



# Example of an application for a subsequent Mining Permit for alluvial gold

This document provides applicants with a fictitious example of an application for a Tier 2 mining permit targeting alluvial gold and its corresponding evaluation by New Zealand Petroleum and Minerals (**NZP&M**). The purpose of the annotated application is to guide applicants on the type and level of information that should be provided when applying for an alluvial gold mining permit. The accompanying evaluation then demonstrates how NZP&M assesses that information for mining permit application. The purpose is to increase the transparency of the evaluation process.

This example document is to complement the guideline on “Preparing and acceptance of Tier 2 alluvial gold permit applications”.

NZP&M often has to go back to applicants during the evaluation process to request additional information. This reduces the efficiency of the evaluation process and results in longer processing times.

The Regulations require certain information to be provided with an application. This information is then assessed by NZP&M against the relevant criteria under the Act and Minerals Programme. Applicants provide the general information required under regulation but frequently;

- do not provide a level of detail that will enable an adequate assessment against the relevant considerations; or

- the information provided does not address specific aspects of the relevant considerations under the Act and Minerals Programme.

This example application is intended to help reduce these issues by:

- providing examples of the types and level of information needed to support an application targeting alluvial gold;
- highlighting the key parts of the legislation and how they are covered by the information in the application;
- directing readers to additional existing guidelines for further guidance,
- highlighting areas where the application will need to front-foot potential issues, and
- showing how the information provided in your application is assessed by NZP&M against the legislative requirements.

It is recommended that you refer to the relevant considerations under the Act and Minerals Programme, additional guidance given throughout the document, the Minerals guidelines on the NZP&M website, and, if in doubt, contact NZP&M.

It is important to note that your application may be affected by circumstances or eventualities that are not covered off in this example.

## Disclaimer

This document is an exemplar only and is not intended to cover every possible situation. In the unlikely event that the information within this document is inconsistent with the Act, relevant Minerals Programme or relevant regulations, the Act, Programme and regulations prevail.

There may be factors taken into account in any application process, transaction or decision that are not covered by this exemplar. Adherence to this document does not guarantee a particular outcome. New Zealand Petroleum and Minerals (**NZP&M**) retains the discretion to decline any application where the statutory requirements for that application are not met.

NZP&M is not responsible for the results of any action taken on the basis of information in this document, or for any errors or omissions. NZP&M may vary the information included at any time without notice. This document has no binding legal effect and should not be used as a substitute for obtaining independent legal advice

UNDER SECTION 23A & SECTION 32, CROWN MINERALS ACT

# Application for a prospecting permit, mining permit or minerals exploration permit

This form is to be used to apply for a new permit or a subsequent permit under section 32 of the Crown Minerals Act 1991. This form is not to be used to apply for a petroleum exploration permit or any permit offered for allocation by public tender under section 24 of the Crown Minerals Act 1991.

- New Zealand Petroleum & Minerals recommends that applicants familiarise themselves with the Crown Minerals Act 1991 (the 'Act'), the relevant regulations, and the relevant Minerals Programme, and seek professional advice where appropriate before making an application for a permit. See <http://www.nzpam.govt.nz/cms/about-nzpam/rules-and-regulations> for more details.
- Please note that information provided with your application is treated confidentially but may be subject to release under the provisions of the Official Information Act 1982. If this is the case, we may consult with you before the material is considered for public release.
- The personal information you must include in this form is needed to process your application under the Act. You have the right under the Privacy Act 1993 and/or the Official Information Act 1982 to access information held about you by New Zealand Petroleum & Minerals and request that this information be corrected if necessary.
- If the space on any part of this form is insufficient to include all relevant details, place them at the beginning of the supporting Information document in the order they appear in this form, state 'see supporting information' in the appropriate space, and attach the document to the application.
- Note that a permit holder is the person who is the sole permit participant, or all of the permit participants, as the case may be. A permit participant means a person who holds a participating interest in a permit.

## SECTION 1: CONTACTS

### 1.1 Application contact<sup>1</sup> details:

Please set out the details of the Application contact.

Name:	<hr/>
Organisation:	<hr/>
Postal address:	<hr/>

<sup>1</sup> Application contact

The Application contact is the sole point of contact for an application. An application contact:

- receives all communications about the progress of an application, including any application fee invoice.
- can view all applications for which they are the Application contact (where they have an New Zealand Petroleum & Minerals online permitting system account)

Email:	_____
Preferred contact method:	<input type="checkbox"/> Post <input type="checkbox"/> Email (a preferred method must be indicated)
Primary phone:	_____
Secondary phone:	_____

### 1.2 Permit administrator<sup>2</sup> details:

Please set out the permit administrator details.

Name:	_____
Organisation:	_____
Postal address:	_____

Email:	_____
Preferred contact method:	<input type="checkbox"/> Post <input type="checkbox"/> Email (a preferred method must be indicated)
Primary phone:	_____
Secondary phone:	_____

#### 2 Permit administrator

The Permit administrator is the ongoing primary contact on matters to do with the permit. A permit administrator:

- receives all communications regarding the permit not directed to the Fee administrator, Royalty administrator, ERL administrator, Geotechnical contact, or Audit contact. This includes all communication around upcoming obligations.
- can view all permits for which they are the Permit administrator (and where they have an New Zealand Petroleum & Minerals online permitting system account).
- by default assumes the Geotechnical contact role for a permit, when the permit is first granted, however this can be assigned at any time by email.
- by default assumes the Fee administrator role for a permit, when the permit is first granted, however this can be assigned at any time using this form.

## SECTION 2: PROPOSED PERMIT HOLDER PERMIT PARTICIPANTS AND INTERESTS

### 2.1 Proposed permit participant details:<sup>3</sup>

If there is more than one proposed permit participant please record the details of each additional one using Form APP 09 Additional permit participant information (see <http://www.nzpam.govt.nz/cms/permit-holders/permit-applications>).

Name of proposed permit participant: <sup>4</sup>	_____	
Type of proposed permit participant:	<input type="checkbox"/> Individual <input type="checkbox"/> NZ registered company (please state NZ Company number) _____ <input type="checkbox"/> Incorporated society <input type="checkbox"/> Partnership <input type="checkbox"/> Local authority	<input type="checkbox"/> Crown <input type="checkbox"/> Overseas company <sup>5</sup> <input type="checkbox"/> Trust <sup>4</sup> <input type="checkbox"/> Industrial and provident society <input type="checkbox"/> Other (please state)

<sup>3</sup> Under section 91 of the Act, the name and contact details of the permit participants of each permit must be on the public register. Contact details for the purposes of this section are considered to be the permit participant(s) address which may be an email address (currently address for service) and telephone number at which the permit participant may be contacted. Therefore, this information will be publicly available.

<sup>4</sup> Permits can only be granted to legal entities. Trusts must provide the full name of every trustee and partnerships the full name of all partners. This information may be supplied in a separate list included in the supporting information to the application.

<sup>5</sup> Please note that overseas companies carrying on business in New Zealand are required to register with the New Zealand Companies Office under section 334 of the Companies Act 1993. For further information on registration and the obligations of overseas companies carrying on business in New Zealand please refer to [www.companies.govt.nz](http://www.companies.govt.nz)

Postal address:<sup>6</sup>

Physical address:<sup>6</sup>

Address for service:<sup>7</sup>

Primary phone:

Email address:

Preferred contact method:

Post  Email (a preferred method must be indicated)

<sup>6</sup> Physical and postal addresses need to be of the registered office, if applicable.

<sup>7</sup> The address for service must be a physical address within New Zealand.

## 2.2 Proposed permit interests:

Please list all proposed permit participants, their percentage interest in the proposed permit and indicate the proposed permit operator.<sup>8</sup>

Permit participant(s):	Operator: <sup>8</sup> (Y/N)	Interest:
1.		%
2.		%
3.		%
4.		%
5.		%

<sup>8</sup> The operator is the person who is responsible for the day-to-day management of activities under the permit.

## SECTION 3: PROPOSED PERMIT DETAILS

### 3.1 Proposed permit details:

Please provide the following details:

What type of permit are you seeking?	<b>Petroleum</b> <input type="checkbox"/> Prospecting <input type="checkbox"/> Mining OR <b>Minerals</b> <input type="checkbox"/> Prospecting <input type="checkbox"/> Exploration <input type="checkbox"/> Mining
What mineral(s) are you seeking this permit for? <sup>9</sup>	
Proposed permit tier: <sup>10</sup>	<input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2

<sup>9</sup> For subsequent permits, the minerals must be one or more of the same minerals as the current permit.

<sup>10</sup> All Petroleum permits are Tier 1. For minerals permits see <http://www.legislation.co.nz/act/public/1991/0070/latest/DLM5239546.html>

<p>If this is a <i>prospecting</i> permit application, is a non-exclusive permit sought?</p>	<p><input type="checkbox"/> Not applicable (<i>non applicable for petroleum exploration permits</i>)</p> <p><input type="checkbox"/> Yes If this is a petroleum prospecting permit application, are you applying for speculative prospector status?<sup>11</sup></p> <p style="padding-left: 40px;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> No</p>
<p>If this is an <i>exploration</i> or <i>mining</i> permit application, is the application for a subsequent permit pursuant to section 32 of the Act?</p>	<p><input type="checkbox"/> Not applicable (<i>not an exploration or mining permit application</i>)</p> <p><input type="checkbox"/> Yes current permit number: _____</p> <p><input type="checkbox"/> No (<i>Application must be received before permit expires</i>)</p>
<p>If this is a <i>Minerals mining</i> permit application, please tick all mining methods that are proposed to be used and state whether the application is for a hobby or recreational operation and whether it is for a special purpose mining activity:</p>	<p><input type="checkbox"/> Not applicable (<i>not a minerals mining permit application</i>)</p> <p><input type="checkbox"/> Solution mining      <input type="checkbox"/> Opencast      Other (please state) _____</p> <p><input type="checkbox"/> Surface mining      <input type="checkbox"/> Underground _____</p> <p><input type="checkbox"/> Dredging      <input type="checkbox"/> Reworking _____</p> <p>Hobby or recreational operation<sup>12</sup>    <input type="checkbox"/> Yes    <input type="checkbox"/> No</p> <p>Special purpose mining activity<sup>13</sup>    <input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
<p>If this is a <i>Minerals</i> permit application, is the application part of a newly available acreage (NAA) offer?<sup>14</sup></p>	<p><input type="checkbox"/> Not applicable (<i>not a minerals permit application</i>)</p> <p><input type="checkbox"/> Yes NAA number: _____</p> <p><input type="checkbox"/> No</p>
<p>Proposed area:<sup>15</sup></p>	<p>_____ hectares or _____ square km</p>
<p>Location:</p>	<p>Region (please state) _____</p> <p><input type="checkbox"/> Onshore    <input type="checkbox"/> Offshore<sup>16</sup>    <input type="checkbox"/> Both</p>
<p>Is the permit application area intended to exclude all granted permits or existing privileges for the same minerals group?</p>	<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>
<p>Proposed operation name:</p>	<p>_____</p>
<p>Proposed duration<sup>17</sup></p>	<p>_____ Years _____ Months</p>

<sup>11</sup> As defined under section 90C of the Act.

<sup>12</sup> Hobby or recreational operations means small-scale suction dredging operations where the suction dredge has a combined engine rating no higher than 10 horse power, and beach sand mining operations that are limited to hand tools and riffle box.

<sup>13</sup> As defined under section 2 of the Act.

<sup>14</sup> Land with NAA status is subject to a time-bound competitive allocation process. For more information about the process, see clauses 6.7. and 6.8 of the Minerals Programme for Minerals (Excluding Petroleum) 2013.

<sup>15</sup> The area is to be stated in hectares for Minerals exploration and mining permits only. For all other permit types, including all Petroleum permits, please state the proposed area extension in square kilometres.

<sup>16</sup> Offshore is anything that is the seaward side of the mean high watermark.

<sup>17</sup> **Prospecting permits** are ordinarily granted initially for up to 2 years, **exploration permits** are ordinarily granted initially for up to 5 years and **mining permits** for up to 40 years. **Mining permits** for alluvial gold and hobby or recreational operations are ordinarily granted for up to 10 years.

## SECTION 4: SUPPORTING INFORMATION

### 4.1 Documents required:

Please attach the following:

- A signed APP 09 form for each additional proposed permit participant.
- A signed APP 10 Application authority form for each proposed permit participant that is not you as an individual.
- For Tier 1 minerals applications on land for minerals other than gold or silver only – a Land Minerals Status (LMS) report. Even if this is a subsequent permit application and an LMS report has previously been provided please attach a copy of the report.
- A map of the permit area. The map must clearly identify the location of the proposed permit and must be prepared in accordance with the regulations. For subsequent permit applications, the area must fall only within the area of the current permit.
- Other supporting information as outlined in the relevant Regulations, see the application guides at the following link: <http://www.nzpam.govt.nz/cms/permit-holders/permit-applications>

## SECTION 5: APPLICATION FEE

### 5.1 Fee payment:<sup>18</sup>

Please indicate how the application fee is to be or has been paid:

- I have paid by direct credit and have attached as evidence a copy of the successful internet banking transaction.
- I have attached a cheque.

<sup>18</sup> Your application must be accompanied by the appropriate fee prescribed in the relevant fees regulations or evidence that the appropriate fee has been paid. Payments by direct credit are to be made to New Zealand Petroleum & Minerals' bank account held with Westpac Bank, NZ Government Branch- 318 Lambton Quay, Wellington New Zealand 6011, account number 03 0049 0001311 02 and a proposed permit participant's name should be used as the reference for the payment. An applicant is also expected to pay for all bank fees incurred for telegraphic transfers made from overseas. One bank fee is charged when the fee leaves the country of origin's bank and another fee is charged when it is received by a bank in New Zealand. As such, payments by telegraphic transfer should ensure that overseas bank charges are set to 'Ours' in order to have the bank fees paid at both ends – SWIFT Code is WPACNZ2W.

## SECTION 6: DECLARATION

I declare that all information provided in this application is true and correct to the best of my knowledge and that I am authorised to sign this application<sup>19</sup>.

Signature:	_____
Name:	_____
Position of signatory:	_____
Organisation:	_____
Date:	_____

<sup>19</sup> Where the permit participant is a company, partnership, society, trust or other legal entity, the application must be signed in accordance with the relevant legislative requirements, constitution, or rules by a person or agent with the requisite authority. All applications must be signed in accordance with the relevant regulations.

This completed form is to be forwarded to [nzpam@mbie.govt.nz](mailto:nzpam@mbie.govt.nz) or mailed to the NZP&M postal address below.

[www.nzpam.govt.nz](http://www.nzpam.govt.nz)  
[nzpam@mbie.govt.nz](mailto:nzpam@mbie.govt.nz)

PO Box 1473, Wellington 6140,  
New Zealand

FREEPHONE (WITHIN NEW ZEALAND): 0508 263 782  
INTERNATIONAL CALLS: +64 3 962 6179 FAX: +64 4 471 0187

NZP&M is a branch of the New Zealand Ministry of Business, Innovation and Employment. We manage New Zealand's Crown Mineral Estate. Our aim is to maximise the gains to New Zealand's economy from development of these resources, a key component to the government's Business Growth Agenda. To support this aim we endeavour to educate and inform New Zealanders, including consultation with indigenous stakeholders and local government.



# An example of an application for a Subsequent Mining Permit

The purpose of this document is to provide applicants with an example of the types of information that can be used to support an application for a Tier 2 mining permit targeting alluvial gold. Permit applicants should also refer to the online guidance on preparing and acceptance of Tier 2 alluvial gold permit applications.

An application for a mining permit must satisfy the requirements, and be consistent with, the purpose of the Crown Minerals Act 1991 (the **Act**), the Crown Minerals (Minerals other than Petroleum) Regulations 2017 (**Regulations**) and the Minerals Programme for Minerals (Excluding Petroleum) 2013 (**Minerals Programme**). In order for an application to be accepted for processing it must contain the information specified in regulation 18 of the Regulations.

Once an application is deemed complete and is accepted for evaluation, the assessment by NZP&M will focus on the considerations, criteria that are outlined in the Act, Regulations and Minerals Programme, especially Chapter 10 which relates to mining permits.

To satisfy those requirements the application has to provide sufficiently detailed information to allow for a complete evaluation. Taking some time to expand on and provide context for your application and to make it as complete as possible will go a long way in our evaluation of your permit application in a timely manner.

NZP&M has developed a series of Minerals Guidelines that provide useful information to help guide our applicants through the legislation and the application process. Guidelines have been developed for a variety of aspects, including one specifically covering the preparation and acceptance of Tier 2 alluvial gold permit applications. Have a look at the guidelines while preparing your application: <https://www.nzpam.govt.nz/permits/minerals/guidelines/>.

The following is an example of an application for a subsequent Mining Permit for alluvial gold and aggregate. Discussion of what is required is given in italics.

## **APPLICATION FOR A SUBSEQUENT MINING PERMIT FOR ALLUVIAL GOLD AND AGGREGATE**

### **Objectives**

*It is worth outlining at a high level the objective(s) of the proposed operation. This will help address whether the application is consistent with the purpose of a mining permit (i.e. consistency with section 23 of the Act and clause 10.1(3) of the Minerals programme).*

### **Example information**

Jim Shue is applying for a Tier 2 subsequent mining permit for gold and aggregate over a 55.5 ha portion of Exploration Permit 22011, approximately 25 km east of Northwest Southton. This application comes on the back of results from a programme of test-pitting and bulk-sampling in Midas Formation gravels along a degraded terrace in Upshot Creek. The primary focus of the mining operation will be the recovery of alluvial gold in the terrace block but a small volume of the processed gravels will be stockpiled and sold as aggregate to the local market.

*Ordinarily a mining permit application targeting alluvial gold has to be an unbroken area less than 200 hectares and cover an unbroken area (clauses 4.6, 10.3 and 10.4 of the Minerals Programme). If the land you're applying for is outside of these parameters then you will need to justify why this is appropriate. Your application should also justify why the full application area is required.*

### **Geology & Permit Area History**

*Clause 10.2 of the Minerals Programme outlines a number of matters that are ordinarily considered when assessing a proposed work programme and/or whether a deposit or resource has been sufficiently delineated. These include consideration of an applicant's knowledge of the area (e.g. mineral occurrences, geology and previous work) as well as the actual resource and how it is proposed to be worked.*

*The proposed work programme needs to be appropriate to the geology of the area and compatible with previous prospecting, exploration or mining activities. The proposed activities need to be in accordance with good industry practice.*

*A map of the geology is a valuable addition, particularly with additional annotation showing historical activity and the location of proposed activity.*

#### **Example information**

A geological map of the area is shown in Figure 1. The target geology is the auriferous mid-Pleistocene glacio-fluvial gravels of the Midas Formation. These gravels occur in relict stream beds and fluvial terraces throughout the Paddle Valley, deposited by Upshot Creek. In the adjacent Silicon Valley the Midas gravels were mined intermittently from the early 1900s through to 1939 by Golden Goose Limited. Little information can be found about the total amount of gold recovered during this period, but we were able to find historic company records showing that 1,050 troy ounces were recovered during the final three years of the operation.

Paddle Valley is incised into Greenland Group meta-sediment basement. These Greenland Group rocks, and the adjacent schists to the north-west, are reported to host mineralised quartz veins. Locally, the Pliocene-aged Murky Mudstone unconformably overlies basement which is then overlain by the auriferous Midas Formation gravels. The gold in these gravels is thought to have been sourced from erosion of the mineralised quartz veins. Fluvio-glacial processes have transported and concentrated the gold into placer deposits along the active stream beds and river terraces. The contact between the Midas gravels and Murky Mudstone is considered to mark the 'bottom' of the alluvial gold-bearing deposits in the region.

Paddle Valley has experienced little dedicated exploration activity. Prior to our current exploration work the last known activity in the area was an exploration programme conducted by Cash Cow Ltd in 1992 under EP 12345. Although the company's focus was on establishing hard rock gold prospectivity they also carried out some preliminary work on the alluvial gold resource potential of the Upshot Creek river bed and terrace structures. Stream sediment was panned at 10 locations along the active Upshot Creek bed with mixed results ('colour' observed in 4/10 pans). Three test pits were also completed along a degraded terrace. These data are reported in Minerals Report (MR) 7777 and Table 1. The approximate sample locations are shown on Figure 2.

Although the location of the sites and gold grade were reported (91-139 mg Au/m<sup>3</sup>), few other details were given. In particular, no information was given about sample depths or thickness of overburden and wash. The company went into liquidation shortly thereafter and no further exploration work was carried out in the area until we obtained EP 22011.

Under EP 22011 we have re-tested this same degraded terrace and from our results have identified a mineable alluvial gold deposit in the Midas Formation gravels that comprise the terrace, and this is outlined in subsequent sections.

*All gold, silver, and uranium is owned by the Crown – these are sometimes referred to as the "statute minerals". All other minerals, even those on Crown-owned land, have the potential to be privately-owned. Permits cannot be issued for privately-owned minerals. For this reason, if your application includes non-statute minerals (such as gravel, aggregate, sand etc.) you must provide evidence of the mineral ownership in the application area.*

*NZP&M strongly recommends that applicants provide a Land and Mineral Status (LMS) report prepared by a LINZ-accredited supplier. A list of accredited suppliers can be found [here](#).*

*In some cases, particularly where mineral ownership is contentious, or multiple land parcels are involved, NZP&M may require a LMS report from a LINZ-accredited supplier be provided.*

#### **Example information**

In addition, testing to-date has identified that the clean, well-sorted Midas Formation gravels in the application area hold value as a source of aggregate, and will be a secondary target of our mining activities. A large inactive, NE-striking thrust fault lies to the east of the application area.

A Land and Mineral Status (LMS) report was supplied to NZP&M in support of EP 22011. That report, prepared by a LINZ-accredited Crown Property Supplier confirmed that the gravel in the application area is owned by the Crown. A copy of that earlier LMS report is attached to this application.



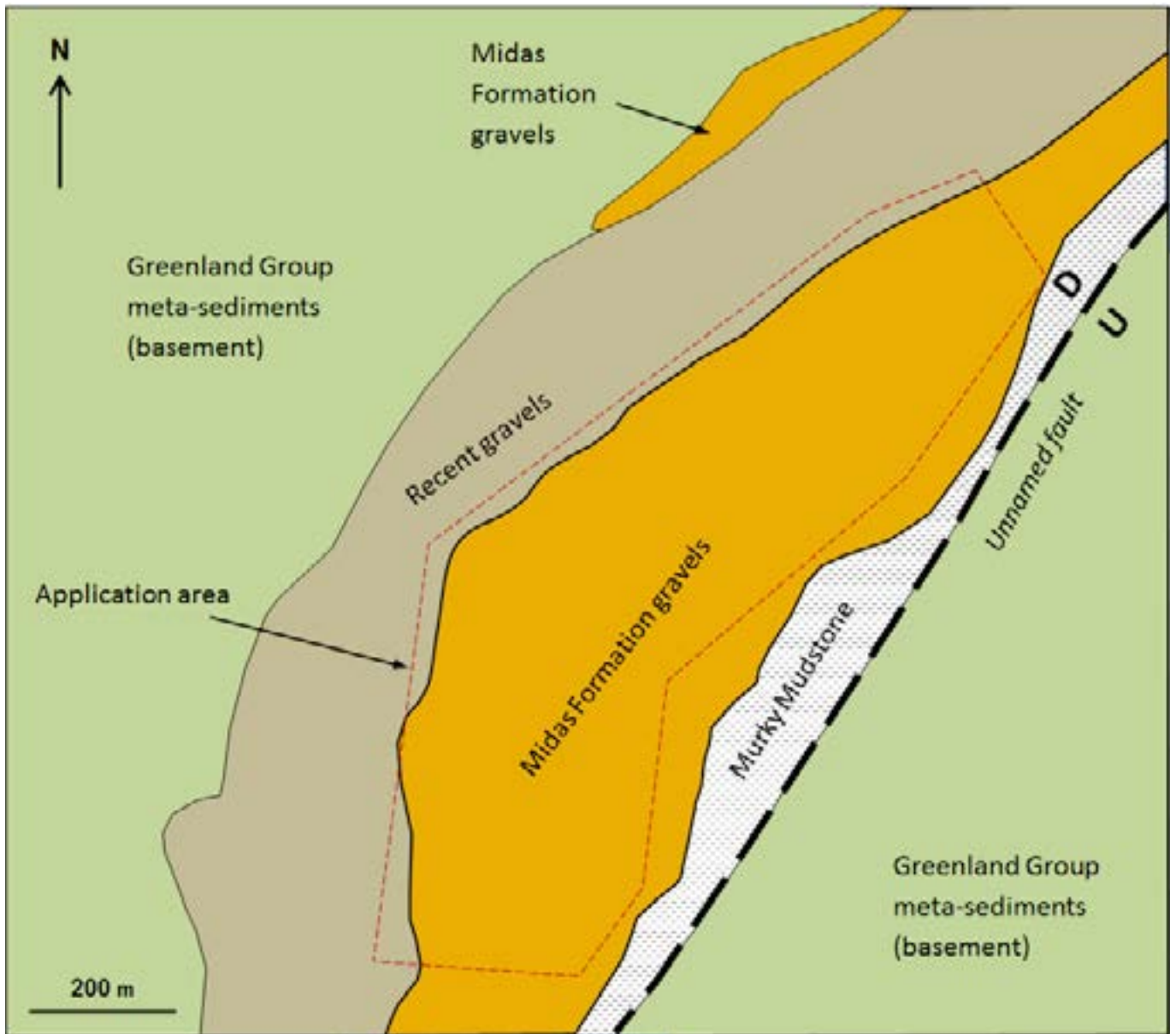
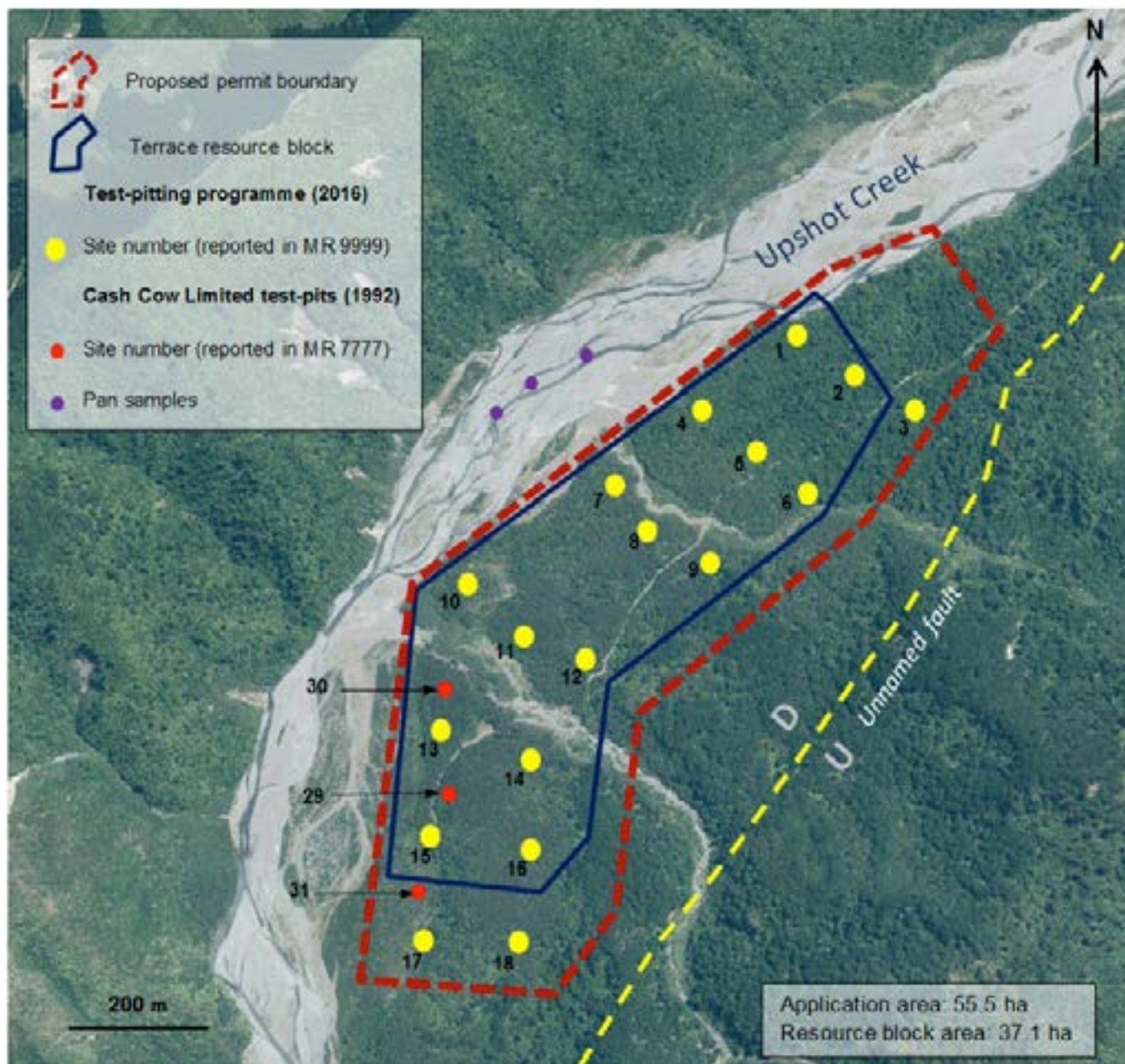


Figure 1: Geological map of the application area and surrounding Paddle Valley area.



**Figure 2: Aerial photo showing the proposed subsequent mining permit area and the delineated terrace resource block. Also shown are relevant recent and historical exploration sites.**

### Alluvial gold resource block

The delineation of the resource is considered under clauses 10.2 and 10.3 of the Minerals Programme.

You need to clearly explain what data has been used to prepare the resource estimate and be transparent about any assumptions that are built in to it. NZP&M is also interested in the quality of the data underpinning the resource estimate. A map should be provided to show the area of land that the resource estimate applies to as well as showing the sample locations for data used in (or excluded from) the estimate.

Estimates of the mineral resource should show or include:

- A map showing the size and location of the gold deposit in relation to the application area.

- The location of historical or recent exploration and type of exploration and sampling (e.g. drill holes, test pits etc.) used to estimate the resource.
- The thickness and depth of the gold bearing material.
- The volume of gold-bearing material in cubic metres.
- The gold grade, provided in units of milligrams of gold per cubic metre (mg Au/m<sup>3</sup>).
- The quantity of gold in either kg or troy ounces.

Applying a simple weighting to your sample data will give a more realistic resource estimate e.g. by accounting for variations in sample volumes, depths, and grades. Applicants are encouraged to provide a spreadsheet to show the workings for their resource estimate – see the example provided.

### Example information

A mineable alluvial gold resource block covering 37.1 ha has been delineated from the results of test-pitting and bulk sampling activities carried out under EP 22011. The results of this test

pitting programme are fully documented in report MR 9999 submitted to NZP&M, and are summarised here to support this application (Table 1).

**Table 1: Results of test pitting and bulk sampling programme**

Site	Depth (m)	Overburden (m)	Wash thickness (m)	Volume (m <sup>3</sup> )	Grade (mg Au/m <sup>3</sup> )	Bottom contact	Comment
1	4.2	1.5	2.7	10	93	Mudstone	Issues with pit collapse and infiltration
2	5.6	2.6	3.0	15	112	Mudstone	
3	7.2	4.1	3.1	15	42	Mudstone	Excluded from resource block
4	4.5	1.7	2.8	15	367	Mudstone	
5	4.7	1.9	2.8	200	559	Mudstone	Bulk sample
6	5.8	2.8	3.0	15	333	Mudstone	
7	4.1	1.2	2.9	15	266	Mudstone	
8	4.3	1.3	3.0	200	259	Mudstone	Bulk sample
9	5.5	2.4	3.1	15	232	Mudstone	
10	3.6	0.9	2.7	15	216	Mudstone	
11	4.2	1.3	2.9	200	234	Mudstone	Bulk sample
12	5.0	1.7	3.3	15	177	Mudstone	
13	4.1	1.3	2.8	15	239	Mudstone	
14	4.9	1.5	3.4	15	332	Mudstone	
15	3.9	1.2	2.7	200	149	Mudstone	Bulk sample
16	5.0	1.9	3.1	15	192	Mudstone	
17	4.7	1.8	2.9	15	14	Mudstone	Excluded from resource block
18	5.5	2.5	3.0	15	23	Mudstone	Excluded from resource block
<b>Sample Sites from Cash Cow Limited, 1992 (as reported in MR7777)</b>							
29	4	Not stated	Not stated	10	109	Base of wash not reached	Excluded from resource estimate as base not sampled
30	4	Not stated	Not stated	10	132	Base of wash not reached	Excluded from resource estimate as base not sampled
31	4	Not stated	Not stated	10	91	Base of wash not reached	Excluded from resource estimate as base not sampled

Gold-bearing gravels were tested at 18 locations (Figure 2) by excavating pits and processing gravel wash through a 1.2 m land-based trommel screen. Residual sample was further processed on a Wiffley table and the recovered gold then weighed. Volumes processed were typically 15 m<sup>3</sup> although 200 m<sup>3</sup> bulk samples were taken at four sites. Sample volumes were calculated based on 1 heaped bucket load being equivalent to 1 m<sup>3</sup> (using a 1,000 mm width bucket on the 20 T excavator).

Gold grades of 14 to 559 mg/m<sup>3</sup> were encountered with economic grades recovered in all but three holes. The depth of overburden (comprising soil and non-auriferous gravels) ranged from 1.1 to 3.1 m and wash thickness ranged from 2.1 to 3.7 m. All 18 pits encountered the Murky Mudstone confirming that the full thickness of the gravel wash was sampled at all sites. Overburden and wash thickness increased slightly towards the eastern boundary of the application area. For this reason we have used the weighted averages of gold grade, wash thickness and overburden to estimate the total mineable alluvial gold resource and to inform the project economics. The weighting also takes into account the amount of material sampled (Figure 3).

The estimated mineable alluvial gold resource is as follows:

- Terrace resource block area = 37.1 ha
- 1.8 m overburden (weighted average) consisting of soil and low-grade gravels
- 3.1 m thick gold-bearing gravel wash (weighted average)
- 1,140,000 m<sup>3</sup> of gold-bearing gravel at a weighted global average grade of 279 mg Au/m<sup>3</sup>, for ~10,220 troy oz. of gold

Data from the following sites are not included in the resource block or resource estimation:

- Our sample sites 3, 17, and 18, which yielded uneconomic grades – these sites are outside of our delineated resource block; and
- Samples sites 29, 30, and 31 of Cash Cow Limited (MR 7777) – although gold grades were reported we don't consider the data reliable. No information was given about sample depths or thickness of overburden and wash. We suspect the full thickness of the gravel wasn't sampled.

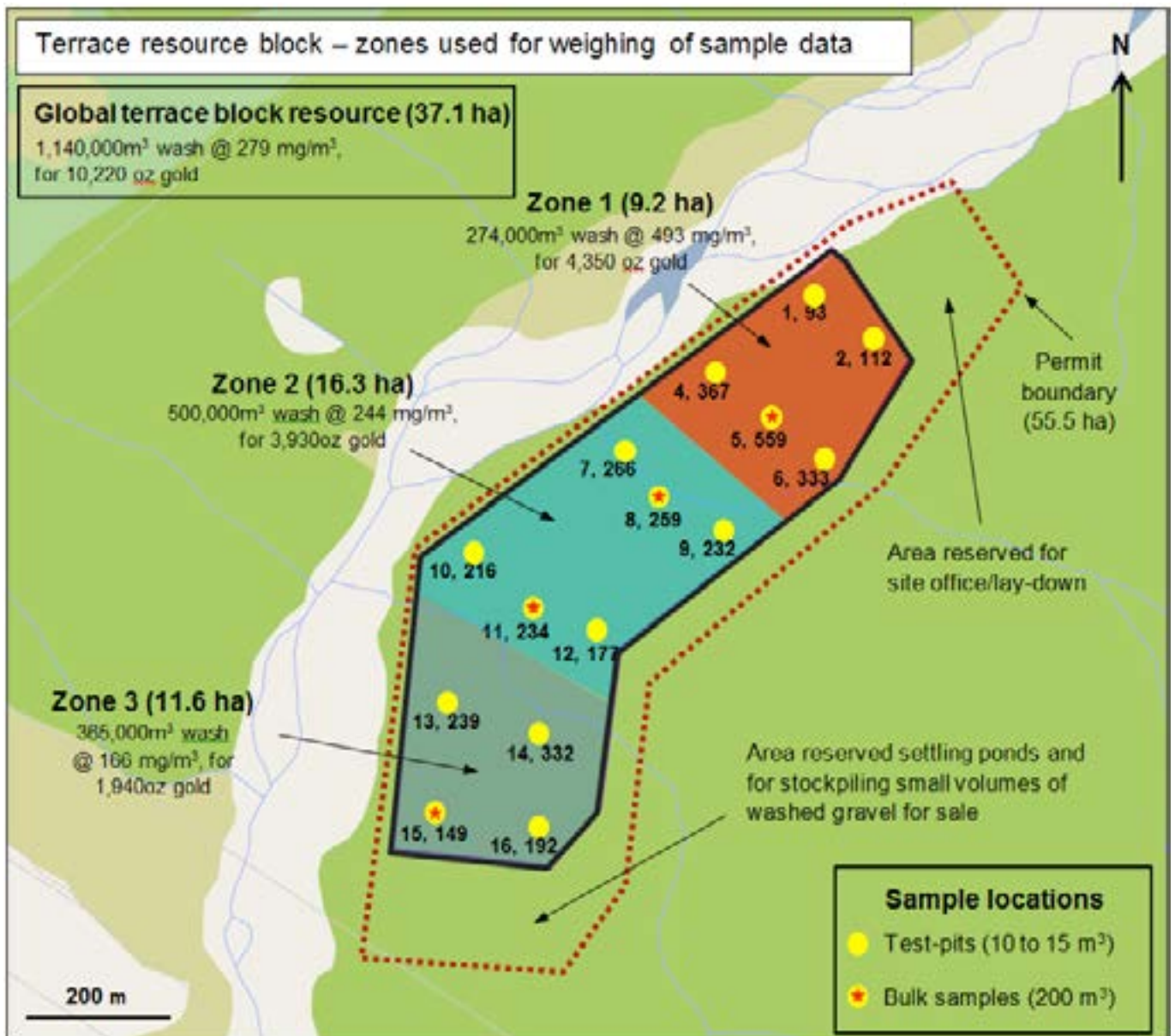


Figure 3: Map showing the location of test-pit and bulk sample sites used in the resource estimate. Numbers next to the site locations denote the site number followed by the gold grade reported in mg Au/m<sup>3</sup>. The resource block was spatially divided into three zones to allow data to be appropriately weighed (i.e. to take into account the relative importance of sample volumes, wash thickness, and gold grade).

## Work Programme

*Clauses 10.2 and 10.3 of the Minerals Programme outline the specific matters that are ordinarily considered in assessing a proposed work programme for a mining permit and suitability of the application area.*

*Applicants should provide details of the size, nature, extent, and siting of the proposed mining operation and the intended mining method. Assessment of the proposed work will include consideration of:*

- *The proposed start date for production.*
- *The expected production rate and proposed production schedule.*
- *The progression and direction of the mining operation along the delineated resource.*
- *How often the operation will be worked.*
- *The expected resource recovery.*
- *How long it is expected to take to extract the resource. Estimated expenditure on a weekly and/or yearly basis.*

*The work programme must comprise activities to economically exploit the identified resource/deposit and those activities must be carried out in accordance with good industry practice. Therefore you should describe the proposed activities in sufficient detail to demonstrate consistency with good industry practice.*

*During the evaluation a 'minimum' work programme will be agreed upon with NZP&M. This is usually based on key milestones (such as the commencement of mining) and ongoing commitments (such as maintaining a minimum mining rate). Your application should state what you consider to be realistic minimum work programme obligations. Proposed production rates in particular should be kept realistic – remember that NZP&M will monitor compliance against the agreed minimum work programme.*

*For further guidance refer to the document ["Guidance on design of work programmes for minerals prospecting, exploration and mining permits"](#).*

### Example information

Our proposed work programme for the permit is as follows:

- Within 12 months of obtaining the permit:
  - Obtain resource consents from Regional and District councils – we already have consents for water take and discharge to water in place (RC2017-55-03 and RC2017-55-04) but need to upgrade our land disturbance consent and obtain consent to clear vegetation from the site. We already have a land access agreement in place with the private land owner.
  - Establish site infrastructure (settling ponds, site office, ~300 m of access tracks).
  - Clear vegetation.
  - Carry out further test-pitting to increase sample density, and confirm grades (resource estimate updated as appropriate), and to confirm resource does not continue under areas planned for site infrastructure.
  - Strip overburden, stockpile soil and low-grade gravel for rehab.
  - Commence mining of gold-bearing gravels.

- Once production has started:
  - At full production we will anticipate an annual production of 50,000 m<sup>3</sup> of gold-bearing gravel through a 1.2 m land-based trommel. Based on our test-pitting and bulk-sampling results this should yield approximately ~450 ounces of gold per year.
  - We consider we can commit to a minimum production of 30,000 m<sup>3</sup> gold-bearing gravels per year. This would allow for mechanical failures, maintenance, adverse weather etc.
  - Approximately 5,000 to 10,000 m<sup>3</sup> of the processed gravels will be stockpiled annually for sale to the domestic market – the remainder will be used to rehab the site.
  - Ongoing test-pitting and appraisal.
  - Rehabilitation as the mine progresses.

It is considered that completing the above work programme will allow for the development and extraction of the alluvial gold resource, and in a manner consistent with good industry practice.

### Duration

*Clause 10.6 of the Minerals programme states that a Tier 2 mining permit for alluvial gold is typically only granted for up to 10 years. Later down the track a permit holder may apply to extend the duration of their mining permit.*

### Example information

We are applying for the 10 years available for an initial Tier 2 mining permit.

If we commence mining within 12 months and achieve an annual production of around 50,000 m<sup>3</sup> of gold-bearing gravels per year we estimate it will take about 24 years to deplete the alluvial gold resource. As such we will likely apply in future to extend the duration of the mining permit.

### Proposed mining and project economics

*Clause 10.2(1)(e) and (f) of the Minerals Programme require consideration of the proposed mining activities from feasibility and financial viability standpoint. You need to demonstrate that you have considered and factored in realistic costs and income for the operation. This needs to include consideration of the capital needed upfront to get the operation underway before it starts producing an income, as well as ongoing expenditure. A relatively detailed breakdown of the project economics should be provided. See the spreadsheet example provided.*

A two-person mining operation is proposed, which will be led by Jim Shue (as the Permit Operator), employing Trevor Smith as a subcontractor. Soil and low-grade gravel will be stripped to expose the gold-bearing wash at the base of the Midas Formation. Soil and low-grade gravel will be stockpiled for rehabilitation. Mining will begin from the southwest corner of the resource block and will zig-zag back and forth to the lateral extents of the resource block as the mine footprint advances progressively upstream, roughly parallel to Upshot Creek. Rehabilitation will occur as the mine advances. The mine footprint is subject to change pending conditions of the resource consents.

As the depth to the bottom of wash varies from only 3.6 to 5.6 metres, the mine pit will use a single bench to the working floor of the mine.

Annual production estimates are based on an average working day of 8 hours throughout the year. Taking into account seasonal variability, our annual production assumes the gold screen is operating on average for 8 hours a day, 5 days a week for 42 weeks a year.

Two excavators (20T and 30T) will be used to extract gold-bearing wash which will be fed through a land-based 1.2 m trommel to recover gold. With this equipment we are able to process approximately 240 m<sup>3</sup> of wash during an 8 hour day.

Therefore, running at full production, we expect an annual throughput of just over 50,000 m<sup>3</sup> of gold-bearing gravel. At a weighted average global gold grade of 279 mg/m<sup>3</sup> of wash, this is expected to yield 452 troy oz. of gold per year. At a conservative local gold price of \$1,600 per troy oz., this equates to a gross gold income of **\$723,000** per year.

It is noted that a smaller volume of the washed gravels (on the order of 5,000 to 10,000 m<sup>3</sup> per year) will be stockpiled for sale to the local market with the remainder used in site rehabilitation. This will be a source of additional income although this will be subject to local demand and may be irregular. Gravel sales have not been factored into the project economics.

A Land and Mineral Status (LMS) report was supplied to NZP&M in support of EP 22011. That report, prepared by a LINZ-accredited Crown Property Supplier confirmed that the gravel in the application area is owned by the Crown. A copy of that earlier LMS report is attached to this application.

The overall costs of running the operation include:

- \$101,000 wages for two people @ \$30 per hour fulltime for 42 weeks a year
- \$84,000 per year for lease of a 30 tonne excavator
- \$72,000 per year in diesel/fuel to operate two excavators, pumps, gold screen
- \$23,000 per year contingency for maintenance and repairs
- \$87,000 per year for administrative costs (includes permit fees, resource consents, insurance and royalties to the Crown and landowner as a percentage of gold revenue).

This equates to a total annual cost of **\$367,000**. With this cost structure and level of production the operation has a break-even local gold price of just over \$710 per troy oz. Alternatively, with the same costs and a local gold price of \$1,600 then an annual production of around 200 troy oz. is required to remain profitable.

Therefore, the total annual profit margin of the operation at full production is expected to be approximately **\$356,000**.

For full details of the project economics and assumptions, refer to the spreadsheet included.

## Start-up costs

It's estimated that the operation will take \$60,000 to get set-up and underway. This includes the cost for resource consents, stripping vegetation, establishing settling ponds, ~300 m of access tracks and a container site office.

## Point of valuation

The proposed point of valuation for calculating royalties is the permit boundary.

## Capability

*The capability of an applicant to comply with and give effect to the proposed permit and work programme is an important consideration in the legislation (e.g. section 29A(2) of the Act). Clause 5.3 of the Minerals Programme also provides that where there is a significant concern with an applicant's capability – from either a technical, financial, or poor compliance history standpoint – the application can be declined without further consideration.*

*As such the application needs to demonstrate, in sufficient detail, the applicant's capability of meeting the proposed work programme and general permit conditions. This will need to be established with respect to the applicant's technical capability, financial capability, and (where relevant) their compliance history on previous permits.*

## Technical

*The technical capability of the proposed 'operator' to undertake the day-to-day management of the work programme must be demonstrated. This includes the appropriate level of technical experience for the person(s) responsible and also the availability and suitability of relevant equipment.*

*If an applicant proposes to contract work out to a third party in order to bring in technical expertise, then the applicant should also be able to demonstrate relevant experience in the management of projects and contractors.*

*For further guidance refer to the [Technical Capability](#) guideline.*

## Example information

The two-person mining operation will be led by Jim Shue (as the Permit Operator), employing Trevor Smith as a subcontractor. Jim has 10 years' experience exploring and mining for alluvial gold in New Zealand – this includes exploration work on EP 21045 and EP 22011 and alluvial mining using a land-based screen on MP 97124 and MP 97633 (the Old Nick's mine).

Jim holds a B-Grade Mine Manager's certificate and is currently studying towards his A-grade certificate. He owns outright an eight year old 20 T digger and a truck and low loader for transporting it. He also owns a 1.2 m trommel screen, sluice boxes, water pumps, a 150 mm dredge and an assortment of smaller equipment that will be used in the mining operation. He has 'wheels, tracks and rollers' endorsements on his licence.

A 30 T excavator will be leased for use in the operation.

Trevor Smith has 7 years' experience in alluvial gold exploration and mining in Canada (2 years) and New Zealand. He is currently working towards his B-Grade certificate and has wheels, tracks and rollers licence endorsements.

## Financial

You will need to demonstrate that you have sufficient funding available to undertake the obligations in the work programme. While a bank statement can show a level of available funds it does not necessarily indicate commitment to spend the funds on the proposed work programme. Further evidence of commitment of those funds e.g. agreements with equipment suppliers or previous evidence of financial commitment can strengthen the case for granting the permit application. It is important to provide independent evidence of financial capability.

Applicants with an existing permit portfolio should also factor in committed spending on other their other permits.

Refer to the [Financial Capability](#) guideline for more information, including the different types of supporting evidence that are (or are not) acceptable.

### Example information

Mr Shue is financially capable of meeting all work programme obligations and payment of annual fees. As evidence of this the following attachments are provided:

- A current ZNA Bank statement (dated 01 July 2017) showing a balance of \$32,287;
- Evidence of passive income from another business interest with tax statements showing income for the preceding two years;
- A schedule of equipment owned by the applicant, and that is available for use on the permit;
- A breakdown of committed expenditure on the applicant's other active permits - \$20,000 is committed over the next 5 years;
- A letter from the Mr Shue's accountant, Cash Ledger, providing a reference in support of Mr Shue's financial capability to establish the mine and undertake the proposed mining activities, in addition to existing exploration work programme commitments; and
- A letter of credit from the ZNA Bank (dated 01 July 2018) confirming a line of credit to the amount of \$80,000 to be used to fund the start-up costs of the mine operation.

Once the operation is established the revenue from the mine will be used to absorb operating costs.

## Compliance

Any previous history with NZP&M and minerals permits will be taken into consideration, particularly any compliance issues. These may be in regard to compliance with timely completion of work programme obligations, reporting obligations and any fees. If there are some historical compliance issues with previous permits then 'front-footing' issues with explanation and/or assurance of future compliance is recommended.

### Example information

Jim Shue's compliance history on his various permits has been pretty good overall.

An issue with completion of the first stage of the work programme for EP 666 has been addressed previously with NZP&M following the difficulties encountered after the great flood of 2009. It's acknowledged that we should have applied for a change of conditions to avoid becoming non-compliant. We've chalked that one up to inexperience and don't expect a repeat of those issues. The second stage work programme obligations were completed and led to the delineation of a resource and successful grant of a subsequent mining permit over part of this area.

Jim Shue holds a 50% interest in EP 21045 along with Harry Foot. NZP&M will be aware that, although the first stage drilling programme for that EP was completed ahead of time, the associated technical report was submitted well after the due date (eventually submitted as MR 8888). This was an oversight on our part as we had planned to compile and submit the report ourselves but lost track of the timeframes and as a result missed the reporting deadline.

Going forward we will be engaging the services of Janice Goodie (Goodie Consulting Limited) who will be helping ensure we meet our reporting obligations. Janice has over 30 years' experience as a consultant to the mineral exploration and mining industry and will assist with the preparation and submission of all our technical reports.

We are up-to-date and compliant with all work programme, reporting and financial obligations on the parent permit (EP 22011).



**NEW ZEALAND  
PETROLEUM & MINERALS**

[www.nzpam.govt.nz](http://www.nzpam.govt.nz)  
[nzpam@mbie.govt.nz](mailto:nzpam@mbie.govt.nz)

PO Box 1473, Wellington 6140,  
New Zealand

FREEPHONE (WITHIN NEW ZEALAND): 0508 263 782  
INTERNATIONAL CALLS: +64 3 962 6179 FAX: +64 4 471 0187

NZP&M is a division of the Ministry of Business, Innovation and Employment. We lead and actively manage New Zealand's petroleum and minerals portfolio ensuring the country's economic interests and assets are comprehensively protected. Our goal is to use our wider understanding of the energy and resources sector to increase national and regional prosperity via petroleum and minerals exploration and production.

As a government agency, we engage with Councils, iwi and communities about petroleum and minerals development and regulation of the industry. We manage compliance and revenue collection on behalf of the Crown and aim to maximise the return that these important industries deliver for the benefit of all New Zealanders.

We report to the New Zealand public through the Minister of Energy and Resources.



# Recommendation

**Date:** 1 September 2018  
**To:** National Manager Minerals  
**From:** Minerals Advisor  
**Application:** Minerals Mining Permit 25678,  
Subsequent Permit Application 25678.01

**EXAMPLE ONLY**

## APPLICATION SUMMARY

Permit number	Minerals Mining Permit 25678
Date received	24 July 2017
Permit holder / Operator	Jim Shue (100%) (Operator)
Minerals	Gold and aggregate
Operation type	Alluvial
Duration	10 years
Permit location	Paddle Valley, Southton Region
Permit area	55.5 ha
Sensitive Areas	The permit area does not overlie any Schedule 4 land, World Heritage sites or any other sensitive areas.
Tier Status	Tier 2
Royalty basis	2013
Subsequent to	Minerals Exploration Permit 22011
Recommendation	Grant
Peer reviewed by	Senior Minerals Advisor

## ASSESSMENT OF APPLICATION

### Background (sections 23A, 29A and Parts 2, 3, 4, 5, 8, 9 & 10)

1. This is an application for a subsequent permit made pursuant to section 32 of the Crown Minerals Act 1991 (the **Act**). The following assessment considers the matters set out in the Act and Minerals Programme for Minerals (Excluding Petroleum) 2013 (the **Minerals Programme**) that the Minister should consider in evaluating an application for a subsequent minerals mining permit (in particular, Parts 2, 3, 4, 5 and 10 of the Minerals Programme). The Minister is not limited to these matters in determining the application.
2. Minerals exploration permit 22011 was granted on 17 September 2014 to Jim Shue (the "**applicant**") over 396 ha of Paddle Valley 20 kilometres south of Eureka Town in the Southton Region. The permit was granted for a term of three years and grants the rights to explore for gold and aggregate with the work programme focused on alluvial gold.
3. The applicant has carried out an exploration programme under EP 22011 and has stated to have delineated a mineable alluvial gold resource. The applicant is applying for a subsequent mining permit over 55.5 ha of the eastern terrace of Upshot Creek, see Figure 2. The applicant is applying to mine for alluvial gold as well as the extraction of aggregate as a by-product to the proposed alluvial gold mining operation.



4. The applicant has previously held a number of permits as an individual and under his company, Shue Mining Limited, see Table 1 below for the details of these permits.

**Table 1: Permits related to the applicant**

Permit type	Permit #	Permit holder	Permit Status	Grant date	Duration
Mining	2468	Jim Shue (50%) Bruce McGavin (50%)	Surrendered	11 June 2004	15 years
Exploration	224	Shue Mining Ltd (100%)	Surrendered	25 May 2007	5 years
Mining	4321	Jim Shue (50%) Bruce McGavin (50%)	Active	1 February 2008	10 years
Exploration	666	Jim Shue (50%) Bruce McGavin (50%)	Expired	1 February 2008	5 years
Mining	4567	Jim Shue (50%) Louis Cypher (50%)	Active	24 July 2012	10 years
Exploration	21045	Jim Shue (50%) Harry Foot (50%)	Active	3 March 2014	5 years
Exploration	22011	Jim Shue (100%)	Active (subsequent permit pending)	17 September 2014	3 years

**Availability of land area and minerals** (section 28A, clauses 1.6, 3.1, 3.2, 4.2, 5.3(8), 5.3(9), 6.1(4), 6.4, 6.10 and Schedule 3)

5. The land and minerals have been assessed in accordance with the Act and Minerals Programme and are available for permitting. The land does not include any sensitive areas or overlap any existing permits.
6. The applicant has applied to explore for aggregate, a non-statute mineral. The applicant has provided a Land and Mineral Status (“LMS”) report prepared by Mike Dave, who is a LINZ-accredited Crown Property Supplier and has been verified by officials. The LMS report states that non-statute minerals on the land parcels within the application area are Crown-owned.

**Permit tier** (sections 2B and 2C, Schedule 5 and clause 1.7)

7. This is assessed to be a Tier 2 permit by virtue of section 2B(1)(d) of the Act as this is a mining permit for a mineral specified in Schedule 5 of the Act and the royalties or production are not expected to exceed the threshold of a payable annual royalty of \$50,000 as per Schedule 5 of the Act.

**Permit area** (clauses 4.6, 10.3 and 10.4)

8. The applicant has applied for an unbroken permit area of 55.5 ha. The application area is in line with the ordinary limit of 200 ha for a Tier 2 mining permit (that is not for a hobby or recreational operation) under clause 10.4 of the Minerals Programme, and unbroken therefore aligns with clause 4.6 of the Minerals Programme.
9. Considering clause 10.3, officials are satisfied that the permit area is appropriate as;
- the delineated resource is located over 37.1 ha of the 55.5 ha proposed permit area; and
  - the upstream and downstream sections of the application area that are not covered by the resource block are proposed locations of mine infrastructure (see Figure 3) that are required to develop the resource and will enable the work programme to be carried out; and

- the work programme is suitable and the matters covered by clause 10.2 are appropriately addressed as is set out below.

**Duration** (section 35(7) and clause 10.6)

10. Section 35(7) enables the Minister to grant a mining permit for up to 40 years.
11. The applicant has applied for a duration of 10 years. This duration aligns with clause 10.6(1) of the Minerals Programme where a Tier 2 mining permit will ordinarily be granted for a period no more than 10 years if the permit is for alluvial gold. At the expected production rate of 50,000m<sup>3</sup> it would take approximately 24 years to mine the delineated resource from the commencement of the permit.

**The Work Programme**

**Delineation of mineral deposit and assessment of work programme**

12. On the basis of the applicant’s detailed work programme that was presented in the application, officials have proposed the following minimum work programme for the permit certificate.
- Within 12 months of the commencement date of the permit, the permit holder shall (to the satisfaction of the chief executive):
    - commence mining in the permit.
  - The permit holder shall, to the satisfaction of the chief executive, carry out the following work programme:
    - unless otherwise approved in writing by the chief executive, the mining of gravels for the recovery of gold and aggregates at a minimum rate of 30,000 cubic metres per year of gold-bearing gravels (from the commencement of mining as per condition 1(a)) by opencast methods using earthmoving machinery as necessary; and
    - undertake rehabilitation as necessary.

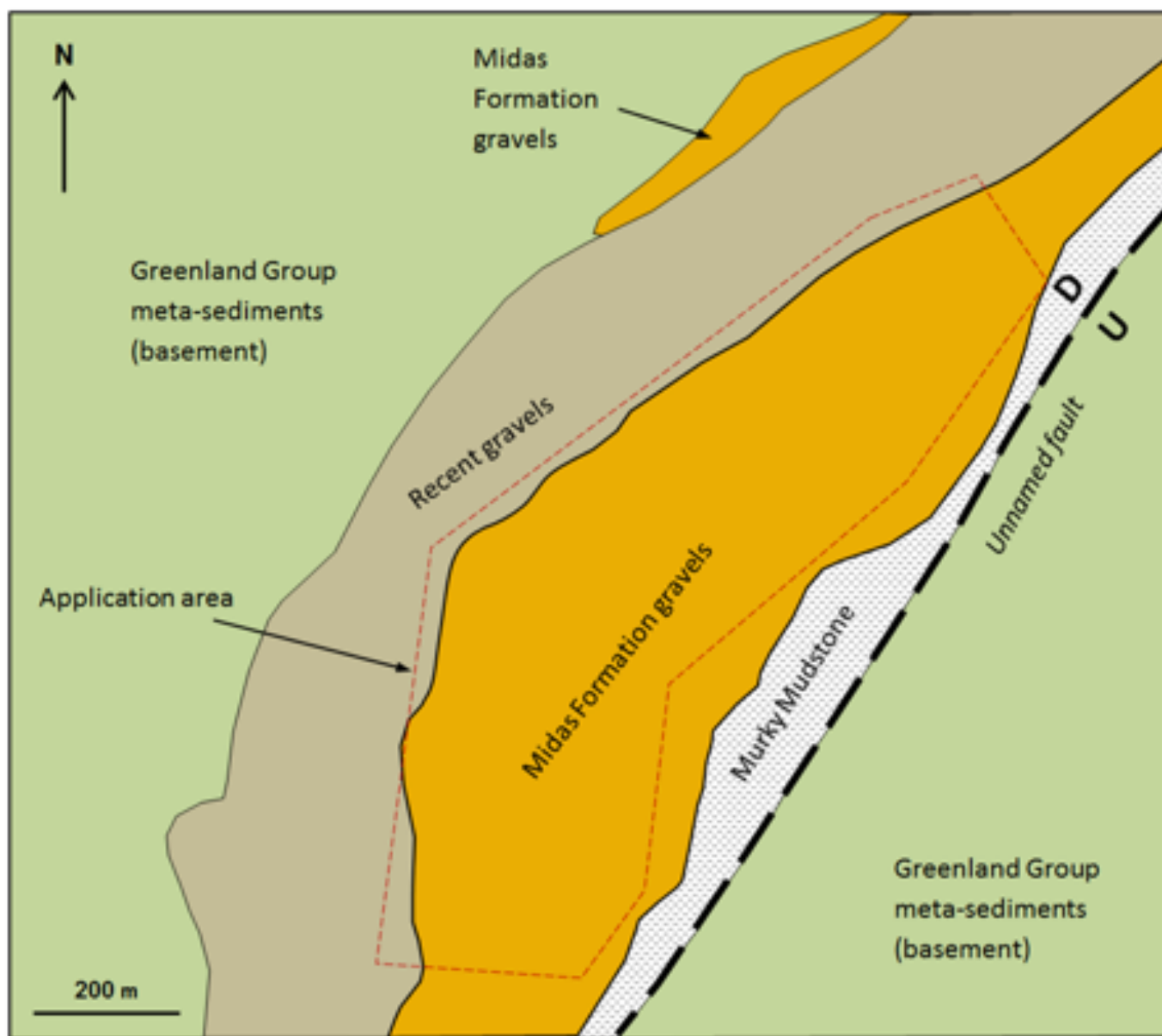
13. The above work programme was sent to the applicant on 15 August 2017 and was accepted by the applicant on 21 August 2017.
14. The applicant proposed a minimum extraction rate of 30,000m<sup>3</sup> per year. Officials are satisfied with the minimum extraction rate as it will still enable sufficient gold to be recovered where a payable royalty would occur at the current local gold price of \$1,600 per troy oz. As such the Crown will obtain a fair financial return for the mining of its resource with the operation still remaining profitable.

**The geology and occurrences of minerals in the permit area and the applicant's knowledge** (clauses 9.3(1)(a))

15. The applicant has provided the following description of the application area.
16. A geological map of the area is shown in Figure 1. Paddle Valley is incised into Greenland Group meta-sediment basement. These Greenland Group rocks, and the adjacent schists to the north-west, are reported to host mineralised quartz veins.

Locally, the Pliocene-aged Murky Mudstone unconformably overlies basement which is then overlain by the auriferous Midas Formation gravels. The gold in these gravels is thought to have been sourced from erosion of the mineralised quartz veins. Fluvio-glacial processes have transported and concentrated the gold into placer deposits along the active stream beds and river terraces. The contact between the Midas gravels and Murky Mudstone is considered to mark the 'bottom' of the alluvial gold-bearing deposits in the region.

17. The target geology is the auriferous mid-Pleistocene glacio-fluvial gravels of the Midas Formation. These gravels occur in relict stream beds and fluvial terraces throughout Paddle Valley, deposited by Upshot Creek.
18. The applicant has conducted a literature review of the geology and history of prospecting and exploration of the area. Under EP 22011 the applicant has conducted programmes of test pitting and bulk sampling within the application area, see Figure 2 for the location of these test pits.



**Figure 1: Geology of the application area**

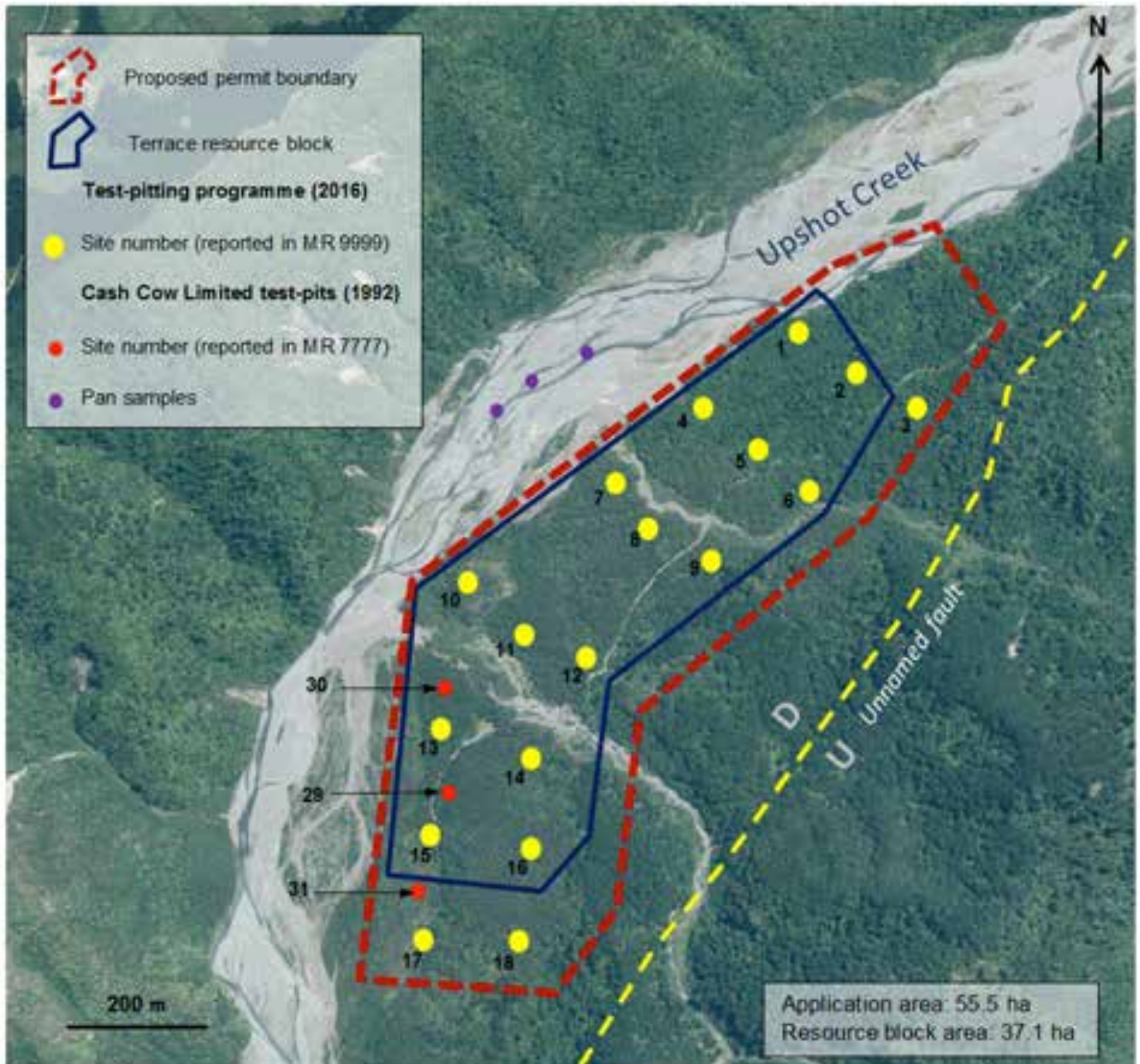


Figure 2: Location of test pits conducted by the applicant

**Estimates of mineable mineral resources and inferred mineral resources (clauses 10.1(3)(a), 10.2(1)(c) and (d))**

19. The applicant is stated to have identified a minable alluvial gold resource. The resource block covers 37.1 ha and has been determined by using the results of the test pits and bulk samples conducted by the applicant under EP 22011. The full results of the test pitting and bulk sampling have been reported under MR 9999 (including quality assurance and quality control aspects of the exploration work) and have been sufficiently summarised in the application.

20. The Midas Formation was tested at 18 locations by the applicant with all pits encountering the Midas Formation, see Figures 1 and 2. The Midas Formation gravels were tested through a 1.2 m land-based trommel with the residual sample further processed on a Wilfley table. Each test pit had a volume of 15m<sup>3</sup> of wash gravel sampled with four test pits having 200m<sup>3</sup> bulk samples conducted. All test pits were dug to the base of the Midas Formation. Table 2 below shows the results from each of the test pits as well as historical test pits in the area.

**Table 2: Test pit results used in resource estimate**

Site	Depth (m)	Overburden (m)	Wash thickness (m)	Volume (m <sup>3</sup> )	Grade (mg Au/m <sup>3</sup> )	Bottom contact	Comment
1	4.2	1.5	2.7	10	93	Mudstone	Issues with pit collapse and infiltration
2	5.6	2.6	3.0	15	112	Mudstone	
3	7.2	4.1	3.1	15	42	Mudstone	Excluded from resource block
4	4.5	1.7	2.8	15	367	Mudstone	
5	4.7	1.9	2.8	200	559	Mudstone	Bulk sample
6	5.8	2.8	3.0	15	333	Mudstone	
7	4.1	1.2	2.9	15	266	Mudstone	
8	4.3	1.3	3.0	200	259	Mudstone	Bulk sample
9	5.5	2.4	3.1	15	232	Mudstone	
10	3.6	0.9	2.7	15	216	Mudstone	
11	4.2	1.3	2.9	200	234	Mudstone	Bulk sample
12	5.0	1.7	3.3	15	177	Mudstone	
13	4.1	1.3	2.8	15	239	Mudstone	
14	4.9	1.5	3.4	15	332	Mudstone	
15	3.9	1.2	2.7	200	149	Mudstone	Bulk sample
16	5.0	1.9	3.1	15	192	Mudstone	
17	4.7	1.8	2.9	15	14	Mudstone	Excluded from resource block
18	5.5	2.5	3.0	15	23	Mudstone	Excluded from resource block
<b>Sample Sites from Cash Cow Limited, 1992 (as reported in MR7777)</b>							
29	4	Not stated	Not stated	10	109	Base of wash not reached	Excluded from resource estimate as base not sampled
30	4	Not stated	Not stated	10	132	Base of wash not reached	Excluded from resource estimate as base not sampled
31	4	Not stated	Not stated	10	91	Base of wash not reached	Excluded from resource estimate as base not sampled

21. Results from the test pitting showed that the total gravel thickness increases from west to east; as such the applicant has used weighted averages to estimate the gold grade and volume of wash and overburden.

22. The applicant's estimated mineable alluvial gold resource is as follows:

- Terrace resource block area = 37.1 ha
- 1.8m overburden (weighted average) consisting of soil and low-grade gravels
- 3.1m thick gold-bearing gravel wash (weighted average)
- 1,140,000m<sup>3</sup> of gold-bearing gravel at a weighted global average grade of 279 mg Au/m<sup>3</sup>, for ~10,220 troy oz. of gold

23. Figure 3 below shows the location of the resource block and the block being subdivided into three smaller zones to allow the data to be appropriately weighted. As shown in Table 2, the grades from three test pits conducted by the applicant and the three historical test pits were excluded from the resource estimate.

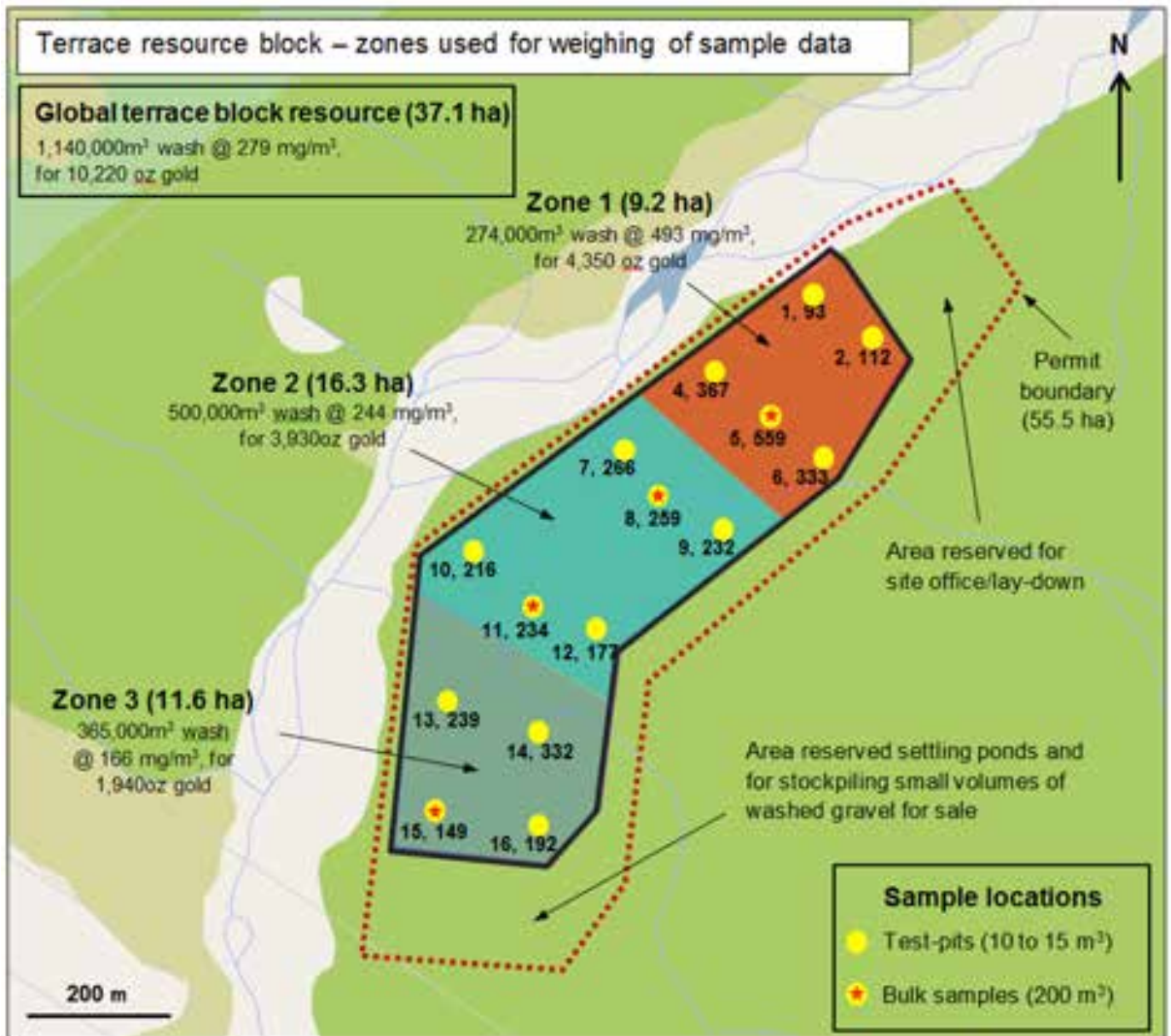


Figure 3: Location of resource block, exploration data used in estimate and and sub-zones

24. Appendix 1 is a spreadsheet provided by the applicant that shows how the applicant estimated the alluvial gold resource from the exploration data.
25. The applicant has proposed to carry out a series of verification test pits prior to mining to verify the resource estimate. Due to the nature and scale of the operation, that being a medium scale alluvial operation, officials are satisfied for this verification work to be carried out under a mining permit.
26. The applicant has stated the resource estimate is a global resource and has not been classified using the usual terminology under a recognised resource classification code.
27. Officials are satisfied that the applicant has sufficiently estimated a mineable mineral resource and has provided suitable evidence of the input data and methodology of the estimation for the scale and type of deposit the estimate relates to.

**Applicant's mining feasibility studies and project economics (clauses 10.2(1)(e) and (f))**

28. The applicant has not provided a mine feasibility study. Due to the nature and scale of the operation proposed, officials would not expect a full feasibility study to be undertaken.
29. Prior to the commencement of mining the applicant proposes to carry out verification test pits to validate the resource estimate and test pitting where the proposed site office is to be located to confirm the resource does not continue into this area. The applicant will also need to construct a 300m access road to the site. The applicant expects to commence mining within 12 months of the commencement of the permit. This is considered an appropriate amount of time to allow required resource consents to be obtained and establish site infrastructure (as per clause 10.13).

30. The applicant is proposing to carry out a two-person alluvial gold mining operation. Soil and low-grade gravel will be stripped to expose the gold-bearing wash at the base of the Midas Formation. Soil and low-grade gravel will be stockpiled for rehabilitation. Two excavators (20T and 30T) will be used to extract gold-bearing gravels that will be fed through a land-based 5-foot trommel to recover gold.
31. Mining will begin from the southwest corner of the resource block and will zig-zag back and forth to the lateral extents of the resource block as the mine footprint advances progressively upstream, roughly parallel to Upshot Creek. The mine footprint is subject to change pending conditions of the access arrangement and resource consents. Rehabilitation will occur progressively as the mine advances.
32. The applicant has stated that with the equipment proposed to be used the applicant will be able to process approximately 240m<sup>3</sup> of gold-bearing gravels per day. Full production is estimated based on an average working day of 8 hours, 5 days a week for 42 weeks of the year. This estimate factors in seasonal variation. At full production the applicant estimates that annual throughput of gold-bearing gravels will be just over 50,000m<sup>3</sup>. At a weighted average global gold grade of 279 mg/m<sup>3</sup> of wash, this is expected to yield 452 troy oz. of gold per year.
33. The applicant has stated that a smaller volume of suitable washed gravels will be stockpiled for the sale on the local market, which is stated to be subject to demand and can be irregular. The applicant has stated they will stockpile 5,000 to 10,000m<sup>3</sup> of gravel for this demand. Gravel sales have not been factored into the project economics.
34. Officials are satisfied that the applicant has proposed a suitable mine design to mine the delineated alluvial gold deposit and associated aggregate by-product.

#### **Project economics**

35. The applicant has estimated the capital expenditure for the operation will be approximately \$60,000, which includes cost for resource consents, stripping vegetation, establishing settling ponds, ~300m of access tracks and a container site office.
36. The applicant has estimated the annual operating costs of the mining operation to be \$367,000 based on the mining and throughput of 50,000m<sup>3</sup> of gold-bearing gravels and associated stripping of overburden.
37. The applicant anticipates gold recovery of 452 troy oz. of gold per year. The applicant has based the project on a local gold price of \$1,600 per troy oz., this would equate to a gross income of \$723,000 per year. Therefore, the total annual profit margin of the operation at full production is expected to be approximately \$356,000.

38. The applicant has stated that the break-even local gold price is \$710 per troy oz.
39. The applicant has provided a spreadsheet breaking down the above costs and revenues to determine what has been used to estimate the project economics (see Appendix 2).
40. Officials are satisfied that the applicant has demonstrated the financial viability of the operation.

#### **Consistency of proposed mining operations with good industry practice** (section 29A(2)(a)(iii), clauses 1.3(10) & (11), 5.2(4) clause 10.2(1)(g))

41. Officials are satisfied that the proposed work programme is in accordance with good industry practice. The applicant is proposing to mine the full extent of the delineated resource by mining the full area of the resource estimate block.
42. The applicant is also proposing to conduct test pits to verify the full extent of the resource in the proposed application area prior to mining. This is to avoid potential sterilisation of the resource by verifying the resource estimate and conducting sterilisation holes where mine infrastructure is planned to be located.
43. The applicant is proposing to carry out on-going appraisal of the resource that will enable optimisation of the mining operation as it progresses.

#### **Consistency with the purpose of the Act and the purpose of a minerals mining permit** (sections 1A, 29A(2)(a)(i), (ii) and clauses 1.2, 1.3, 5.2, 10.1 and 10.2)

44. Based on the paragraphs above, officials are satisfied that the permit holder has identified and delineated an exploitable mineral deposit and that the proposed work programme is consistent with the purpose of Act and the permit and has the objective of economically depleting the deposit to the maximum extent practicable in accordance with good industry practice.

#### **Capability**

##### **Likelihood of complying with and giving proper effect to the proposed work programme** (section 29A(2)(b) and clause 5.3)

#### **Financial Capability**

45. The Minister must be satisfied that the applicant has the financial capability to undertake the proposed work programme, as such the applicant will normally be required to demonstrate that he has sufficient funding available to undertake the proposed work programme. Officials will be determining whether the applicant has the financial capability to cover the capital expenditure of the operation. As detailed in the "Project economics" section above, the mining operation is expected to be profitable as such the operating costs will be covered by revenue from the gold produced. Within the first year of the full production of gold, the profit from the operation should cover the estimated capital expenditure of the operation.

46. The applicant has provided:

- A current ZNA Bank statement (dated 01 July 2017) showing a balance of \$32,287;
- Evidence of passive income from another business interest with tax statements showing income for the preceding two years;
- A schedule of equipment owned by the applicant, and that is available for use on the permit;
- A breakdown of committed expenditure on the applicant's other active permits - \$20,000 is committed over the next 5 years;
- A letter from Mr Shue's accountant, Cash Ledger, providing a reference in support of Mr Shue's financial capability to establish the mine and undertake the proposed mining activities, in addition to existing exploration work programme commitments; and
- A letter of credit from the ZNA Bank (dated 01 July 2017) confirming a line of credit to the amount of \$80,000 to be used to fund the start-up costs of the mine operation.

47. The applicant has demonstrated that he has access to \$112,287 from his current bank statement and line of credit. This available funding is able to cover the committed \$20,000 (over five years) on exploration programmes and the \$60,000 in capital expenditure over the next 12 months.

48. Considering the available funding, mining equipment owned by the applicant and income generated from other mining operations, officials are satisfied that the applicant has the financial capability to undertake the proposed work programme and give proper effect to the permit.

#### **Technical Capability**

49. As Mr Shue is the sole permit participant he is also the proposed permit operator.

50. The applicant will be managing the proposed mining operation. He will subcontract in Trevor Smith to provide additional support and expertise. Mr Shue is stated to have 10 years' experience of exploring and mining for alluvial gold in New Zealand including conducting the exploration on EP 22011 and 21045 as well as working on a land-based alluvial gold mine at Old Nick's mine under MP 97124 and 97633. Mr Shue is stated to hold a B-Grade Miner Managers certificate and is currently studying towards his A-Grade certificate.

51. The applicant has also worked in a partnership with Bruce McGavin on EP 666 and MP 4321 and 2468 that include a hobby operation on MP 2468 and a conventional alluvial gold mining operation on MP 4321.

52. Mr Smith is stated to have 7 years' experience in alluvial gold exploration and mining in Canada and New Zealand and is currently working towards his B-Grade certificate.

53. Considering the above paragraphs, officials are satisfied that the applicant, as the proposed permit operator, has the technical capability to undertake the proposed work programme and give proper effect to the permit.

#### **Work Programme Compliance History**

54. Table 1, in the "Background" section above, shows permits that the applicant and related company, Shue Mining Ltd, currently hold and have held. See Appendix 3 for the compliance history of each permit.

55. There are two instances of work programme non-compliance on MP 2468 and EP 666. Despite this non-compliance officials are satisfied that overall the applicant has a satisfactory compliance history that does not demonstrate that the applicant is unlikely to comply with the proposed work programme. Officials are satisfied for the following reasons:

- Clause 5.3(4) provides that previous non-compliance will normally count against, but not necessarily preclude the granting of a permit; and
- The non-compliance on MP 2468, which related to not meeting the permit's minimum production rate for one year, is considered to be low level non-compliance. Overall the applicant has given effect to the permit; and
- Despite the non-compliance on EP 666, the applicant largely completed the work programme. They have also acknowledged the non-compliance, have actively worked the permit to comply with the next stage of the work programme, and defined a resource that is now being mined on MP 4567; and
- Aside from the two instances of non-compliance, the applicant is compliant on all other related permit's work programmes; and
- With respect to the three mining permits the applicant holds, only one has been non-compliant for one year out of the nine years the permits have been held. Officials consider that this record of compliance demonstrates that the applicant is likely to comply with the proposed work programme.

#### **Summary**

56. Having considered the applicant's financial and technical capability and the compliance history of the applicant in relation to work programme obligations, officials are satisfied that the applicant is likely to comply with and give proper effect to the proposed work programme.

#### **Likelihood of complying with reporting obligations and the payment of fees and royalties (section 29A(2)(c) and clause 5.3)**

57. See Appendix 3 for the compliance history of the applicant and related parties in relation to reporting and payment of fees and royalties.

58. The applicant has been compliant with their payment of fees and royalties on permits related to him. There was been three instances of lateness of reports being submitted to NZP&M; two late annual summary reports on MP 4567 and the late reporting of exploration results on EP 21045. Once submitted these reports were deemed complete reports but recorded as late. The applicant has hired a consultant (Goodie Consulting Limited) to assist the applicant in meeting his reporting obligations across his permit portfolio.

59. Considering the applicant has been late on only three instances across seven permits over the past nine years, and the applicant is taking steps to ensure he is compliant with reporting obligations in the future, officials are satisfied that the applicant is likely to comply with reporting obligations and payment of fees and royalties.

**Consultation with iwi and hapu** (*section 4, clauses 2.2, 2.3, 2.5, 2.7 and 2.8*)

NZP&M will consult with relevant Iwi and Hapu during the course of the evaluation. An example is not considered appropriate in this case.

For the purposes of this example it is assumed no issues arose from the consultation.

NZP&M would always encourage the permit applicant to proactively engage with relevant iwi and hapu to help address any concerns that may arise and help build a positive relationship.

### Any other relevant factors

60. None identified.

## CONCLUSION

61. Officials are satisfied that:

- (a) the permit holder's exploration activities for gold and aggregate in EP 22011 have resulted in the discovery of a deposit or occurrence of the mineral;
- (b) the permit holder has identified and delineated an exploitable mineral deposit;
- (c) the objective of the proposed work programme is to economically deplete the deposit to the maximum extent practicable in accordance with good industry practice; and
- (d) the permit area is appropriate.

62. Having considered the relevant provisions in the Act and the Minerals Programme and for the reasons outlined above it is considered appropriate to grant the application.

## RECOMMENDATION

63. It is recommended that you:

- (a) approve the work programme shown in paragraph 12;
- (b) grant the application and sign the attached Certificate of Permit Grant; and
- (c) determine that the permit status will be Tier 2.

---

Reviewed by:

[Name]

[Position]



# Appendix 1 – Spreadsheet detailing resource estimate

Row	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Resource estimate - Terrace Resource Block, Uphot Creek																			
2	Site	Depth (m)	Overburden (m)	Wash thickness (m)	Volume (m <sup>3</sup> )	Grade (mg Au/t)	Bottom contact	Comment	Weighting zone											
3	1	4.9	2.1	2.8	10	53	Mudstone	Issues with pit collapse and infiltration	1											
4	2	5.2	1.6	3.6	15	112	Mudstone		1											
5	3	3.8	1.7	2.1	15	397	Mudstone		1											
6	4	5.2	1.9	3.3	200	559	Mudstone	Bulk sample	1											
7	5	5.2	1.9	3.3	200	559	Mudstone	Bulk sample	1											
8	6	5.3	2.2	3.1	15	333	Mudstone		1											
9	7	5.1	2.5	2.6	15	286	Mudstone		2											
10	8	5	1.3	3.7	200	259	Mudstone	Bulk sample	2											
11	9	5.5	2.4	3.1	15	232	Mudstone		2											
12	10	4.6	2.1	2.5	15	216	Mudstone		2											
13	11	4.5	1.3	3.2	200	234	Mudstone	Bulk sample	2											
14	12	5	1.7	3.3	15	278	Mudstone		2											
15	13	3.6	1.1	2.6	15	239	Mudstone		3											
16	14	4.8	1.5	3.3	15	332	Mudstone		3											
17	15	5.1	1.4	3.7	200	145	Mudstone	Bulk sample	3											
18	16	5	1.9	3.1	15	192	Mudstone		3											
19	17	6.8	2.1	2.7	45	42	Mudstone	Excluded from resource estimate	N/A											
20	18	4.2	1.8	2.9	15	54	Mudstone	Excluded from resource estimate	N/A											
21	19	6.4	2.5	3	15	23	Mudstone	Excluded from resource estimate	N/A											
22	Sample sites from Cash Cow Limited, 1992 (as reported in MR777)																			
23	20	4	Not stated	Not stated	10	169	wash out	Excluded from resource estimate as base not sampled	N/A											
24	20	4	Not stated	Not stated	10	532	wash out	Excluded from resource estimate as base not sampled	N/A											
25	31	4	Not stated	Not stated	10	84	wash out	Excluded from resource estimate as base not sampled	N/A											
26																				
27																				
28																				
29																				
30																				
31																				
32																				
33																				
34																				
35																				
36																				

Resource estimate - weighed	Weighted average grade (mg/m <sup>3</sup> )	Average wash thickness (m)	Average overburden thickness (m)	Resource block area (m <sup>2</sup> )	Resource block volume (m <sup>3</sup> )	Overburden volume (m <sup>3</sup> )	Gold resource (mg)	Gold resource (troy oz)
Zone 1	433	2.81	1.51	52,000	274,146	174,800	138,286,827	4,350
Zone 2	244	3.07	1.81	193,000	499,807	305,923	122,171,438	3,928
Zone 3	168	3.19	1.48	198,000	269,400	171,108	60,482,171	1,945
Global resource	279	3.07	1.76	371,000	1,139,427	652,833	320,940,436	10,222

Conversion factor mg/troy oz: 3.21507E-05

Resource estimate - (non-weighted - i.e. based on arithmetic means)	Ave. grade (mg/m <sup>3</sup> )	Ave. wash thickness (m)	Volume of wash (m <sup>3</sup> )	Gold resource (troy oz)	Δ (Weighted minus non-weighted)
	251	3.06	1,135,250	9,149	1,073

# Appendix 2 – Spreadsheet detailing project economics

Row	Col A	Col B	Col C	Col D	Col E	Col F	Col G	Col H	Col I	Col J	Col K	Col L	Col M	Col N	Col O	Col P	Col Q
1		<b>Project economics</b>															
2		<b>Total gold-bearing gravel resource</b>															
3		1	130,427 m3														
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	

Section	Item	Value
Total annual production	Total Income	\$72,443
	Total Costs	\$307,278
	Profit/loss	\$336,165
Total annual costs	Wages	\$100,800
	Equipment	\$64,000
	Fuel	\$72,000.00
	Maintenance	\$23,400.00
Administration	\$87,873	
Time needed to deplete resource	Years	23.0
	Months	276

Section	Item	Value			
Wages	2 employees				
	\$30 hourly rate				
	42 weeks per year				
Equipment	42 weeks per year				
	\$100,800 total wages per year (gross)				
Equipment hire - 30 tonne digger	40 hours per week				
	\$50 Lanes per hour				
Fuel	\$84,000 annual cost (for 42 weeks production only)				
	See note regarding a monthly report				
Maintenance	201 digger	10	400	\$500.00	\$24,000
	30T digger	15	600	\$150.00	\$9,000
	Pumps	2	80	\$100.00	\$4,800
	Screens	3	120	\$150.00	\$17,200
	<b>Total</b>				<b>\$17,200</b>
Maintenance contingency	\$24,400 (15% of equipment hire and fuel cost)				
	Administration costs				
Administration costs	\$1,000 (DPR) permit fees (annual)				
	\$724 (DPR) royalty (rough estimate based on 1% of gold income)				
	\$1,500 Council side cost (annual)				
	\$1,500 Resource consents				
	\$72,344 Land owner royalty (10% of gross gold income)				
	\$1,500 Insurance (annual)				
	\$2,000 Health and Safety				
<b>Total</b>				<b>\$87,873</b>	

## Appendix 3 – Relevant compliance history to Jim Shue

### Jim Shue and Bruce McGavin

#### Mining permit 2468

64. The permit holder acquired the permit in 2008. The permit was in a state of non-compliance as mining had not commenced within the required time frame (24 months of the commencement date) and at a minimum rate of 20,000 cubic metres per year. The previous permit holder is liable for the non-compliance up to when the permit was transferred. The applicant commenced mining on the permit in late 2009 following gaining land access and has continually mined the permit since. The permit holder did not meet the minimum mining rate in 2011 due to the applicant having to wait for exotic trees to be felled. Mining re-commenced in 2012 where the applicant has since met the minimum production rate. Mining finished in 2016 and the permit was surrendered.

65. Although the applicant did not meet the minimum production rate for one year, officials consider this to be a low level of non-compliance as the applicant has largely given effect to the permit since acquiring it in 2008.

66. The applicant is compliant on reporting, payment of annual fees and royalty obligations in relation to the permit.

#### Mining permit 4321

67. The applicant is compliant with the permit's conditions. The permit is for a hobby/recreational operation as such does not have a deliverable work programme.

68. The permit holder was late on submitting two annual summary reports (2007 and 2008 calendar years) in relation to the permit. The permit holder is compliant with annual fee payments in relation to the permit. As the permit is for a hobby operation, the permit holder has not produced sufficient gold for a royalty to be payable.

#### Exploration permit 666

69. The permit consists of a two staged work programme, the first due on 31 January 2010 and the second stage due by 31 January 2013.

70. The permit holder did not fully comply with the first stage of the work programme that included a programme of mapping, pan sampling and reconnaissance test pitting. The applicant did complete a literature review, geological mapping and completed 7 of minimum of 10 test pits. This was reported to NZP&M under MR 9456. The final three test pits were not carried out due to the great flood in 2009 that flooded most of the permit area that resulted in work not being able to be completed. The applicant did not apply for a change of conditions to address this non-compliance.

71. The applicant then carried out an exploration programme on the permit in the summer of 2011/2012 that defined an alluvial gold resource that resulted in subsequent mining permit 4567 being granted in June 2012. The work was sufficient to meet the obligations under the second stage of the work programme and was reported under MR 9765.

72. The applicant is compliant on reporting and payment of annual fee obligations in relation to the permit.

### Jim Shue and Louis Cypher

#### Mining permit 4567

73. The permit was originally held by the applicant and Bruce McGavin. Mr McGavin transferred his interest and changed the operator to Louis Cypher on 14 December 2012. The permit holder is compliant with the permit's work programme that required mining to commence within 12 months and at a minimum rate of 30,000 cubic metres per year.

74. The permit holder is compliant on reporting, payment of annual fee and royalty obligations in relation to the permit.

### Shue Mining Ltd

#### Exploration permit 224

75. The permit holder surrendered the permit before any work programme obligations were due as the permit holder was unable to get land access.

76. The applicant is compliant on reporting and payment of annual fee obligations in relation to the permit.

### Jim Shue and Harry Foot

#### Exploration permit 21045

77. The permit holder has complied with the first stage of the work programme that was due to be completed by 3 March 2017.

78. The permit is compliant on annual reporting and payment of annual fee obligations in relation to the permit. The permit holder was late on submitting the technical report for the first stage of the work programme. The report was due to be submitted by 2 May 2017 but was not submitted until 2 June 2017.

### Jim Shue

#### Exploration permit 22011

79. The permit holder is compliant with the permit's work programme ahead of the due date of the obligations and has fully reported on the work.

80. The permit holder is compliant on reporting and payment of annual fee obligations in relation to the permit.



**NEW ZEALAND  
PETROLEUM & MINERALS**

www.nzpam.govt.nz  
nzpam@mbie.govt.nz

PO Box 1473, Wellington 6140,  
New Zealand

FREEPHONE (WITHIN NEW ZEALAND): 0508 263 782  
INTERNATIONAL CALLS: +64 3 962 6179 FAX: +64 4 471 0187

NZP&M is a division of the Ministry of Business, Innovation and Employment. We lead and actively manage New Zealand's petroleum and minerals portfolio ensuring the country's economic interests and assets are comprehensively protected. Our goal is to use our wider understanding of the energy and resources sector to increase national and regional prosperity via petroleum and minerals exploration and production.

As a government agency, we engage with Councils, iwi and communities about petroleum and minerals development and regulation of the industry. We manage compliance and revenue collection on behalf of the Crown and aim to maximise the return that these important industries deliver for the benefit of all New Zealanders.

We report to the New Zealand public through the Minister of Energy and Resources.