

PROVINCE OF BRITISH COLUMBIA
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

SAND AND GRAVEL PERMIT
APPROVING WORK SYSTEM AND RECLAMATION PROGRAM
(Issued pursuant to Section 10 of the **Mines Act** R.S.B.C. 1996, C.293)

Permit: **G-5-328**

Mine No.: **1630747**
Approval No.: **18-1630747-0822**

Issued to: **Revelstoke Sand and Gravel Ltd.**
Box 440 Main Post Office
Revelstoke BC V0E 2S0

for work located at the following property:

274 & 322 Westside Road, Revelstoke, BC

This approval and permit is subject to the appended conditions.

Issued this 22nd day of August in the year 2018.



Glen Hendrickson
Senior Inspector of Mines

PREAMBLE

Notice of intention to commence work on a sand and gravel pit, including a plan of the proposed work system and a program for the protection and reclamation of the surface of the land and watercourses affected by the Notice of Work dated Monday, February 01, 2016 was filed with the Inspector of Mines on Monday, February 01, 2016. Notice of such filing was published in on and in the Gazette on August 31, 2017.

This permit contains the requirements of the Ministry of Energy, Mines and Petroleum Resources for reclamation. It is also compatible, to the extent possible, with the requirements of other provincial ministries for reclamation issues. The amount of security required by this permit, and the manner in which this security may be applied, will also reflect the requirements of those ministries. Nothing in this permit, however, limits the authority of other provincial ministries to set other conditions, or to act independently, under their respective permits and legislation.

Decisions made by staff of the Ministry of Energy, Mines and Petroleum Resources will be made in consultation with other ministries.

CONDITIONS

The Chief Inspector of Mines (Chief Inspector) hereby approves the work plan and the program for protection and reclamation of the land surface and watercourses subject to compliance with the following conditions:

1. Reclamation Security

- (a) The owner, agent or manager (herein called the Permittee) shall maintain with the Minister of Finance securities in the amount of twenty nine thousand, three hundred forty six dollars (\$29,346). The security will be held by the Minister of Finance for the proper performance of the approved program and all the conditions of this permit in a manner satisfactory to the Chief Inspector.
- (b) The Permittee shall conform to all forest tenure requirements of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Should the Permittee not conform to these requirements then all or part of the security may be used to cover the costs of these requirements.

- (c) The Permittee shall conform to all Ministry of Environment and Climate Change Strategy approval, licence and permit conditions, as well as requirements under the **Wildlife Act**. Should the Permittee not conform to these conditions, then all or part of the security may be used to fulfill these requirements.

2. Land Use

The surface of the land and watercourses shall be reclaimed to the following land use: **Wild Land**.

3. Productivity

The level of land productivity to be achieved on reclaimed areas shall not be less than existed prior to mining on an average property basis unless the Permittee can provide evidence which demonstrates, to the satisfaction of the Chief Inspector, the impracticality of doing so.

4. Revegetation

Land shall be re-vegetated to a self-sustaining state using a locally sourced certified weed free native species seed mix appropriate for use in the BEC Climate Zone.

5. Use of Suitable Growth Medium

- (a) On all lands to be revegetated, the growth medium shall satisfy land use, productivity, and water quality objectives. Topsoil and overburden (to rooting depth) shall be removed from operational areas prior to any disturbance of the land and stockpiled separately on the property for use in reclamation programs, unless the Permittee can provide evidence which demonstrates, to the satisfaction of the Chief Inspector, that reclamation objectives can otherwise be achieved.
- (b) No topsoil shall be removed from the property without the specific written permission of the Inspector of Mines.

6. Buffer Zones and Berms

Buffer zones and/or berms shall be established between the mine and the property boundary unless exempted in writing by the Inspector of Mines.

7. Treatment of Structures and Equipment

Prior to abandonment, and unless the Chief Inspector has made a ruling otherwise, such as heritage project consideration or industrial use,

- (a) all machinery, equipment and building superstructures shall be removed,
- (b) concrete foundations shall be covered and revegetated unless, because of demonstrated impracticality, they have been exempted by the Inspector, and
- (c) all scrap material shall be disposed of in a manner acceptable to the Inspector.

8. Watercourses

- (a) Watercourses shall be reclaimed to a condition that ensures
 - (1) long-term water quality is maintained to a standard acceptable to the Chief Inspector,
 - (2) drainage is restored either to original watercourses or to new watercourses which will sustain themselves without maintenance, and
 - (3) use and productivity objectives are achieved and the level of productivity shall not be less than existed prior to mining unless the Permittee can provide evidence which demonstrates, to the satisfaction of the Chief Inspector, the impracticality of doing so.
- (b) Water which flows from disturbed areas shall be collected and diverted into settling ponds.

9. Roads

- (a) All roads shall be reclaimed in accordance with land use objectives unless permanent access is required to be maintained.

(b) Individual roads will be exempted from the requirement for total reclamation under condition 9(a) if either:

- (1) the Permittee can demonstrate that an agency of the Crown has explicitly accepted responsibility for the operation, maintenance and ultimate deactivation and abandonment of the road, or
- (2) the Permittee can demonstrate that another private party has explicitly agreed to accept responsibility for the operation, maintenance and ultimate deactivation and abandonment of the road and has, in this regard, agreed to comply with all the terms and conditions, including bonding provisions, of this reclamation permit, and to comply with all other relevant provincial government (and federal government) regulatory requirements.

10. Disposal of Fuels and Toxic Chemicals

Fuels, chemicals or reagents which cannot be returned to the manufacturer/supplier are to be disposed of as directed by the Chief Inspector in compliance with municipal, regional, provincial and federal statutes.

11. Temporary Shutdown

If this sand and gravel pit ceases operation for a period longer than one year the Permittee shall either continue to carry out the conditions of the permit or apply for an amendment setting out a revised program for approval by the Chief Inspector.

12. Safety Provisions

All safety and other provisions of the **Mines Act** shall be complied with to the satisfaction of the Chief Inspector.

13. Monitoring

The Permittee shall undertake monitoring programs, as required by the Inspector of Mines, to demonstrate that reclamation objectives are being achieved.

14. Alterations to the Program

Substantial changes to the program must be submitted to the Inspector of Mines for approval.

15. Notice of Closure

Pursuant to Part 10.6.1 of the Health, Safety and Reclamation Code for Mines in British Columbia, a Notice of Completion of Work shall be filed with the Inspector of Mines not less than seven days prior to cessation of work.

16. Annual Report

Annual reports shall be submitted in a form and containing the information as and if required by the Inspector of Mines.

17. Site Stability

- a) The inspector shall be advised in writing at the earliest opportunity of any unforeseen conditions that could adversely affect the extraction of materials, site stability, erosion control or the reclamation of the site.
- b) The stability of the slopes shall be maintained at all times and erosion shall be controlled at all times.
- c) The discovery of any significant subsurface flows of water, seeps, substantial amounts of fine textured, soils, silts and clays, shall be reported to the inspector as soon as possible and work shall cease until the inspector advises otherwise.

SPECIAL CONDITIONS:

18. Permit Approval

- a) Excavation, crushing and screening of sand and gravel at a rate of production that does not exceed 9,000 m³ per year is approved with a maximum disturbance area of 3.1 ha.
- b) Harvesting of trees and ground prep is included in the 3.1 ha limit. Progressive reclamation practices must be utilized to maintain the 3.1 ha disturbance limit over the 5 ha area of approval.

- c) Operations shall be restricted to the hours of 7am to 5pm Monday to Friday; no crushing is permitted on Saturday and Sunday and not on statutory holidays .

19. Protection of Cultural and Heritage Resources

- a) On commencement, the Permittee shall implement the Archaeological Chance Find Procedure and ensure all employees are trained in the use of this document.
- b) If unanticipated archaeological materials or cultural features are encountered during construction or related activities, the Permittee shall cease work in the immediate area and implement the Archaeological Resources and Paleontology Chance Find Management Procedure, contact the Archaeology Branch of the Ministry of Forests, Lands and Natural Resource Operations and make arrangements under appropriate permits to scientifically excavate, record and report findings.

20. Protection of Land and Watercourses

- a) This permit does not authorize onsite fuel storage. A request to store fuel onsite may be submitted to the Chief Inspector; application shall include a Fuel Management Plan that demonstrates compliance with the Field Guide to Fuel Handling, Transportation, and Storage document as updated from time to time and found under the guidance section on the following website:
(<http://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/fuel-tanks>)
- b) The city of Revelstoke shall be contacted a first responder to all reportable fuel spills as defined in the Spill Reporting Regulation of the *Environmental Management Act*.
- c) Excavation shall not occur below a depth 1.5 metres above the high ground water table. A written procedure for determining the level of the high ground water table prior to initiating mining beyond the first bench shall be prepared by a qualified person. The procedure shall be provided to the inspector of mines prior to excavating beyond the first bench and prior to the updated mine plan required by August 22, 2023.
- d) The Permittee shall salvage and stockpile topsoil, overburden, and organic material including large woody debris for use in reclamation.

- e) Stockpiled topsoil and organic materials shall be re-vegetated using a certified weed-free seed mix species appropriate for the BEC Zone, to reduce erosion during the storage period.
- f) On commencement, the Permittee implement the Weed Management Plan.

21. Mine Emergency Response Plan (MERP)

- a) The permittee shall implement the approved MERP on commencement. The MERP shall be kept up to date and be made available at the mine site at all times.
- b) The Permittee shall ensure that mine site employees and contractors are knowledgeable and accountable for fulfilling the actions of the MERP.

22. Dust and Noise Control

- a) On commencement, the Permittee shall implement the Dust Management Plan dated February 2016.
- b) The Dust Management Plan shall be reviewed and revised as necessary and on completion of the Revelstoke West Side Dust Control Plan. Revised Dust Management Plans shall be submitted to MMD-Cranbrook@gov.bc.ca.
- c) On commencement, the Permittee shall implement the Noise Control Plan. The Noise Control Plan shall be reviewed and revised as necessary; revised plans shall be submitted to MMD-Cranbrook@gov.bc.ca.
- d) In addition to the measures of the Dust Management Plan, crushers shall be outfitted with and utilize spray bars to control dust.



Notice of Work

274 & 322 Westside Road, Revelstoke, BC

Tracking Number: 100155507

APPLICANT INFORMATION

If approved, will the authorization be issued to an Individual or Company/Organization? Company/Organization
What is your relationship to the company/organization? Agent

APPLICANT COMPANY/ORGANIZATION CONTACT INFORMATION

Applicant is an Individual or an Organization to whom this authorization Permit / Tenure / Licence will be issued, if approved.

Name: REVELSTOKE SAND & GRAVEL LTD.
Doing Business As: Revelstoke Sand and Gravel Ltd.
Phone: 250-837-5288
Fax: 866-385-2013
Email: jackmckinnon15@gmail.com
BC Incorporation Number: BC0207570
Extra Provincial Inc. No:
Society Number:
GST Registration Number:
Contact Name: Jack Mckinnon
Mailing Address: PO BOX 440 Main Post Office
Revelstoke BC V0E2S0

AGENT INFORMATION

Please enter the contact information of the Individual/Organization who is acting on behalf of the applicant.

Name: REVELSTOKE SAND & GRAVEL LTD.
Doing Business As: Carl Rankin: Agent
Phone: 250-448-1946
Fax: 866-385-2013
Email: carl@multiplerealty.ca
BC Incorporation Number: BC0207570
Extra Provincial Inc. No:
Society Number:
GST Registration Number:
Contact Name: Carl Rankin
Mailing Address: PO BOX 440
Revelstoke BC V0E 2S0
Letter(s) Attached: Yes (Letter of Agency Weside Road.docx)

CORRESPONDENCE E-MAIL ADDRESS

If you would like to receive correspondence at a different email address than shown above, please provide the correspondence email address here. If left blank, all correspondence will be sent to the above given email address.

Email: carl@multiplerealty.ca
Contact Name: Carl Rankin

TECHNICAL INFORMATION

APPLICATION INFORMATION

Type of Notice of Work: Sand & Gravel
Is this a New Permit or an Amendment to an existing permit for this property? New Permit

MINE INFORMATION

Do you have an existing mine number?	No
Name of the property:	274 & 322 Westside Road, Revelstoke, BC
Tenure Numbers:	
Crown Grant / District Lot Numbers:	Part of Lot LS 5, Sec. 4, Twp. 24, R2, W6M, KD & Part of Sec. 4, Twp. 24, R2, KD
Directions to site from nearest municipality:	Revelstoke, Victoria Road to Trans. Canada Hwy. #1 West to Westside Road, north on Westside Road, approximately 2 Km to Interoute Pit access Road.
Geographic Coordinates of Mine:	Latitude: 51.0204400 Longitude: -118.2321380
Maximum Annual Tonnage Extracted:	9000 tonnes

INFORMATION ABOUT PROPOSED ACTIVITIES

Activities to be undertaken:

Sand & Gravel / Quarry Operations

FIRST AID

Proposed First Aid equipment on site:

The weigh station will be equipped with a Worksafe BC Level 1 First Aid kit, spine board & stretcher . The pit is ambulance accessible, not more than 15 minutes away.

There will be an excavator and loader, and two fire pumps in the pit at all times. There are trained contract fire crews available within 15 minutes.

Rescue Equipment - Selkirk Helicopters ' base is 1 Km from this Gravel Pit.

There will be an excavator, a grader and a loader available for emergency, fire etc

Level of First Aid Certificate held by attendant:

Occupational First Aid Level 2 with Transportation Endorsement

DESCRIPTION OF WORK PROGRAM

If you prefer to upload a document, please enter "see attached document" and attach the document in the "Document Upload" step later in the application under "Other".

Sufficient details of your work program to enable a good understanding of the types and scope of the activities that will be conducted:

See Management Plan Attached

TIME OF PROPOSED ACTIVITIES

Original Start Date:

Mar 15, 2016

Proposed start and end date:

Apr 11, 2016 to Apr 10, 2026

Please remember that you need to give 10 days notice to the Inspector of Mines of your intention to start work, and 7 days notice of your intention to stop work.

ACCESS

Access presently gated:

No

PRESENT STATE OF LAND

Please identify what the present state of the land is where you would like to undertake your activities. If some of the questions do not apply to you please enter n/a in the space provided.

Present condition of the land:

Crown Land exhibiting Second Growth timber and old cut block trails

Type of vegetation:

Hemlock and Spruce 2nd Growth

Physiography:

See Cross Sections Attached and City of Revelstoke Development Permit Attached

Current means of access:

Existing Main Road and Existing Access Road

Old equipment:

None

Recreational trails / use:

None

ACCESS TO TENURE

Do you need to build a road, create stream crossings or other surface disturbance that will not be on your tenure? No

LAND OWNERSHIP

Application area in a community watershed: No
Proposed activities on private land: No

Proposed activities on Crown land: Yes
Licence of Occupation: No

Have you applied for a Licence of Occupation? Yes
File number of application: 4405626

Activities in a park: No

CULTURAL HERITAGE RESOURCES

Cultural Heritage applies to a large spectrum of heritage resources that is defined as "an object, a site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to British Columbia, a community or an aboriginal people."

The Archaeology Branch of the Ministry of Forests, Land and Natural Resource Operations is responsible for the administration of the Heritage Conservation Act as it applies to archaeological sites. The Archaeology Branch has developed guidelines for companies engaged in natural resource extraction to aid in planning for and avoiding or managing impacts to protected archaeological sites.

Are you aware of any protected archaeological sites that may be affected by the proposed project? No

FIRST NATIONS ENGAGEMENT

In making decisions on authorizations, the government will be fulfilling its responsibility to consult, and where appropriate, accommodate First Nations. The government takes this responsibility seriously and encourages the applicant to engage First Nations early and often as part of any planned development.

Establishing good relations with First Nations who might be affected by a proposed development is a key part of any successful mining operation. The Ministry of Energy and Mines encourages applicants to engage and information share with First Nations that might be affected by a proposed development prior to submitting an application. The earlier in the life of a proposed activity that the avenues of communication are established the greater the likelihood that the relationships formed will be constructive and beneficial to all parties. A lack of information sharing and engagement by the applicant may result in extended timeframes for decision.

Applicants should keep a detailed record of information sharing and engagement with First Nations on their project in the event the government needs to review it. Information on First Nations information sharing and engagement should include the following: a list of First Nations contacted, whether the activity was modified based on feedback from First Nations, and whether the applicant has entered into any informal or formal agreements with First Nations in connection with the project.

The Consultative Areas Database Public Map Service is an online, interactive mapping tool that allows you to identify First Nations who have treaty rights or asserted or proven rights or title on the land base. More information can be found at <http://www.empr.gov.bc.ca/TITLES/MINERALTITLES/FIRSTNATION/Pages/CAD.aspx>.

Have you shared information and engaged with First Nations in the area of the proposed activity? Yes

Please tell us about your engagements in the field below or attach a your record of engagement by uploading it at the "Document Upload" step later in the application process. If you are attaching your record later, please enter in the text box "See record attached". Please ensure your record does not contain an individual's personal information such as contact information.

Describe your First Nations engagement activities: First Nations referral by City of Revelstoke as part of our recent Development Permit

As a result of the engagement, are you aware of any cultural heritage resources in the area where the work is proposed? No

SAND & GRAVEL / QUARRY OPERATIONS

MAPS

All plans and sections must indicate the scale and orientation of the drawing and must include:

1) Plan View of Proposed Development illustrating:

- Property boundaries and set back of excavation from property boundary
- Watercourses and drainage (wet, dry or intermittent) on the property and within 150 metres of its boundaries
- All previous surface workings, the final boundaries of proposed excavation, and boundaries of excavation at the end of development described in the Notice of Work
- Access roads, including development roads within the pit and access to the public roads
- All proposed and existing stockpiles (topsoil, overburden, product etc.)
- All settling ponds (for both surface run off and process water) and source of process water
- Buildings and other facilities (fuel/lubricant storage, sanitary facilities, weigh scale, etc.)
- Sediment control structures and the location of any point discharges from the property
- Fencing, berms and/or vegetative buffers.

2) Cross and longitudinal sections of Proposed Development illustrating:

- The original land surface and, if applicable, the groundwater table elevation
- Typical configuration during mining, indicating angle of slope and, where applicable, bench locations
- Proposed configuration on completion of reclamation

3) A copy of the land title/crown land tenure map must be provided.

SOIL CONSERVATION

Average depth of overburden:	2.00 m
Average depth of topsoil:	1.80 m
Measures to stabilize soil overburden stockpiles and control noxious weeds:	Pit will be mined 2 hectares at a time and all Overburden and Topsail will be stockpiled for replacement and reclamation as we begin each next 2 hectare section.

LAND USE

Is the site within the Agricultural Land Reserve?	No
Does the local government have a Soil Removal Bylaw?	No
Official Community Plan for the site:	Future Growth
Current land use zoning for the site:	RR60
Proposed end land use is:	Grave Pits
Estimate total minable reserves over the life of the mine:	90,000 m3
Estimate annual extraction from site:	9,000 m3/year

Application must be made to the Environmental Assessment Office if estimated extraction for sand/gravel production is 500,000 tonnes/year or 1,000,000 tonnes over 4 years; or if estimated extraction is 250,000 tonnes/year for quarried product.

ACTIVITIES

Click on the "Add Activity" button to add one or more activities. Select your activity out of the list and enter the tonnes, the total disturbed area and the total merchantable timber volume.

Please note that you must notify the Inspector at least two weeks before if you are planning to bring a crusher on site.

Activity	Total Disturbed Area (ha)	Merchantable timber volume (m³)
Crushing	0.20	1.00
Excavation of Pit Run	2.00	1.00
Mechanical Screening	0.20	1.00
Total:	2.40	3.00

Is the work year round or only seasonal? Year round
Brief description of operation, including proposed work schedule: See Attached Management Plan

RECLAMATION PROGRAM

Describe the proposed reclamation and timing for this specific activity: See Attached Management Plan
If backfilling of pits or pit slopes is proposed in the final configuration for reclamation, details of materials to be used and placement procedures: Replace Stripped and Stockpiled Overburden
Estimated cost of reclamation activities described above: \$15,000.00
Will progressive reclamation be carried out? Yes
Maximum unreclaimed disturbance at any given time: 2.00 ha

GROUNDWATER PROTECTION

Average depth to the high groundwater table at the proposed excavation: 6.0 m
Elevation of the groundwater table was determined from: ☐ Existing area wells
☐ Test pits
☐ Test wells drilled for this purpose
☒ Other: RP Bio investigation as part of Development Permit Applications
Measures proposed to protect groundwater from potential impacts of the proposed mining activity: See Attached City Of Revelstoke Development Permit

IMPACT MINIMIZATION

Shortest distance between proposed excavation to nearest residence: 700 m
Shortest distance between proposed excavation to nearest residential water source: 700 m
Measures proposed to prevent inadvertent access of unauthorized persons to the mine site: Controlled access road, clearly marked for Industrial use. There are now, ans shall always remain natural vegetation borders which will conceal operations and prevent unauthorized access, plus we will have a lockable gate at the pit road entrance.
Measures proposed to minimize noise impacts of the operation: See Attached Management Plan and Maps
Measures proposed to minimize the dust impacts of the operation: See Attached Management Plan and Maps
Measures proposed to minimize visual impacts of the operation: See Attached Management Plan and Maps

TIMBER CUTTING

Total merchantable timber volume: 3.00 m3

Free Use PermitBased on the information provided you will require a Free Use Permit as the total volume of merchantable timber to be cut does not exceed 50 m3. This permit will be automatically applied for as part of this Notice of Work.

EQUIPMENT

Click on the "Add Equipment" button to add one type of equipment at a time. All equipment must comply with the requirements of the Health, Safety and Reclamation Code.

Quantity	Type	Size / Capacity
1	Bulldozer/Crawler Tractors	D6 Series
1	Crusher	6-8 Cubic Meter Hopper
1	Excavator	300 Series
1	Loader	980 Series
2	Truck	Tandem Dumps for Transport

SUMMARY OF RECLAMATION

Based on the information you have provided on the previous screens the Summary of Reclamation is:

Activity	Total Affected area (ha)	Estimated cost of reclamation (\$)
Sand & Gravel / Quarry	2.40	15,000.00
Subtotal:	2.40	15,000.00
Unreclaimed disturbance from previous year:	0.00	
Disturbance planned for reclamation this year:	2.00	
Total:	0.40	15,000.00

OTHER CONTACTS

Please enter the contacts that are applicable to your application.

Contact Info	Type of Contact
Name: Jack Mckinnon	Tenure Holder
Phone: 250-837-5288	
Daytime Phone: 250-837-1388	
Fax:	
Email: jackmckinnon15@gmail.com	
Mailing Address: PO BOX 440 General Delivery Revelstoke BC V0E2S0	

Name: Jack Mckinnon	Site operator
Phone: 250-837-5288	
Daytime Phone: 250-837-1388	
Fax:	
Email: jackmckinnon15@gmail.com	
Mailing Address: PO BOX 440 General Delivery Revelstoke BC V0E2S0	

Name: Revelstoke Sand & Gravel Ltd.	Permittee
Phone: 250-837-5288	

Daytime Phone: 250-837-1388
Fax:
Email: jackmckinnon15@gmail.com
Mailing Address: PO BOX 440 General Delivery
Revelstoke BC V0E2S0

Name: Jack Mckinnon Mine manager
Phone: 250-837-5288
Daytime Phone: 250-837-1388
Fax:
Email: jackmckinnon15@gmail.com
Mailing Address: PO BOX 440 General Delivery
Revelstoke BC V0E2S0

LOCATION INFORMATION

LAND IDENTIFICATION

Do you have the legal description of the land or the civic address then click on 'Add Land Information'.

Description

Other

Civic Address: 274 Westside Road, Revelstoke BC V0E2S0

Other

Civic Address: 322 Westside Road, Revelstoke BC V0E2S0

Provincial Crown Land

Legal Description: Part of Lot LS 5, Sec. 4, Twp.24, R2, W6M, KD & Part of Sec.4, Twp.24, R2, KD

All applications must include the appropriate maps and applications received without maps will be returned. All maps must be in colour, computer generated, with a scale, north arrow and a detailed legend.

For Mineral, Coal and Placer applications you must provide a minimum of 3 maps:

- A Location Map which must show the location of the property in relation to the nearest community with the access route from the community to the work site clearly marked;
- A Tenure Map which must show the boundaries of the tenure(s) and tenure numbers, at a scale of 1:20,000 or less;
- A Map of Proposed Work which must show topography, water courses, existing access, existing disturbance, contour lines, known cultural heritage resources and/or protected heritage property, at a scale of 1:10,000 or 1:5,000. For site specific applications the location of all proposed exploration activities must be shown; for area-based applications the work area must be shown as a polygon, with the location of all proposed exploration activities for year 1 shown, and shape files provided of the area.

For Sand & Gravel/Quarry applications you must provide a Plan View, Cross and Longitudinal Sections and a Land Title/Crown Land Tenure Map. Details of these requirements are listed in the Sand & Gravel/Quarry Operations Activity sheet.

☒ I have one or more files (PDF, JPG, PNG etc.) with my maps

MAP FILES

Do you have a PDF or image file of a drawn map? You can upload it here.

Description	Filename
Local Features	Local Features map - A1_A2 ...
MERP Map	MERP map (2).pdf
Site Specific A6	Site Specific map - A6.pdf
Site Specific Ortho	Site Specific map - ortho (...)

☒ I have shape files from my Geographic Information System

SPATIAL FILES

Do you have a spatial file from your GIS system? You can upload it here.

Description	Filename
Westside Quarry 1	RSG_Westside_quarry_Albers.dbf
Westside Quarry 2	RSG_Westside_quarry_Albers.prj
Westside Quarry 3	RSG_Westside_quarry_Albers.shp
Westside Quarry 4	RSG_Westside_quarry_Albers.shx

ATTACHED DOCUMENTS

Document Type	Description	Filename
Mine Emergency Response Plan	Westside Road Pit - MERP	REVELSTOKE SAND MERP.docx
Other	City of Revelstoke Development Permit	DP2015-09 Approval Notifica...
Other	Letter of Agency	Letter of Agency Weside Roa...
Other	Management Plan	Management Plan.pdf
Record of First Nations Engagement	First Nations Report	RTS_Lands File 4405626_Reve...

PRIVACY DECLARATION

PRIVACY NOTE FOR THE COLLECTION, USE AND DISCLOSURE OF PERSONAL INFORMATION

Personal information is collected by FrontCounter BC under the legal authority of section 26 (c) and 27 (1) of the Freedom of Information and Protection of Privacy Act (the Act).

The collection, use, and disclosure of personal information is subject to the provisions of the Act. The personal information collected by FrontCounter BC will be used to process your inquiry or application(s). It may also be shared when strictly necessary with partner agencies that are also subject to the provisions of the Act. The personal information supplied in the application package may be used for referrals or notifications as required. Personal information may be used by FrontCounter BC for survey purposes. For more information regarding the collection, use, and/or disclosure of your personal information by FrontCounter BC, please contact FrontCounter BC at 1-877-855-3222 or at: FrontCounter

BC Program Director FrontCounter BC,
Provincial Operation
441 Columbia Street
Kamloops, BC V2C 2T3

☒ Check here to indicate that you have read and agree to the privacy declaration stated above.

REFERRAL INFORMATION

Some applications may also be passed on to other agencies, ministries or other affected parties for referral or consultation purposes. A referral or notification is necessary when the approval of your application might affect someone else's rights or resources or those of the citizens of BC. An example of someone who could receive your application for referral purposes is a habitat officer who looks after the fish and wildlife in the area of your application. This does not apply to all applications and is done only when required.

We have prepopulated some of the fields for your convenience but you can change in the information at any time. Please note that the information might become available to the public if required.

Company / Organization: REVELSTOKE SAND & GRAVEL LTD.
Contact Name: Jack Mckinnon
Contact Address: PO BOX 440 Main Post Office
Revelstoke BC V0E2S0
Contact Phone: 250-837-5288
Contact Email: jackmckinnon15@gmail.com

☒ I hereby grant permission for the public release of the information provided above. This information will be used to fulfill, if required, the referral and advertising requirements of my application.

IMPORTANT NOTICES

- Once you click 'Next' the application will be locked down and you will NOT be able to edit it any more.

DECLARATION

☒ By submitting this application form, I, declare that the information contained on this form is complete and accurate.

OFFICE

Office to submit application to: Cranbrook

PROJECT INFORMATION

Is this application for an activity or project which requires more than one natural resource authorization from the Province of BC? Yes

What is the name of your project? Westside Gravel Pit

Please provide any of the following: reference number(s), project number(s), tracking number(s), or other descriptive information which would allow us to group these applications together: 100116723 Crown Land Tenure Application

APPLICANT SIGNATURE

Applicant Signature

Date

OFFICE USE ONLY

Office Cranbrook	File Number	Project Number
	Disposition ID	Client Number

SITE SPECIFIC MAP
GRAVEL QUARRY APPLICATION
MAP - A6
ORTHOPHOTO UNDERLAY

Date: Sept. 22 / 2014

Scale: 1 : 2,500

Location:

Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.

Legal Desc:

Part of S4, T24, R2, W6M
Kootenay District

Total Area of Disturbance: 8.2 ha.

Drawn by: R.F. Azimuth Forestry

POC
UTM 413556, 5652842
Z11

Proposed Road
Access (0.1ha)

City of Revelstoke
Waste Management Area

Interoute
Access Rd
4404142

Proposed Quarry
Site (8.1ha)

Telus Unity
R-W
4403840

WESTSIDE RD.

0 50 100 150
METERS
SCALE 1:2,500

Columbia River

SITE SPECIFIC MAP

GRAVEL QUARRY APPLICATION
MAP - A6

Date: Sept. 22 / 2014

Scale: 1 : 2,500

Location:

Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.

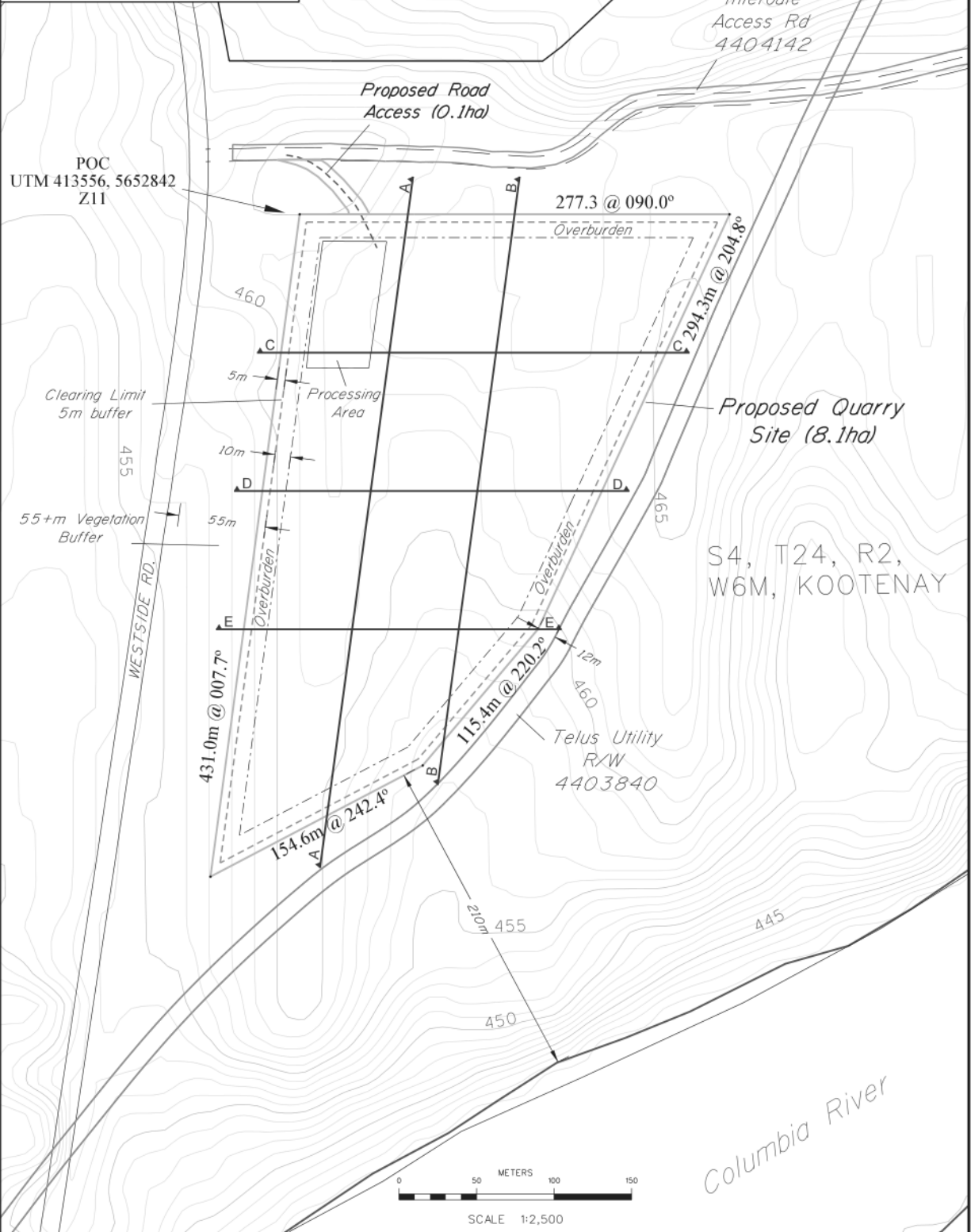
Legal Desc:

Part of S4, T24, R2, W6M
Kootenay District

Total Area of Disturbance: 8.2 ha.

Contour Interval: 1 metre

Drawn by: R.F. Azimuth Forestry



LOCAL FEATURES MAP

GRAVEL QUARRY APPLICATION MAP - A1/A2

Date: Sept. 22 / 2014

Scale: 1 : 20,000

Location:

**Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.**

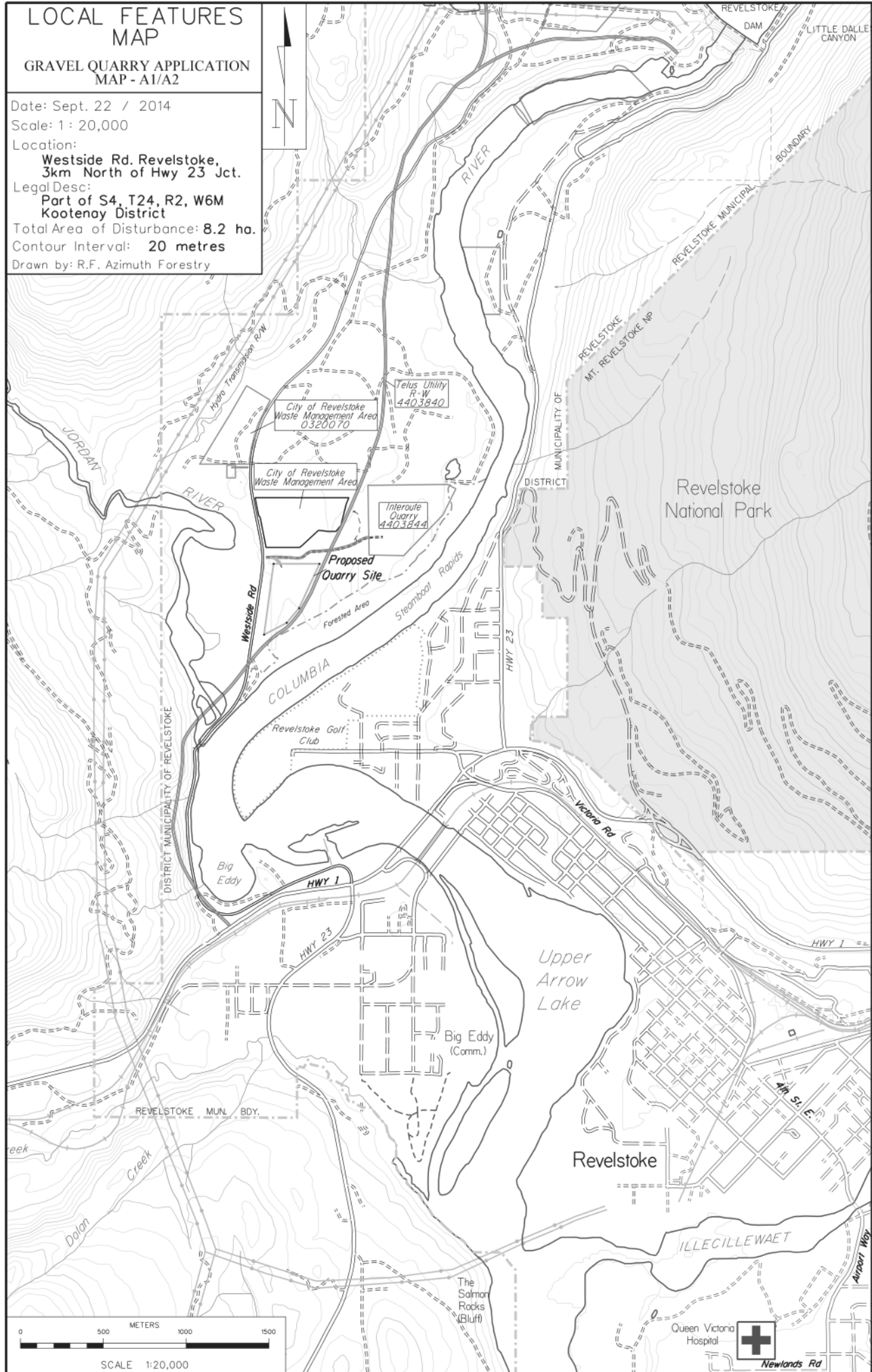
Legal Desc:

**Part of S4, T24, R2, W6M
Kootenay District**

Total Area of Disturbance: 8.2 ha.

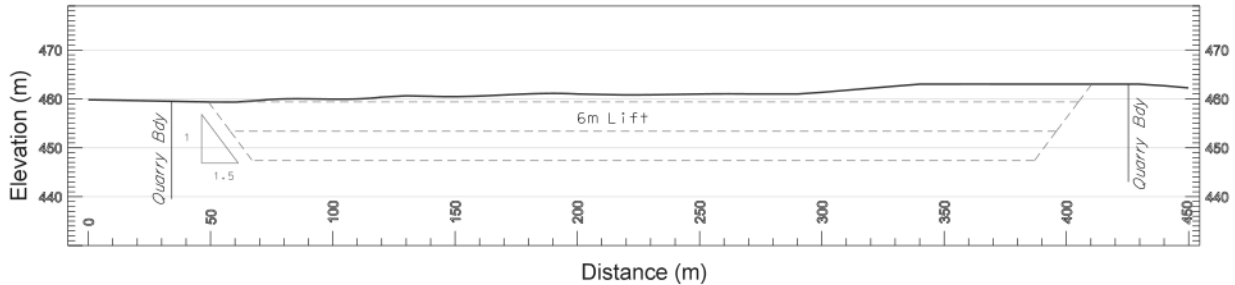
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Drawn by: R.F. Azimuth Forestry

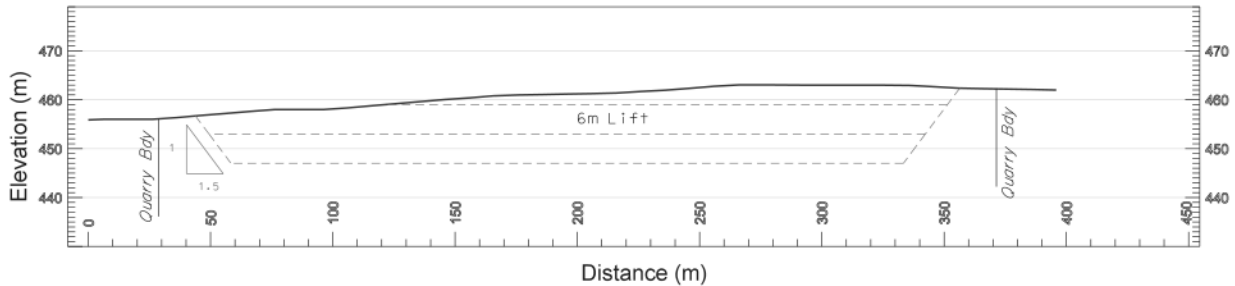


Cross-Section Views

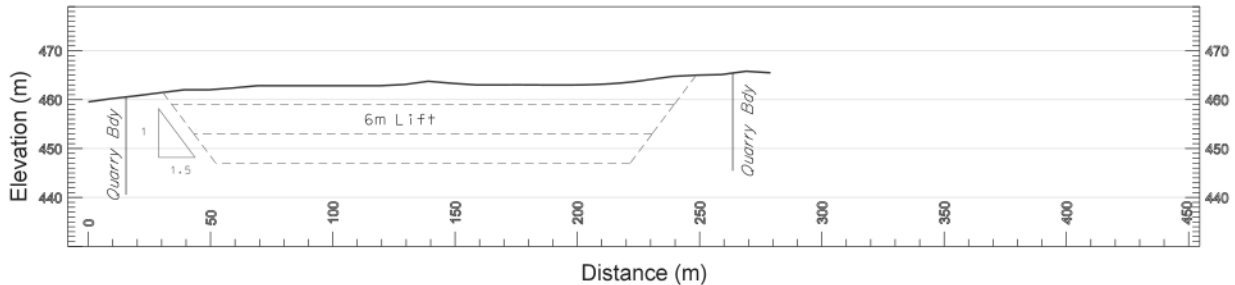
A



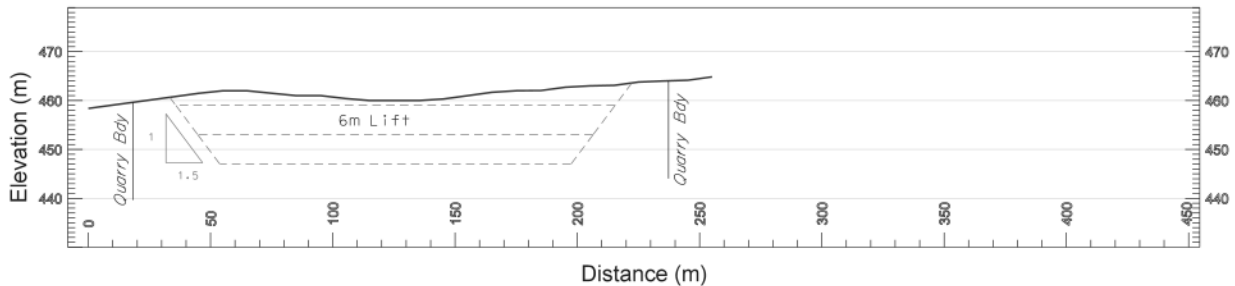
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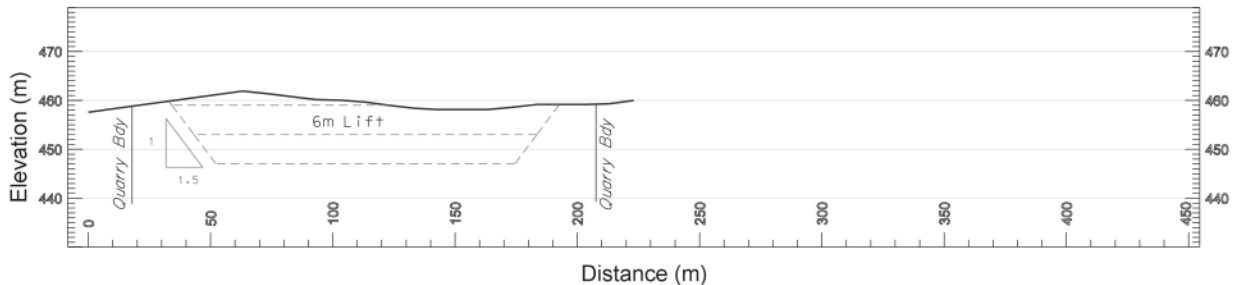
C



D



E



H SCALE - 1:200
V SCALE - 1:100

August 18, 2017

Westside Road Pit – Operating Plan

1.0 Present State of Land

The Westside Road Pit is on Crown Land within the city limits of Revelstoke. The entire site has been previously disturbed (logged for an old cut block).

There is no known overlapping or adjacent use of this parcel, public or others. An existing CSRD landfill is north of the site; active Ministry of Transportation and Infrastructure gravel workings are to the north and northwest and a 200m buffer comprising the Columbia River greenbelt (40% of which is treed) runs along the eastern boundary of the site.

The proposed pit area has been previously logged and grubbed (non merchantable forest as part of reforestation of an old cut block in 1988). The overburden thickness of approximately 0.15 to 0.2 m of organics will be stockpiled separately to be preserved for reclamation. The soil texture varies and consists of coarse sand and some gravel, deposited as part of an ancient, abandoned fluvial terrace.

The main access to the pit is via Westside Road, which is a city road in good condition. The minor access road off Westside Road (Lands file no. 4404142) is also in good working condition. There is an existing gate at the junction of the access road and Westside Road, with appropriate signage warning the public of an operating pit, hours of operation, and no trespassing signs.

There are no watercourses running through the proposed site. The Columbia River is approximately 200 m east of the site. The depth to the water table from the existing pit floor (and proposed mining depth) is approximately 10 m, based on Columbia River observations and a handheld GPS survey of the river's high water mark.

2.0 Location

Westside Pit is located approximately 4 km north of Revelstoke, BC, off a gated access road from Westside Road. From Revelstoke, follow the Trans Canada Highway through town heading west, turning right after approximately 600 m on to West Side Road just after the bridge. Proceed along Westside Road for approximately 3 km, before turning right on to the site access road. The site is approximately 200 m west of the Columbia River, and approximately 1km east of Jordan River.

Westside Pit (License No. 405626, Lands file no. 4405626): That part of the Northwest and Southeast $\frac{1}{4}$ of Section 4, Township 24, Range 2, West of the Sixth Meridian, Kootenay District containing 8.2 hectares more or less.

Westside Pit road access (License No. 414124, Lands file no. 4404142): Those parts of the Northeast and Northwest $\frac{1}{4}$'s of Section 4, Township 24, Range 2, West of the Sixth Meridian, Kootenay District containing 0.74 hectares, more or less.

3.0 Mining Plan

The dimensions of the open pit will be approximately 8 ha, with a mining depth of 10 m. When possible, processed aggregate will be stockpiled within the excavated area. Mining will occur in phases, allowing for progressive reclamation to occur in areas not required for stockpiles or excavation. The total area of disturbance at any time will be approximately 4 ha.

The site will be excavated in two phases. Each phase will be approximately 4ha in size.

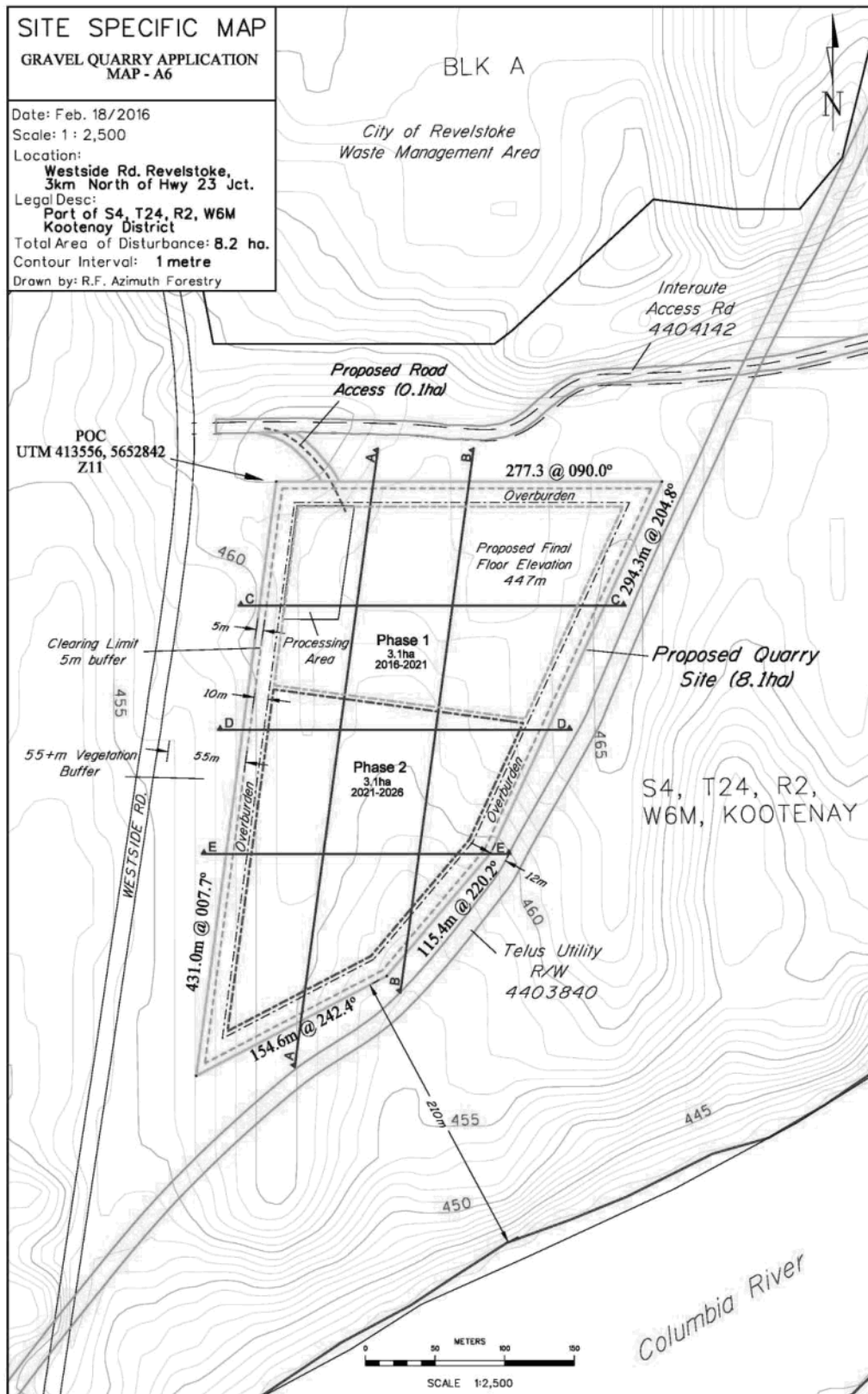
Stockpiles of different products will be stored on site. For proper stockpile management and safety, space is required for this wide range of products if the pit is permitted to expand as there would not be adequate space to house the crusher and the stockpiles; a stockpile area beside the excavation will occur.

The areas comprised by Phase I will be logged and grubbed. Areas not being used for mining and stockpiling will be prepared and seeded with a local forest range grass mix to reduce dust due to the loss of trees and ground cover.

Phase I – Move existing organic stockpiles to the east as excavation of the 4 ha extends south. Excavate remaining area to mining depth. Stockpile some of the material on the stripped areas in phase I. All areas that have been logged and grubbed will be reseeded, with the proposed stockpile area reserved for storing products

Phase II – Strip and grub ~ all 4.0 ha parcel boundary. Stockpile all organics along the eastern boundary as a berm for ease of reclamation. The Phase I area will be mined to a depth of approximately 10 m. A portion of Phase I and Phase II will be used as a stockpile area during the excavation and mining process of this site. All areas that have been logged and grubbed will be reseeded. A stockpile area will reserved for storing processed material.

Phase III – Once mining is complete, reclamation of all Phases will occur. The reclamation of the whole site will follow the guidelines as per the Mining regulations and Best Management Practices for Reclamation of gravel pits. The goal of the reclamation program is to have “equivalent land capability” as was on the property before excavation occurred.



4.0 Dust Control Plan

The following dust control plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- All trucks leaving the site will be covered with a tarp;
- Placement of the crusher in the bottom of the pit;
- Well maintained access roads;
- Placement of dust control measures on haul roads and active travelled areas;
- Placement of dust control measures on stockpile of sand;
- Stockpile sand in the bottom of the pit;
- A 200 meter tree buffer will be maintained on the river side of the pit;
- Areas not being mined or used for stockpiling will be seeded with a forestry range mix;
- A maximum drop height of 2 meters;
- Overburden stockpiles will be seeded with a forestry mix;
- All personal will be informed on this dust control plan;
- The operator shall suppress the fugitive dust created within the operational area of the pit so that the measured value of dust does not exceed 1.7 mg/dm²d.
- In cases of a wind event or extreme heat and the above mentioned measures are not adequate, operations will stop until RSG has managed the dust effectively.
- The location of the pit requires adherence to accepted best practices and will use water as a preferred surfactant to prevent dust.

5.0 Noise Control Plan:

The following noise control plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- Placement of the crusher in the bottom of the pit;
- Well maintain access roads;
- A 200 meter tree buffer will be maintained on the river side of the pit;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- A maximum drop height of 2 meters;
- All personal will be informed of this noise control plan;
- All equipment used on the site will have functional mufflers that are in good working order and muffle noise to their full capacity;
- Stockpiles will be placed to minimize normal operating noise;

6.0 Transportation of Aggregate to Market:

The following Transportation plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- All trucks leaving the site will be covered with a tarp;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- Well maintained access roads;
- All personnel will be informed this transportation plan;
- All drivers will be qualified and experienced;
- All trucks and equipment will undergo required safety inspections and be in good working conditions;
- All trucks will follow the designated City of Revelstoke Truck routes;
- No known overloaded trucks will be permitted to leave the site;
- All trucks will abide with all traffic regulations;
- Truck drivers who are repeat offenders of these guidelines will have their access to the pit denied;

7.0 Weeds Control Plan

The following weed control plan will be followed:

- Prior to transporting, earth moving equipment will be cleaned to minimize movement of foreign seeds onto site;
- Prior to transporting the crusher, the equipment will be cleaned;
- Overburden stockpiles will be seeded with a forestry mix;
- The soil disturbance will be kept to a minimum.
- Inspections for weeds will be conducted periodically and managed accordingly;
- All vehicles and transportation equipment will be restricted to the designated haul road in the pit;
- Work with CSRD noxious weed control program as required.

7.1 Weeds Control Plan

- The following information is part of the weed control plan in 7.0
 - a.** There are no invasive species within the proposed pit area that we are aware of or have observed in our work on the area, at this time. The risks are high due the proximity of the Regional Landfill and the access road, however at this time the pit is covered by a reforestation plantation with mixed natural ingress of conifers and natural regeneration of the forest floor.
 - b.** Several RSG staff will be trained in the identification of invasive species and one of our principles has decades of experience in the establishment and management of cultured and rehabilitation landscapes and is knowledgeable in invasive species control.

8.0 Production Plan

The following production plan will be followed:

- Prior to transporting the crusher onto the site, the equipment will be cleaned;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- The crushing operations will typically run 6 to 8 weeks per year;
- The preferred time of year for the crushing operation to occur is spring and fall;
- All personal will be informed of the Noise, Dust, Transportation, Weed and Mining Plan;
- A maximum drop height of 2 meters;
- Periodical, testing will be conducted on workers to determine the silica exposure rate while working within the pit. This data will be forwarded to the Occupational Health Mining Minerals, Division Ministry of Energy, Mines and Petroleum Resources.
- In cases of a wind event or extreme heat, and the dust measures are not adequate, operations will stop until RSG has managed the dust effectively.
- All equipment used on the site will have functional mufflers that are in good working order and muffle noise to their full capacity;
- Stockpiles will be placed to minimize normal operating noise;

9.0 Wildlife Management Plan

During the process of applying for our Westside Gravel Pit application was circulation to various government departments. Cory Legebokow with the Ministry of Environment advised that there were no concerns from the Ministry of Environment.

- The existing 200 meters forested area between the gravel pit and the Columbia River will be undisturbed. This will act as a corridor/ shelter for any wildlife or birds passing through the area;
- This site is located about 700 meters away from the Jordan River to the west, which is on the opposite side of Westside Road;
- There is no water course on site;
- Mining will be approximately 10 meters above the ground water table and high water mark of the Columbia;
- The land was previously logged
- The lands to the south and north have also been previously logged;
- This area has other industrial sites to the west is a Landfill operation, while further to the north are MoT and City of Revelstoke aggregate pits.
- There are no known threatened or endangered species in the area;
- There will be minimal to no disturbance to existing wildlife habitats;

10.0 Reclamation Plan

- The site will be reclaimed as per Ministry of Energy and Mines regulations.
- All top soil (to rooting depth) will be stripped and stockpiled separately to all other material (overburden, underlying sand/gravel/rock) prior to any disturbance of the land. Top soil piles will be seeded with a forestry range mix to control weeds and to minimize blowing dust. At the completion of mining, all slopes shall be trimmed to a consistent, minimum slope of 2:1 or the natural slope angle with native granular material which will require the use of a bulldozer. Exhausted areas of the pit will be re-claimed and re-vegetated with local forest range mix.
- The aggregate operation of this land is a temporary activity. The operation's reclamation plan will be done in such a manner as to not limit the post extraction land uses.
- Once the excavation has been completed the land will be returned to its natural state with an equal ability to grow trees or other forms of vegetation.
- If the City of Revelstoke changes the end land use, the reclamation plan may be altered to meet the permitted post-mining activities;
- Progressive reclamation will occur, when excavated areas are no longer required for crushing and stockpiling;

11.0 City of Revelstoke OCP and Zoning Bylaws

- The official Community Plan (OCP) designation for the subject area is Urban Reserve. Gravel operations can be located in any OCP designation.
- We will abide by the all the parameters outlined in this by-law. It should be noted that Zoning Bylaw No. 1264 states that *"the subject property is zoned Urban Reserve (UR). Section 7.11.2 of the Zoning Bylaw permits the use of a gravel extraction operation providing that the area is not less than four hectares (9.8 acres)."*
- We have copied the section of the by-law that would apply to our operations, and agree to abide by these parameters.

- **SECTION 7 - RESIDENTIAL DISTRICTS (R and RR)**
<http://www.cityofrevelstoke.com/bylaws/bylaws/1264-s7.htm>

7.11 RURAL RESIDENTIAL - 60 HECTARE - DISTRICT - RR60

This zone provides for the retention of forest and wild land as non-urban, for the conservation of agricultural land by the holding of land in large parcels, for the prevention of intensive use in areas subject to periodic flooding, and

for the accommodation of forestry, mining, transportation, recreation and water uses **and activities**.

7.11.1 Uses Permitted

Within this zone, the following uses only are permitted:

(14) Extraction of raw materials from the land, including preliminary grading, cutting or crushing of materials, providing that no further processing is permitted on the site except where the product is regulated by the Mines Regulation Act, or is to be used on the site, and providing that the extraction and processing are sited so as not to endanger or encroach on any perimeter boundary of such site.

- We agree to follow the operating hours of Monday to Friday, 7:00am to 5:00pm. These hours of operation will be no different to any other works in the area.
- The gravel extraction and crushing complies with both the City of Revelstoke zoning and official community plan.

12.0 Chemical and Fuel Management Guide

The following chemical and fuel management guide will be followed:

- All concerned employees will go through a WHMIS and Spill Response Training on a regular basis. The training will provide the appropriate emergency procedures in case of a spill.
- At Revelstoke Sand and Gravel a spill response team is set up to help manage any type of spill incident. The team will be in charge of determining whether a spill can be handled with in house measures or if an outside clean-up team is requested.
- A spill kit will be located on site in a onsite cabinet;
- The following Spill response procedure will be followed;
 - ◆ Identify the spill and safety concerns;
 - Evacuate the area of all but essential personnel;
 - If possible determine what the nature of the spill is;
 - Do not approach spill, if it is unidentified;
 - Defining the spill shall only be attempted if no one will be exposed to undue hazards and risks meaning that proper PPE is worn. Search for labels, containers, signs, color of containers, etc.;
 - ◆ Contact the supervisor and spill response team;
 - Summon the site supervisors;
 - Contact the incident command;
 - ◆ Identify safety concerns;
 - Assess the area and consider all potential risks near the spill;
 - Consult the MSDS sheet for product characterization;

- Eliminate all ignition, heat and power sources;
- Shut off all equipment;
- Identify equipment where flammable or toxic products may be concern;
- Determine Hot Zone Area which represents a buffer zone around the spill of around 10 feet;
- Identify areas that may be O2 deficient;
- Identify confined spaces;
- ◆ Identify environmental concerns;
 - Consider the following;
 - Water intakes or water courses;
 - Identify topography, sumps and trenches;
 - Vegetation;
 - Ground penetration;
 - Livestock;
 - Impending weather conditions;
- ◆ Respond;
 - Spill team suits up the PPE according to MSDS Sheets;
 - Cover all drains, and dike or reroute spill from entering waterways;
 - Prevent spill from exiting the hot zone by blocking doorways and escape areas;
 - Build substitute containment by forming berms;
 - Contain spill by using granular, pads, or sock according to MSDS sheets;
 - Absorb spill material working from outside inward, circular motion;
 - Vacuum free liquids with approved vacuum if possible and safe;
- ◆ Clean-up/Dispose;
 - Use spark proof equipment if product is flammable or has a low flashpoint;
 - Pick-up absorbed material, place in disposal bags or containers;
 - All pads, granular, sock, non reusable PPE should be placed in disposal container;
 - Contact approved waste disposal company to pick up containers or bags;
- ◆ Decontamination;
 - Decontaminate area to prevent additional hazards;
 - Rinse off or discard contaminated material in a contained area;
 - Dispose of any non usable equipment;
 - Remove the most soiled or contaminated clothing first;
 - Do not touch clean clothing or material with used gloves;
 - Turn clothing inward to avoid recontamination;

- ◆ Report
 - Report all spills internally;
 - Complete the incident report;
 - Inform proper environmental authority and necessary government agencies on reportable levels;

13.0 Safety

Our existing pit operation has operated accident free since its opening. Safety has been considered the company's highest priority. An effective and comprehensive safety program has been in place for many years. Operations strictly adhere to Ministry of Mines, Energy & Petroleum Resources rules and regulations, e.g. signage, sloping, gates, berms, and proper Personal Protective Equipment (PPE).

14.0 Archeological Finds

Revelstoke Sand and Gravel will report any chance archeological finds in accordance with the provincial procedures and reporting formats as provided by the Ministry of Mines. A copy is attached.

Respectfully submitted,

Signed: _____

Date: August 18, 2017

**Mr. Jack McKinnon, Owner
Revelstoke Sand and Gravel Ltd**

Westside Road Quarry
Revelstoke Sand & Gravel Ltd.
Notice of Work: 16307472011601
Dust Management Plan

February 2016

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1. INTRODUCTION

Revelstoke Sand and Gravel intends to operate a sand and gravel quarry at 274 & 322 Westside Road. Site activities are conditioned by a Notice of Work permit which requires an accompanying Dust Management Plan and program for fugitive dust prevention to be submitted to the Ministry of Energy & Mines (MEM), for its acceptance.

1 - Prior to the commencement of the development, a plan for dust minimization and dust control shall be submitted to the MEM, for its acceptance. Dust minimization control shall be carried out in accordance with this plan or such alternative plan that may subsequently be amended, as a result of new information being received from MEM, during the life of operations at the site.

2 - Dust monitoring shall be carried out during all days of on-site activity in accordance with this plan and shall commence as of the first day of onsite Phase 1 development, and thereafter until reclamation activities have been completed.

This document provides the information requested by MEM. The implementation of the Plan will be under the control of site management and will form part of the onsite Management Plan for operations at the quarry.

2. SITE CONDITIONS

2.1 Site Location and Setting

The Westside Road Quarry (the Site) lies in the Westside Road Industrial area. Neighbouring properties include the City of Revelstoke Waste Management Site and the InterRoute Quarry. South of the Site and to the South East lies the Columbia River and on the far side of the Columbia River, the residential subdivision known as Columbia Park

Prevailing winds, in the area of the Site, are primarily from a Westerly direction. Annual precipitation in Revelstoke is in the order of 649 mm per year (Environ. Can.), and an average monthly rainfall of 60mm or more during the non-winter months, and therefore it can be assumed that there are numerous days each year when ground conditions will be wet or damp and therefore unlikely to generate dust.

2.2 Process Description

Westside Road Quarry is a sand and gravel extraction and crushing and screening processing site, followed by site restoration. No mass material storage will occur on this site as all processed materials will be transferred for stockpiling and storage to the Jake & Jay Holdings yard, several kilometers north of this site.

Soil and overburden will be stripped and separated in accordance with a 2 phase program and the principles for soils handling for later use in restoration.

The Site will be worked in accordance with 2 phases, working from north to south, and west to east. The phases roughly correspond to existing field boundaries. The sand and gravel will be excavated from the quarry face by a tracked 360° hydraulic excavator, and a 980 series Loader will load the excavated material into the Crushing Plant Hopper, from temporary stockpiles on the quarry floor.

The as-processed sand and gravel will be loaded onto Tandem Dump Trucks for transport to the Jake & Jay yard. All Tandem Dumps are equipped with auto cover sheeting systems and all loads will be sheeted prior to leaving the Site.

Restoration of the Site will be undertaken in accordance with the phased program. All soil stripped from the Site during the preparation works will be re-utilized to achieve the final restoration design and grade. Soils will be stockpiled around the perimeter of the quarry.

No imported fill or waste will be utilized in site restoration. Backfill and land-forming to achieve the final landscape profile will be undertaken utilizing stripped overburden and inter-burden (unwanted conglomerate, silt and clays etc.) occurring within the sand and gravel.

2.3 Potential Dust Sources

The existing other Revelstoke Sand and Gravel operations have not given rise to problematic levels of dust due to location, the dampness of the mineral, climate and site operating procedures. However, the potential remains for dust to be generated that could cause a nuisance.

By not following prescribed on-site activities the potential to cause fugitive emissions of dust can arise from:

- (a) soil and overburden removal, handling and storage;
- (b) sand and gravel extraction operations within the quarry void;
- (c) material handling and loading operations; and
- (d) the movement of vehicles on the site haul road.

3. OPERATIONAL DUST CONTROL MEASURES

3.1 Overview

RSG recognizes the potential for minerals workings to generate dust nuisance and expresses a commitment to operating the site in accordance with current best practices. By implementing best practice measures to control and mitigate the generation and transportation of dust, it is considered that dust emissions from the site can be adequately controlled.

The aim of the dust control measures set out by this Plan are consistent with the key planning principles at RSG. This is that dust emissions should, as far as possible, be controlled, mitigated or removed at source.

The objective of this Plan is to minimize the visible release of airborne dusts and particulates arising from mineral extraction and related activities onto public areas outside the site, and to prevent releases in such quantities or concentrations that are likely to cause pollution of the environment or harm to human health or serious detriment to the amenity of the locality.

The Plan is subject to continuous review, and will be revised in the light of updated best practice guidance.

3.2 Management Responsibility

Site Management and Supervision

The Quarry Manager is the President of RSG, and is the designated individual with the responsibility for ensuring that the Dust Management Plan is enforced on site, and its contents are communicated to all employees and contractors working at the site as part of the induction procedure.

Should an off-site complaint about be received about fugitive dust emissions, it is the Quarry Manager's responsibility to investigate the cause and take corrective action where necessary in line with the Action Plan outlined in Section 5 of this document.

Training, Awareness and Competence

- (a) staff at all levels will be provided with the necessary training and instruction in operational control procedures to control emissions; and
- (b) training, awareness and competence will be evaluated on a routine basis to ensure ongoing effectiveness.

Operational Control

- (a) written operating instructions will be prepared for all relevant critical operations including abnormal operating conditions; and reviewed on an annual basis to ensure ongoing effectiveness.

Maintenance

A written program of maintenance will be developed and implemented for all aspects of the process. Maintenance will include:

- (a) routine scheduled inspections;
- (b) preventative maintenance activities; and
- (c) reactive maintenance activities in the event of any plant breakdown - this will be minimized at all times.

3.3 Control Measures - Soil and Overburden Removal and Handling Operations

Soil and overburden removal will be undertaken by the Quarry Manager or designated contractor. Stripping operations will utilize an excavator, dump trucks and dozer with materials placed on grade on the exterior perimeter boundaries of the quarry and used in the phased restoration of the quarry. Soils will only be stripped, handled, stored and replaced in accordance with the Management Plan which will carefully be reviewed before the commencement of soil stripping.

Dust control and mitigation measures for this area of operation include:

- (a) should dust emissions be generated in extremely dry periods then suppression will be facilitated by use of mobile spray units;

- (b) soils and overburden placed on perimeter edges will be adjacent to 30-meter tree forested areas which will prevent the generation of fugitive dust emissions from these materials;
- (c) soil handling will be restricted in adverse weather conditions (e.g. high winds);
- (d) access to storage areas by machinery shall be restricted other than for the purposes of mound construction and maintenance;
- (e) overburden and soil removal activities will be planned to take into consideration seasonal weather variations and seeding seasons for planting;
- (f) progressive restoration of areas following extraction, to minimize the area exposed to wind erosion.
- (g) access to restored areas will be restricted; and
- (g) double handling of stripped materials will be minimized wherever possible.

3.4 Control Measures - Mineral Extraction

The sand and gravel will be excavated from the quarry face by a tracked 360° hydraulic excavator, and a Loader will load the excavated material from temporary stockpiles on the quarry floor (or directly) into the Crushing Plant Hopper

Dust control and mitigation measures for this area of operation include:

- (a) equipment will be appropriate for the task for which it is being used, maintained in good working order, and operated according to the manufacturer's instructions;
- (b) during extraction operations with the potential to cause significant dust emissions, or during adverse weather conditions, the area being worked will be kept damp by regular application of water via water bowser or similar;
- (c) excavation, and the loading of road haulage vehicles will take place within the quarry void;
- (d) handling operations will be kept to a minimum to avoid unnecessary emissions of dust;
- (e) temporary stockpiles of crushed materials will be located with regard to sensitive areas wherever possible, taking account of prevailing wind conditions;
- (f) dampening of temporary stockpiles and exposed areas will be carried out where necessary to minimize the wind entrainment of dust during adverse meteorological conditions; and

3.5 Control Measures: Materials Handling and Storage

There will be no stockpiling of sand and gravel, other than temporary stockpiling of small amounts of sand and gravel at the extraction point and at the exit point of the Screening Plant. The control measures for this area of operation is covered in section 3.4.

(g) drop heights from the Loader will always be minimized to minimum safe clearances of the Hopper sides and Screens and all Dump Trucks are loaded in a method of just clearing the sides of the Dump Box and then lowering the Loader Bucket edge into the Dump Box and feathering the drop from side to side, within the Dump Box. This process produces the least possible amount of materials disturbance and minimal dust creation.

3.6 Control Measures - Roads and Traffic Management

Vehicle Speed Limits

Speed restrictions of 10 kph will be imposed for all vehicles driving on the site, in order to minimize emissions of dust from internal road surfaces and appropriate signage will be posted at the entry point of the quarry haul road.

Dust Suppression

During dry conditions, the potential for dust emissions is increased and may potentially impact on the amenity of neighbors, visitors or employees. During such periods an appropriate dust suppression technique will be employed on internal roads, and the technique to be utilized at the site will be congruent to the chemical applications on the InterRoute haul road.

Water supplies for the onsite mobile spray bowser unit will be sourced from the Jake & Jay Holdings Maintenance Building.

Prevention of Dust Generation from Vehicle Movements

(a) Vehicles leaving the site will always be adequately sheeted or otherwise contained prior to exiting the site onto the public highway.

Design and Maintenance of Roads

- (a) internal un-surfaced haul roads will be well maintained and compacted, to minimize spillage from vehicles and dust emissions from loose and uneven surfaces; and,
- (b) internal roads will be designed to avoid sharp corners and steep gradients that would encourage sharp braking.

4. MONITORING AND RECORDING PROTOCOL

4.1 Visual Monitoring and Recording

It is the responsibility of all site personnel to maintain a visual awareness of dust emissions during the working day. Any significant dust emission occurring with the potential to travel beyond the site boundary will be reported to the Site Manager, who will be responsible for investigating the cause and taking immediate action to minimize further emissions. If necessary, site operations will be halted until appropriate remedial action is completed.

The Site Manager or nominated employee will inspect the site boundary and/or location of sensitive receptors relative to wind direction on a weekly basis to check for abnormal levels of on-site dust creation and off site deposition. If this is found, the cause will be investigated and remedial action will be taken where necessary.

A logbook relating to the management of dust will be maintained by RSG. The information kept will include:

- details of the source, date and time of any significant dust emission during site operations, along with an assessment of its likely impact,
- details of complaints received; and
- details of remedial action taken and changes made to operational procedures, in order to eliminate or minimize dust emissions.

5. Dust Action Plan

5.1 Introduction

If during routine visual monitoring, significant volumes of airborne dust are identified, or dust is being produced with the potential to affect sensitive areas and cross the site boundary the actions detailed within this section will be taken.

5.2 Mineral Extraction and Materials Handling

- take immediate steps to establish the cause of the abnormal emissions;
- cease operations until corrective action can be taken, or adverse weather conditions change;
- implement corrective action, such as the use of water sprays, or temporarily relocate the area of work until the wind direction or other adverse weather conditions change;
- enter actions into site log book.

5.3 Vehicle Movements

- establish the cause of the abnormal emissions;
- implement corrective action, such as the use of chemical treatment or the water bowser on the dusty area of road or repair to a damaged haul road surface;
- if relevant, organize road sweeping of tarmac or other hard surfaces;
- ensure vehicles are obeying the site speed limit;
- enter actions into site log book.

Mine Emergency Response Plan

Westside Road Gravel Pit Permit

Revelstoke Sand & Gravel Ltd.

Revelstoke, B.C.

2016

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

Mine Emergency Response Plan (MERP)

I. Mine/Operation Information

A Mine is a place as defined under the *Mines Act* (RSBC 1996, C. 293.1 Feb.24, 2016). The following list identifies basic information regarding the Westside Gravel Pit:

Mine Name & Contact:

Westside Road Pit
c/o Revelstoke Sand & Gravel
Box 440 Revelstoke B.C.

Tel: (250) 837-5288

Fax: (250)837-2833

✓ **Mine Manager**
Mr. Jack McKinnon
(250) 837-1388
jackmckinnon15@gmail.com

✓ **Safety Manager**
Mr. Jack McKinnon
(250) 837-1388
jackmckinnon15@gmail.com



- ✓ Mine number: **Tracking # 10015507**
- ✓ Mine permit number: **To Be Issued**
- ✓ Type of operation: **Excavate, load, crush, screen**
- ✓ Location of the property: **City of Revelstoke**

Latitude: 51° 1'13.584" N
Longitude: 118°13'55.697"W

- ✓ Number of employees on site, including management and contractors:

This number varies with daily operations. Under a single full day shift at steady utilization, there may be 4 to 6 employees on site, including Truck Drivers.

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

II. Hazard Analysis of Operation

This section identifies potential emergencies that could occur at the mine site:

Fire

Limited opportunity for fire. This could happen in our portable/safety office or on one of the operating machines. Each machine (Excavator, loader, etc.) and portable office is equipped with a, yearly certified, fire extinguisher.

Explosives

There will be no drilling and subsequent blasting associated with this Gravel Pit operation. All gravel extraction will be by excavation and loader operations. No explosives will be located or stored on site.

Worker Injury

Potential for worker injury is most often Musculoskeletal, through falls and tripping. Care must be taken when in the sand pit – slopes should be maintained to avoid sand slips or slides. Workers near crushing and sand screening equipment are required to wear hearing protection and have annual hearing check-ups. See Jake-Jay Holdings OH&S Manual for details.

Trees along the falling perimeter will be inspected at regular intervals and any time operations are within 30 meters. Any trees which indicate potential danger will be brought to the attention of the Mine Manager and will be removed as appropriate. As the pit operations progress, there will be some high pit faces resulting from the mining operations. These areas will be identified to all persons visiting the site in an orientation meeting and all workers will be trained and cognizant of the dangers with falling rocks and debris. Hard hats and safety shoes are to be worn at all times by all persons on site in the pit areas.

Environmental / Climate

Environmental emergencies will be limited to potential fuel spills which would be minor in nature. No fuel tanks of a size greater than 500 liters are kept on-site and are either double-walled tanks or have 150% containment berming surrounding the tank.

Drainage ditches are maintained to handle run-off in the case of high precipitation. Flooding is not a concern because the working property is above the flood plain elevation. Sandhill extraction face wash-outs are possible under high precipitation events. Maintaining proper slope face angles and attention to drainage collection will be required to avert these issues.

Equipment Failure

All equipment will be operated within normal operating ranges – excavators, trucks, loaders. Normal wear and tear will be handled through existing regular maintenance programs. Crushing and screening equipment can be hazardous – employee orientations and training are mandatory prior to operating or being near these pieces of equipment. Rocks can be thrown at velocity from crushing equipment. In general, the Mine Manager operates the Crushing and Screening plant for efficiency.

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

Equipment Collision

All truck drivers and equipment operators shall be familiar with right-of-way protocols and travel lanes on and off site. Highway laws & regulations are to be followed at all times. Cell phone use is not permitted in moving vehicles. Constant monitored, common industry multi-channel radios are installed in all equipment and are operational at all times.

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

III. Emergency Equipment

Emergency equipment is available on site to deal with any identified potential emergencies/hazards. This list includes equipment that may be needed in the case of an emergency event:

- ✓ Fire extinguishers are contained within each piece of heavy equipment and in the site safety office trailer.
- ✓ All Workers are required to wear steel-toed boots, hardhats, and reflective vests while on site.
- ✓ 2 pumps usable for Fire are available in the tool trailer.
- ✓ First Aid supplies are contained in the site Safety / First Aid Trailer.
- ✓ Rescue equipment is limited to ropes and spine board, contained in the tool trailer and First Aid Trailer.
- ✓ Equipment can be assigned to an emergency task where appropriate through the foremen, or Mine Manager. Bulldozer & excavator can be used for building roads, trails, or water containment berms and ditches to direct, dam, or dyke water flows.
- ✓ Industrial ambulance or emergency transport vehicle are available by contacting 911. The site is found within the City of Revelstoke, where the Hospital and Ambulance Service are less than 20 minutes away.

IV. Trained Personnel

All staff will be notified of Safety Trained personnel on-site through posted notices and through regular tail-gate meetings and safety meetings. These persons will be capable of dealing with the identified potential emergencies/hazards.

- ✓ On-site Level 1 & 2 First Aid providers will be designated and identified
- ✓ Contact information for local Fire Department, Search and Rescue, and British Columbia Ambulance Service locations will be posted.

Revelstoke Fire Rescue Services (& Ambulance)

227 – 4th Street West, Revelstoke, BC

Phone: **911** (Emergency calls only)

Phone: **250-837-2884** (Non-emergency calls)

Revelstoke Search and Rescue Phone: 911 (Emergency Calls Only)

Min. Of Forests-Protection Phone: 250-837-0349

Selkirk Mountain Helicopters – Phone: 250-837-2455 (5 Min. Away)

Queen Victoria Hospital – 250-837-2131 (-20 Min. Away)

RCMP – Revelstoke Detachment – Phone 250-837-5255

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

V. Implementation of the MERP and Incident Command

Personnel involved with MERP (see general chart – Appendix)

- ✓ "First steps", including who to call, how to call and when to call
- ✓ The Mine Manager will be responsible for implementing the MERP
- ✓ The staff in charge of conducting emergency operations will be identified on-site.
- ✓ Communication systems to be used during an emergency response will include two- way radios (installed in all equipment), cell phones, land lines, and fax or email (where appropriate)
- ✓ The specific identification of personnel with assigned tasks (by function) will occur on-site prior to start-up and at initial meetings. These personnel will include:
 1. Mine Manager
 2. Designated Emergency Co-ordinator
 3. Designated First Aid Co-ordinator

Procedures and protocols will be documented and posted for:

- Ø Staff call outs
- Ø Calling for assistance from other agencies or operations
- Ø Sending out required notifications to Mines Inspectors (Health and Safety)
- Ø Sending out required notifications to Provincial Emergency Plan personnel
- Ø Notifications to surrounding businesses and to users of access roads in emergency events.
- Ø Emergency Notifications and Mobilization Documentation.

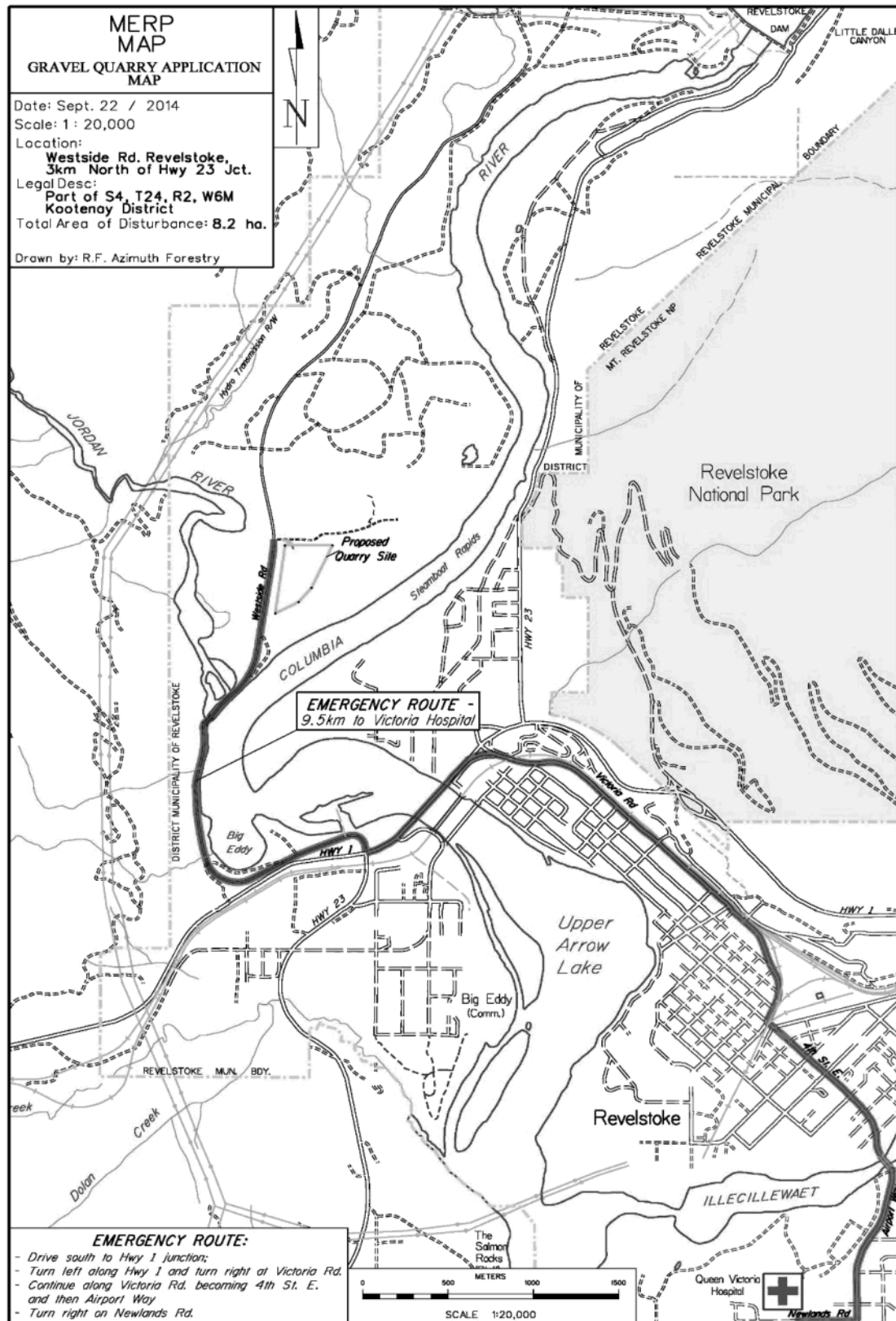
VI. Directions to the Site

Site and location mapping is found on the following two pages.

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016



Gravel Pits - 2016

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

VII. Contact Lists

FIRST CALL - ALL EMERGENCIES: 911

Ambulance: 911

Fire: 911

✓ Mine Name & Contact:
Westside Gravel Pit c/o
Revelstoke Sand & Gravel
2500 Westside Road,
Revelstoke, B.C.
V0E 2S0
Tel: (250) 837-5288
Fax: (250) 837-2833

✓ Mine Manager
Mr. Jack McKinnon
(250) 837-1388
jackmckinnon15@gmail.com

✓ Safety Manager
Mr. Jack McKinnon
(250) 837-1388
jackmckinnon15@gmail.com

Revelstoke Fire & Rescue Services (Incl. Ambulance)

227 – 4th Street West, Revelstoke, BC, V8C 2N4

Phone: **911** (Emergency calls only)

Phone: **250-837-2884** (Non-emergency calls)

Revelstoke Search and Rescue Services

Phone: **911** (Emergency Calls Only)

City of Revelstoke: Public Works

Darren Komonoski – Operations Manager – Public
Works 250-837-2001 or Mike Thomas Director of
Engineering 250-837-2922

Ministry of Energy and Mines

Alan Day, Senior Inspector of Mines, Health and
Safety 250-893-9543

The Workers' Compensation Board.

Workplace safety and health inquiries 604 276-3100

Claims or rehabilitation inquiries

110 Enterprise Way, Kelowna Monday-

Friday 8:00 a.m.-4:30 p.m.

Phone 888.621.7233 Toll-free 1 888 967-5377

Employer and assessment 604 244-6181

Human resources 604 276-3009

Prevention & Occupational Health & Safety 604 276-3100

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

Workers' Compensation Board claims correspondence to:

Workers

PO Box 4700 Stn Terminal
Vancouver, BC V6B 1J1 Toll-
free fax 1 888 922-8807 Greater
Vancouver
fax 604 233-9777

Employers

PO Box 8940 Stn Terminal
Vancouver, BC V6B 1H9
Toll-free fax 1 888-922-
8803
Greater Vancouver fax 604 233-9722

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

VIII. Training

On-going training for all persons will be facilitated through tail-gate sessions, safety meetings, and through regular review of site procedures, protocols and activities.

Further training for task specific operations, such as emergency coordination and safety will be undertaken on an as-needed basis.

IX. Records

Records associated with this MERP will be housed with the safety meeting records and site operations records. These will be maintained on site in the safety office. Records will include:

- ✓ Training and courses
- ✓ Equipment checks
- ✓ Implementation of emergency procedures (if applicable) – activity records
- ✓ Incident debriefing (where applicable)

X. Dynamic Nature of this Plan

These guidelines are meant to be dynamic and will be added to as operations or information changes.

The Mine Manager will ensure plans are updated as may be required from time to time due to changes in personnel, equipment, the mine plan, or operation locations. Tool- box sessions will permit testing the MERP with affected persons including evacuation drills and coordination at muster points.

Evacuation procedures will be posted and communicated to all affected personnel.

Revelstoke Sand & Gravel Ltd.

Mine Emergency Response Plan

Gravel Pits - 2016

APPENDIX

Emergency and Spills Response Typical Roles and Responsibilities See Also Spill Response Plan

Role/Function	Responsibilities
Designated Emergency or Spills Response Coordinator	Ultimately responsible for all activities related to the emergency or spill response, reporting and clean-up. Upon being informed of an emergency or spill, he/she will proceed to the site to confirm the incident and its cause and severity, and initiate response actions in accordance with the ESRP. He/she will authorize all external communication and use of off-site resources, liaise with others involved in the response and ensure clean-up is satisfactory. He/she will ensure that any required follow-up monitoring is conducted, equipment is inspected and that the ESRP is revised as required based on new information.
First Person On-Scene	All employees have the responsibility for emergency and spill detection and reporting. The first person on-scene should assess the situation and, if qualified, start initial containment and response procedures, provided it is safe and feasible to do so. He/she should notify the Emergency or Spills Response Coordinator as soon as possible and offer assistance as requested.
Spill Response	A spill response team is mobilized at the direction of the Spills Coordinator. The team will carry out spill response practices and procedures and work cooperatively with outside contractors or authorities.
Communications	Responsible for liaison between the specific spill or emergency site and the Emergency or Spills Response Coordinator. He/she will provide the relevant information about the spill/emergency to other members of the response team, internal staff and outside authorities, as directed by the Coordinator.
Evacuation	Responsible for ensuring that all employees have been evacuated and have assembled in a designated area(s). He/she will count all employees to ensure that all are evacuated, remain orderly and are prepared to assist in the response actions, if necessary.
Fire Fighting	Responsible for ensuring that all fire extinguishers are checked in accordance with Ministry of Energy and Mines regulations and that any fire prevention systems are tested and checked according to insurance and corporate requirements. He/she will co-ordinate all firefighting activities required on-site.
First Aid	Responsible for the administration of standard first aid to injured employees or the public.
Traffic	Responsible for ensuring that the emergency or spill area is cleared of all unnecessary vehicles and equipment and that access to hydrants, pumping connections and spill response equipment is maintained.
Physical Plant Coordination	Responsible for the utility and service shutdown of the physical plant. He/she supervises the shutdown of all equipment and processes under the direction of the Emergency or Spills Response Coordinator.
Alternates and Assistants	At least one alternate and assistant should be designated for each of these functions.

Revelstoke Sand and Gravel Ltd.

SITE SPECIFIC MAP

GRAVEL QUARRY APPLICATION
MAP - A6

Date: Aug. 16/2017

Scale: 1 : 2,500

Location:

Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.

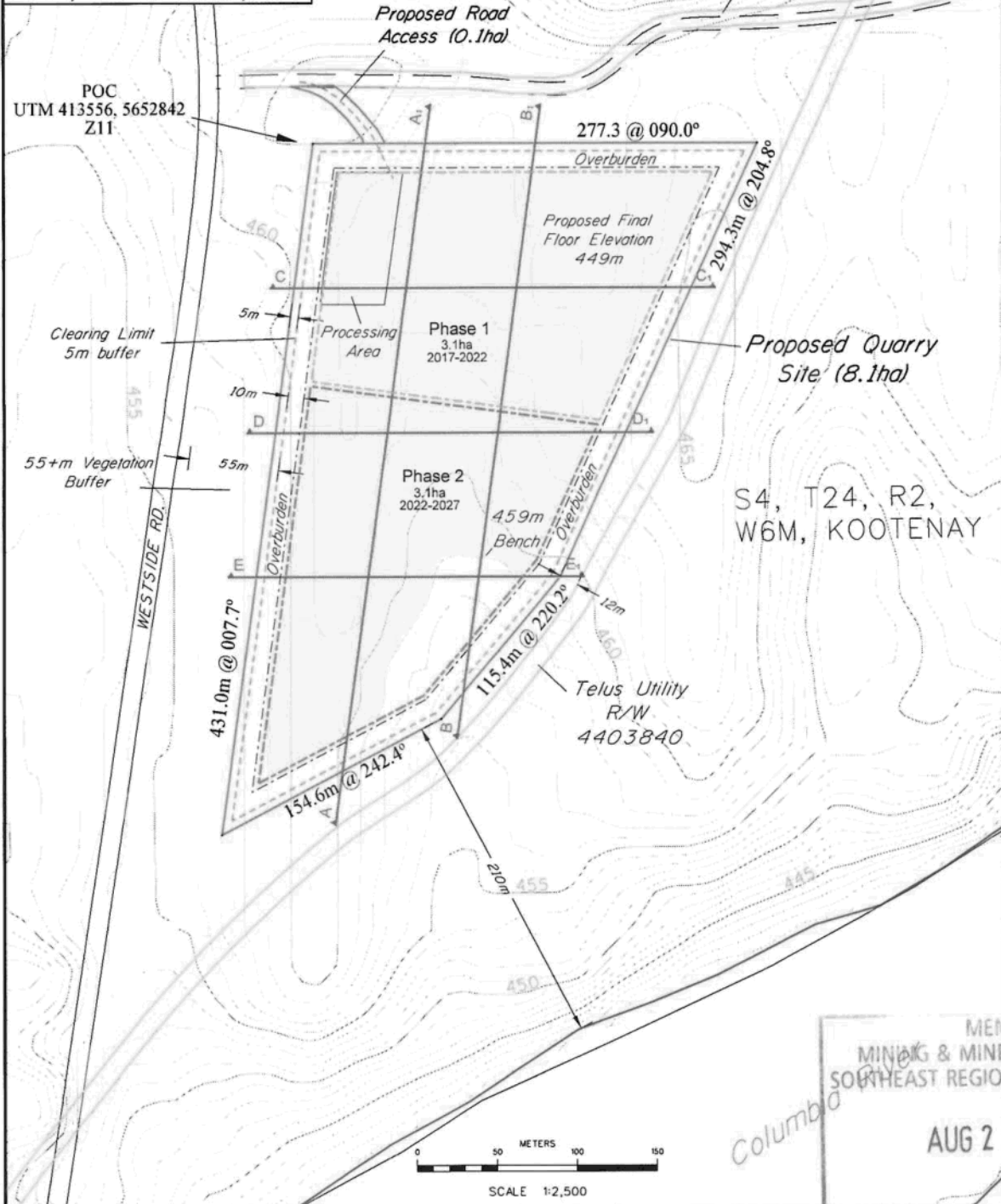
Legal Desc:

Part of S4, T24, R2, W6M
Kootenay District

Total Area of Disturbance: 8.2 ha.

Contour Interval: 1 metre

Drawn by: R.F. Azimuth Forestry



Revelstoke Sand and Gravel Ltd.

SITE SPECIFIC MAP GRAVEL QUARRY APPLICATION MAP - A6 ORTHOPHOTO UNDERLAY

Date: Feb. 18/2016

Scale: 1 : 2,500

Location:

Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.

Legal Desc:

Part of S4, T24, R2, W6M
Kootenay District

Total Area of Disturbance: 8.2 ha.

Drawn by: R.F. Azimuth Forestry



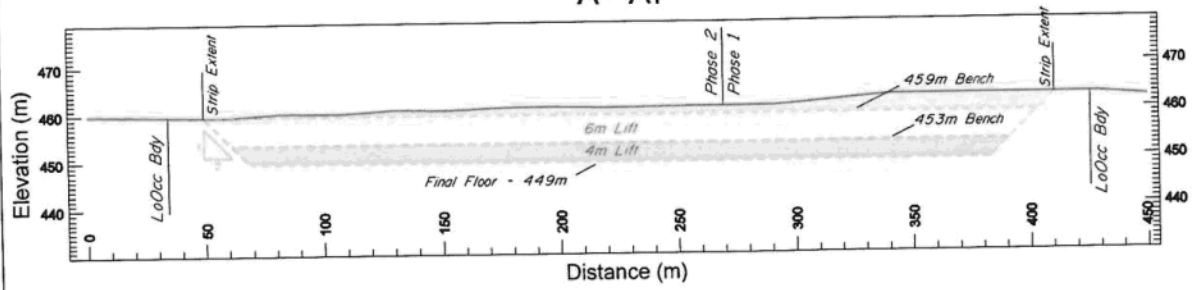
ALS DIVISION
CRANBROOK BC

2017

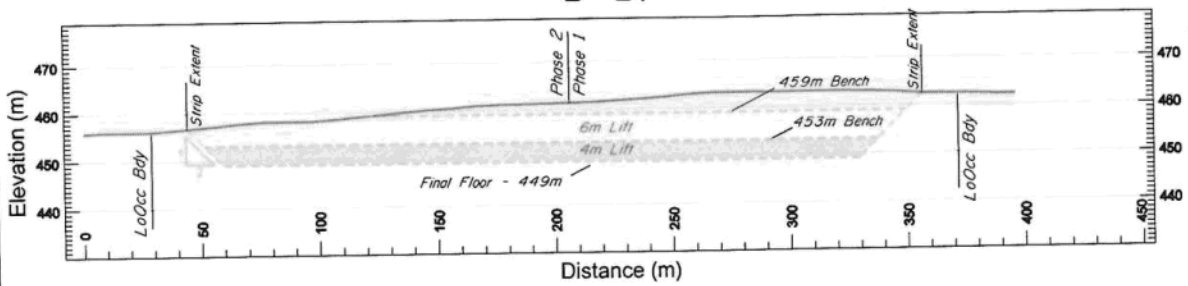
FILE #:

Cross-Section Views

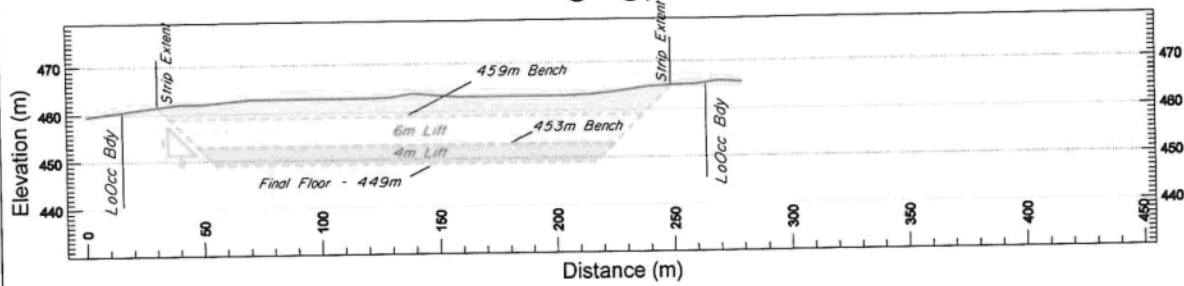
A - A₁



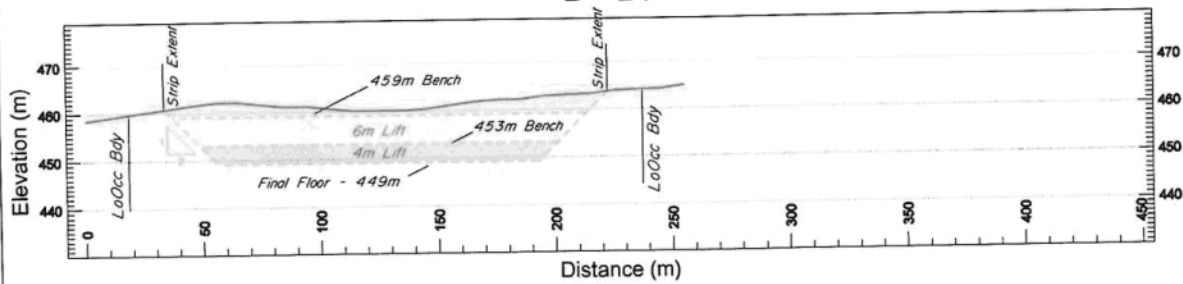
B - B₁



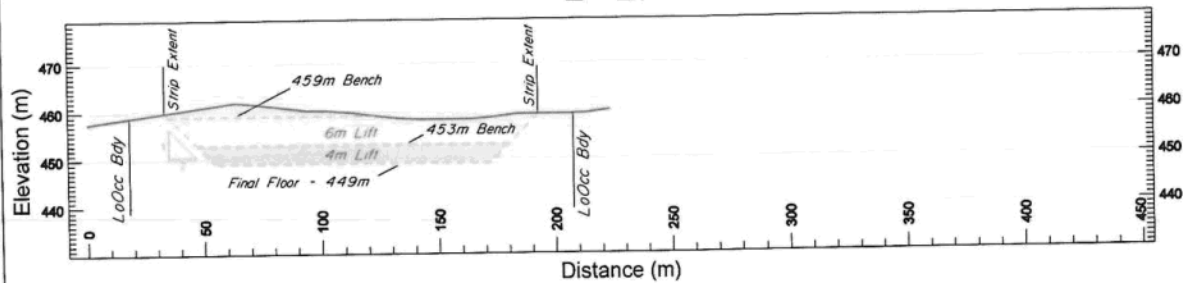
C - C₁



D - D₁



E - E₁



H SCALE - 1:2000
V SCALE - 1:1000

Revelstoke Sand and Gravel Ltd.

LOCAL FEATURES MAP

GRAVEL QUARRY APPLICATION
MAP - A1/A2

Date: Sept. 22 / 2014

Scale: 1 : 20,000

Location:

Westside Rd. Revelstoke,
3km North of Hwy 23 Jct.

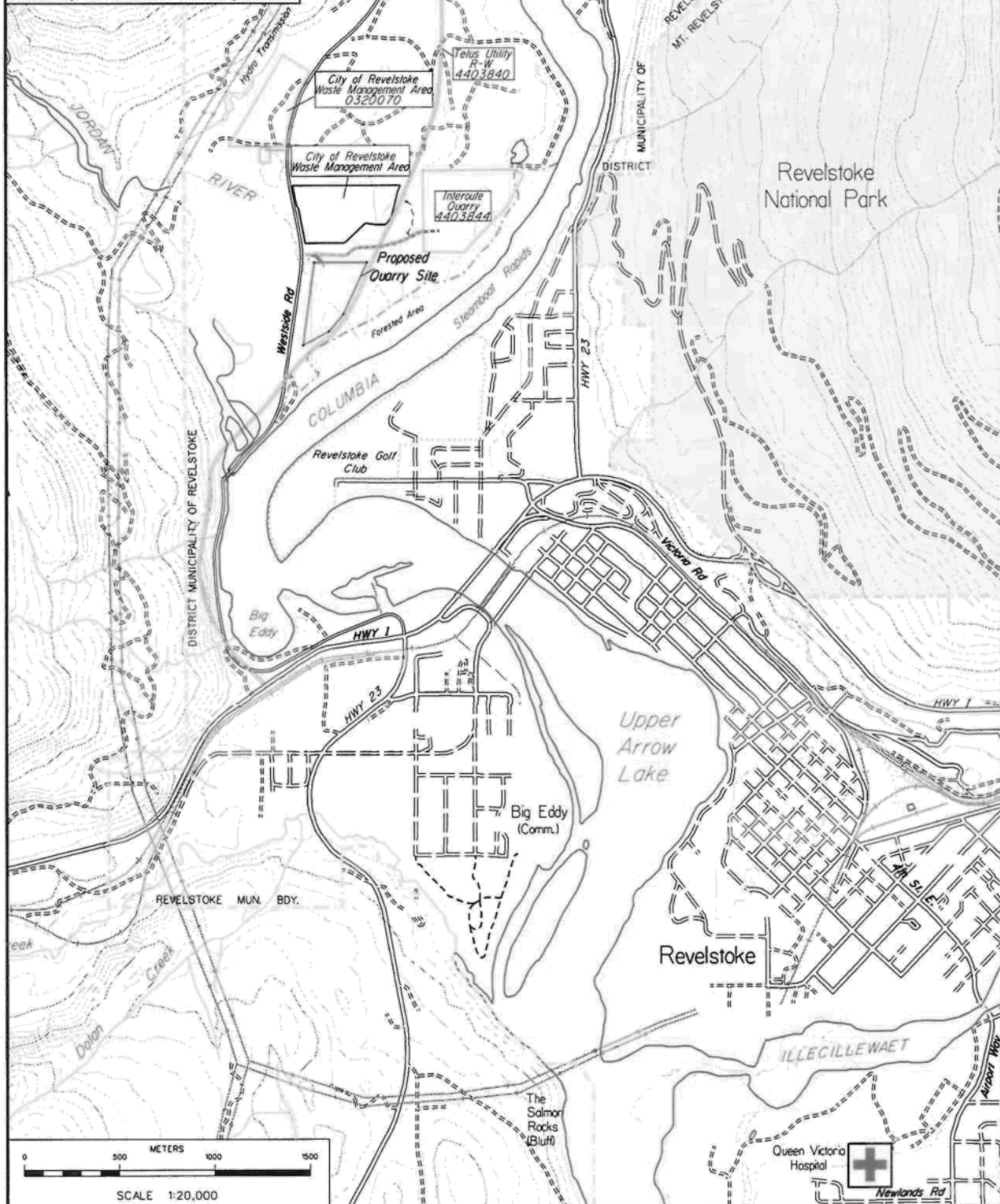
Legal Desc:

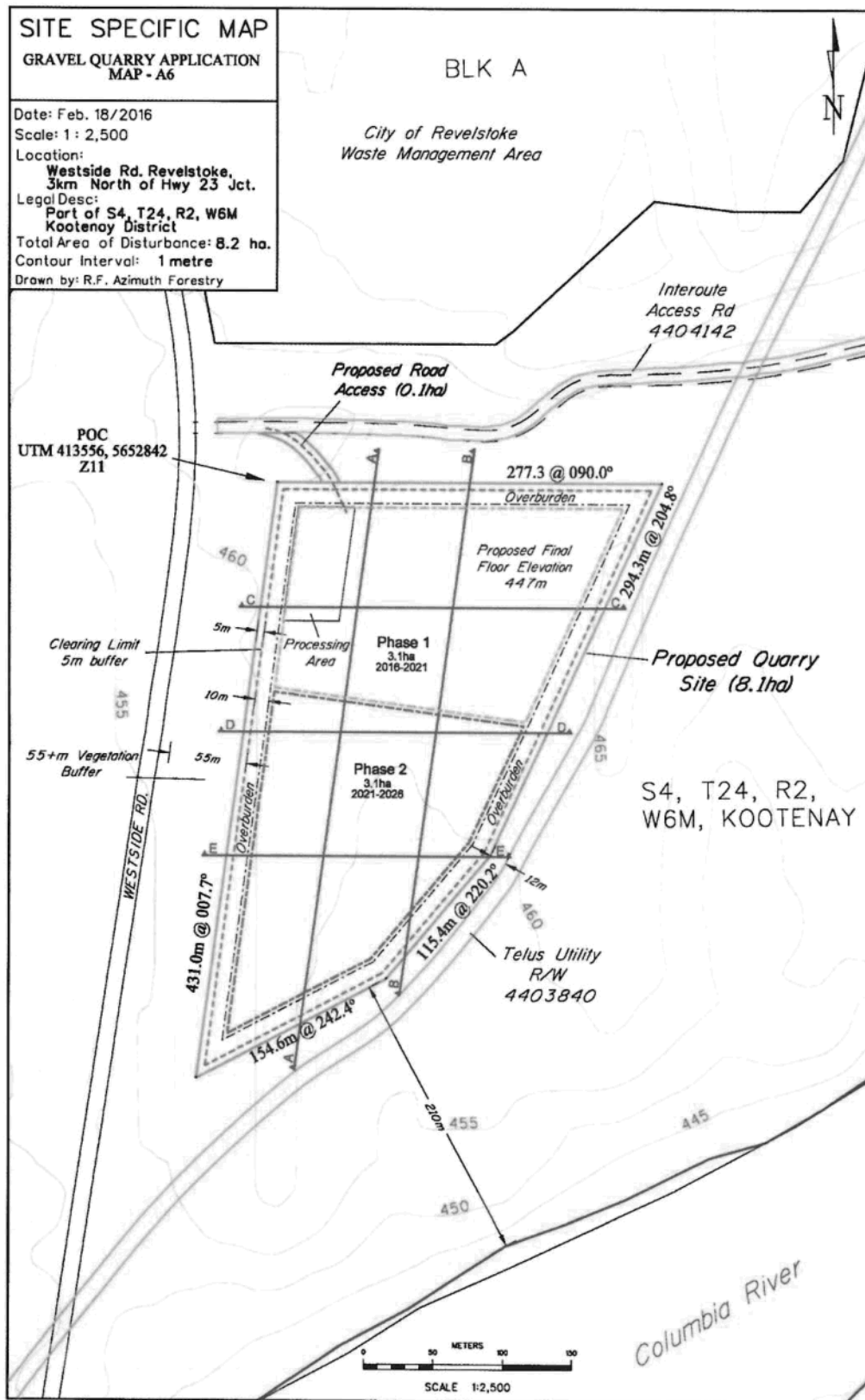
Port of S4, T24, R2, W6M
Kootenay District

Total Area of Disturbance: 8.2 ha.

Contour Interval: 20 metres

Drawn by: R.F. Azimuth Forestry





August 18, 2017

Westside Road Pit – Operating Plan

1.0 Present State of Land

The Westside Road Pit is on Crown Land within the city limits of Revelstoke. The entire site has been previously disturbed (logged for an old cut block).

There is no known overlapping or adjacent use of this parcel, public or others. An existing CSRD landfill is north of the site; active Ministry of Transportation and Infrastructure gravel workings are to the north and northwest and a 200m buffer comprising the Columbia River greenbelt (40% of which is treed) runs along the eastern boundary of the site.

The proposed pit area has been previously logged and grubbed (non merchantable forest as part of reforestation of an old cut block in 1988). The overburden thickness of approximately 0.15 to 0.2 m of organics will be stockpiled separately to be preserved for reclamation. The soil texture varies and consists of coarse sand and some gravel, deposited as part of an ancient, abandoned fluvial terrace.

The main access to the pit is via Westside Road, which is a city road in good condition. The minor access road off Westside Road (Lands file no. 4404142) is also in good working condition. There is an existing gate at the junction of the access road and Westside Road, with appropriate signage warning the public of an operating pit, hours of operation, and no trespassing signs.

There are no watercourses running through the proposed site. The Columbia River is approximately 200 m east of the site. The depth to the water table from the existing pit floor (and proposed mining depth) is approximately 10 m, based on Columbia River observations and a handheld GPS survey of the river's high water mark.

2.0 Location

Westside Pit is located approximately 4 km north of Revelstoke, BC, off a gated access road from Westside Road. From Revelstoke, follow the Trans Canada Highway through town heading west, turning right after approximately 600 m on to West Side Road just after the bridge. Proceed along Westside Road for approximately 3 km, before turning right on to the site access road. The site is approximately 200 m west of the Columbia River, and approximately 1km east of Jordan River.

Westside Pit (License No. 405626, Lands file no. 4405626): That part of the Northwest and Southeast ¼ of Section 4, Township 24, Range 2, West of the Sixth Meridian, Kootenay District containing 8.2 hectares more or less.



Westside Pit road access (License No. 414124, Lands file no. 4404142): Those parts of the Northeast and Northwest $\frac{1}{4}$'s of Section 4, Township 24, Range 2, West of the Sixth Meridian, Kootenay District containing 0.74 hectares, more or less.

3.0 Mining Plan

The dimensions of the open pit will be approximately 8 ha, with a mining depth of 10 m. When possible, processed aggregate will be stockpiled within the excavated area. Mining will occur in phases, allowing for progressive reclamation to occur in areas not required for stockpiles or excavation. The total area of disturbance at any time will be approximately 4 ha.

The site will be excavated in two phases. Each phase will be approximately 4ha in size.

Stockpiles of different products will be stored on site. For proper stockpile management and safety, space is required for this wide range of products if the pit is permitted to expand as there would not be adequate space to house the crusher and the stockpiles; a stockpile area beside the excavation will occur.

The areas comprised by Phase I will be logged and grubbed. Areas not being used for mining and stockpiling will be prepared and seeded with a local forest range grass mix to reduce dust due to the loss of trees and ground cover.

Phase I – Move existing organic stockpiles to the east as excavation of the 4 ha extends south. Excavate remaining area to mining depth. Stockpile some of the material on the stripped areas in phase I. All areas that have been logged and grubbed will be reseeded, with the proposed stockpile area reserved for storing products

Phase II – Strip and grub ~ all 4.0 ha parcel boundary. Stockpile all organics along the eastern boundary as a berm for ease of reclamation. The Phase I area will be mined to a depth of approximately 10 m. A portion of Phase I and Phase II will be used as a stockpile area during the excavation and mining process of this site. All areas that have been logged and grubbed will be reseeded. A stockpile area will reserved for storing processed material.

Phase III – Once mining is complete, reclamation of all Phases will occur. The reclamation of the whole site will follow the guidelines as per the Mining regulations and Best Management Practices for Reclamation of gravel pits. The goal of the reclamation program is to have “equivalent land capability” as was on the property before excavation occurred.

4.0 Dust Control Plan

The following dust control plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- All trucks leaving the site will be covered with a tarp;
- Placement of the crusher in the bottom of the pit;
- Well maintained access roads;
- Placement of dust control measures on haul roads and active travelled areas;
- Placement of dust control measures on stockpile of sand;
- Stockpile sand in the bottom of the pit;
- A 200 meter tree buffer will be maintained on the river side of the pit;
- Areas not being mined or used for stockpiling will be seeded with a forestry range mix;
- A maximum drop height of 2 meters;
- Overburden stockpiles will be seeded with a forestry mix;
- All personal will be informed on this dust control plan;
- Dust monitoring canisters will be placed at 4 to 6 different locations to sample fugitive dust. This will test both the local background dust as well as the dust generated from within the Westside pit.
- The operator shall suppress the fugitive dust created within the operational area of the pit so that the measured value of dust does not exceed 1.7 mg/dm²d.
- In cases of a wind event or extreme heat and the above mentioned measures are not adequate, operations will stop until RSG has managed the dust effectively.
- The location of the pit requires adherence to accepted best practices and will use water as a preferred surfactant to prevent dust.

5.0 Noise Control Plan:

The following noise control plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- Placement of the crusher in the bottom of the pit;
- Well maintain access roads;
- A 200 meter tree buffer will be maintained on the river side of the pit;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- A maximum drop height of 2 meters;
- All personal will be informed of this noise control plan;
- All equipment used on the site will have functional mufflers that are in good working order and muffle noise to their full capacity;
- Stockpiles will be placed to minimize normal operating noise;

6.0 Transportation of Aggregate to Market:

The following Transportation plan will be followed:

- 30 km speed limit will be maintained within the pit area;
- All trucks leaving the site will be covered with a tarp;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- Well maintained access roads;
- All personnel will be informed this transportation plan;
- All drivers will be qualified and experienced;
- All trucks and equipment will undergo required safety inspections and be in good working conditions;
- All trucks will follow the designated City of Revelstoke Truck routes;
- No known overloaded trucks will be permitted to leave the site;
- All trucks will abide with all traffic regulations;
- Truck drivers who are repeat offenders of these guidelines will have their access to the pit denied;

7.0 Weeds Control Plan

The following weed control plan will be followed:

- Prior to transporting, earth moving equipment will be cleaned to minimize movement of foreign seeds onto site;
- Prior to transporting the crusher, the equipment will be cleaned;
- Overburden stockpiles will be seeded with a forestry mix;
- The soil disturbance will be kept to a minimum.
- Inspections for weeds will be conducted periodically and managed accordingly;
- All vehicles and transportation equipment will be restricted to the designated haul road in the pit;
- Work with CSRD noxious weed control program as required.

8.0 Production Plan

The following production plan will be followed:

- Prior to transporting the crusher onto the site, the equipment will be cleaned;
- Hours of operations will be between 7:00 am and 5:00 pm, five days a week (Monday to Friday, and not on holidays);
- The crushing operations will typically run 6 to 8 weeks per year;
- The preferred time of year for the crushing operation to occur is spring and fall;
- All personal will be informed of the Noise, Dust, Transportation, Weed and Mining Plan;

- A maximum drop height of 2 meters;
- Periodical, testing will be conducted on workers to determine the silica exposure rate while working within the pit. This data will be forwarded to the Occupational Health Mining Minerals, Division Ministry of Energy, Mines and Petroleum Resources.
- In cases of a wind event or extreme heat, and the dust measures are not adequate, operations will stop until RSG has managed the dust effectively.
- All equipment used on the site will have functional mufflers that are in good working order and muffle noise to their full capacity;
- Stockpiles will be placed to minimize normal operating noise;

9.0 Wildlife Management Plan

During the process of applying for our Westside Gravel Pit application was circulation to various government departments. Cory Legebokow with the Ministry of Environment advised that there were no concerns from the Ministry of Environment.

- The existing 200 meters forested area between the gravel pit and the Columbia River will be undisturbed. This will act as a corridor/ shelter for any wildlife or birds passing through the area;
- This site is located about 700 meters away from the Jordan River to the west, which is on the opposite side of Westside Road;
- There is no water course on site;
- Mining will be approximately 10 meters above the ground water table and high water mark of the Columbia;
- The land was previously logged
- The lands to the south and north have also been previously logged;
- This area has other industrial sites to the west is a Landfill operation, while further to the north are MoT and City of Revelstoke aggregate pits.
- There are no known threatened or endangered species in the area;
- There will be minimal to no disturbance to existing wildlife habitats;

10.0 Reclamation Plan

- The site will be reclaimed as per Ministry of Energy and Mines regulations.
- All top soil (to rooting depth) will be stripped and stockpiled separately to all other material (overburden, underlying sand/gravel/rock) prior to any disturbance of the land. Top soil piles will be seeded with a forestry range mix to control weeds and to minimize blowing dust. At the completion of mining, all slopes shall be trimmed to a consistent, minimum slope of 2:1 or the natural slope angle with native granular material which will require the use of a bulldozer. Exhausted areas of the pit will be re-claimed and re-vegetated with local forest range mix.

- The aggregate operation of this land is a temporary activity. The operation's reclamation plan will be done in such a manner as to not limit the post extraction land uses.
- Once the excavation has been completed the land will be returned to its natural state with an equal ability to grow trees or other forms of vegetation.
- If the City of Revelstoke changes the end land use, the reclamation plan may be altered to meet the permitted post-mining activities;
- Progressive reclamation will occur, when excavated areas are no longer required for crushing and stockpiling;

11.0 City of Revelstoke OCP and Zoning Bylaws

- The official Community Plan (OCP) designation for the subject area is Urban Reserve. Gravel operations can be located in any OCP designation.
- We will abide by the all the parameters outlined in this by-law. It should be noted that Zoning Bylaw No. 1264 states that *"the subject property is zoned Urban Reserve (UR). Section 7.11.2 of the Zoning Bylaw permits the use of a gravel extraction operation providing that the area is not less than four hectares (9.8 acres)."*
- We have copied the section of the by-law that would apply to our operations, and agree to abide by these parameters.

- **SECTION 7 - RESIDENTIAL DISTRICTS (R and RR)**
<http://www.cityofrevelstoke.com/bylaws/bylaws/1264-s7.htm>

7.11 RURAL RESIDENTIAL - 60 HECTARE - DISTRICT - RR60

This zone provides for the retention of forest and wild land as non-urban, for the conservation of agricultural land by the holding of land in large parcels, for the prevention of intensive use in areas subject to periodic flooding, and for the accommodation of forestry, mining, transportation, recreation and water uses **and activities**.

7.11.1 Uses Permitted

Within this zone, the following uses only are permitted:

- (14) Extraction of raw materials from the land, including preliminary grading, cutting or crushing of materials, providing that no further processing is permitted on the site except where the product is regulated by the Mines Regulation Act, or is to be used on the site, and providing that the extraction and processing are sited so as not to endanger or encroach on any perimeter boundary of such site.

- We agree to follow the operating hours of Monday to Friday, 7:00am to 5:00pm. These hours of operation will be no different to any other works in the area.
- The gravel extraction and crushing complies with both the City of Revelstoke zoning and official community plan.

12.0 Chemical and Fuel Management Guide

The following chemical and fuel management guide will be followed:

- All concerned employees will go through a WHMIS and Spill Response Training on a regular basis. The training will provide the appropriate emergency procedures in case of a spill.
- At Revelstoke Sand and Gravel a spill response team is set up to help manage any type of spill incident. The team will be in charge of determining whether a spill can be handled with in house measures or if an outside clean-up team is requested.
- A spill kit will be located on site in a onsite cabinet;
- The following Spill response procedure will be followed;
 - ◆ Identify the spill and safety concerns;
 - Evacuate the area of all but essential personnel;
 - If possible determine what the nature of the spill is;
 - Do not approach spill, if it is unidentified;
 - Defining the spill shall only be attempted if no one will be exposed to undue hazards and risks meaning that proper PPE is worn. Search for labels, containers, signs, color of containers, etc.;
 - ◆ Contact the supervisor and spill response team;
 - Summon the site supervisors;
 - Contact the incident command;
 - ◆ Identify safety concerns;
 - Assess the area and consider all potential risks near the spill;
 - Consult the MSDS sheet for product characterization;
 - Eliminate all ignition, heat and power sources;
 - Shut off all equipment;
 - Identify equipment where flammable or toxic products may be concern;
 - Determine Hot Zone Area which represents a buffer zone around the spill of around 10 feet;
 - Identify areas that may be O2 deficient;
 - Identify confined spaces;
 - ◆ Identify environmental concerns;
 - Consider the following;
 - Water intakes or water courses;
 - Identify topography, sumps and trenches;

- Vegetation;
- Ground penetration;
- Livestock;
- Impending weather conditions;
- ◆ Respond;
 - Spill team suits up the PPE according to MSDS Sheets;
 - Cover all drains, and dike or reroute spill from entering waterways;
 - Prevent spill from exiting the hot zone by blocking doorways and escape areas;
 - Build substitute containment by forming berms;
 - Contain spill by using granular, pads, or sock according to MSDS sheets;
 - Absorb spill material working from outside inward, circular motion;
 - Vacuum free liquids with approved vacuum if possible and safe;
- ◆ Clean-up/Dispose;
 - Use spark proof equipment if product is flammable or has a low flashpoint;
 - Pick-up absorbed material, place in disposal bags or containers;
 - All pads, granular, sock, non reusable PPE should be placed in disposal container;
 - Contact approved waste disposal company to pick up containers or bags;
- ◆ Decontamination;
 - Decontaminate area to prevent additional hazards;
 - Rinse off or discard contaminated material in a contained area;
 - Dispose of any non usable equipment;
 - Remove the most soiled or contaminated clothing first;
 - Do not touch clean clothing or material with used gloves;
 - Turn clothing inward to avoid recontamination;
- ◆ Report
 - Report all spills internally;
 - Complete the incident report;
 - Inform proper environmental authority and necessary government agencies on reportable levels;

13.0 Safety

Our existing pit operation has operated accident free since its opening. Safety has been considered the company's highest priority. An effective and comprehensive safety program has been in place for many years. Operations strictly adhere to Ministry of Mines, Energy & Petroleum Resources rules and regulations, e.g. signage, sloping, gates, berms, and proper Personal Protective Equipment (PPE).

14.0 Archeological Finds

Revelstoke Sand and Gravel will report any chance archeological finds in accordance with the provincial procedures and reporting formats as provided by the Ministry of Mines. A copy is attached.

Respectfully submitted,

Signed:



Date: August 18, 2017

**Mr. Jack McKinnon, Owner
Revelstoke Sand and Gravel Ltd**