Optional Virtual Site Visit – RFP for Remediation Plan Design and Support Services (QA)

Faro Mine Remediation Project

PSPC Pacific Region

November 16th, 2021

Meeting instructions

- Please turn cameras “on” and audio “off”
- Questions?
  - Please use the Chat function during conference
  - Email questions only to sal.pillay@pwgsc-tpsgc.gc.ca
- Fairness Monitor
- Technical difficulties during Conference?
  - sal.pillay@pwgsc-tpsgc.gc.ca or Tel: (604) 363-6714

Agenda

1. Introduction by Procurement
2. Opening prayer / Welcome from Ross River Dena Council
3. Procurement Overview
4. Technical Overview:
   - Overview of Required Services
   - Overview of the Remediation Plan
5. Questions and Answers

Ross River Kaska Dena

Faro Mine Complex and Changed Lives

Agenda

- Opening prayer – Chief Caesar
- Opening comments - Chief Caesar
- Faro Mine, what it means to Ross River Kaska Dena – Chief Caesar/Stanley Noel
- Faro and Reconciliation
- Other

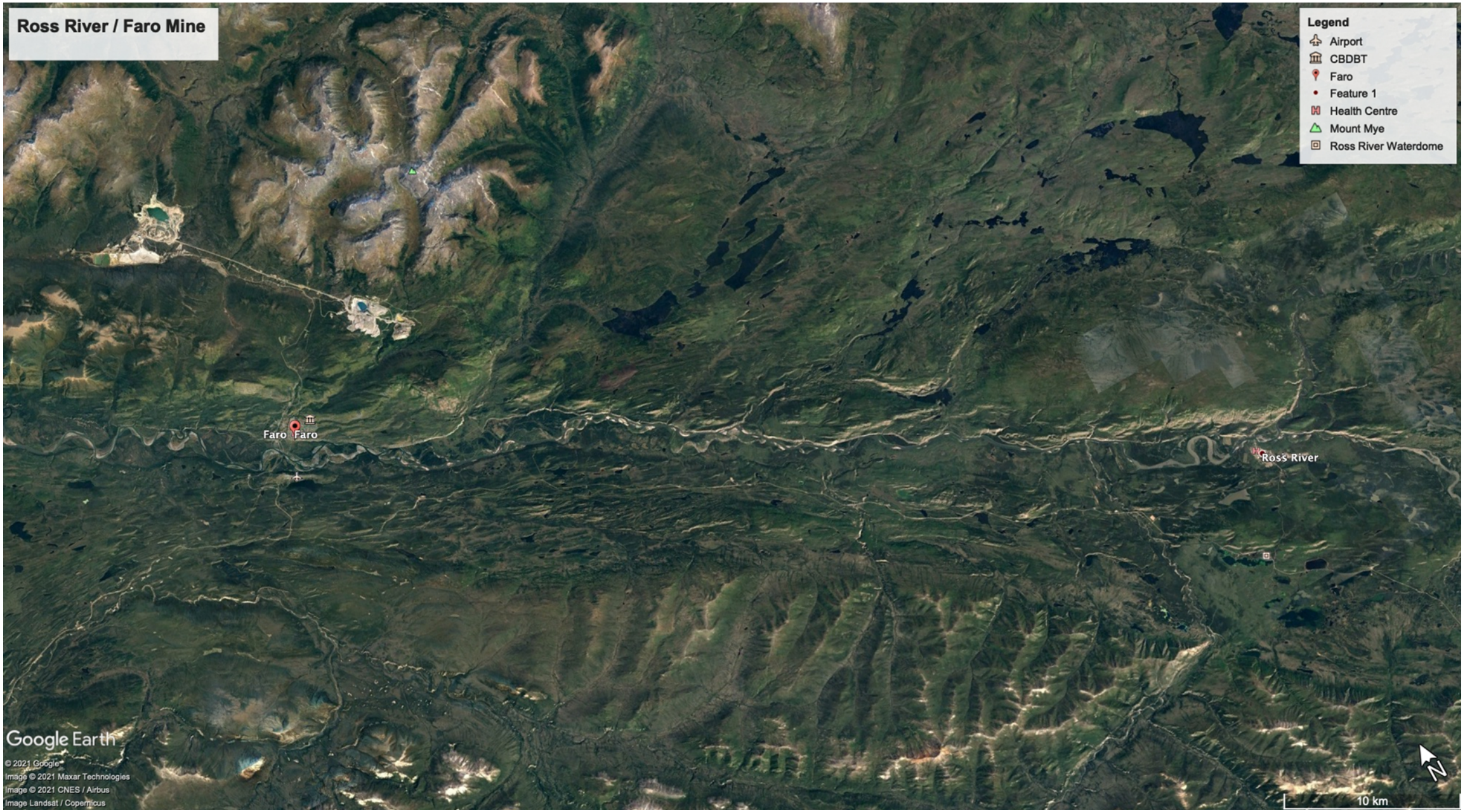
Ross River / Faro Mine
Legend
Airport
CBDBT
Faro
Feature 1
Health Centre
Mount Mye
Ross River Waterdome
Faro
Faro
Ross River
Google Earth
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Image Landsat / Copernicus
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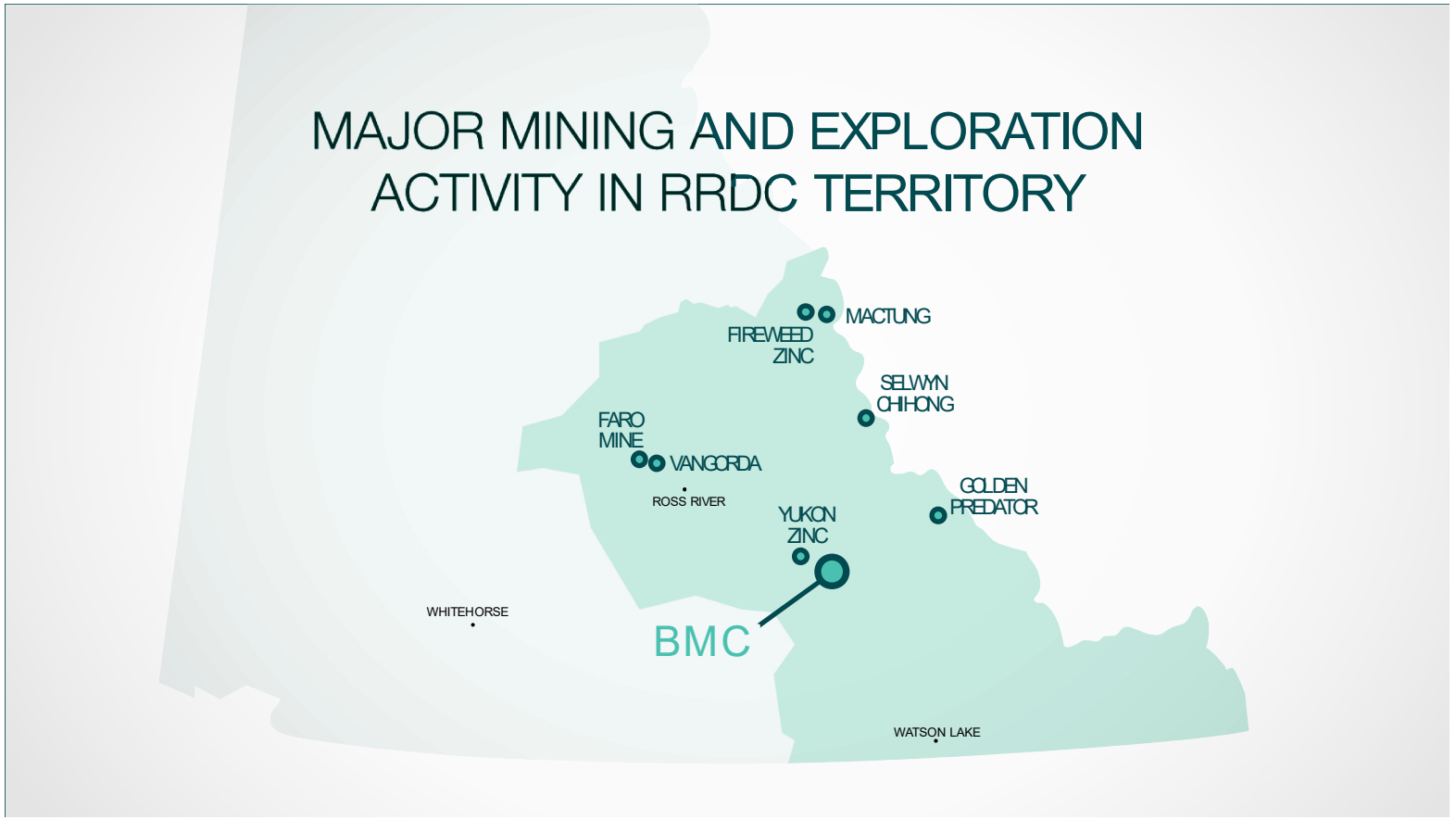
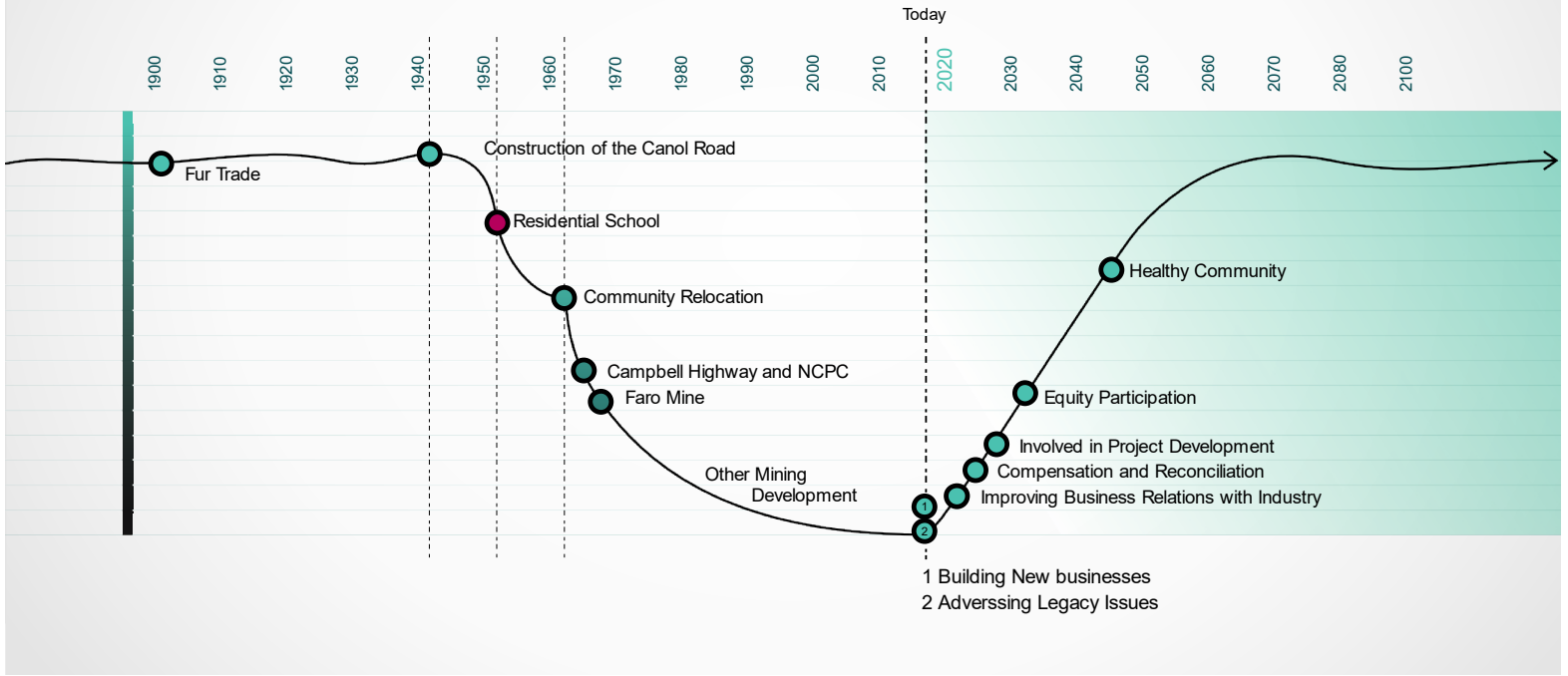
MAJOR MINING AND EXPLORATION ACTIVITY IN RRDC TERRITORY



ROSS RIVER DENA COUNCIL BACKGROUND



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Procurement Timeline

For planning purposes, the current procurement milestones are:

Milestones	Estimated completion
RFP closing date	December 2021
Evaluation and Selection	January 2022
Contract Award	January or February 2022

Notes:

- RFP, Q&As and amendments will be posted on buyandsell.gc.ca
- No public bid opening will be held for this procurement

Required Services

Remediation Plan Design and Support Services (QA)

Overall purpose of the future RPD/SS Contract

The Government of Canada intends to engage the services of a Remediation Plan Design and Support Services (RPD/SS) Engineering Consultant to produce the design and support services for the Faro Mine Remediation Project (FMRP) and for the Vangorda / Grum Mine Remediation Project.

Overview of services required

The RPD/SS Consultant is required to complete the design of the various Design Packages of the overall mine remediation, as well as oversee the implementation of the work, mainly for Quality Assurance purposes.

For example:

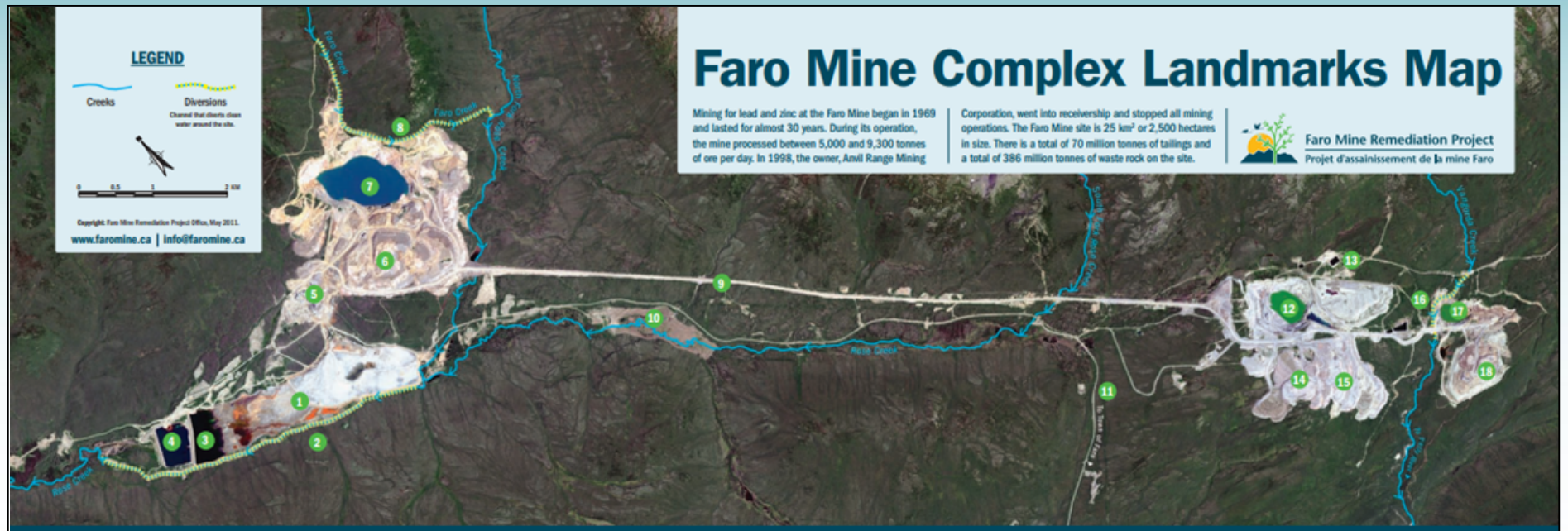
- Preparing design options, alternatives, recommendations;
- Completing the design / technical documents for each tender package identified by Canada;
- Providing a wide range of civil engineering, geotechnical (soil and rock mechanics), geo-scientific and 3D-modeling services;
- Preparing design level Cost Estimates;
- Preparing design schedules and providing input on construction durations, as well as on overall sequencing of work packages;
- Providing input into the Project Risk Plan
- Supporting Canada by managing engineering QA and assisting in responding to site conditions / issues, as required;
- Defining conceptual commissioning procedures and confirming that performance requirements have been met;
- Preparing designs for the continuing care and maintenance and Site operations at the Faro Mine Complex (for both the Faro Mine Site and the Vangorda / Grum Mine Site), including possible designs for urgent works;
- Supporting Canada by providing warranty period inspections; and
- Communicating and consulting, as and when required, on the design and support services work with other project team members, with stakeholders, YESAB and regulators

Possible TA#	Design package #	Scope Book Code	Scope Book Grouping and Title
			Site Development
1	1	SD-ROAD	Roads
	2	SD-PADS	Bulk Earthworks (Pads)
	3	SD-FUEL	Fuel Storage
	4	SD-EXPL	Explosives Storage
	5	SD-BORR	Borrow Development
			Tailings Area
2	6	TA-RELC	Tailings Relocations
	7	TA-LAND	Tailings Landform
	8	TA-COVR	Tailings Cover
	9	TA-TSWC	Tailings Surface Water Conveyance
			Tailings Area Dams
3	10	TA-IDAM	Intermediate Dam
	11	TA-SDAM	Secondary Dam
	12	TA-CVDR	Cross Valley Dam Regrading
			Mine Area
4	13	MA-WRDR	Mine Area Relocations
	14	MA-WRDL	Waste Rock Landform
	15	MA-COVR	Mine Area Covers
	16	MA-MSWC	Waste Rock Surface Runoff Conveyance
	17	MA-CONW	Mine Area Contact/Runoff Water

Possible TA#	Design package #	Scope Book Code	Scope Book Grouping and Title
			Contact Water
5	18	CW-ZTPD	Zone II Pit Dewatering System
	19	CW-ETAC	Emergency Tailings Area Seepage Interception System (ETA-SIS)
	20	CW-NFRC	North Fork Rose Creek Seepage Interception System (NFRC-SIS)
	21	CW-DVIS	Down Valley Seepage Interception System (DV-SIS)
	22	CW-CONV	Contact Water Conveyance System
			Perimeter Non-Contact Water
6	23	NC-DVDC	North Tailings Conveyance System
	24	NC-ETDC	East Tailings Diversion Channel
	25	NC-FCDC	Faro Creek Diversion Channel (East and West Faro Valley)
	26	NC-NFRC	North Fork Rose Creek Integration
	27	NC-RCDC	Rose Creek Diversion Channel
	28	NC-RCCA	Confluence of North Fork Rose Creek and South Fork Rose Creek
			Demolition and Waste
7	29	DW-CSTF	Contaminated Soil Treatment Facility
	30	DW-SOIL	Contaminated Soils
	31	DW-LAND	Site Landfill
			Site Restoration
8	32	SR-ROAD	Existing Roads (incl. Haul Road)
	33	SR-HIST	Other Historical Disturbance
	34	SR-RVEG	Revegetation

Active remediation plan

Overview of the Mine Sites



1. Rose Creek Tailings Area
This area is 4 km long and up to 1 km wide and located at the base of Rose Creek Valley. It holds over 55 million tonnes of tailings. Three dams (original, secondary and intermediate) hold the tailings in place. A fourth dam, the Cross Valley Pond, holds treated water.

2. Rose Creek Diversion
The 4 km long channel diverts the Rose Creek around the tailings impoundment area.

3. Intermediate Pond & Dam
Pond where contaminated water is collected and pumped to the Faro Water Treatment Plant.

4. Cross Valley Pond & Dam
Pond where treated water is stored and tested. Water meeting acceptable standards is discharged into Rose Creek.

5. Mill Area – Faro Water Treatment Plant
The original mill structure was modified and is now used as a water treatment plant. Contaminated water from the Faro Pit is collected and treated at this plant.

6. Faro Waste Rock
Over 260 million tonnes of waste rock (divided into 30 separate dumps) are in the Faro area covering approximately 3.35 km² or 335 hectares.

7. Faro Pit
The pit is approximately 1,675 m long, 975 m wide and 335 m deep. It covers an area approximately 1.6 km² or 106 hectares.

8. Faro Creek Diversion
The 3.35 km long channel diverts the Faro Creek around the Faro Pit. Faro Creek then joins the North Fork of Rose Creek.

9. Haul Road
The 10 km road connects the Faro area to the Grum/ Vangorda areas and was used to haul ore from the Grum/ Vangorda areas to the mill for processing.

10. Fresh Water Supply Dam & Reservoir
The reservoir was used to provide a constant source of water to the mill for processing ore. When mining operations ceased, the reservoir was no longer required and the dam was breached.

11. Access Road
The 22 km road connects the Town of Faro to the Faro Mine Complex.

12. Grum Pit
The pit is approximately 1,100 m long, 700 m wide and 200 m deep. It covers an area approximately 0.77 km² or 77 hectares. A bio-treatment program occurs in the pit to treat the water.

13. Vangorda Water Treatment Plant
Contaminated water from the Vangorda Pit is collected and treated at this plant. Water meeting acceptable standards is discharged into Vangorda Creek.

14. Grum Waste Rock
Over 110 million tonnes of waste rock are in the Grum area covering approximately 1.48 km² or 148 hectares.

15. Grum Sulphide Cell Cover Project
The Grum Sulphide Cell is a portion of Grum Waste Rock which contains a higher quantity of sulphidic material prone to generating acid. The 0.275 km² area was resloped and covered with a liner and soil to control the generation of acid rock drainage.

16. Vangorda Creek Diversion
The 1.2 km long channel diverts the Vangorda Creek around the Vangorda Pit.

17. Vangorda Pit
The pit is approximately 1,150 m long, 350 m wide and 150 m deep. It covers an area approximately 0.42 km² or 42 hectares.

18. Vangorda Waste Rock
Over 16 million tonnes of waste rock are in the Vangorda area covering approximately 0.4 km² or 40 hectares.

Remediation Objectives

Protect human health and safety

Protect and, to the extent practicable, restore the environment including land, air, water, fish and wildlife

Return the mine site to an acceptable state of use that reflects pre-mining land use where practicable

Maximize local and Yukon socio-economic benefits

Manage long-term site risk in a cost-effective manner

Remediation Approach

In 2008, Crown-Indigenous Relations and Northern Affairs Canada, the Government of Yukon and Affected First Nations agreed to the following preferred closure approach:

Water Management

- Capture Acid Rock Drainage Seepage/Runoff
- Upgrade Surface Water Diversions (keep clean water clean)

Dams and Impoundments

- Upgrade Dams and Spillways
- Stabilize Open Pit Wall

Tailings and Waste Rock

- Re-grade and Cover Tailings
- Re-grade and/or Cover Waste Rock

Other

- Demolition of Infrastructure
- Remediating Contaminated Soil

Stabilization, Land Forming and Covers

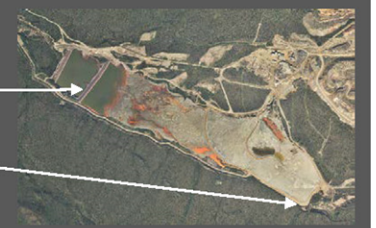
Remediation Plan Component 2
Stabilize and Revegetate Landforms

Re-shape, cover, revegetate and establish surface drainage on waste rock and tailings

Rose Creek Tailings Area

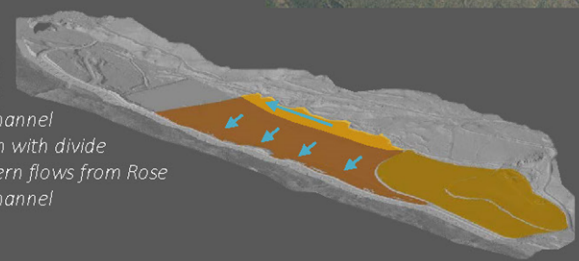
1. Stabilize dams

Add buttress to Intermediate Dam
Improve foundation of Secondary Dam.

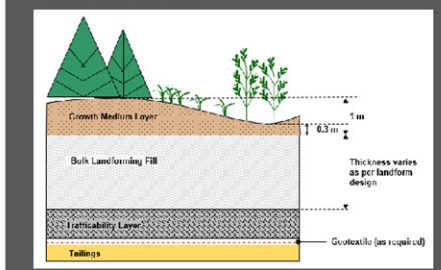


2. Landform surface

Use material from expansion of Rose Creek Diversion Channel to create landform with divide separating northern flows from Rose Creek Diversion Channel



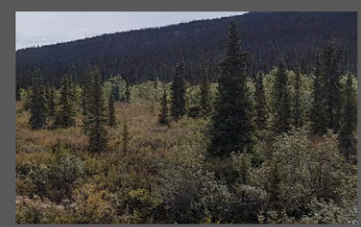
3. Construct cover



Cover all tailings surfaces. Profile is designed to support vegetation growth

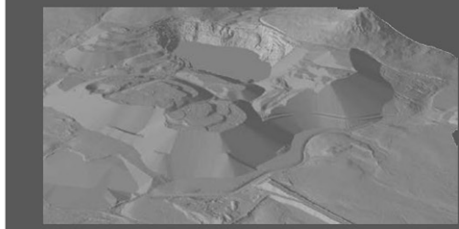
4. Establish drainage and revegetate

Minor upgrade to the intermediate dam spillway to convey northwest perimeter water



Faro Mine Area

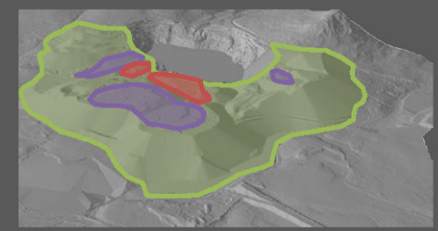
1. Relocate low grade ore and regrade slopes



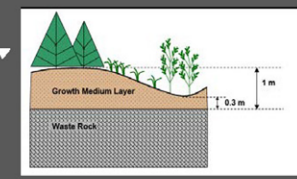
Low grade ore will be relocated to a central pile so it can be covered more efficiently

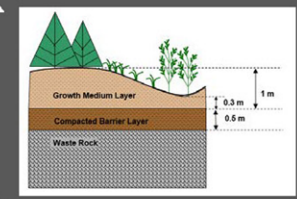
Cover types are selected to reduce infiltration through waste rock materials that are higher strength contaminant sources

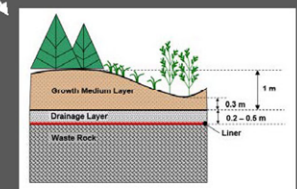
2. Construct three type of cover



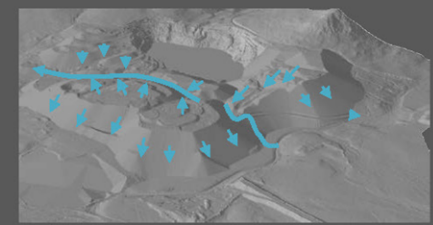
Isolation Cover
Low Infiltration
Very Low Infiltration





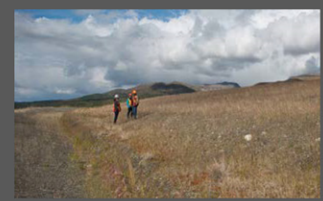


3. Establish drainage



4. Seed and plant vegetation

Early establishment to minimize erosion.
Variety of seed mixes for slopes, flats, dry areas, moist areas.
Planting to create vegetated drainage swales.



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Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

FARO MINE

Faro Mine Remediation Plan

InfoGraphic 5 - Remediation Plan - Stabilize and Revegetate Landforms

Date:	Approved:	Figure:
May 2019	DBM	2-5

Stabilization, Land Forming and Covers

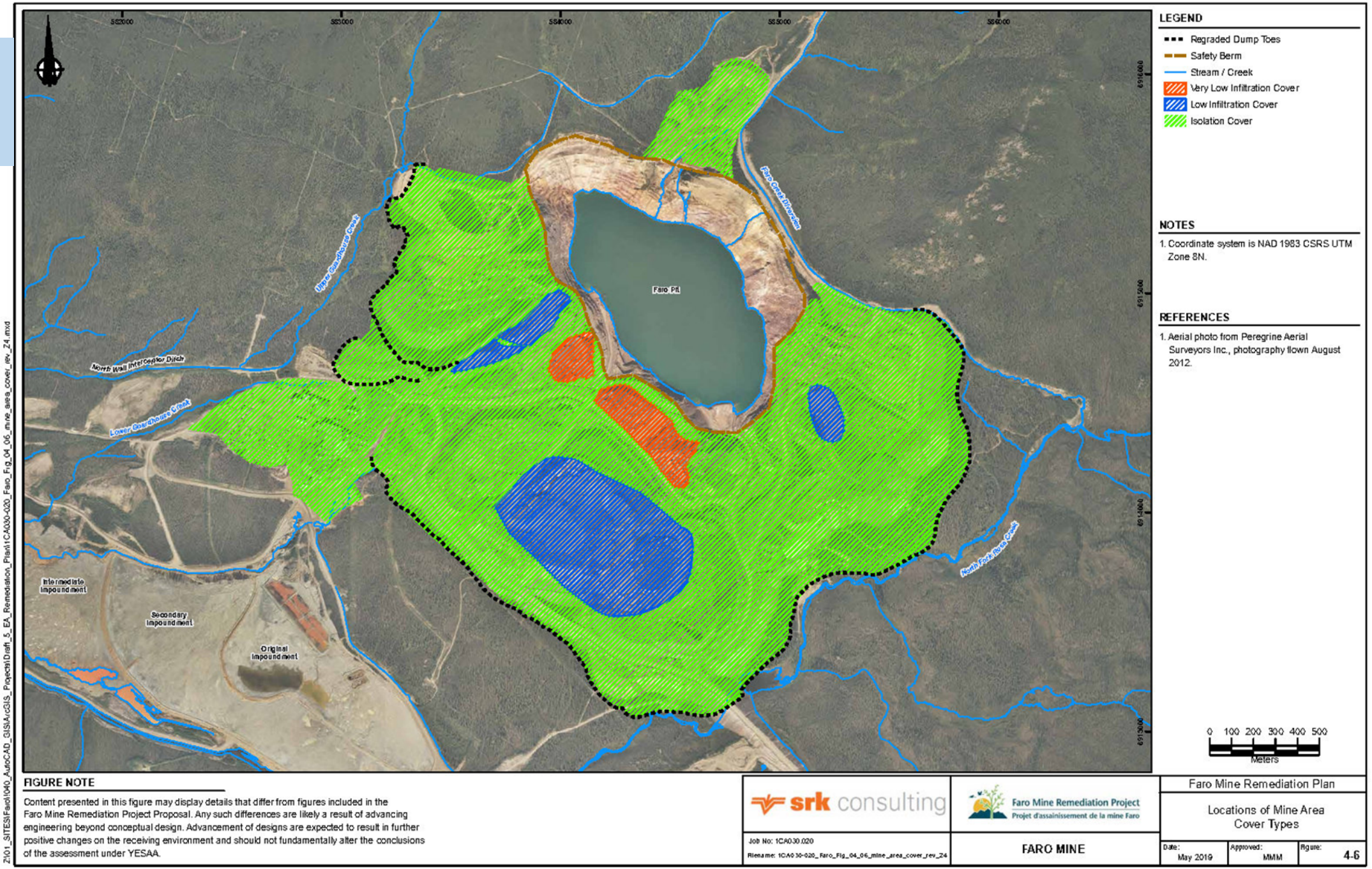

FIGURE NOTE

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Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

FARO MINE

Faro Mine Remediation Plan

Locations of Mine Area Cover Types

Date:	Approved:	Figure:
May 2019	MMM	4-6

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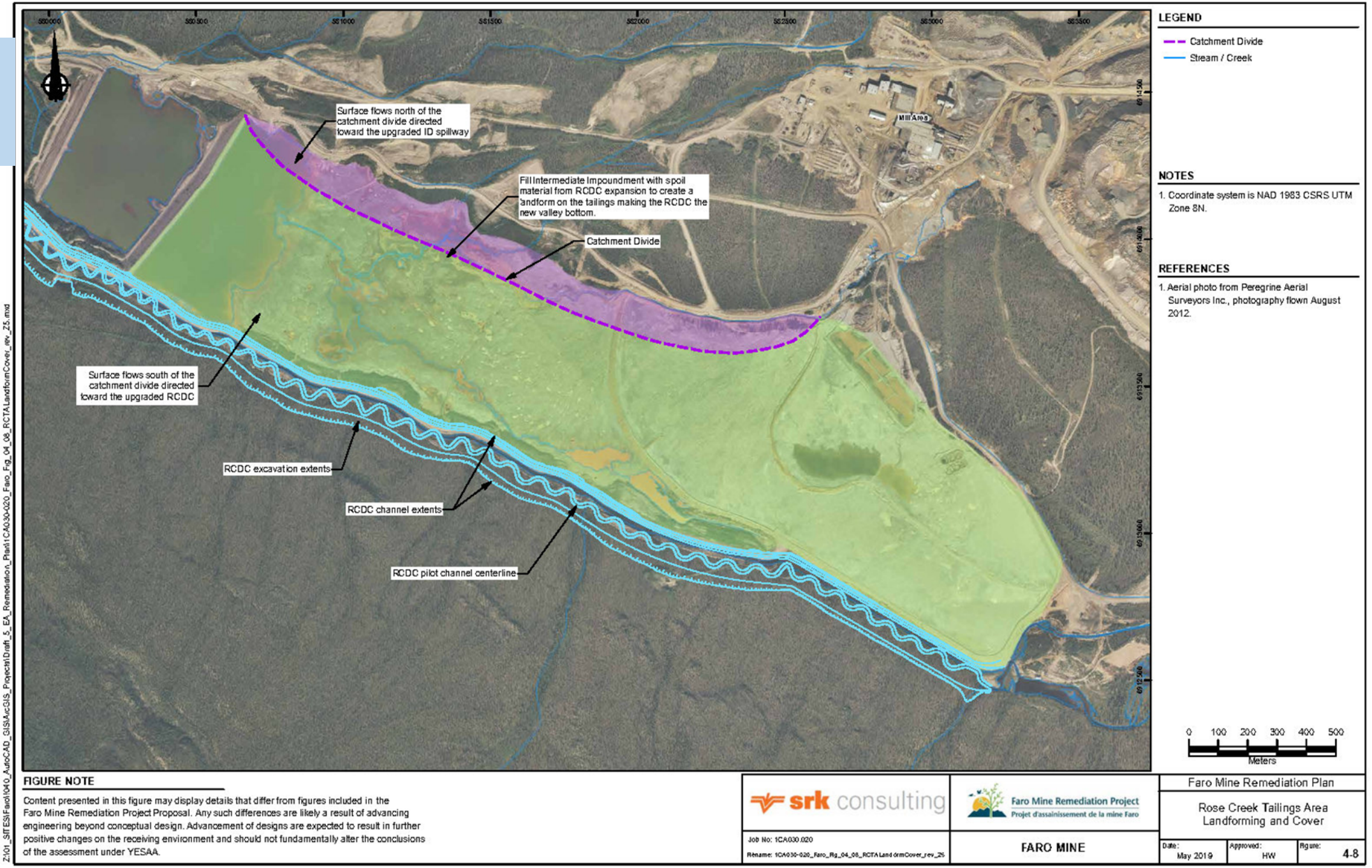
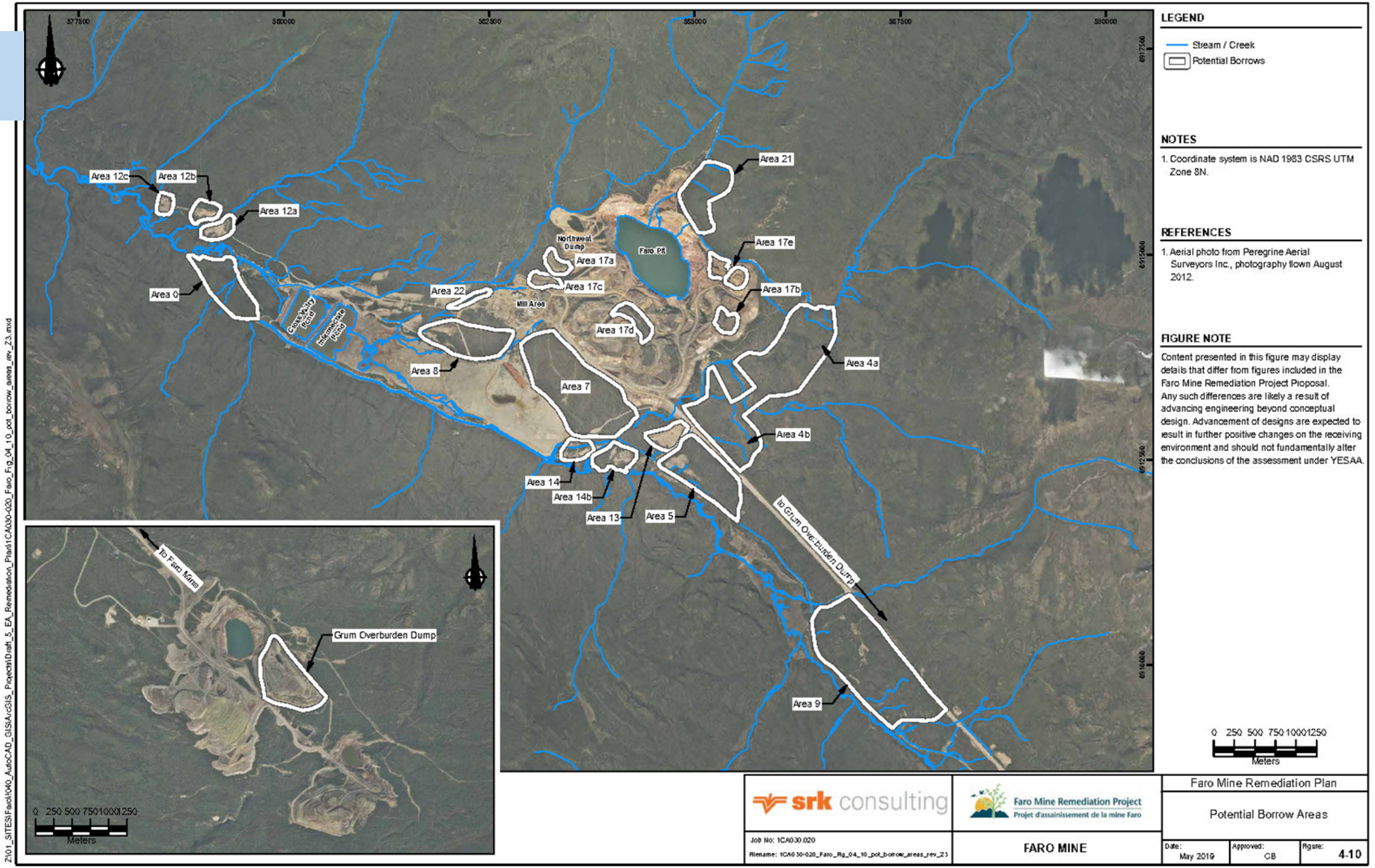
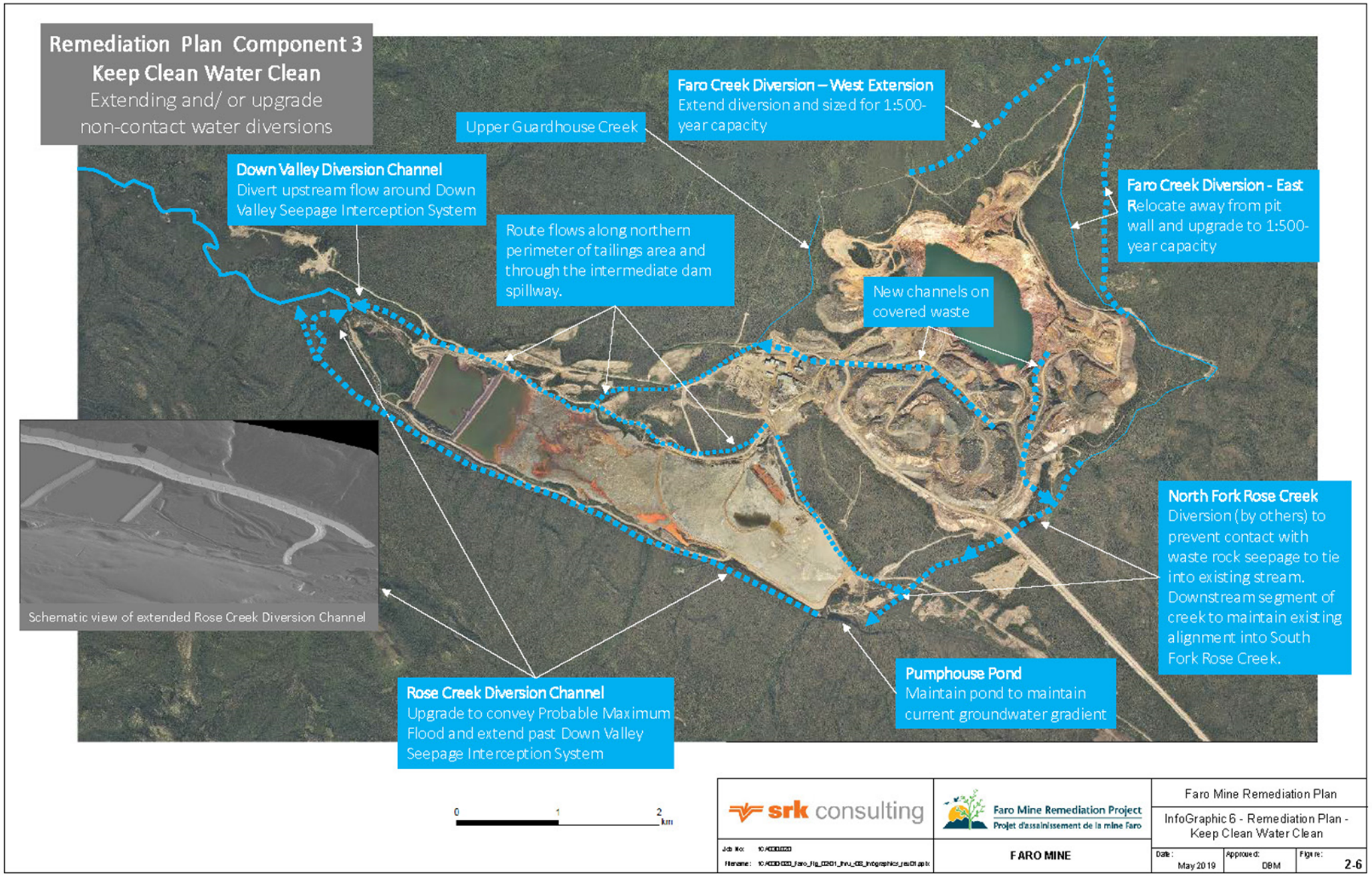
Stabilization, Land Forming and Covers



Borrow Development



Non-Contact Water



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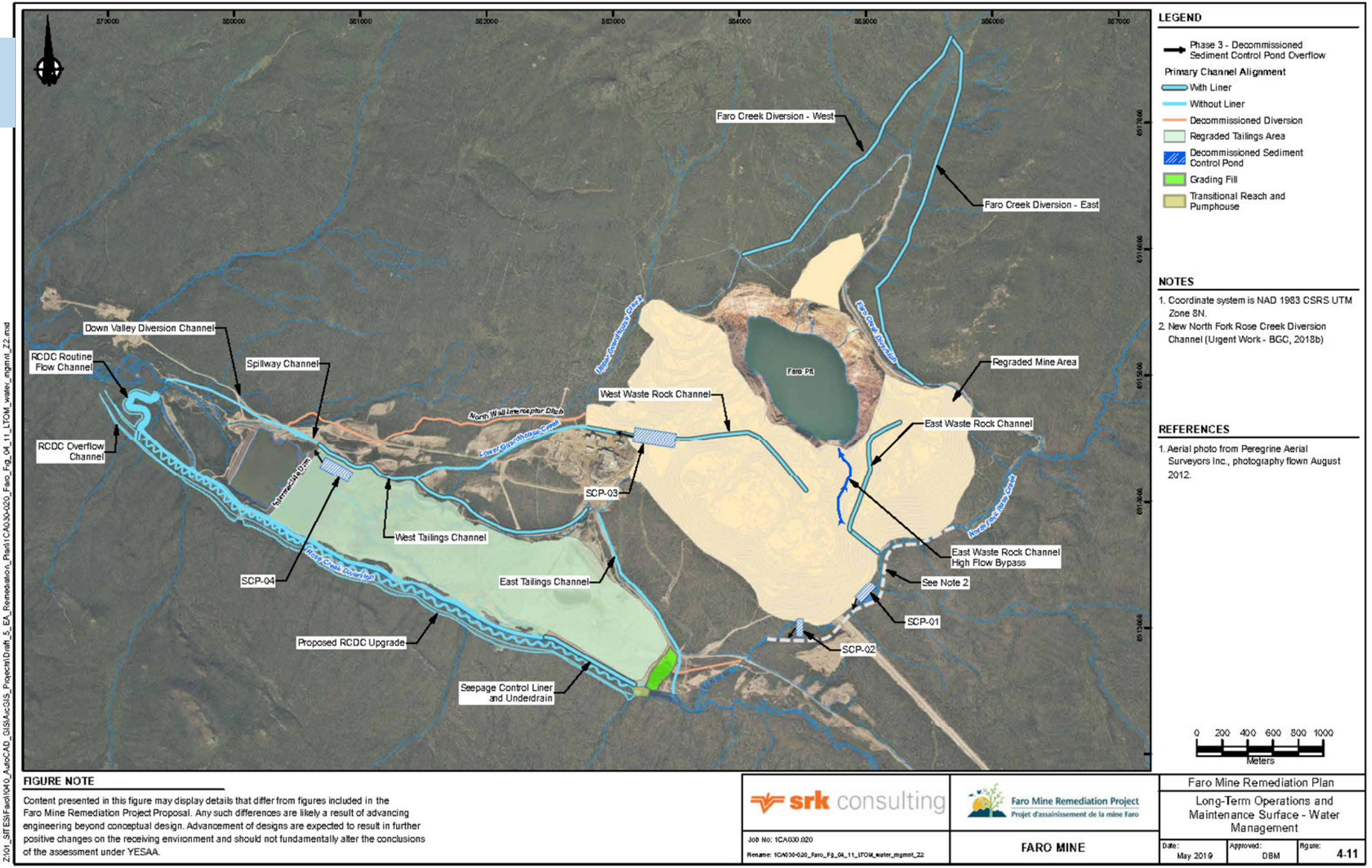

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Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

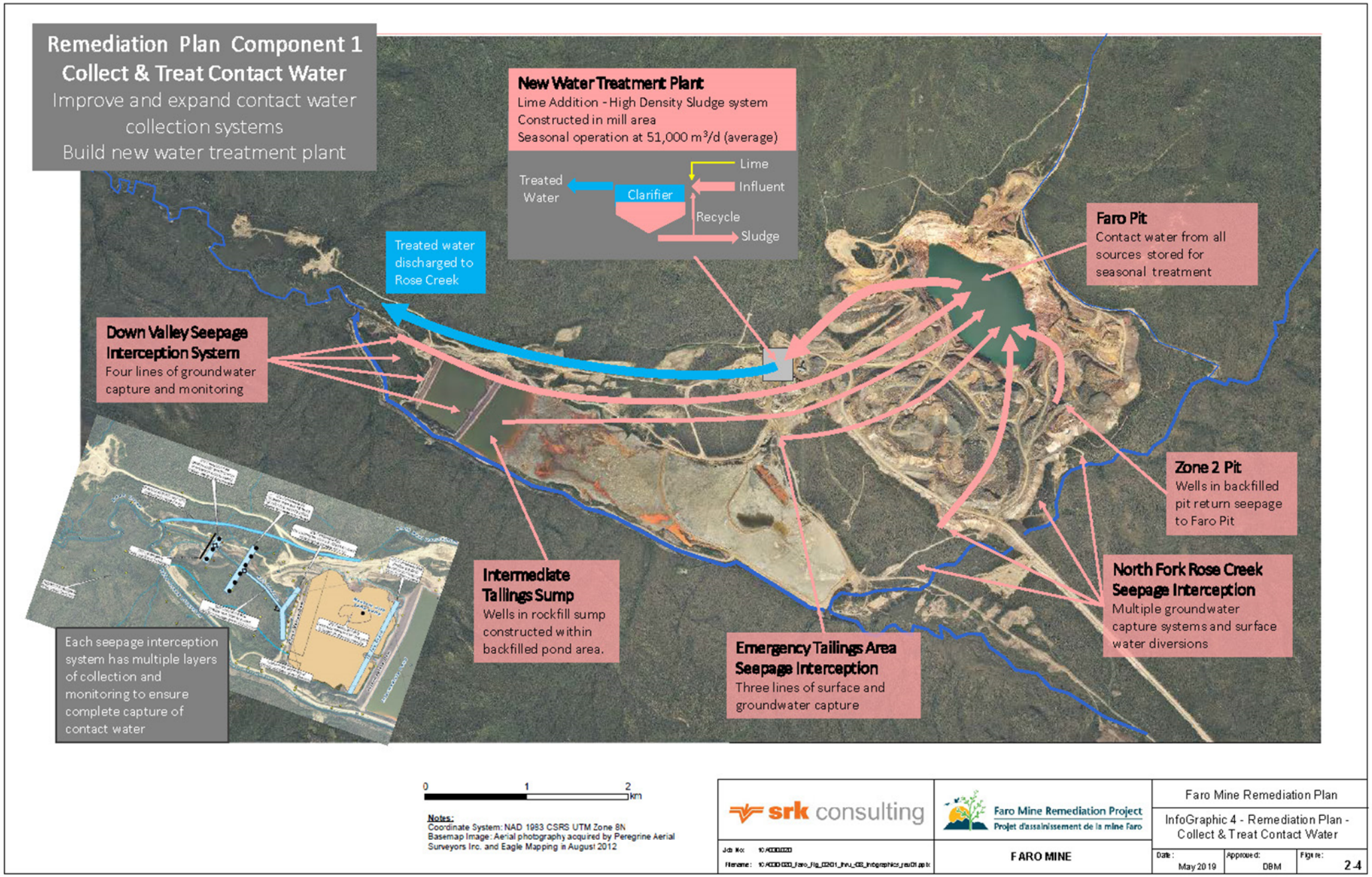
FARO MINE

Faro Mine Remediation Plan

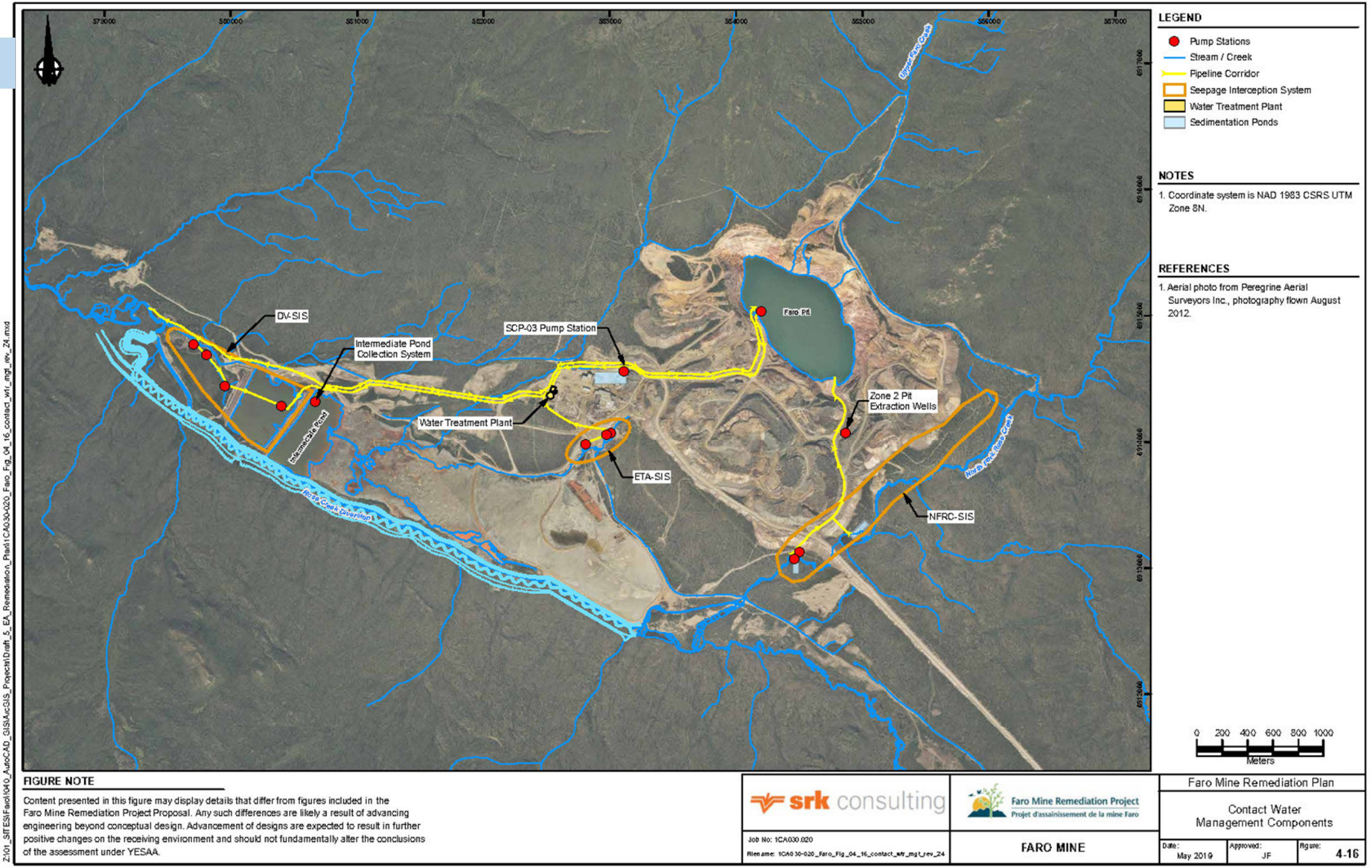
Long-Term Operations and Maintenance Surface - Water Management

Date:	Approved:	Figure:
May 2019	DBM	4-11

Contact Water



Contact Water



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Filename: 1CA030-020_Faro_Fig_04_16_contact_wtr_mgt_rev_24

Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

FARO MINE

Faro Mine Remediation Plan

Contact Water Management Components

Date:	Approved:	Figure:
May 2019	JF	4-16

Contact Water DV-SIS

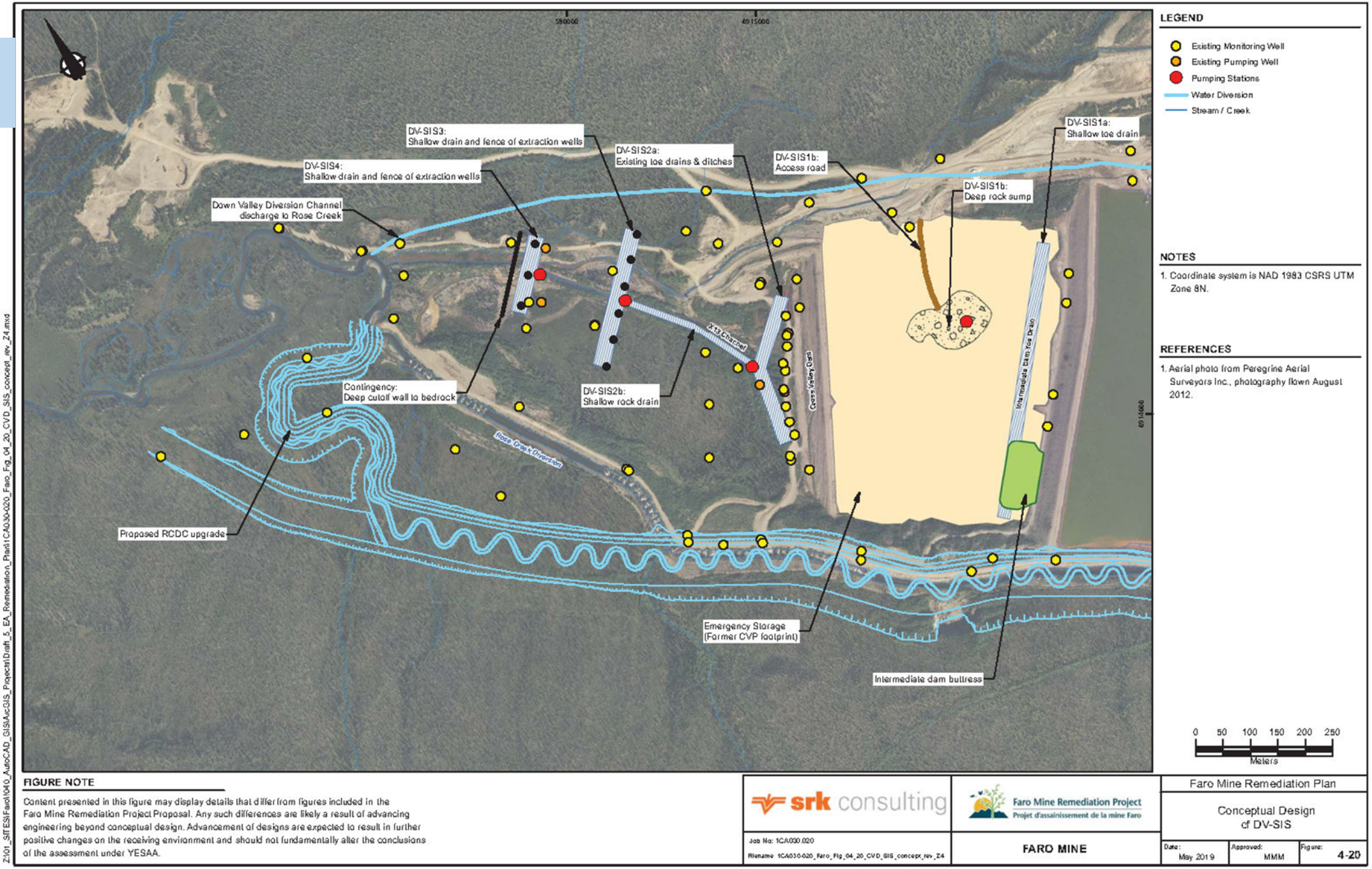

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FIGURE NOTE

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Job No: 1CA030.020

Filename: 1CA030-020_Faro_Fig_04_20_CVD_SIS_concept_rev_Z4

Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

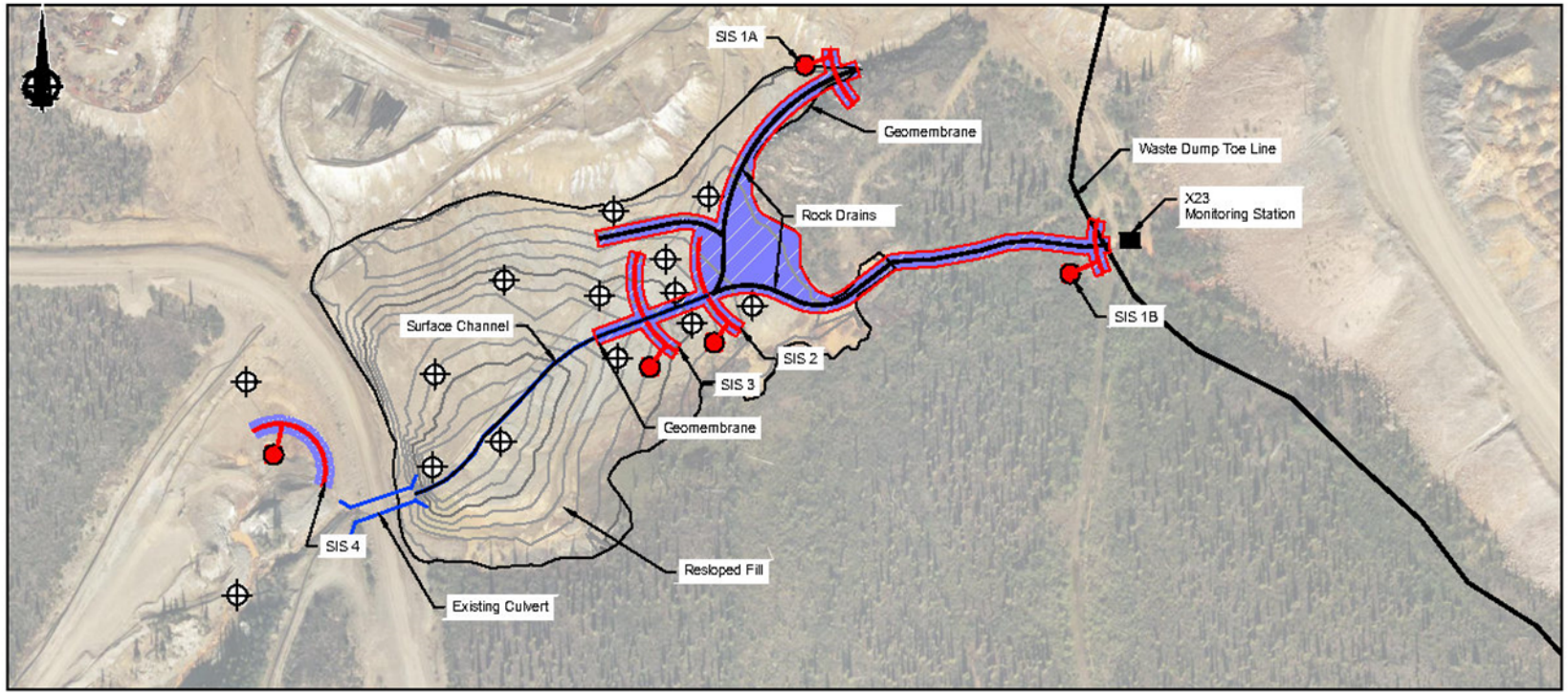
FARO MINE

Faro Mine Remediation Plan

Conceptual Design of DV-SIS

Date:	Approved:	Figure:
May 2019	MMM	4-20

Contact Water
ETA SIS



LEGEND

- Pump Station
- Monitoring Well

NOTES

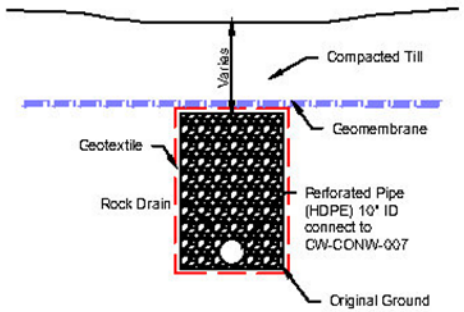
1. Coordinate system is NAD 1983 CSRS UTM Zone 8N.

REFERENCE

1. Aerial photo from Peregrine Aerial Surveyors Inc., photography flown August 2012.

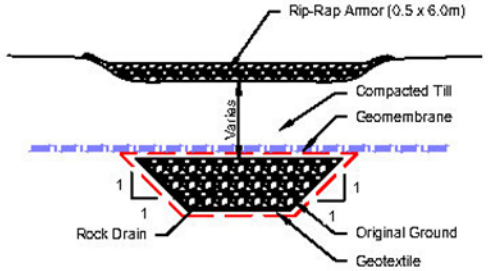
Emergency Tailings Area

0m 20 40 60 80 100



Seepage Interception System Typical Section

0m 1 2 3 4



Rock Drains overlain by 8m wide Geomembrane Typical Section

0m 1 2 3 4

FIGURE NOTE

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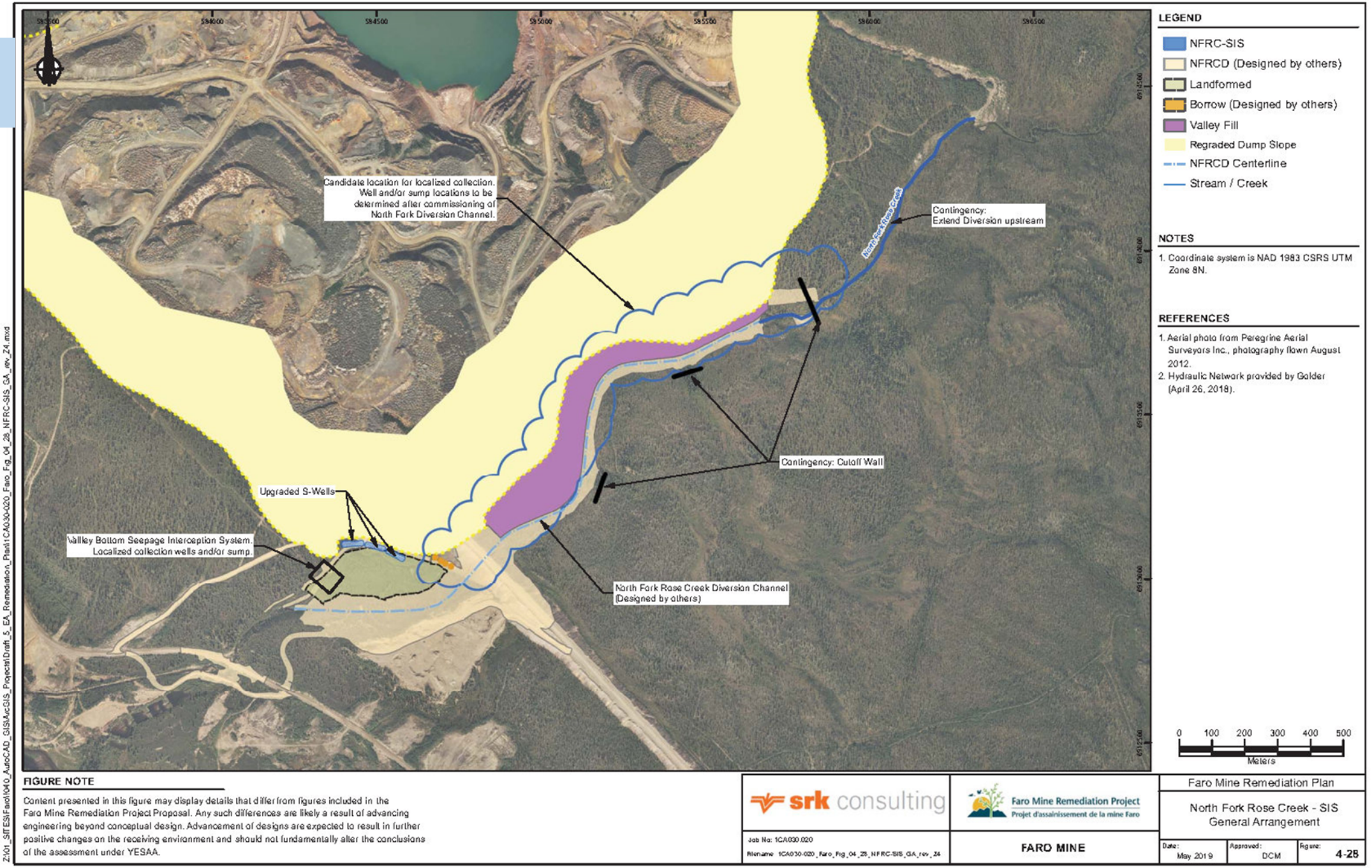
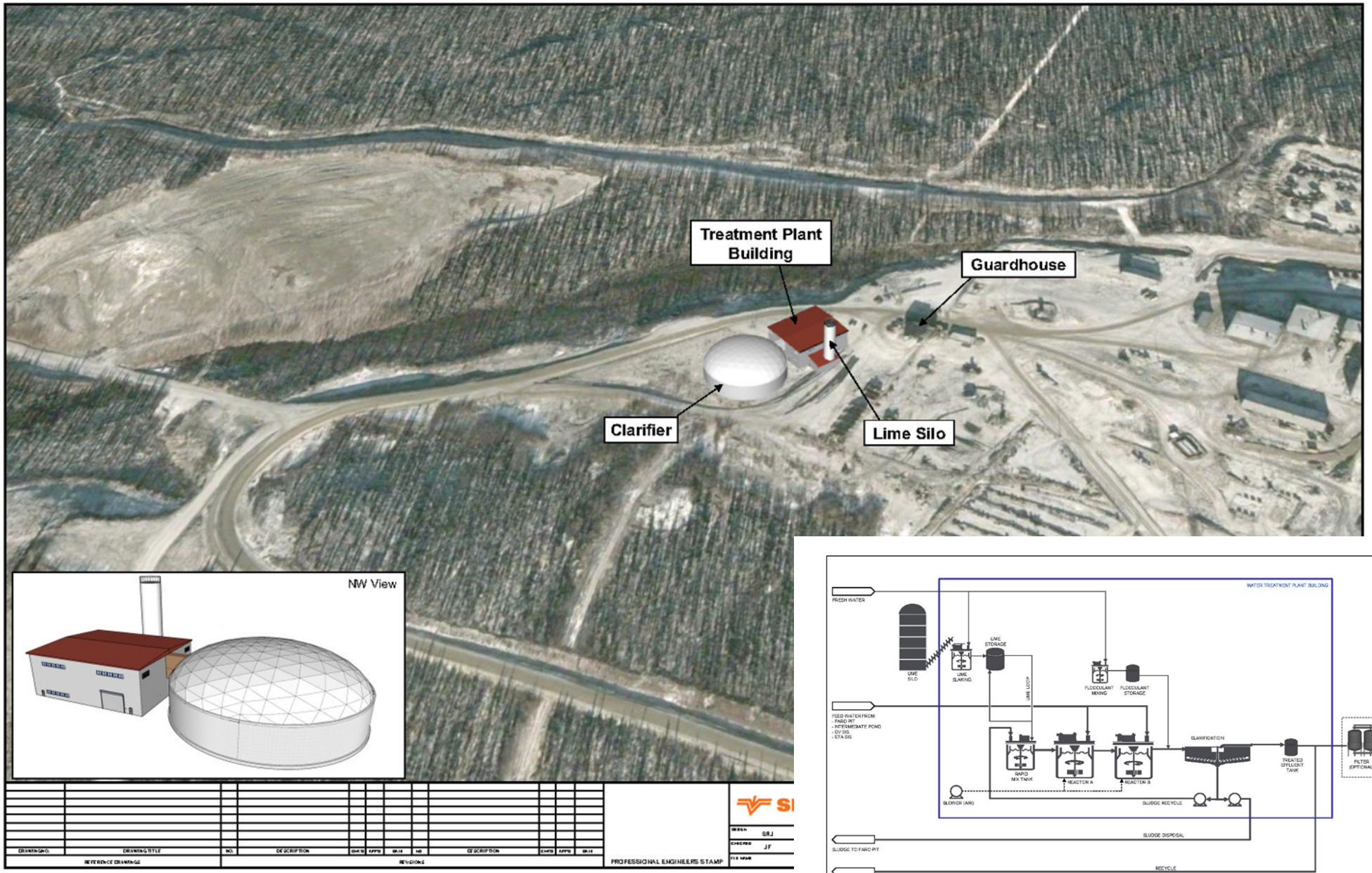
SRK consulting	Faro Mine Remediation Project / Projet d'assainissement de la mine Faro	Faro Mine Remediation Plan ETA SIS General Layout
SRK JOB NO: 1CA030.020 FILE NAME: 1CA030-020_Faro_Fig_04_26_ETA_SIS_layout_rev_26.dwg	FARO MINE	DATE: May 2019 · APPROVED: MDR · FIGURE: 4-26

Contact Water NFRC



Water Treatment



Demolition/ Hazardous Waste

LEGEND

Buildings for Demolition

Infrastructure Key

1. Warehouse
2. Norcan Building
3. Lube Storage Area
4. Mill Building
5. Cold Storage
6. Reagents Building
7. Crusher Building
8. Coarse Ore Bin
9. Guard House
10. Dry & Lunch Room
11. Concentrate Loadout Building
12. Interim Water Treatment Plant
13. Fire Pump Building
14. Guardhouse Distribution Shed
15. Potable Water Shed
16. Old Water Pump House
17. Substation 1, 2 and Transformer
18. Generator
19. Truck Shop

NOTES

1. Coordinate system is NAD 1983 CSRS UTM Zone 8N.

REFERENCES

1. Aerial photo from Peregrine Aerial Surveyors Inc., photography flown August 2012.
2. Figure 7-2 CH3M HILL Design Road Map

0 25 50 75 100 125
Meters

FIGURE NOTE

Content presented in this figure may display details that differ from figures included in the Faro Mine Remediation Project Proposal. Any such differences are likely a result of advancing engineering beyond conceptual design. Advancement of designs are expected to result in further positive changes on the receiving environment and should not fundamentally alter the conclusions of the assessment under YESAA.

srk consulting

Job No: 1CA030.020

Filename: 1CA030-020_Faro_Fig_04_31_mineblgs_demolition_rev_Z5

Faro Mine Remediation Project
Projet d'assainissement de la mine Faro

FARO MINE

Faro Mine Remediation Plan

Mine Buildings and Infrastructure for Demolition

Date:	Approved:	Figure:
May 2019	SDM	4-31

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Demolition/ Hazardous Waste

Other Reclamation

Additional Information

All questions must be submitted in writing to the contracting authority, Saloshna Pillay at sal.pillay@tpsgc-pwgsc.gc.ca, by the date and time stipulated in the RFP.