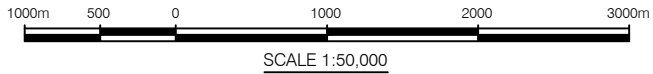
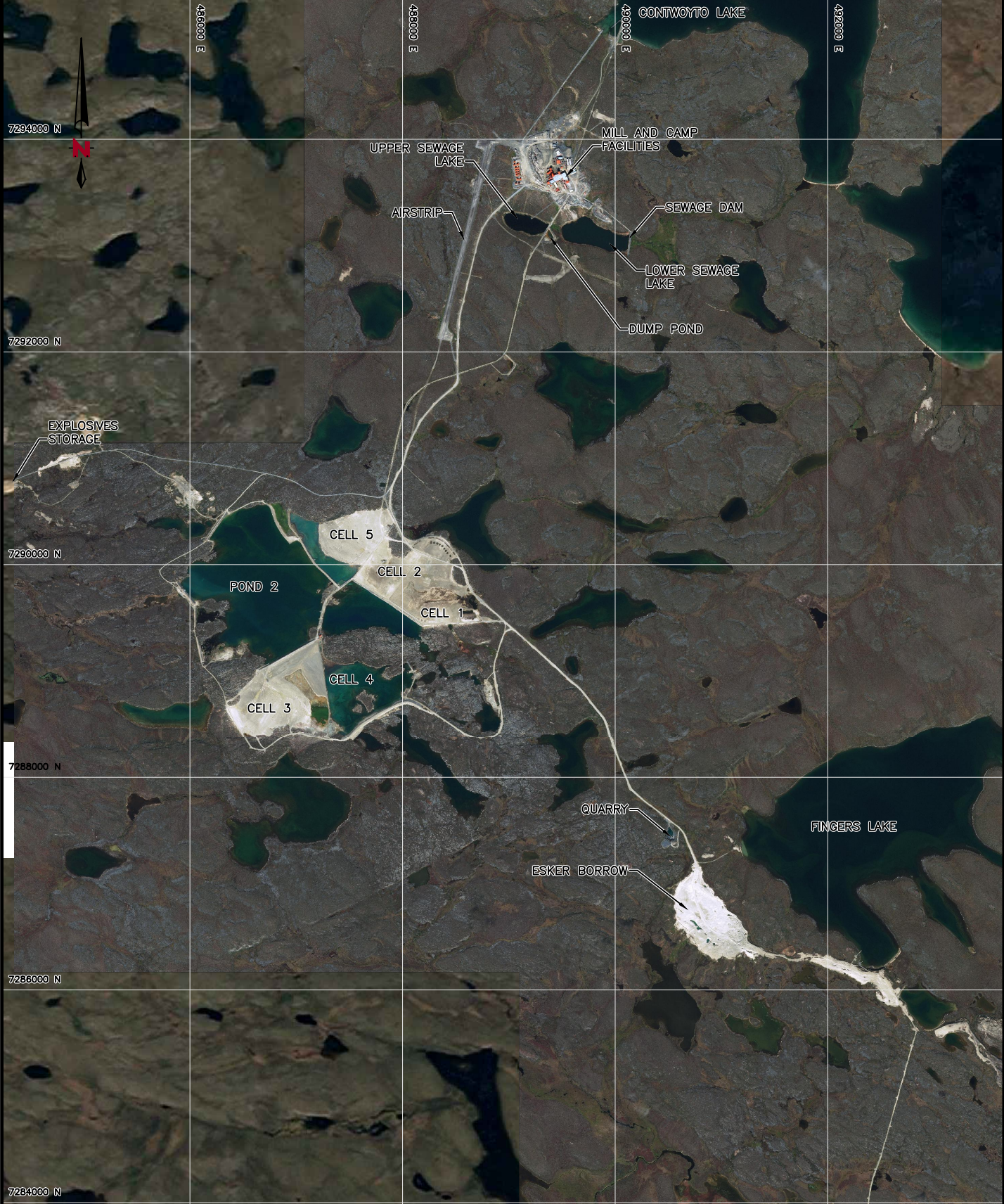


SCALES INDICATED BASED ON AN 8.5"x11" PLOT CONFIGURATION									
REV#	Date	-			XX	XX	XX	XX	XX
REV.	DATE	DESCRIPTION			DWN	DSG	CHK		APR
LUPIN MINES INC.									
2017 DAM SAFETY REVIEW									
SCALE:		AS SHOWN	SITE LOCATION						
DATE:		2016-10-20							
CO-ORD. SYS.:		UTM-NAD83-12							
DRWN BY:		KM							
DSGN BY:		--							
REV'D BY:		AT	<div>NORWEST</div>						
APP'D BY:		SE							
					PROJECT NO.:	FIG. NO.:		REV.:	
					924-3	1		A	



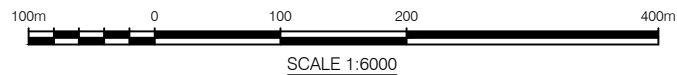
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XREF FILE(S): Lupin-NE Lupin-NW Lupin-SW Lupin-mine\_vw2 2012aug21\_north lupin\_mine\_vw2 2012aug21\_south  
DATE: 9/29/2017 TIME: 16:03:34 PLOT SCALE: 1:3.972



SCALES INDICATED BASED ON AN 8.5"x11" PLOT CONFIGURATION

REV#	Date		XX	XX	XX	XX
REV.	DATE	DESCRIPTION	DWN	DSG	CHK	APR
LUPIN MINES INC.						
2017 DAM SAFETY REVIEW						
SCALE:	AS SHOWN	SITE OVERVIEW				
DATE:	2016-10-20					
CO-ORD. SYS.:	UTM-NAD83-12					
DRWN BY:	KM					
DSGN BY:	--					
REV'D BY:	AT	<b>NORWEST</b>				
APP'D BY:	SE					
		PROJECT NO.:	924-3	FIG. NO.:	2	REV.:
						A





SCALES INDICATED BASED ON AN 8.5"x11" PLOT CONFIGURATION

REV#	Date		XX	XX	XX	XX
REV.	DATE	DESCRIPTION	DWN	DSG	CHK	APR
<b>LUPIN MINES INC.</b>						
<b>2017 DAM SAFETY REVIEW</b>						
SCALE:	AS SHOWN					
DATE:	2016-10-20					
CO-ORD. SYS:	UTM-NAD83-12					
DRWN BY:	KM					
DSGN BY:	--					
REVD BY:	AT					
APP'D BY:	SE					
<b>NORWEST</b>			PROJECT NO.:	FIG. NO.:	REV.:	
			924-3	3	A	

## LUPIN MINES INC.

### 2017 DAM SAFETY REVIEW

#### MILL SITE AND SUPPORT FACILITY PLAN

**NORWEST**

PROJECT NO.:

924-3

FIG. NO.:

3

REV.:





A

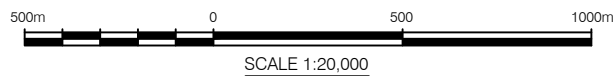




## LEGEND

### THERMISTORS STATUS

-  ACTIVELY MONITORED
-  DAMAGED
-  MONITORED DURING DSR-NO CALIBRATION DATA
-  UNLOCATED-LOCATION ESTIMATED FROM HISTORICAL MAP



SCALES INDICATED BASED ON AN 8.5"x11" PLOT CONFIGURATION

REV#	Date		XX	XX	XX	XX
REV.	DATE	DESCRIPTION	DWN	DSG	CHK	APR
<b>LUPIN MINES INC.</b>						
<b>2017 DAM SAFETY REVIEW</b>						
SCALE:	AS SHOWN					
DATE:	2016-10-20					
CO-ORD. SYS:	UTM-NAD83-12					
DRWN BY:	KM					
DSGN BY:	--					
REVD BY:	AT					
APP'D BY:	SE					
<b>NORWEST</b>			TAILINGS CONTAINMENT AREA			
			PROJECT NO.:	FIG. NO.:	REV.:	
			924-3	4	A	





Photo 1: Looking east along the Dam 1A upstream slope. Note the erosion at the HWM.



Photo 2: Looking east along the Dam 1A crest. Note the water treatment equipment and work pad extending over the upstream slope



Photo 3: Looking east along the Dam 1A downstream slope. Note discharge siphons.



Photo 4: Looking south along the Dam 1B upstream slope. Note there is no adjacent water.



Photo 5: Looking south along the Dam 1B downstream slope.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam 1A and 1B			
NORWEST	PN: 924-3	FIGURE 1	REV. A





Photo 6: Looking south along the Dam 1C upstream slope. Note there is no adjacent water.



Photo 7: Looking south along the Dam 1C crest.



Photo 8: Looking south along the Dam 1C downstream slope.



Photo 9: Looking south along the Dam 2 upstream slope. Note the erosion at the HWM.



Photo 10: Looking south at the Dam 2 seepage collection pond at northern buttress.



Photo 11: Looking east at Dam 2 downstream slope of dam.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam 1C and Dam 2			
NORWEST	PN: 924-3	FIGURE 2	REV. A





Photo 12: Looking east along the Dam 3 upstream slope.



Photo 13: Looking west along Dam 3 crest and storm drain.



Photo 14: Looking north at the Dam 3 drainage with boulder armoring. Boomerang Lake is in the background.



Photo 15: Looking east at the Dam 3D downstream slope from the west abutment.



Photo 16: Looking west at the Dam 3D downstream slope at the mid-point of the dam.



Photo 17: Looking east at the Dam 3D crest from thermistor D3D-1, with the Cell 1 cover to the right and mine rock buttress to the left.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam 3 and Dam 3D			
NORWEST	PN: 924-3	FIGURE 3	REV. A





Photo 18: Looking east from the west abutment along the upstream slope.



Photo 19: Looking west along crest and upstream slope at the upstream crest 1/3 distance away from west abutment.



Photo 20: Looking east at the downstream slope from the east abutment



Photo 21: Looking at the erosion gully over the downstream crest at the east abutment

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam 4			
NORWEST	PN: 924-3	FIGURE 4	REV. A





Photo 22: Looking east from the Dam 5 west abutment along the upstream slope.



Photo 23: Looking west at the Dam 5 downstream slope from the west abutment



Photo 24: Looking south from the Dam 6 north abutment at the crest and downstream toe. Note the erosion at the bottom of the photo.



Photo 25: Looking south at the Dam 6 centerline.



Photo 26: Natural ponding at the Dam 6 south abutment.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam 5 and Dam 6			
NORWEST	PN: 924-3	FIGURE 4	REV. A





Photo 27: Looking south at the Dam J upstream slope (facing Pond 1). Note the erosion at the HWM.



Photo 28: Looking north at the Dam J upstream slope (facing Pond 1). Note the erosion at the HWM.



Photo 29: Close up looking north at the Dam J downstream slope (facing Pond 1). Note the undercut has caused sloughing and reduce crest width.



Photo 30: Looking south at the Dam K downstream slope (facing Pond 2) from north abutment of Dam J. Note the undercut erosion at the HWM.



Photo 31: Close up look at the Dam K undercut erosion and the near vertical slope.



Photo 32: Close up look at the Dam K undercut erosion and the near vertical slope.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam J and Dam K			
NORWEST	PN: 924-3	FIGURE 6	REV. A





Photo 33: Looking north at the Dam L upstream slope (facing Cell 3) and the crest from the south abutment. Note the Cell 3 cover in the left horizon.



Photo 34: Looking north along the Dam L centerline. Note the reduction in crest width near the end.



Photo 35: Looking north at the Dam L downstream slope (facing Cell 4).



Photo 36: Looking west at the Dam M repaired buttress and armor at the toe, with Dam N and Pond 2 to the left.



Photo 37: Close up look toward the east at the repair buttress at Dam M with armor at the toe.



Photo 38: Looking west at the repair buttress at Dam M with armor at the toe.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam L and Dam M			
NORWEST	PN: 924-3	FIGURE 7	REV. A





Photo 39: Looking northwest at the Dam N downstream slope (facing Pond 2).



Photo 40: Looking northwest at the Dam N crest toward the north abutment. Note the water behind the dam (right) is approximately 0.8m below the crest.



Photo 41: Looking northwest at the Dam N upstream slope.



Photo 42: Looking north at the repaired section of the southern portion of the Divider Dyke.



Photo 43: Looking north at the northern portion of the Divider Dyke. Note the reduced crest width and sloughing and cracks.



Photo 44: Close up look of the sloughing and cracks on the northern section of the Divider Dyke.

LMI	Lupin Mine Incorporated		
	2017 Dam Safety Inspection		
Site Inspection Photograph Log for Dam N and Divider Dykes			
NORWEST	PN: 924-3	FIGURE 8	REV. A



# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

**STRUCTURE** Dam 1A

PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 1A

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	1	
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 3/5

**STRUCTURE** Dam 1A

PROJECT #:



## PAGE 4/5



PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 5/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 1A

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:



# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

**STRUCTURE** Dam 1B

PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 1B

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope		
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

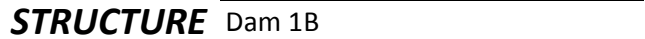
PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 3/5



PROJECT #:

## PAGE 4/5



PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 5/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 1B

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

**STRUCTURE** Dam 1C

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 1C

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	7	erosion gully
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 3/5



PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam 1C

## ADDITIONAL NOTES / REFERENCES / INTERVIEWS



# DAM FACILITY INSPECTION FORM

PAGE 5/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 1C

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

## STRUCTURE

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 2

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	10	erosion gullies
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 3/5

## STRUCTURE Dam 2

PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam 2

PROJECT #:



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 2

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

**STRUCTURE** Dam 3

PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 3

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine  
**OWNER:** Lupin Mine Incorporated  
**STRUCTURE:** Dam 3

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM TOE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Soft toe conditions		x			
Evidence of boils		x			
Evidence of contamination		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### SPILLWAY OR DISCHARGE STRUCTURES

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Control structures		x			
Blockages or debris		x			
Erosion		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

1. Repair was done to add armor and geotextile to the erosion gully to change it into a discharge channel.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 4/5



PROJECT #:



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 3

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

## STRUCTURE Dam 3D

PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 3D

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 3/5

**STRUCTURE** Dam 3D

PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam 3D

## ADDITIONAL NOTES / REFERENCES / INTERVIEWS



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 3D

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

## STRUCTURE

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 4

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	21	erosion gullies
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions	x		east abutment	20	historical exposed geogrid

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 3/5

**STRUCTURE** Dam 4

PROJECT #:

## PAGE 4/5



PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 4

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

## STRUCTURE

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 5

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope		erosion gullies
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 3/5

**STRUCTURE** Dam 5

PROJECT #:

## PAGE 4/5



## ADDITIONAL NOTES / REFERENCES / INTERVIEWS



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 5

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

## STRUCTURE

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam 6

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	24	erosion gullies
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions	x		east abutment	26	ponding water in natural low.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



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## STRUCTURE

PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam 6

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam 6

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

**STRUCTURE** Dam J

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam J

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	28, 29	erosion at HWM
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 3/5

**STRUCTURE** Dam J

PROJECT #:

## PAGE 4/5



PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam J

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:



# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

**STRUCTURE** Dam K

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam K

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		3 erosion gullies	32	
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine  
**OWNER:** Lupin Mine Incorporated  
**STRUCTURE:** Dam K

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM TOE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Soft toe conditions		x			
Evidence of boils		x			
Evidence of contamination		x			
Deformation or geotechnical concern	x		downstream toe	32, 31	significant wave undercut.
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### SPILLWAY OR DISCHARGE STRUCTURES

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Control structures		x			
Blockages or debris		x			
Erosion		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam K

PROJECT #:



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam K

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

**STRUCTURE** Dam L

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam L

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		mid-point, past cover	35	erosion gully
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 3/5

**STRUCTURE** Dam L

PROJECT #:



## PAGE 4/5



## ADDITIONAL NOTES / REFERENCES / INTERVIEWS

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam L

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine  
**OWNER:** Lupin Mine Incorporated  
**STRUCTURE:** Dam M

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	Buttress construction

### UPSTREAM DAM SLOPE / BEACH

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Concern with water level / freeboard		x			
Beach development		x			
Wave or other erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### DAM CREST

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Crest width / access		x			
Evidence of erosion		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Settlement		x			
Low areas (sinkholes) or ponded water		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

1. Buttresses were being built to shore up the slope and offer protection from waves.

PREPARED BY:

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# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam M

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:



# DAM FACILITY INSPECTION FORM

PAGE 3/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine  
**OWNER:** Lupin Mine Incorporated  
**STRUCTURE:** Dam M

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM TOE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Soft toe conditions		x			
Evidence of boils		x			
Evidence of contamination		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### SPILLWAY OR DISCHARGE STRUCTURES

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Control structures		x			
Blockages or debris		x			
Erosion		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

1. The buttresses is connected to form a continuous structure to protect the entire eroded toe.

PREPARED BY:

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PROJECT #:

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PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam M

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 1/5

**STRUCTURE** Dam N

PROJECT #:



# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE** Dam N

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	39	wave action erosion
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

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PROJECT #:

## PAGE 4/5

**STRUCTURE:** Dam N

PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Dam N

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

- Canadian Dam Association (CDA) Technical Bulletin: Dam Safety Reviews (DRAFT, 2015)
- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #:

# DAM FACILITY INSPECTION FORM

**NORWEST**  
CORPORATION

## DAM SUMMARY INFORMATION

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Tailings Containment Area

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
PURPOSE OF DAM	Tailings and water containment
DAM CLASSIFICATION	Low to Significant
DATE OF LAST DSR	2015
DATE OF NEXT DSR	2020
ORIGINAL DESIGN ENGINEER	Geocon
CURRENT DESIGN ENGINEER	Golder Associates
LENGTH AND MAX. HEIGHT	Max Individual Dam Length = 930m, Max Individual Height = 6.2m
CREST WIDTH	Variable between 2m to 10m
STORAGE VOLUME	Information not available
CONSTRUCTION METHOD	Sand and gravel frozen core dam with geosynthetics liner cutoff
POND ADJACENT TO DAM	Pond is adjacent to most perimeter dams and some internal dams
DESIGN BEACH WIDTH	Information not available
CURRENT BEACH WIDTH	between 0 and 200m
DISCHARGE STRUCTURES	Siphons over Dam 1A during water treatment
EMERGENCY DISCHARGE STRUCTURES	None. Fully enclosed facility
CURRENT DAM ELEVATION	Approximately 486.2m
CURRENT POND ELEVATION	Approximately 482.2m
DATE OF LAST DAM RAISE	2005
FINAL DAM ELEVATION	Approximately 486.2m
MINE PRODUCTION RATE	None. Currently at care and maintenance status
TAILINGS DEPOSITION METHOD	None. Currently at care and maintenance status
DAM INSTRUMENTATION	Thermistors in some dams
DESIGN/AS-BUILT INFO. AVAILABLE	Last design by BGC Engineering in 2003
SURVEILLANCE PROGRAM AVAILABLE	Annual geotechnical inspection
WATERSHED AREA	Combined total approximately 1,188 ha.

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

Site consist of eight preimeter dams and seven internal dams.

PREPARED BY:

REVIEWED BY:

PROJECT #:



## PAGE 1/5

**STRUCTURE** Divider Dykes

PROJECT #:

# DAM FACILITY INSPECTION FORM

PAGE 2/5



## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Divider Dykes

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
WORK SINCE LAST INSPECTION	

### DOWNSTREAM DAM SLOPE

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion	x		downstream slope	43, 44	wave action erosion
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Non-uniform slope		x			
Other noteworthy conditions		x			

### DAM ABUTMENTS

OBSERVED FEATURES	YES	NO	LOCATION	PHOTO #	COMMENTS / NOTES
Signs of phreatic surface / seepage		x			
Areas of seepage turbid		x			
Erosion		x			
Evidence of sloughing / sliding		x			
Evidence of cracking		x			
Deformation or geotechnical concern		x			
Instrumentation		x			
Vegetation		x			
Other noteworthy conditions		x			

### ADDITIONAL NOTES / REFERENCES / PLAN VIEW / CROSS SECTION / SKETCHES

PREPARED BY:

REVIEWED BY:

PROJECT #:

## PAGE 3/5

STRUCTURE Divider Dykes

PROJECT #:

## PAGE 4/5



PROJECT #:

# DAM FACILITY INSPECTION FORM

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## DAM INSPECTION CHECKLIST

**SITE:** Lupin Mine

**OWNER:** Lupin Mine Incorporated

**STRUCTURE:** Divider Dykes

INSPECTED BY	Alvin Tong
DATE	August 28, 2017
WEATHER CONDITIONS	Overcast with Sunny periods
CHANGES SINCE LAST INSPECTION	

### DAM SAFETY MANAGEMENT SYSTEMS

FEATURES	YES	NO	DOCUMENTS / COMMENTS / NOTES
Corporate tailings management policy statement		x	See note 1 below.
Tailings management accountability assigned		x	See note 1 below.
Objectives and targets established		x	See note 1 below.
Roles and responsibilities assigned and understood		x	See note 1 below.
Succession planning		x	See note 1 below.
Adequate resources assigned		x	See note 1 below.
Training systems in place		x	See note 1 below.
Periodic reporting to management and regulator		x	See note 1 below.
Regulations, permits and commitments understood		x	See note 1 below.
Regulatory compliance measured	x		As per annual inspection
Formal risk management plan in place		x	See note 1 below.
Potential failure mode analysis completed		x	See note 1 below.
Communication systems in place		x	See note 1 below.
ERP/EPP developed and tested	x		EPP is in place but not tested
Decommissioning and closure accounted for	x		Active reclamation is compliance to the Closure Plan
Document management system in place	x		Documented in Annual Report.
Corporate review of tailings management		x	See note 1 below.
Adequate financial resources assigned		x	See note 1 below.

This Dam Facility Inspection Form follows the philosophy and intent of the following guidelines:

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- Mining Association of Canada (MAC): A Guide to Audit and Assessment of Tailings Facility Management (2011)
- Association of Professional Engineers and Geoscientists of BC (APEGBC): Professional Practice Guidelines - Legislated Dam Safety Reviews in BC

### ADDITIONAL NOTES / REFERENCES / INTERVIEWS

1. No tailings has been deposit since 2005. The site is currently on care and maintenance. Tailings deposition procedures, documentations, and regulation requirements will be updated once the site go into production.

PREPARED BY:

REVIEWED BY:

PROJECT #: