

PROPERTY DESCRIPTIONS

Location of Water Use

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Mine (see attached)						QQ 1/4	Q 1/4

Location of Water Source

Subdivision Name or Survey Number	Lot, Block, or Tract	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Mine South Fork Red Dog Creek (see Attached)						QQ 1/4	Q 1/4

Location of Water Return Flow or Discharge (if applicable)

Geographic Name of Water Body or Well Depth	Meridian	Township	Range	Section	Quarter Sections	
Red Dog Tailings Pond & Red Dog Creek (see attached)					QQ 1/4	Q 1/4

WATER SOURCE DESCRIPTION

Ground Water

Type (e.g. drilled, dug)	Total Depth (in feet)	Static Water Level (in feet)	Date Completed	Well Yield (in gpm)

Surface Water

Type (e.g. stream, lake, spring)	Geographic Name (if named)
Stream and Reservoir	South Fork Red Dog Creek

METHOD OF TAKING WATER (IF KNOWN)

Pump	Pump Intake ^{see attached} _____ Inches	Hours Working <u>24</u> Hours/Day
	Pump Output _____ GPM	Length of Pipe _____ Feet (from pump to point of use)
Gravity	Pipe Diameter _____ Inches	Length of Pipe _____ Feet (take point to point of use)
	Head _____ Feet	Diversion Rate _____ <input type="checkbox"/> GPM or <input type="checkbox"/> CFS
Ditch	L _____ D _____ W _____ Feet	Diversion Rate _____ <input type="checkbox"/> GPM or <input type="checkbox"/> CFS
Reservoir	L _____ D _____ W _____ Feet	Water Storage _____ AF
Dam	L <u>5700</u> H <u>228</u> W _____ Feet	Water Storage <u>59,713</u> AF

AMOUNT OF WATER

Common Water Uses and Standard Amounts

Type of Use	How Many		Standard Amounts		Total Amount Requested	Months of Use	
						Begin	End
Fully Plumbed Single-family Home (includes irrigation of 10,000 sq. ft.)	#_____Homes	X	500 GPD	=			
Partially Plumbed Single-family Home (no hot water heater)	#_____Homes	X	250 GPD	=			
Unplumbed Single-family Home (hand carry water)	#_____Homes	X	75 GPD	=			
Duplex or Triplex	#_____Bldgs.	X	1000 GPD	=			
Four-plex and Larger Housing	#_____Units	X	250 GPD	=			
Motel or Resort	#_____Rooms	X	150 GPD	=			
Work Camps	#_____People	X	50 GPD	=			
Domestic Irrigation	#_____Sq. ft.	X	250 GPD per 10,000 Sq. ft.	=			
Non-domestic Irrigation	#_____Acres	X	0.5 AFY	=			

Other Water Uses

Type of Use	How Many		Amount		Total Amount Requested	Months of Use	
						Begin	End
		X		=			
		X		=			
Type of Use					Total Amount Requested	Months of Use	
See attached					93,419 AFY	Jan	Dec

Expected date for water system and water use to be fully developed **or** date when existing use started _____.
 Note: Pursuant to AS 46.15.180(a)(1). Crimes, a person may not construct works for an appropriation, or divert, impound, withdraw, or use a significant amount of water from any source without a permit, certificate of appropriation, or authorization issued under this chapter.

11 AAC 93.040 sets out the required information on an application for a water right. AS 38.05.035(a) authorizes the director to decide what information is needed to process an application for the sale or use of state land and resources. This information is made a part of the state public land records and becomes public information under AS 40.25.110 and 40.25.120 (unless the information qualifies for confidentiality under AS 38.05.035(a)(8) and confidentiality is requested, AS 43.05.230, or AS 45.48). Public information is open to inspection by you or any member of the public. A person who is the subject of the information may challenge its accuracy or completeness under AS 44.99.310, by giving a written description of the challenged information, the changes needed to correct it, and a name and address where the person can be reached. False statements made in an application for a benefit are punishable under AS 11.56.210. In submitting this form, the applicant agrees with the Department to use "electronic" means to conduct "transactions" (as those terms are used in the Uniform Electronic Transactions Act, AS 09.80.010 – AS 09.80.195) that relate to this form and that the Department need not retain the original paper form of this record: the department may retain this record as an electronic record and destroy the original.

SIGNATURE

The information presented in this application is true and correct to the best of my knowledge. I understand that per 11 AAC 93.040 and 11 AAC 93.050 additional information may be required by the department to adjudicate this application. Failure to provide requested information could result in this file being closed.

Yesnik Leslie RDOG
Digitally signed by Yesnik Leslie
RDOG
Date: 2021.04.16 15:31:29 -08'00'

Signature

Les Yesnik

Name (please print)

Date

General Manager

Title (if applicable)

FEE required by regulation 11 AAC 05.260.

Make checks payable to "Alaska Department of Natural Resources":

- **\$100** for one single-family residence or duplex, or for water use associated with one single-family residence or duplex.
- **\$1,500** for up to 60 hours of staff time, for activities related to oil and gas and associated substances.
- **\$1,500** for up to 60 hours of staff time, for activities related to locatable mining.
- **\$1,500** for up to 60 hours of staff time, for hydroelectric power generation capacity greater than 100 kilowatts.
- **\$1,500** for up to 60 hours of staff time, for water removal out of a hydrologic unit under AS 46.15.035 or 46.15.037.
- **\$250** for 5,000 GPD or less for a use not listed above.
- **\$565** for greater than 5,000 GPD and no more than 30,000 GPD for a use not listed above.
- **\$690** for greater than 30,000 GPD and no more than 100,000 GPD for a use not listed above.
- **\$1,125** for greater than 100,000 GPD for a use not listed above.

REFERENCES

Measurement Units

GPD = gallons per day

CFS = cubic feet per second

GPM = gallons per minute

AF = acre-feet

AFY = acre-feet per year (325,851 gallons/year)

AFD = acre-feet per day (325,851 gallons/day)

MGD = million gallons per day

Conversion Table

<u>5,000GPD=</u>	<u>30,000GPD=</u>	<u>100,000GPD=</u>	<u>500,000GPD=</u>	<u>1,000,000GPD=</u>
0.01 CFS	0.05 CFS	0.2 CFS	0.8 CFS	1.5 CFS
3.47 GPM	20.83 GPM	69.4 GPM	347.2 GPM	694.4 GPM
5.60 AFY	33.60 AFY	112.0 AFY	560.1 AFY	1120.1 AFY
0.02 AFD	0.09 AFD	0.3 AFD	1.5 AFD	3.1 AFD
0.01 MGD	0.03 MGD	0.1 MGD	0.5 MGD	1.0 MGD

Red Dog Mine – South Fork Red Dog Creek Withdrawal Additional Information

Property Descriptions

Location of Water Use				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	19W	24	SE
Kateel	31N	19W	25	NE & SE
Kateel	31N	19W	36	NE
Kateel	31N	18W	19	NE, SE, & SW
Kateel	31N	18W	20	NW & SW
Kateel	31N	18W	29	NW & SW
Kateel	31N	18W	31	NW & NE
Kateel	31N	18W	32	NW

Location of Water Source				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	19W	24	SE
Kateel	31N	19W	25	NE, SW & SE
Kateel	31N	19W	36	NE
Kateel	31N	18W	19	NE, SE, & SW
Kateel	31N	18W	20	NW & SW
Kateel	31N	18W	29	NW, SE & SW
Kateel	31N	18W	31	NW & NE
Kateel	31N	18W	32	NW & NE

Location of Water Return Flow or Discharge				
Meridian	Township	Range	Section	Quarter Sections
Kateel	31N	19W	24	SE
Kateel	31N	19W	25	NE & SE
Kateel	31N	19W	36	NE
Kateel	31N	18W	19	NE, SE, & SW
Kateel	31N	18W	20	NW & SW
Kateel	31N	18W	29	NW & SW
Kateel	31N	18W	31	NW & NE
Kateel	31N	18W	32	NW

Method of Taking water

The Water withdrawal is from the following locations:

South Fork Red Dog Creek Precipitation Collection

Precipitation falling in the South Fork Red Dog Creek Drainage Basin is collected in the tailings impoundment. Multiple diversion structures have been constructed to divert a portion of this flow to the Bons Creek and Main Stem Red Dog Creek. The collection area flowing into the tailings impoundment is approximately 1,558 acres. Based on an annual precipitation of 40 inches a volume of 5,194 acre feet is collected.

Tailings Impoundment

To provide a storage location for the tailings generated by the mill the South Fork Red Dog Creek was converted into a tailings impoundment. The impoundment is formed by the construction of two dams: the Red Dog Tailings Main Dam (NID# AK00201) at the mouth of the South Fork Red Dog Creek and the Red Dog Tailings Back Dam (NID# AK00303) at the drainage divide between the South Creek Red Dog Creek and the Bons Creek drainage basins. The construction of the main tailings dam began in 1989 and the back dam in 2007. The dams are currently constructed to a crest elevation of 986 feet AMSL. The completion of the dams to a crest elevation of 1,006 feet AMSL is scheduled for 2027. At project completion the tailings impoundment will have the capacity to store 59,512 acre feet. The impoundment capacity is used for both water and tailings with tailings displacing the water storage capacity through the life of the operation.

Reclaim Barges

Two floating barges withdraw water from the tailings impoundment. The barges have a combined pumping capacity of 33,300 gpm year around. The water is used for metal mining and water treatment. The mill water is returned to the tailings impoundment. The water treatment water is either used in the mill, discharged to Red Dog Creek, used for road watering in the tailings and Mine drainage basins, returned to the tailings impoundment or transferred to the Main Pit or the Aqqaluk Pit in the Middle Fork Red Dog Creek drainage basin.

Water Usage

The water is used for metal mining and treatment for discharge to Red Dog Creek, and dust control. To maintain the site water balance water may also be pumped from the South Fork Red Dog Creek collection area to the Middle Fork Red dog Creek collection area and stored in either the Main Pit or the Aqqaluk Pit.

Total Water Requested

Water Use #1

Precipitation and surface flow collection of ~1,558 acres. Based on 40 inches of precipitation a year a volume of 5,194 AFY.

Water Use #2

Tailing Impoundment water storage. At the 1,006 ft crest elevation the tailing impoundment will be able to store 59,512 acre Feet.

Water Use #3

An additional 28,713 AFY of water withdrawn from the tailings impoundment. Used in the Mill and returned to the Tailings Impoundment.

Total requested volume: 93,419

The requested water volume are in addition to the volume permitted under LAS 25096. Teck currently holds permit to Appropriate Water LAS 25096. The permit allows for 25,000 acre feet for metal mining use and 7,421 acre feet for water treatment with a priority date of April 24, 1987.

Red Dog Mine South Fork Red Dog Creek Tailings Impoundment Location Map

