation network

As the proposed development is located in the Dunedin City Council territorial area, the water supply system must be designed in accordance with the Dunedin Code of Subdivision and Development – August 2010.

3.2 Existing Water Supply System

The water supply to the Outram community is sourced from a bore located in the gravels next to the Taieri River (upstream of the subdivision). The raw water is pumped up to a treatment plant located next to a 2,273m³ treated water reservoir. A 150mm diameter pipeline transports the treated water from the reservoir to the Outram Township and surrounding settlements - see Figure 3.1 below.

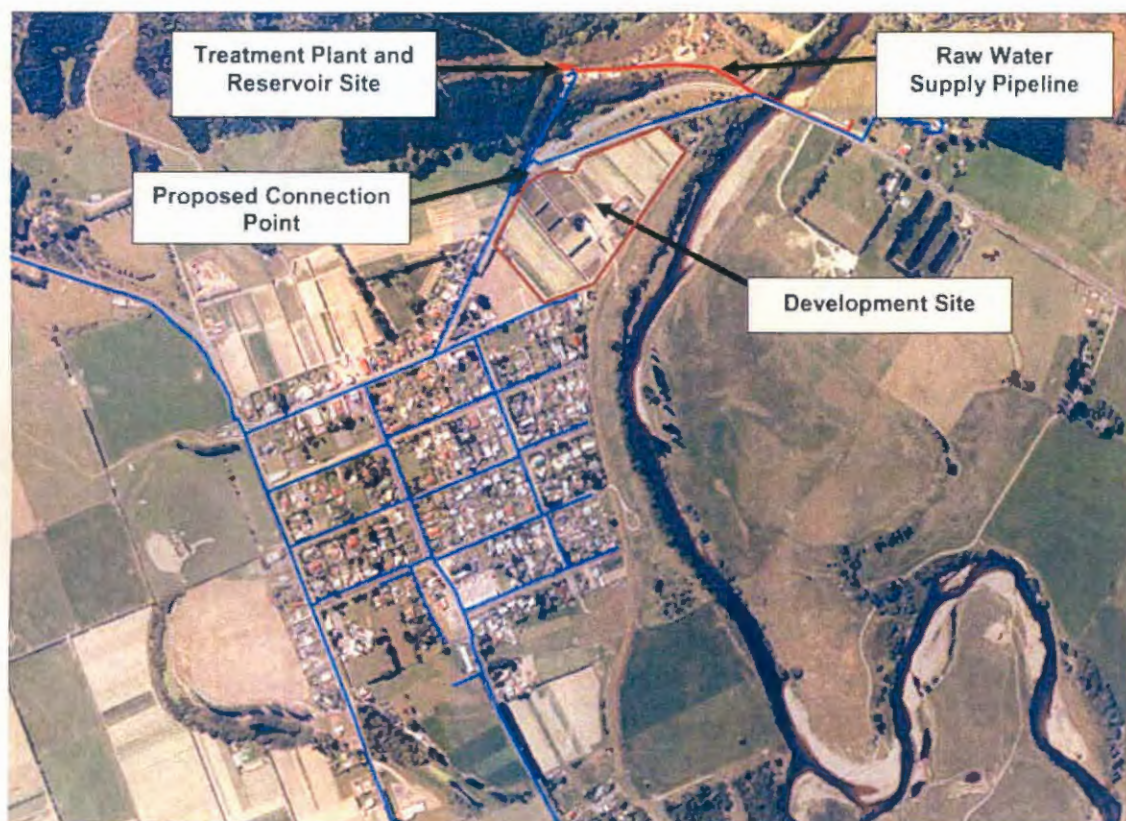


Figure 3.1: Outram Water Supply System

3.3 Peak Domestic Water Supply Demands

The existing Outram population connected to the Outram water supply is recorded as being 750 persons in the Ministry of Health Register of Drinking Water Supplies - 2011.

Based on the Dunedin City Council Code of Subdivision - August 2010 the minimum peak domestic water demand for the Outram supply including the 24 lots proposed for this development is calculated below.

$$\{750 + 24 \text{ lots} \times 3 \text{ persons/lot}\} \times 250 \text{ l/person/day} \times 5 \text{ peaking factor} = 1,027,500 \text{ l/day}$$

This figure equates to an estimated peak flow of 11.9 l/sec.

The extra demand imposed by the subdivision is estimated to increase the peak flows by 9.6%.

This flow will be able to be conveyed easily down from the treated water reservoir by the existing 150mm dia. treated water main. The total township peak flow rate including the proposed development equates to a pipeline flow velocity of 0.67m/sec which is well within the flow capacity of the pipeline.

It is proposed to connect to the existing trunk main coming down the hill from the reservoir with a 150mm dia. PN16 Series 2 uPVC water main in compliance with the DCC standards as shown in the plan presented in Appendix 3. The new 150mm dia. reticulation will feed into the development to supply potable water to the lots and fire hydrants.

3.4 Fire Fighting Flows

As noted in the Dunedin City Council Code of Subdivision - August 2010 the water reticulation is also required to meet the flow and pressure requirements of SNZ PAS 4509 – NZ Fire Service Firefighting Water Supplies Code of Practice - 2008. Based on the requirements of Table 2 in the code and taking into consideration the types of dwellings proposed in this development the water supply must be able to provide a total flow of 25 l/sec from two hydrants at a minimum pressure of 100kPa.

It is proposed to locate the new 150mm dia. water main in the development with the appropriate number of hydrants to ensure that they meet the minimum spacing requirements as determined by the code. The hydrants will be located no further away than 135m from any building and no more than 270m apart. A plan showing the proposed water reticulation is presented in Appendix 3.

Based on the size of the trunk water main, the close proximity to the treated water reservoir and the size of proposed new pipeline at the development, the flows and pressures required by the Fire Fighting Code of Practice will be easily met.

3.5 Water Storage Requirements

Water storage is required to cover treatment plant failure and other supply interruption scenarios as well as providing a residual volume for fighting fires.

Based on the existing population including the proposed development the existing Outram treated water reservoir storage equates to 11 days storage at average daily flows.

$$\text{i.e. } 2,273\text{m}^3 / \{750 + 24 \times 3\} \times 0.25\text{m}^3/\text{day} = 11 \text{ days storage}$$

This is more than enough to cope with any malfunction in the raw water supply system or water treatment plant.

In regards to the fire fighting reserve the NZ Fire Service Code of Practice requires 45m³ of water storage for this type of development. This again is well below the amount of storage provided by the existing Outram treated water reservoir.

3.6 Drinking Water Quality Requirements

The Dunedin City Council Code of Subdivision - August 2010 requires that any new components connected to a water supply must be capable of providing potable water in compliance with the Health (Drinking Water) Amendment Act.

The quality of the water currently being supplied to Outram residents does not currently meet the New Zealand Drinking Water Standards. Under the Health (Drinking Water) Amendment Act the water supply authority (Dunedin City Council in this case) have a period of time to upgrade the supply to consumers. It is understood that the DCC currently have an upgrade of the treatment plant in their programme of impending works and will be adding UV disinfection to the existing plant in due course.

Given the impending upgrade of the existing treatment plant it is recommended that the proposed development connect to the existing water supply scheme as noted above. It is assumed that the treatment upgrade will most likely occur before a significant number of houses have been built and that it is therefore not necessary to provide any further water treatment to the new consumers in the interim.

3.7 Water Supply Infrastructure Summary

A summary of the water supply concept for the proposed development is presented below.

- (i) Connect to the existing Outram water supply trunk main coming down the hill from the reservoir where it meets the main road leading into Outram.
- (ii) Supply and install a 150mm dia. PN16 Series 2 uPVC water main into the development feeding the hydrants and smaller house water supplies as shown on the plan presented in the Appendix 3.
- (iii) Supply and install enough fire hydrants on the new water main to meet the requirements of SNZ PAS 4509 – NZ Fire Service Firefighting Water Supplies Code of Practice - 2008.
- (iv) Do not install any further water treatment devices. – This does not preclude individual lot owners to install their own Point of Use treatment systems.
- (v) Do not provide any additional water storage.



4.0 STORMWATER

4.1 Introduction

This section of the report describes the stormwater runoff conditions that exist on the Balmoral development site and the stormwater management measures proposed for the development.

4.2 Stormwater Environment

4.2.1 External Catchments

The proposed development site lies in the former flood plain of the Taieri River outside the stopbank that now protects the site and Outram from flooding from the river. Mountford Street (SH 87), and the land above and north of SH87, on the western and north-western boundary of the site, drains to the west via a drain that lies close to the toe of the hills above Outram and is referred to as "West Drain" in Figure 4.1. A site layout plan showing the features of the vicinity of the site, the lot boundaries and the stormwater catchments is included in Appendix 4.

An urbanised area outside the south-western boundary of the site adjacent to Holyhead Street currently drains into the site and ponds on Lot 25 which also receives runoff from approximately 52% of the area within the site. The ponded stormwater infiltrates gradually from the pond to the groundwater table that is typically 5m to 8m below ground surface in the Outram area. All areas to the south and west of the site drain to in the "Contour Channel" that flows into Lake Waipori that is 15km southwest of Outram. During extreme events the pond that forms on Lot 25 overflows across Holyhead Street and the overflow joins the natural drainage path through Outram to the southwest. The overflow across Holyhead Street has a frequency of approximately once every 10years (10 year Average Return Interval (ARI)). The landward side of the stopbank on the east boundary of the site drains to Lot 25 but the eastern side of the stopbank drains to the Taieri River.

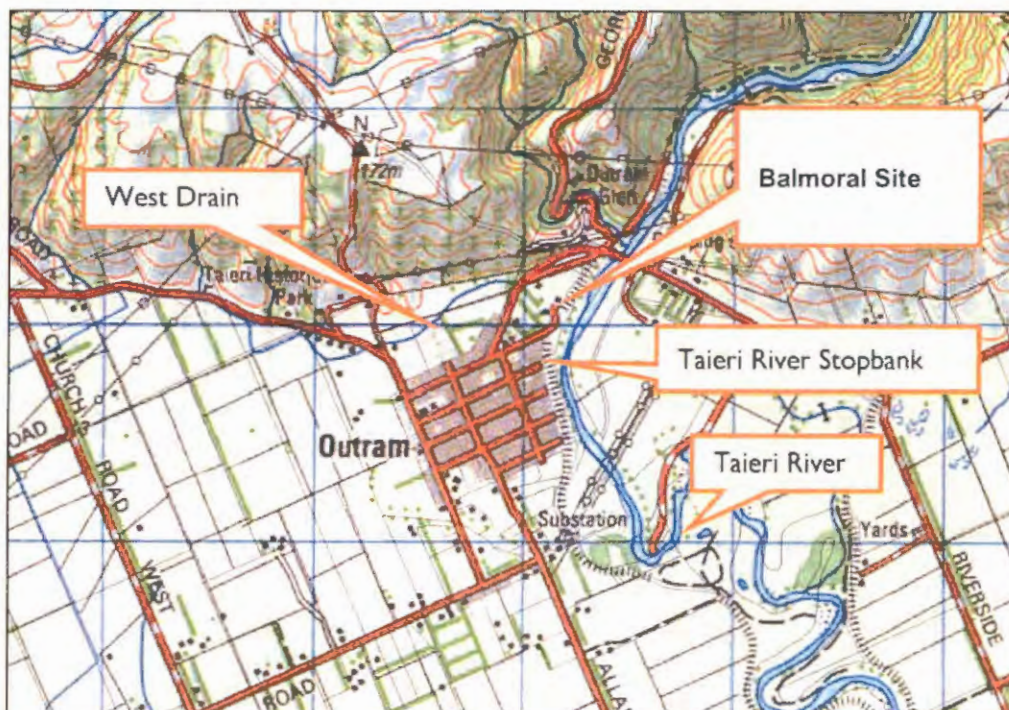


Figure 4.1: Existing Stormwater Features

The existing external catchments draining into the site are therefore limited to the face of the stopbank to the east and the small urban area on the northern side of Holyhead Street.

4.2.2 Site Catchment

Within the site, 52% of the site, referred to as the "East Catchment", drains to Lot 25 and the remaining 48%, referred to as the "West Catchment" drains to a culvert under SH87 on the western boundary of the site. Apart from some existing farm buildings and a historic house the catchment within the site is either grass or market garden. The soils over the site are generally silty sandy loams to a depth of up to 3m and therefore this soil layer is of relatively low permeability and consequently the natural infiltration to the underlying groundwater aquifer is slow. Permeability tests on the soils classified the soils as a "Clay loam". The cohesive and well graded nature of the soil means that the permeability is less than the "silty sandy loam" texture description would normally suggest.

Since the urban area adjacent to and on the northern side of Holyhead Street, the East catchment, a neighbouring property to the northeast of the site and the face of the stopbank all drain to the depression on Lot 25, the volume of water that collects there is significant and the volume of runoff would be increased to a limited extent by the increase in the impermeable area that would result from the proposed development.

A Stormwater Management Concept Layout plan is included in Appendix 4.

4.2.3 Groundwater Conditions

The depth to groundwater of 5m to 8m referred to above has been observed by Mr Brownlie, a local plumber, who has installed many of the septic tanks in the Outram Township. The test pits as part of the site investigations for assessing the options for wastewater disposal were up to 3m deep and as expected did not reach groundwater.

Information from the ORC for the "Outram Bore" records that under normal climatic conditions groundwater is typically 5m below ground at the site of the bore on the corner of Orme Street and Allanton Road. When there is significant rainfall that results in a flood down the Taieri River the groundwater table quickly responds. The response of the groundwater level to flood water levels in the Taieri River can be seen in Figure 4.2 below.

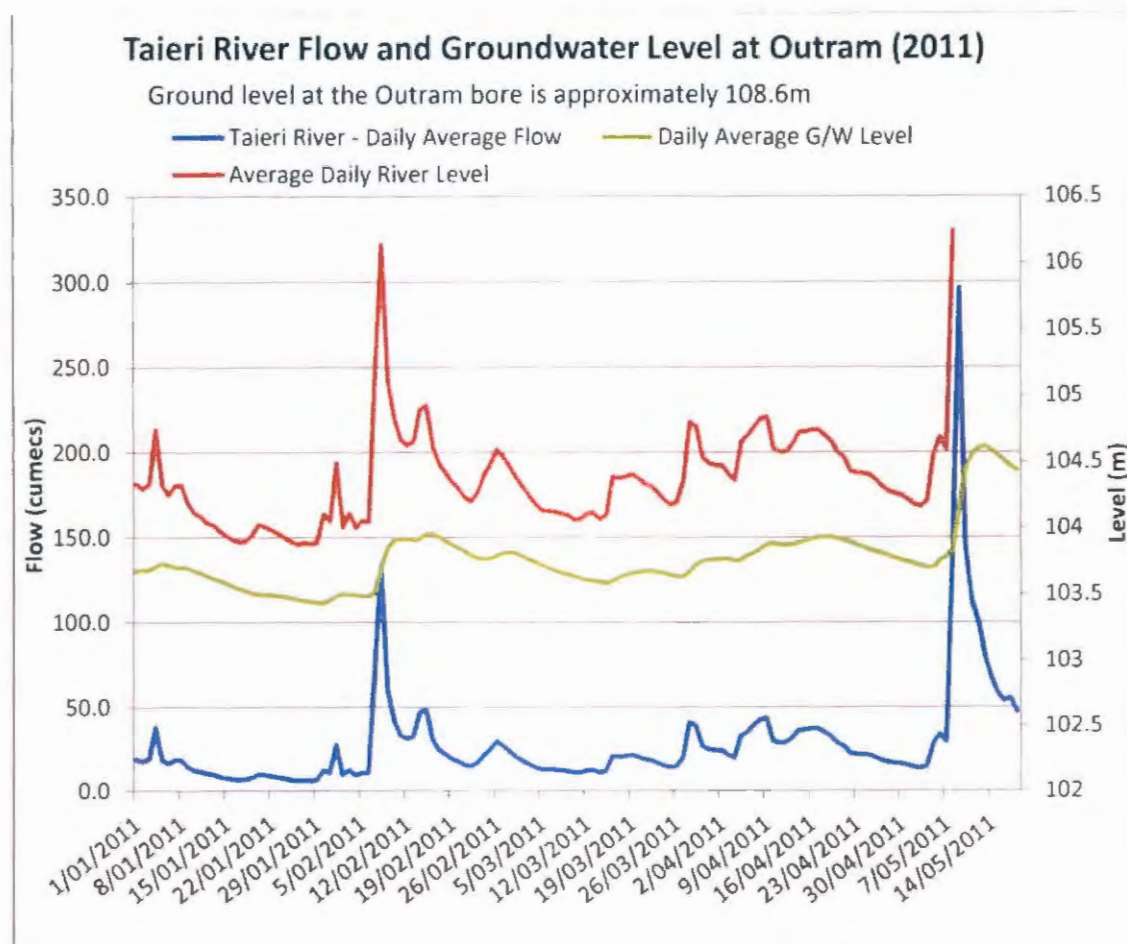


Figure 4.2: Taieri River Flow and Groundwater Data

4.2.4 Taieri River Flood Conditions

The flood hazard posed by the Taieri River is detailed in the report "Balmoral Developments (Outram) Ltd - Balmoral Subdivision Development - Flood Hazard Taieri River" prepared by David Hamilton and dated 5 December 2011. The conclusion with regard to the flood hazard at the site from this report is as follows:

"The capacity of the Taieri River floodway past the site is approximately 3,500 m³/s before the spillway at the upstream end of the development site would commence operation. The 1% AEP (100 year return period flood event is currently assessed as 2,350 m³/s and with climate change is expected to increase to about 2,725 m³/s. The current protection standard is in excess of a 0.2% AEP (1 in 500 year return period) flood event."

Further, in relation to stormwater, the report notes that the peak flood flow in the river adjacent to the Balmoral site is due to the response to rainfall in the lower part of the Taieri River catchment generally down gradient from the Maniototo basin. The straight line distance from Outram to the lower Maniototo basin at Kokonga is 75km which means that the peak flow in the river at Outram is likely to occur at least 12 hours after peak rainfall. The report notes that Traquair Stream that has a 100 year Average Return Interval (ARI or 1% Annual Exceedence Probability (AEP)) flow of 94m³/s and enters the Taieri River just upstream of the site, contributes less than 1% of the peak flood flow at Outram. This means that runoff from local

Outram catchments draining directly to the Taieri River would enter the river long before the upper catchment peak Taieri River flood flow arrives at Outram.

4.3 Regulatory Requirements

4.3.1 Otago Regional Council

Otago Regional Plan Water

The discharge of stormwater to water from a reticulated stormwater system to water, or onto or into land in circumstances where it may enter water is a **permitted** activity under the ORP: Water. Under Rule 12.4.1. The following items must be considered as part of the stormwater discharge decision:

- (a) *Where the system is lawfully installed, or extended, after 28 February 1998:*
 - (i) *The discharge is not to any wetland identified in Schedule 9; and*
 - (ii) *Provision is made for the interception and removal of any contaminant which would give rise to the effects identified in Condition (d) of this rule; and*
- (b) *The discharge does not contain any human sewage; and*
- (c) *The discharge does not cause flooding of any other person's property, erosion, land instability, sedimentation or property damage; and*
- (d) *The stormwater discharged, after reasonable mixing, does not give rise to all or any of the following effects in the receiving water;*
 - (i) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or*
 - (ii) *Any conspicuous change in the colour or visual clarity; or*
 - (iii) *Any emission of objectionable odour; or*
 - (iv) *The rendering of fresh water unsuitable for consumption by farm animals; or*
 - (v) *Any significant adverse effects on aquatic life.*

Flood Protection Management Bylaw 2008

The ORC Flood Protection Bylaw sets out the requirements for protection of the Taieri River Stopbank that exists on the east boundary of the site. An important consideration is a 20m wide zone along the toe of the stopbank where excavation may be prohibited for the construction of drains within 20m of the "excavation-sensitive areas" without the prior authority of the ORC. This prohibition on excavation extends over significant areas of Lots 15 and 16 and Lots 22 to 25.

4.3.2 Dunedin City Council

Dunedin City Council sets minimum standards and requirements for residential subdivision in the Dunedin Code of Subdivision and Development 2010 (DCSD). The code requires that the design and construction of stormwater systems be undertaken in accordance with the requirements of Part 4 of NZS 4404:2004 except as amended and extended by the Dunedin City Council document.

Section 4.3.2.5.1 of the amended code requires that primary stormwater infrastructure be designed for a 10year ARI storm. Primary protection in areas where secondary flow paths are not available or for secondary flow paths through private property then a 100year ARI design storm is applicable.



Under Section 4.3.2.5.2 a freeboard of 0.5m is required in addition to computed flood level for habitable floor levels and 0.3m freeboard is required for commercial and industrial buildings.

4.3.3 Building Act

Any proposed alteration to flood levels in a stream in the vicinity of buildings is subject to the requirements of the Building Act (1991). The Building Act requires that a 50 year ARI flood event does not enter habitable building areas and that a 10 year ARI does not cause nuisance or damage to property. The flood protection requirement for habitable building areas in the Building Act is surpassed by the requirements for freeboard required by the DCSD set out in Section 4.3.2.

4.4 Existing Stormwater Infrastructure

The existing infrastructure includes road side open water table drainage on the northern side of Holyhead Street that drains to Lot 25, an open water table drain along the toe of the outer batter and shoulders of the SH87 road formation. The toe of batter and water table drainage along SH87 is intercepted and drained at two locations on the southeast side of the road to the West Drain on the northwest side of the SH87 road formation. There is a mixed piped and open channel stormwater drainage system through Outram that starts on the south side of Holyhead Street adjacent to Lot 25. The disposal of stormwater in Outram is a mix of infiltration to ground and conveyance to a stormwater detention area west of the township.

The level of flood protection from floods in the Taieri River provided by the stopbank on the eastern boundary of the site is not included in the scope of this report.

With the exception of the depression on Lot 25 there is no significant stormwater infrastructure on site that would be retained in use in the future development of the site.

4.5 Proposed Stormwater Management Concept

4.5.1 Potential Development Stormwater Effects

Stormwater would be generated from additional roofs of residential buildings, roads, footpaths and hard-standing areas as a result of the development and therefore the proposed development without the proposed mitigation infrastructure would increase the peak runoff rate and runoff volume.

An analysis of the site assuming that the impermeable area per lot would be 200m² for a dwelling and attendant buildings, 100m² for paved areas including driveways and outdoor living areas, sealed carriageways for the roads and footpaths would result in the impermeable area being 18% of the total area of the site. The area per lot varies from 2,000m² to 3560m².

The effect of the increase in impermeable area as a result of the development will be mitigated by providing a stormwater management concept that includes features such as swales, detention ponds and a small pump station and rising main.

4.5.2 Stormwater Management Concept

As noted in Section 4.2.2 the topography of the site creates two catchments; the East Catchment that drains to the depression in Lot 25 and the West Catchment that drains to the West Drain. In addition to the East Catchment that drains to the depression in Lot 25 three external catchments also drain to the depression and these are:



- i. The stopbank on the eastern boundary referred to as the "Stopbank" catchment.
- ii. The existing property on the northeast boundary referred to as the "Neighbour" catchment.
- iii. Part of the urban area adjacent to the southwest boundary of the site referred to as the "External Urban" catchment.

The post development stormwater management concept includes the components for the East and West catchments described in Table 4.1. Refer to the Appendix 4 for the layout of the stormwater management concept.

Table 4.1 Post Development Stormwater Management Concept

Catchment	Stormwater Management Concept
East Catchment The East catchment is divided into "East 1" and "East 2" sub-catchments.	Stormwater Flow Collection i. For the East Catchment the discharge of stormwater would be without on lot detention storage from all lots to the depression on Lot 25 referred to further as the East Area Detention Pond (EDP). ii. The EDP would receive runoff from the East Catchment within the site plus the Stopbank, External Urban Area and Neighbour sub-catchments including a sealed ROW to lot's 2 and 5 iii. The existing drainage along the toe of the Taieri River stopbank would remain essentially unchanged. Stormwater Disposal Options iv. Two stormwater disposal discharge options were considered for the EDP: a. West Drain Discharge Option - natural infiltration to the ground as occurs now and a pump station for discharge to the West Drain at nominally 15 litres per second (l/s) ; or, b. Taieri River Discharge Option – as for option a. above but the pump from the EDP would discharge directly to the Taieri River at 15l/s. West Drain Discharge Option v. The EDP would detain the increased runoff from the developed site including runoff from the Stopbank and Neighbour catchments on the northern side of Holyhead Street. vi. For flood events up to the 10year ARI storm rainfall the pump station in the EDP would defer pumping runoff in the pond to the West Drain until 12hours after the peak water level is reached. This is intended to avoid any adverse effects on the West Drain beyond the site while also minimising damage to grass and vegetation in the EDP. vii. For a 100year ARI design rainfall event the pump would provide a constant discharge to the West Drain such that the total flow from the EDP catchment and the West Catchment Area to the West Drain is no greater than under the pre-development scenario. For the design 100year ARI event the total post-development peak flow to the West Drain will be 195 l/s which is less than the pre-development peak flow (197 l/s). viii. Adopting the pre-development peak flow as the maximum flow, the design pump capacity is 15l/s being the approximate difference between the pre-development flow of 197l/s and post development

	peak flow for the 100year ARI storm event of 180l/s. The reduction in the post development peak flow from the West Catchment is achieved by specifying slightly more detention storage for the lots in the West Catchment than strictly required to achieve stormwater neutrality. Taieri River Discharge Option ix. For all rainfall events the pump would begin to operate as soon as the EDP meets its minimum operating level equivalent to a designated pond empty water level. x. The 15l/s flow would have no adverse effect on the flow regime in the Taieri River at the site or downstream. (The 100yr ARI peak river flow is estimated to be 2,725,000l/s.) xi. Installation of the rising main from the pump station to the river would require installation of a pipe through area where excavation is prohibited without ORC approval including over the stopbank formation. The pipe would be shallow and the pipe outlet would be designed and located so that there is no erosion or other adverse effects on the river flood berm and banks. Pump Station xii. The pump station for both the West Drain and Taieri River discharge options would be located outside the Excavation Prohibited area and where the drainage of the pond floor can be achieved with a minimum of earthworks. An indicative location is shown in Drawing 704132: Sheet SW01 in Appendix 4. East Area Detention Pond xiii. To contain the 100year ARI event the existing pond that would become the EDP would be increased in size. Excavation to increase the size of the existing pond would be outside the area along the toe of the stopbank where excavation is prohibited. The EDP would be a grassed and landscaped area available for recreation (except during flood events).
West Catchment The West catchment is divided into "West 1" and "West 2" sub-catchments.	xiv. Collector System A piped collector system would be provided as the primary drainage system with a minimum capacity to carry the 10year ARI storm event. xv. Lot Detention Storage Detention storage on each lot would be required to offset the effects of the increased post development flows. Preliminary calculations indicate that the detention volumes for the 100year ARI event would be 6.5m³ per lot (m³/lot) (6500 litres/lot) for the West 1 catchment and 4.2m³/lot (4,200 litres/lot) for the West 2 catchment. The difference is due to the shorter time of concentration for the West 1 catchment over the West 2 catchment. xvi. Permissible Discharge The detention storages on each lot would be designed to provide the permissible discharge for the 10year and 100year ARI storm events respectively. (The permissible discharge for the 100year ARI event is greater than for the 10year ARI event.) The discharge from the lot would be via a sump that would allow a permissible discharge to leave the lot to the stormwater system. Each sump

	would discharge to an open channel or piped stormwater collector or secondary overland flow path. xvii. Secondary Flow Paths Flows in excess of the 10year ARI event would flow overland using constructed surface swales and roadways (Lot 26) including Rights of Way (ROW) to the off-site drainage network under SH87. xviii. Access Way Drainage For Lot 26 and a reciprocal ROW that would serve Lots 3, 4, 7, 8 and 9 would be provided with a sealed surface and water table drains.
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4.5.3 Preferred East Catchment Stormwater Disposal Option

As described in Table 4.1 there are two possible stormwater disposal options for stormwater from the East Catchment Detention Pond (EDP) with disposal being either to the West Drain or to the Taieri River.

A third "Status Quo" option was rejected without detailed consideration. The Status Quo option was to provide for lot detention storage in the East Catchment and let the extreme event secondary flows continue to flow down gradient through the existing Outram stormwater system. This would perpetuate the existing long duration ponding problem on Lot 25 and therefore it was seen as desirable to install a pump to reduce future issues with the existing and future pond.

Assuming that an acceptable design for the rising main can be agreed to with the ORC to mitigate any risk to the Taieri River stopbank then the Taieri River disposal option has the following advantages:

- i. The potential for any adverse effect on the capacity of the West Drain is avoided.
- ii. There is no significant effect on the Taieri River flood regime that would be the result of pumping 15l/s to the river. The discharge to the river would initiate of the order of half a day before the flood peak from the Taieri River would arrive at the site.
- iii. The proposal offers a solution that would be of benefit to the Outram. During extreme storm events water would be confined to the site instead of flowing down gradient and surcharging the Outram stormwater system.
- iv. The EDP would be emptied at a greater rate and therefore the risk of damage to grass and plantings around the proposed detention pond would be significantly less than for the West Drain disposal option.

The preferred stormwater disposal option for the East Catchment is therefore to pump stormwater runoff from the EDP over the stopbank to the Taieri River.

4.5.4 Effects Assessment Methodology

The pre-development and post development peak flow from the East and West catchments were calculated using hydrological modelling software (HEC-HMS) to account for the storage proposed in Lot 25 and in the West 1 and West 2 catchments to offset the increased imperviousness as a result of development.

The peak flood flows were estimated using the United States Soil Conservation Service rainfall loss / runoff method and the SCS unit hydrograph method. Both the loss and unit hydrograph methods are included in the US Army Corp of Engineers HEC-HMS hydrological software suite.

The SCS method calculations for the predevelopment scenario were checked against the modified Rational Method where good agreement was found for the 10year ARI event.

Catchment Data

The silty sandy soil texture and relatively low permeability of the topsoil and sub-soil layers meant that the Soil group D and a grassed catchment condition was chosen to provide a Curve Number (CN) value of 75. The CN equal to 75 was adopted for the loss calculations for the pre- and post-development scenarios consistent with grazing and market garden use now and low density urban use for the post-development land use. A summary of the catchment data is shown in Table 4.2 below.

Table 4.2: Site Catchment Analysis

Catchment	Catchment Area (m ²)	% of Site Area	Post Development % Impervious
West Catchment area	30,390	48%	18%
East Catchment area	33,372	52%	14%
Total Site Area	63,762		

The hydrological calculations assume a total site catchment area of 63,762m² (6.4 hectares (ha)) determined using Johnston Whitney "Schematic Proposal" (Paterson Pitts Partners Ltd drawing - Job Ref:30-688, Sheet 4 of 4, June 2011).

Rainfall Data

HIRDS Version 3 data for a climate change scenario for a 0.7 to 1.1 °C increase in temperature out to 2040 was adopted to generate the design rainfall depth – duration – ARI data for the model computations. The 2040 storm rainfall profiles for the 10year and 100year ARI events were adopted for both the pre and post development catchment conditions.

The land within the site is relatively flat and therefore times of concentration are accordingly relatively long. The time of concentration for East and West catchments was estimated to be between 49 and 53 minutes in the predevelopment condition and 39 to 44 minutes in the post development condition. The peak rainfall in the model was set to occur at 50% of the storm duration. Use of the SCS design storm rainfall distribution method in this case means that a 100 year ARI short duration peak rainfall coincides with the respective 24 hour duration 100 year ARI rainfall depth. The coincidence of a 100 year ARI 12 hour duration and a 100 year ARI 30 minute duration peak rainfall depth was considered the most appropriate extreme event case for the relatively small sub-catchments that include storage elements.

Model Elements

The HEC-HMS modelling software enables the rainfall runoff process to be modelled for a "sub-basin" being a total catchment represented by a number of sub-catchments joined by a network of channels and storages. The pre-development condition was modelled as two catchments being the East and West catchments plus the relevant external catchments being the "External Urban" (northern side of Holyhead Street), the "Stopbank" and "Neighbour" catchments that drain to the East catchment.

The post-development condition was based on the pre-development model except that the West catchment was broken down into two sub-catchments West 1 and West 2 and a storage element was added to model detention storage in each sub-catchment with the increase in imperviousness in the West 1 and West 2 sub-catchments. The East catchment was represented as the East 1 and East 2 sub-catchments and the imperviousness was increased to



represent the post – development condition. The imperviousness was not increased for the Stopbank, External Urban and Neighbour catchments.

4.5.5 Hydrological Analysis Results

The preliminary design estimates of peak flow for the pre and post development scenario and storage requirements for the West catchment are set out in Tables 4.3 and 4.4 below.

Table 4.3: Pre and Post Development Scenario Flow Estimates

Peak Estimated Stormwater Runoff Flow (l/s)											
Pre-Development						Post-Development					
East Catchment			West Catchment			East Catchment			West Catchment		
Sub-catchments	10 yr ARI	100 yr ARI	Sub-catchments	10 yr ARI	100 yr ARI	Sub-catchments	10 yr ARI	100 yr ARI	Sub-catchments	10 yr ARI	100 yr ARI
Catchment	76	218	Catchment	69	197	East 1	42	106	West 1	25	88
Road	10	30				East 2	42	120	West 2	37	128
Neighbour	11	32				East 3		36			
External Urban	17	48				External Urban	30	69			
						Neighbour	18	43			
Stopbank	11	39				Stopbank	11	39			
Combined Runoff Flow	112 (to EDP)	319 (to EDP)		69	197	Combined Runoff Flow	142 (to EDP)	365 (to EDP)		62	195
Stormwater Disposal flow at the sub-Catchment Disposal Point	See Note 1 below			69	197	Option - EDP runoff pumped to West Drain	0	15		62	195
	See Note 2 below					Option - EDP runoff pumped to Taieri River	15	15		62	180

Note 1 Stormwater discharge infiltrates to ground over days and weeks and during extreme events there is some flow to the Outram surface and piped stormwater system.

Note 2 The West Catchments 10yr ARI disposal discharge – For the West Drain disposal option the discharge from the EDP would be deferred for 12hours after the peak runoff has passed from the West Catchment and therefore the peak discharge from the West catchment is the same for both disposal options.

Table 4.4: Detention Storage Estimates

Required Total Storage Volume per Lot (m ³) for the 10yr and 100yr ARI Events			
West 1		West 2	
10 yr ARI	100 yr ARI	10 yr ARI	100 yr ARI
4.2	6.5	2.6	4.1

4.5.6 Conclusions

The following conclusions are drawn from the hydrological calculations in the context of the proposed post development stormwater management concept.

- i. The detention storage requirements for the West catchment are modest and could be accommodated using swales, garden plots or tankage all with permissible discharge controls. The options for providing for the permissible discharge would be a matter for the lot owner and final design. If cost effective, a practical option would be to increase the detention storage volume on a lot and discharge at the 10year ARI permissible design flow to the primary collector system and simplify the permissible discharge control requirement.
- ii. The storage requirement for the EDP on Lot 25 for a 100year ARI event is 4,000m³ in order to prevent an overflow to the area of Outram south of Holyhead Street. The storage requirement over the area of Lot 25 represents a uniform water depth of 970mm. A detailed plan as to how 4,000m³ of storage would be accommodated within Lot 25 has not been prepared however from a visual examination of the site it appears that the depth of storage up to the existing road extension off Holyhead Street will be adequate with excavation likely to be required to enlarge the pond beyond the Prohibited Excavation zone. Refer to the photograph in Figure 4.3.
- iii. The stormwater detained in the EDP would be pumped over the adjacent stopbank to the Taieri River.
- iv. Based on the West 1 and West 2 total detention storage volumes required per lot from Table 4.4 for the 100year ARI event the peak discharge calculated to the West Drain is 180l/s which is 17l/s less than the 100yr ARI pre-development peak flow of 197l/s. The capacity of the culverts under SH87 to take the pre-development flow from the site has not been confirmed.
- v. The enlarged EDP with a pump station discharging to the Taieri River reduces the existing potential risk of adverse flooding to the Outram south of Holyhead Street.



Figure 4.3: Balmoral Site at Lot 25 – Location of proposed Detention Pond – Existing Access from Holyhead Street is visible upper centre of photograph.

4.5.7 Consent Requirements

The inclusion of a pump in the EDP means that provision would need to be made for a discharge of stormwater to the Taieri River. Since the discharge of stormwater from a reticulated stormwater system to water, or onto or into land in circumstances where it may enter water is a permitted activity under the ORC Water Plan provided the requirements of Section 12.4.1 of the Plan are satisfied a resource consent is not required.

Approval would be required from the ORC for construction of the works in the Excavation Prohibited area and over the stopbank before implementing the preferred East Catchment stormwater disposal option.

4.6 Stormwater Effects Assessment

4.6.1 Runoff Flow and Volume

For the West Catchment the peak runoff flow in the post-development scenario would be equal to or less than the pre-development flow at the point of discharge from the site.

The stormwater disposal discharge from the East Catchment EDP to groundwater would be similar to the pre-development scenario but there would be an additional pumped discharge from the East Catchment to the Taieri River. The pumped discharge would have no significant adverse effect on flood conditions in the Taieri River and would reduce extreme storm event flows to the Outram stormwater network and therefore would be of benefit to Outram.

The change in the volume of runoff due to the increase in the impermeable area is proposed as part of the development is minor.

4.6.2 Runoff Water Quality

It is expected that stormwater from this site could contain the following changes in the discharge of contaminant from the pre-development condition:

- Suspended Solids - possible increase.
- Oxygen Demanding Substances - possible increase.
- Pathogens - likely reduction.
- Dissolved Contaminants - an increase due to vehicles (lead, zinc, copper).

The effects of the changes in contaminant discharges would however be minor. The lot area is relatively large and therefore the area of grass and garden vegetation and the flat topography of the site would mean that erosion is minimal and the other contaminants would be largely absorbed. Features that would absorb contaminants include grass, lawns and gardens, on site detention basins and road sumps.

The West Drain drainage path leaving the site is ephemeral therefore there is no significant effect on natural waterways. The volume of contaminants from SH87 would be relatively large compared to that from the proposed development and therefore any marginal effects due the proposed development would be minor.

4.6.3 Alternative Stormwater Management Options

The proposed stormwater management option was developed taking into consideration other options as presented in Table 4.5 below.

Table 4.5 Alternative Stormwater Management Option Assessment

No.	Alternative Stormwater Concept	Conclusion
1	Conventional development with on-site communal detention storage would be developed to maintain post development neutrality. Discharge to the Outram stormwater network south of Holyhead Street.	The location of the detention storage on Lot 25 would require upgrading of the Outram stormwater system to accommodate the development. Upgrading the Outram system to take the modest increase in flow would be too expensive.
2	As for 1 above but with Disposal to West Drain.	The cost of the pump and the reliance on the pump represented additional cost and a greater risk of overflows to the area south of Holyhead Street. Additional flow would load the West Drain to a greater extent than for the adopted stormwater management concept.
3	Utilise the existing West Drain drainage network with detention storage but discharge the East catchment to water to ground using an infiltration pit beneath the pond in Lot 25.	Very unlikely to work due to high groundwater levels during flood conditions in the Taieri River. Represents a significant risk of a piping failure under the stopbank even if the infiltration pit were located outside the excavation prohibited zone. Risk of groundwater contamination.
4	Re-use of roof and other impervious area runoff for non-potable use to maintain stormwater neutrality.	The volume of storage required for residential water supply would be greater than the detention storage required for lot areas of 2000m ² or greater. The greater storage volume would be greater due to the expected water demand. Taking a water supply available from the existing Outram water supply network would be beneficial for fire fighting and residential use. The duplication of the water supply system for re-use and mains supply from Outram would add additional cost.



4.6.4 Environmental Effects

The proposed stormwater management concept represents very little change to the current stormwater drainage flows and volumes and disposal locations except in the case of an extreme event where there would be a small reduction in flows to the existing Outram stormwater system.

Stormwater flows would not adversely affect the receiving groundwater after infiltration from the EDP and other detention facilities proposed for the West Catchment and conceivably if ponds or garden features were adopted in the East Catchment if lot owners voluntarily practiced water conservation.

4.6.5 Construction Erosion and Sedimentation Plan

Development of the site would require an Erosion and Sedimentation Management Plan (ESMP).

The site is relatively flat and therefore the construction of access ways and the installation of services will not require extensive earthworks. Construction of the EDP will require earthworks and therefore will require specific attention in the ESMP.



IN THE MATTER

of the Resource Management
Act 1991

AND

IN THE MATTER

of the Dunedin District Plan
Review ('2GP')

STATEMENT OF EVIDENCE OF HUGH DUDLEY FORSYTH

1. Introduction

- 1.1 My name is Hugh Forsyth and I am appearing on behalf of Balmoral Development (Outram) Ltd to provide landscape evidence in support of their submission OS 741 to the proposed Second Generation Dunedin District Plan ('2GP'). I am a registered landscape architect and I have followed the Code of Conduct for professional witnesses in preparation of this evidence.
- 1.2 My Clients seek to change the proposed zone for the northern part of 94 Holyhead Street, Outram, from 'Rural Taieri Plains' to 'Town and Settlement' under the 2GP. I have been asked to review the existing amenity values of this site, to assess the contribution the site makes to the rural setting of Outram and to assess the effects a zone change would have on these values.
- 1.3 In preparing this evidence I read the planning report from Private Plan Change 11, that was initiated by my Clients and reviewed the Holyhead Street Structure plan that arose from subsequent proceedings (Appendix 15.D, 2GP). I have since read the S42 report 'Urban Land Supply' and Review Sheet 48, that is referred to in the report and have reviewed the Holyhead Street Structure plan (Appendix 15.D, 2GP).
- 1.4 I visited the site on the 28th of February 2017 and then again 17th of April to confirm my initial impressions. During these visits I walked around the boundaries of the full area of 94 Holyhead Street, walked along the river embankment and drove along adjacent public roads. I took photographs and have included some of these in my evidence.
- 1.5 During my site visits I met with the applicants, Cathy and Neville Ferguson, and discussed their intentions to develop the submission area for low-density residential housing. This will include lots of 1000m² or more in size and as an extension of the development outlined in the Structure Plan, which will meet the southern boundary of the submission area.

1.6 My evidence has the following structure:

- Site description
- Landscape character and visual catchment
- Proposed development
- Planning context
- Amenity Effects
- Mitigation
- Summary and Recommendations

1.7 I am able to support the proposed zone change but have made some recommendations that to mitigate potential adverse effects that may arise from the future development of the submission area.

2. Site Context and Structure

2.1 The site area is located on the north/west outskirts of Outram Township and is part of the land contained within 94 Holyhead Street. The southern boundary is approximately 420m from the main street of Outram (Holyhead Street). Its northern boundary meets the private of 51 Mountfort Street and at approximately 150m south/west of the Taieri River Bridge (Fig.1).

2.2 A 4m high flood bank marks its eastern boundary and a small non-continuing lane meets the north/west boundary. A walking track follows the top of the flood bank and provides views across the site to the highway to the north/west and back over Taieri River to the pastureland to the east. This meets a private property sign at the northern site boundary but appears to provide continued legal access to the bridge.

2.3 The lane is narrow, approximately 4m in width, and is contained between the site boundary hedge and the embankment of SH87 above. It provides vehicle access to 51 Mountfort Street and pedestrian access to Outram Glen to the north.

2.4 Highway 87 passes the site on a raised embankment that is offset by approximately 50m at the northern boundary and 20m at the southern boundary. The embankment drops in grade from north to south and from approximately 5m to 2m above the site.

2.5 This section of SH87 is named 'Mountfort Street' and extends between the Taieri River Bridge and the main street of Outram. It appears to be consistently busy and carried approximately 20 cars per minute during early afternoon weekday site visit. My observation from driving along this road several times is that most vehicles travel at approximately 80kph.

- 2.6 Roadside planting of trees and shrubs screen the site from northern road approach until cars are immediately opposite the northern boundary and views end near the southern boundary where a medium sized willow tree marks the present highway entrance. Further street trees are planted along the road berm between the shrubs and the southern site boundary but allow relatively clear views of the site over a distance of approximately 140m. This is a viewing time of approximately 6.5 seconds for a motorist driving at 80kph (Fig.2).
- 2.7 The site comprises a flat land area of approximately 2.19ha and forms an irregular rectangle of approximately 196m in length that is approximately 65m wide at its north/east boundary and 180m wide at its south/west end. Land cover includes pasture, trees (that surround the farmhouse), a small market garden area that meets a tall 5m+ hedge on the southern boundary, and a low and slightly rambling hedgerow that faces the lane and highway on the north/west boundary.
- 2.8 Balmoral Farmhouse is located in the south/east corner of the site on a separate lot of 3115m² but visually and functionally appears part of the submission area. The farmhouse is a two-storey building with a ground floor area of approximately 150m² in area and is surrounded by a large garden and a range of medium sized and tall trees.
- 2.9 Upstairs attic bedrooms and windows face towards the highway and its white painted form is framed against tree planting and highlighted by the intersection of the flood embankment and the southern boundary hedge that runs across the south/east site boundary. Two outbuildings are located either side of service yard to its south and where an access road extends to Holyhead Street.
- 2.10 The combined area of the site and the farmhouse is approximately 2.5ha and equates to approximately 39.35% of the 6.3518ha of land that is included in legal title for 94 Holyhead Street. The balance of approximately 3.85ha forms the Structure Plan.
- 2.11 In summary the site area is a visually and physically contained subset of the wider land area of 94 Holyhead Street that is located in the northern tip of this section of river terrace. The site is flat and contains pasture, Balmoral Farmhouse and the tree and shrub planting and outbuildings that surround the house.
- 2.12 The site is contained by A prominent river embankment contains the site to the east while hedges and the tree planting on the neighbouring property to the north/east mark the other boundaries. SH87 passes its north/west boundary on an embankment that provides strategic views of most of the site area. The land is not used for any significant purpose other than residential at this point.

3. Landscape Character and Visual Amenity

- 3.1 From my observation the site has an unusually simple landscape structure that includes hedgerows; flood bank; pasture; and several buildings and area of trees and garden that are localized in one part of the site. This limited pattern of vegetation, landform and a localized area of buildings are easy to perceive from a passing vehicle and offers several off site experiences for those walking along the flood embankment or the narrow lane on the sites north/west boundary.
- 3.2 Those gained at site level are quite different from road or embankment view and provide a sense of scale and distance that is absent when viewing from above. In this sense the perception of the landscape character and value of the site is also different, although its structure and elements remain the same.
- 3.3 The site has a long and narrowing form at the north/east boundary with 51 Mountfort Street and is more contained and intimate in character at this end. The south/west end of the site is twice as wide and has a larger and more expansive scale that is reinforced by prominence the farmhouse and tree planting.
- 3.4 The wider landscape context includes Taieri River, which gives form to the flood bank, the rural landscape beyond, and Outram Township whose suburban boundary is approximately 195m south/west of the site. However the predominant influences at site level are the presence of SH87, the flood bank and views to the forested slopes to the north/west and the rising ridgeline and slopes to the north/east, above Outram Glen and the planting that is located along the lane and around 51 Mountfort Street.
- 3.5 I would describe the sites character as semi-rural/residential. This characterization takes into account the high level of open space that surrounds the house, hedgerows and views to the wider countryside but relatively small overall land area, the number of buildings within the site boundaries, lack of rural activity, and continuous presence of SH87. All parts of the site are managed and there are no obvious elements of natural process or natural character.
- 3.6 The visual catchment for the site and the farmhouse includes the stretch of SH87 that has a clear view for motorists and occasional pedestrians. Other off site views may from the flood bank and by local residents either driving down the lane to 51 Mountfort Street or using it as walking access to Outram Glen Recreation Reserve, to the north/east.
- 3.7 For the reasons that I outlined in section 3.1 above the site is appealing from off site road view. Within the overall framework Balmoral Farmhouse is main focus of these

passing views. The lack of other structures and the broad pasture setting and simple forms of the flood bank and hedge emphasize its presence. Brief views to the river side trees and distant hills and reinforce its apparent rural context.

- 3.8 The same elements apply within the site and where the sense of place is much higher than that gained from the road above, as would be expected. However views to distant farm hills, and adjacent native forest, are as significant as the farmhouse and difference between 'inside' and 'outside' applies to future development and designing for its amenity.
- 3.9 My assessment of landscape value for the present site is 'low-medium' on a scale of 'low, low-medium, medium, medium-high' and 'high'. My assessment is based on the low levels of natural process and pattern that are evident in the site, the modified character of the site and the influence of infrastructure to the north/west and east of the site area. This is a separate assessment to 'amenity' and which draws on Section 7 (c) of the Resource Management Act (1991).
- 3.10 My assessment of the sites amenity value 'medium' on the same scale. An assessment of amenity is wider than visual appeal, although this is often a key factor. In this case the farmhouse is a key focal point for off site road views and is also dominant within the site, although not as significant as views from outside.
- 3.11 Apart from its visual and aesthetic appeal the building has historic significance in the area, as recognized by its listing by Heritage New Zealand, and is the element that requires protection if present amenity values are to be retained, albeit in a different form.

4. Proposed Development

- 4.1 The part of 94 Holyhead Street that is included in the Structure Plan will be developed for to include 25 'large lot' residential sites and will include a storm water detention pond and access to SH87 and Holyhead Street. Further and similar residential development will be undertaken in the submission area if rezoning is approved and will be developed as a continuation of the Structure Plan area.

5. Planning Context

- 5.1 The proposed zone for the site is 'Taieri Rural Zone' within the 2GP. The site is assessed as containing high-class soils and being within a Hazard 2 flood area and Balmoral Farmhouse is identified as a heritage building. The site is not identified as reflecting higher landscape or natural character values.

- 5.2 The purpose of the rural zone is set out as providing for 'productive rural activities' and 'ecosystem services', which include soil, air, water and natural habitat for vegetation and fauna (Section 16, 'Rural Zones', 'Introduction'). Threats to the rural environment are identified as land fragmentation and the use rural land for non-productive use. Non-productive uses are linked to 'adverse effects on landscape values, rural character and amenity values and the natural environment.
- 5.3 Objectives respond to these issues by encouraging acceptable rural activity (16.2.1.1), preventing unnecessary or inappropriate development (16.2.1.5), avoiding restrictions on rural activity through reverse sensitivity (16.2.1.7) and seeking to retain natural features and encourage building that is appropriate to its receiving environment (16.2.1.7).
- 5.4 To provide guidance the District is divided into seven landscape areas and a summary of the key elements and values for each area is provided. Appendix A7, Section A7.3 provides an overview of the 'Taieri Plains'. This discussed the pattern of intensive use in the eastern part of Taieri Plains and the larger scale and less intensive 'working landscape' within the western parts, and including the farmland surrounding Outram.
- 5.5 Specifically the Taieri Plains rural landscape may include:
- Larger fields and beef and dairy farming
 - A grid-like pattern of development with a regular form to fence lines and shelter belts
- 5.6 A key issue for the submission is whether or not the site is 'rural' in the manner envisaged by the 2GP. On the basis of driving around the outskirts of Outram and viewing the hedgerow/tree boundaries and enclosed field areas to its south/west and the large fields east of Taieri River I conclude that it is not and for reasons of size, form and use.
- 5.7 The two field areas to the immediate east of the site and on the opposite side of the river are 25 and 52ha in area respectively and are part of much larger area of land that extends eastward. These farm areas contain one or two groups of buildings, fences, and carry stock or crops with farm tracks linking the different parts.
- 5.8 In contrast the site is 2.1ha in area and is separated from and other adjacent field areas and is not big enough to carry stock other than for domestic purposes. The site has been used for horticultural purposes but this activity has ceased. Market gardening has also been discontinued within the wider Outram area and suggests it is no longer viable.

5.9 Potential adverse effects on the rural environment through residential development are discussed in the next section of my evidence.

6. Amenity Effects

6.1 Future construction within the structure plan area will require removal of the hedge that runs across the site adjacent to the farmhouse, both to provide access to the highway, and to allow for sunlight to the lots adjoining it. The effect of this, and the removal of the shelterbelt further south on the road boundary, will be to open the combined land area to view from SH87.

6.2 My view is that this change to the present landscape structure is significant and that the Structure Plan now forms the baseline for assessment for future development. Given its strategic location and open road view 94 Holyhead Street will continue to provide a setting to the entrance to Outram from but its character will be residential, even if the submission area remains undeveloped.

6.3 For this reason I do not consider the current site values and its contribution to Outram's setting are sufficient to preserve it regardless. However I do consider that the visual amenity value of Balmoral Farmhouse can be retained in part for road users. Its preservation as a building sits with its listing by Heritage NZ.

6.4 Following debate with the development team and the Client a proposal has been developed by Paterson Pitts Ltd that I consider preserves the visual setting for the farmhouse from north/west road view. This proposes a view shaft of 42.5m width at the north/west boundary and a 22.5m cone to the farmhouse at the eastern side of the site (Fig.5).

6.5 This view shaft would be located at the southern end of the area that is currently open to site views and the lowest point of the highway and therefore the most strategic point. It is also likely that the willow tree located at this point on the road embankment will be removed to provide adequate site lines to the highway. This removal will further enhance the viewing potential of the farmhouse from this point.

6.6 I also consider that the future amenity of the submission area should be concerned with the enjoyment and amenity of the inhabitants. For this reason I would recommend a 3m wide boundary setback on the eastern side of the north/west lane for provision of footpath and adequate room to plant a boundary avenue of Kowhai or similar medium sized semi deciduous flowering tree.

- 6.7 A pedestrian connection through the site from the Holyhead Street to this lane would also restore the amenity that will be lost to present residents when the Structure Plan area is developed.

7. Summary and Recommendation

- 7.1 My recommendation is that consent be given for a zone change subject to submission of a landscape and site plan to be approved by Council prior to consent and incorporation of the view shaft and height conditions illustrated in Figure 5 of my visual evidence.

- 7.2 Specific development recommendations include:

- Undertake medium height tree planting along the north-east boundary
- For houses located on the north/west boundary:
 - (i) Reflectivity values of 40% and down on roofs and wall cladding
- A design statement be prepared for submission at consent and adoption by the development team that seeks to limit the height and prominence of street light fittings and light throw throughout the site and provides for planting of medium street trees (6m maximum height) at a maximum of 10m centre.

Hugh Forsyth

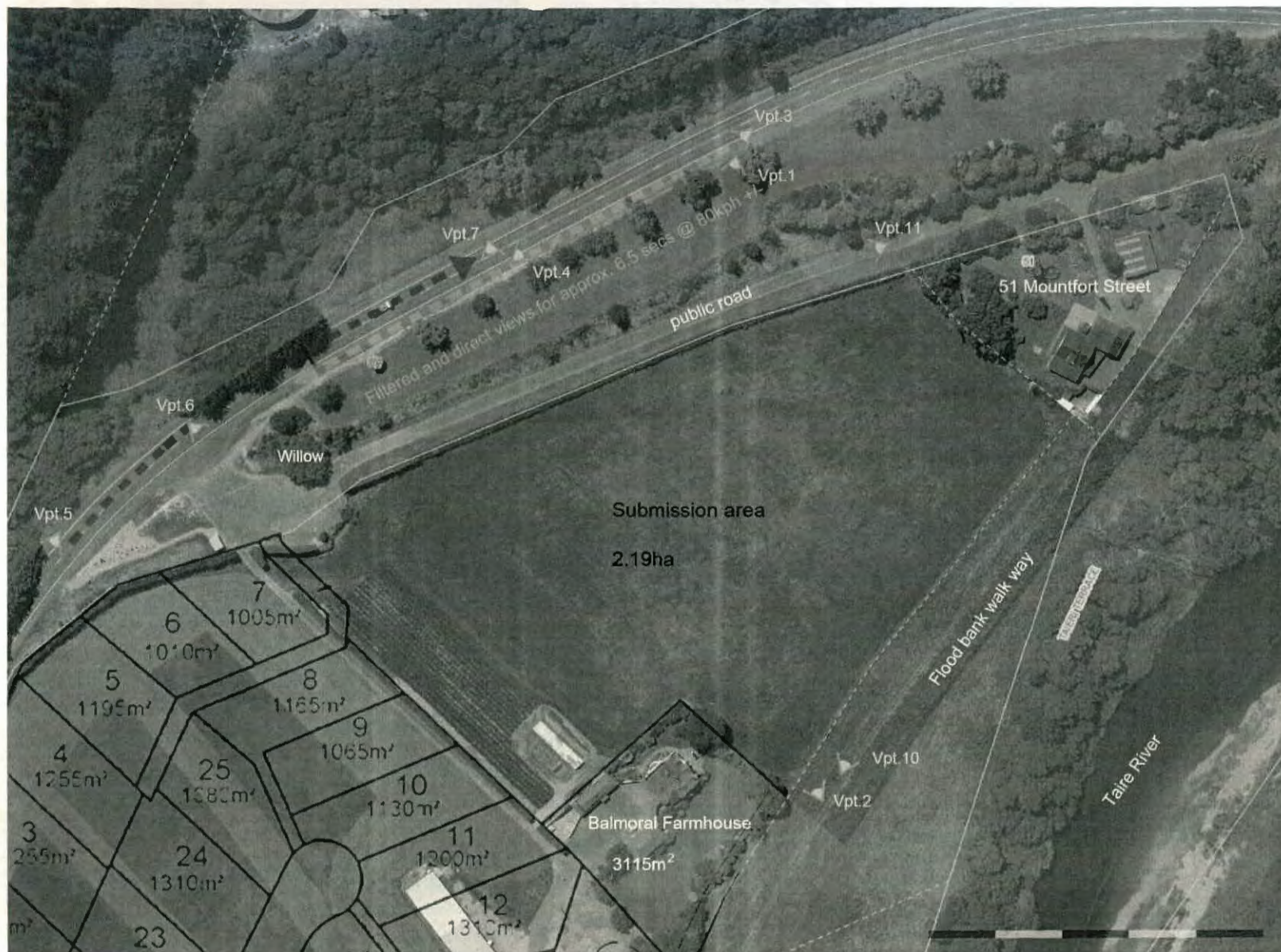
15th May 2017



LEGEND

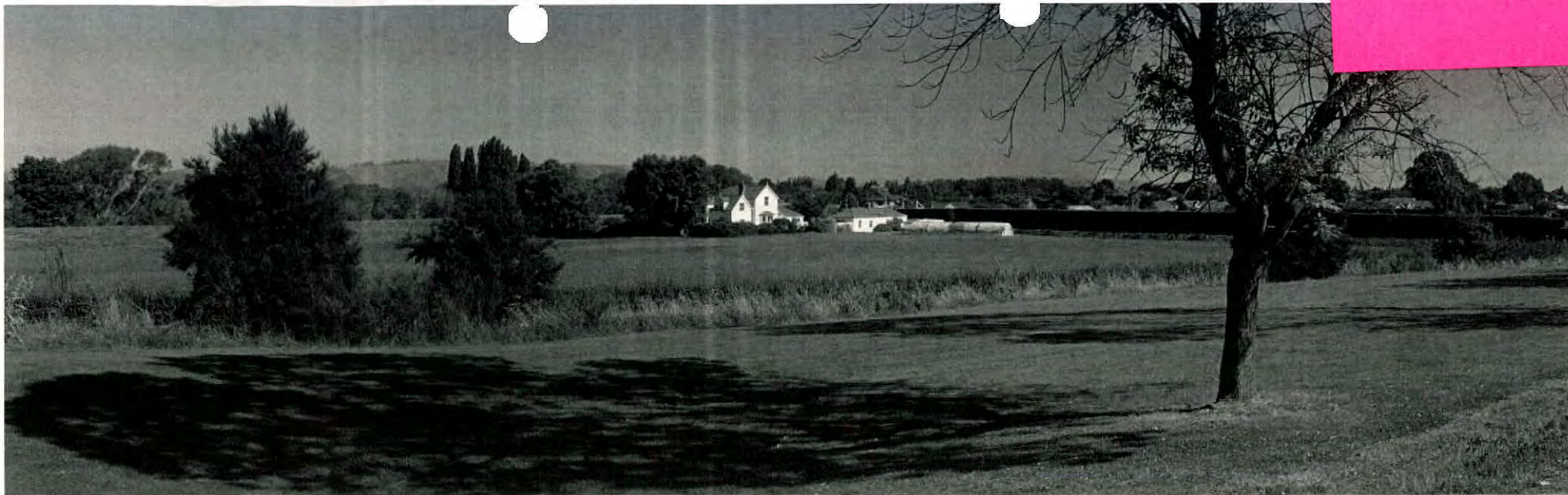
1. Submission area - 94 Holyhead Street - Township and Settlement (2GP)
2. Balmoral farmhouse - Historic Building overlay (2GP)
3. Taieri River
4. Taieri Road Bridge
5. SH87 / Mountfort Street
6. Flood bank
7. Outram Glen
8. Holyhead Street Structure Plan - 94 Holyhead Street - Township and Settlement (2GP)
9. 22 Mountfort St - Rural Taieri Plains (2GP)
10. 1 Hoylake Street - Large lot residential (2GP)
11. 6 Formby St - Rural Taieri Plains (2GP)
12. Rural Taieri Plains Zone (2GP)
13. Outram Township - Township and Settlement (2GP)

Outram Township - Township and Settlement (2GP)



LEGEND

- Vehicles travelling north-east
- Vehicles approaching Outram
- Site area visible to road view
- Site area not visible to road view
- Holyhead St structure plan area
- View points - refer Fig. 3 & 4



Viewpoint 1 - Balmoral Farmhouse and field, viewed from north-east road approach to Outram



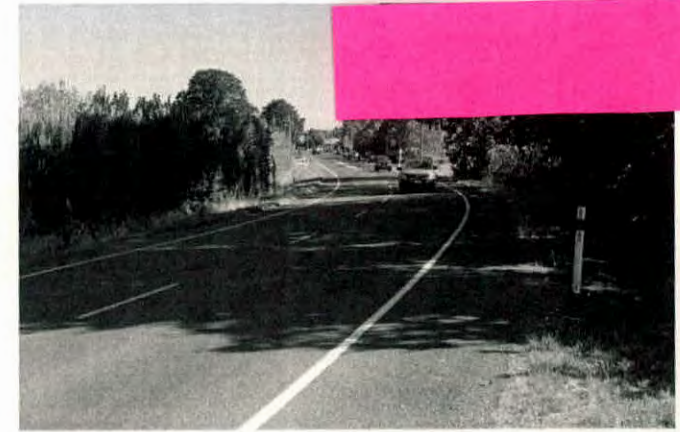
Viewpoint 2 - Mountfort Street and the north-east field area viewed from the flood bank walkway



Vpt.3 - North-east approach to Outram past the site on Mountfort Street



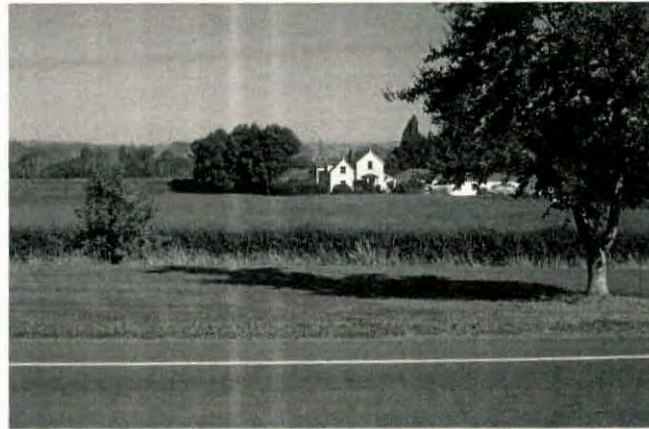
Vpt.4 - Vehicles approaching from north-east on Mountfort Street



Vpt. 5 - Outram Township boundary



Vpt. 6 - View to Balmoral Farmhouse and Leylandii front boundary hedge



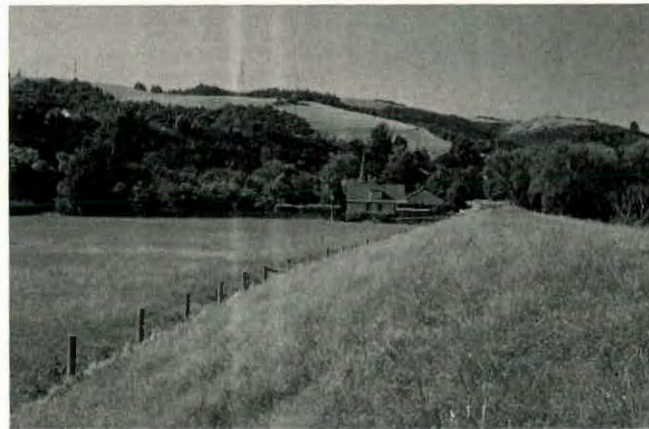
Vpt.7 - Vehicle view to Balmoral Farmhouse - travelling north-east from Outram



Vpt. 8 - Holyhead Street - view north-east



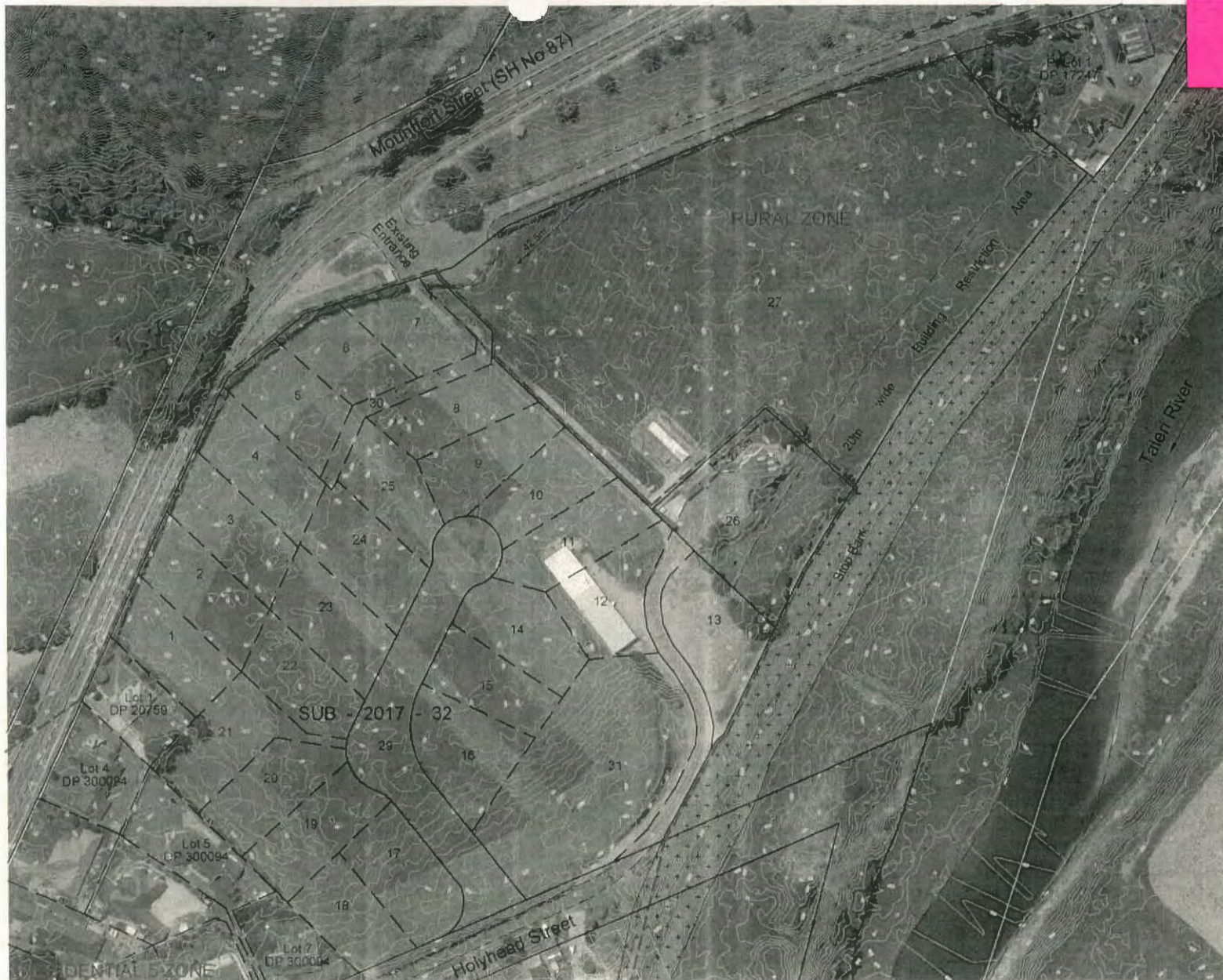
Vpt. 9 - View to farmland on eastern side of Taieri River (Taieri Rural Plains)



Vpt. 10 - View north-east along flood bank to 51 Mountfort Street



Vpt. 11 - View south-west along public road - Site boundary to left



Proposed Building Restriction Area
 > No permanent or temporary structures except for fences to 1.2m in height
 > No vegetation allowed to grow to more than 2.0m in height.

NOTES

- Existing structures
- Zone Boundary



5.

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Sheet 1 of 1

Balmoral Developments (Outram) Ltd
 94 Holyhead Street, Outram

Project Name

Plan of View Space to be Protected
 over Lot 27 SUB-2017-32

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Client Ref	Project No	Original Date	Scale
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Drawn By	Checked By	Approved By	
Sheet No	1 of 1	Sheet Title	B
Date	27/04/2017	Scale	DO NOT SCALE



94 HOLYHEAD STREET
PROPOSED RESIDENTIAL DEVELOPMENT
OUTRAM
LANDSCAPE REPORT

Landscape Report - 94 Holyhead – Residential Subdivision

Introduction

This report has been produced for inclusion in the resource consent application lodged by Cathy and Neville Ferguson, Balmoral Developments (Outram) to subdivide the land to the north/east of their residence at 94 Holyhead Road. It provides an overview of the proposed subdivision site and a landscape response to the development concept.

The relevant drawings are:

- Drawing D15829:
‘Lots 32 – 53 Being a Proposed Subdivision of Lots 10 and 27 SUB 2017’, Patterson Pitts Group, 27th April 17
- Fig.1:
‘94 Holyhead Street, Outram – Landscape Concept Plan’, Site Environmental Consultants, Fig.1, May 17

I have also provided evidence for a submission by Balmoral Developments to the 2GP Hearings Panel and undertook several site visits in the preparation. My site impressions the basis of my recommendations as well as other measures that were adopted in the submission.

Proposed site and public visibility

The site is located at the beginning of the final approach to Outram from the Taieri River Bridge and is approximately 200 long, south/west to north/east. It is approximately 186 wide at its south/west boundary but tapers at its upper north/east corner to a width of approximately 67m. A 4m high river stop bank follows the north/east side boundary and provides a physical backstop to the site when viewed from the road.

The main views to the site are from SH87 and which passes the site on an embankment that is elevated between 2 and 5m above the site as it passes. Road views are quite brief and last between 6 – 9 seconds. These views provide the majority of the public views of the site and its public profile.

A small hill range rises to the north/west of the site and from the far boundary of SH87. The lower slopes contain continuous native regenerative vegetation. Views to the north include the pasture covered upland farm slopes of the hills that rise to the north/west of Outram Glen and the river valley above. Tree planting and the residence at 51 Mountfort Street mark the north/east site boundary.

Balmoral Farmhouse and Amenity values

Balmoral Farmhouse is a distinctive two level historic building in direct line of site from SH87. Outram residents also walk past the present fields and can see the Farmhouse from the small lane that provides access to 51 Mountfort Street, at the northern end of the site.

Consideration of its profile and amenity value led to the adoption of a view shaft that will ensure that no significant structures or planting are located within it. Drawing D15829 shows that the view shaft is 42.5m wide on the highway side of the site and 22.5m wide adjacent to the farmhouse.

Landscape Strategy

Balmoral Farmhouse and Site boundaries

The 2GP assessment considered the contribution that the site makes to wider amenity values. These included its role in providing a setting for the northern approach to Outram and highlight provided by Balmoral Farmhouse. Two responses have been made in the landscape plan.

- A view shaft to Balmoral Farmhouse has been placed across the site to near the south/west boundary
- Tree planting has been placed along the road boundary

Drawing D15829 defines the extent of the view shaft and includes conditions that exclude permanent structures above 1.2m high and vegetation above 2m within it. A hedgerow is located along the boundary and frames the lower part of the site to passing vehicle view. Small to medium sized tree planting (4m height) is proposed along this boundary to provide the same effect and prevent direct views to adjacent houses. The trees will also provide some privacy and filtered views to the road for residents (Fig.3).

Access road

The access road has its route through the centre of the proposed development and will be a focus point for future residents as they drive in and out. Planting is proposed on both sides of the road (6m height) with parking restricted to the north/east side.

The planting is intended to provide a short boulevard effect that provides seasonal leaf and floral effects without compromising sunlight to houses or views to the surrounding landscape. These trees will not obstruct views to Balmoral Farmhouse from SH87.

Connectivity

A 4m wide lane is provided between the access road and the lane that lies between the site and SH87. This will allow Outram residents to walk through the development on their way to Outram Glen to the north, as they do at present. Hedge planting is proposed on the northern side of the access way.

Proposed Consent Conditions

The following conditions are recommended as part of the resource consent decision:

- Incorporation of the view shaft shown on Drawing D15829 in the consent rules
- Incorporation of the landscape concept figure 1 as the basis of consent negotiations
- Require provision of a landscape management plan to the satisfaction of Council's landscape architect prior to construction that includes planting provisions and confirms species and maintenance provisions
- Restrict light reflectivity values of roofs and walls of the houses directly on the north/west boundary to 40% for roofs and 50% for walls (Resene British Standard 5252 colour range)

Hugh Forsyth

Landscape architect

30th May 2017



Legend



2m boundary set back.
Photinia 'red robin'
planted @ 8m centres



4m pedestrian alley.
3m path + 1.5m planting bed.
Hedge planting to 1m.
Hebe, lavender or rosa sp.



2m foot path + 1.5m grass strip.
Pyrus calleryana 'aristocrat'
@ 8 - 9m centres



6m clear carriageway.
3m deep parallel parking.
2m foot path.
1.5m tree planting beds.



Balmoral Developments Limited

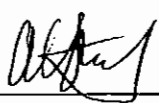
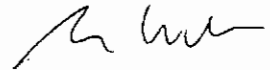
Preliminary Site Investigation Report
94 Holyhead Street, Outram

24 January 2013
Prepared by Mona Wells

Balmoral Developments Limited
Preliminary Site Investigation Report
94 Holyhead Street, Outram
Project No. 704132

This report has been prepared by the Dunedin office of Spiire

1st Floor John Wickliffe House 265-269 Princes Street PO Box 910 Dunedin 9054 New Zealand

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Prepared by	Mona Wells	
Reviewed by	Phillip Ware	
Approved for issue by	Phillip Ware	

Issue Date	Revision No.	Author	Checked	Approved

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Appendix 1 Title Search Documents

Appendix 2 Certified Results of Laboratory Analysis

Executive Summary

Balmoral Developments Limited has commissioned Spiire to prepare a Preliminary Site Investigation (PSI) Report to investigate a 6.3 hectare site located at 94 Holyhead Street, Outram, for the presence of contaminants. The primary purpose of this is to investigate whether contaminants are present at high levels that would warrant further action contingent upon its being suitable for subdivision.

This report summarises Spiire's investigation, and has been prepared following the Ministry for the Environment's Guidelines for investigations involving potentially contaminated land (referred to herein as the MfE Guidelines) and the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (referred to as the NES). The PSI consisted of a desktop study and interviews, to gather information about the site and its history, and a site inspection; this information was used to develop an initial conceptual site model, which identifies potential sources of contamination, pathways for release, and potential effects. Additionally, for this PSI Balmoral Developments Limited specifically requested sampling, analysis, and interpretation of results to provide an evidentiary basis from which to assess the site's status with respect to the Hazardous Activities and Industries List (HAIL).

The use history indicates that the site might be construed as a HAIL site based on present and previous market gardening activity. While the desktop study found that there was no evidence that previous activities were likely to cause contamination, sampling and analysis was performed to substantiate the findings of the desktop study. Analysis was conducted for heavy metals and pesticide residues, i.e. contaminants identified as likely to be associated with legacy agricultural activities per the MfE Guidelines and the NES.

The findings reported herein indicate that no contaminants are present at levels above soil guideline values appropriate to residential use, inclusive of the scenario of dietary consumption of up to 10% produce grown on site. Based on these findings, there are no triggers to indicate that the site is contaminated. Accordingly, Spiire assess that by the standards of best practice there is no basis for recommending a detailed site investigation and recommend no further investigation for contaminants be undertaken at the site. This assessment is subject to limitations, as described herein, and it is important that Balmoral Developments Limited ensure that these are understood and that additional advice is sought, if appropriate, to manage any undiscovered risks. Spiire recommend that Balmoral Holdings Limited, or its representative, contact the Otago Regional Council to request that the ORC's records be updated to reflect the findings of this investigation.

1. Introduction

1.1 Background and Objectives

Historically, the site at 94 Holyhead Street, Outram, has been used for agricultural purposes. Recently, plans have been developed to subdivide the property, enabling building opportunities within the subdivision. To ensure site suitability for this purpose, Spiire New Zealand was commissioned to investigate the site to determine whether environmental contamination might be present. The project brief specifically calls for field testing to enhance confidence in results. The primary deliverable of the work is this Preliminary Site Investigation (PSI) Report, which includes conclusions as to the site's disposition with respect to known or potential environmental contamination, and, as appropriate, recommended steps needed to ensure that contaminant risk is mitigated for end-users of the site.

1.2 Scope of Work

Consistent with the MfE Guidelines for PSIs of potentially contaminated land, the following scope of work was undertaken:

- (i) Review of all relevant information, including searching for any previous reports pertaining to 94 Holyhead Street, Outram. Sources were as follow:
 - Otago Regional Council (ORC) property file records – searched by Simon Beardmore on behalf of Spiire;
 - Dunedin City Council (DCC) property file records;
 - Digital New Zealand, a project led by the National Library of New Zealand with links to important historical archives nationwide;
 - Philip Page, Partner, Galloway Cook and Allen, conversant with present resource management disposition of the property; and
 - Neville Ferguson, a principle in Balmoral Developments Limited and historical owner and user of the property.
- (ii) Inspection of the site to assess its present state and any indications of potentially contaminating activities that have taken place historically or are currently occurring at the site.
- (iii) Preparation of this PSI report, which includes all relevant information (collected from above), and complies with relevant reporting guidelines (MfE, 2007, 2004a, 2004b, 2003) as well as the newly implemented National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (henceforth referred to as the MFE, 2012). This report assesses the following:
 - Whether previous and/or current on-site activities had or have the potential to cause on-site contamination;
 - The likely nature of any contamination;
 - The risks to future site users from any contamination; and
 - The requirement for further on-site investigations to define the extent of any contamination.

1.3 Limitations

Spiire has performed services for this project in accordance with current professional standards for environmental site assessments. No guarantees are either expressed or implied. This report does not attempt to fulfil the requirements of legal due diligence.

There is no investigation that is thorough enough to preclude the presence of materials at the site that presently, or in the future, may be considered hazardous. As regulatory criteria are subject to change, contaminant concentrations present and considered to be acceptable may, in the future, become subject to different regulatory standards that cause them to become unacceptable for existing or proposed land use activities.

Any recommendations, opinions or findings stated in this report are based on circumstances, facts, and regulatory criteria as they existed at the time that Spiire performed the work and on data obtained from the investigations and site observations as detailed in this report. Opinions and judgements expressed in this report, which are based on an understanding and interpretation of current regulatory standards, should not be construed as legal opinions. This report and the information it contains have been prepared solely for the use of Balmoral Developments Limited. Any reliance on this report by other parties shall be at such party's own risk.

2. Site Overview

2.1 Site Identification

The street number, street name, and town identifying the site are 94 Holyhead Street, Outram. The site is listed on Dunedin City Council files under identifiers OT12B/346, and its general locale is shown in Figure 1. The site is legally described as Lot 2 Deposited Plan 20759. In this report, reference to the site constitutes the total area associated with the above address and legal description. Figure 2 shows the boundaries of the property that is under investigation in this report, and henceforth any reference to the site will be understood to refer to the area indicated in Figure 2.



Figure 1: Map View of the Site Location (Circled in Purple) in Relation to the Town of Outram.



Figure 2: Recent Aerial View of Holyhead Street, Outram; the Site under Investigation is Shaded in Red.

2.2 History of Site Ownership and Use

The main house on the property is a historical building that dates to the late 1860s (N. Ferguson pers. comm., 2012, site number B651 on the DCDP's list of "*Townscape and Heritage Buildings and Structures*" – note: it appears that the legal description for B651 is incorrectly listed as Lot 1, DP20759; DCC, 2006). From the circumstance of a heritage building being located on the site, the site appears to have a long history of occupation, however, no official records of this were found. According to property records, the site was part of a larger piece of land that in the mid-1920s was owned by Eliza Borrie (listed as a spinster, of Dunedin), with a small sliver along the north having been owned by James Anderson (listed as "of Outram Mail Carrier"). Eliza Borrie was leasing the land to a David Hannah. Starting in 1941 through to 1946, the land owned by Eliza Borrie underwent a series of transfers, whereby part of the land was acquired by Frank Ferguson of Outram Market Gardener in 1946. In 1952, Frank Ferguson also acquired the portion of the land that had been owned by James Anderson up until 1947, and had subsequently been owned from 1947 to 1952 by an Edward Barling, Assistant Restaurant Manager. In 1974, Frank Ferguson was seized of another 329 m² of land bordering State Highway 87 on the present site, as well some small portions of land at the edges of the site that had previously belonged to the Ministry of Works and were classed as road land. In 1988, the land passed under one title (OT12B/346), with the borders of the present site shown in Figure 2, to Neville Ferguson of Outram Market Garden, Neville being the son of Frank Ferguson. Copies of certificates of title and a Gazette Notice are in Appendix 1.

The Ferguson family has occupied and used the land for market gardening since the mid-1940s until recent times; according to Neville Ferguson, market gardening activities ceased around 2003-2004, since which time the majority of the parcel has been grassland. Mr Ferguson was further able to verify that the land was acquired from private purchase and had no significant history of intensive use prior to his father's having acquired the parcel. Mr Neville Ferguson's understanding is that the land was primarily kept in pasture prior to the mid-1940s. No records were found concerning the use of the land prior to the Fergusons' occupation of it. In view of the relatively small size of many of the parcel that bordered the main area of the site prior to the site's having become one contiguous parcel, there is no probable land use of such small areas that might suggest a source of contaminating activity in these areas prior to the mid-1940s. While the land was used as a market garden for a long period of time, Mr. Ferguson is not aware of his father's ever having made intensive use of agrochemicals such as DDT, nor is he aware of a history of bulk storage of such chemicals on the site. Mr Ferguson affirms that such activities did not occur during the period of his direct oversight over the market gardening activity.

During the course of this PSI, two historical photographs showing the site and surrounding area were discovered. Figure 3 shows these. Figure 3A is a photo of the town of Outram that was taken from a perspective overlooking the site. The photo is credited as being from the firm of Muir and Moodie, which was based in Dunedin and doing business from near the end of the 19th century into the early 20th century. According to the Encyclopaedia of New Zealand, the last authenticated negatives from this firm were dated circa 1915, which would date the image in Figure 3A to this date or prior. The second image, shown in Figure 3B, is an aerial photo and dates from 1964. From both of these photos it is evident that the site has been under continuous cultivation of some sort. The appearance of the earlier photo suggests cultivation for silage, whereas the appearance of the later photo suggests that the block was divided

into subsections, with subsections each hosting different cultivars. From the photos it is apparent that the site itself has remained clear, with no visually discernible use other than cultivation. Additional historical photos were requested from the ORC, who were unable to comply with the request due to photos being "off-site" (Simon Beardmore, pers. comm., 2012).



Figure 3: (A) View of the Outram Overlooking the Site from the North (i.e. View to the South/southwest) ca. 1915 or earlier. (B) A 1964 Aerial View of the Site from the Northeast Looking to the Southwest. In Both Images the Site Boundaries are Outlined in Red. Photos Courtesy of Museum of New Zealand, 2012 (A) and National Library, 2012 (B).

2.3 Previous Investigations

No evidence of previous investigation was discovered. According to Simon Beardmore (pers. comm., 2012), Environmental Officer with the ORC, the ORC has an entry for Lot 2 DP20759 in their "Database of Selected Landuses". This database is described as one that

"identifies sites where activities have occurred that are known to have the potential to contaminate land. The record of a property in the database does not necessarily imply contamination. Similarly, the absence of available information does not necessarily mean that the property is uncontaminated; rather no information exists on the database."

The ORC's database shows no identified land-uses associated with the parcel, and likewise there is no record of previous investigation.

2.4 Current and Future Use

At present, Mr Neville Ferguson's daughter, Amy Bartlett, lives in the main house on the site, and a small area of the site near the house is under cultivation as a vegetable garden. Due to the limited amount of cultivation and the present restrictions on the sale and use of agrochemicals, there is no probable land use that might suggest a source of contaminating activity from present use. The site can be seen in an aerial photo of Outram from 2010 that is posted on the Wikipedia website, which verifies that the majority of the site has been grassed in recent times (Wikipedia, 2012).

In future, the planned subdivision will provide for the opportunity to build a number of residential dwellings on the site. This proposed use necessitates the present investigation in order to ensure that the site is fit-for-purpose going forward and to assess the site's actual status with regard to the HAIL (Hazardous Activities and Industries List).

2.5 Additional Site Information

Additional details concerning the site's present disposition are summarised in Table 1 below.

Table 1: Summary of Additional Site Information

Zoning/ Classification	– Rural (DCC, 2006). – Part of the site is within the area classed as Groundwater Protection Area A by the DCC. – There is an Excavation Sensitive area that extends 20 m from the Taieri River flood bank. – Note: Duty of care standards indicate residential standards for site assessment.
Caveats / Covenants	– None known by present occupant.
Easements	– No easements are shown on the current title and there are none shown on the title plan.
Building Consents / Permits	– The present owner affirms that there are no active building permits/PIMs issued for the site.
Resource Consents / RMA Incidents	– The ORC confirms that there are neither consents held nor RMA incidents identified for this property.
Storage Tanks	– The present owner confirms that there is one underground sewage tank at the site.
Sewerage and Services	– There is no reticulated sewage, however, there are electric and reticulated water supply services to the site.

2.6 Summary of Desktop Information

The available information regarding use, with a longitudinal history of well over 60 years, is relatively complete. Because of the known past land use for market gardening, and the putative use for other agricultural activities prior to the mid-1940s (Figure 3A), the site may be interpreted to be a HAIL site.

The HAIL is a compilation of activities and industries that potentially result in contamination of land. Item A10 of the list covers the use of pesticides in market gardens and is the most applicable to the present site, however, other activities described under Section A of the list that relate to legacy agricultural activities and might be interpreted as having secondary relevance. As the legacy activity of concern is agricultural in nature, potential contaminants include pesticides, herbicides, fungicides, carbamates, pyrethroids, heavy metals and impurities that might be present in certain soil amendments (e.g. cadmium in phosphate fertilizers). A large number of the compounds within these categories are so-called organic chemical compounds (i.e. largely constituted of carbon and hydrogen). This assessment is consistent with the guidance provided by Schedule B of the MfE's Contaminated Land Management Guidelines, which outlines hazardous substances associated with the HAIL (MfE, 2004a).

While market gardens are sometimes associated with contaminating practices with respect to legacy agrochemicals, the information provided by Mr. Neville Ferguson indicates that no actual A10 or secondary hazardous activities occurred at the site. In view of past use, and because the site has hitherto not been investigated, the client opted for limited sampling to accompany this PSI. The purpose of sampling is to demonstrate whether there is a trigger for further investigation (per the terms of the NES). If no trigger is indicated from sampling results, this will provide an evidentiary basis from which the site might be assessed as investigated and fit-for-purpose with respect to the intended future use.

3. Site Condition and Surrounding Environment

3.1 Site Inspection

A site inspection of the entire site area of 6.3 hectares was conducted on the 21st of November, 2012. The inspection was conducted to examine the site and observe any evidence of contamination. Specific points noted are conditions at the site boundaries and visible signs of contamination or odours that might suggest contamination. A cursory inspection of factors that relate to site geology and hydrology is also performed to ensure consistency with what is known of the surrounding area. An overall picture of the site geology and hydrology is useful in assessing the transport potential of contaminants to or from the site.

3.2 Conditions at Site Boundaries

Conditions at the site boundaries are as described below:

North – The area to the north of the site is part of the Outram-Mosgiel Road and associated buffer area. It is occupied by a two-lane road, and otherwise has a variety of plantings constituting passive use. There is also a residential dwelling at the far northeast site boundary.

East – The Taieri River flows to the east of the site, and between the river and the site there is a narrow strip of greenbelt that is owned by the ORC and for which the DCC property records list a use of stock finishing (DCC, 2012). Sheep were observed grazing on this land on the date of the site inspection.

South – Holyhead Street lies to the southern-most boundary of the site, on both sides of which are residential dwellings.

West – The area to the west of the site is variously comprised of a residential dwellings along Mountfort Street, a single lifestyle block, and a small corner of farmland used for stock finishing and owned by Traquair Burn Limited.

Most of the boundary is either fenced or bounded by dense hedges. The boundaries along Mountfort Street and the Outram-Mosgiel Road have tall *Macrocarpa* hedges, whereas the boundaries along the green spaces that border the Taieri River are fenced. The portions of the boundaries to the north and south that abut residential areas have a combination of fencing and hedging. There was no evidence of active erosion at the site; it appears that the natural disposition of site is toward the Taieri River, however, there are no pronounced drainage features as such across any of the boundaries, and the green area owned by the ORC that lies between the site and the river has been built up, which would appear to preclude active drainage to the river itself.

3.3 Visual Inspection, Signs of Contamination and Odours

Other than the main residence, there are some small sheds, suitable and apparently designed for garaging and storage, as well as two small greenhouses to the northwest of the main house and a larger shed capable of housing farm machinery to the south-southwest on the property. There is a small hardstand area for parking next to the main house, with a dirt road, lined by *Macrocarpa* hedges, that connects the hardstand area to the Outram-Mosgiel Road. There is a landscaped garden area around the house, and a number of trees bordering this. The remainder of the site is covered in grass. A few items, including a boat and some equipment, that may have been used in market gardening, and miscellaneous masonry are stored in and around the large shed.

The only items observed present that could be interpreted as associated with contamination were three drums located at the southwestern-most corner of the site, along the boundary with a residence on Mountfort Street. These drums appeared to have originally contained chain and bar lubrication oil and all were empty and sealed. There was no evidence that the drums had been compromised or evidence of present or past leakage. During site inspection, no evidence was found of any fill, soil discolouration, inexplicable bare patches, or plant stress, either on the site itself or along the site boundaries. Likewise, no odours were observed. Figure 4A–L shows photos taken at the site, including the site, views of the site boundaries, views across the site boundaries, and two related site detail views.

In sum from the visible indications and absence of odour, there are no evident signs of contamination at the site.

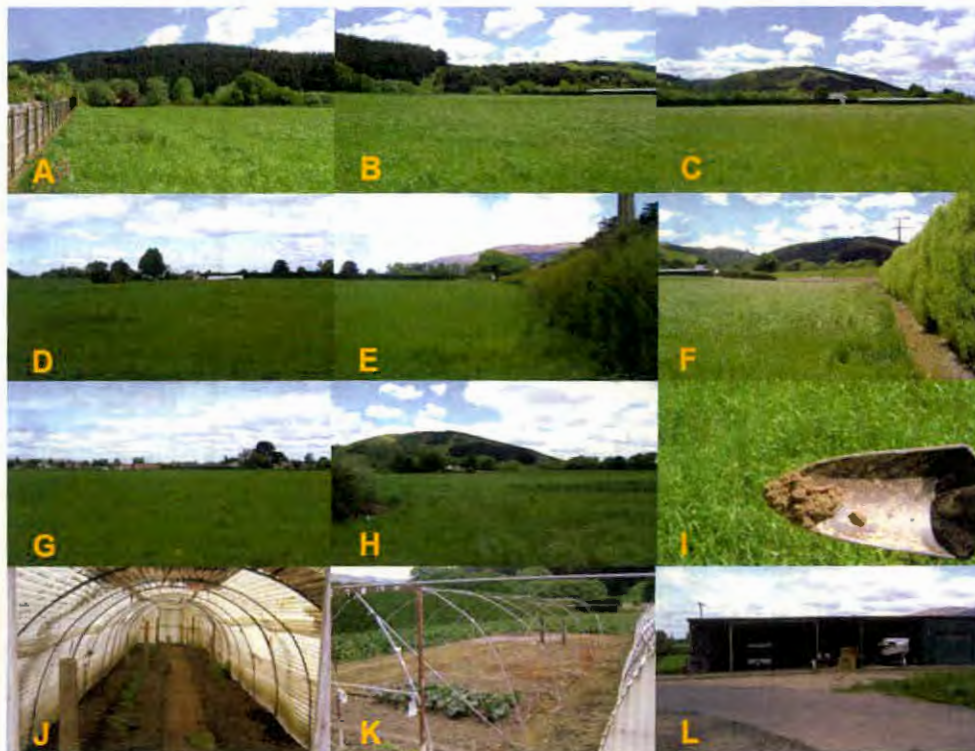


Figure 4: Views at Site: (A) Looking North-Northwest toward Mountfort Road along Southern Site Boundary; (B) Looking North across the Site from the Southern-most Boundary, toward the Outram-Mosgiel Road; (C) View North from the Southern-most Boundary, overlooking the Main House and Large Shed; (D) Overlooking the Main House and Greenhouses from the Northern-

most Site Boundary, View toward South; (E) View South along North Site Boundary/Outram-Mosgiel Road; (F) View along Southern-most Site Boundary toward Holyhead Street; (G) View South from Centre of Site, toward Residential Area to the South; (H) View North from Centre of Site, toward Residence to the North; (I) Site Soil; (J) Inside Greenhouse at Site; (K) Vegetable Garden at Site; (L) View of Large Shed at Site.

3.4 Geology and Hydrology

The ground surface at the site and its immediate surroundings is largely flat, with gentle slopes locally toward the south/southeast, as noted above. A total difference of elevation across the entire site has been reported as 2.7 m (CPG, 2011). The area on which the site is situated overlies a geological basement that is primarily composed of a Otago Schist, and the depth to basement rock is estimated to vary between 150-300 m (Bishop and Turnbull, 1996; Irricon, 1994). This basement is overlain by Quaternary silts, sands, and gravels that are primarily derived from Otago Schist (Tonkin & Taylor, 2005). The Pomahaka soil at the site has been built over time from Taieri River alluvium (Barrell et al., 1999) and is a free draining sandy loam. This class of soil is reported to have moderate water holding capacity, high organic matter, high phosphorus retention, and high fertility (Environment Southland, 2003). Consistent with this, a disproportionately large number of earthworms were encountered in the soil during soil sampling at the time of the site visit.

There was no surface water at the site on the date of the site inspection; the site is bordered by the Taieri River, with a raised flood bank between the river and the site. One report indicates that, after very heavy rains, standing water pools. The mean annual rainfall in the area averages 650-750 mm/year (ORC, 2010).

The groundwater aquifer underlying the area of the Taieri Plain at Outram is accepted to be layered, such that denser layers of silt and clay confine and pressurise underlying gravel layers to produce a confined aquifer (ORC, 2012, and references therein). However, studies by the ORC indicate that this may vary significantly in the immediate area of the Taieri River, where the site is located, where transmissivity is high (ORC, 2010). Permeability has been measured at the site and found to be high (CPG, 2011). As noted above, part of the site is located in a designated Groundwater Protection Zone, due to the potential risk of surface water runoff infiltrating soil and reaching groundwater. Absent additional information, is it conservative to assume that localised recharge to groundwater will be the dominant transport mechanism relevant to any aqueous transport of chemicals from the site. The depth to groundwater in the area is highly variable; one report states that test pits dug at site by found no groundwater to 3 m and stated that local information suggests a typical range of 5-8 m below the surface would be the anticipated depth to groundwater at the site (CPG, 2011).

4. Disposition of Site Contamination

The disposition of any contamination at site must be confirmed with results from field sampling and analysis, and, for contaminated land, these results must be evaluated against soil guideline values (SGVs), also referred to in New Zealand as soil contamination standards (SCSs) and by other terms in other countries. This section summarises appropriate SGVs for the site, followed by a description of field sampling, sample analysis, and results from analysis.

4.1 Basis for Soil Guideline Values

A SGV is a first stage screening value that provides the concentration of a contaminant in soil to which people (and/or ecological receptors) on or near a site can be exposed without creating an unacceptable level of risk to health. For the protection of human health, SGVs are derived by defining a critical receptor (e.g. a child of a certain age and weight) and defining tolerable daily intake for a particular contaminant. Then, using assumptions regarding exposure (e.g. amount, duration, pathway), the soil concentrations that would equal the tolerable daily intake are calculated. Exposure pathways reflect how people are exposed to contaminants.

SGVs are based on generic exposure scenarios based on use. An exposure scenario is a combination of exposure pathways typical of a particular activity or use in which exposure to soil contaminants is likely to occur; an activity could be, for instance, a child playing in a residential area. The intent is to estimate the intake of a contaminant for each particular scenario. For simple risk assessment, generic use scenarios are used, with a standard combination of exposure pathways for each scenario. The generic use scenarios used for the SGVs are intended to be typical of the great majority of situations in which New Zealanders may be exposed to soil contaminants.

The site investigated here is classed as Rural by the DCC, however, considering the site's potential use for residential development, the Residential use scenario, described in Table 2 below, is most relevant to this investigation. As a result, based on the MfE Guidelines, any results should be assessed against SGVs given for this scenario. There are both more conservative and more liberal standards that could be applied; however, the one presented is appropriate both to the use classification of the site based on the information available.

Table 2: Use Scenario Most Relevant to this PSI (MfE, 2012).

Residential, 10% Produce Consumption	Residential land use, for standard residential lots with single dwelling sites with gardens, including home-grown produce consumption (10%).
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SGVs in this report, tabulated in Section 4.3, are taken from the New Zealand MfE wherever possible. There are different source documents for MfE SGVs. The most important is the NES documentation (2012). The NES for contaminated land was introduced in order to address a legacy of soil contamination in New Zealand that has resulted from the use, and improper storage and disposal, of chemicals in industry and agriculture. Prior to the introduction of the NES, controls to manage contaminated soils were left to individual councils, which did not ensure consistency of controls at a national level, whereas the implementation of an NES for contaminated land does promote consistency. Where applicable, NES SGVs are used and supercede all other MfE SGVs, which in turn supercede SGVs in use elsewhere (MfE, 2007). The NES covers a relatively small suite of common contaminants, hence NES SGVs (SCSSs) only apply to a few chemicals considered here.

The NES controls apply to "Land use change, subdivision, and disturbance of any land where, according to the best information available, there has been a facility on the land or a hazardous activity carried out on the land that may have involved the intentional or accidental discharges of hazardous substances that could now be a risk to human health". As a result, although the NES only applies to a small number of chemicals under consideration here, adherence to the terms of the NES is mandatory since the site is being investigated in part to confirm its HAIL status (MfE, 2012).

In some cases, the MfE has not developed a specific SGV for some contaminants under some use scenarios. When no MfE values exist, guideline values from reputable sources such as the United States Environmental Protection Agency (US EPA), the UK Department of Food and Rural Affairs (DEFRA), the UK Environment Agency and the Australian National Environmental Protection Council (NEPC) are used, according to acceptable SGV sources and the hierarchy of use for these sources that is specified by the MfE (2007). All SGVs are subject to inherent limitations, the general nature of which is outlined in Section 1.3. A particular point regarding the use scenario in Table 2 relates to produce consumption. Many international residential SGVs do not specify a given level of produce consumption, while some MfE SGVs specify more or less than the 10% in Table 2. The MfE recognises this in specifying its hierarchy, which is based on risks. Specific additional points with regard to SGVs used here are noted in individual tables of results below.

4.2 Field Sampling and Analysis

For this PSI, Spiire's brief specifically entailed conducting field sampling and analysis, and this provides an evidentiary basis for determination of the disposition of contaminants at the site. Spiire took four surface grab sub-samples and instructed the analytical laboratory to composite these into one. This sample was analysed for heavy metals and pesticide residues. The purpose of taking a composite sample, i.e. a sample that represents a mixture of sub-samples taken from different locations, is to reduce needless laboratory expense – if contamination is present at high levels, even if some of the sub-samples are uncontaminated, the resulting sample will still reflect the presence of the contaminated sub-samples that went into the composite. Since the desktop study did not indicate any basis from which to suspect prior contamination, i.e. there was no judgemental basis to sample specific areas of the site, sub-samples were taken over a random grid, as shown in Figure 5 below.

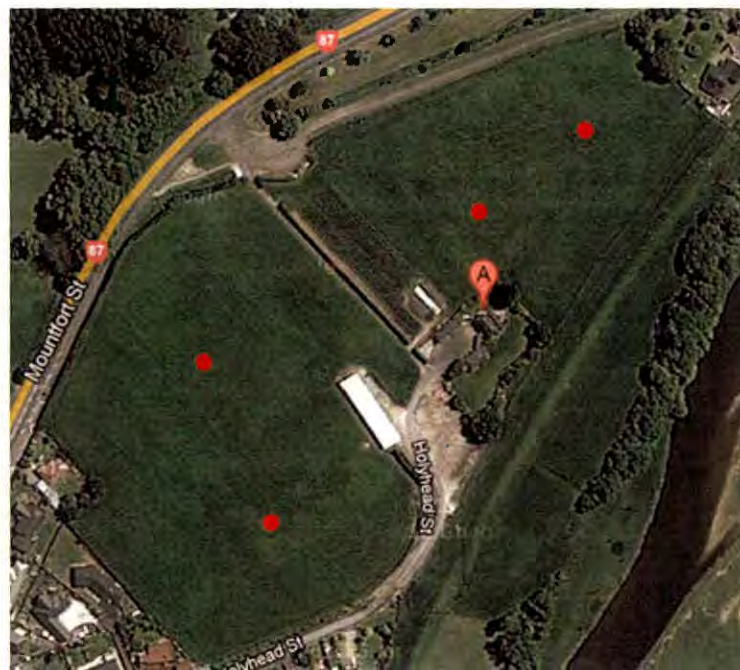


Figure 5: Aerial photo showing the locations of each of the four sub-samples taken for compositing.

As previously noted, information about the site indicates that HAIL associated use may have occurred, hence HAIL compounds associated with this use were chosen for analysis. Soil was chosen as the primary medium of analysis. This is a standard approach for preliminary investigation as soil often contains a much higher quantity of heavy metals and pesticide residues than air or water.

The initial results from analysis received from the laboratory for the composite sample indicated baseline issues for arsenic, as described in Section 4.3 below. As a result, further investigation was requested by Balmoral Developments Limited, and Spiire had the laboratory reanalyse each of the surface grab samples individually, i.e. without compositing. These four individual results for arsenic are also presented below.

4.3 Results

The results from analysis of the composite sample, summarised in this section, indicate that all concentrations of contaminants are below SGVs. According to MfE Guidelines, adjusted SGVs (ASGVs) have also been determined. To determine the ASGV, the original SGV is divided by the number of sub-samples combined to produce the composite sample. For composited samples, the MfE Guidelines stipulate use of the ASGV instead of the SGV. When compared to ASGVs, all concentrations of contaminants from sample analysis are below ASGVs except for arsenic.

The results from analysis of the composite sample for heavy metals are summarised in Table 3 below. The result from analysis for mercury is below analytical limits of detection; hence, the < or "less than" symbol next to the values given for Composite Sample 1. The results for arsenic indicate that the amount in Composite Sample 1 is just at the ASGV, i.e. the arsenic is at the absolute high end of what could be interpreted as acceptable for the Residential use scenario with produce consumption, based on analysis of a composite sample and using the ASGV for comparison, as required by the MfE.

Table 3: Results from Analysis for Heavy Metals (all results in mg/kg).¹

Sample	Arsenic mg/kg	Cadmium mg/kg	Chromium mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Nickel mg/kg	Zinc mg/kg
Composite Sample 1	5.	0.17	9.	12.	11.	< 0.10	8.	45.
ASGV ² Residential	5.	0.75	115.	> 2,500	52.5	52.5	33.	1,750
SGV	20. ³	3. ³	460 ³	> 10,000 ³	210 ³	310 ³	130 ⁴	7,000 ⁵

1. Cells highlighted in grey exceed SGVs or ASGVs.
2. Since four sub-samples were taken, ASGVs are calculated as one-fourth of the applicable SGV.
3. MfE 2012. *Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*; the cadmium and chromium values listed are conservative because cadmium is specified at pH 5 (and the SGV is higher at higher ambient soil pHs) and because chromium is specified for chromium VI, which is much more toxic than chromium III.
4. Environment Agency (EA) 2009. Soil Guideline Values for Nickel in Soil: SC050021/Ni SGV, Guideline Values for Nickel in Soil.
5. National Environment Protection Council (NEPC) 1999. Guideline on Health-Based Investigation Levels.

When the results from composite testing exhibit values that are over the ASGV, this is an indication of contamination *or* reflects something referred to as a technical exceedance. Technical exceedances are an artefact of sample compositing and are not actual exceedances; a technical exceedance *is not* an indication of contamination. The MfE Guidelines require sufficient sampling to assure reasonable site coverage, and, to enable cost reduction, the Guidelines also recognise and allow for sample compositing. In mixing sub-samples together, the analytical results for a composite sample will be the average of the results that would have been obtained if each subsample had been analysed individually. The MfE instructions that specify use of AGSVs for composited sampled lead to the safest result, as shown by the two examples below:

Example 1, technical exceedance – all four subsamples have concentrations of the Composite Sample, say for argument arsenic = 7.0 mg/kg – in this case, if all subsamples have the same value, the average arsenic at site, that will be reflected in analysis of the composite sample, is 7.0 and the site is unsafe by the ASGV criterion for composite sampling (7.0 being above the ASGV of 5.0 mg/kg).

Example 2, hot spot contamination – three of the samples have no arsenic, but one of the samples has very high arsenic. In this scenario, in order for the average or composite value to be 7.0 mg/kg, the single high arsenic sample would have a value of 28. mg/kg, which would exceed the SGV of 20.0 mg/kg. In other words, there would be a high arsenic hot spot (contamination) on the site that would be unsafe.

Example 2 shows how the use of an ASGV protects against the possibility of missing a hot spot when samples are composited, however, Example 1 shows how a technical exceedance can occur even when no contamination is present (because the actual safe limit is reflected by the SGV, which is 20.0 mg/kg for arsenic). Since arsenic exists naturally in many rocks and soils as a naturally occurring arsenic baseline (Craw, 2003; Henke, 2009), it is highly improbable that the baseline values of local soils are zero, and non-zero baselines are a common contributor to technical exceedances.

To test this possibility of arsenic's being near the ASGV for technical reasons, Balmoral Developments Limited requested that Spiire have the lab re-analyse the four subsamples sent to the lab for lab compositing. The results are shown in Table 4; the average of 4.3 mg/kg arsenic for the subsamples is in agreement with the composite value of 5 mg/kg in Table 3 to within analytical uncertainty. Thus the average of four subsamples (4.3 mg/kg) is almost five times less than the SGV to which averages of individual samples are compared.

In summary, the average value for individual sample analysis of arsenic is near the ASGV because natural arsenic baselines are not zero, however all individual samples show arsenic values well below the applicable SGV in Table 4, and the results for analysis of all other heavy metals show that the levels present at site are well below the required AGVs in Table 3.

Table 4: Results from Individual Analysis of Sub-samples for Arsenic (all results in mg/kg).

Sample	Sub-sample 1	Sub-sample 2	Sub-sample 3	Sub-sample 4	Average
Composite Sample 1 - subsamples	4.0	5.0	4.0	4.0	4.3
SGV					20.

Table 5 below summarises results from analysis of the composite sample for pesticide residues. Most of the results for pesticide residues from the composite sample were found to be below analytical limits of detection (per mercury above, indicated by the < or "less than" symbol). For these results to be meaningful, it is also necessary that detection limits are below ASGVs. If detection limits are above ASGVs, then the analysis is too insensitive for results to be used in determination of contamination. In Table 5, all of the limits of detection, i.e. listings for Composite Sample 1, are below ASGVs. In sum, for over 200 compounds analysed, there are either no detectable pesticide residues at the site, and the analysis was sufficiently sensitive to detect residues of threat to human health had any been present, or, the levels detected were below the ASGVs.

Table 5: Results from Analysis for Pesticide Residues (all results in mg/kg).¹ All SGV Values from the US EPA² except as Noted.

Constituent	Composite Sample 1	ASGV ³	SGV
Acetochlor	< 0.008	300	1,200
Alachlor	< 0.006	150	610
Atrazine	< 0.008	530	2,100
Atrazine-desethyl	< 0.008	—	—
Atrazine-desisopropyl	< 0.015	—	—
Azaconazole	< 0.004	—	—
Azinphos-methyl	< 0.015	—	—
Benalaxyl	< 0.004	—	—
Bendiocarb	< 0.008	—	—
Benodanil	< 0.015	—	—
Bifenthrin	< 0.004	230	920
Bitertanol	< 0.015	—	—
Bromacil	< 0.008	—	—
Bromophos-ethyl	< 0.008	77	310
Bromopropylate	< 0.008	—	—
Bupirimate	< 0.008	—	—
Buprofezin	< 0.008	—	—
Butachlor	< 0.008	—	—
Captafol	< 0.04	30	120
Captan	< 0.015	2,000	7,900

Constituent	Composite Sample 1	ASGV ³	SGV
Carbaryl	< 0.008	1,500	6,100
Carbofenthion	< 0.008	–	–
Carbofuran	< 0.008	77.	310
Carboxin	< 0.008	1,500	6,100
Chlorfenvinphos	< 0.008	11.	43.
Chlorfluazuron	< 0.008	–	–
Chlorothalonil	< 0.008	230	920
Chlorpropham	< 0.015	3,000	12,000
Chlorpyrifos	< 0.008	15.	61.
Chlorpyrifos-methyl	< 0.008	150	610
Chlortoluron	< 0.015	–	–
Chlozolate	< 0.008	–	–
Coumaphos	< 0.015	–	–
Cyanazine	< 0.008	30	120
Cyfluthrin	< 0.008	–	–
Cyhalothrin	< 0.008	77.	310
Cypermethrin	< 0.015	150	610
Cyproconazole	< 0.011	–	–
Cyprodinil	< 0.008	–	–
Deltamethrin	< 0.008	–	–
Demeton-S-methyl	< 0.015		2.4
Diazinon	< 0.004	11.	43.
Dichlobenil	< 0.008	–	–
Dichlofenthion	< 0.008	–	–
Dichlofluanid	< 0.008	–	–
Dichloran	< 0.03	–	–
Dichlorvos	< 0.010	7.7	31.
Dicofol	< 0.04	–	–
Dicrotophos	< 0.008	–	–

Constituent	Composite Sample 1	ASGV ³	SGV
Difenoconazole	< 0.011	–	–
Dimethoate	< 0.015	3.	12.
Dinocap	< 0.08	–	–
Diphenylamine	< 0.015	370	1,500
Disulfoton	< 0.008	0.6	2.4
Diuron	< 0.008	30	120
EPN	< 0.008	–	–
Esfenvalerate	< 0.011	–	–
Ethion	< 0.008	7.7	31.
Etrimfos	< 0.008	–	–
Famphur	< 0.008	–	–
Fenamiphos	< 0.008	3.7	15.
Fenarimol	< 0.008	–	–
Fenitrothion	< 0.008	–	–
Fenpropathrin	< 0.008	370	1,500
Fenpropimorph	< 0.008	–	–
Fensulfothion	< 0.008	–	–
Fenthion	< 0.008	–	–
Fenvalerate	< 0.011	–	–
Fluazifop-butyl	< 0.008	–	–
Fluometuron	< 0.008	200	790
Flusilazole	< 0.008	–	–
Fluvalinate	< 0.006	150	610
Folpet	< 0.015	1,500	6,100
Furalaxyl	< 0.004	–	–
Haloxifop-methyl	< 0.008	0.77	3.1
Hexaconazole	< 0.008	–	–
Hexazinone	< 0.004	500	2000
Hexythiazox	< 0.04	–	–

Constituent	Composite Sample 1	ASGV ³	SGV
Imazalil	< 0.04	200	790
Indoxacarb	< 0.008	–	–
Iodofenphos	< 0.008	–	–
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	< 0.04	–	–
Iprodione	< 0.008	–	–
Isazophos	< 0.008	–	–
Isofenphos	< 0.004	–	–
Kresoxim-methyl	< 0.004	–	–
Leptophos	< 0.008	–	–
Linuron	< 0.008	–	–
Malathion	< 0.008	300	1,200
Metalaxyl	< 0.008	930	3,700
Methacrifos	< 0.008	–	–
Methamidophos (including Acephate)	< 0.04	0.77	3.1
Methidathion	< 0.008	15.	61.
Methiocarb	< 0.008	–	–
Metolachlor	< 0.006	2,300	9,200
Metribuzin	< 0.008	2,300	9,200
Mevinphos	< 0.03	–	–
Molinate	< 0.015	30	120
Myclobutanil	< 0.008	–	–
Naled	< 0.04	30	120
Nitrofen	< 0.015	–	–
Nitrothal-isopropyl	< 0.008	–	–
Norflurazon	< 0.015	600	2,400
Omethoate	< 0.04	–	–
Oxadiazon	< 0.008	77.	310
Oxychlordan	< 0.004	–	–
Oxyfluorfen	< 0.004	–	–

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Constituent	Composite Sample 1	ASGV ³	SGV
Paclobutrazol	< 0.008	200	790
Parathion-ethyl	< 0.008	93.	370
Parathion-methyl	< 0.008	93.	370
Penconazole	< 0.008	–	–
Pendimethalin	< 0.008	600	2,400
Permethrin	< 0.003	770	3,100
Phorate	< 0.015	3.	12.
Phosmet	< 0.008	–	–
Phosphamidon	< 0.008	–	–
Pirimicarb	< 0.012	–	–
Pirimiphos-methyl	< 0.008	78.	312.
Prochloraz	< 0.04	140	550
Procymidone	< 0.008	–	–
Prometryn	< 0.004	60	240
Propachlor	< 0.008	200	790
Propanil	< 0.03	77.	310
Propazine	< 0.004	300	1,200
Propetamphos	< 0.008	–	–
Propham	< 0.008	300	1,200
Propiconazole	< 0.006	200	790
Prothiofos	< 0.008	–	–
Pyrizophos	< 0.008	–	–
Pyrifenox	< 0.011	–	–
Pyrimethanil	< 0.008	–	–
Pyriproxyfen	< 0.008	–	–
Quintozene	< 0.015	–	–
Quizalofop-ethyl	< 0.008	–	–
Simazine	< 0.008	77.	310
Simetryn	< 0.008	–	–

Constituent	Composite Sample 1	ASGV ³	SGV
Sulfentrazone	< 0.04	–	–
Sulfotep	< 0.008	–	–
TCMTB [2-(thiocyanomethylthio)benzothiazole, Busan]	< 0.015	450	1,800
Tebuconazole	< 0.008	–	–
Tebufenpyrad	< 0.004	–	–
Terbacil	< 0.008	77.	790
Terbufos	< 0.008	0.37	1.5
Terbumeton	< 0.008	–	–
Terbuthylazine	< 0.004	–	–
Terbuthylazine-desethyl	< 0.008	–	–
Terbutryn	< 0.008	15.	61.
Tetrachlorvinphos	< 0.008	–	–
Thiabendazole	< 0.04	–	–
Thiobencarb	< 0.008	150	610
Thiometon	< 0.015	–	–
Tolyfluanid	< 0.004	–	–
Triadimefon	< 0.008	–	–
Triazophos	< 0.008	–	–
Trifluralin	< 0.008	–	–
Vinclozolin	< 0.008	370	1,500
Aldrin	< 0.011	0.65	2.6 ⁴
alpha-BHC	< 0.011	–	–
beta-BHC	< 0.011	–	–
delta-BHC	< 0.011	–	–
gamma-BHC (Lindane)	< 0.011	–	–
cis-Chlordane	< 0.011	–	–
trans-Chlordane	< 0.011	–	–
Total Chlordane [(cis+trans)*100/42]	< 0.04	0.4	1.6*
2,4'-DDD	< 0.011	0.5	2.0*

Constituent	Composite Sample 1	ASGV ³	SGV
4,4'-DDD	< 0.011	0.5	2.0*
2,4'-DDE	< 0.011	–	–
4,4'-DDE	0.128	0.35	1.4*
2,4'-DDT	0.028	–	–
4,4'-DDT	0.33	–	–
Total DDT Isomers	0.49	17.	70 ⁴
Dieldrin	< 0.011	0.65	2.6 ⁴
Endosulfan I	< 0.011	93	370
Endosulfan II	< 0.011	93	370
Endosulfan sulphate	< 0.011	93	370
Endrin	< 0.011	4.5	18.
Endrin aldehyde	< 0.011	–	–
Endrin ketone	< 0.011	–	–
Heptachlor	< 0.011	0.027	0.11*
Heptachlor epoxide	< 0.011	0.013	0.053*
Hexachlorobenzene	< 0.011	0.075	0.3*
Methoxychlor	< 0.011	–	–
Bentazone	< 0.2	77.	310
Acifluorfen	< 0.2	–	–
Bromoxynil	< 0.2	300	1,200
Clopyralid	< 0.2	–	–
Dicamba	< 0.2	450	1,800
2,4-Dichlorophenoxyacetic acid (24D)	< 0.2	200	690
2,4-Dichlorophenoxybutyric acid (24DB)	< 0.2	120	490
Dichlorprop	< 0.2	–	–
Fluazifop	< 0.2	–	–
Fluroxypyr	< 0.2	–	–
Haloxypop	< 0.2	0.77	3.1
2-methyl-4-chlorophenoxyacetic acid (MCPA)	< 0.2	–	–

Constituent	Composite Sample 1	ASGV ³	SGV
2-methyl-4-chlorophenoxybutanoic acid (MCPB)	< 0.2	–	–
Mecoprop (MCP; 2-methyl-4-chlorophenoxypropionic acid)	< 0.2	–	–
Oryzalin	< 0.4	770	3,100
Pentachlorophenol (PCP)	< 0.2	14.	55. ⁴
Picloram	< 0.2	1,100	4,300
Quizalofop	< 0.2	–	–
2,3,4,6-Tetrachlorophenol (TCP)	< 0.2	450	1,800
2,4,5-trichlorophenoxypropionic acid (245TP, Fenoprop, Silvex)	< 0.2	150	610
2,4,5-Trichlorophenoxyacetic acid (245T)	< 0.2	120	490
Triclopyr	< 0.2	–	–

1. – indicates guideline not available; * indicates that SGV is specified by US EPA as based on cancer risk.
2. United States Environmental Protection Agency (US EPA). Regions 3, 6, and 9 Regional Screening Levels for Chemical Contaminants at Superfund Sites. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm, downloaded 3.04.2012. The SGVs marked with a * reflect carcinogenic SGVs.
3. Since four sub-samples were taken, ASGVs are calculated as one-fourth of the applicable SGV.
4. MfE 2012. *Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*.

Summarising all results from sampling and analysis, of a very large array of compounds analysed, this report has not found evidence of contaminants at the site that exceed SGVs. Copies of all lab results are given in Appendix 2.

5. Site Characterisation

5.1 Type of Environmental Contamination

The term contaminant refers to a substance that is not normally present in the environment. For this report however, the following operational definition is used: a contaminant is a substance that is present at levels that might cause harmful effects to humans or the environment. Therefore, this report does not consider whether or not the levels present are from natural sources or not, but only whether or not contamination is likely to, or does, exist above safe levels. The results from analysis of samples taken at site indicate that no contaminants are present at levels above contaminant SGVs, and therefore, the site is not contaminated with respect to the operational definition given above.

5.2 Extent of Environmental Contamination

No contamination was discovered.

5.3 Potential for Degradation and Interaction

Non-applicable as no contamination was discovered.

5.4 Exposure Routes and Risks to Exposed Populations

Non-applicable as no contamination was discovered.

6. Conclusions and Recommendations

6.1 Summary and Conclusions

The following summarises results from CPG's preliminary investigation of the site. It has been confirmed that market gardening has occurred on this site, market gardening in itself is not a HAIL activity. The wording of the HAIL list item A10 is as follows "Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds". This investigation has discovered no historical evidence of HAIL activity in that persistent bulk storage or use of pesticides was not evident in anecdotal evidence or highlighted as part of limited sampling. Given the above the below conclusions are made:

- No evidence of previous investigation or sampling and analysis was found;
- Spiire collected four soil surface grab sub-samples and had these lab composited into one sample; the single composite sample was analysed for heavy metals and pesticide residues, consistent with contaminants that might be present from legacy agricultural activities;
- No results exceeded applicable SGVs or ASGVs;

The findings in this preliminary investigation support the following conclusions:

- The site is currently suitable for residential living, inclusive of consumption of up to 10% of dietary produce from produce grown on site with respect to NES SGVs.
- Due to the preliminary nature of this investigation, it is not possible to fully exclude the possibility that the site may have been impacted by previous site activities to a degree greater than apparent from results reported herein; and
- Limitations notwithstanding, the present standards of best practice for site investigation, inclusive of, but not limited to, the MfE Guidelines and the NES have been followed. By these standards, there is no basis for further investigation.

6.2 NES Statement

It is the view of Spiire that it is uncertain if there is a "piece of land" in the terminology of the NES. It is highly likely that market gardening has taken place over most of the site, however, the actual HAIL activity of persistent pesticide storage and use is unlikely.

Given the potential uncertainty above the site has been evaluated as if the NES applies and the permitted activity criteria under section 8(4) applied. A PSI has been completed by a Suitably Qualified and Experienced Practitioner (SQEP). This PSI concludes, based on the information provided within this document that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land.

6.3 Recommendations

Based on the results of this PSI, Spiire recommends that Balmoral Developments Limited provide this report to the ORC with a request for a status update to reflect that the site has been investigated as a potential HAIL site, with negative findings as to same.

7. References

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US EPA 2009. *Regional Screening Levels, Residential Soil Table*, <http://www.epa.gov/region09/superfund/prg/> updated November, 2011.

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Appendix 1

Title Search Documents



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**
Limited as to Parcels

Historical Search Copy




R.W. Muir
Registrar-General
of Land

Identifier OT321/43
Land Registration District Otago
Date Issued 26 August 1946

Cancelled

Interests

For memorials see paper image of title

7960812.1 Departmental dealing to convert CT OT321/43 into Landonline - 6.10.2008 at 3:00 pm

CANCELLED

CANCELLED

NEW ZEALAND.

Land Transfer (Compulsory
Registration of Titles)
Act, 1924.
Reference: Deeds Index. G. 413
Application No. C. 886



OFFICE.
Register-book,
Vol. 215, folio 221

215/221

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT.
LIMITED AS TO PARCELS AND TITLES

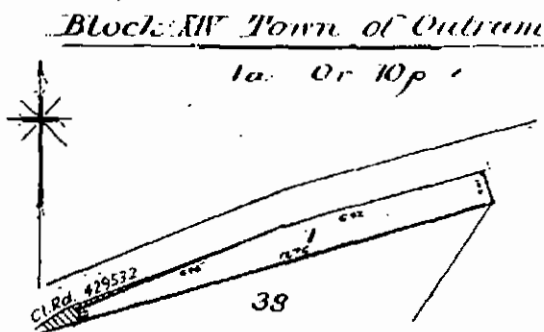
This Certificate, dated the Twenty-seventh day of November, one thousand nine hundred and twenty-six, under the hand and seal of the District Land Registrar of the Land Registration District of Otago, witnesses that JAMES ANDERSON of Outram Mail Carrier

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon, subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan herein bordered green, be the several admeasurements a little more or less, that is to say: All that parcel of land containing One acre Ten Perches more or less situated in the Town District of Outram being Section One (1) Block Fourteen (XIV) TOWN OF OUTRAM and being the land in Conveyance registered in the Deeds Register Office at Dunedin as No. 124151



Mr. Philip Ferguson
District Land Registrar.

EQUIVALENT METRIC
AREA IS 4390.22



New Plan 17247
Scale, 3 chains to an inch

comp

Transfer 180574 James Anderson to
James Edward Barling of Dunedin
Assistant Manager of Restaurant
produced 21st Aug. 1905 at 11.30 a.m.
M. H. ANDERSON A.R.
Transfer 180574 James Edward Barling
A. Frank Ferguson of Outram Market
Gardener produced 4th November
1952 at 2.46 p.m. M. H. ANDERSON A.R.
Transfer 180574 James Edward Barling
A. Frank Ferguson of Outram Market
Gardener produced 4th November
1952 at 2.46 p.m. M. H. ANDERSON A.R.
Transfer 180574 James Edward Barling
A. Frank Ferguson of Outram Market
Gardener produced 4th November
1952 at 2.46 p.m. M. H. ANDERSON A.R.

THIS REPRODUCTION (ON A REDUCED SCALE)
CERTIFIED TO BE A TRUE COPY OF THE
ORIGINAL REGISTER FOR THE PURPOSES OF
SECTION 215 LAND TRANSFER ACT 1952.
J. H. McEwen A.L.R.

OVER

C.T. 215/221

429532 Gazette Notice proclaiming
as closed the road hatched black on
the diagram hereon (13.Op) and vesting
the said land in Frank Ferguson of Outram
Market Gardener - 16.9.1974 at 10.48 am.

Ferguson
A.L.R.

The Closed road in Gazette
Notice 429532 is now known
Section 2 Block XIV Town of
Outram. See W/A 429532
BAC

510972/2 Transmission to Hazel Marguerita Ferguson
of Outram Widow, William Hales Reid of Invercargill
Stipendiary Magistrate and Ian McNab Douglas
of Dunedin Solicitor as executors entered 13.2.1979
at 11.39 am

Ferguson
A.L.R.

510972/5 Transfer to Neville Raymond Ferguson
of Outram Market Gardener - 13.2.1979 at 11.40 am

Ferguson
A.L.R.

510972/6 Mortgage to The Rural Banking and
Finance Corporation of New Zealand -
13.2.1979 at 11.40 am

Ferguson
A.L.R.

532958/1 Discharge of mortgage 510972/6
as to the part lot 1 DP 17247 herein -
15.4.1980 at 2.50 pm

Ferguson
A.L.R.

532958/2 Transfer of the part lot 1
DP 17247 herein to Gordon Clive Allen
and Margery Ruth Allen - 15.4.1980 at
2.50 pm
BC/253 issued

Ferguson
A.L.R.

532958/2) Cancelled as to the balance
15.4.1980) and a new CT BC/254 issued

Ferguson
A.L.R.



DUPLICATE DESTROYED

5 15 1 1980



References

Prior C/T 321/43, 6A/223, 8C/254

Land and Deeds 69

Transfer No

N/C. Order No. 710944/1



REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 6th day of September one thousand nine hundred and Eighty Eight under the seal of the District Land Registrar of the Land Registration District of OTAGO

WITNESSETH that NEVILLE RAYMOND FERGUSON of Outram, Market Gardener

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 6.3518 hectares more or less being Lot 2 Deposited Plan 20759 and being Part River Sections 37 and 38 WEST TAIERI DISTRICT and being Section 2 and Part Sections 1 and 2 Block XIV TOWN OF OUTRAM

608822/6 Mortgage to The Rural Banking and Finance Corporation of New Zealand - 30.1.1984 at 11.02 am

DISCHARGED

9 AUG 1991

ASSISTANT LAND REGISTRAR



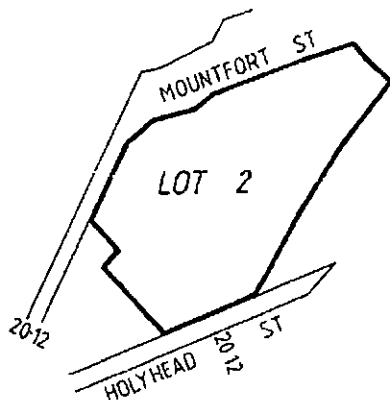
A.L.R

720000 Mortgage to The National Bank of New Zealand Limited - 24.1.1989 at 11.00am

A.L.R

936412.1 Variation of Mortgage 720000 12.9.1997 at 11.56

for DLR



SCALE 1:7500 approx. AREA 6.3518 ha
Measurements are Metric

No. 12B / 346

No. 12B / 346



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Historical Search Copy

R.W. Muir
Registrar-General
of Land

Identifier OT12B/346
Land Registration District Otago
Date Issued 06 September 1988

Prior References

OT321/43 OT6A/223 OT8C/254

Estate Fee Simple
Area 6.3518 hectares more or less
Legal Description Lot 2 Deposited Plan 20759

Original Proprietors

Neville Raymond Ferguson

Interests

720000 Mortgage to The National Bank of New Zealand Limited - 24.1.1989 at 11.00 am
936412.1 Variation of Mortgage 720000 - 12.9.1997 at 11.56 am
5015252.1 Transfer to Neville Raymond Ferguson and Cathrine Jan Ferguson - 14.12.2000 at 2:55 pm
5015252.2 Transfer to Neville Raymond Ferguson, Cathrine Jan Ferguson and Cook Allan Gibson Trustee
Company Limited - 14.12.2000 at 2:55 pm
5015252.3 Transfer to Balmoral Developments (Outram) Limited - 14.12.2000 at 2:55 pm



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



R. W. Muir
Registrar-General
of Land

Guaranteed Search Copy issued under Section 172A
of the Land Transfer Act 1952

Identifier OT12B/346
Land Registration District Otago
Date Issued 06 September 1988

Prior References

OT321/43 OT6A/223 OT8C/254

Estate Fee Simple
Area 6.3518 hectares more or less
Legal Description Lot 2 Deposited Plan 20759

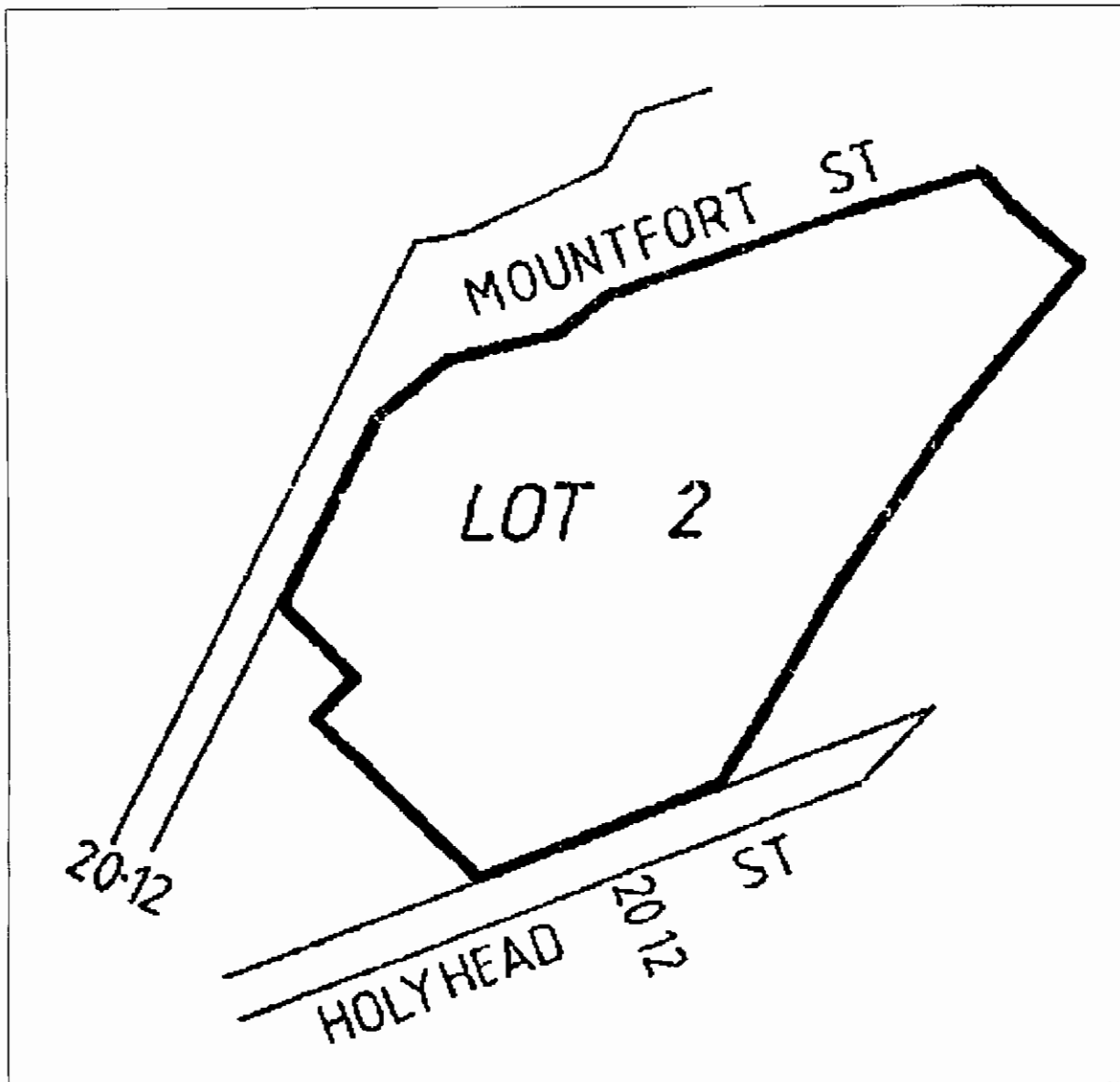
Proprietors
Balmoral Developments (Outram) Limited

Interests

720000 Mortgage to The National Bank of New Zealand Limited - 24.1.1989 at 11.00 am
936412.1 Variation of Mortgage 720000 - 12.9.1997 at 11.56 am

Identifier

OT12B/346



References

Prior C/T 215/221

Transfer No. 532968/1

N/C. Order No.

CANCELLED



Land and Deeds 69

REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 15th day of April one thousand nine hundred and eighty under the seal of the District Land Registrar of the Land Registration District of O T A G O

WITNESSETH that NEVILLE RAYMOND FERGUSON of Outram Market Gardener

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 2443 square metres more or less being part Section 1 Block XIV TOWN OF OUTRAM

DISCHARGED

510972/6 Mortgage to The Rural Banking and Finance Corporation of New Zealand - 13.12.1979 at 11.40 am

ASSISTANT LAND REGISTRAR



A.L.R.

608822/6 Mortgage to The Rural Banking and Finance Corporation of New Zealand - 30.1.1984 at 11.02 am

A.L.R.

710944/1) Cancelled and CT 12B/346 issued
6.9.1988) for the Part Lot 2 D.P. 20759

DISTRICT LAND REGISTRAR

Cancelled

OTAGO
NEW ZEALAND

DUPLICATE DESTROYED

21/9/1988

New Plan 20759

BLOCK XIV
TOWN OF OUTRAM N° 87

S.H.

2443m²

Pt 1 56.07

Lot 1
D.P. 17247

Pt 38

WEST TAIERI S.D.
RIVER SECTIONS

Measurements are Metric

S.O. 14719

References

Prior C/T
Gazette Notice 429532Transfer No.
N/C. Order No. 431520**CANCELLED**

Land and Deeds 69

REGISTER

No. 6A / 223

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 21st day of October one thousand nine hundred and seventyfour
under the seal of the District Land Registrar of the Land Registration District of O T A G O

WITNESSETH that FRANK FERGUSON of Outram Market Gardener

is seized of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 329 square metres more or less being Section 2 Block XIV TOWN OF OUTRAM.

510972/2 Transmission to Hazel Marguerita Ferguson of Outram Widow, William Hales Reid of Invercargill Stipendiary Magistrate and Ian McNab Douglas of Dunedin Solicitor as executors entered 13.2.1979 at 11.39 am


ASSISTANT LAND REGISTRAR

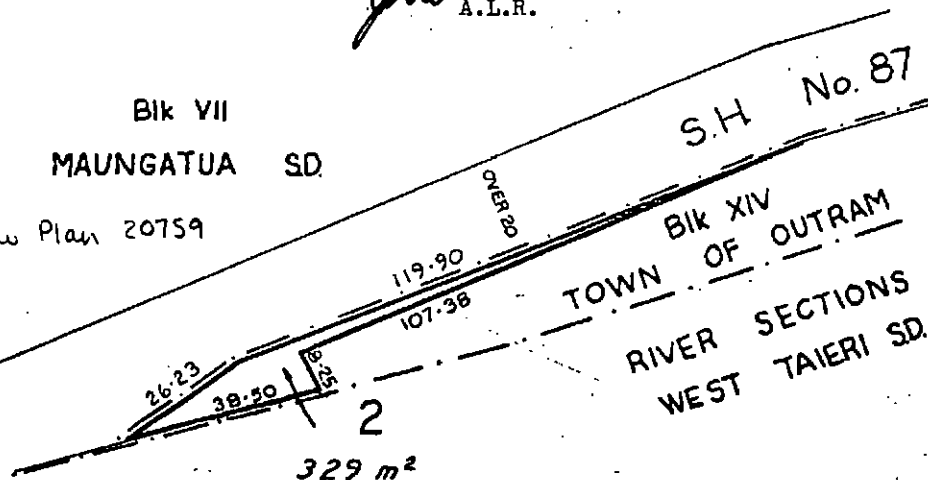
608822/6 Mortgage to The Rural Banking and Finance Corporation of New Zealand - 30.1.1984 at 11.02 am

510972/5 Transfer to Neville Raymond Ferguson of Outram Market Gardener - 13.2.1979 at 11.40 am

710944/1) Cancelled and CT 12B/346
6.9.1988) issued for the Part Lot 2
D.P. 20759

510972/6 Mortgage to The Rural Banking and Finance Corporation of New Zealand - 13.2.1979 at 11.40 am

Bk VII
MAUNGATUA SD
Plan 20759



DISTRICT LAND REGISTRAR
Cancelled
OTAGO
NEW ZEALAND

DUPLICATE DESTROYED

Measurements are Metric

SO. 17988

- A. R. P. Adjoining or passing through
 0 0 14.8 Part Section 9, Block XII, Hukerenui Survey District; coloured green on plan M.O.W. 28027 (S.O. 48027).
 0 1 5 Part Section 9 and part Section 5, Block XII, Hukerenui Survey District; coloured green on plan M.O.W. 28027 (S.O. 48027).

THIRD SCHEDULE

NORTH AUCKLAND LAND DISTRICT

Land Taken and Vested

ALL those pieces of land situated in Block XII, Hukerenui Survey District, described as follows:

- A. R. P. Being
 0 0 0.4 { Parts Section 19, Block XII, Hukerenui Survey District; coloured yellow, edged yellow on plan M.O.W. 28027 (S.O. 48027).
 0 0 6.8 {

As shown on the plans marked and coloured as above mentioned and deposited in the office of the Minister of Works and Development at Wellington.

Dated at Wellington this 20th day of August 1974.

F. M. COLMAN, for Minister of Works and Development.
 (P.W. 53/102; Ak. D.O. 50/15/11/0/48026)

Land Proclaimed as Road and Road Closed and Vested in Taieri County

PURSUANT to section 29 of the Public Works Amendment Act 1948, the Minister of Works and Development hereby proclaims as road the land described in the First Schedule hereto and also hereby proclaims that the road described in the Second Schedule hereto is hereby closed and when so closed shall vest in Frank Ferguson, of Outram, market gardener.

FIRST SCHEDULE

OTAHO LAND DISTRICT

ALL those pieces of land described as follows:

- A. R. P. Being
 0 0 6.1 Part River Section 49, East Taieri Survey District; coloured blue on plan.
 0 0 0.01 Part River Section 49, East Taieri Survey District; coloured sepia on plan.
 0 0 7.8 Part Section 37, Block VII, Maungatua Survey District; coloured blue on plan.
 0 0 6.0 Part River Section 49, East Taieri Survey District; coloured yellow on plan.
 0 0 0.1 Part Section 38R, Irregular Block, East Taieri Survey District; coloured yellow on plan.

SECOND SCHEDULE

OTAHO LAND DISTRICT

ALL that piece of road containing 13 perches adjoining or passing through Section 1, Block XIV, Town of Outram, and River Section 38, West Taieri Survey District; coloured green on plan.

As the same are more particularly delineated on the plan marked M.O.W. 27049 (S.O. 17146), deposited in the office of the Minister of Works and Development at Wellington and thereon coloured as above mentioned.

Dated at Wellington this 21st day of August 1974.

F. M. COLMAN, for Minister of Works and Development.
 (P.W. 72/87/17/0; Dn. D.O. 72/87/17/0/0)

Street Closed and Added to the Adjoining Reserve in Block VII, Puniu Survey District, Kihikihī Town District

PURSUANT to section 29 of the Public Works Amendment Act 1948, the Minister of Works and Development hereby proclaims that the street described in the First Schedule hereto is hereby closed and added to the adjoining reserve described in the Second Schedule hereto.

FIRST SCHEDULE

SOUTH AUCKLAND LAND DISTRICT

ALL that piece of street containing 4 acres 1 rood 8 perches situated in Block VII, Puniu Survey District, adjoining or passing through Allotment 220 to 223 inclusive, 225, 228, 235 to 241 inclusive, 359 to 363 inclusive, 367 to 370 inclusive, and 377 to 380 inclusive, Town of Kihikihī; as shown on plan M.O.W. 28049 (S.O. 46918) deposited in the office of the Minister of Works and Development at Wellington and thereon coloured green.

SECOND SCHEDULE

SOUTH AUCKLAND LAND DISTRICT

ALL those pieces of land situated in Block VII, Puniu Survey District, described as follows:

- A. R. P. Being
 0 1 15.3 Lot 18, D.P. S. 4908 (part Kihikihī Domain, Gazette, 1960, page 1927).
 41 0 0 Allotments 220 to 225 (inclusive), 228 to 234 (inclusive), 236 to 241 (inclusive), and 359 to 380 (inclusive), Town of Kihikihī (part Kihikihī Domain, Gazette, 1883, page 249).
 1 0 0 Allotment 235, Town of Kihikihī (part Kihikihī Domain, Gazette, 1895, page 407).

Dated at Wellington this 21st day of August 1974.

F. M. COLMAN, for Minister of Works and Development.
 (P.W. 52/168; Hn. D.O. 20/7/85)

Declaring Land Taken for State Housing Purposes in the City of Manukau

PURSUANT to section 32 of the Public Works Act 1928, the Minister of Works and Development hereby declares that, a sufficient agreement to that effect having been entered into, the land described in the Schedule hereto is hereby taken for State housing purposes from and after the 5th day of September 1974.

SCHEDULE

NORTH AUCKLAND LAND DISTRICT

ALL that piece of land containing 10 acres situated in the City of Manukau and being Lot 1, D.P. 51653. All certificate of title No. 1C/908, North Auckland Land Registry.

Dated at Wellington this 16th day of August 1974.

F. M. COLMAN, for Minister of Works and Development.
 (H.C. 4/322/27; Ak. D.O. H.C. 4/322/27)

Declaring Land Taken for State Housing Purposes in Manukau City

PURSUANT to section 32 of the Public Works Act 1928, the Minister of Works and Development hereby declares that, a sufficient agreement to that effect having been entered into, the land described in the Schedule hereto is hereby taken, subject to the fencing agreement contained in memorandum of transfer 681736, North Auckland Land Registry, for State housing purposes from and after the 5th day of September 1974.

SCHEDULE

NORTH AUCKLAND LAND DISTRICT

ALL that piece of land containing 40 acres 1 rood 38 perches situated in the City of Manukau, North Auckland R.D., and being part Lot 2, D.P. 49443. All certificate of title No. 19D/1130, North Auckland Land Registry.

Dated at Wellington this 20th day of August 1974.

F. M. COLMAN, for Minister of Works and Development.
 (H.C. 4/322/23; Ak. D.O. 4/322/23)

Declaring Land Taken for State Housing Purposes in the City of Manukau

PURSUANT to section 32 of the Public Works Act 1928, the Minister of Works and Development hereby declares that, a sufficient agreement to that effect having been entered into, the land described in the Schedule hereto is hereby taken, for State housing purposes from and after the 5th day of September 1974.

321/43

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT
LIMITED AS TO PARCELS

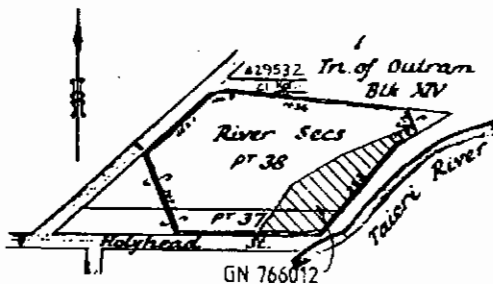
This Certificate, dated the Thirtieth day of August one thousand nine hundred and forty
under the hand and seal of the District Land Registrar of the Land Registration District of 100000 Edinburgh that
PAUL FERGUSON of Outram Market Gardener

is scheduled of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial under written or endorsed hereon; subject also to any existing right of the Crown to take and lay off roads under the provisions of any Act of the General Assembly of New Zealand) in the land hereinafter described, as the same is delineated by the plan hereon bordered, _____, to be the several admeasurements a little more or less, that is to say: All that parcel of land containing 22 acres (12) 1 rood 10 p. (13) 1 rood 10 p. (14) 1 rood 10 p. (15) 1 rood 10 p. (16) 1 rood 10 p. (17) 1 rood 10 p. (18) 1 rood 10 p. (19) 1 rood 10 p. (20) 1 rood 10 p. (21) 1 rood 10 p. (22) 1 rood 10 p. (23) 1 rood 10 p. (24) 1 rood 10 p. (25) 1 rood 10 p. (26) 1 rood 10 p. (27) 1 rood 10 p. (28) 1 rood 10 p. (29) 1 rood 10 p. (30) 1 rood 10 p. (31) 1 rood 10 p. (32) 1 rood 10 p. (33) 1 rood 10 p. (34) 1 rood 10 p. (35) 1 rood 10 p. (36) 1 rood 10 p. 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(301) 1 rood 10 p. (30

EQUIVALENT METRIC
AREA IS 7.4057 ha
GN 766012 - 1.1528 ha
6.2529 ha

Pl. River Secs. 37+38
West Tairi S.D.

18a. 1c. 8p



Scale, 8 chains to an inch.

Now Plan 20759

[illegible]

THIS REPRODUCTION IS A TRUE AND CORRECT COPY
CERTIFIED TO BE A TRUE COPY OF THE
ORIGINAL REGISTERED FOR THE PURPOSES OF
SECTION 214A LAND TRANSFER ACT 1952.

429532 Gazette Notice proclaiming as closed the road hatched black on the diagram hereon (13.0p) and vesting the said land in Frank Ferguson of Outram Market Gardener - 16.9.1974 at 10.48 am.

510972/2 Transmission to Hazel Marguerite Ferguson of Outram Widow, William Hales Reid of Invercargill Stipendiary Magistrate and Ian McNab Douglas of Dunedin Solicitor as Executors entered 13.2.1979 at 11.39 am

510972/5 Transfer to Neville Raymond Ferguson
of Outram Market Gardener - 13.2.1979 at 11.10

over..

C.T. 321/43

510972/6 Mortgage to The Rural Banking and
Finance Corporation of New Zealand
13.2.1979 at 11.40 am

DISCHARGED

A.L.R.

608822/6 Mortgage to The Rural Banking and
Finance Corporation of New Zealand -
30.1.1984 at 11.02 am

A.L.R.

688598 Compensation Certificate pursuant
to Section 19 of the Public Works Act
1981 - 12.10.1987 at 1.28pm

710944/1) New CT 12B/346 issued for
6.9.1988) the Part Lot 2 D.P. 20759

710944/2) New CT 12B/347
6.9.1988) issued for Lot 1 D.P. 20759

A.L.R.

766012 Gazette Notice declaring part of the
within land to be acquired for Soil
Conservation and Rivers Control purposes
and shall vest in the Otago Catchment
Board on the 10.8.1989 - 25.10.1990
at 9.12am

A.L.R.





Appendix 2

Certified Results of Laboratory Analysis



ANALYSIS REPORT

Page 1 of 6

Client:	Spiire New Zealand Ltd	Lab No:	1071754	SPV1
Contact:	Mona Wells	Date Registered:	22-Nov-2012	
	C/- Spiire New Zealand Ltd	Date Reported:	30-Nov-2012	
	PO Box 910	Quote No:		
	DUNEDIN 9054	Order No:		
		Client Reference:		
		Submitted By:	Mona Wells	

Sample Type: Soil

Sample Name:	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4			
Lab Number:	1071754.5			

Individual Tests

Dry Matter	g/100g as rcvd	83	-	-	-	-
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Heavy metals, screen As,Cd,Cr,Cu,Ni,Pb,Zn,Hg

Total Recoverable Arsenic	mg/kg dry wt	5	-	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	0.17	-	-	-	-
Total Recoverable Chromium	mg/kg dry wt	9	-	-	-	-
Total Recoverable Copper	mg/kg dry wt	12	-	-	-	-
Total Recoverable Lead	mg/kg dry wt	11.0	-	-	-	-
Total Recoverable Mercury	mg/kg dry wt	< 0.10	-	-	-	-
Total Recoverable Nickel	mg/kg dry wt	8	-	-	-	-
Total Recoverable Zinc	mg/kg dry wt	45	-	-	-	-

Acid Herbicides Screen in Soil by LCMSMS

Bentazone*	mg/kg dry wt	< 0.2	-	-	-	-
Acifluorfen*	mg/kg dry wt	< 0.2	-	-	-	-
Bromoxynil*	mg/kg dry wt	< 0.2	-	-	-	-
Clopyralid*	mg/kg dry wt	< 0.2	-	-	-	-
Dicamba*	mg/kg dry wt	< 0.2	-	-	-	-
2,4-Dichlorophenoxyacetic acid (24D)*	mg/kg dry wt	< 0.2	-	-	-	-
2,4-Dichlorophenoxybutyric acid (24DB)*	mg/kg dry wt	< 0.2	-	-	-	-
Dichlorprop*	mg/kg dry wt	< 0.2	-	-	-	-
Fluazifop*	mg/kg dry wt	< 0.2	-	-	-	-
Fluroxypyr*	mg/kg dry wt	< 0.2	-	-	-	-
Haloxypop*	mg/kg dry wt	< 0.2	-	-	-	-
2-methyl-4-chlorophenoxyacetic acid (MCPA)*	mg/kg dry wt	< 0.2	-	-	-	-
2-methyl-4-chlorophenoxybutanoic acid (MCPB)*	mg/kg dry wt	< 0.2	-	-	-	-
Mecoprop (MCP; 2-methyl-4-chlorophenoxypropionic acid)*	mg/kg dry wt	< 0.2	-	-	-	-
Oryzalin*	mg/kg dry wt	< 0.4	-	-	-	-
Pentachlorophenol (PCP)*	mg/kg dry wt	< 0.2	-	-	-	-
Picloram*	mg/kg dry wt	< 0.2	-	-	-	-
Quizalofop*	mg/kg dry wt	< 0.2	-	-	-	-
2,3,4,6-Tetrachlorophenol (TCP)*	mg/kg dry wt	< 0.2	-	-	-	-
2,4,5-trichlorophenoxypropionic acid (245TP,Fenoprop, Silvex)*	mg/kg dry wt	< 0.2	-	-	-	-



Sample Type: Soil

Sample Name: Composite of Bal
SE1 + Bal SW2 +
Bal N3 + Bal N4

Lab Number: 1071754.5

Acid Herbicides Screen in Soil by LCMSMS

2,4,5-Trichlorophenoxyacetic acid (245T)*	mg/kg dry wt	< 0.2	-	-	-	-
Triclopyr*	mg/kg dry wt	< 0.2	-	-	-	-

Multiresidue Pesticides in Soil samples by GCMS

Acetochlor	mg/kg dry wt	< 0.008	-	-	-	-
Alachlor	mg/kg dry wt	< 0.006	-	-	-	-
Aldrin	mg/kg dry wt	< 0.011	-	-	-	-
Atrazine	mg/kg dry wt	< 0.008	-	-	-	-
Atrazine-desethyl	mg/kg dry wt	< 0.008	-	-	-	-
Atrazine-desisopropyl	mg/kg dry wt	< 0.015	-	-	-	-
Azaconazole	mg/kg dry wt	< 0.004	-	-	-	-
Azinphos-methyl	mg/kg dry wt	< 0.015	-	-	-	-
Benalaxyl	mg/kg dry wt	< 0.004	-	-	-	-
Bendiocarb	mg/kg dry wt	< 0.008	-	-	-	-
Benodanil	mg/kg dry wt	< 0.015	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	-	-	-
Bifenthrin	mg/kg dry wt	< 0.004	-	-	-	-
Bitertanol	mg/kg dry wt	< 0.015	-	-	-	-
Bromacil	mg/kg dry wt	< 0.008	-	-	-	-
Bromophos-ethyl	mg/kg dry wt	< 0.008	-	-	-	-
Bromopropylate	mg/kg dry wt	< 0.008	-	-	-	-
Bupirimate	mg/kg dry wt	< 0.008	-	-	-	-
Buprofezin	mg/kg dry wt	< 0.008	-	-	-	-
Butachlor	mg/kg dry wt	< 0.008	-	-	-	-
Captafol	mg/kg dry wt	< 0.04	-	-	-	-
Captan	mg/kg dry wt	< 0.015	-	-	-	-
Carbaryl	mg/kg dry wt	< 0.008	-	-	-	-
Carbofenthiol	mg/kg dry wt	< 0.008	-	-	-	-
Carbofuran	mg/kg dry wt	< 0.008	-	-	-	-
Carboxin	mg/kg dry wt	< 0.008	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	-	-
Chlorfenvinphos	mg/kg dry wt	< 0.008	-	-	-	-
Chlorfluazuron	mg/kg dry wt	< 0.008	-	-	-	-
Chlorothalonil	mg/kg dry wt	< 0.008	-	-	-	-
Chlorpropham	mg/kg dry wt	< 0.015	-	-	-	-
Chlorpyrifos	mg/kg dry wt	< 0.008	-	-	-	-
Chlorpyrifos-methyl	mg/kg dry wt	< 0.008	-	-	-	-
Chlortoluron	mg/kg dry wt	< 0.015	-	-	-	-
Chlozolinate	mg/kg dry wt	< 0.008	-	-	-	-
Coumaphos	mg/kg dry wt	< 0.015	-	-	-	-
Cyanazine	mg/kg dry wt	< 0.008	-	-	-	-
Cyfluthrin	mg/kg dry wt	< 0.008	-	-	-	-
Cyhalothrin	mg/kg dry wt	< 0.008	-	-	-	-
Cypermethrin	mg/kg dry wt	< 0.015	-	-	-	-
Cyproconazole	mg/kg dry wt	< 0.011	-	-	-	-
Cyprodinil	mg/kg dry wt	< 0.008	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-

Sample Type: Soil

Sample Name: Composite of Bal
SE1 + Bal SW2 +
Bal N3 + Bal N4
Lab Number: 1071754.5

Multiresidue Pesticides in Soil samples by GCMS

4,4'-DDE	mg/kg dry wt	0.128	-	-	-	-
2,4'-DDT	mg/kg dry wt	0.028	-	-	-	-
4,4'-DDT	mg/kg dry wt	0.33	-	-	-	-
Total DDT Isomers	mg/kg dry wt	0.49	-	-	-	-
Deltamethrin	mg/kg dry wt	< 0.008	-	-	-	-
Demeton-S-methyl	mg/kg dry wt	< 0.015	-	-	-	-
Diazinon	mg/kg dry wt	< 0.004	-	-	-	-
Dichlobenil	mg/kg dry wt	< 0.008	-	-	-	-
Dichlofenthion	mg/kg dry wt	< 0.008	-	-	-	-
Dichlofluanid	mg/kg dry wt	< 0.008	-	-	-	-
Dichloran	mg/kg dry wt	< 0.03	-	-	-	-
Dichlorvos	mg/kg dry wt	< 0.010	-	-	-	-
Dicofol	mg/kg dry wt	< 0.04	-	-	-	-
Dicrotophos	mg/kg dry wt	< 0.008	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.011	-	-	-	-
Difenoconazole	mg/kg dry wt	< 0.011	-	-	-	-
Dimethoate	mg/kg dry wt	< 0.015	-	-	-	-
Dinocap	mg/kg dry wt	< 0.08	-	-	-	-
Diphenylamine	mg/kg dry wt	< 0.015	-	-	-	-
Disulfoton	mg/kg dry wt	< 0.008	-	-	-	-
Diuron	mg/kg dry wt	< 0.008	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	-	-	-
Endrin	mg/kg dry wt	< 0.011	-	-	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.011	-	-	-	-
EPN	mg/kg dry wt	< 0.008	-	-	-	-
Esfenvalerate	mg/kg dry wt	< 0.011	-	-	-	-
Ethion	mg/kg dry wt	< 0.008	-	-	-	-
Etrimfos	mg/kg dry wt	< 0.008	-	-	-	-
Famphur	mg/kg dry wt	< 0.008	-	-	-	-
Fenamiphos	mg/kg dry wt	< 0.008	-	-	-	-
Fenarimol	mg/kg dry wt	< 0.008	-	-	-	-
Fenitrothion	mg/kg dry wt	< 0.008	-	-	-	-
Fenpropathrin	mg/kg dry wt	< 0.008	-	-	-	-
Fenpropimorph	mg/kg dry wt	< 0.008	-	-	-	-
Fensulfothion	mg/kg dry wt	< 0.008	-	-	-	-
Fenthion	mg/kg dry wt	< 0.008	-	-	-	-
Fenvalerate	mg/kg dry wt	< 0.011	-	-	-	-
Fluazifop-butyl	mg/kg dry wt	< 0.008	-	-	-	-
Fluometuron	mg/kg dry wt	< 0.008	-	-	-	-
Flusilazole	mg/kg dry wt	< 0.008	-	-	-	-
Fluvalinate	mg/kg dry wt	< 0.006	-	-	-	-
Folpet	mg/kg dry wt	< 0.015	-	-	-	-
Furalaxyl	mg/kg dry wt	< 0.004	-	-	-	-
Haloxifop-methyl	mg/kg dry wt	< 0.008	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	-	-	-
Hexaconazole	mg/kg dry wt	< 0.008	-	-	-	-
Hexazinone	mg/kg dry wt	< 0.004	-	-	-	-
Hexythiazox	mg/kg dry wt	< 0.04	-	-	-	-
Imazalil	mg/kg dry wt	< 0.04	-	-	-	-

Sample Type: Soil**Sample Name:**Composite of Bal
SE1 + Bal SW2 +
Bal N3 + Bal N4**Lab Number:**

1071754.5

Multiresidue Pesticides in Soil samples by GCMS

Indoxacarb	mg/kg dry wt	< 0.008	-	-	-	-
Iodofenphos	mg/kg dry wt	< 0.008	-	-	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	< 0.04	-	-	-	-
Iprodione	mg/kg dry wt	< 0.008	-	-	-	-
Isazophos	mg/kg dry wt	< 0.008	-	-	-	-
Isofenphos	mg/kg dry wt	< 0.004	-	-	-	-
Kresoxim-methyl	mg/kg dry wt	< 0.004	-	-	-	-
Leptophos	mg/kg dry wt	< 0.008	-	-	-	-
Linuron	mg/kg dry wt	< 0.008	-	-	-	-
Malathion	mg/kg dry wt	< 0.008	-	-	-	-
Metaxalyl	mg/kg dry wt	< 0.008	-	-	-	-
Methacrifos	mg/kg dry wt	< 0.008	-	-	-	-
Methamidophos	mg/kg dry wt	< 0.04	-	-	-	-
Methidathion	mg/kg dry wt	< 0.008	-	-	-	-
Methiocarb	mg/kg dry wt	< 0.008	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	-	-	-
Metolachlor	mg/kg dry wt	< 0.006	-	-	-	-
Metribuzin	mg/kg dry wt	< 0.008	-	-	-	-
Mevinphos	mg/kg dry wt	< 0.03	-	-	-	-
Molinate	mg/kg dry wt	< 0.015	-	-	-	-
Myclobutanil	mg/kg dry wt	< 0.008	-	-	-	-
Naled	mg/kg dry wt	< 0.04	-	-	-	-
Nitrofen	mg/kg dry wt	< 0.015	-	-	-	-
Nitrothal-isopropyl	mg/kg dry wt	< 0.008	-	-	-	-
Norflurazon	mg/kg dry wt	< 0.015	-	-	-	-
Omethoate	mg/kg dry wt	< 0.04	-	-	-	-
Oxadiazon	mg/kg dry wt	< 0.008	-	-	-	-
Oxychlorane	mg/kg dry wt	< 0.004	-	-	-	-
Oxyfluorfen	mg/kg dry wt	< 0.004	-	-	-	-
Paclobutrazol	mg/kg dry wt	< 0.008	-	-	-	-
Parathion-ethyl	mg/kg dry wt	< 0.008	-	-	-	-
Parathion-methyl	mg/kg dry wt	< 0.008	-	-	-	-
Penconazole	mg/kg dry wt	< 0.008	-	-	-	-
Pendimethalin	mg/kg dry wt	< 0.008	-	-	-	-
Permethrin	mg/kg dry wt	< 0.003	-	-	-	-
Phorate	mg/kg dry wt	< 0.015	-	-	-	-
Phosmet	mg/kg dry wt	< 0.008	-	-	-	-
Phosphamidon	mg/kg dry wt	< 0.008	-	-	-	-
Pirimicarb	mg/kg dry wt	0.012	-	-	-	-
Pirimiphos-methyl	mg/kg dry wt	< 0.008	-	-	-	-
Prochloraz	mg/kg dry wt	< 0.04	-	-	-	-
Procymidone	mg/kg dry wt	< 0.008	-	-	-	-
Prometryn	mg/kg dry wt	< 0.004	-	-	-	-
Propachlor	mg/kg dry wt	< 0.008	-	-	-	-
Propanil	mg/kg dry wt	< 0.03	-	-	-	-
Propazine	mg/kg dry wt	< 0.004	-	-	-	-
Propetamphos	mg/kg dry wt	< 0.008	-	-	-	-
Propham	mg/kg dry wt	< 0.008	-	-	-	-
Propiconazole	mg/kg dry wt	< 0.006	-	-	-	-
Prothiofos	mg/kg dry wt	< 0.008	-	-	-	-
Pyrazophos	mg/kg dry wt	< 0.008	-	-	-	-
Pyrifenoxy	mg/kg dry wt	< 0.011	-	-	-	-
Pyrimethanil	mg/kg dry wt	< 0.008	-	-	-	-
Pyriproxyfen	mg/kg dry wt	< 0.008	-	-	-	-

Sample Type: Soil

Sample Name: Composite of Bal
SE1 + Bal SW2 +
Bal N3 + Bal N4

Lab Number: 1071754.5

Multiresidue Pesticides in Soil samples by GCMS

Quintozene	mg/kg dry wt	< 0.015	-	-	-	-
Quizalofop-ethyl	mg/kg dry wt	< 0.008	-	-	-	-
Simazine	mg/kg dry wt	< 0.008	-	-	-	-
Simetryn	mg/kg dry wt	< 0.008	-	-	-	-
Sulfentrazone	mg/kg dry wt	< 0.04	-	-	-	-
Sulfotep	mg/kg dry wt	< 0.008	-	-	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole, Busan]	mg/kg dry wt	< 0.015	-	-	-	-
Tebuconazole	mg/kg dry wt	< 0.008	-	-	-	-
Tebufenpyrad	mg/kg dry wt	< 0.004	-	-	-	-
Terbacil	mg/kg dry wt	< 0.008	-	-	-	-
Terbufos	mg/kg dry wt	< 0.008	-	-	-	-
Terbumeton	mg/kg dry wt	< 0.008	-	-	-	-
Terbutylazine	mg/kg dry wt	< 0.004	-	-	-	-
Terbutylazine-desethyl	mg/kg dry wt	< 0.008	-	-	-	-
Terbutryn	mg/kg dry wt	< 0.008	-	-	-	-
Tetrachlorvinphos	mg/kg dry wt	< 0.008	-	-	-	-
Thiabendazole	mg/kg dry wt	< 0.04	-	-	-	-
Thiobencarb	mg/kg dry wt	< 0.008	-	-	-	-
Thiometon	mg/kg dry wt	< 0.015	-	-	-	-
Tolylfluanid	mg/kg dry wt	< 0.004	-	-	-	-
Triadimefon	mg/kg dry wt	< 0.008	-	-	-	-
Triazophos	mg/kg dry wt	< 0.008	-	-	-	-
Trifluralin	mg/kg dry wt	< 0.008	-	-	-	-
Vinclozolin	mg/kg dry wt	< 0.008	-	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Samples
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	5
Heavy metals, screen As, Cd, Cr, Cu, Ni, Pb, Zn, Hg	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	5
Acid Herbicides Screen in Soil by LCMSMS*	Solvent extraction with sonication, dilution, analysis by LCMSMS with online SPE. Tested on dried sample	-	5
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GPC cleanup, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	-	5
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry), gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	5
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	5
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This report must not be reproduced, except in full, without the written consent of the signatory.

A handwritten signature in blue ink, appearing to be 'Ara Heron', written over a horizontal line.

Ara Heron BSc (Tech)
Client Services Manager - Environmental Division



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ANALYSIS REPORT

Page 1 of 6

Client:	Spiire New Zealand Ltd	Lab No:	1071754	SPv2
Contact:	Mona Wells	Date Registered:	22-Nov-2012	
	C/- Spiire New Zealand Ltd	Date Reported:	13-Dec-2012	
	PO Box 910	Quote No:		
	DUNEDIN 9054	Order No:		
		Client Reference:		
		Submitted By:	Mona Wells	

Amended Report

This report replaces an earlier report issued on the 30 Nov 2012 at 3:58 pm
At the client's request, arsenic analyses have been added to samples
1071754.1-4.

Sample Type: Soil

Sample Name:	Bal SE1 20-Nov-2012 12:00 pm	Bal SW2 20-Nov-2012 12:10 pm	Bal N3 20-Nov-2012 12:30 pm	Bal N4 20-Nov-2012 12:40 pm	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4
Lab Number:	1071754.1	1071754.2	1071754.3	1071754.4	1071754.5

Individual Tests

Dry Matter	g/100g as rcvd	-	-	-	83
Total Recoverable Arsenic	mg/kg dry wt	4	5	4	-
Heavy metals, screen As,Cd,Cr,Cu,Ni,Pb,Zn,Hg					
Total Recoverable Arsenic	mg/kg dry wt	-	-	-	5
Total Recoverable Cadmium	mg/kg dry wt	-	-	-	0.17
Total Recoverable Chromium	mg/kg dry wt	-	-	-	9
Total Recoverable Copper	mg/kg dry wt	-	-	-	12
Total Recoverable Lead	mg/kg dry wt	-	-	-	11.0
Total Recoverable Mercury	mg/kg dry wt	-	-	-	< 0.10
Total Recoverable Nickel	mg/kg dry wt	-	-	-	8
Total Recoverable Zinc	mg/kg dry wt	-	-	-	45

Acid Herbicides Screen in Soil by LCMSMS

Bentazone*	mg/kg dry wt	-	-	-	< 0.2
Acifluorfen*	mg/kg dry wt	-	-	-	< 0.2
Bromoxynil*	mg/kg dry wt	-	-	-	< 0.2
Clpyralid*	mg/kg dry wt	-	-	-	< 0.2
Dicamba*	mg/kg dry wt	-	-	-	< 0.2
2,4-Dichlorophenoxyacetic acid (24D)*	mg/kg dry wt	-	-	-	< 0.2
2,4-Dichlorophenoxybutyric acid (24DB)*	mg/kg dry wt	-	-	-	< 0.2
Dichlorprop*	mg/kg dry wt	-	-	-	< 0.2
Fluazifop*	mg/kg dry wt	-	-	-	< 0.2
Fluroxypyr*	mg/kg dry wt	-	-	-	< 0.2
Haloxypop*	mg/kg dry wt	-	-	-	< 0.2
2-methyl-4-chlorophenoxyacetic acid (MCPA)*	mg/kg dry wt	-	-	-	< 0.2
2-methyl-4- chlorophenoxybutanoic acid (MCPB)*	mg/kg dry wt	-	-	-	< 0.2
Mecoprop (MCP; 2-methyl-4- chlorophenoxypropionic acid)*	mg/kg dry wt	-	-	-	< 0.2
Oryzalin*	mg/kg dry wt	-	-	-	< 0.4
Pentachlorophenol (PCP)*	mg/kg dry wt	-	-	-	< 0.2
Picloram*	mg/kg dry wt	-	-	-	< 0.2
Quizalofop*	mg/kg dry wt	-	-	-	< 0.2



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

Sample Type: Soil					
Sample Name:	Bal SE1 20-Nov-2012 12:00 pm	Bal SW2 20-Nov-2012 12:10 pm	Bal N3 20-Nov-2012 12:30 pm	Bal N4 20-Nov-2012 12:40 pm	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4
Lab Number:	1071754.1	1071754.2	1071754.3	1071754.4	1071754.5
Acid Herbicides Screen in Soil by LCMSMS					
2,3,4,6-Tetrachlorophenol (TCP)*	mg/kg dry wt	-	-	-	< 0.2
2,4,5-trichlorophenoxypropionic acid (245TP, Fenoprop, Silvex)*	mg/kg dry wt	-	-	-	< 0.2
2,4,5-Trichlorophenoxyacetic acid (245T)*	mg/kg dry wt	-	-	-	< 0.2
Triclopyr*	mg/kg dry wt	-	-	-	< 0.2
Multiresidue Pesticides in Soil samples by GCMS					
Acetochlor	mg/kg dry wt	-	-	-	< 0.008
Alachlor	mg/kg dry wt	-	-	-	< 0.006
Aldrin	mg/kg dry wt	-	-	-	< 0.011
Atrazine	mg/kg dry wt	-	-	-	< 0.008
Atrazine-desethyl	mg/kg dry wt	-	-	-	< 0.008
Atrazine-desisopropyl	mg/kg dry wt	-	-	-	< 0.015
Azaconazole	mg/kg dry wt	-	-	-	< 0.004
Azinphos-methyl	mg/kg dry wt	-	-	-	< 0.015
Benalaxyl	mg/kg dry wt	-	-	-	< 0.004
Bendiocarb	mg/kg dry wt	-	-	-	< 0.008
Benodanil	mg/kg dry wt	-	-	-	< 0.015
alpha-BHC	mg/kg dry wt	-	-	-	< 0.011
beta-BHC	mg/kg dry wt	-	-	-	< 0.011
delta-BHC	mg/kg dry wt	-	-	-	< 0.011
gamma-BHC (Lindane)	mg/kg dry wt	-	-	-	< 0.011
Bifenthrin	mg/kg dry wt	-	-	-	< 0.004
Bitertanol	mg/kg dry wt	-	-	-	< 0.015
Bromacil	mg/kg dry wt	-	-	-	< 0.008
Bromophos-ethyl	mg/kg dry wt	-	-	-	< 0.008
Bromopropylate	mg/kg dry wt	-	-	-	< 0.008
Bupirimate	mg/kg dry wt	-	-	-	< 0.008
Buprofezin	mg/kg dry wt	-	-	-	< 0.008
Butachlor	mg/kg dry wt	-	-	-	< 0.008
Captafol	mg/kg dry wt	-	-	-	< 0.04
Captan	mg/kg dry wt	-	-	-	< 0.015
Carbaryl	mg/kg dry wt	-	-	-	< 0.008
Carbofenthoion	mg/kg dry wt	-	-	-	< 0.008
Carbofuran	mg/kg dry wt	-	-	-	< 0.008
Carboxin	mg/kg dry wt	-	-	-	< 0.008
cis-Chlordane	mg/kg dry wt	-	-	-	< 0.011
trans-Chlordane	mg/kg dry wt	-	-	-	< 0.011
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	-	< 0.04
Chlorfenvinphos	mg/kg dry wt	-	-	-	< 0.008
Chlorfluazuron	mg/kg dry wt	-	-	-	< 0.008
Chlorothalonil	mg/kg dry wt	-	-	-	< 0.008
Chlorpropham	mg/kg dry wt	-	-	-	< 0.015
Chlorpyrifos	mg/kg dry wt	-	-	-	< 0.008
Chlorpyrifos-methyl	mg/kg dry wt	-	-	-	< 0.008
Chlortoluron	mg/kg dry wt	-	-	-	< 0.015
Chlozolinate	mg/kg dry wt	-	-	-	< 0.008
Coumaphos	mg/kg dry wt	-	-	-	< 0.015
Cyanazine	mg/kg dry wt	-	-	-	< 0.008
Cyfluthrin	mg/kg dry wt	-	-	-	< 0.008
Cyhalothrin	mg/kg dry wt	-	-	-	< 0.008
Cypermethrin	mg/kg dry wt	-	-	-	< 0.015
Cyproconazole	mg/kg dry wt	-	-	-	< 0.011

Sample Type: Soil						
Sample Name:		Bal SE1 20-Nov-2012 12:00 pm	Bal SW2 20-Nov-2012 12:10 pm	Bal N3 20-Nov-2012 12:30 pm	Bal N4 20-Nov-2012 12:40 pm	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4
Lab Number:		1071754.1	1071754.2	1071754.3	1071754.4	1071754.5
Multiresidue Pesticides in Soil samples by GCMS						
Cyprodinil	mg/kg dry wt	-	-	-	-	< 0.008
2,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.011
4,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.011
2,4'-DDE	mg/kg dry wt	-	-	-	-	< 0.011
4,4'-DDE	mg/kg dry wt	-	-	-	-	0.128
2,4'-DDT	mg/kg dry wt	-	-	-	-	0.028
4,4'-DDT	mg/kg dry wt	-	-	-	-	0.33
Total DDT Isomers	mg/kg dry wt	-	-	-	-	0.49
Deltamethrin	mg/kg dry wt	-	-	-	-	< 0.008
Demeton-S-methyl	mg/kg dry wt	-	-	-	-	< 0.015
Diazinon	mg/kg dry wt	-	-	-	-	< 0.004
Dichlobenil	mg/kg dry wt	-	-	-	-	< 0.008
Dichlofenthion	mg/kg dry wt	-	-	-	-	< 0.008
Dichlofluanid	mg/kg dry wt	-	-	-	-	< 0.008
Dichloran	mg/kg dry wt	-	-	-	-	< 0.03
Dichlorvos	mg/kg dry wt	-	-	-	-	< 0.010
Dicofol	mg/kg dry wt	-	-	-	-	< 0.04
Dicrotophos	mg/kg dry wt	-	-	-	-	< 0.008
Dieldrin	mg/kg dry wt	-	-	-	-	< 0.011
Difenoconazole	mg/kg dry wt	-	-	-	-	< 0.011
Dimethoate	mg/kg dry wt	-	-	-	-	< 0.015
Dinocap	mg/kg dry wt	-	-	-	-	< 0.08
Diphenylamine	mg/kg dry wt	-	-	-	-	< 0.015
Disulfoton	mg/kg dry wt	-	-	-	-	< 0.008
Diuron	mg/kg dry wt	-	-	-	-	< 0.008
Endosulfan I	mg/kg dry wt	-	-	-	-	< 0.011
Endosulfan II	mg/kg dry wt	-	-	-	-	< 0.011
Endosulfan sulphate	mg/kg dry wt	-	-	-	-	< 0.011
Endrin	mg/kg dry wt	-	-	-	-	< 0.011
Endrin Aldehyde	mg/kg dry wt	-	-	-	-	< 0.011
Endrin ketone	mg/kg dry wt	-	-	-	-	< 0.011
EPN	mg/kg dry wt	-	-	-	-	< 0.008
Esfenvalerate	mg/kg dry wt	-	-	-	-	< 0.011
Ethion	mg/kg dry wt	-	-	-	-	< 0.008
Etrimfos	mg/kg dry wt	-	-	-	-	< 0.008
Famphur	mg/kg dry wt	-	-	-	-	< 0.008
Fenamiphos	mg/kg dry wt	-	-	-	-	< 0.008
Fenarimol	mg/kg dry wt	-	-	-	-	< 0.008
Fenitrothion	mg/kg dry wt	-	-	-	-	< 0.008
Fenpropathrin	mg/kg dry wt	-	-	-	-	< 0.008
Fenpropimorph	mg/kg dry wt	-	-	-	-	< 0.008
Fensulfothion	mg/kg dry wt	-	-	-	-	< 0.008
Fenthion	mg/kg dry wt	-	-	-	-	< 0.008
Fenvalerate	mg/kg dry wt	-	-	-	-	< 0.011
Fluazifop-butyl	mg/kg dry wt	-	-	-	-	< 0.008
Fluometuron	mg/kg dry wt	-	-	-	-	< 0.008
Flusilazole	mg/kg dry wt	-	-	-	-	< 0.008
Fluvalinate	mg/kg dry wt	-	-	-	-	< 0.006
Folpet	mg/kg dry wt	-	-	-	-	< 0.015
Furalaxyl	mg/kg dry wt	-	-	-	-	< 0.004
Haloxifop-methyl	mg/kg dry wt	-	-	-	-	< 0.008
Heptachlor	mg/kg dry wt	-	-	-	-	< 0.011
Heptachlor epoxide	mg/kg dry wt	-	-	-	-	< 0.011
Hexachlorobenzene	mg/kg dry wt	-	-	-	-	< 0.011

Sample Type: Soil

Sample Name:	Bal SE1 20-Nov-2012 12:00 pm	Bal SW2 20-Nov-2012 12:10 pm	Bal N3 20-Nov-2012 12:30 pm	Bal N4 20-Nov-2012 12:40 pm	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4
Lab Number:	1071754.1	1071754.2	1071754.3	1071754.4	1071754.5

Multiresidue Pesticides in Soil samples by GCMS

Hexaconazole	mg/kg dry wt	-	-	-	< 0.008
Hexazinone	mg/kg dry wt	-	-	-	< 0.004
Hexythiazox	mg/kg dry wt	-	-	-	< 0.04
Imazalil	mg/kg dry wt	-	-	-	< 0.04
Indoxacarb	mg/kg dry wt	-	-	-	< 0.008
Iodofenphos	mg/kg dry wt	-	-	-	< 0.008
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	-	< 0.04
Iprodione	mg/kg dry wt	-	-	-	< 0.008
Isazophos	mg/kg dry wt	-	-	-	< 0.008
Isofenphos	mg/kg dry wt	-	-	-	< 0.004
Kresoxim-methyl	mg/kg dry wt	-	-	-	< 0.004
Leptophos	mg/kg dry wt	-	-	-	< 0.008
Linuron	mg/kg dry wt	-	-	-	< 0.008
Malathion	mg/kg dry wt	-	-	-	< 0.008
Metalaxyl	mg/kg dry wt	-	-	-	< 0.008
Methacrifos	mg/kg dry wt	-	-	-	< 0.008
Methamidophos	mg/kg dry wt	-	-	-	< 0.04
Methidathion	mg/kg dry wt	-	-	-	< 0.008
Methiocarb	mg/kg dry wt	-	-	-	< 0.008
Methoxychlor	mg/kg dry wt	-	-	-	< 0.011
Metolachlor	mg/kg dry wt	-	-	-	< 0.006
Metribuzin	mg/kg dry wt	-	-	-	< 0.008
Mevinphos	mg/kg dry wt	-	-	-	< 0.03
Molinate	mg/kg dry wt	-	-	-	< 0.015
Myclobutanil	mg/kg dry wt	-	-	-	< 0.008
Naled	mg/kg dry wt	-	-	-	< 0.04
Nitrofen	mg/kg dry wt	-	-	-	< 0.015
Nitrothal-isopropyl	mg/kg dry wt	-	-	-	< 0.008
Norflurazon	mg/kg dry wt	-	-	-	< 0.015
Omethoate	mg/kg dry wt	-	-	-	< 0.04
Oxadiazon	mg/kg dry wt	-	-	-	< 0.008
Oxychlorane	mg/kg dry wt	-	-	-	< 0.004
Oxyfluorfen	mg/kg dry wt	-	-	-	< 0.004
Paclobutrazol	mg/kg dry wt	-	-	-	< 0.008
Parathion-ethyl	mg/kg dry wt	-	-	-	< 0.008
Parathion-methyl	mg/kg dry wt	-	-	-	< 0.008
Penconazole	mg/kg dry wt	-	-	-	< 0.008
Pendimethalin	mg/kg dry wt	-	-	-	< 0.008
Permethrin	mg/kg dry wt	-	-	-	< 0.003
Phorate	mg/kg dry wt	-	-	-	< 0.015
Phosmet	mg/kg dry wt	-	-	-	< 0.008
Phosphamidon	mg/kg dry wt	-	-	-	< 0.008
Pirimicarb	mg/kg dry wt	-	-	-	0.012
Pirimiphos-methyl	mg/kg dry wt	-	-	-	< 0.008
Prochloraz	mg/kg dry wt	-	-	-	< 0.04
Procymidone	mg/kg dry wt	-	-	-	< 0.008
Prometryn	mg/kg dry wt	-	-	-	< 0.004
Propachlor	mg/kg dry wt	-	-	-	< 0.008
Propanil	mg/kg dry wt	-	-	-	< 0.03
Propazine	mg/kg dry wt	-	-	-	< 0.004
Propetamphos	mg/kg dry wt	-	-	-	< 0.008
Propham	mg/kg dry wt	-	-	-	< 0.008
Propiconazole	mg/kg dry wt	-	-	-	< 0.006
Prothiofos	mg/kg dry wt	-	-	-	< 0.008

Sample Type: Soil

Sample Name:	Bal SE1 20-Nov-2012 12:00 pm	Bal SW2 20-Nov-2012 12:10 pm	Bal N3 20-Nov-2012 12:30 pm	Bal N4 20-Nov-2012 12:40 pm	Composite of Bal SE1 + Bal SW2 + Bal N3 + Bal N4
Lab Number:	1071754.1	1071754.2	1071754.3	1071754.4	1071754.5

Multiresidue Pesticides in Soil samples by GCMS

Pyrazophos	mg/kg dry wt	-	-	-	< 0.008
Pyrifenox	mg/kg dry wt	-	-	-	< 0.011
Pyrimethanil	mg/kg dry wt	-	-	-	< 0.008
Pyriproxyfen	mg/kg dry wt	-	-	-	< 0.008
Quintozene	mg/kg dry wt	-	-	-	< 0.015
Quizalofop-ethyl	mg/kg dry wt	-	-	-	< 0.008
Simazine	mg/kg dry wt	-	-	-	< 0.008
Simetryn	mg/kg dry wt	-	-	-	< 0.008
Sulfentrazone	mg/kg dry wt	-	-	-	< 0.04
Sulfotep	mg/kg dry wt	-	-	-	< 0.008
TCMTB [2-(thiocyanomethylthio) benzothiazole, Busan]	mg/kg dry wt	-	-	-	< 0.015
Tebuconazole	mg/kg dry wt	-	-	-	< 0.008
Tebufenpyrad	mg/kg dry wt	-	-	-	< 0.004
Terbacil	mg/kg dry wt	-	-	-	< 0.008
Terbufos	mg/kg dry wt	-	-	-	< 0.008
Terbumeton	mg/kg dry wt	-	-	-	< 0.008
Terbuthylazine	mg/kg dry wt	-	-	-	< 0.004
Terbuthylazine-desethyl	mg/kg dry wt	-	-	-	< 0.008
Terbutryn	mg/kg dry wt	-	-	-	< 0.008
Tetrachlorvinphos	mg/kg dry wt	-	-	-	< 0.008
Thiabendazole	mg/kg dry wt	-	-	-	< 0.04
Thiobencarb	mg/kg dry wt	-	-	-	< 0.008
Thiometon	mg/kg dry wt	-	-	-	< 0.015
Tolylfluanid	mg/kg dry wt	-	-	-	< 0.004
Triadimefon	mg/kg dry wt	-	-	-	< 0.008
Triazophos	mg/kg dry wt	-	-	-	< 0.008
Trifluralin	mg/kg dry wt	-	-	-	< 0.008
Vinclozolin	mg/kg dry wt	-	-	-	< 0.008

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Samples
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-5
Heavy metals, screen As, Cd, Cr, Cu, Ni, Pb, Zn, Hg	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	5
Acid Herbicides Screen in Soil by LCMSMS*	Solvent extraction with sonication, dilution, analysis by LCMSMS with online SPE. Tested on dried sample	-	5
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GPC cleanup, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	-	5
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry), gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	5
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-5
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	1-4
Total Recoverable Arsenic	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2.	2 mg/kg dry wt	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This report must not be reproduced, except in full, without the written consent of the signatory.

A handwritten signature in blue ink, appearing to read 'Peter Robinson', with a long horizontal flourish extending to the right.

Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental Division

8 May 2017

Paterson Pitts Partners Limited
PO Box 5933
Moray Place
Dunedin 9058

Attention: Andrew Robinson

Dear Andrew,

HAIL-2017-30 – 94 Holyhead Street, Outram

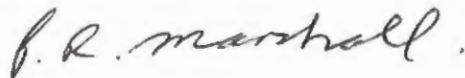
Please find enclosed the results of the Hazardous Activities and Industries List (HAIL) Property Search lodged on 18 April 2017. This HAIL property search details the information which is documented on the Council records for the site at 94 Holyhead Street, Outram. Please note the attached documentation only includes information that is available on the Council's records and the Council does not necessarily hold comprehensive records of the historic land use of this site.

Aerial photography indicates the site has been used for market gardening. As a result the land is considered to be a potential HAIL site as follows:

A 10 Persistent pesticide – market gardens.

It is recommended that further investigation of the historic land use be undertaken through other means including consulting with any former land owners and checking with the Otago Regional Council. This information does not constitute a Preliminary Site Investigation in terms of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Yours sincerely



Phil Marshall
Senior Planner

Phil Marshall

From: Chris Scott
Sent: Wednesday, 19 April 2017 11:56 a.m.
To: Phil Marshall
Subject: RE: HAIL-2017-30, 94 Holyhead Street Outram, HAIL application lodged
Attachments: 94 Holyhead 1970.jpg; 94 Holyhead 1974.jpg; 94 Holyhead 1991.jpg; 94 Holyhead 2000.jpg

Hi Phil,

I have examined the available archival evidence relating to this address, and can find no direct evidence of HAIL activity at the site. The aerial photos suggest that the address has been market gardens for an extended period; this may date back at least as far as the 1920s, but the records are not entirely clear.

The available aerial photos are attached; if you require anything further, please let me know.

Regards,

Chris Scott
Archivist, Digital Services
Business Information Services
Dunedin City Council
50 The Octagon, Dunedin; PO Box 5045, Moray Place, Dunedin 9058, New Zealand
Telephone: 03 477 4000; Fax: 03 474 3694
Email: <mailto:chris.scott@dcc.govt.nz>; <http://www.dunedin.govt.nz>

Visit DCC Archives photo collection at www.flickr.com/photos/dccarchives P Please consider the environment before printing this e-mail

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

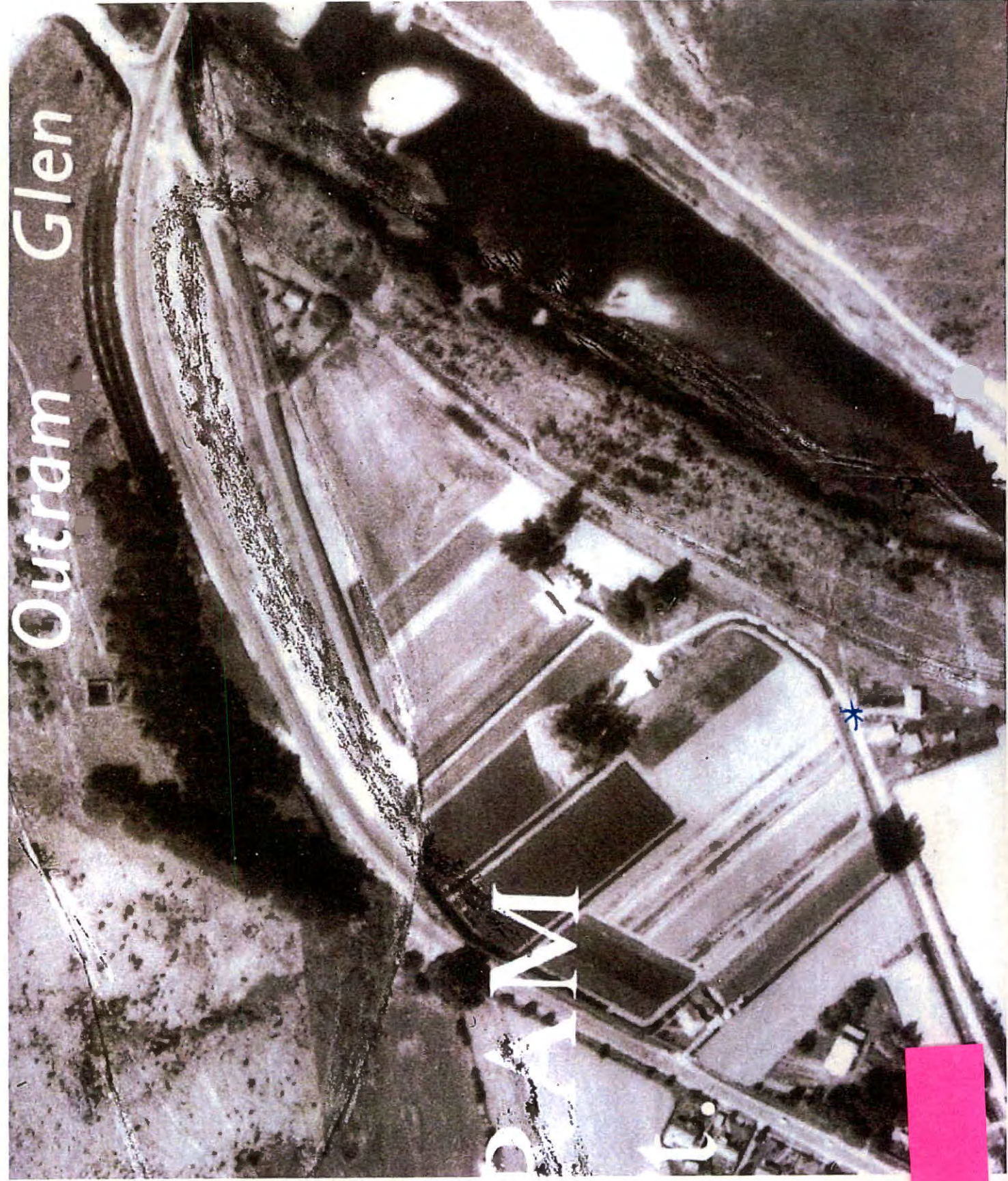
From: Laura Mulder [<mailto:lcmulder@dcc.govt.nz>]
Sent: Wednesday, 19 April 2017 9:40 a.m.
To: Digital Services - Archives
Subject: HAIL-2017-30, 94 Holyhead Street Outram, HAIL application lodged

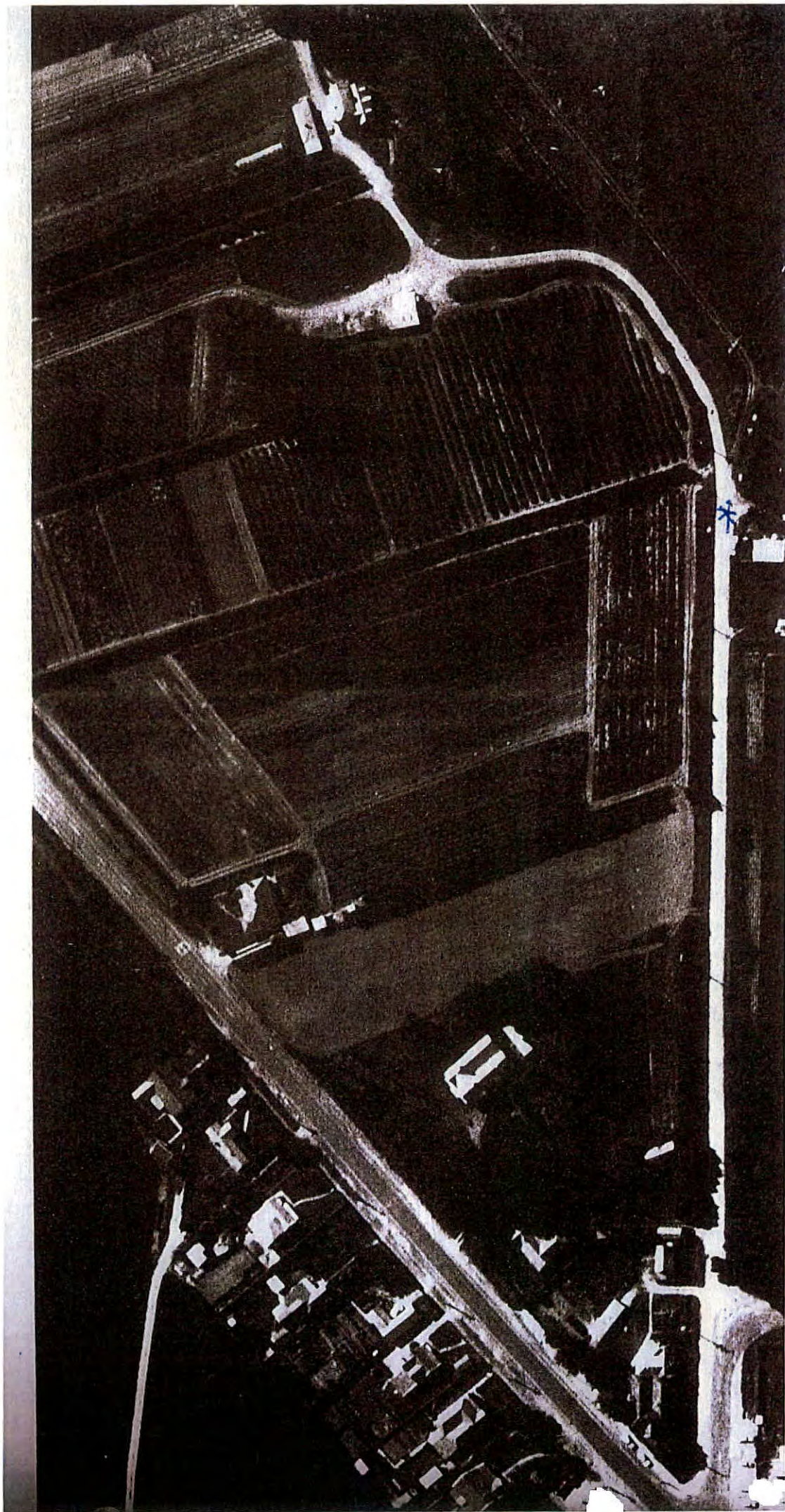
Please do the archival search

Additional Info:

Attachment links to HAIL-2017-30, 94 Holyhead Street Outram

DATE
1970.



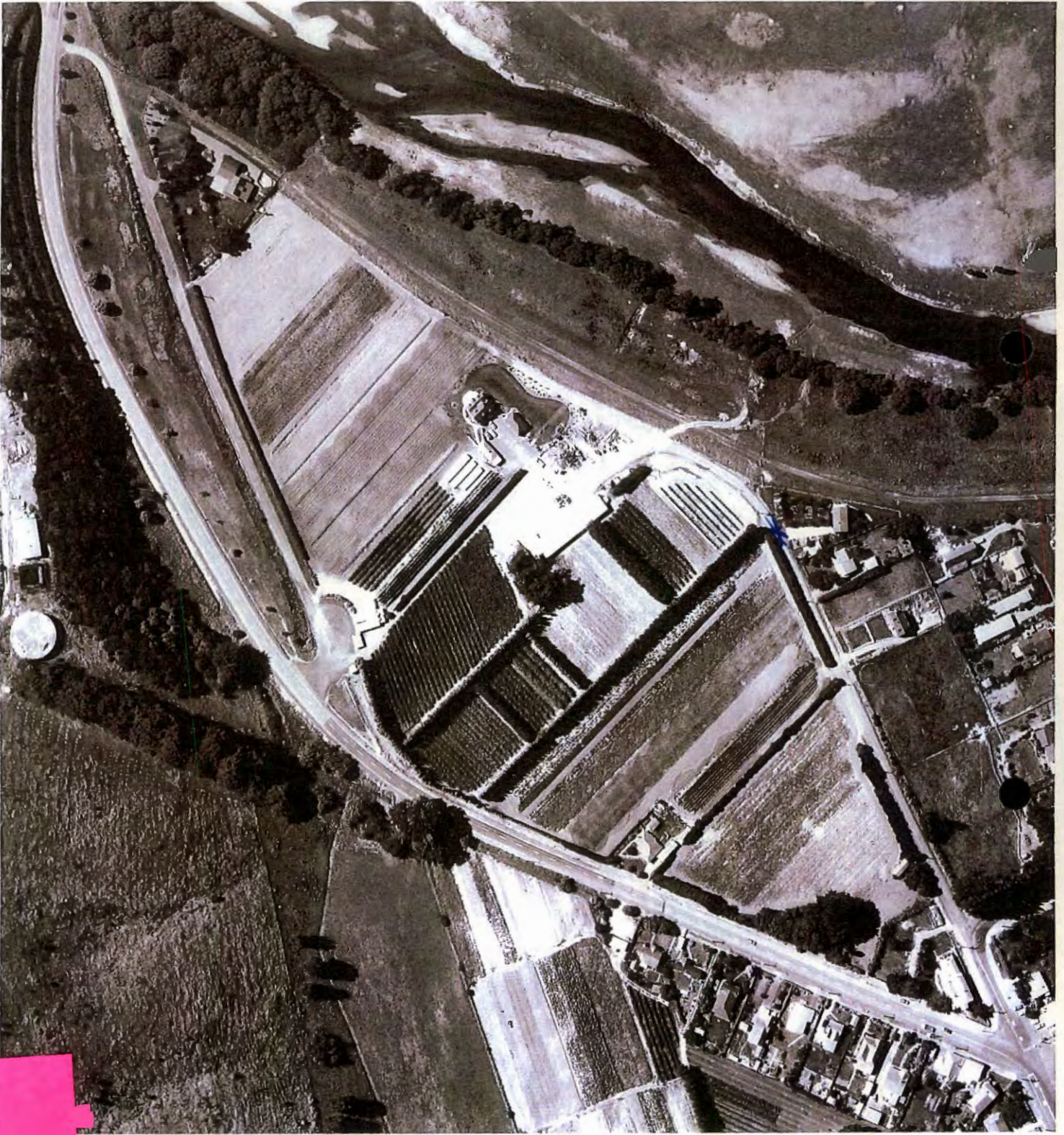


DATE 1974.



DATE
1991.

← 2



DATE
2000.

← 2 →







26 April 2017

Dear Andrew,

Thank you for your enquiry regarding information that the Otago Regional Council may hold regarding potential soil contamination at the properties indicated below:

Address	Legal Description or Valuation Number
94 Holyhead Street, Outram	Lot 2 DP 20759

The Otago Regional Council maintains a database of properties where information is held regarding current or past land-uses that have the potential to contaminated land. Land-uses that have the potential to contaminate land are outlined in the [Ministry for the Environment's Hazardous Activities and Industries List \(HAIL\)](#).

Where investigation has been completed, results have been compared to relevant soil guideline values. The database is continually under development, and should not be regarded as a complete record of all properties in Otago. The absence of available information does not necessarily mean that the property is uncontaminated; rather no information exists on the database. You may also wish to examine the property file at the relevant City or District Council to check if there is any evidence that activities occurring on the HAIL have taken place.

I can confirm that:

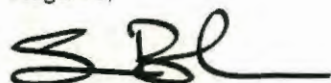
The above land does not currently appear on the database.

If your enquiry relates to a rural property, please note that many current and past activities undertaken on farms may not be listed on the database, as they can be more difficult to identify. Activities such as use, storage, formulation, and disposal of pesticides, offal pits, landfills, animal dips, and fuel tanks have the potential to contaminated land.

Similarly, the long-term use of lead-based paints on buildings can, in some cases, cases cause soil contamination. The use of lead-based paint is generally not recorded on the database.

Please feel free to contact me if you have any other enquires, or you would like to discuss the matter further.

Regards,



Simon Beardmore
Senior Environmental Officer

The enclosed/attached information is derived from the Otago Regional contaminated land register and is being disclosed to you pursuant to the Local Government Official Information and Meetings Act 1987. This information reflects the Otago Regional Council's current understanding of this site, which is based solely on the information obtained by the Council and held on record. It is disclosed only as a copy of those records and is not intended to provide a full, complete or entirely accurate assessment of the site. Accordingly, the Otago Regional Council is not in a position to warrant that the information is complete or without error and accepts no liability for any inaccuracy in, or omission from, this information. Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.



DUNEDIN CITY

COUNCIL

Kaunihera-a-rohe o Otepoti

50 The Octagon, PO Box 5045, Moray Place
Dunedin 9058, New Zealand
Telephone: 03 477 4000, Fax: 03 474 3488
Email: dcc@dcc.govt.nz
www.dunedin.govt.nz

22 May 2017

Balmoral Developments (Outram) Ltd
C/- Kurt Bowen
Paterson Pitts Group Ltd
PO Box 5933
Dunedin 9058

Dear Kurt

RESOURCE CONSENT APPLICATION: SUBDIVISION: SUB-2017-32
LAND USE: LUC-2017-182
94 HOLYHEAD STREET
OUTRAM

Your application for the staged subdivision (including earthworks) of the land at 95 Holyhead Street, Outram, into 26 residential lots, road, utility reserve and balance land, and for the subdivision of a site subject to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES), was processed on a non-notified basis in accordance with sections 95A to 95G of the Resource Management Act 1991. Your application for land use consent for a dwelling on a mixed-zoned site (Lot 100), and for the change in use and soil disturbance of a site subject to the NES was also processed in accordance with sections 95A to 95G of the Act.

In considering sections 95A to 95G, it was determined that the effects were no more than minor, there were no potentially affected parties to the application, and there were no special circumstances in relation to the proposal. Therefore, public notification was not required. A Senior Planner considered the application under delegated authority on 22 May 2017.

I advise that the Council has **granted** consent to the applications with conditions. The decision and conditions are shown in the attached certificate.

BACKGROUND TO APPLICATION

The subject site is a rural property, formerly used for market gardening, at 94 Holyhead Street, Outram. It is an irregular shaped property with State Highway 87 and its road reserve along its northwest and northern boundaries, the Taieri River floodbank along its south-eastern boundary, and Holyhead Street on its southern edge. State Highway 87 becomes Mountfort Street as it enters Outram. The site abuts several residential properties on its western boundary. There is an existing dwelling on-site with access to the end of the formed section of Holyhead Street. Alternative access is also available to State Highway 87 via an existing intersection which serves an unnamed road (within State highway road reserve) running along the northern edge of the subject site. The subject site is legally described as Lot 2 Deposited Plan 20759, held in Computer Freehold Register OT12B/346, and has an area of 6.3518ha.

The site was subject to a private plan change, PC-2012-14, to rezone the land from Rural to Residential 6. The Hearings Committee declined the plan change application on 13 June 2013. The applicant then appealed the decision. A consent order, ENV-2013-CHC-84, was subsequently issued on 21 January 2015 which rezoned approximately half the subject

property as Residential 6. The balance land at the north-eastern end of the site remains zoned Rural. The site is now subject to a Structure Plan, Appendix 8.7 in the District Plan, which provides for 26 residential lots, new road, and a detention pond area. The Structure Plan was sufficiently detailed enough for the lots to be numbered and their areas defined, and the associated rules of Appendix 8.7 determined the access routes for the various lots.

DESCRIPTION OF ACTIVITY

The applicant has now submitted a subdivision proposal for the subject site based on the Structure Plan of 8.7. The proposed subdivision will create 25 new residential lots ranging in size from 1005m² to 1490m². The existing dwelling will be established on a new lot of 2980m², making it the 26th residential property. The remaining land will become road, reserve and a balance lot, Lot 27, which is zoned Rural and will have an area of 2.17ha.

The subdivision layout is not entirely in accordance with the Structure Plan. Differences are as follows:

- The access to Lot 26 has been changed to align with the existing driveway.
- Lot 13 is now situated on the southeast side of the drive. It will be subject to the building restriction along the floodbank.
- Access to Lots 12 and 13 will be via right of way over the access to Lot 26.
- The layout of Lots 9 to 16 is now different.
- The size and shape of the reserve lot has now changed. It will increase in size from 4520m² to 4570m² and its shape is less elongate.
- Lot 28, being a Rural-zoned lot defined to accommodate an effluent disposal field associated with the residential lots, has been removed from the proposal. Effluent disposal will be by means of individual on-site facilities for the residential lots.

In addition, the following change has been promoted during the processing of this consent to address NZ Transport Agency concerns about visibility along State Highway 87. An additional lot not shown on the application plan is to be created from the front portions of proposed Lots 4 and 5. This land, Lot 32, is to vest with the NZ Transport Agency as road.

The subdivision will be given effect to in stages. Stage 1 will create Lots 1 to 8, 17, 18, 24, 25, Access Lot 30, the additional Lot 32, and balance land Lot 100. Lot 100 will be a mixed zoned site containing the existing house. Access Lot 30 will provide access to Lots 1 to 8, 24 and 25 onto Mountfort Street (State Highway 87) via the existing intersection. The access lot will be owned in quarter shares by Lots 4 to 7, with Lots 8, 24 and 25 being given rights of way.

Stage 2 will be the subdivision of Lot 100 into Lot 9 to 16, 19 to 23, 26, 27 (balance land), 29 (road to vest) and 31 (reserve). The existing house will be contained within Lot 26, and will have a leg-in over its existing driveway to the end of Holyhead Street. Lots 12 and 13 will obtain access over this existing driveway via rights of way. The new road will be a cul-de-sac from Holyhead Street, and will provide access to Lots 8 to 11, 14 to 17, and 19 to 25. The rights of way over Access Lot 30 enjoyed by Lots 8, 24 and 25 will be cancelled at Stage 2, therefore requiring these three lots to obtain access via the new cul-de-sac.

There is no Lot 28 in the proposal.

Lot 31 will vest with the Council as public infrastructure reserve to serve as a stormwater detention pond.

The plan shows a 20m wide building restriction area along the edge of the Taieri River floodbank. Excavations within this area require consent from the Otago Regional Council; as such, the subdivision has been designed so that the development of the new lots will not require excavation within this area.

Land use consent will be required for the existing dwelling at Stage 1 on new mixed-zoned Lot 100. There is no land use proposal for Lot 27, which is the Rural-zoned balance land at Stage 2.

Water supply for the new lots is to be provided by new infrastructure connecting to the public reticulated supply in Mountfort Street and/or Holyhead Street. Foul drainage for the new lots is to be achieved through the installation of the Hynds Lifestyle aerated wastewater system on each lot. A copy of the specifications is attached to the application.

Stormwater will discharge from the various lots either to the Mountfort Street open channel or to the stormwater detention pond. Those lots discharging to the Mountfort Street channel are to be fitted with individual on-site retention facilities to keep post-development flows the same as pre-development flows. The detention pond will pump either directly to the Taieri River, or to the open drain in Mountfort Street.

The applicant has applied for earthworks consent. The proposal involves 4400m³ of topsoil removal from an area of 11000m² and at an average depth of 400mm. The topsoil is to be stripped from the road and accesses, the detention pond area, and the fill areas on Lots 12 to 18. Approximately half the topsoil will be reinstated on-site once re-levelling has been completed. The remaining topsoil will be removed from the site to an approved location yet to be determined.

6600m³ of cut to fill will also take place in order to excavate the pond area and re-level the greater site. This will also be over an area of 11000m², and to an average depth of 600mm. The greatest extent of cut to fill earthworks will be 3.0m depth at the northern end of the detention pond. All batter grades will be constructed to 2H:1V or flatter. The cut and fill volumes will balance so that there is no removal of material off-site or new material being brought in. Clay material will only be removed from the site if it is determined to be unsuitable for use or where there is a surplus of material after all filling is completed. All fill within the new vacant sites is to be certificated by a suitably qualified person.

4800m³ of the earthworks will be associated with the detention pond to increase its capacity. The storage capacity of the pond is calculated at 4000m³ or more. Excavations within the pond area will range from 0.75m to 3.0m change in ground level.

REASONS FOR APPLICATION

Dunedin currently has two district plans: The Dunedin City District Plan and the Proposed Section Generation Dunedin City District Plan (the Proposed Plan). The Proposed Plan was notified on 26 September 2015 and is currently proceeding through the public process of becoming the operative plan. Until the rules of the Proposed Plan become operative, the current District Plan remains the operative plan. Where the rules of the Proposed Plan have been given effect, the provisions of both plans need to be considered.

Section 88A of the Resource Management Act 1991 states that the activity status of an application is determined at the time of lodging the consent. The activity status could, therefore, be determined by the current District Plan or the Proposed Plan, depending on which rules are operative at the time. Nevertheless, even if it is the current District Plan which determines the activity status of the application, the rules of a proposed plan must be considered during the assessment of the application pursuant to section 104(1)(b) of the Act.

The relevant rules of the two district plans for this application are as follows:

The Dunedin City District Plan.

The subject site is zoned **Residential 5** and **Rural**. The existing house on-site is listed in Schedule 25.1 as **B651**. Much of the site is within the **Groundwater Protection Zone A**. The northwest and northern boundaries of the site abut Mountfort Road which becomes Outram-Mosgiel Road and is designated **D464 - State Highway SH 87**. The site is subject of **Structure Plan - Appendix 8.7**. The general area is shown on the Hazards Register as being subject to **11407 - Seismic (liquefaction)** and **11582 - Flood (overland flow path)** and the southern portion of the site is within **10111 - Seismic (intensified shaking)**.

Subdivision

Rule 18.5.1(iii) lists subdivision in the Residential zones as a restricted discretionary activity where the application complies with Rules 18.5.3 to 18.5.6, and 18.5.9 to 18.5.12, and each site complies with minimum area and frontage requirements of the relevant zone, or a multi-unit residential activity complies with the requirements of permitted activities within the original site including overall density. Rule 18.5.12 requires subdivision to comply with any relevant structure plan. The proposed subdivision is not fully compliant with Appendix 8.7.

Rule 18.5.1(i) lists subdivision as a restricted discretionary activity in the Rural zone where the application complies with Rules 18.5.3 – 18.5.6, 18.5.9 and 18.5.10, and each resulting site is at least 15.0ha. Lot 100 at Stage 1, and Lot 27 at Stage 2, will have less than 15.0ha.

For the above reasons, the proposed subdivision is considered to be a **non-complying** subdivision pursuant to Rule 18.5.2.

Land Use

Rule 8.11.1(i) lists residential activity at a density of not less than 1000m² of site area per residential unit as being a permitted activity for the Residential 5 zone (with only one residential unit permitted per site in the Holyhead Street Structure Plan area) subject to compliance with the performance criteria. The future residential activity of Lots 1 to 25, and the existing residential unit of Lot 26, is considered to be a permitted activity.

There is no proposal for residential development of the Rural-zoned balance land, but Rule 6.5.2(iii) lists residential activity as being a permitted activity in the Rural zone provided that the minimum area of the site is not less than 15.0ha. At Stage 1, the existing residential activity of Lot 100 will be on a mixed zoned site having less than 15.0ha of Rural-zoned land. Accordingly, the residential activity of Lot 100 is considered to be a **non-complying** activity pursuant to Rule 6.5.7(i).

Table 17.4 exempts earthworks involved with subdivision from obtaining separate consent provided that detailed engineering plans for these earthworks have been expressly approved by the Council as part of the subdivision consent process. The earthworks to form the road, pond and re-level some lots are therefore exempt from obtaining separate land use consent. It is noted that the subdivision earthworks will exceed the scale thresholds of Rule 17.7.3(ii) and 17.7.4(iii).

The Proposed Plan

The site is zoned **Township and Settlement** and **Rural – Taieri Plains**. It has **high class soils**. It is **Hazard 2 – Flood**. There is **No DCC Reticulated Wastewater** for the Town and Settlement zone. Part of the site is **Groundwater Protection A – Lower Taieri Aquifer**.

Subdivision Activity:

Rule 15.3.5.2 lists general subdivision in the residential zones as being a restricted discretionary activity subject to compliance with the performance criteria. Rule 15.7.4.1(i) sets the minimum site size for the Township and Settlement zone (no DCC reticulated wastewater mapped area) as being 1000m². The subdivision will meet this requirement but will not meet Rule 15.7.7.1(d) which requires the subdivision to be in accordance with the Structure Plan. The subdivision is considered to be a non-complying activity pursuant to Rule 15.7.7.2. This rule is not in effect.

Rule 16.3.5.1 lists general subdivision in the Rural zones as being a restricted discretionary activity subject to compliance with the performance standards. Rule 16.7.4 is in effect and sets the minimum site size for the Rural – Taieri Plains zone as 40.0ha. The mixed zoned site, Lot 100, at Stage 1 and the balance land, Lot 27, at Stage 2 will have less than 40.0ha of Rural-zoned land. Accordingly, the proposed subdivision is considered to be a **non-complying** activity pursuant to Rule 16.7.4.3.

Under the Proposed Plan, activities have both a land use activity and a development activity component.

Land Use Activity:

Rule 15.3.3.3 lists residential activity as a permitted activity in the residential zones subject to the performance criteria. On the basis of information available, the future and existing residential activity of Lots 1 to 26 is considered to be a permitted activity.

Rule 16.3.3.23 lists residential activity as a permitted activity in the rural zones subject to the performance criteria. Rule 16.5.2.1(g) requires at least 25ha within a site in order to establish the first residential dwelling. Proposed Lot 100 at Stage 1 will have less than 25.0ha of Rural-zoned land, and the existing residential activity is considered to be a non-complying activity pursuant to Rule 16.5.2.3. This rule is not in effect or operative.

Development Activity:

There is no new development proposed for the new lots in either the Township and Settlement zone or the Rural-Taieri Plains zone as part of this consent, although the future development of Lots 1 to 25 is anticipated at a later date. On the basis of the known information, the future residential activities of the new lots are considered to be a permitted activity.

Rule 15.3.4.29 lists earthworks in the residential zones as being a permitted activity subject to the performance standards. The proposed earthworks will fail to comply with the following:

- Rule 15.6.2.1(a)(i) specifies a maximum change in ground level of 1.5m for residential zones. The proposal is for up to 3.0m cut in the pond area, therefore breaching this rule by 1.5m.

The earthworks are considered to be Earthworks – large scale, and are a restricted discretionary activity pursuant to Rule 15.6.2.1(f).

Overall Proposed Plan Status:

Having regard to both the land use and development activity components under the Proposed Plan, the land use proposal is considered to be a non-complying activity.

Summary

The application was lodged on 24 April 2017, after the close of submissions on the Proposed Plan. The zone rules are subject to submissions and could change as a result of the subdivision process. However, Rule 16.7.4 (regarding minimum site size for Rural-zoned land) is in effect. Accordingly, the Proposed Plan rules are not relevant to the activity status of the application as determined at the time of lodgement except for the rule regarding minimum lot size of a Rural-zoned property.

The activity status of the proposed subdivision is therefore determined by the Dunedin City District Plan and the Proposed Plan, and is considered to be a **non-complying** activity. The land use proposal is also determined by the Dunedin City District Plan, and is considered to be a **non-complying** activity.

At the time of issuing this subdivision decision, the Proposed Plan rule regarding minimum site size for Rural sites has been given effect, and is applicable to this application, but is subject to submissions. All other relevant rules are not in effect and are also subject to submissions. The rules could change as a consequence of the submission process. Accordingly, the Council need not have regard to the rule provisions of the Proposed Plan as part of the assessment of this subdivision application except for the minimum site size rule which needs to be weighted accordingly.

NES Soil Contamination Considerations:

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 came into effect on 1 January 2012. The National Environmental Standard applies to any piece of land on which an activity or industry described in the current edition of the Hazardous Activities and Industries List (HAIL) is being undertaken, has been undertaken or is more likely than not to have been undertaken. Activities on HAIL sites may need to comply with permitted activity conditions specified in the National Environmental Standard and/or might require resource consent.

The applicant has submitted a preliminary site investigation report (PSI) dated 24 January 2013, prepared by Spiire. While the subject site has a history of market gardening, Spiire does not consider that the market gardening involved persistent pesticide bulk storage or use of pesticides on the site. The Spiire report states:

'It is the view of Spiire that it is uncertain if there is a "piece of land" in the terminology of the NES. It is highly likely that market gardening has taken place over most of the site, however, the actual HAIL activity of persistent pesticide storage and use is unlikely.'

The Spiire report concludes:

'... based on the information provided with this document that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land.'

The Otago Regional Council has considered the HAIL status of the subject site in a report dated 5 May 2017. The Otago Regional Council believed that, based on the site's extensive history of market gardening over a period of 60 years, that the use and storage of persistent pesticides has occurred on-site. The Otago Regional Council did not consider that the limited amount of sampling undertaken by Spiire was fully representative of the disposition of all soils on the site, and as such, the property was considered to be a HAIL site.

Council's Consulting Engineer, MWH, has also considered the Spiire and Otago Regional Council's reports. The Consulting Engineer comments in an email dated 19 May 2017:

*I agree with Spiire's conclusion that, "the site has been investigated as a potential HAIL site, with negative findings as to same." However I also note that Spiire has been less certain over whether or not the NES should apply given that, in their view, "the actual HAIL activity of persistent pesticide storage and use is **unlikely**". [emphasis added by MWH]*

As such, the Consulting Engineer considered that the Dunedin City Council needed to issue consent under the NES for the subdivision of the land. Given that a Detailed Site Investigation report for the site does not exist, the consent will be a **discretionary** activity pursuant to Regulation 11 of the NES.

PLANNING ASSESSMENT

Affected Persons

No affected party approvals have been submitted with the application. No persons are considered to be adversely affected by this proposal for the reasons given below in the section on the Effects on the Environment.

Effects on the Environment

The following assessment of effects on the environment has been carried out in accordance with section 104(1) of the Resource Management Act 1991. It addresses those assessment matters listed in sections 6.7, 8.13 and 18.6 of the District Plan and Rule 16.7.4 of the Proposed Plan considered relevant to the proposed activity, and is carried out on the basis that the subject site is situated on the urban fringe of Outram. The site has frontage to State Highway 87. The Taieri River and its floodbank are located a short distance to the southeast

of the subject site. There is residential development to the southwest, and farmland to the west and on the opposite side of the river. The land to the north rises steeply on the far side of State Highway 87, and is a vegetated bank with the Taieri Historical Park at the top.

Any actual or potential effects on the environment of allowing this proposal to proceed will be no more than minor for the following reasons:

1. Lot Size and Dimensions (18.6.1(q)) and Physical Limitations (18.6.1(k))

The proposal involves the two-stage subdivision of a mixed-zoned site. The subdivision layout was previously assessed at the time of the Environment Court mediation for the private Plan Change, and has now specified by the Structure Plan Appendix 8.7 in the District Plan. The proposed subdivision is considered to maintain the intent of the Structure Plan, which is to create 26 Residential 5-zoned lots and a balance area of Rural land, but has a number of differences as discussed below.

Stage 1 of the subdivision will create Lots 1 to 7, 8, 17, 18, 24 and 25. These lots will all be residential lots ranging in size between 1005m² and 1310m². The balance land will become Lot 100, which will contain the existing dwelling and have mixed zoning. No area is given for this lot but it will be approximately 4.8ha.

Lots 1 to 7 are shown as having frontage to Mountfort Street (State Highway 87) with Lots 1 to 3 each having their own access onto this road. Lots 17 and 18 will be accessed directly from Holyhead Street (with Lot 17, being a corner site, also having the option of using the proposed road at Stage 2).

Lots 4 to 8, 24 and 25 will share access to State Highway 1 via Access Lot 30. The access lot does not intersect directly with the State highway, but will join an unnamed road within the State highway road reserve which has a substantial intersection with the State highway itself. The Structure Plan specifies that Lots 1 to 4 are to have direct access, so the access to Lot 4 is not entirely in accordance with the Structure Plan. As the NZ Transport Agency seeks to have as few driveways onto State highway as possible, the inclusion of Lot 4 with the users of the access lot is considered to be acceptable.

Given concerns about the visibility along the State highway, the applicant has agreed to a triangle of land currently part of proposed Lots 4 and 5 being vested as road with the NZ Transport Agency. To this end, there will be a requirement to create Lot 32 as road to vest. Lot 32 will be a triangle created by introducing a boundary between the southern front corner of Lot 4 and the north-eastern front corner of Lot 5. Although this is not in accordance with the Structure Plan, it is not considered to introduce any adverse consequences to the new lots or the State highway.

Stage 2 will create Lots 9 to 16, 19 to 23, 26 (containing the existing house), 27 (balance land), 29 (road) and 31 (public infrastructure reserve) from the subdivision of Lot 100. The vacant residential lots will range in size between 1010m² and 1490m². While the number of lots and the general layout is in accordance with the Structure Plan, there are several changes based mainly around the alignment of the existing driveway to the house of proposed Lot 26.

The applicant seeks to keep the existing driveway for use by the house, and the subdivision proposal gives Lot 26 a leg-in over this feature. As this existing driveway is in a different position to the driveway promoted by the Structure Plan, there is a flow-on effect where the residential lots and detention pond area change shape. Proposed Lots 12 and 13 will now be accessed via the existing driveway (using rights of way), and the reserve lot, Lot 31, will be a different shape. The changes are considered to be of limited consequence, although approximately half of Lot 13 will now fall within a 20m building restriction area relating to the Taieri River floodbank. This will limit its development options, but not to the point where the site cannot be built on.

Lot 29 will be a cul-de-sac into the new subdivision, coming off Holyhead Street. This will provide access to most of the new residential lots except those Stage 1 lots which have alternative access, and Lots 12, 13 and 26 as discussed above.

At Stage 2, Lots 8, 24 and 25 of Stage 1, which will be obtaining access to State Highway 87 via Access Lot 30, will have their rights of way over Lot 30 revoked, and will instead have to use the new cul-de-sac. This is an unusual feature of the subdivision proposal which is not without its complications given that Lots 8, 24 and 25 are likely to be in different ownership to the applicant at the time of Stage 2, and could already be developed. The access lot and proposed cul-de-sac are situated on opposite sides of the three properties, meaning that any house built on these three lots prior to Stage 2 must have garaging that can be accessed from the northwest or the southeast. There is also the question of where the costs lie for the rerouting of access within the three properties when the original route over Access Lot 30 is cancelled. This will be a private matter between the subdivider and the property owners, to be sorted at the time of purchase. The requirement to change the access route will be placed on the titles of Lots 8, 24 and 25 at Stage 1, so all parties should be aware of the situation when buying and/or developing the lots.

Lot 27 will be an undersized Rural-zoned site with no existing or proposed development. Although it is a new undersized lot, it is considered to be acceptable as it contains all the Rural-zoned land within one site and its creation has been pre-determined by the Structure Plan. Access will be to the unnamed road within the State highway road reserve. There is no minimum site size requirement for farming, and the existing use of the land can continue as a permitted activity on the new site of 2.17ha.

The new residential lots are all over minimum site size for the Residential 5 zone, and will have adequate legal and physical access. There are no known geotechnical issues affecting this land which will compromise the building potential of these lots. Lot 26 is already developed with a historic homestead. There is no expectation that the proposed subdivision will create any site having physical limitations rendering it unsuitable for future use.

2. Easements (18.6.1(i))

There are no easements registered on the title of the subject site.

New easements proposed as part of this subdivision at Stage 1 are confined to rights of way over Access Lot 30 in favour of Lots 8, 24 and 25. Lots 4 to 7 can also have rights of way over Access Lot 30 although, as these four lots will each have a quarter-share ownership in the access lot, the right of way easements (should they be created) are not necessary for access but might be for other reasons at the subdivider's discretion.

The rights of way over Access Lot 30 in favour of Lots 8, 24 and 25 are to be cancelled at Stage 2 so that these lots will be accessed via the new road. A new right of way over Lot 9 in favour of Lot 8 will be created in order to provide the necessary connection with the cul-de-sac as Lot 8 will not have direct frontage to the new road.

New rights of way will also be created at Stage 2 over the leg-in to Lot 26 in favour of Lots 12 and 13. This differs from the Structure Plan as Lots 12 and 13 were to be served for access via the proposed road. Instead, these lots will not utilise the new road at all. This is acceptable as the lots will still have adequate legal and physical access.

No service easements are shown on the application plan. These can be created as necessary at the time of subdivision to ensure that all lots have legal access to services.

3. Infrastructure (18.6.2(d), (e), (i), (j), (n), (o), and (p))

The Consents and Compliance Officer, Water and Waste Services Business Unit, has considered the application. A review of the Council's GIS records shows:

- A 50mm and 200mm diameter water pipe and 375mm diameter stormwater pipe in Mountfort Street.
- A 125mm and 25mm diameter water pipe in Holyhead Street.

Water Services

The applicant proposes obtaining water supply via the extension of the pipe on Mountfort Street and/or Holyhead Street, and vesting the new pipe with Council. Engineering plans of the new infrastructure will be required. The Water and Waste Services Business Unit advises that Council will **not** accept ownership of water infrastructure located within private roads or rights of way.

There is currently a 40mm diameter metered water supply to the existing dwelling on proposed Lot 26.

It is required that each lot be serviced from an individual Point of Supply as defined by the Dunedin City Council Water Bylaw 2011. This development requires a new water service for proposed Lots 1 through to 25 which will be approved through the "Application for Water Supply" process; this is a condition of consent. All new water service connections to the proposed development must be in accordance with the requirements of Section 6.6.2 of the Dunedin Code of Subdivision and Development 2010.

Fire-fighting Requirements

All aspects relating to the availability of water for fire-fighting should be in accordance with SNZ PAS 4509:2008, being the Fire Service Code of Practice for Fire Fighting Water Supplies. There are fire hydrants on Holyhead and Mountfort Streets. Hydrants will need to be considered when water infrastructure extensions are being designed. Based on SNZ PAS 4509:2008 a W3 (25l/s) zone requires a Fire Hydrant within 135 m and a second within 270 m.

Wastewater Services

There are no Council-owned reticulated wastewater services in this area available for connection. The applicant proposes the installation of Hynds Lifestyle aerated wastewater systems and effluent disposal areas for each residential lot. Any onsite effluent disposal shall be to a wastewater treatment and effluent disposal system which is to be designed by an approved wastewater treatment and effluent disposal system designer.

Stormwater Services

The applicant has proposed upsizing the existing stormwater detention pond (Lot 31) to 4000m³ and vesting it with the Council as reserve.

- Stormwater drainage from the north-west catchment will enter an existing open channel at the side of Mountfort St and then on to the detention pond.
- Stormwater drainage from north-east sites will be achieved via onsite retention to control flow rate into the channel.
- Stormwater drainage from south-east lots will be achieved by draining directly to the pond.
- The detention pond will discharge into the Taieri River at a rate of 15litres/second (this will require Otago Regional Council approval).

A Storm Water Management Plan (SWMP) is required by the Water and Waste Services Business Unit, to clearly detail the proposed stormwater system/s.

The SWMP must ensure proposed development will not exacerbate any current capacity or surcharge issues within the area. The SWMP is to include:

- Storm water calculations which state the difference between the pre-development flows and post-development flows and how to manage any difference in flow;
- Clear details of the stormwater management systems proposed for the development to accommodate for any runoff;
- Clear details of impervious surfaces;
- Design drawings;
- Plans indicating secondary overland flow paths;
- Details of ownership and management arrangements;
- Evidence that the system will meet the requirements of NZS4404:2010 and the Dunedin Code of Subdivision and Development 2010.

The SWMP must be submitted and accepted by the Asset Planning Engineer, Water and Waste Services prior to any construction commencing.

Private Drainage

New Lots 1 to 25 will each require a septic tank for wastewater drainage, designed by an approved septic tank and effluent disposal designer. Consent will be required from the Otago Regional Council due to these properties being located within the groundwater protection zone. Stormwater is to discharge to the street kerb and channel or roadside drainage channels. If these are not available, then soak pits may be used for each new lot.

Lot 26 has an existing dwelling.

Stormwater from access Lot 30 and Lot 29 (road to vest) is to discharge to the proposed stormwater pipe.

Lot 27 will not be used for residential purposes as part of this consent.

Easements

All rights are reserved for any necessary easements required by this subdivision.

Easements in gross are required for any new pipes to be vested in Council which are located within private property.

Service easements are required where private water supply and wastewater or stormwater pipes cross property boundaries in favour of the lot they service.

Conclusion

The Water and Waste Services Business Unit has no issues with the proposal, subject to conditions consistent with the above matters.

The Otago Regional Council has also considered the proposal and made a number of comments. It advises that proposing to run a pipe across a floodbank for piping and disposing of storm water to the Taieri River would require both bylaw and designation approval from Otago Regional Council. While the application suggests this exercise of obtaining approval would not be 'problematic', the Otago Regional Council advises that considerations will include:

- how that may affect ORC's floodbank maintenance and access operations; and
- maintenance and possible risk from leaks in this stormwater piping.

The Otago Regional Council requests that the applicant discuss this aspect of the proposal with the Council further.

Regarding wastewater management, the Otago Regional Council notes the following:

'The proposed subdivision is partially, or completely over a GPZ-A [Ground Protection Zone A]. If individual onsite treatment systems are to be used, then some of the properties are going to require resource consents for their septic tanks. ORC is focused on water quality, and a plan change related septic tank plan change is proposed.

'The applicant may wish to further consider the following potential benefits of a cluster waste-water treatment plant rather than individual on-site treatment systems;

- It benefits the community by ensuring better environmental outcomes as cluster systems can produce a higher quality effluent than individual systems; and*
- It benefits property owners by reducing the maintenance, consenting, and compliance requirements and costs.'*

The proposal includes two stage one sites, Lots 17 and 18, as well as seven new Stage 2 sites, within the Ground Protection Zone A. These properties will require resource consent from the Otago Regional Council for their septic tanks.

5. Hazards (18.6.1(t))

The Consulting Engineer, MWH, has considered the application. He notes that the Otago Regional Council report: *Flood hazard on the Taieri Plain, Review of Dunedin City District Plan: Natural hazards First revision: August 2015* places the site within Area 1B, Above High tide level.

The Consulting Engineer has not commented on the appropriateness of developing the land in terms of the flood protection risk and stormwater treatment, or the need to establish a minimum floor level for the development as a whole. He considers that these matters are more appropriately addressed by Council's Water and Waste Services Business Unit or the Otago Regional Council.

In terms of natural hazards affecting this land, the Consulting Engineer comments that the site is recorded on the GNS Assessment of Liquefaction hazards in Dunedin City, dated May 2014, as being within:

- Domain C. The ground is predominantly underlain by poorly consolidated marine or estuarine sediments with a shallow groundwater table. There is considered to be a moderate to high likelihood of liquefaction-susceptible materials being present in some parts of the areas classified as Domain C.

Underlying soils have a potential for amplified movement and liquefaction during a significant seismic event. The cases for seismic loading are normally addressed at building control stage.

- The Dunedin City Council Building Control Authority will ask for verification that the site is 'good ground' in accordance with NZS3604, Section 3.1. This verification will require site investigation in accordance with the standard, potentially including dynamic cone testing to 10m depth to quantify the potential for liquefaction for each dwelling.
- Specific foundation design may subsequently be required or, if the assessed potential movement is significant, specifically designed ground improvement works may be more cost effective.

MWH generally recommends that, for larger subdivisions, the requirement to quantify this risk should lie with the developer. The Consulting Engineer believes that the extent of the proposed subdivision is sufficient for this efficiency to be recognised whilst under single-title, rather than the purchaser to have to assess this risk individually.

In conclusion, MWH did not oppose the subdivision subject to conditions consistent with the above points.

The Otago Regional Council has also commented on the proposal in an email to the Dunedin City Council received on 19 May 2017. It notes that there is an existing level of residual risk at this site because of its location next to a floodbank and major river. The proposal may increase this level of residual risk.

6. NES Matters

The application was submitted with a Preliminary Site Investigation, dated 24 January 2013, as prepared by **Spiire**. The primary purpose of the report was to investigate whether contaminants are present on the subject site at high level warranting further action as part of its development. The report notes that the history of use of the site as a market garden indicates that the site might be construed as a HAIL site, and sampling of soils was undertaken to substantiate the findings of a desktop study which found no evidence of previous activities causing contamination. There were four soil samples taken from across the site, and composited in one sample for analysis.

Analysis of the samples for heavy metals and pesticide residue indicated that there were no contaminants present at levels above soil guideline values appropriate for residential use. Spiire concludes that there are no triggers to indicate that the site is contaminated. The report states:

'Accordingly, Spiire assess that by the standards of best practice there is no basis for recommending a detailed site investigation and recommend no further investigation for contaminants be undertaken at the site. This assessment is subject to limitations ... and it is important that Balmoral Developments Limited ensure that these are understood and that additional advice is sought, if appropriate, to manage any undiscovered risks.'

The limitations noted in the report relate to the fact that no investigation will be thorough enough to preclude the presence of materials which might be considered hazardous presently or in the future.

Council's Consulting Engineer, **MWH**, peer reviewed the Spiire report in a memorandum to Council received 19 May 2017. MWH considers the Spiire report to be a *'... thorough and well-reasoned PSI which reaches unequivocal evidence-based conclusions that are fully explained and supported.'* MWH noted that the soil sampling was rather limited in its extent, but considered that the sampling was all that was necessary for the 'preliminary' site investigation. The Consulting Engineer also considered that the results, coupled with other evidence, meant no additional sampling is necessary. The Consulting Engineer comments:

'The PSI concludes, correctly, that based on the information obtained it is "highly unlikely" that there will be a risk to human health if the proposed sub-division activity to create residential lots is undertaken on the subject land ... The PSI prepared by Spiire to support the application is well reasoned and supported by detailed and appropriate evidence, to the extent that the conclusions reached with respect to the non-HAIL status of the site are conclusively established.'

The **Otago Regional Council**, reviewing the same report, did not agree. The Otago Regional Council considered that market gardening has occurred on-site from approximately 1940 to 2004, and it is more than likely that persistent pesticides have been used at some point. The limited sampling from the Preliminary Site Investigation detected relatively low level DDT residues which support this conclusion. The Otago Regional Council has listed the site as a 'Verified HAIL' site for the following reasons:

'The limited sampling within the PSI is not sufficient to determine a contamination status for the property. The four samples taken may not be representative of the disposition of all soils on site. The pattern of market gardening seen in the 2003 Google Earth image shows many different cultivated areas which can be subject to different spray regimes. It also show two additional glasshouses, buildings, now removed on the northern edge of the site. The site investigation did not target any of the potential hot-spots which may be expected at the site, such as glasshouses, spray sheds or mixing areas.'

Council's Consulting Engineer, **MWH**, reviewed the comments of the Otago Regional Council in an email dated 19 May 2017. He was of the opinion that the Otago Regional Council's conclusions are very conservative as the levels of DDT and its decomposition products are very low, although not zero. While hot-spots might have been missed by the limited sampling, the ubiquitous use of other persistent pesticides would have shown up in the samples in the same way that DDT has. The Consulting Engineer did not consider that persistent pesticide use at this site has occurred other than some application of DDT. He notes that DDT was used for grass grub control from the 1920s, and the presence of DDT in the soil samples could relate to the site's pasture use prior to 1940.

The Consulting Engineer did not consider that DDT was likely to have been applied to the site in a manner which would create hot-spots. Spillage from loading the hopper (for distribution) could have occurred; however, MWH considered this risk to be low. MWH also took into account the summary of the site's use by the current owner, Neville Ferguson. While the Consulting Engineer agreed with Spiire's conclusion about the site not being a HAIL site, he also noted that Spiire was unsure whether or not the NES should apply given their view that the HAIL activity of persistent pesticide storage and use was 'unlikely'. The Consulting Engineer recommends:

'From DCC's perspective I think a consent is required under the NES for the proposed subdivision of the land. Given that a DSI does not exist for the land such a consent would attract discretionary status. However I do not believe any onerous conditions will be necessary on the consent because I agree with Spiire's contention that the subdivision of this land presents a low risk to human health and the site is "currently suitable for residential living, inclusive of consumption of up to 10% of dietary produce from produce grown on site".'

Accordingly, consent under the NES has been provided for the subdivision, change in use, and disturbance of soils, at this subject site. Only one condition has been imposed for a soil management plan to address NES concerns. However, this does not negate a duty by the developer to undertake the management of soil contamination appropriately, including further investigation and remediation, should there be any indication of soil contamination discovered during the subdivision works.

7. Earthworks

Design and engineering of retaining structures and earthworks.

The proposal includes earthworks concentrated along the access routes and the southeast portion of the subject site within the Residential 5 zone. In its simplest terms, the earthworks will firstly facilitate the construction of the road, and secondly, will increase the capacity of the stormwater detention pond. The cut material from the pond is to be distributed over Lots 12 and 14 to 18, thereby raising the ground level of the residential lots.

The proposed earthworks require the stripping of topsoil from 11000m² of the subject site to an average depth of 400mm, the stockpiling of this topsoil, and the redistribution of the soil over Lots 12 and 14 to 18 once the ground levels have been

raised. Approximately 4400m³ of topsoil will be striped and half or so of this will be removed from the site.

Clay material will be cut from the stormwater detention pond area (avoiding the 20m wide building restriction area associated with the floodbank). The greatest depth of cut will be approximately 3.0m at the northern end of the pond. All batter grades will be constructed to 2H:1V batters. There will be a total of 6600m³ clay cut to fill material, with 4800m³ of this being from the pond area.

The clay material from the pond area will be redistributed across the residential lots, Lots 12, and 14 to 18. All fill placed within the new vacant residential sites shall be certified by a suitably qualified engineer.

The subject site has a very gentle contour, and no retaining walls are proposed in association with the subdivision earthworks.

While the proposed earthworks breach the scale thresholds set by the District Plan for permitted and controlled earthworks, this is largely a result of the large area over which the earthworks are being undertaken. Apart from the excavation of the pond, the earthworks will involve a relatively modest change in levels, and will not create any steep batter slopes. No earthworks are proposed in close proximity to external boundaries of the subject site.

Council's Consulting Engineer, MWH, has considered the proposed earthworks. He notes that the potential fill on-site will average 0.6m in depth, and considers it appropriate to have controls in place where fill is intended to support structures. The Consulting Engineer recommends that:

- *Any earth fill over 0.6m thick supporting foundations must be specified and supervised by a suitably qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development;*
- *The extents and thickness of any un-engineered fill should be marked on an as-built plan for the information of future landowners.*

Effects on the stability of land and buildings.

The subject site is gently sloping and there is no expectation that the proposed earthworks will affect the stability of the site or adjoining properties. The topsoil removal will be to an average depth of 400mm, and will be taken from the road, access lot, detention pond area and the fill region through Lots 12 to 18. The cut into clay material will be confined to the area of the detention pond.

The closest neighbouring property to the earthworks will be 58 Holyhead Street. The plan shows the proposed earthworks on Lot 18 as being clear of this boundary by approximately 4.0m. The ground level is to be raised through Lots 17 and 18, and as such, there is no risk of the earthworks undermining the existing dwelling on 58 Holyhead Street. The batter grade will be no steeper than 2H:1V and a retaining wall will not be required.

Council's Consulting Engineer advises that all batter grades will be constructed to 2H:1V or flatter. He considers this to be a pragmatic construction, and should not result in the creation of any instabilities. He also notes that the greater excavations appear to be in the order of 3.0m, at the northern end of the detention pond. At present there are no structures in the vicinity, and these slopes should not create any instability.

The Otago Regional Council manages the Taieri River floodbank to the southeast of the subject site. A 20m wide building restriction area associated with the floodbank extends into the subject site and will affect Lots 13, 26, 27 and 31. Lot 26 is the existing house site which will not be redeveloped. Proposed Lots 13 and 27 are outside

the cut and fill areas and will not be affected by the proposed earthworks. The cut for the detention pond within Lot 31 will be kept clear of the 20m building restriction area. There will be no earthworks undertaken within the building restriction area.

Even if the subdivision is being undertaken outside of the mapped excavation sensitive zone, the Otago Regional Council, in its email of 19 May 2017, expects that the Dunedin City Council will carefully consider the need for a high level of expertise and assessment of the proposed earthworks, particularly the excavation of a relatively deep detention pond adjacent to the flood bank as Earthworks can lead to a compromising of a floodbank's integrity during a flooding event (such as via the effects that result in 'piping'). In this case, such a failure would mean the Outram settlement would be put at greater risk from flooding. The earthworks of the detention pond have been considered by Council's Consulting Engineer, MWH, as discussed above, who has not identified any concerns about the pond excavations causing any instability.

Effects on the surface flow of water and on flood risk.

The proposed subdivision involves an almost level subject site. The CPG Infrastructure Reports dated December 2011, submitted with the application, identifies the site has having a slight crown so that the western half drains to the west, and the eastern half of the site drains to the east. Water was ponding near the Holyhead Street entrance to the site in the location now promoted as the stormwater detention area.

There is an open drain along the edge of the State Highway 87 road formation, and an open drain along the northern edge of Holyhead Street entrance to the existing house. The proposed subdivision will introduce a new cul-de-sac approximately midway within the residential development and this will be fully drained with kerb and channel. Any general surface flow across the general area will be managed by the subdivision stormwater drainage systems.

The applicant proposes requiring Lots 1 to 9 and 21 to 25 to each have on-site retention tanks so that the rate of stormwater discharge to the open drain next to State Highway 87 is no greater post-development to the current rate. Proposed Lots 10 to 20 will each drain into the stormwater detention pond. From there, water will drain via new public infrastructure pipes. The intent is to have the water pumped to the Taleri River at a rate of 15 litres per second. As such, the proposed subdivision is not expected to interfere with existing surface flows or increase the flooding risk for the subject land or other areas.

Effects on underground utilities.

There are no underground utilities within the subject site which are expected to be affected by the proposed earthworks. Electricity lines to the existing house are overhead, and there are no Council-owned reticulated services in the location of the proposed earthworks.

Adverse effect on the amenity of the neighbouring properties.

There will be temporary adverse effects on the amenity of the neighbouring properties during the construction period as there will be possible noise, vibration, and dust effects to address. Provided the developer confines construction works to the normal working hours, and actively manages dust effects, the effects of the proposed works are considered acceptable.

The closest neighbour to the proposed earthworks is 58 Holyhead Street. There is no change in ground level anticipated in close proximity to their boundary, and the fact that the subject site is more or less level means none is necessary either as part of the subdivision works or the establishment of a building platform on this subject site. As above, any noise, vibration or dust effects on this neighbour will be temporary and should be managed appropriately to ensure the adverse effects are acceptable.

Effects on visual amenity and landscape.

The subject site is currently a farm paddock with some cropping on the urban edge of Outram. The proposed earthworks are to develop the land in accordance with its zoning, and will be relatively minor in terms of changes to ground levels. I also note that the land has been cropped as a market garden for many years where exposed soils have often been the standard appearance of the property. For these reasons, the proposed earthworks are not expected to have an adverse effect on the visual amenity and landscape.

Effects on any archaeological site and/or any cultural site.

There are no known archaeological or cultural sites in this location.

Effects on the transportation network, caused by the transport of excavated material or fill.

Approximately half of the topsoil stripped from the site will need to be removed from the subject site and disposed of to an appropriate location. There may also be some removal of clay material if it proves to be unsuitable for foundation works on the new residential lots. As such, heavy vehicle truck movements to and from the site are to be anticipated.

The application does not detail the proposed route for the trucks but there are two options available. The most direct route from the subject site will be to State Highway 87 via the existing intersection. The NZ Transport Agency manages this road, and will have the authority to place conditions on its use as access to the site during the construction period.

Alternatively, the site can be accessed via Holyhead Street. This is a quieter road with no through traffic, and there will be no safety issues arising from trucks crossing onto the road from the site. It is also a residential street, and heavy truck movements along this road are less acceptable than they would be on a main road. The most likely route taken by the trucks would still result in trucks using the State highway, accessing it at the intersection of Holyhead and Mountfort Streets. The Outram shop is situated at this intersection and there are already complicated traffic movements occurring at this location as a result. Therefore, it is recommended not to use this route, although this is not a condition of consent.

The truck movements are unlikely to create any congestion on the State highway but could be inappropriate traffic for the quieter Holyhead Street. Regardless of the route taken, the developer will need to keep the road clear of debris. Overall, the trucking of topsoil from the site is not expected to adversely impact on the transportation network.

Effects from the release of sediment beyond site boundaries, including transport of sediment by stormwater systems.

The developer will be required to manage the release of sediment from the site during the earthworks period in accordance with the accepted best practise for sediment management.

Cumulative effects relating to any of these matters.

The proposed earthworks are not anticipated to have any adverse cumulative effects. The earthworks period will be temporary during the construction of the subdivision facilities. Earthworks associated with the development of the new lots themselves after subdivision are not addressed by this consent. Should future earthworks on-site breach the performance standards of Section 17 of the District Plan, further consent will be required. Land use consent will also be required for any structures, such as retaining walls supporting fill or surcharge, near to boundaries.

8. Transportation (18.6.1(c))

The Transportation Planner, Transport, has considered the application. Mountfort Street (State Highway 87) is a National Road, and Holyhead Street is a Local Road, in the District Plan roading hierarchy.

In recognition that the NZ Transport Agency manages State Highway 87 and that it has concerns about access, the applicant's agent has promoted in an email dated 18 May 2017 several conditions for consent, namely:

1. The intersection (from SH87 Mountfort Street) should be upgraded to the 'NZTA Diagram E' standard.
2. The hedge of the north-west side of proposed Lots 4 and 5 is removed.
3. The narrow triangle of land running between the north-west corner of Lot 4 and the north-east corner of Lot 5 could be vested to NZ Transport Agency.

The Transportation Planner notes that, at Stage 1, Lots 1 to 3 will obtain access directly to State Highway 87 which is in accordance with the Structure Plan. Lots 17 and 18 will obtain access directly to Holyhead Street via their frontages, which is also in accordance with the Structure Plan. The Transportation Planner considers it appropriate for vehicle crossings to these lots to be assessed at the time of their development (i.e. at future building consent or resource consent application), as this is the usual approach taken at subdivision consent stage. However, I consider that, in the case of Lots 1 to 3, it is beneficial to have the vehicle crossings established so as to maintain maximum lengths of sight distances along State Highway 87. For this reason, the developer shall form the vehicle crossings to Lots 1 to 3 at the best locations of these sites' frontages as part of the subdivision works.

Lots 4 to 7 will achieve vehicle access to Mountfort Street via proposed Access Lot 30. Lots 8, 24 and 25 will also use this route for access at Stage 1, but will change at Stage 2 to using the new road within the subdivision itself. Access Lot 30 will serve seven users at Stage 1, and shall be a minimum formed width of 5.0m, and be adequately drained and hard surfaced for its duration. The rights of way giving Lots 8, 24 and 25 access over Access Lot 30 are to be cancelled at Stage 2. A consent notice on the titles can be used to achieve this, although this is a highly unusual situation, and Transport is amenable to Planning addressing this by way of an alternative mechanism that achieves the same outcome.

At Stage 2, Lot 29 will vest in the council as road. Standard conditions in respect of public infrastructure are applicable:

1. *Detailed engineering plans, showing the details of the construction of the new road to vest, shall be submitted to and approved by the DCC Transport Group prior to construction.*
2. *Upon completion of construction of the new road, all works shall be tested to demonstrate that they meet the acceptance requirements of the DCC Code of Subdivision and Development.*
3. *Upon completion of all of the roading works, the works shall be certified as having been constructed in accordance with the approved plans and specifications, and as-built plans shall be provided to the DCC Transport Group.*

Access to Lots 9 to 11, 14 to 16, and 19 to 23 will be directly to the new road. While it is anticipated that vehicle crossings will be constructed to each of these lots as part of the construction of the new road, vehicle crossings to these lots will be formally assessed at the time of their future development (i.e. at the time of building consent or resource consent application).

Access to Lot 8, once right of way is cancelled over Access Lot 30, will be via over Right of Way B. The full length of the right of way shall be formed to a minimum width of 3.0m, be adequately drained, and hard surfaced for its duration.

Access to Lots 12, 13 and 26 will be via the existing vehicle access formation from Holyhead Street, which will be owned by Lot 26. Lots 12 and 13 will have right of way over this access. Transport does not require any upgrade to the existing vehicle access formation.

Access to Lot 31, the stormwater detention pond area, will be via its direct frontage to Holyhead Street. Access to Lot 27, the rural balance land, will be directly to State Highway 87. Transport considers the general access to these lots to be acceptable.

It is advised that in the event of any future development on the new lots, Transport will assess the provisions for parking and manoeuvring at the time of resource consent or building consent application for future development.

Transport considers the proposed subdivision to be in general accordance with the Structure Plan in terms of transport provisions, and it can therefore be supported from a transport perspective. Transport recommends a number of conditions for consent consistent with the above points.

7. Amenity Values

One means by which the District Plan maintains the amenity values of an area is through the density provisions of the various zones. In this case, the proposed subdivision will create 26 complying Residential 5-zoned sites for residential use, and an undersized Rural-zoned site for farming purposes. There is no dwelling, nor any expressed intention to establish a new dwelling, on the Rural-zoned lot, Lot 27.

While the proposed subdivision will change the appearance and nature of the subject site significantly, change in accordance with the expectations of the District Plan is not considered to be an adverse effect. In this case, the change is not only in line with the requirements of the Residential 5 zone rules, but largely complies with the Structure Plan of Appendix 8.7 (including the creation of the undersized Rural-zoned lot). The use of the land for residential purposes was fully explored at the time of the private plan change which was notified, giving all parties an opportunity to submit on the proposal. The use of the land for residential purposes has therefore been established through a public process, and the proposed subdivision is merely the execution of the outcome of that process.

While the subject site is in a relatively prominent location at the entranceway to Outram, the existing hedge screens much of the residential portion of the site although there is no guarantee that the hedge will remain in place. There are few actual nearby neighbours overlooking the future development. The residential properties to the southwest of the development will have new housing introduced in close proximity to their boundaries. However, provided the housing maintains all yards and height plane angles, the effects on the neighbours' amenity will be in accordance with the expectations of the District Plan. The proposed subdivision and residential development of this land is not considered to be an adverse effect on the amenity values and character of this one or area.

CONSENT DECISION

SUB-2017-32

*That pursuant to section 34A(1) and 104B of the Resource Management Act 1991, and after having regard sections 104 and 104D of the Resource Management Act 1991, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("the NES"), the Dunedin City District Plan, and the Proposed Plan, the Dunedin City Council **grants** consent to a **non-complying** activity being the staged subdivision (including earthworks) of land subject to the NES, being legally described as Lot 2 DP 20759 (CFR OT12B/346) at 94 Holyhead Street, into residential lots, road, reserve and balance land, subject to the conditions imposed under sections 108 and 220 of the Act, as shown on the attached certificate.*

LUC-2017-182

*That pursuant to section 34A(1) and 104B and after having regard to sections 104 and 104D of the Resource Management Act 1991, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("the NES"), and the Dunedin City District Plan, the Dunedin City Council **grants** consent to a **non-complying** activity being the existing residential activity on a new mixed-zoned site (Lot 100 SUB-2017-32) with insufficient Rural-zoned land, and the change of use and soil disturbance of a site subject to the NES, at 94 Holyhead Street, Outram, subject to conditions imposed under section 108 of the Act, as shown on the attached certificate.*

REASONS

Effects

In accordance with section 104 of the Resource Management Act 1991, the actual and potential adverse effects associated with the proposed subdivision have been assessed and are outlined above. It is considered that the proposed activity will have no more than minor adverse effects on the environment.

District Plan – Objectives and Policies

In accordance with section 104(1)(b) of the Resource Management Act 1991, the objectives and policies of the District Plan were taken into account when assessing the application.

The proposal is considered to be consistent with the following objectives and policies:

- **Objective 4.2.1 and Policy 4.3.1 (Sustainability)** seek to maintain and enhance the amenity values of Dunedin.
- **Objective 6.2.2 & Policy 6.3.5 (Rural)** seek to maintain and enhance the amenity values associated with the character of the rural areas.
- **Objective 8.2.1 and Policy 8.3.1 (Residential)** that seek to ensure the adverse effects on the amenity values and character of residential areas are avoided, remedied or mitigated.
- **Objective 8.2.2 and Policy 8.3.6 (Residential)** seek to ensure that activities do not adversely affect the special amenity values of rural townships and settlements.
- **Objective 17.2.3 and Policy 17.3.9 (Earthworks)** seek to ensure earthworks are undertaken in a manner that does not put the safety of people or property at risk and minimises adverse effects on the environment.
- **Objective 18.2.1 and Policy 18.3.1 (Subdivision)** seek to ensure that subdivision activity takes place in a coordinated and sustainable manner.
- **Objective 18.2.2 and Policy 18.3.5 (Subdivision)** seek to ensure that physical limitations are identified and taken into account at the time of subdivision activity.
- **Objective 18.2.7, Policy 18.3.7 and Policy 18.3.8 (Subdivision)** that seek to ensure that provision is made at the time of subdivision activity for appropriate infrastructure, including management of associated subdivision and development.
- **Objective 20.2.2 and Policy 20.3.2 (Transportation)** seek to ensure that land use activities are undertaken in a manner which avoids, remedies or mitigates adverse effects on the transportation network.
- **Objective 20.2.4 and Policy 20.3.6 (Transportation)** seek to maintain and enhance a safe, efficient and effective transportation network.

Proposed Plan

The objectives and policies of the Proposed Plan must be considered alongside the objectives and policies of the current district plan. The proposal is considered to be consistent with the following Proposed Plan objectives and policies:

- **Objective 6.2.3 and Policies 6.2.3.3, 6.2.3.4 and 6.2.3.9 (Transportation)** which seek to ensure that land use, development and subdivision activities maintain the safety and efficiency of the transport network for all travel methods.
- **Objective 6.2.1 and Policy 6.2.1.3 (Transportation)** seek to ensure that transport infrastructure is designed and located to ensure the safety and efficiency of the transportation network.
- **Objective 15.2.1 (Residential)** seeks to ensure that residential zones are primarily reserved for residential activities.
- **Objective 15.2.2 (Residential)** seeks to ensure residential activities, development, and subdivision activities provide high quality on-site amenity for residents.
- **Objective 15.2.3 and Policy 15.2.3.1 (Residential)** seek to ensure activities in residential zones maintain a good level of amenity on surrounding residential properties and public spaces.
- **Objective 15.2.5 and Policy 15.2.5.3 (Residential)** seek to ensure that earthworks necessary for permitted and approved development are enabled.
- **Objective 15.2.4 (Residential)** seeks to ensure that subdivision activities and development maintain or enhance the amenity of the streetscape, and reflect the current or intended future character of the neighbourhood.
- **Objective 16.2.1 (Rural)** seeks to reserve rural zones for productive rural activity and the protection and enhancement of the natural environment.
- **Policy 16.2.1.5 (Rural)** seeks to limited residential activity in the rural zones at a level (density) that supports farming activity.
- **Objective 16.2.3 and Policy 16.2.3.2 (Rural)** seeks residential activity at a density that maintains the rural character values and visual amenity of the rural zones.
- **Policy 16.2.3.8 (Rural)** seeks to only allow subdivision where the subdivision is designed to ensure any associated future land use and development will maintain or enhance the rural character and visual amenity of the rural zones.

The proposal is consistent with the relevant policy provisions above.

Section 104D

Section 104D of the Resource Management Act requires that a resource consent for a non-complying activity must not be granted unless the proposal can meet one of two limbs. The limbs of section 104D require that the adverse effects on the environment will be no more than minor, or the application is for an activity which will not be contrary to the objectives and policies of either the relevant plan or the relevant proposed plan. It is my opinion that the proposed subdivision not fully in accordance the Structure Plan and creating one mixed-zoned lot with insufficient Rural-zoned land for the existing dwelling, and the creation of a new undersized Rural-zoned site, will have effects which are no more than minor and will not be contrary to the objectives and policies of the District Plan. Therefore Council can exercise its discretion under Section 104D to grant consent subject to the recommended conditions.

Other Matters

Case law has suggested that in order to grant consent to a non-complying activity, the application needs to be a 'true exception' otherwise, in terms of precedent effect, the integrity

of the Plan could be undermined. In this instance, the subdivision proposal is non-complying because it is not fully in accordance with the Structure Plan of Appendix 8.7. The changes are relatively minor, and are more or less limited to the access arrangements for Lot 4 and Lot 26 (the existing house). The change for Lot 4 is considered to be beneficial as it will reduce the number of accesses onto State Highway 87. The changes around the access to Lot 26 (with associated changes to Lots 12 and 13) will have few implications because it will make use of an existing access. There are no changes to the number of residential lots being created.

The subdivision is also non-complying because it will create sites with insufficient Rural-zoned land to meet the minimum site size. In fact, all the Rural-zoned land of the subject site is being held in one title after subdivision, and the proposal does not fragment this land at all.

The land use proposal is non-complying because the existing house will be placed on a mixed-zoned site with insufficient Rural-zoned land at Stage 1. This is largely an existing situation for the house, and Stage 1 will merely subdivide some of the residential land from the property. For these reasons, it is considered that the proposed subdivision and land use proposals can be undertaken without undermining the integrity of the District Plan.

Part II Matters

There is no ambiguity, incompleteness or illegality in the District Plan which necessitates resort to Part II of the Act.

RIGHTS OF OBJECTION

In accordance with section 357 of the Resource Management Act 1991, the consent holder may object to this decision or any condition within 15 working days of the decision being received, by applying in writing to the Dunedin City Council at the following address:

The Chief Executive
Dunedin City Council
P O Box 5045
Dunedin 9058

Attn: Senior Planner- Enquiries Plaza, Ground Floor.

Yours faithfully



Lianne Darby
PLANNER



DUNEDIN CITY
COUNCIL
Kaunihera-a-rohe o Otepoti

50 The Octagon, PO Box 5045, Moray Place
Dunedin 9058, New Zealand
Telephone: 03 477 4000, Fax: 03 474 3488
Email: dcc@dcc.govt.nz
www.dunedin.govt.nz

Consent Type: Subdivision and Land Use

Consent Number: SUB-2017-32 & LUC-2017-182

Location of Activity: 94 Holyhead Street, Outram.

Legal Description: Lot 2 DP 20759 (CFR OT12B/346).

Lapse Date: SUB-2017-32: 22 May 2022, unless the consent has been given effect to before this date. For clarity, the lapse period is specific to both stages, so that the giving effect to Stage 1 does not give effect to Stage 2.
LUC-2017-182: three years from the signing of the s223 certificate for Stage 2 of SUB-2017-32 unless the consent has been given effect to before this date.

SUB-2017-32

*That pursuant to section 34A(1) and 104B of the Resource Management Act 1991, and after having regard sections 104 and 104D of the Resource Management Act 1991, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("the NES"), the Dunedin City District Plan, and the Proposed Plan, the Dunedin City Council **grants** consent to a **non-complying** activity being the staged subdivision (including earthworks) of land subject to the NES, being legally described as Lot 2 DP 20759 (CFR OT12B/346) at 94 Holyhead Street, into residential lots, road, reserve and balance land, subject to the conditions imposed under sections 108 and 220 of the Act,, as follows:*

Stage 1: Subdivision of Lot 2 DP 20759 into Residential Lots 1 to 8, 17, 18, 24 and 25, and Balance land Lot 100:

1. *The proposal shall be given effect to generally in accordance with the plan prepared by Paterson Pitts Group entitled, 'Lots 1-27, 29-31 and 100 Being a Proposed Two-Stage Subdivision of Lot 2 DP 20759,' dated 13 April 2017, and the accompanying information submitted as part of SUB-2017-32 received at Council on 24 April 2017, except where modified by the following:*
2. *That prior to certification of the survey plan pursuant to section 223 of the Resource Management Act 1991, the applicant shall ensure the following:*
 - a) *That if a requirement for any easement for services is incurred during the survey, then those easements shall be granted or reserved and included in a Memorandum of Easements.*
 - b) *That a right of way shall be created over Access Lot 30 in favour of Lots 8, 24 and 25, and shall be shown on the survey plan in a Memorandum of Easements. The right of way shall extend across the full width of Access Lot 30.*
 - c) *That easements in gross in favour of the Dunedin City Council shall be created as required over any foul sewer, stormwater sewer or water main which is to be vested with the Council. The easements in gross shall be*

made in accordance with Sections 4.3.9, 5.3.4, or 6.3.10.3, as appropriate, of the Dunedin Code of Subdivision and Development 2010. The easement documentation shall be prepared in consultation with the Asset Manager, Water and Waste Services Business Unit, to ensure an appropriate maintenance agreement is obtained over the access lots and services.

- d) That the dimensions of Lots 4 and 5 shall be altered so as to create an additional lot, Lot 32. Lot 32 shall be a triangular parcel created by joining the southern front corner of Lot 4 with the northern front corner of Lot 5 and containing all the land within the subject site to the northwest of this line. Lot 32 shall be shown on the survey plan as vesting as road.
- e) That Access Lot 30 shall have a minimum legal width of 6.0m.
- f) That the following amalgamation condition shall be imposed on the survey plan:

'That Lot 30 hereon (legal access) be held as to four undivided 1/4 shares by the owners of Lots 4 to 7 hereon as tenants in common in the said shares, and that individual computer registers be issued in accordance therewith (see CSN Request 1448368).'

- 3. Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the applicant shall complete the following:

Services:

- a) An "application for Water Supply - New Service" shall be submitted to the Water and Waste Services Business Unit for approval to establish a new water connection to Lots 1 to 8, 17, 18, 24 and 25. Details of how each unserved lot is to be serviced for water shall accompany the application.
- b) Upon approval by Water and Waste Services Business Unit, water service connections shall be installed in accordance with the requirements of Section 6.6.2 of the Dunedin Code of Subdivision and Development 2010.
- c) That a Stormwater Management Plan for the entire subdivision (Stages 1 and 2) shall be provided to Water and Waste Services for approval prior to construction commencing. The Stormwater Management Plan must outline:
 - Outline stormwater calculations which state the difference between the pre-development flows and post-development flows and how to manage any difference in flow;
 - Clearly detail the stormwater management systems proposed for the development to accommodate for any runoff;
 - Clearly detail impervious surfaces;
 - Design drawings;
 - Plans indicating secondary overland flow paths;
 - Details of ownership and management arrangements;
 - Evidence that the systems meets the requirements of NZS4404:2010 and the Dunedin Code of Subdivision and Development 2010.
- d) That stormwater management of Stage 1 of the development shall be undertaken in accordance with the approved Stormwater Management Plan of condition 3(c) above.

- e) *That, if the stormwater management of Stage 1 requires individual on-site stormwater retention to be installed within any of the lots, a consent notice shall be prepared for registration on the title of that lot for the following on-going condition:*

'Prior to residential activity being established on this site, a stormwater retention tank to retain stormwater run-off from this site, shall be installed. The tank shall have a minimum storage capacity of [volume] litres, or another volume as agreed with the Water and Waste Services Business Unit at the Dunedin City Council. Primary discharge shall be through a restricted aperture located near the invert of the tank, which shall be specifically designed to pass 0.5 litres per second. Secondary discharge shall be by way of a standard 100mm diameter drain installed at the top of the tank which shall provide an escape route for water during extreme rainfall events.'

The word [volume] in the above consent notice shall be replaced with an appropriate storage capacity, as determined by the Stormwater Management Plan of condition 3(c).

Transport and State Highway 87 works:

- f) *That access Lot 30 shall be formed to a minimum width of 5.0m, be hard surfaced from the carriageway of State Highway 87 for its full length, and be adequately drained.*
- g) *The existing intersection onto State Highway 87 shall be upgraded at the consent holder's expense to the NZTA Diagram E standard.*
- h) *Driveways to Lots 1 to 3 shall be formed in positions which maximum sight distances along the State highway, and shall be hard surfaced from the edge of the carriageway to a distance at least 5.0m inside the property boundary.*
- i) *The hedge on the front boundaries of Lots 4 and 5 shall be removed.*
- j) *Prior to any access works or service works being undertaken in the State highway road reserve, an agreement to work on the State highway shall be completed and submitted to the NZ Transport Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days before works commence.*
- k) *A Traffic Management Plan shall be completed and submitted to the NZ Transport Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days prior to works commencing on the State highway road reserve.*
- l) *That, if any earthworks occurring on-site require heavy vehicles to use the State highway for access to and/or from the subject site, the consent holder shall consult with the NZ Transport Agency. A Construction Traffic Management Plan shall be completed and submitted to the NZ Transport Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days prior to truck movements commencing.*

General

- l) That a suitably qualified person shall determine if the land of the entire development (Stages 1 and 2) is 'good ground' in accordance with NZS3604, Section 3.1. This verification will require site investigation in accordance with the standard, potentially including dynamic cone testing to 10m depth to quantify the potential for liquefaction for each dwelling. A report detailing the findings of this investigation shall be provided to Council for its records.*
- m) That, if the site investigations of condition 3(l) above determines that the assessed potential movement of the ground is likely to be significant during a seismic event and that ground remediation works are required, these ground remediation works shall be undertaken for Stage 1 by the consent holder in accordance with conditions 6 and 7 below.*
- n) That electricity and telecommunications shall be supplied to the net area of each allotment. These shall be installed underground from any existing reticulation.*
- n) The subdivider shall provide to Council for approval 'as-built' plans and information detailing all engineering works completed in relation to or in association with Stage 1 of this subdivision. The as-built plans shall be accompanied by a quality assurance report of the installed infrastructure to be vested in Council.*

Such "as-built" plans of:

- (i) the water reticulation pipes laid within the subdivision shall include the locations of hydrants, valves, pipelines, service connections and manifold box installations and details of the pipeline materials and depth of cover over the pipelines. Written confirmation shall also be given that only approved materials have been used in the construction of the water reticulation in the subdivision.*
- (ii) the foul and stormwater system shall show laterals for each lot.*

Consent notices:

- n) A consent notice shall be prepared for registration on the titles of Lots 1 to 3 for the following on-going conditions:*

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40 dBL Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to the Dunedin City Council as part of the building consent application.'

'Vehicle access to State Highway 87 shall be confined to a single driveway positioned so as order to maximise sight distances along the State highway.'

- o) A consent notice shall be prepared for registration on the titles of Lots 4 and 5 for the following on-going conditions:*

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40

dB L Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to the Dunedin City Council as part of the building consent application.'

'There shall be no direct vehicle access to State Highway 87 from this site. All vehicle access shall be obtained via the shared access lot.'

'There shall be no fencing, trees or shrubbery which has a height greater than 1.0m established within 5.0m of the front boundary of this site in order to maximise sight lines for vehicles travelling along State Highway 87.'

- p) A consent notice shall be prepared for registration on the titles of Lots 6 and 7 for the following on-going conditions.

'Any new residential dwelling on the site must be designed, constructed and maintained to achieve a design noise level of 40 dB L Aeq (24hr) inside all habitable spaces to minimise the disturbances to residents from road noise. A suitably qualified person shall confirm this design criterion has been complied with in a report, and a copy of this report shall be provided to the Dunedin City Council as part of the building consent application.'

'There shall be no direct vehicle access to State Highway 87 from this site. All vehicle access shall be obtained via the shared access lot.'

- q) That a consent notice shall be prepared for registration on the titles of Lots 8, 24 and 25 for the following on-going condition:

'The access to this site has been established via the shared access lot directly to State Highway 87. Once the new road into the Balmoral development is constructed at Stage 2 of resource consent SUB-2017-32, all vehicle access to this site will be via the new road. The present rights of way in respect of this site over the access lot to State Highway 87 will be cancelled at Stage 2.'

Stage 2: Subdivision of Lot 100 Stage 1 into Residential Lots 9 to 16, 19 to 23 and 26; Balance land, Lot 27; Road, Lot 29, and Reserve, Lot 31:

4. The proposal shall be given effect to generally in accordance with the plan prepared by Paterson Pitts Group entitled, 'Lots 1-27, 29-31 and 100 Being a Proposed Two-Stage Subdivision of Lot 2 DP 20759,' dated 13 April 2017, and the accompanying information submitted as part of SUB-2017-32 received at Council on 24 April 2017, except where modified by the following:
5. That prior to certification of the survey plan pursuant to section 223 of the Resource Management Act 1991, the applicant shall ensure the following:
 - a) That if a requirement for any easement for services is incurred during the survey, then those easements shall be granted or reserved and included in a Memorandum of Easements.

- b) *That Right of Way B shall be duly created or reserved over Lot 9 in favour of Lot 8, and shall be shown on the survey plan in a Memorandum of Easements. The right of way shall have a minimum legal width of 3.5m.*
 - c) *That Right of Way C shall be duly created or reserved over the leg-in of Lot 26 in favour of Lots 12 and 13, and shall be shown on the survey plan in a Memorandum of Easements. The right of way shall have a minimum legal width of 3.5m.*
 - d) *That easements in gross in favour of the Dunedin City Council shall be created as required over any foul sewer, stormwater sewer or water main which is to be vested with the Council. The easements in gross shall be made in accordance with Sections 4.3.9, 5.3.4, or 6.3.10.3, as appropriate, of the Dunedin Code of Subdivision and Development 2010. The easement documentation shall be prepared in consultation with the Asset Manager, Water and Waste Services Business Unit, to ensure an appropriate maintenance agreement is obtained over the access lots and services.*
 - e) *The existing right of way over Access Lot 30 created at Stage 1 shall be extinguished in respect of Lots 8, 24 and 25 of Stage 1, and shall be shown on the survey plan in a Schedule of Easements to be Cancelled.*
 - f) *That Lot 29 shall be shown on the survey plan as vesting with Council as road.*
 - g) *That Lot 31 shall be shown on the survey plan as vesting with Council as reserve – local purpose.*
6. *Prior to the commencement of earthworks approved by this subdivision consent, the consent holder shall:*
- a) *Before any construction works commence, the consent holder shall provide notice to the Resource Consent Monitoring team by email to rcmonitoring@dcc.govt.nz advising who the supervisor shall be for the design and supervision of the earthworks.*
 - b) *Advise the Council, in writing, of the start date of the works. The written advice shall be provided to Council at least five (5) working days before the works are to commence.*
 - c) *Advise all neighbouring property owners and residents of the proposed works at least five (5) working days prior to works commencing.*
 - d) *All earthworks shall be designed and supervised by an appropriately qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development.*
 - e) *That detailed engineering design of all earthworks, including long-sections and cross-sections of the roads and the ponding area, shall be submitted to the Council for approval prior to physical works commencing on-site. The engineering design of the ponding area shall show that the proposed excavations will not undermine the floodbank.*
 - f) *That, if the earthworks construction period requires heavy vehicles to use the State highway for access to and/or from the subject site, the consent holder shall consult with the NZ Transport Agency. A Construction Traffic Management Plan shall be completed and submitted to the NZ Transport*

Agency's network management consultant (MWH New Zealand Ltd, Dunedin) at least seven working days prior to truck movements commencing.

- g) That a Soil Management Plan prepared by a suitably qualified person shall be submitted to the Council for approval prior to subdivision earthworks commencing, in order to address the management of soils subject to the NES.
7. While undertaking earthworks approved by this subdivision consent, the consent holder shall ensure that:
- a) The earthworks shall be undertaken in accordance with the approved detailed engineering design of condition 6(e) and the Soil Management Plan of condition 6(g).
 - b) Any excavation works shall be inspected by an appropriately qualified person who must certify that the proposed construction or earthwork does not create or exacerbate instability on this or any adjacent property.
 - c) All practicable measures (including dampening of loose soil) shall be undertaken to ensure that dust, resulting from the proposed earthworks, does not escape the property boundary.
 - d) All practicable measures are used to mitigate erosion and to control and contain sediment-laden stormwater run-off from the site during any stages of site disturbance that may be associated with this subdivision. To ensure effective management of erosion and sedimentation on the site during earthworks and as the site is developed, measures are to be taken and devices are to be installed, where necessary, to:
 - divert clean runoff away from disturbed ground;
 - control and contain stormwater run-off;
 - avoid sediment laden run-off from the site; and
 - protect existing drainage infrastructure sumps and drains from sediment run-off.
 - e) Sediment fencing shall be utilised to catch all sediment runoff from the area of the proposed earthworks. This fencing shall remain in place until all exposed surfaces are in an erosion-proof state.
 - f) No soil disturbance or soil shifting, unloading, loading will take place if wind speed is higher than 14 metres per second if the soil is dry and prone to becoming airborne, unless a dust suppressant is applied.
 - g) All loading and unloading of trucks with excavation or fill material is to be carried out within the subject site.
 - h) Any earth fill over 0.6m thick supporting foundations shall be specified and supervised by a suitably qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development.
 - i) Any areas of certified or uncertified fill within the new lots shall be identified on a plan, and the plan and certificates submitted to Council for Council records.
 - j) Cartage of any surplus excavated soil from the site must be to an approved clean fill site (i.e. where dumping of fill is permitted or authorised by

consent). The consent holder shall advise any contractor accordingly. The contractor shall be responsible for keeping the roads clean of material.

- k) Any material trafficked onto the road carriageway shall be removed as soon as possible at the consent holder's expense.
- l) The consent holder shall:
- be responsible for all contracted operations relating to the exercise of this consent; and
 - ensure that all personnel (contractors) working on the site are made aware of the conditions of this consent, have access to the contents of consent documents and to all associated erosion and sediment control plans and methodology; and
 - ensure compliance with the consent conditions.
- m) Should the consent holder cease, abandon, or stop work on site for a period longer than six weeks, the consent holder shall first take adequate preventative and remedial measures to control sediment discharge/run-off and dust emissions, and shall thereafter maintain these measures for so long as necessary to prevent sediment discharge or dust emission from the site. All such measures shall be of a type and to a standard which are to the satisfaction of the Resource Consent Manager.
- n) If at the completion of the earthworks operations, any public road, footpath, landscaped areas or service structures that have been affected/damaged by contractor(s), consent holder, developer, person involved with earthworks or building works, and/or vehicles and machineries used in relation to earthworks and construction works, shall be reinstated to the satisfaction of Council at the expense of the consent holder.
- o) All construction noise shall comply with the following noise limits as per New Zealand Standard NZS 6803:1999.

Time of Week	Time Period	Leq (dBA)	L max(dBA)
Weekdays	0730-1800	75	90
	1800-2000	70	85
	2000-0730	45	75
Saturdays	0730-1800	75	90
	1800-2000	45	75
	2000-0730	45	75
Sundays and public holidays	0730-1800	55	85
	1800-2000	45	75
	2000-0730	45	75

Note: the lower limits for Sundays and public holidays will likely prevent the operation of heavy machinery.

- p) If the consent holder:
- (a) discovers koiwi tangata (human skeletal remains), waahi taoka (resources of importance), waahi tapu (places or features of special significance) or other Maori artefact material, the consent holder should, without delay:
- (i) notify the Consent Authority, Tangata whenua and Heritage New Zealand and in the case of skeletal remains, the New Zealand Police.

- (ii) *stop work within the immediate vicinity of the discovery to allow a site inspection by the Heritage New Zealand and the appropriate runanga and their advisors, who shall determine whether the discovery is likely to be extensive, if a thorough site investigation is required, and whether an Archaeological Authority is required.*

Any koiwi tangata discovered should be handled and removed by tribal elders responsible for the tikanga (custom) appropriate to its removal or preservation.

Site work should recommence following consultation with the Consent Authority, the Heritage New Zealand, Tangata whenua, and in the case of skeletal remains, the New Zealand Police, provided that any relevant statutory permissions have been obtained.

- (b) *discovers any feature or archaeological material that predates 1900, or heritage material, or disturbs a previously unidentified archaeological or heritage site, the consent holder should without delay:*
 - (i) *stop work within the immediate vicinity of the discovery or disturbance; and*
 - (ii) *advise the Consent Authority, the Heritage New Zealand, and in the case of Maori features or materials, the Tangata whenua, and if required, should make an application for an Archaeological Authority pursuant to the Historic Places Act 1993; and*
 - (iii) *arrange for a suitably qualified archaeologist to undertake a survey of the site.*

Site work should recommence following consultation with the Consent Authority.

- 8. *Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the applicant shall complete the following:*

- a) *The subdividing owner of the land shall provide notice to the Resource Consent Monitoring team by email to rcmonitoring@dcc.govt.nz advising who their representative shall be for the design and execution of the engineering works required in association with this subdivision and shall confirm that this representative will be responsible for all aspects of the works covered under NZS4404:2004 "Code of Practice for Urban Land Subdivision" in relation to this development.*
- b) *That the existing shed on-site shall be removed.*

Engineering Design:

- c) *That detailed engineering plans, long-sections, and associated calculations for the water, wastewater and stormwater infrastructure shall be submitted to the Asset Planning Engineer, Water and Waste Services Business Unit, for approval prior to any works commencing on the site. The engineering plans and associated calculations shall meet the requirements of the Construction Plan Check List, the Dunedin Code of Subdivision and Development 2010, and the NZS4404:2004 standard.*
- d) *All work associated with installing the Council-owned infrastructure shall be undertaken in accordance with the approved engineering plans, The*

Dunedin Code of Subdivision and Development 2010, and the NZS4404:2004 standard.

- e) On completion of construction of the servicing infrastructure, as-built plans shall be submitted to the Asset Planning Engineer, Water and Waste Services Business Unit, for approval. The as-built plans shall be accompanied by a quality assurance report of the installed infrastructure to be vested in Council.

Stormwater Services:

- f) That the stormwater management of Stage 2 shall be undertaken in accordance with the approved Stormwater Management Plan of condition 3(c) above.
- g) That, if the stormwater management of Stage 2 requires individual on-site stormwater retention to be installed within any of the lots, a consent notice shall be prepared for registration on the title of that lot for the following on-going condition:

'Prior to residential activity being established on this site, a stormwater retention tank to retain stormwater run-off from this site, shall be installed. The tank shall have a minimum storage capacity of [volume] litres, or another volume as agreed with the Water and Waste Services Business Unit at the Dunedin City Council. Primary discharge shall be through a restricted aperture located near the invert of the tank, which shall be specifically designed to pass 0.5 litres per second. Secondary discharge shall be by way of a standard 100mm diameter drain installed at the top of the tank which shall provide an escape route for water during extreme rainfall events.'

The word [volume] in the above consent notice shall be replaced with an appropriate storage capacity, as determined by the Stormwater Management Plan of condition 3(c).

- h) That the earthworks for the stormwater detention pond shall be undertaken in accordance with conditions 6 and 7 above. There shall be no excavation occurring within the 20m building restriction area as shown on the application plan except superficial clearance of the existing ponding area.

Services:

- i) An "application for Water Supply - New Service" shall be submitted to the Water and Waste Services Business Unit for approval to establish a new water connection to each un-serviced new lot. Details of how each lot is to be serviced for water shall accompany the application.
- j) Upon approval by Water and Waste Services Business Unit, water service connections shall be installed in accordance with the requirements of Section 6.6.2 of the Dunedin Code of Subdivision and Development 2010.

Roadway:

- i) The applicant is required to provide formal road engineering plans to Transport for consideration, for the road to vest (Lot 29). The plans shall be submitted to, and approved by, Transport prior to construction.

- j) Upon completion of construction of the all roading works, the roading infrastructure shall be tested to demonstrate that it meets the acceptance requirements of the Dunedin City Council.
- k) Upon completion of all of roading works, the works shall be certified as having been constructed in accordance with the approved plans and specifications, and as-built plans shall be supplied to Transport.
- l) That any tree planting to be undertaken in road reserve shall be determined in consultation with Transportation Operations and the Parks Officer – Trees. Species and location of trees shall be approved by the Transportation Operations manager prior to planting commencing.
- m) That Right of Way B shall be formed to a minimum width of 3.0m, and be hard surfaced and adequately drained for its duration.
- n) That, should Lots 24 and/or 25 Stage 1 be developed with a residential dwelling, vehicle crossings to these lots from Lot 29 (road to vest) shall be constructed at the consent holders expense, and in consultation with the property owners, in a location which is appropriate for the existing development so as to facilitate revised access to the new road.

General:

- o) That, if the site investigations of condition 3(l) above determines that the assessed potential movement of the ground is likely to be significant during a seismic event, and that ground remediation works are required, these ground remediation works shall be undertaken for Stage 2 by the consent holder in accordance with conditions 6 and 7 above.
- p) That electricity and telecommunications shall be supplied to the net area of each allotment. These shall be installed underground from any existing reticulation.
- q) The subdivider shall provide to Council for approval 'as-built' plans and information detailing all engineering works completed in relation to or in association with this subdivision. The as-built plans shall be accompanied by a quality assurance report of the installed infrastructure to be vested in Council.

Such "as-built" plans of:

- (i) the water reticulation pipes laid within the subdivision shall include the locations of hydrants, valves, pipelines, service connections and manifold box installations and details of the pipeline materials and depth of cover over the pipelines. Written confirmation shall also be given that only approved materials have been used in the construction of the water reticulation in the subdivision.
- (ii) the foul and stormwater system shall show laterals for each lot.

Consent Notices

- r) Once the new road has been constructed, the consent notice registered on the titles of Lots 8, 24 and 25 regarding the transference of access from State Highway 87 to the new cul-de-sac shall be cancelled and removed from the titles of these lots at the expense of the consent holder. A letter shall be provided to Council confirming that alternative access to Lots 8,

24 and 25 Stage 1 is available, and that the consent notice cancellation has been undertaken.

- s) That a plan shall be prepared showing the location of the 20m building restriction area in relation to the boundaries of Lots 13, 26 and 27. The plan shall be clearly labelled, and shall be attached to the consent notice of condition 8(t) below:
- t) That a consent notice shall be prepared for registration on the titles of Lots 13, 26 and 27 for the following on-going condition:

'A portion of this site is situated within 20m of the Taieri River floodbank as shown on the attached plan. There shall be no buildings constructed or any excavations occurring within the extent of this area without the approval of the Otago Regional Council.'

LUC-2017-182

That pursuant to section 34A(1) and 104B and after having regard to sections 104 and 104D of the Resource Management Act 1991, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("the NES"), and the Dunedin City District Plan, the Dunedin City Council **grants** consent to a **non-complying** activity being the existing residential activity on a new mixed-zoned site (Lot 100 SUB-2017-32) with insufficient Rural-zoned land, and the change of use and soil disturbance of a site subject to the NES, at 94 Holyhead Street, Outram, subject to conditions imposed under section 108 of the Act, as follows:

1. The proposal shall be given effect to generally in accordance with the plan prepared by Paterson Pitts Group entitled, 'Lots 1-27, 29-31 and 100 Being a Proposed Two-Stage Subdivision of Lot 2 DP 20759,' dated 13 April 2017, and the accompanying information submitted as part of LUC-2017-182 received at Council on 24 April 2017, except where modified by the following:
2. That a Soil Management Plan prepared by a suitably qualified person shall be submitted to the Council for approval prior to subdivision earthworks commencing, in order to address the management of soils subject to the NES.

Advice Notes:

1. In addition to the conditions of a resource consent, the Resource Management Act establishes through sections 16 and 17 a duty for all persons to avoid unreasonable noise, and to avoid, remedy or mitigate any adverse effect created from an activity they undertake. A similar responsibility exists under the Health Act 1956.
2. The lapse period specified above may be extended on application to the Council pursuant to section 125 of the Resource Management Act 1991.
3. It is the consent holder's responsibility to comply with any conditions imposed on their resource consent prior to and during (as applicable) exercising the resource consent. Failure to comply with the conditions may result in prosecution, the penalties for which are outlined in section 339 of the Resource Management Act 1991.
4. This is resource consent. Please contact the Building Control Office, Development Services, about the need for building consent for any construction work as part of the subdivision.

5. The consent holder is to ensure that all practicable measures are used to mitigate erosion and to control and contain sediment-laden stormwater run-off from the site during any stages of site disturbance that may be associated with this subdivision.
6. The following documentation is recommended as best practice guidelines for managing erosion and sediment-laden run-off and for the design and construction of erosion and sediment control measures for small sites:
 - ARC Technical Publication No. 90 Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region, March 1999.
 - Environment Canterbury, 2007 'Erosion and Sediment Control Guidelines for the Canterbury Region' Report No. CRCR06/23.
 - Environment Canterbury, 2007 "Erosion and Sediment Control Guidelines for Small Sites."
7. All aspects relating to the availability of the water for fire-fighting should be in accordance with SNZ PAS 4509:2008, being the Fire Service Code of Practice for Fire Fighting Water Supplies, unless otherwise approved by the New Zealand Fire Service. Any new development must be within 135m of a fire hydrant, otherwise the proposal will be non-compliant with fire-fighting requirements.
8. The installation and connection of a new water service to the existing public water reticulation system or the upgrading of an existing water service connection will be carried out after the Consent Holder has completed and submitted an 'Application for Water Supply' form to the Water and Waste Services Business Unit or an approved AWSCI, as per the Dunedin City Council Water Bylaw 2011. A quote for the required work must be obtained from an approved water supply connection installer (AWSCI). The list of AWSCI's, application form and the full process can be found here <http://www.dunedin.govt.nz/services/water-supply/new-water-connections>.
9. Parts 4, 5 and 6 (Stormwater Drainage, Wastewater and Water Supply) of the Dunedin Code of Subdivision and Development 2010 must be complied with.
10. It is advised that any drainage issues and requirements (including the necessary works) will be addressed via the building consent process. Separate stormwater and foul sewage drains are required for the new lots.
11. Those new lots situated within the Ground Water Protection Zone A will require resource consent from the Otago Regional Council for the installation of the septic tanks.
12. The Otago Regional Council requests that the consent holder consult with the Council regarding the proposal to discharge stormwater from the stormwater detention pond.
13. Certain requirements for building on this land may be stipulated via the building consent process, and are likely to include the following points:
 - For sites level with or above the road, the finished floor level of any building is to be a minimum of 150mm above the crown of the road.
 - For sites below the road, the finished floor level is to be no less than 150mm above the lowest point on the site boundary. Surface water is not to create a nuisance on any adjoining properties.
 - For secondary flow paths, the finished floor level shall be set at the height of the secondary flow plus an allowance for free board.
 - As required by the New Zealand Building Code E1.3.2, surface water resulting from an event having a 2% probability of occurring annually, shall not enter buildings. The finished floor level shall be set accordingly.

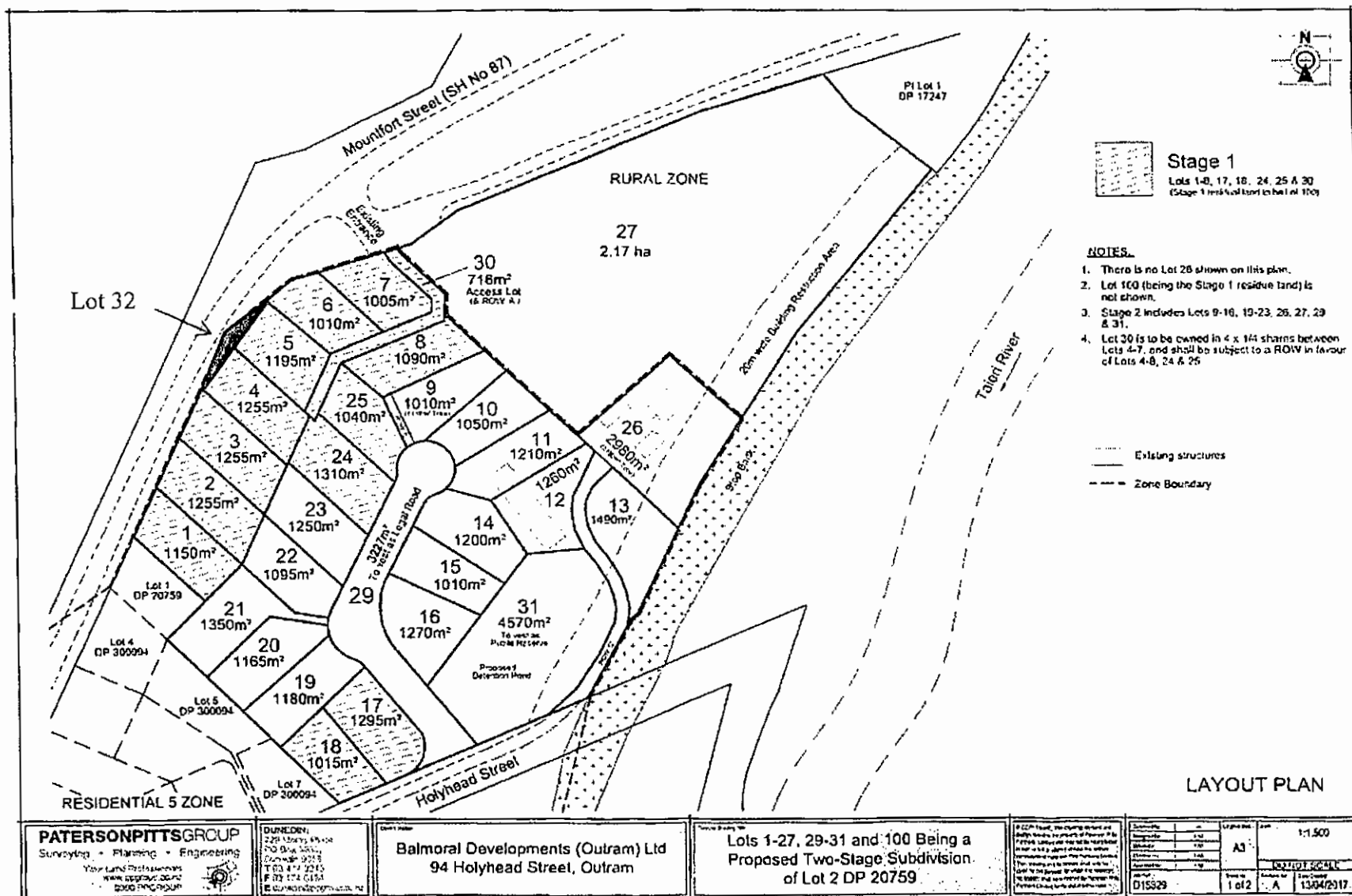
14. It is advised that any vehicle access from a road carriageway to the property boundary is over road reserve and is therefore required to be constructed in accordance with the Dunedin City Council Vehicle Entrance Specification (available from Transport).
15. It is advised that in the event of any new development of the new lots, Transport will review the provisions for access and parking at the time of any building consent or resource consent application.
16. This consent does not address any earthworks for this subdivision associated with the development of the new lots, or the formation of any new access, manoeuvring areas, or retaining walls. Should earthworks on-site breach the performance standards of Section 17 of the District Plan, further consent will be required. Land use consent will also be required for any structures, such as retaining walls supporting fill or surcharge, near to boundaries.
17. Should works disturb previously un-identified contaminated fill material, the works shall continue in accordance with the appropriate procedures for disturbance of contaminated material. Construction workers shall be advised of good practice methods, and their health monitored before, during and after the disturbance of the contaminated soils.
18. There is a potential for this land to flood given its low-lying nature. The Council has not set a minimum floor level for new development on the new lots as part of this resource consent, but it is advised that there might be a minimum floor level requirement at the time of building consent application. The applicant should be prepared to build at a level some distance above ground level. Building Control Services will determine an appropriate level.
19. The subject site could be subject to amplified movement and liquefaction during a significant seismic event. Specific foundation design for the new dwellings may be required. A report on ground conditions, prepared in response to condition 3(1) of this consent, will be available at Council for reference when designing the new housing.
20. On the basis of information currently available, the subject site is considered to be a HAIL site but there is no evidence of contamination which is likely to prove harmful to human health. Although there are no conditions of this consent relating to the HAIL status of the land, this does not negate a duty by the developer to undertake the management of soil contamination appropriately, including further investigation and remediation, should there be any indication of soil contamination discovered during the subdivision works.

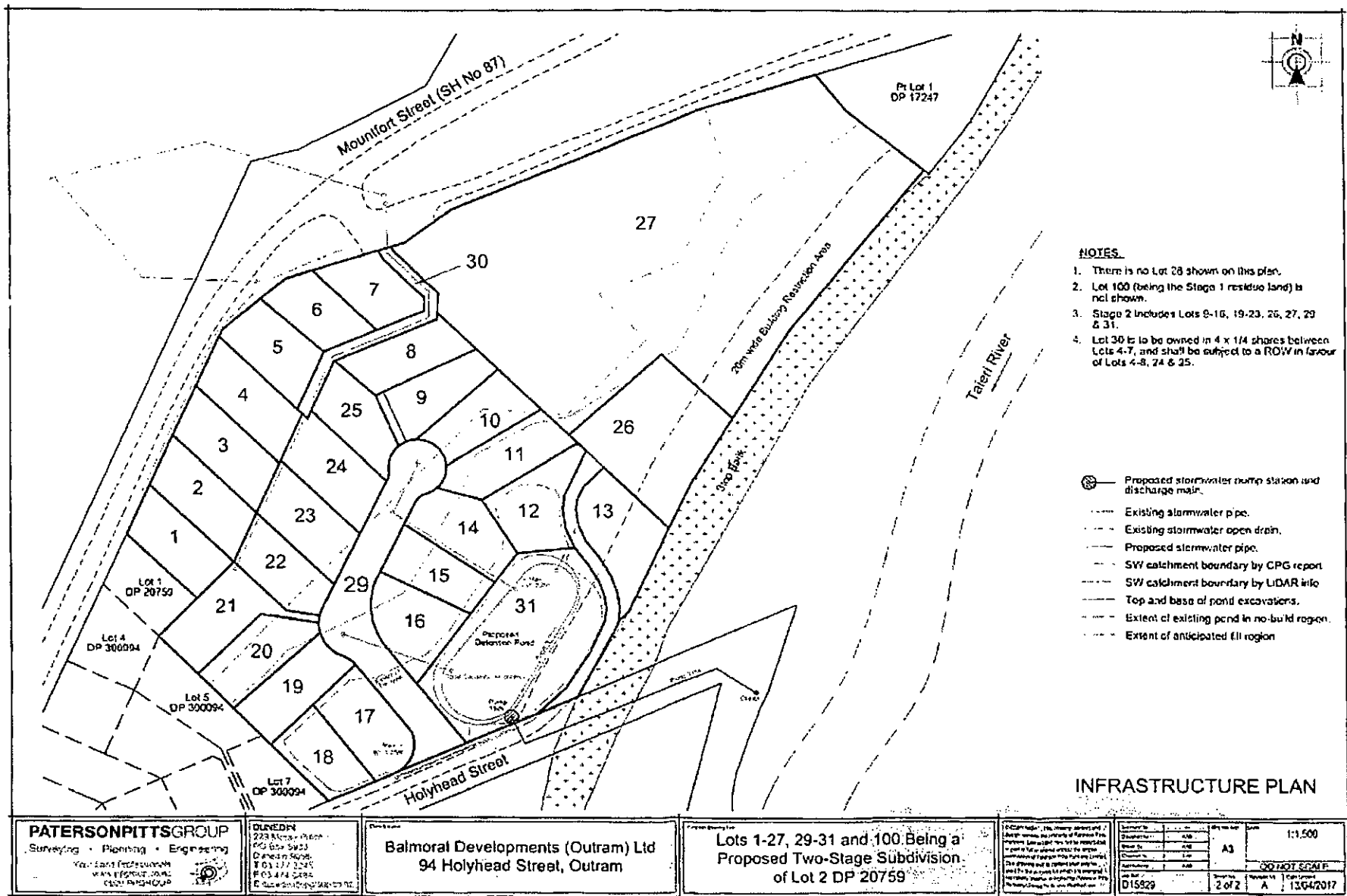
Issued at Dunedin this 22 May 2017.



Lianne Darby
Planner

COPY OF PLAN: Not to scale.









DUNEDIN CITY

C O U N C I L

Kaunihera-a-rohe o Otepoti

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Dunedin 9058, New Zealand
Telephone: 03 477 4000, Fax: 03 474 3488
Email: dcc@dcc.govt.nz
www.dunedin.govt.nz

22 May 2017

Balmoral Developments (Outram) Limited
94 Holyhead Street
Outram 9019

Dear Sir/Madam

DEVELOPMENT CONTRIBUTION PAYABLE: SUB-2017-32
94 Holyhead Road, Outram

On 1 July 2006 the Dunedin City Council implemented a policy on development contributions in accordance with the Local Government Act 2002. Applications for resource consent, building consent or service connections lodged after 1 July 2006 are assessed for development contributions.

Please be advised that your resource consent application has been assessed for development contributions in accordance with the Council's Development Contributions Policy (the Policy) contained within the Long Term Plan 2015/16 - 2024/25. A contribution of \$76,704.89 (including GST) will be payable on this development over two stages. They are:

- **Stage one:** \$37,260.00
- **Stage two:** \$39,444.89

The existing site is assessed as Rural Residential (under the Policy) with an existing dwelling. The proposal seeks to establish 26 residential lots and one rural residential (balance) lot. Development contributions are deemed to apply for the additional demand on Council infrastructure.

A development contribution in relation to stormwater a fee will not apply, as the application seeks to establish an onsite detention pond, which was agreed as part of the private plan change process (PC-2012-14). In addition, the proposed lot 27 (rural residential) appears to have no proposed use (residential, farming etc.) at this stage; it therefore has not been assessed as part of this proposal. Any future development of this site may result in a development contribution being levied.

The attachment to this letter explains how the development contribution has been calculated.

The development contribution must be paid:

- Subdivision Consent – Prior to the issue of the section 224(c) certificate.
- Land Use Consent – Prior to commencement of the consent.

In the event that the development contribution is not paid, the Council may, pursuant to section 208 of the Local Government Act 2002:

- Subdivision Consent – Withhold the section 224(c) certificate.
- Land Use Consent – Prevent the commencement of the resource consent.
- In both cases – Register the development contribution under the Statutory Land Charges Registration Act 1928, as a charge on the title of the land in respect of which the development contribution was required.

In accordance with sections 199A and 199C of the Local Government Act 2002, and the Council's Development Contributions Policy, you have the right to:

- Challenge the accuracy of the development contributions assessment. This can be done by:
 - Lodging a reconsideration application, for the Council to reconsider the requirement for the development contribution, or
 - Lodging an objection, for an independent commissioner to decide the correct requirement for the development contribution.
- Ask that the Council reduce or waive the required development contribution, by lodging an application for remission.
- Ask that the Council allow the development contribution to be paid at a later date, by lodging an application for deferral.
- Ask that a specific evaluation be made of the proposal's actual demand on reserves and infrastructure, by lodging an application for the proposal to be assessed as an unusual development.

These are described in more detail on the attached sheet. Any request for reconsideration must be made within ten working days after the date on which you received this notice. Any objection must be made within 15 working days after the date on which you received this notice. Applications for remission, unusual development and deferral of payment must be applied for before a development contribution payment is made. Each request needs to be in writing and must set out the reasons for the request. Please note that fees and charges may apply to some or all of these processes.

If you have any further queries regarding the assessment or payment of this development contribution, please feel free to contact me on telephone 474-3590 or send an email to development.contributions@dcc.govt.nz.

Yours sincerely



Nic Jepson
Development Contributions Officer

Development Contributions Assessment Tool



Results: Development Contributions Summary Table

Area of Benefit: Outram

Activity	Existing Demand - Credits (EHU)	Proposed Future Demand (EHU)	Additional Demand (EHU)	Standard Development Contribution -\$/EHU (Ex GST)	Development Contribution (Ex GST)	GST	Development Contribution (Inc GST)
Water Supply (OUT-1)	0.00	12.00	12.00	\$1,820.00	\$21,840.00	\$3,276.00	\$25,116.00
Wastewater (n/a)	0.00	0.00	0.00	\$0.00	\$0.00	\$0.00	\$0.00
Stormwater (OUT-2)	0.00	0.00	0.00	\$180.00	\$0.00	\$0.00	\$0.00
Transportation (OUT-3)	0.00	12.00	12.00	\$490.00	\$5,880.00	\$882.00	\$6,762.00
Reserves (OUT-4)	0.00	12.00	12.00	\$340.00	\$4,080.00	\$612.00	\$4,692.00
Community Infrastructure (OUT-5)	0.00	12.00	12.00	\$50.00	\$600.00	\$90.00	\$690.00
Total Development Contribution					\$32,400.00	\$4,860.00	\$37,260.00

Disclaimer: It should also be noted that the results do not apply if the development is in one of the Mosgiel Plan Change Areas.

This tool was built for simple single land use developments. More complicated developments with multiple land use categories must be assessed in stages.

Development contributions are required for the additional demand on reserves, network infrastructure, and/or community infrastructure created by a proposal over and above the demand from the existing land use. The additional demand is calculated by subtracting the existing demand from the proposed future demand. Refer Table 3 of the Development Contributions Policy to see how Equivalent Household Units are determined for each Land Use Category.

The existing demand from the current land use has been calculated using the following:

- Existing Land Use Category: None

The proposed future demand resulting from the development has been calculated using the following:

- Service Connections: Water - Connecting; Wastewater - Not Connecting
- Proposed Land Use Category: Residential Units
- Number of Residential Units - 3 or more habitable rooms/Number of Lots: 12

Development Contributions Assessment Tool

Results: Development Contributions Summary Table

Area of Benefit: Outram

Activity	Existing Demand - Credits (EHU)	Proposed Future Demand (EHU)	Additional Demand (EHU)	Standard Development Contribution -\$/EHU (Ex GST)	Development Contribution (Ex GST)	GST	Development Contribution (Inc GST)
Water Supply (OUT-1)	1.27	14.00	12.73	\$1,820.00	\$23,168.60	\$3,475.29	<u>\$26,643.89</u>
Wastewater (n/a)	0.00	0.00	0.00	\$0.00	\$0.00	\$0.00	<u>\$0.00</u>
Stormwater (OUT-2)	1.55	0.00	-1.55	\$180.00	\$0.00	\$0.00	<u>\$0.00</u>
Transportation (OUT-3)	1.63	14.00	12.37	\$490.00	\$6,081.30	\$909.20	<u>\$6,970.50</u>
Reserves (OUT-4)	1.00	14.00	13.00	\$340.00	\$4,420.00	\$663.00	<u>\$5,083.00</u>
Community Infrastructure (OUT-5)	1.00	14.00	13.00	\$50.00	\$650.00	\$97.50	<u>\$747.50</u>
Total Development Contribution					\$34,299.90	\$5,144.99	<u>\$39,444.89</u>

Disclaimer: It should also be noted that the results do not apply if the development is in one of the Mosgiel Plan Change Areas.

This tool was built for simple single land use developments. More complicated developments with multiple land use categories must be assessed in stages.

Development contributions are required for the additional demand on reserves, network infrastructure, and/or community infrastructure created by a proposal over and above the demand from the existing land use. The additional demand is calculated by subtracting the existing demand from the proposed future demand. Refer Table 3 of the Development Contributions Policy to see how Equivalent Household Units are determined for each Land Use Category.

The existing demand from the current land use has been calculated using the following:

- Existing Land Use Category: Rural Residential (Existing Use)
- Number of Residential Units - 3 or more habitable rooms/Number of Lots: 1

The proposed future demand resulting from the development has been calculated using the following:

- Service Connections: Water - Connecting; Wastewater - Not Connecting
- Proposed Land Use Category: Residential Units
- Number of Residential Units - 3 or more habitable rooms/Number of Lots: 14

Reconsiderations

You may request that the Council reconsider the requirement for the development contribution if you have grounds to believe that:

- a) The development contribution was incorrectly calculated or assessed under the Council's development contributions policy; or
- b) The Council incorrectly applied its development contributions policy; or
- c) The information used to assess the development against the development contributions policy, or the way the Council has recorded or used it when requiring a development contribution, was incomplete or contained errors.

A request for reconsideration must be made in writing, stating clearly which of the above grounds you believe the Council has erred. The request for reconsideration must be made within 10 working days from the date on which you received the development contribution notice.

You cannot request a reconsideration if you have already lodged an objection.

The Council will, within 15 working days from receiving all required relevant information relating to the request, give written notice of the outcome. You can lodge an objection if you are not satisfied with the outcome of the reconsideration.

There is no charge for lodging a request for a reconsideration.

Objections

You may lodge an objection with the Council to the assessed amount of the development contribution if you have grounds to believe that the Council:

- a) Failed to properly take into account features of the development that, on their own or cumulatively with those of other developments, would substantially reduce the impact of the development on requirements for community facilities; or
- b) Required a development contribution for community facilities not required by, or related to, the development, whether on its own or cumulatively with other developments; or
- c) Required a development contribution in breach of section 200 of the Local Government Act 2002 (which imposes limitations on requirements for development contributions); or
- d) Incorrectly applied its development contributions policy to the development.

You cannot challenge the content of the development contributions policy itself.

The notice of objection must:

- a) Be in writing; and
- b) Set out the grounds and reasons for the objection; and
- c) State the relief sought; and
- d) State whether you wish to be heard on the objection.

The objection must be lodged with the Council within 15 working days from:

- The date on which you received the development contribution notice, if no request for reconsideration was made; or
- The date on which you received the outcome of the reconsideration, if a request for reconsideration was made.

(The Council may, in its discretion, allow an objection to be served on it after the 15-working-day period, if satisfied that exceptional circumstances exist.)

As soon as practicable after receiving the objection, the Council will select not more than three development contributions commissioners from a national register to decide the objection.

The development contributions commissioner(s) will:

- Set a date by which briefs of evidence relating to the objection must be exchanged; and
- Decide whether a hearing on the objection needs to be held; and
- Fix the date, time, and place of the hearing, if a hearing is to be held; and
- Decide if replies to briefs of evidence are required, where no hearing is held, and set a date for this if it is required.

The development contributions commissioner(s) decision will be in writing and will be given within 15 working days after the end of the hearing or, if no hearing is held, the last day of the commissioners'

consideration of the evidence. The decision will be binding on both you and the Council. You can apply for judicial review of a decision made by a development contributions commissioner if you are not satisfied with the outcome of the objection.

There are charges for lodging an objection. The Council has the ability to recover actual and reasonable costs incurred by it from you in respect of:

- Selecting, engaging, and employing development contributions commissioners; and
- Secretarial and administrative support of the objection process; and
- Preparing for, organising and holding the hearing.

Remissions

Before a development contribution payment is made, you can make an application for a remission, where the Council will consider whether to exercise its discretion and grant a remission in whole or in part.

Remission (in whole or in part) of development contributions may be allowed in the following circumstances:

- Where the actual cost of the project or a revised estimate is lower than the cost used as the basis for the contributions indicated in this policy; or
- Where you will fund or otherwise provide for the same reserve, network infrastructure, or community infrastructure; or
- Where the projects indicated in the development contributions policy are no longer to be undertaken; or
- Where the Council determines that a development contribution will not be charged.

Any remission (in whole or in part) may result in the need for a private development agreement to confirm alternative arrangements.

There are charges for lodging a remission. The Council requires the initial payment of a fixed deposit. The final amount payable is dependent on the total amount of time and money spent in processing your application.

Deferral of Payment

Before a development contribution payment is made, you can make an application to defer the payment of a development contribution. These will be assessed on a case by case basis and may use any of the following mechanisms:

- Defer using Local Government Act 2002 parameters – allow payment to be made later in the sequence of development (for example, at building consent); or
- Defer using Resource Management Act 1991 mechanisms – for example, using lot amalgamation under the consent process to allow payment to be made as sections are sold; or
- Defer using legal agreement – for example, requiring payment as sections are sold. A legal agreement and a bank guaranteed bond (or similar) may be used to ensure payment.

Administration and interest costs may be added to deferred payments.

There are charges for lodging a deferral. The Council requires the initial payment of a fixed deposit. The final amount payable is dependent on the total amount of time and money spent in processing your application.

Unusual Developments

Before a development contribution payment is made, you can make an application for the proposal to be assessed as an unusual development.

An unusual demand is where a development creates a significantly different demand on infrastructure than could usually be expected under their relevant land use category, or where a development does not fit into the land use categories in the development contributions policy.

The Council will individually assess any such development taking into account the unusual demand characteristics.

There are charges for lodging an application for an unusual development. The Council requires the initial payment of a fixed deposit. The final amount payable is dependent on the total amount of time and money spent in processing your application.



**SECOND
GENERATION
DISTRICT PLAN**

**Urban Land Supply
Part 2
Section 42A Report**

**Appendix 5 – Correction to
Assessment of Residential Capacity**

**Proposed Second Generation Dunedin City
District Plan (2GP)**

24 May 2017

Revised Appendix 5: Corrected Capacity Data, 16 May 2017

Township / GR1TZ catchment		2018	2023	2028	2033	2038	2043	2048
Brighton	Existing adjusted capacity	30	30	30	30	30	30	30
	Projected demand	1	1	1	1	1	1	1
	120% Projected Demand	1	1	1	1	1	1	1
	Surplus / shortfall in capacity (capacity minus demand)	29	29	29	29	29	29	29
Broad Bay-Portobello	Existing adjusted capacity	67	67	67	67	67	67	67
	Projected demand	4	8	12	15	15	15	15
	120% Projected Demand	5	10	14	18	18	18	18
	Surplus / shortfall in capacity (capacity minus demand)	62	57	53	49	49	49	49
Karitane	Existing adjusted capacity	46	46	46	46	46	46	46
	Projected demand	8	8	8	8	8	8	8
	120% Projected Demand	10	10	10	10	10	10	10
	Surplus / shortfall in capacity (capacity minus demand)	36	36	36	36	36	36	36
Middlemarch	Existing adjusted capacity	47	47	47	47	47	47	47
	Projected demand	0	0	0	0	0	0	0
	120% Projected Demand	0	0	0	0	0	0	0
	Surplus / shortfall in capacity (capacity minus demand)	47	47	47	47	47	47	47

Outram	Existing adjusted capacity	6	6	6	6	6	6	6
	Projected demand	9	25	37	57	70	87	102
	120% Projected Demand	11	30	44	68	84	104	122
	Surplus / shortfall in capacity (capacity minus demand)	-5	-24	-38	-62	-78	-98	-116
Port Chalmers and Sawyers Bay	Existing adjusted capacity	40	40	40	40	40	40	40
	Projected demand	12	12	12	12	12	12	12
	120% Projected Demand	14	14	14	14	14	14	14
	Surplus / shortfall in capacity (capacity minus demand)	26	26	26	26	26	26	26
Waikouaiti	Existing adjusted capacity	72	72	72	72	72	72	72
	Projected demand	10	10	10	10	10	10	10
	120% Projected Demand	12	12	12	12	12	12	12
	Surplus / shortfall in capacity (capacity minus demand)	60	60	60	60	60	60	60
Waitati	Existing adjusted capacity	29	29	29	29	29	29	29
	Projected demand	1	1	1	1	1	1	1
	120% Projected Demand	1	1	1	1	1	1	1
	Surplus / shortfall in capacity (capacity minus demand)	28	28	28	28	28	28	28
Warrington	Existing adjusted capacity	40	40	40	40	40	40	40
	Projected demand	8	17	32	41	56	66	79

	120% Projected Demand	10	20	38	49	67	79	95
	Surplus / shortfall in capacity (capacity minus demand)	30	20	2	-9	-27	-39	-55
Fairfield, Abotsford, Green Island and Waldronville	Existing adjusted capacity	117	117	117	117	117	117	117
	Projected demand	174	398	596	780	960	1122	1294
	120% Projected Demand	209	478	715	936	1152	1346	1553
	Surplus / shortfall in capacity (capacity minus demand)	-92	-361	-598	-819	-1035	-1229	-1436
Mosgiel	Existing adjusted capacity	432	432	432	432	432	432	432
	Projected demand	128	347	559	812	1035	1227	1440
	120% Projected Demand	154	416	671	974	1242	1472	1728
	Surplus / shortfall in capacity (capacity minus demand)	278	16	-239	-542	-810	-1040	-1296
North	Existing adjusted capacity	69	69	69	69	69	69	69
	Adjusted GR1TZ capacity (Appendix 1)	60	60	60	60	60	60	60
	Total estimated capacity	129	129	129	129	129	129	129
	Projected demand	34	69	104	144	178	200	230
	120% Projected Demand	41	83	125	173	214	240	276
	Surplus / shortfall in capacity (capacity minus demand)	88	46	4	-44	-85	-111	-147
North East	Existing adjusted capacity	153	153	153	153	153	153	153
	Adjusted GR1TZ capacity (Appendix 1)	22	22	22	218	218	218	218
	Total estimated capacity	175	175	175	371	371	371	371



	Projected demand	61	137	211	298	384	461	542
	120% Projected Demand	73	164	253	358	461	553	650
	Surplus / shortfall in capacity (capacity minus demand)	102	11	-78	13	-90	-182	-279
North West	Existing adjusted capacity	101	101	101	101	101	101	101
	Adjusted GR1TZ capacity (Appendix 1)	0	0	0	0	0	0	0
	Total estimated capacity	101	101	101	101	101	101	101
	Projected demand	112	179	240	309	374	424	486
	120% Projected Demand	134	215	288	371	449	509	583
	Surplus / shortfall in capacity (capacity minus demand)	-33	-114	-187	-270	-348	-408	-482
South East	Existing adjusted capacity	191	191	191	191	191	191	191
	Adjusted GR1TZ capacity (Appendix 1)	0	0	0	0	0	0	0
	Total estimated capacity	191	191	191	191	191	191	191
	Projected demand	51	110	158	209	246	278	315
	120% Projected Demand	61	132	190	251	295	334	378
	Surplus / shortfall in capacity (capacity minus demand)	130	59	1	-60	-104	-143	-187
South West	Existing adjusted capacity	156	156	156	156	156	156	156
	Adjusted GR1TZ capacity (Appendix 1)	204	204	204	204	204	204	204
	Total estimated capacity	360	360	360	360	360	360	360
	Projected demand	51	107	160	199	231	254	282
	120% Projected Demand	61	128	192	239	277	305	338
	Surplus / shortfall in capacity (capacity minus demand)	299	232	168	121	83	55	22

West	Existing adjusted capacity	108	108	108	108	108	108	108
	Adjusted GR1TZ capacity (Appendix 1)	34	34	34	214	214	214	214
	Total estimated capacity	142	142	142	322	322	322	322
	Projected demand	24	46	55	64	66	88	105
	120% Projected Demand	29	55	66	77	79	106	126
	Surplus / shortfall in capacity (capacity minus demand)	113	87	76	245	243	216	196
Total	Total estimated capacity	2024	2024	2024	2400	2400	2400	2400
	120% Projected Demand	826	1769	2634	3552	4376	5104	5905
	Surplus / shortfall in capacity (capacity minus demand)	1198	255	-610	-1152	-1976	-2704	-3505