

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
WASHINGTON, D.C. 20549

**FORM 8-K**

CURRENT REPORT

PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934

Date of Report. EN

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**SIGNATURES**

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SLR International Corporation  
22118 20 Ave SE, Suite G202, Bothell, WA 98021 USA



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# CONTENTS

1.0 Executive Summa









## 14.1 Processing Method





21.0





# TABLES



























- Routine plant samples are collected and analyzed in the HibTac onsite laboratory f







## 1.2 Economic Analysis

### 1.2.1 Economic Criteria

An un-escalated teSa

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approximately 6,420 acres







### 1.3.4 Geological Setting, Mineralization, and Deposit

The HibTac deposit

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- Mine and Plant concentrator facilities near Hib











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### 3.0 PROPERTY DESCR













### 3.3 Encumbrances

Hibbing Taconite gr e tr t en







Table 4-2 Nearby Pea yP é 5



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Figure 6-1: Location of the Animikie Basin and Diagrammatic Cross-section Showing Development of the Basin





6.2 Loc















#### 6.3.4 Lower Slaty Member

Mod









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## 7.0 EXPLORATION

Exploration for magnetic iron-formations at HibTac has relied predominantly on diamond core drilling (DD) and LiberaSon or Davis Tube (DT) analyses of recoverable magnetic concentrate for over four decades. Most exploration work by Cliffs has been and continues to be near-mine diamond core drilling conducted using a 400 ft x 400 ft grid. Limited ground magnetic surveying has been used locally in

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The samples are initially reduced using stage crushing with a 20 mesh sieve and then passed through a 60 mesh sieve. The samples are then reduced using stage crushing with a 20 mesh sieve and then passed through a 60 mesh sieve.

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portion of the 2015 DD program that was deferred pending implementation of controls on Satmagan instrument calibration and sample preparation, and tooling/testing.

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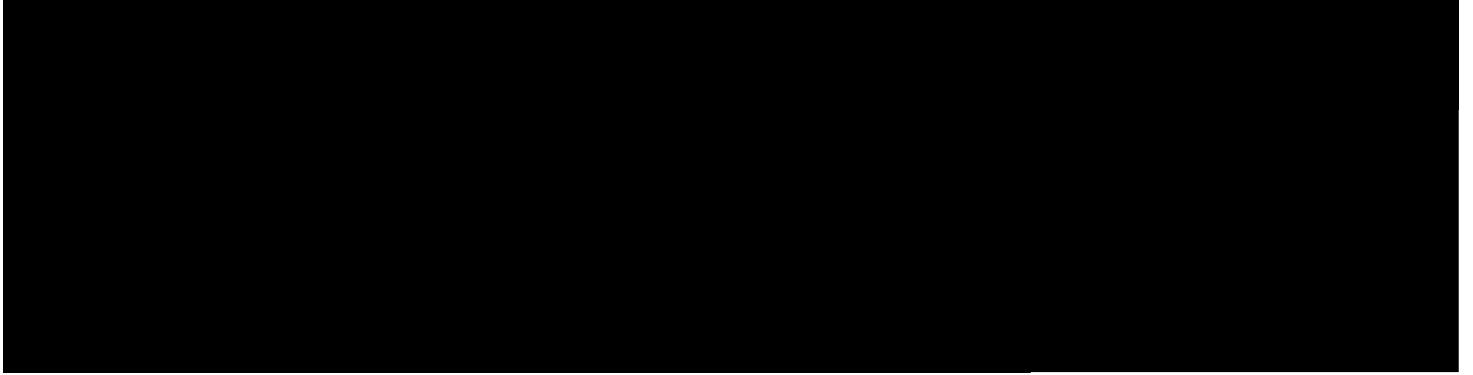
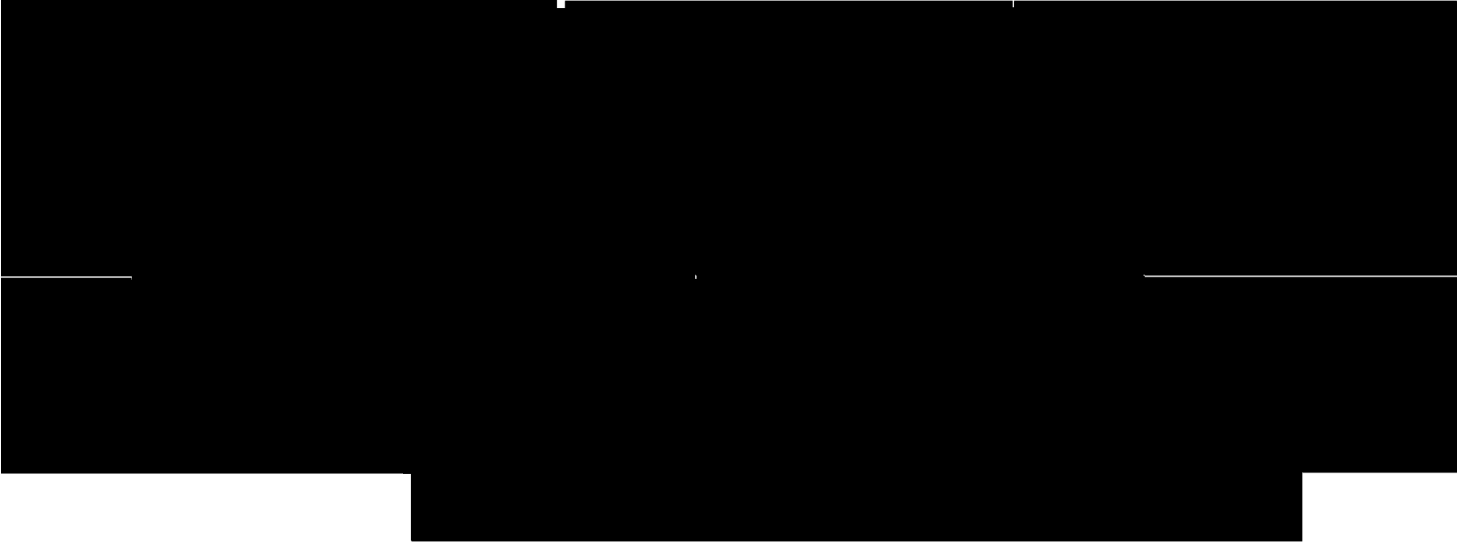


Figure 8-13. g

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period

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## 10.0 MINERAL PROCESSING AND METALLURGICAL TESTING

### 10.1 Historical Metallurgical Testin

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## 10.2.3 Materi









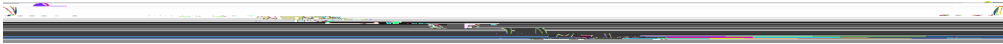


Table 11-1: Summary of Mineral Resources











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Unit	Model Code
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plots

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## 11.7 Block Models









factor of glacial overbur



Figure 11-5: LOM Phase Mineral Resource Classification



Figure 11-6: Mineral Resource Classification Exclusive of Mineral Reserves











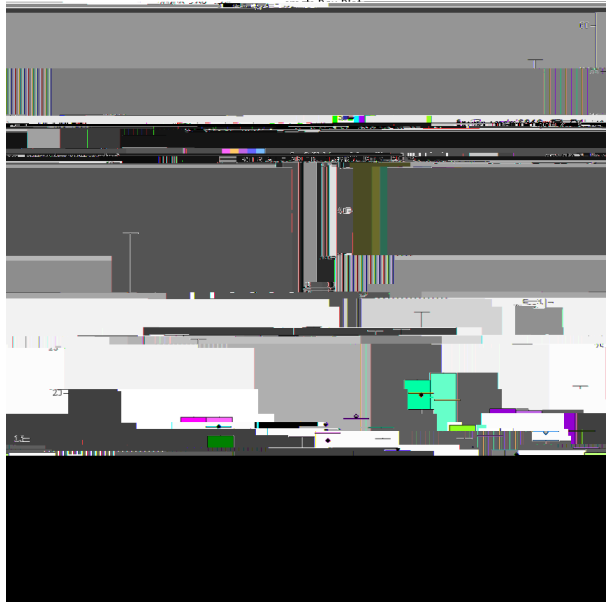


Figure 11-8 Whisker Plots for smgfe Composites and Blocks Otype2 Domains

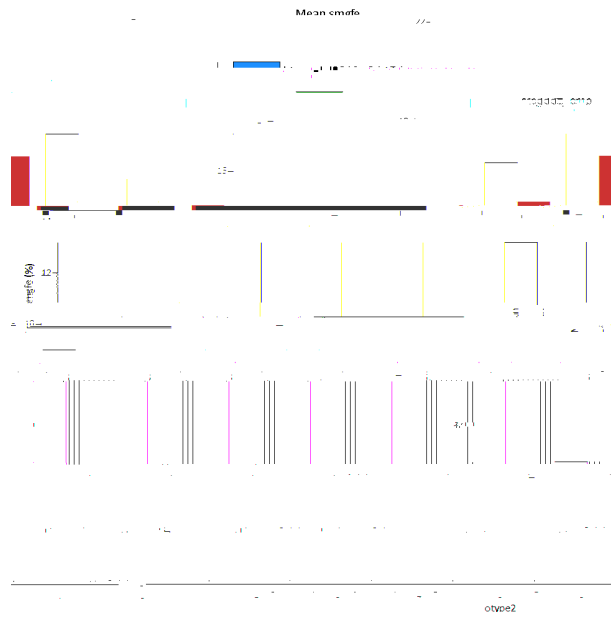


Figure 11-9 Histogram for smgfe Composites and Blocks Otype2 Domains

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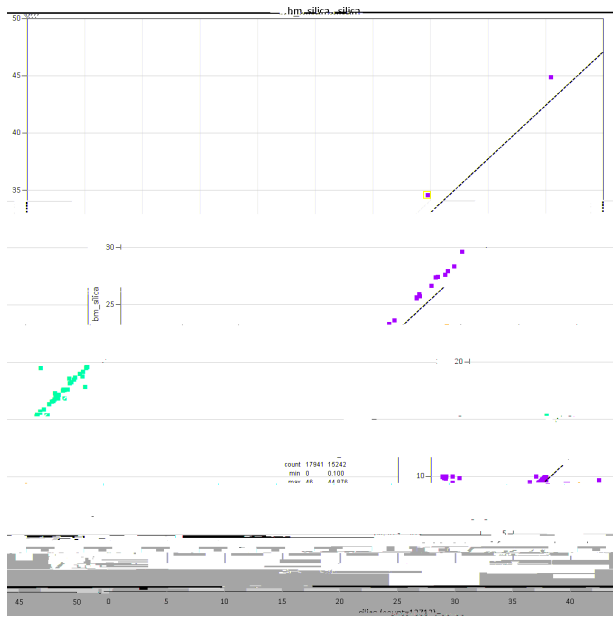


Figure 11-13: Scatter Plot Silica Grades Comp







Table 11-10 Summary of Mineral Resource - December 31, r













## 12.3 Pit Optimization

HibTac's Mineral

















The current slope design used for the rock slopes at HibTac includes an IRA of 42.5°, which is significantly less than the Barr 2012 and 2019 [ ]

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## 13.4 Production Schedul







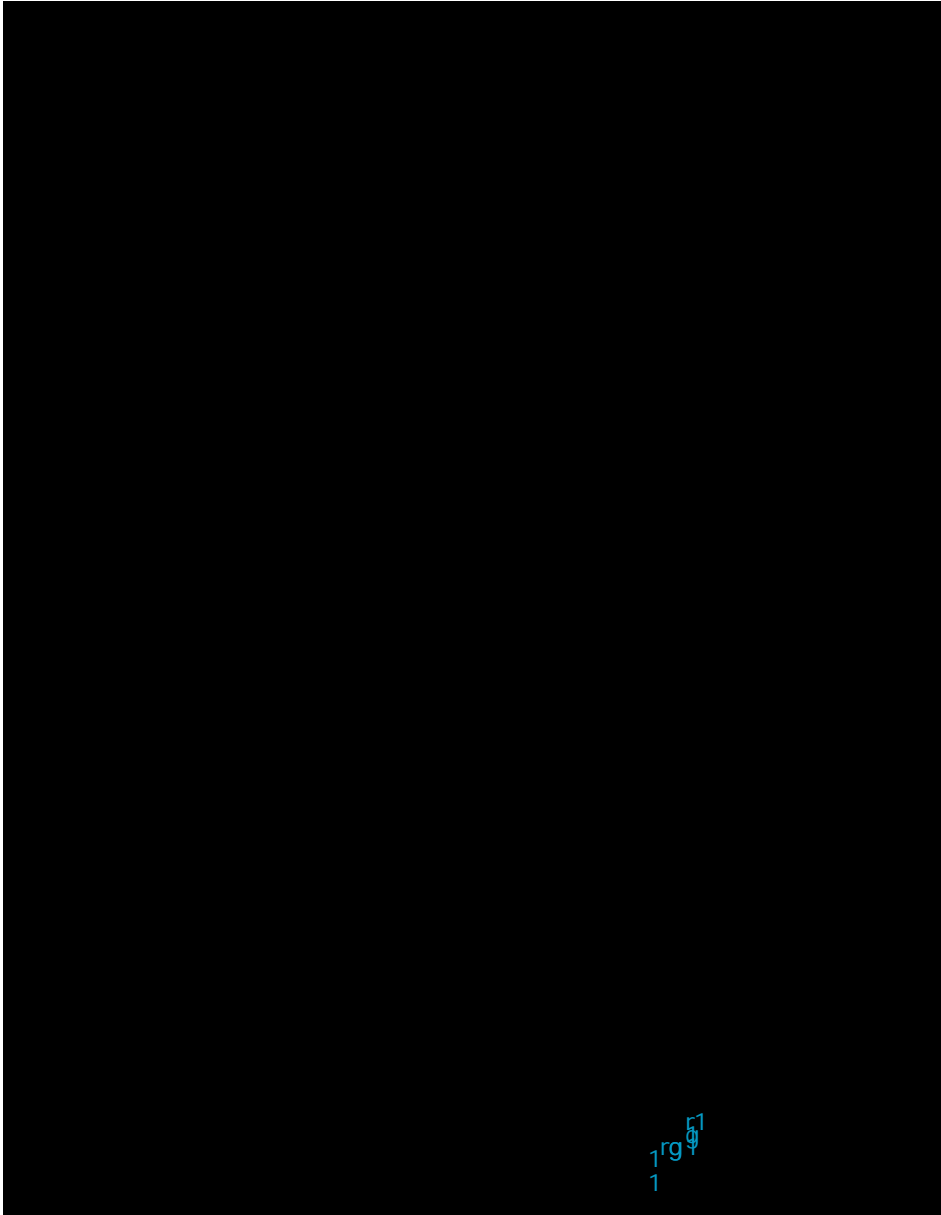
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The HibTac LOM p





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Figure 13 111i<sup>1</sup> 4 ) è





13.6 M















Table 14-4: Summary of Proc





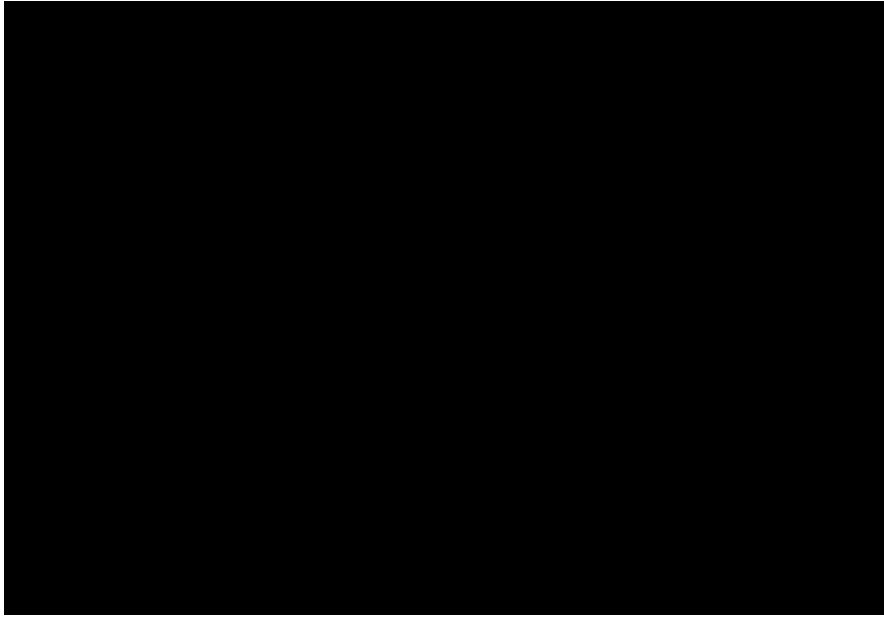












Source

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Figure 15-6: Regional Electrical Power Distribution





## 15.8 Water Supply

The water for mining an





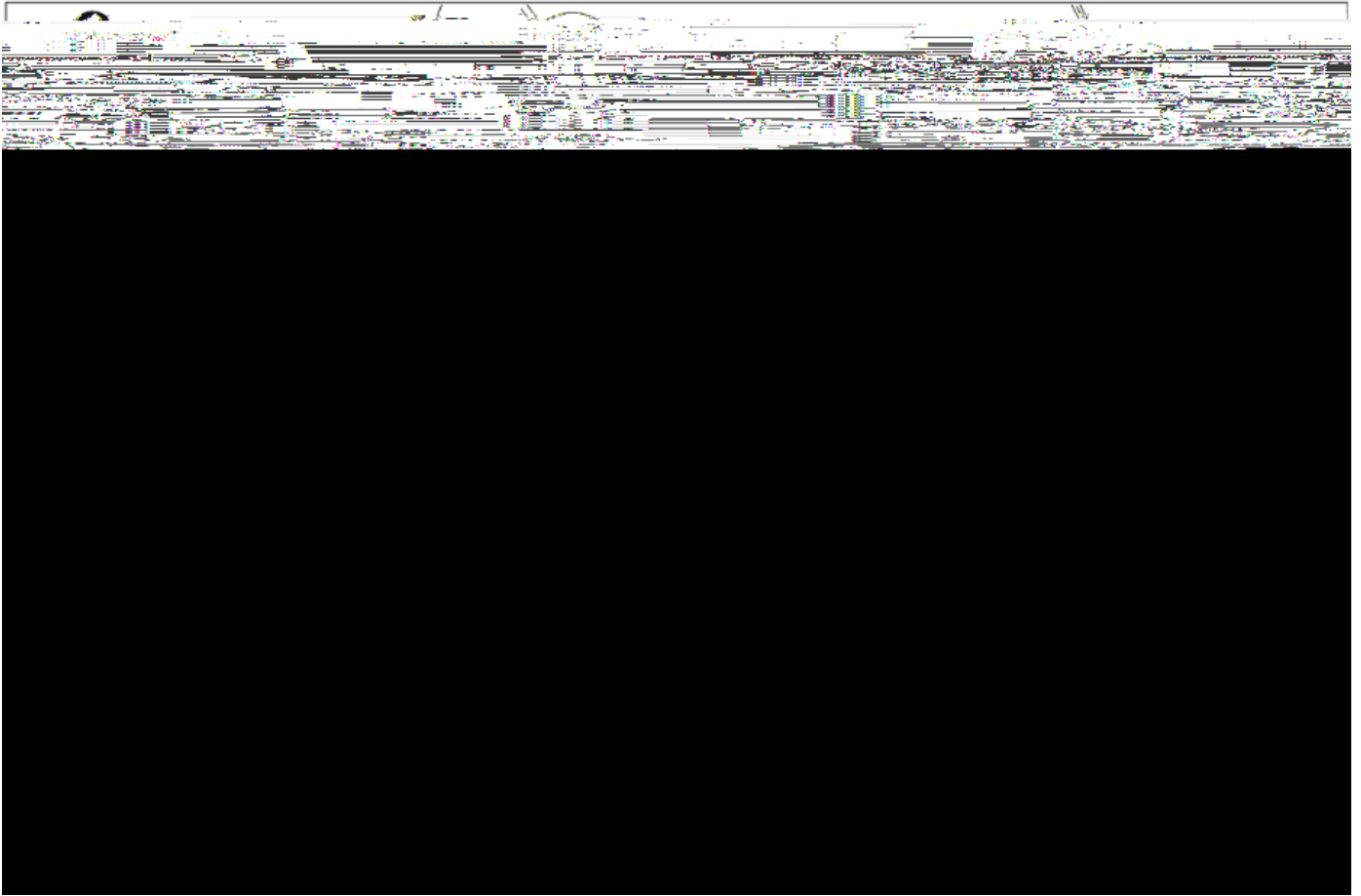


Figure 15-7: H

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## 17.0ENVIRONMENTAnn







#### 17.2.4 Tailings Disposal, Mine Overburden, and Waste Rock Stockpiles







- Basin area: Request for aut







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## 22.0 INTERPRETATIONeIORI

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Area 1, 2, and 3 (WA-1, WA-2, and WA-3 with approximately 2,080 acres,

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Technical Report Summary on the Minorca Property,  
Minnesota, USA  
S-K 1300 Report

Cleveland,











12.2	Previous Mineral Reserve Estimates in 2012 (Mts Fe; \$2.25 per ton)	a	122
12.3	Pit Optimization	n5A	123
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13.6	Mining Fleet	142
13.7	Mine Wo	

17.4 Mine Closure Plans and Bonds

173

17.5 Social and Community

174

180 ~~Environmental~~ ~~Operational~~ ~~Performance~~ ~~Reporting~~









Table 6-



Table 13-7: Major Mining Equipm













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Table 1-5: Summary of Minorca Mineral Resources - December 31, 2021  
Cleveland-Cliffs Inc. - Minorca



Notes:

1. Tonnage h









2021/2022. Through this agreement, Minorca has invested in new infrastructure to be















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## 3.0 PROPERTY DESCRIPTION

### 3.1 Location

The Property is located in St7

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Table 4-2 Near-by Pop



Brown glacial se'

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Table 5

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## 7.0 EXPLORATION

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Core was selected from 14 drill holes by the mine geologist to be measured for density. The first step is to measure the mass of the sample, then measure the mass of the sample totally submerged in water. Because of water's buoyant force

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Data presented in F

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### 8.2.3.3 Weight Recovery Preparation Duplicates

Weight recov

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variation observed in sample







variables. The starting point for improving sample



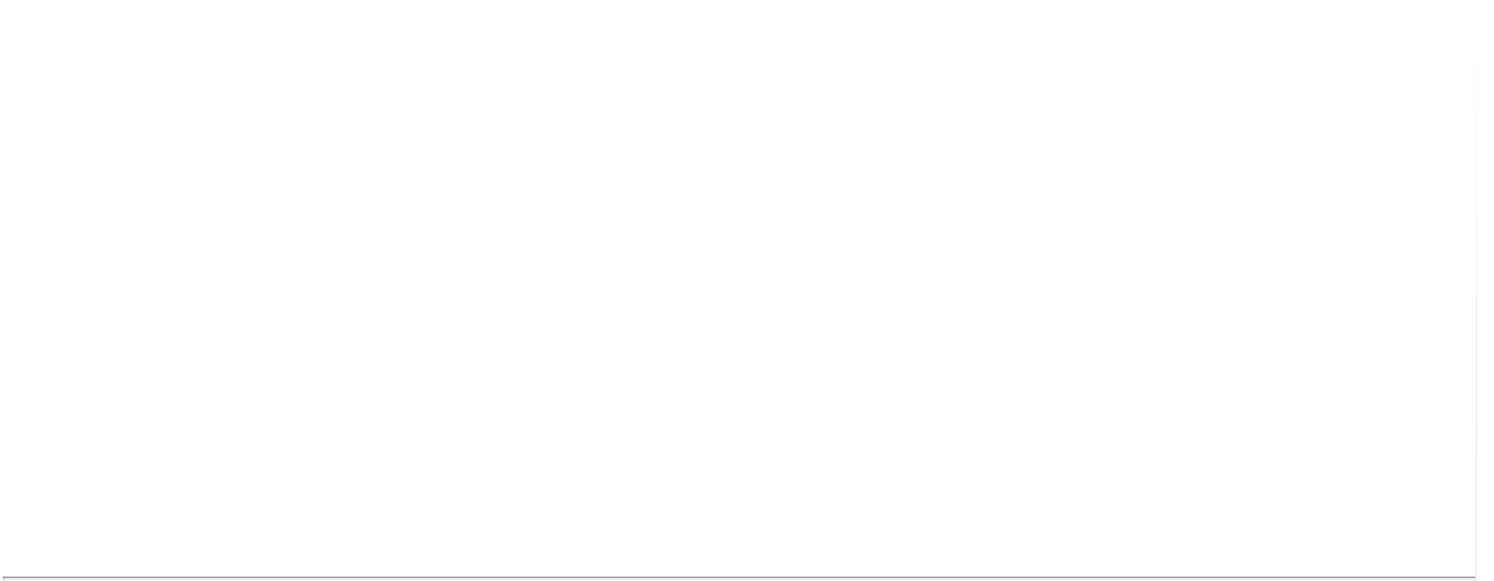




Figure 9-1: Drill Hole Database di

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drilling at Minorca,





















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volume representation of the geologic contacts (wiref /













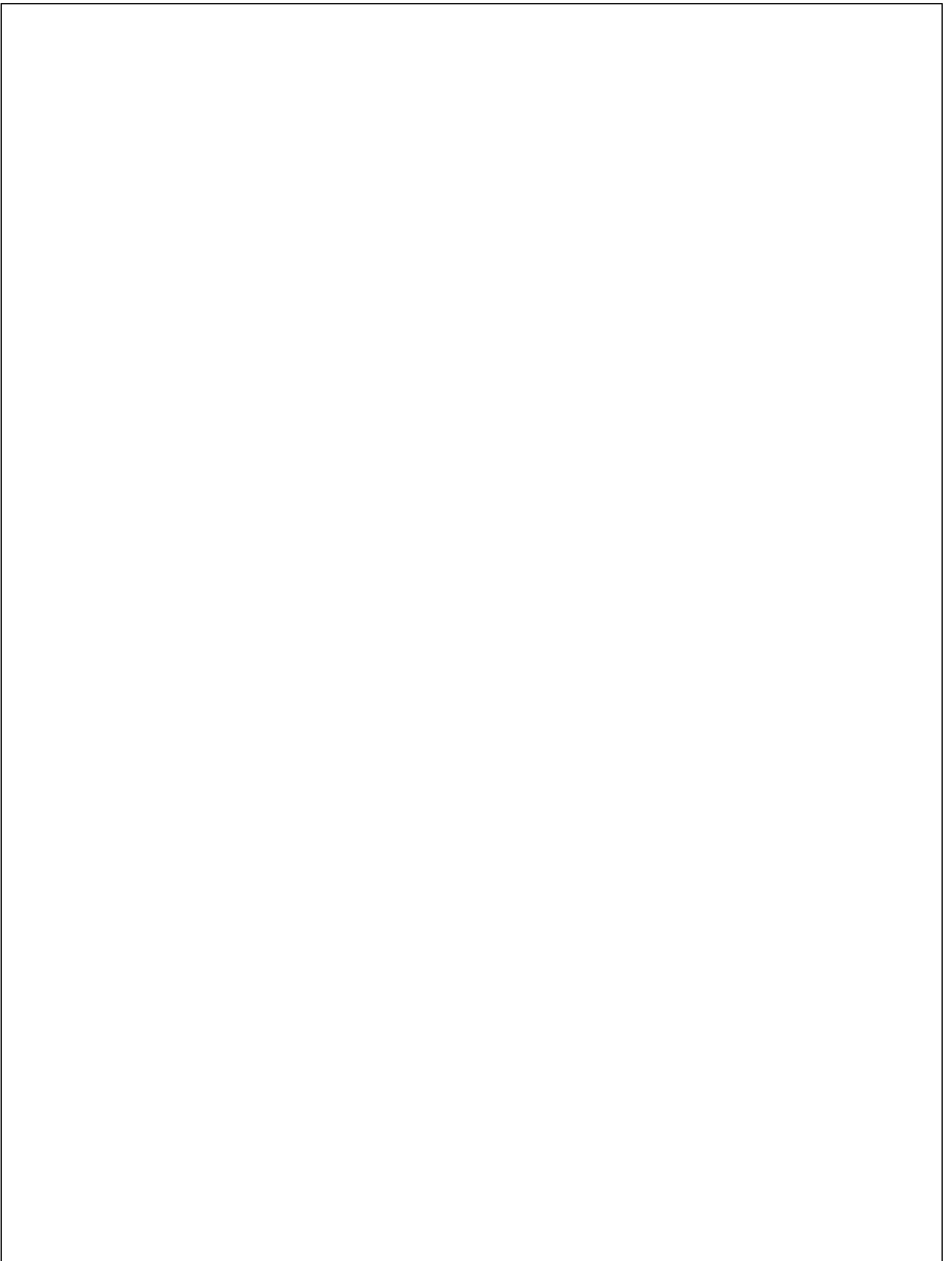


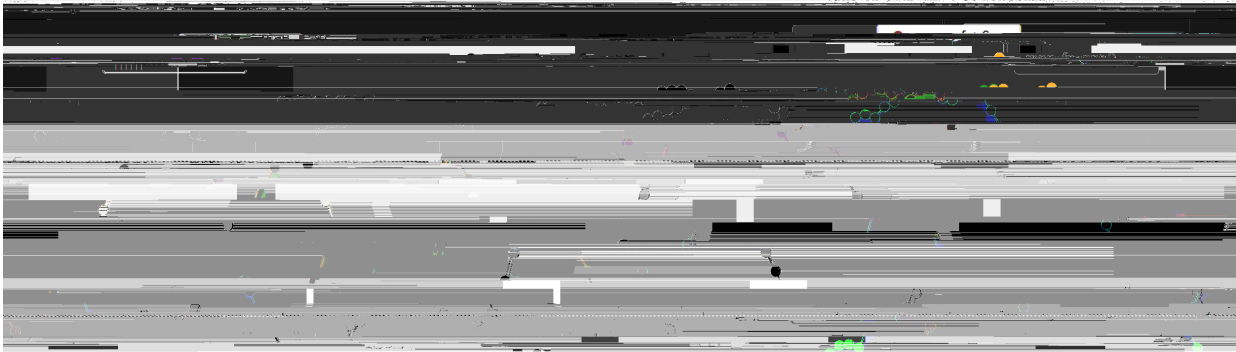






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Source: SLR, 2021

Figure 11-9. North-South F t 5

















In 2019, the L















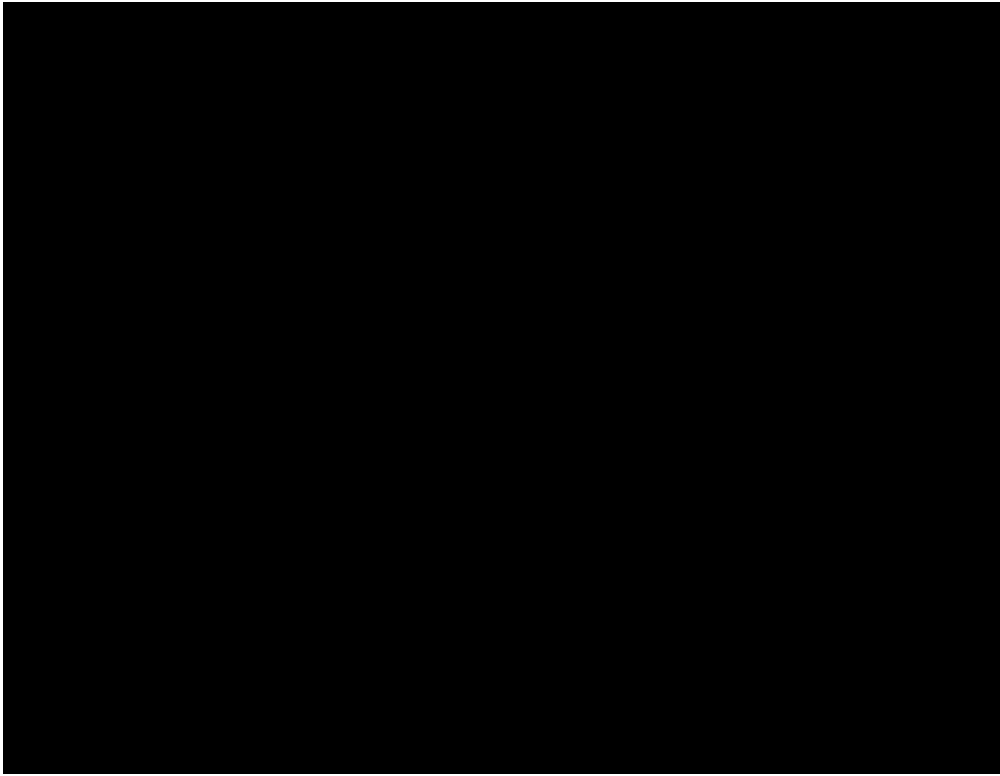


Figure 12-4: Minorca Pit Optimization and Pit Design Limits

In general, the final piener—



## 13.2 Pit Geotechnical





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### 13.3 Open Pit Design

The Lauren\$an, East 1, and East 2 pit designs combine current site M41mbse2s

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### 13.4.2 Grade Control

As described in Section 6.0, the geology is well known with two primary ore minerals, the ~~entire~~ and

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Of note, a production curtailment occurred dur\$









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## 14.0 PROCESSING AND RECOVERY METHODS

### 14.1 Process Description

A simplified process is shown in Figure 14.1.

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## 19.0 ECONOMIC ANALYSIS

### 19.1 Economic Criteria

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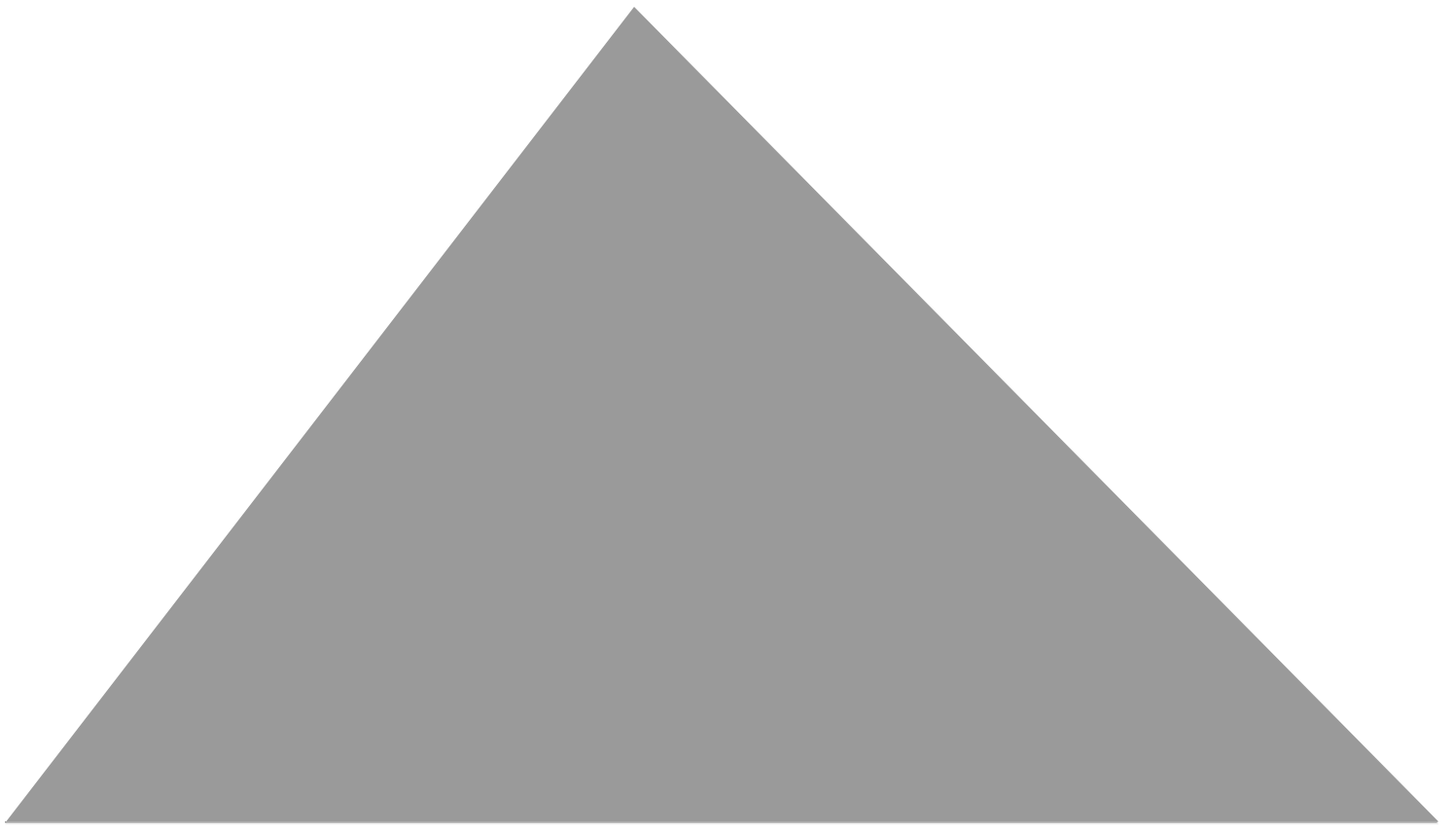


Perry, E.C., Jr., Tan, F.C., Morey G.B., 1973, Geology and stable isotope geochemistry of the Biwabik Iron Formation, Northern Minnesota: Economic Geology, Volume 68, pp. 1110-1125.

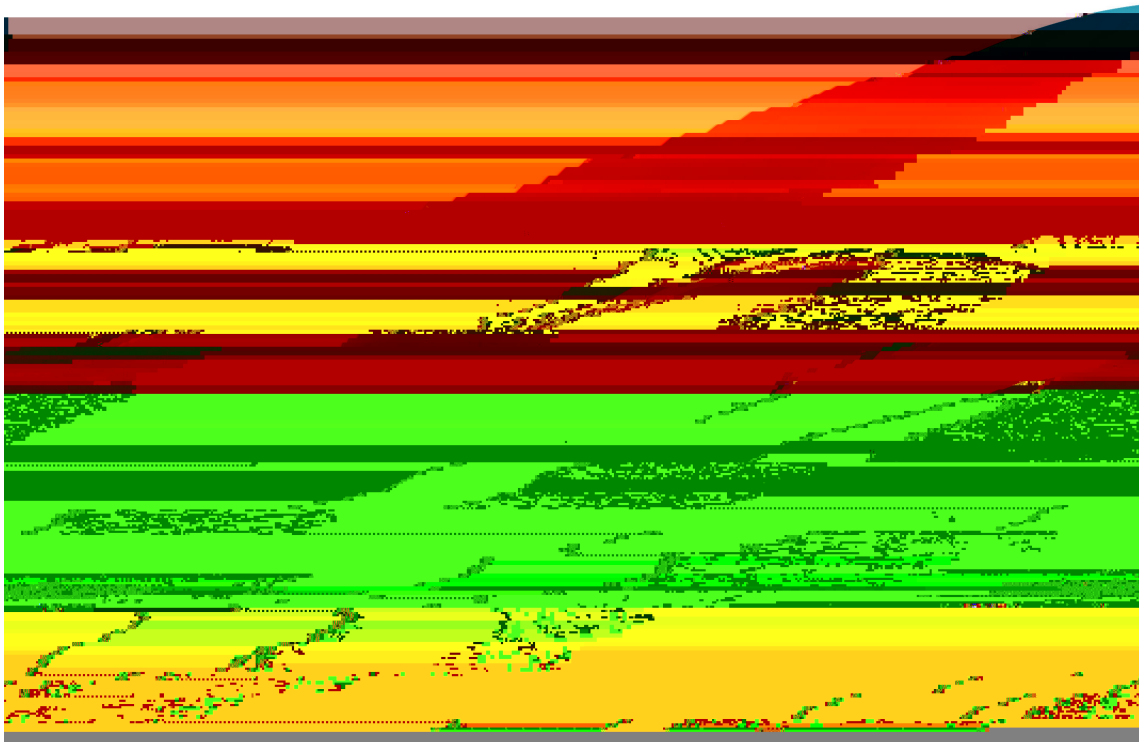
Ryan, T.M., and Pryor, P.R., 2000, Designing catch benches and interramp slopes, in Slope Stability in Surface Mining (eds W.A. Hustrulid, M.K. McCarter & D.Jt

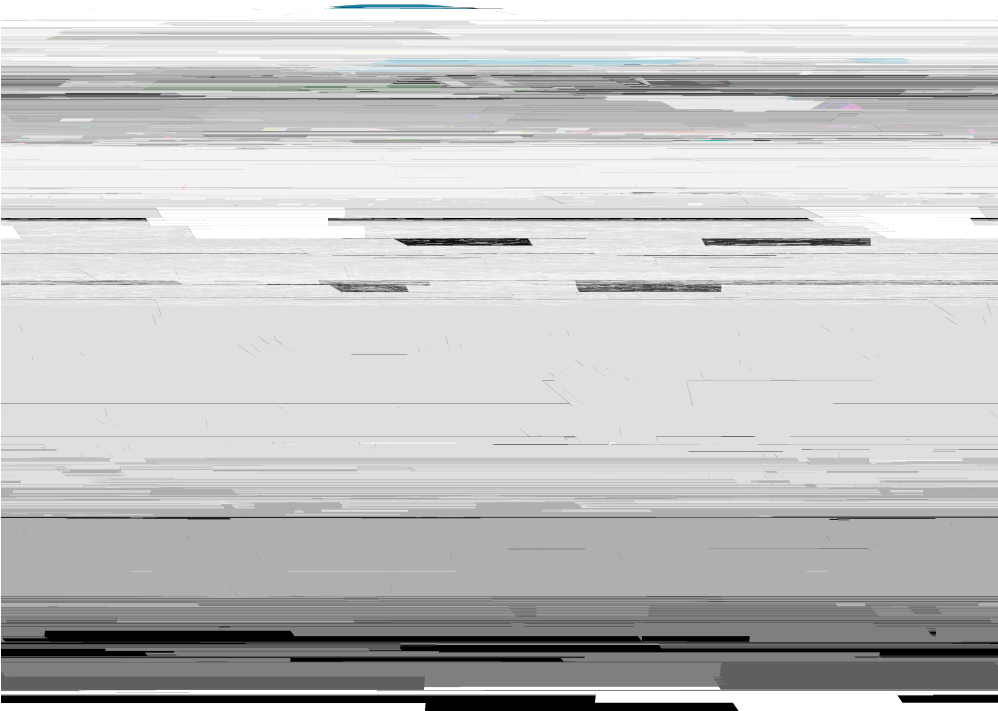
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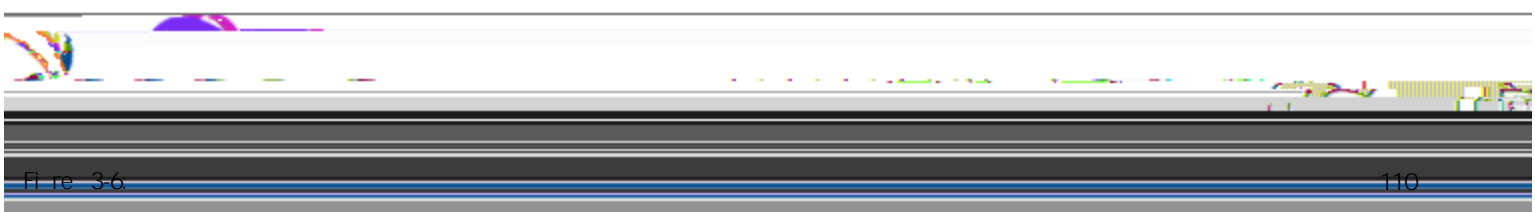


Figure 3-6

110

Figure 14-1: Northshore Crushing Flowsheet

116

Figure 14-2: Northshore Concentrator Flowsheet

117

Figure 14-3: Pellet Production Yard Flowsheet

120

Figure 55-1: Northshore Road Sheet







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44 In future updates, use local drill hco















A stratigraphic model representing the Bivabik IF was constructed in Maptek's Vulcan 6 —













conducted in accordance with the Financial















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## 3.0 PROPERTY DESCRIPTION

### 3.1 Property Loca





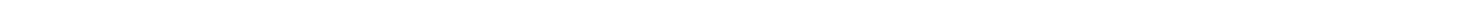




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Figure 3-2 Peter Mitchell Mine Title Boundaries











### 4.3 Local Resources

Labor is readily available in the Property area. Medical facilities with trauma centers are

Sa

















Figure

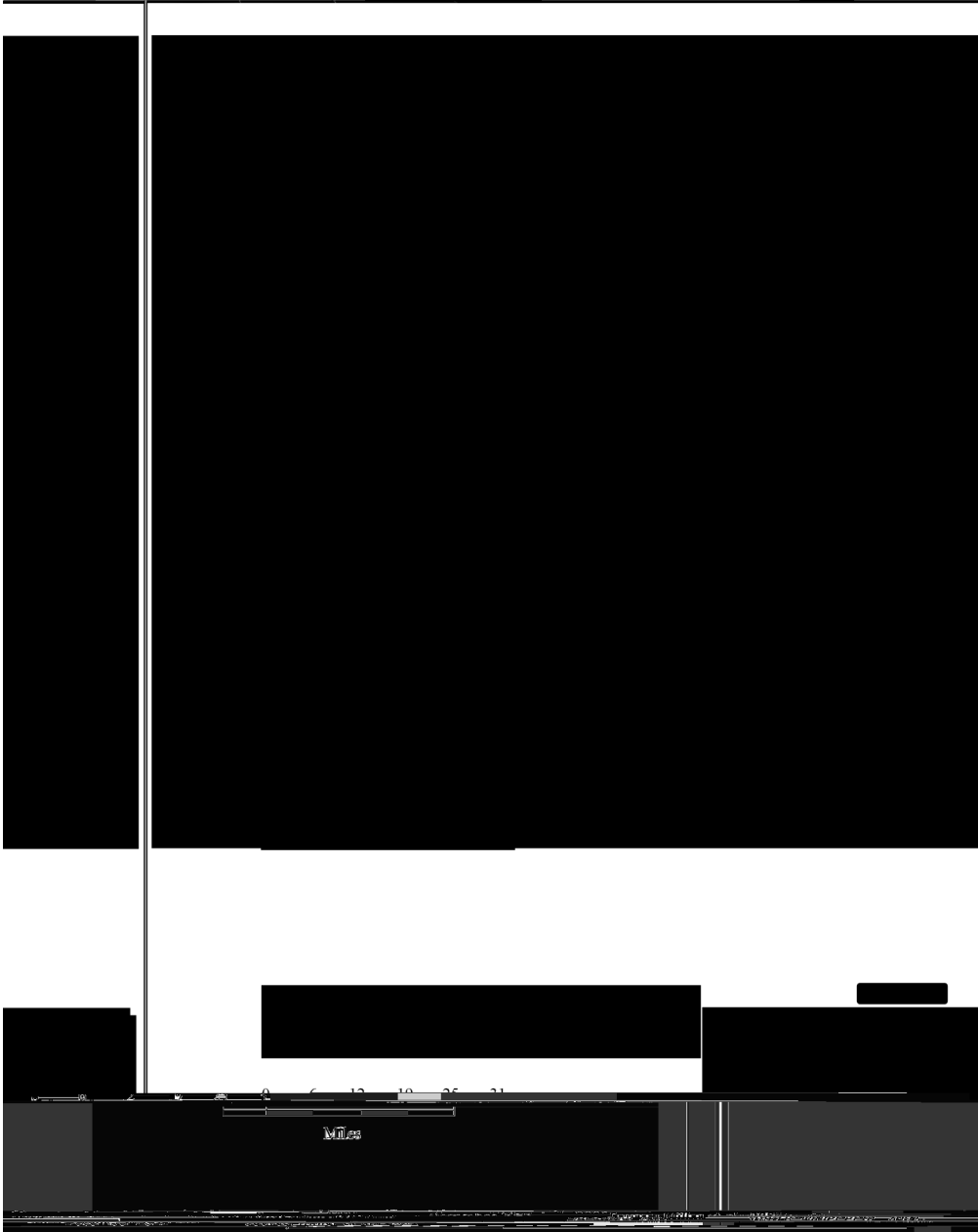


Figure 6-2 Regional Geological Map



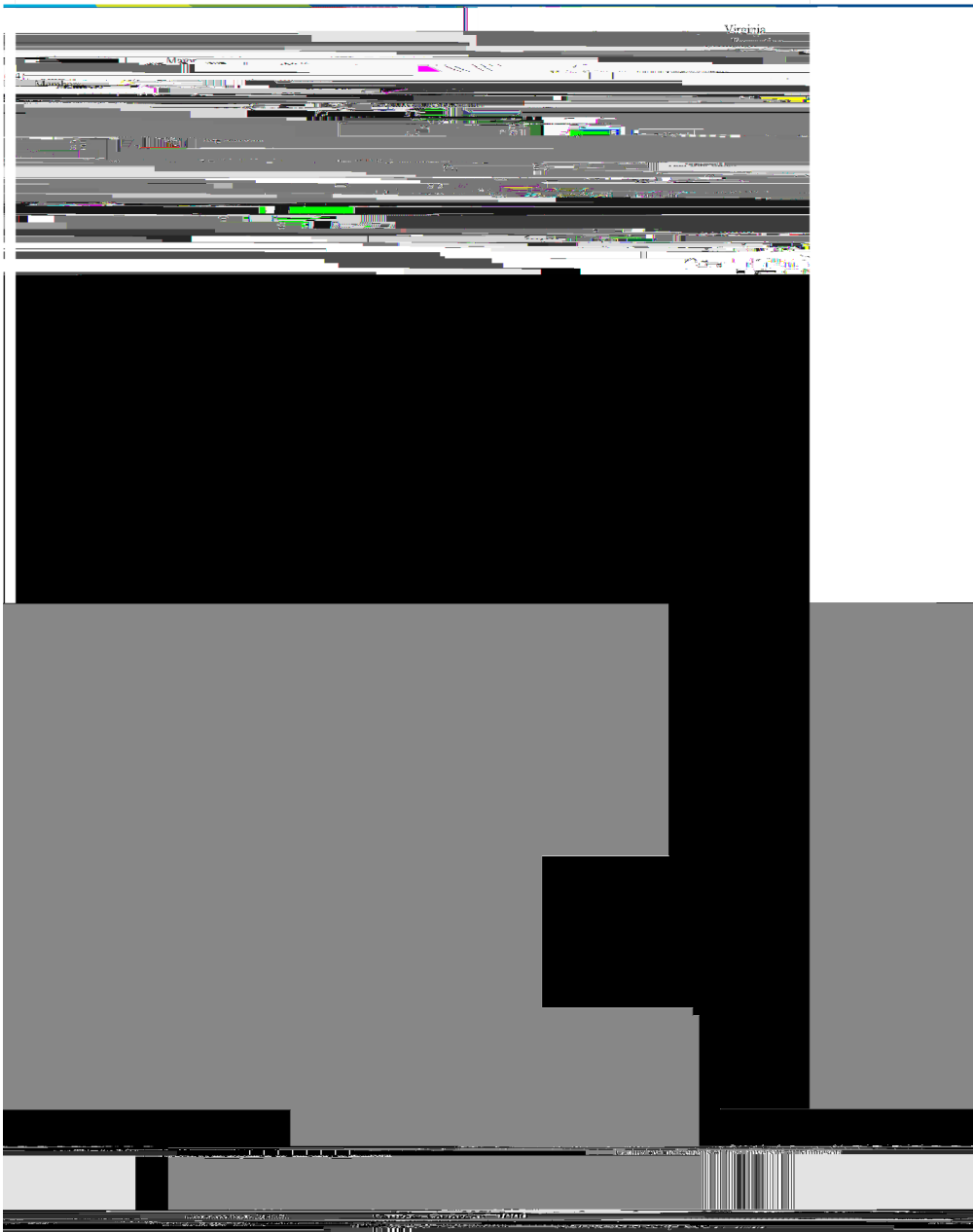


Figure 6-3: Regional Stratigraphic Column of the Biwabik IF









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## 6.5 Deposit Types

6.5.1















## 7.2.2 Procedures

### 7.2.2.1 Collar Coordinates

Planned drill hole collar locations are located using a digital Global Positioning System (GPS) receiver by a Northshore surveyor. When the drill hole is completed, the location is identified with a wood post of unique color to distinguish it from other posts or markers in the pit or Bor-Sy-Oy g

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## 8.1.2 Sample Analysis

Several proc







Sample preparation requires using a buckboard and muller to grind the sample to 100% passing -200 mesh. The method involves an









## 81.26 Concentratability

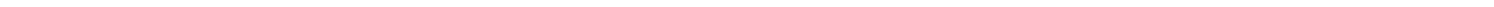
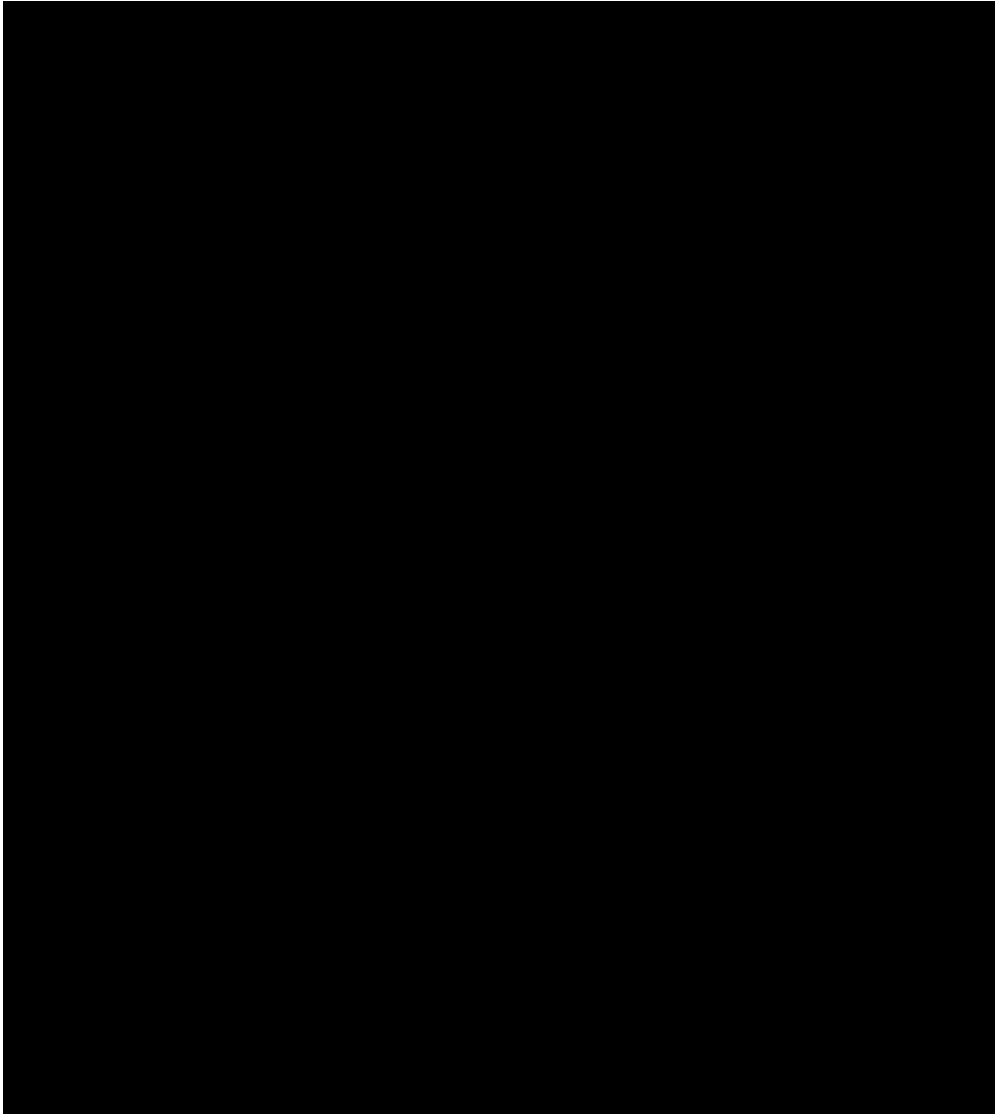
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Figure 8-4: Control Plots of MagFe and Concentra





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## 10.0 MINERAL PROCES





























## 11.7 Block Model

A sub-blocked model is created in Vulcan with dimension and origin as



















## 11.11 Model Validation

Blocks were validated using industry-standard techniques including:

- Visual inspection of assays and composites versus block grades (Figure 11-7 and Figure 11-8)
- Visual comparison







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120 MINERAL RESERVE<sup>22</sup>

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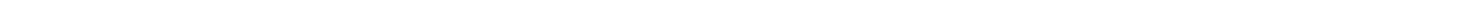








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- The mining practices and slope conditions observed at























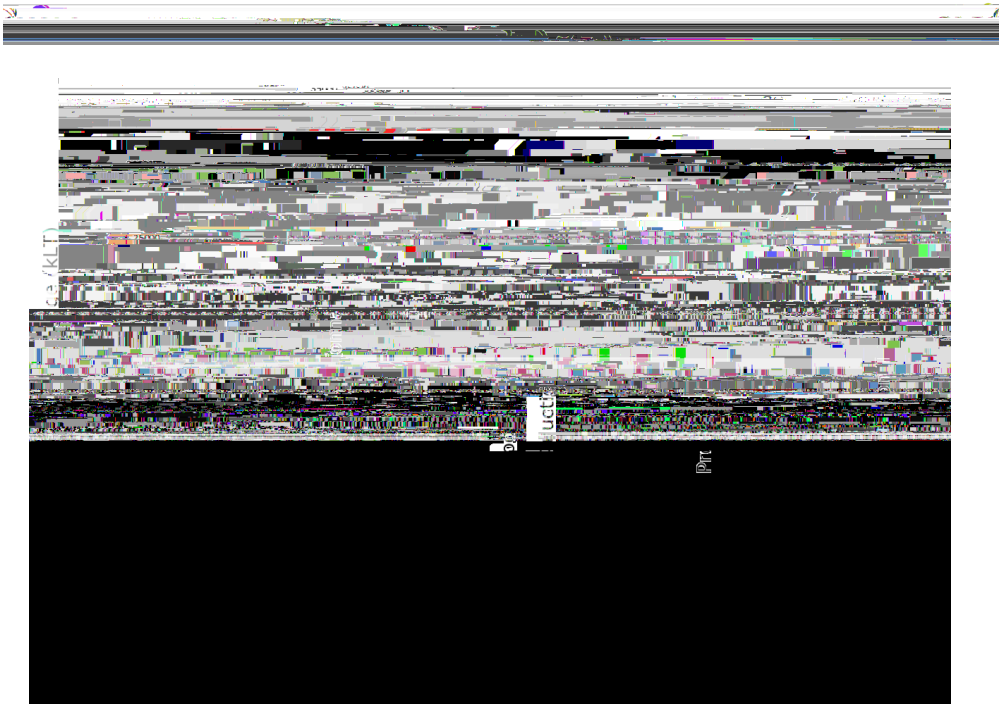


Figure 13-5: Past and Forecast LOM Production

### 13.5 Overburden and Waste Rock Stockpiles

Overburden and waste-rock material is stockpiled in designated stockpile areas based on where it was mined from and material type.

NorthK

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In 2018, Golder Associates Inc. (Golder, 2018) assessed the current stockpiles using guidelines published by Hawley and Cuning (2017) to classify the instability hazard as either very







## 14.0 PROCESSING AND RECOVERY METHODS

### 14.1 Crushing a

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NSM uses













A coarse grind contains less than 89% passing 325 mesh.

A fine grind contains 91% passing 925 mesh.

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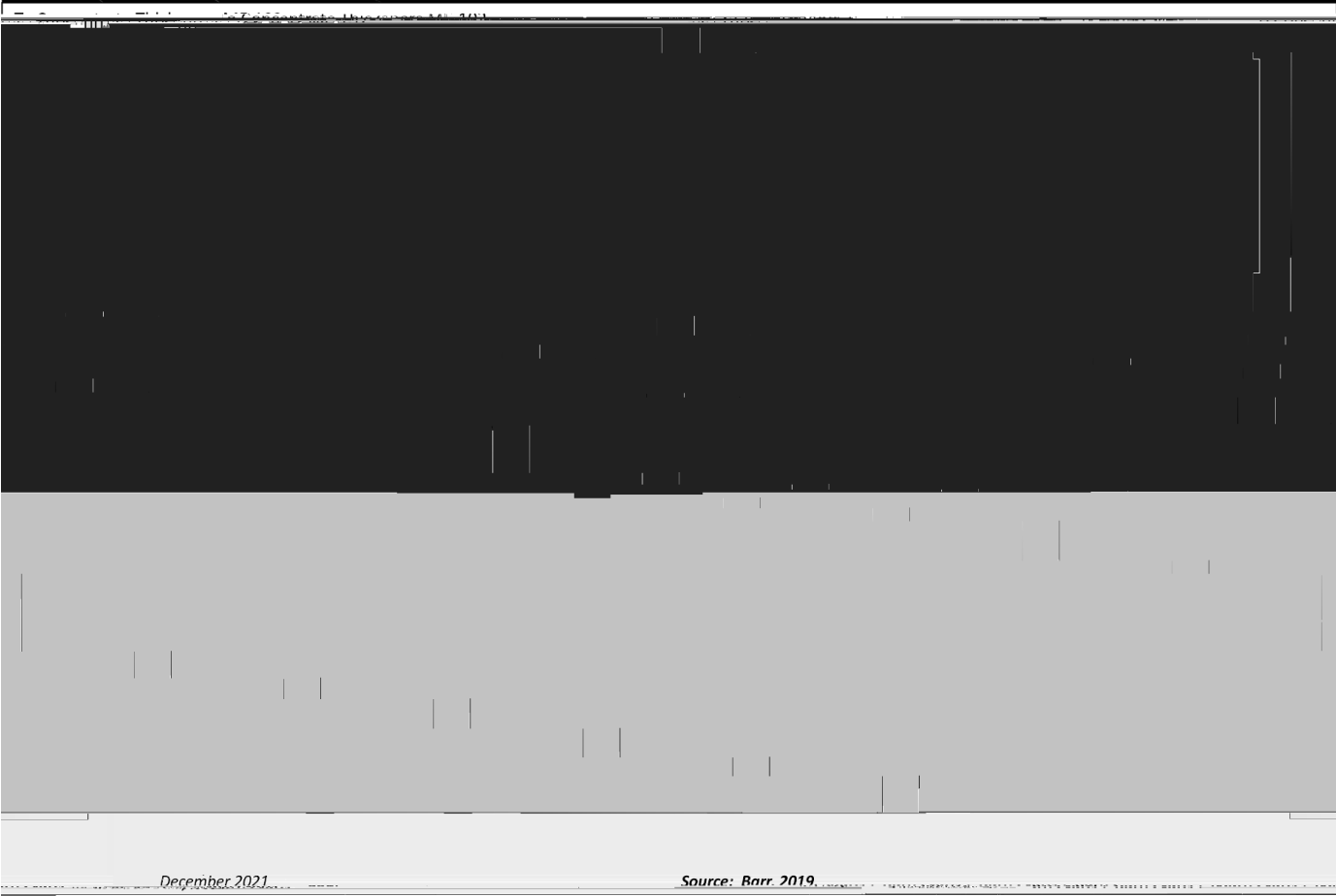


Figure 14-3: Title of the figure, followed by a series of characters: T i e T T g F i e e u t r u T i i n i L L v L N u u











Table † e e -









Dirty fines from the concentrator are loaded in 80 LT side-dump cars at Silver Bell and corcoe BLN inc

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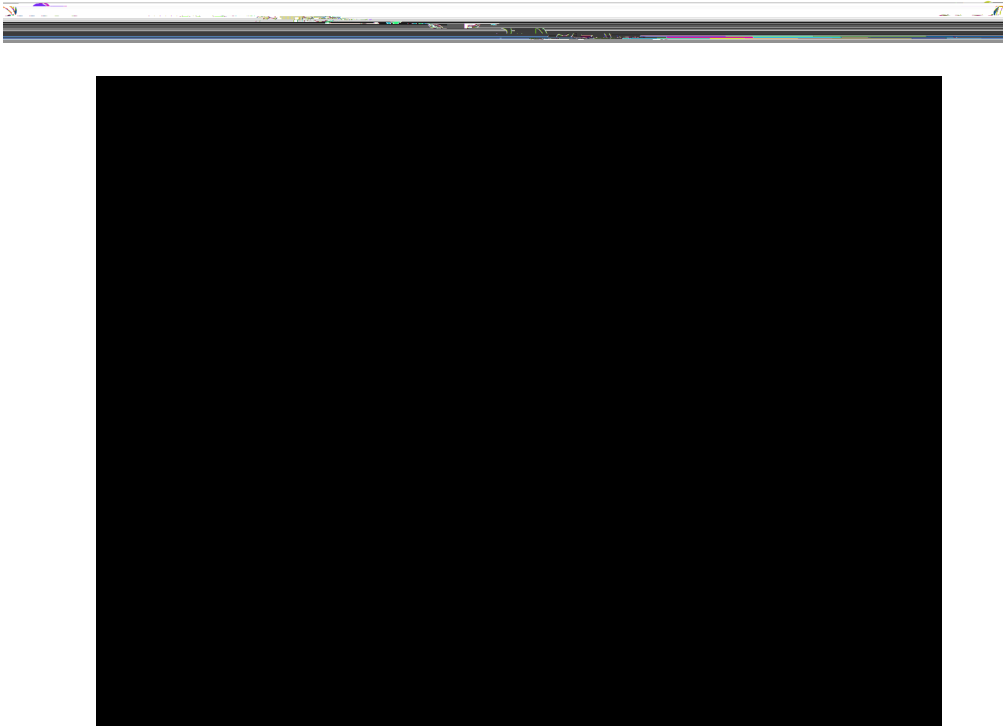


Figure 15-2 Northshore Mining Railroad

### 15.3 PortFaces It

The portFaces two ma0 e Sy



shipping season, station continues operating pellet stockpile conveyors and performing maintenance. A photograph of the port facility is shown in Figure 15-3.

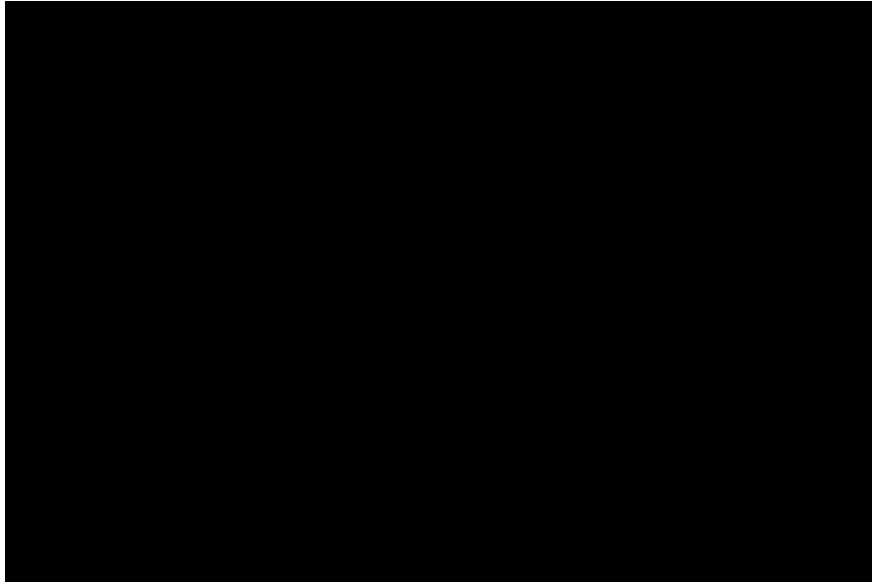


Figure 15-3 Silver Bay Port Facility

#### 15.4 Tailings Disposal

NSM operates a tailings storage facility (TSF), which encompasses approximately 2,500 acres located approximately seven miles by rail northwest of the Plant, referred to as the Milepost 7 Tailings Basin. The TSF is permitted and is comprised of three perimeter areas (DA, DE, and DF) and a central area, referred to as the Milepost 7 Tailings Basin. The TSF is permitted under a permit issued by the Department of Environmental Protection (DEP) under the Clean Water Act (CWA).





## 15.4.1 Facility Des





presently planned t

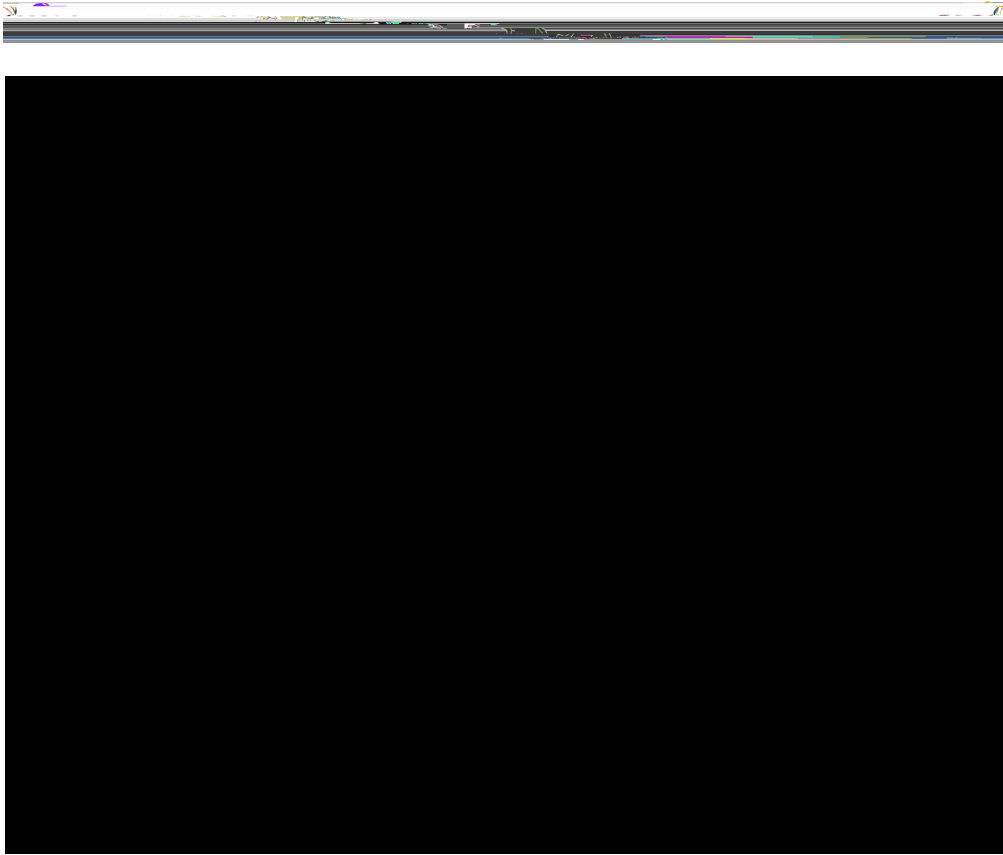












Source: Northern Natural Gas Company

Figure 15-6: Regional Natural Gas Supply

## 15.7 Diesel, Gasoline, and <sup>any</sup> I



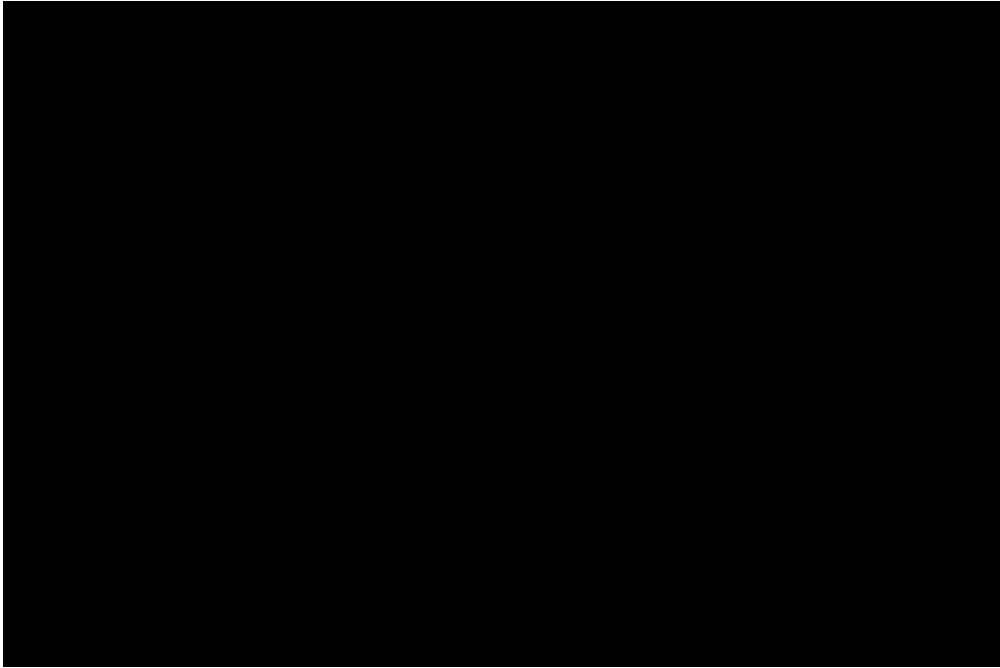


Figure 15-7: Peter Mitchell Mine Facilities

### 15.11 Silver Bay Plant Facilities

Fig rs 04 / gg / r 0 0 9 n 0 / è /







Cliff is uniquely positioned







## 16.2 Contracts

### 16.2.1 Pellet ete









- U.S. Env









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Permit No	Description	ê w pÿ	ê nã Uctio	In	Ee, cãv ê zv	e	W
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Mine and Plant facilities are not established.







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## 19.0ECONOMICA O







Table 19-4: Life of Mine Indicative Economic Results  
Cleveland-Cliffs Inc. – Northshore Property

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Table 19-5: After-tax









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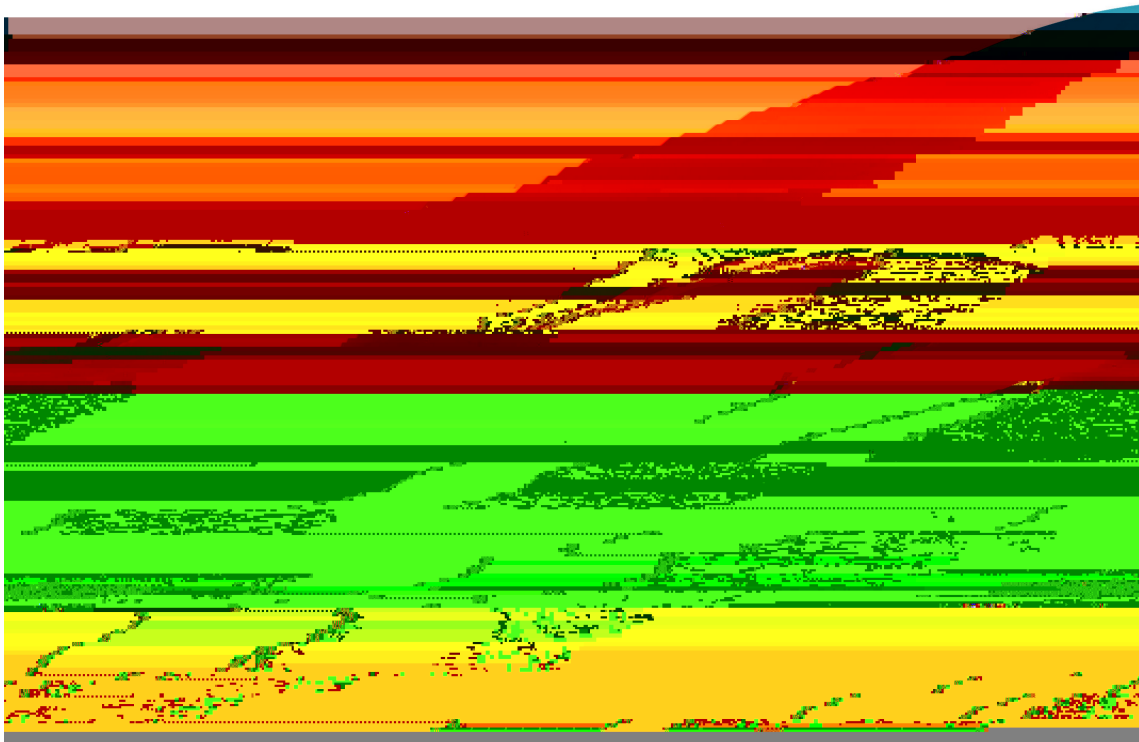


















## Technical Report Summary











8.0 Sample Preparation, Analyses, an





## 14.0 Processing and ReN

18.0 Capital and Operating Costs

169

29.1 Capital Costs

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Table 1-1: Technical-Economic Assumptions 4

Table 1-2: LOM Production Summary 5

Table 1-3: LOM Plant Production Summary 5

Table 1-4:  
1906 J-4







Table 12-2: Mineral Reserve Classification Criteria

105

Table 12-3: Profitability Criteria for Mineral Reserve Classification

















- In both 2019 and 2020, actual versus model-





#### 1.1.1.4 Infrastructure

- The Property is in a historical













In 1991 the TBS mine was idled, and in May 1999 Eveleth Mines closed the Line 1 concentrating and pelletizing line, reducing production to 4.2 MLT of iron ore pellets per year. T

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Table 1-6: Summary of UTAC Mineral Reserves – December 31, 2021  
Cleveland-Cliffs Inc. – Unit D n II

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Acronym	Definition
HRC	hot-rolled coil
ID	Inverse distance squared
ID	Inverse distance cubed
IF	iron formation
IRA	inter-ramp angle
IRR	internal rate of return
ISO	International Standards Organization
KEV	key economic variables
LG	Lerdal Sa

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Figure 3-1: Property Location Map



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## 6.0 GEOL



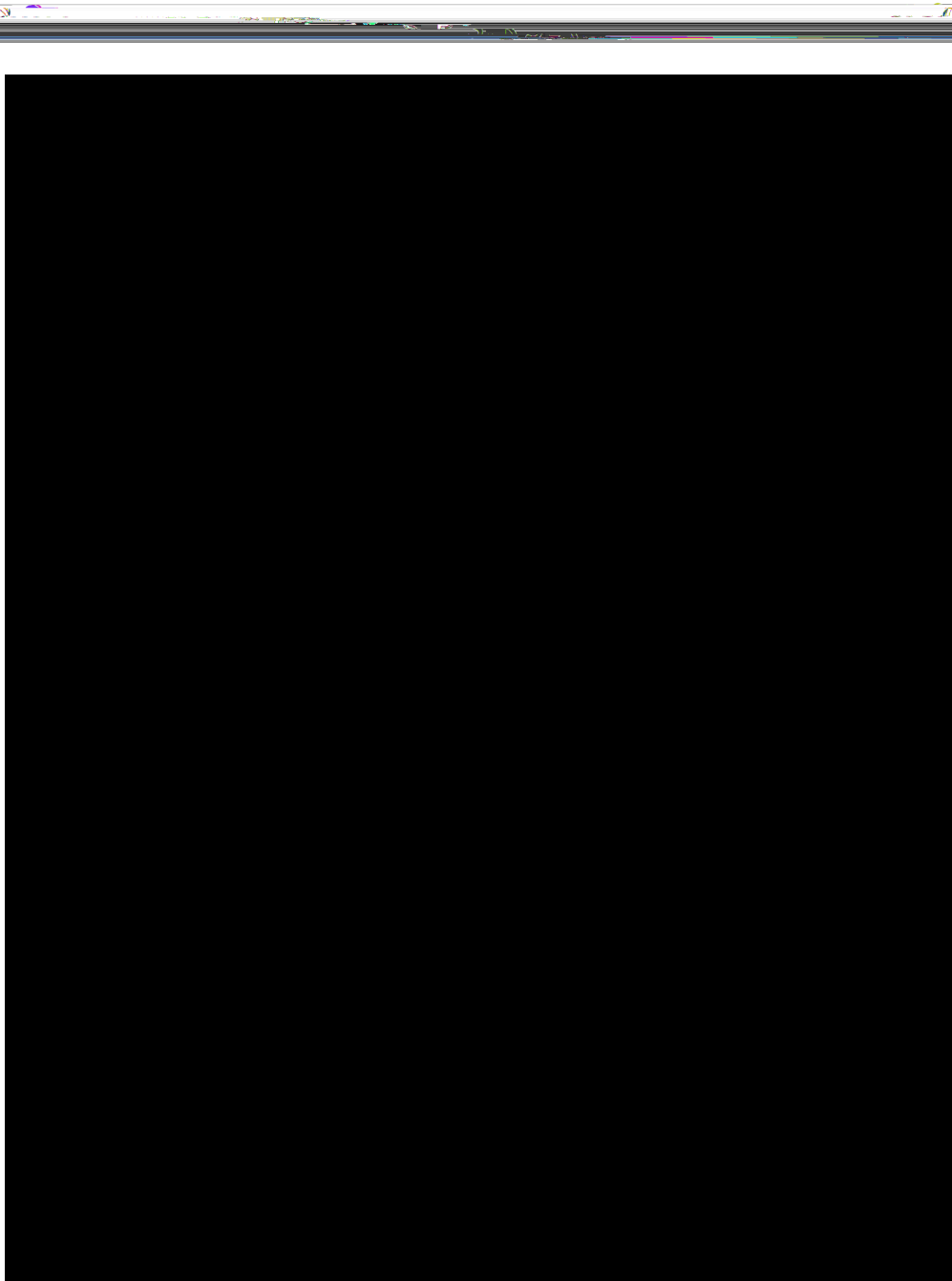
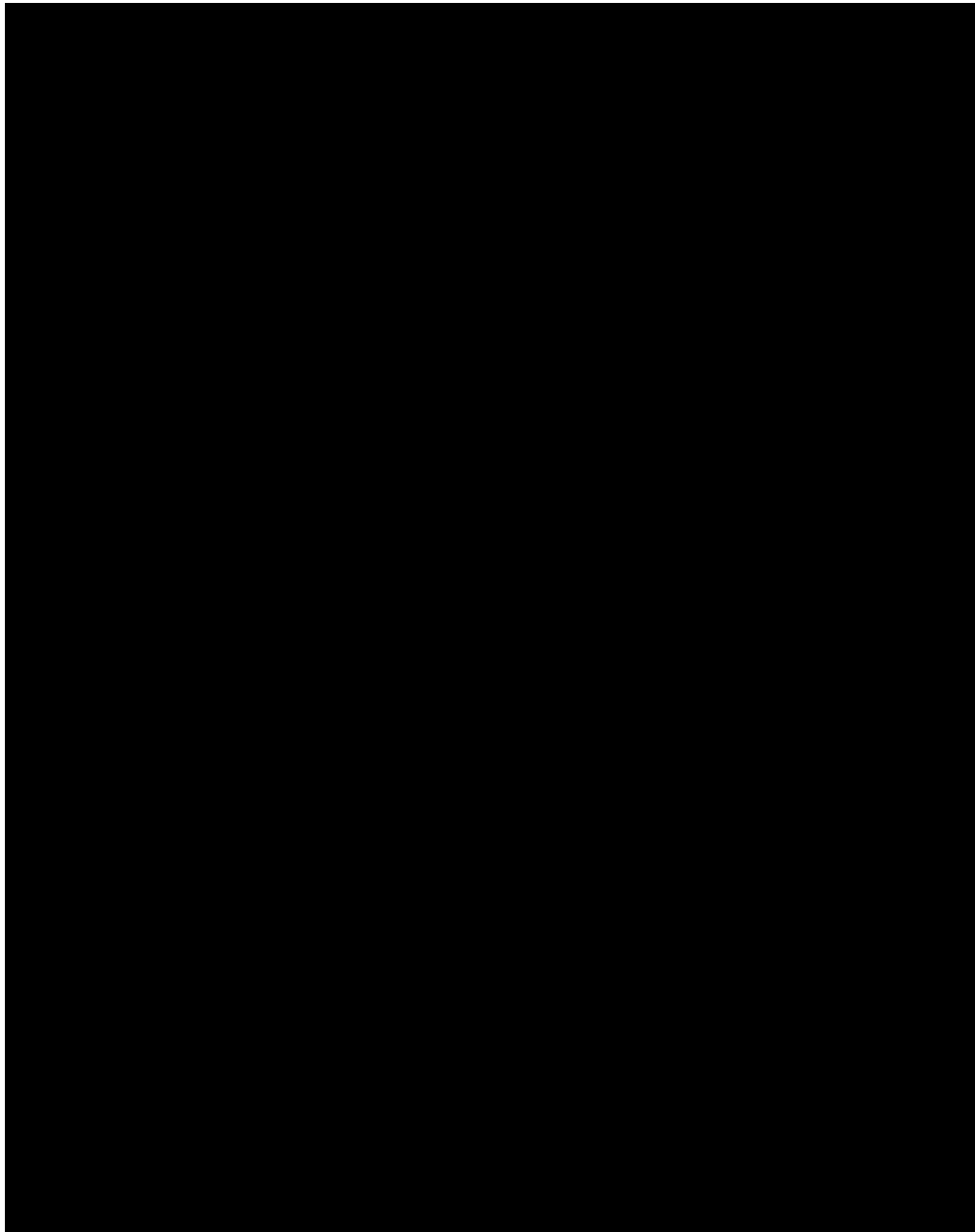


Figure 6-1: Location of the Animikie Basin and Schematic Cross-section Showing Development of the Basin





Note. UTACpitsinp

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formation in the upper portion, referred to as the "intermediate slate," is a district-scale marker interval. LS-1 is nova





Thunderbird Mine area. As a result, the UC-1 subunit's thickness is variable



0cm2 - The "Marker State" is a black thin









In the Thunder





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Subunpun

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## 7.0 EXPLORATION

### 7.1 Exploration

Cliffs does not maintain detailed records or results of early, non-drilling prospecting methods used during initial exploration activities, such as geophysical surveys, mapping, trenching, test pits, and sampling conducted prior to Cliffs' ownership of UTAC. Most exploration work

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## 7.2 Drillin















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81.10 D.





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in milling









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Table 11-1: Summary of UTAC Mineral Resources – December 31, 2021  
Cleveland-Cliffs Inc. – de 1-1: iee eel: e ,e1,





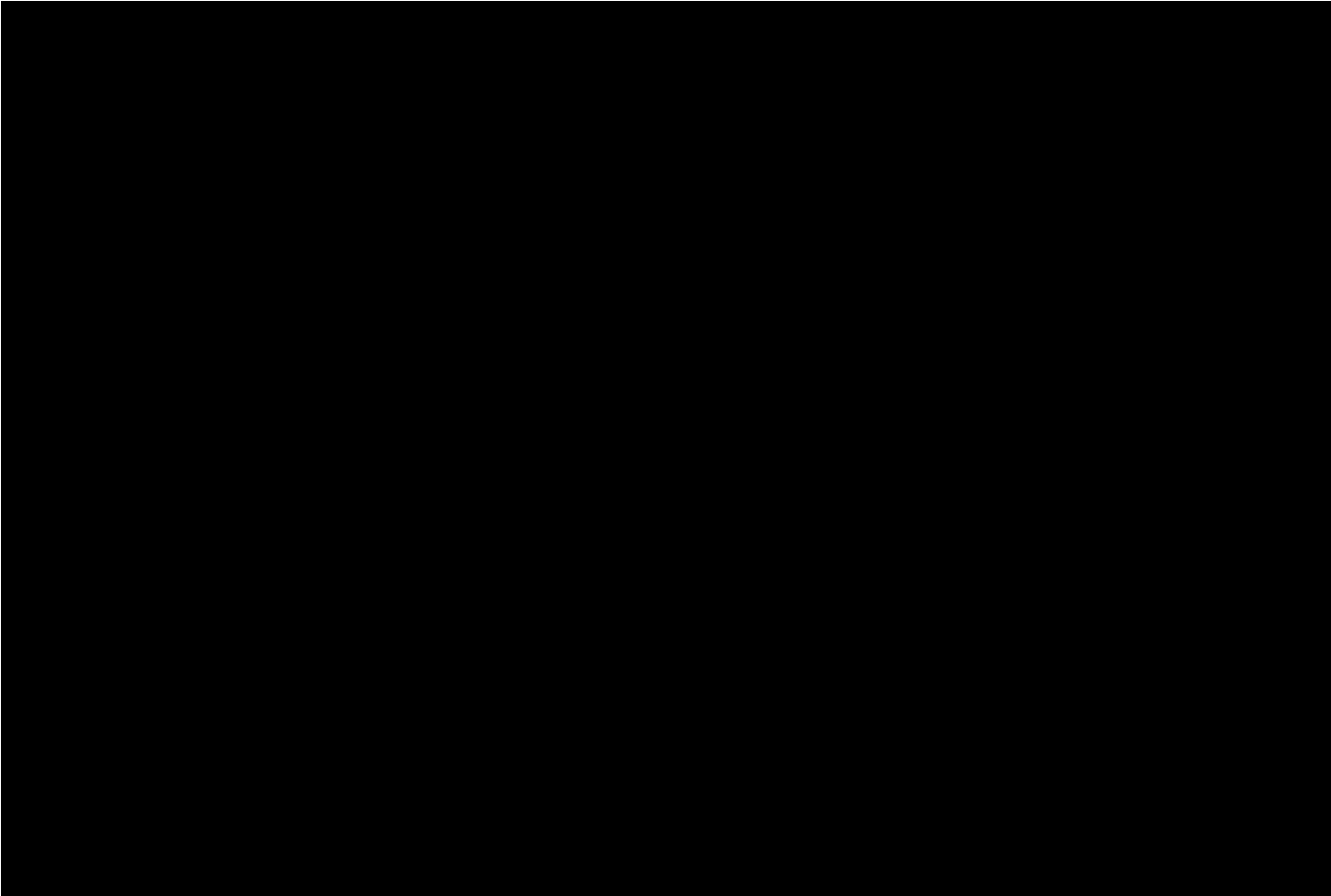


Figure 11-1: TBN Cross-section











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## 11.9 Classification

Definitions for resource categories used in this TRS are those defined by SEC in S-K 1300 Miner Resources and Management

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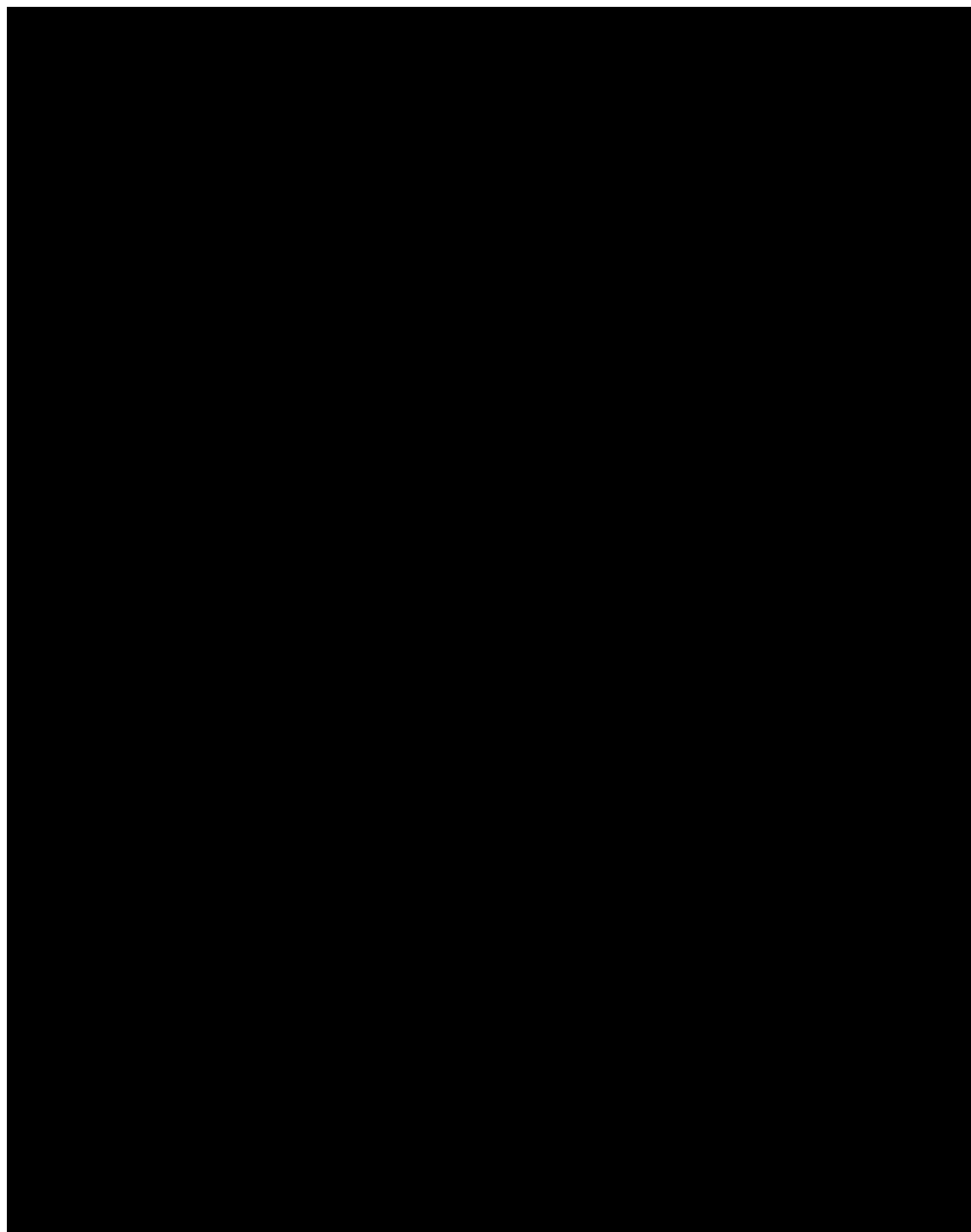
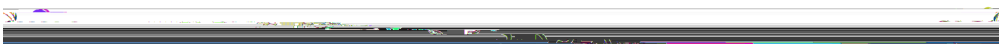


Figure 11-8: Plan View of TBS Assay and Block Magnets e 5 1

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Table 11-10







## 11.11 Model Reconciliation

Reconciliation results, comp







9. Bulk densitu







## 12.0 MINERAL RESERVE ESTIMATES

Mineral R





SLR is not awar





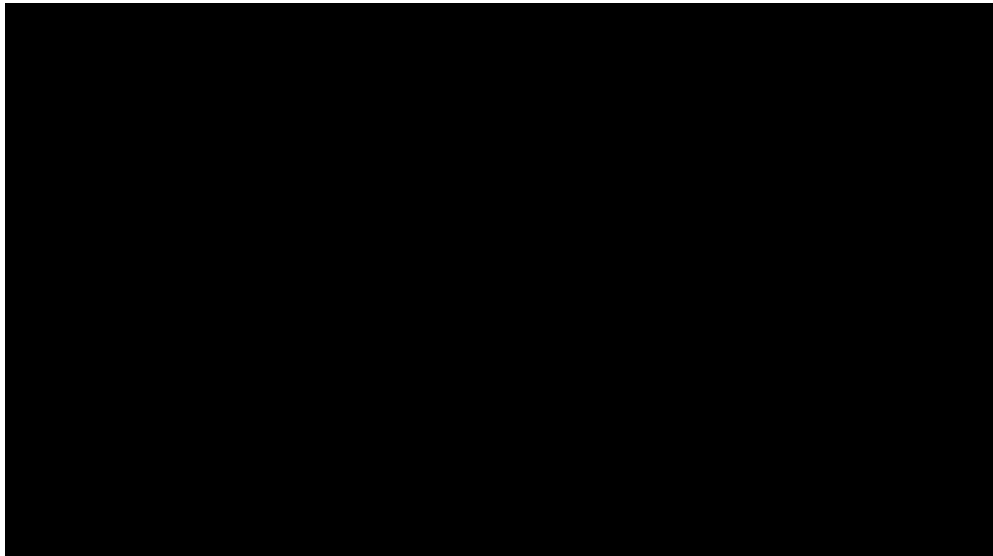


Figure 12-1: Conccent







- Fine crushing and concentrating cost = \$7.50/LT crude ore.
- Pelletizing and general cost = \$30.64/LT dryb





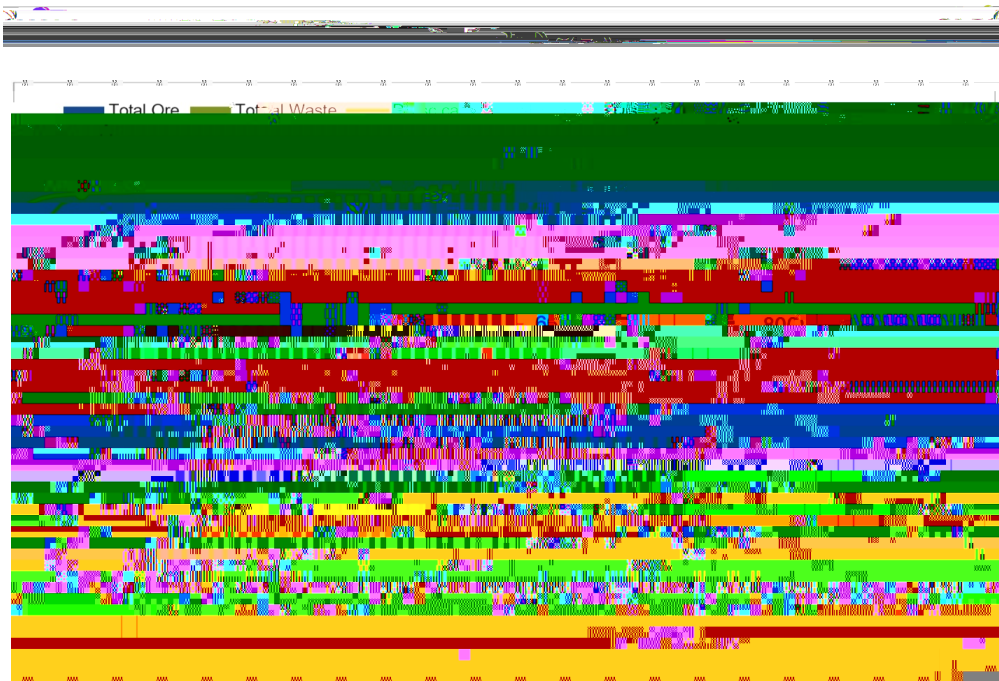


Figure 12-2 TBN Pit Optimization Pit-by-Pit Graph

Table 12-5: TBS Pit Optimization Results

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Figure 12-3 TBS Pit Optimization Pit-by-Pit Graph







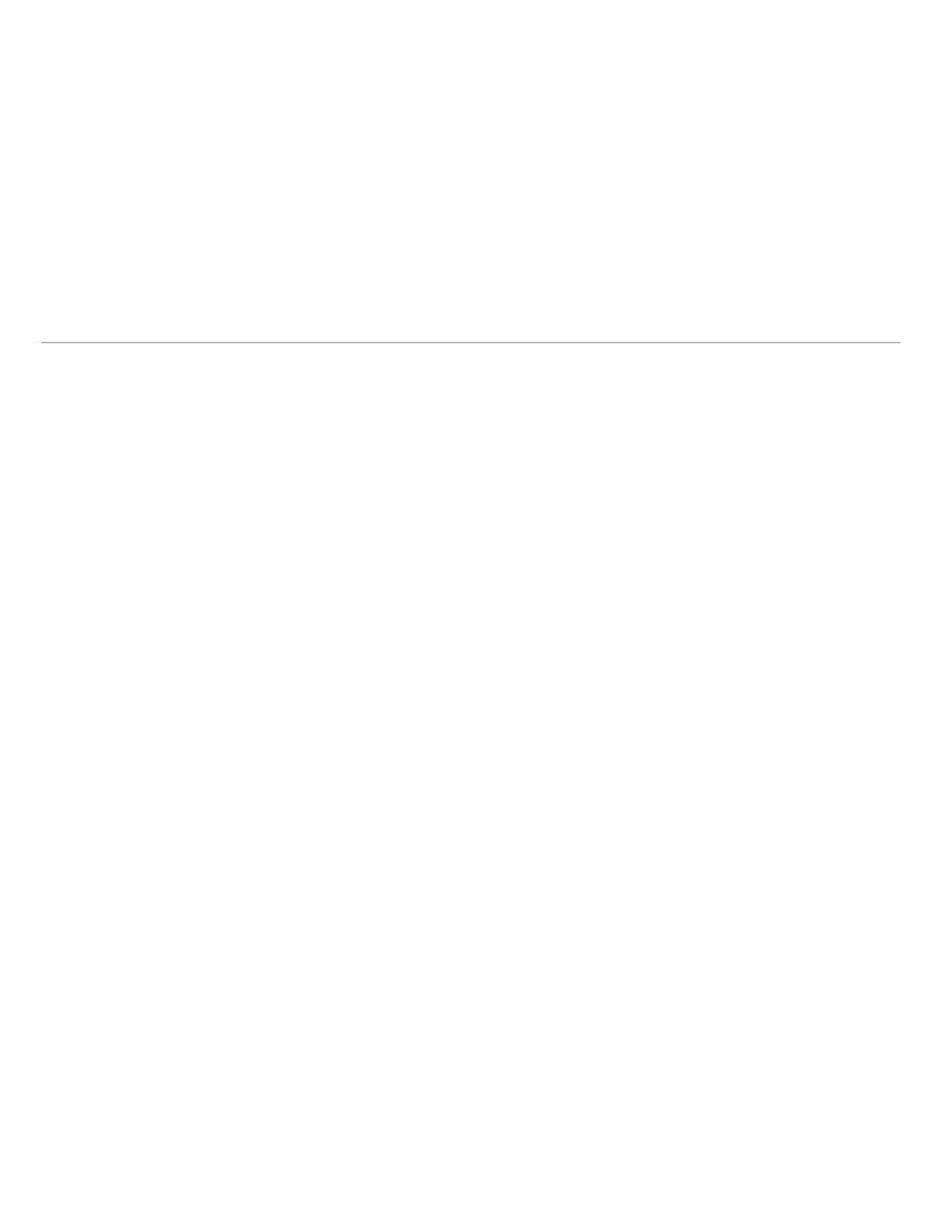










Table 13-3: Rock 5 o I, 11k é é







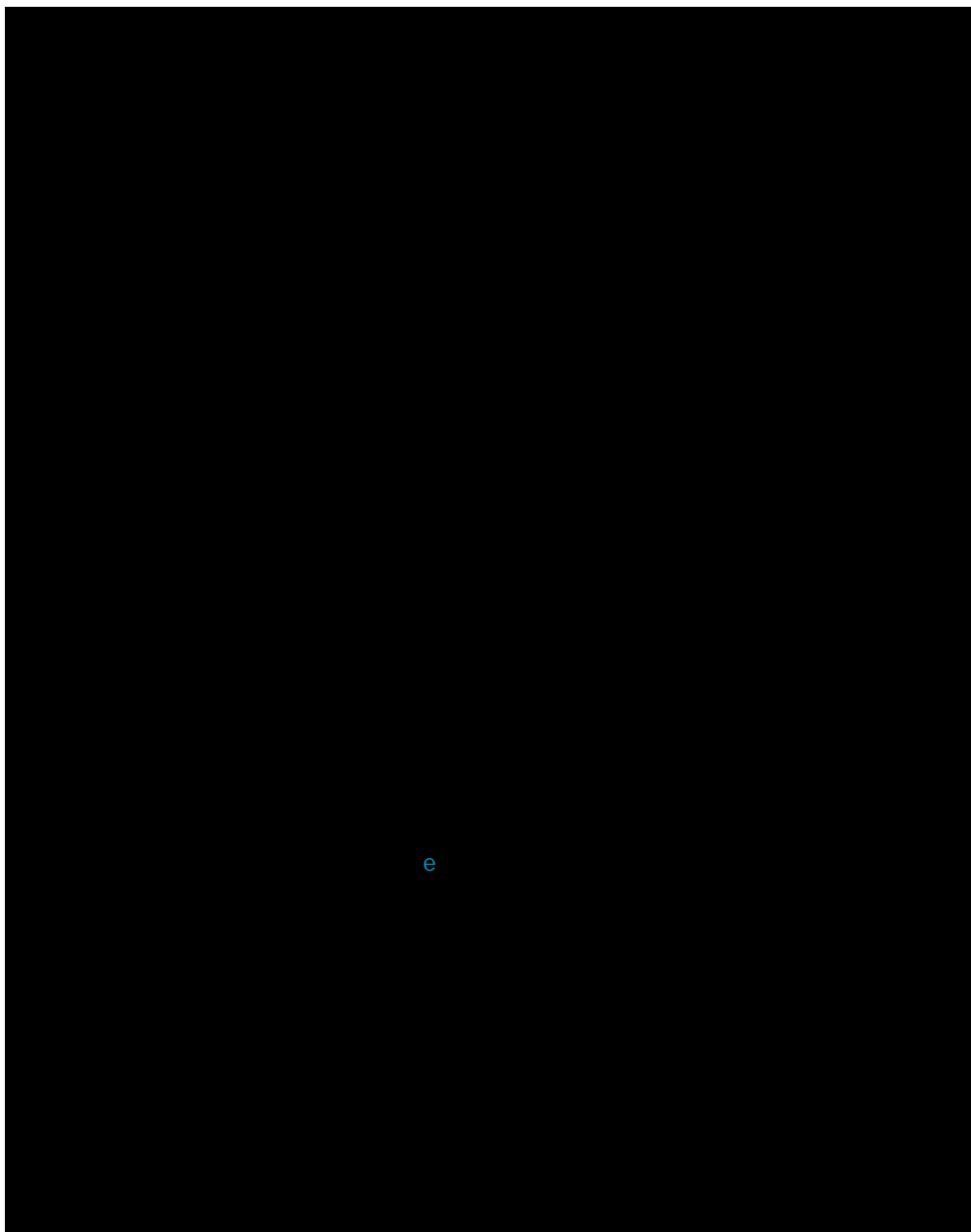
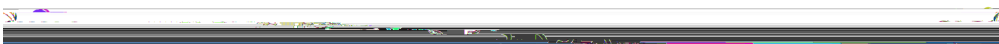


Figure 13-

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SLR

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Figure 14-1: Crushing Flowsheet













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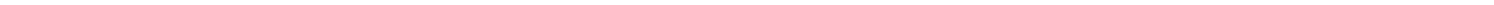
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## 15.0 INFRASTRUCTURE

### 15.1 Roads

The mine site i









### 15.3 Port Facilities

Port facilities are located in Duluth, Minnesota Duluth





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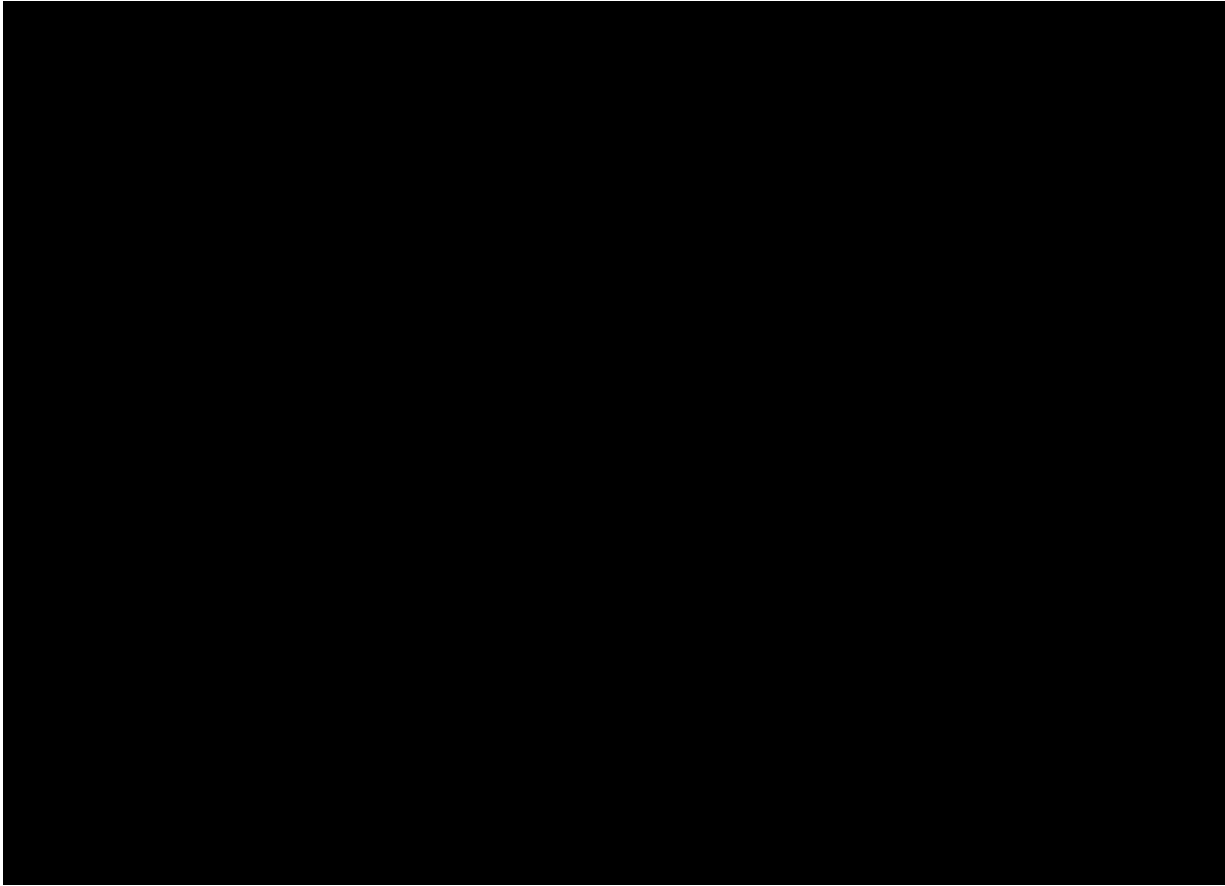


system, careful water management, monitoring of the dam and foundation performance, and the placement of tailings material to ensure that it meets the design requirements. To address these issues, Client has retained Barr as the EOR, with the EOR designation being an industry standard for tailings management, as the EOR typically verifies that the Tailings Storage Basin Cells are being constructed and operated by Client as designed and to meet all applicable regulations, guidelines, and standards.

Based on a review of the documentation provided, SLR has the following recommendations:

1. Prioritize the completion of an Operations, Maintenance and Surveillance (OMS) Manual for the TSF with the EOR in accordance with Mining Association of Canada (MAC) standards.





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Source: Northern Natural Gas Company

Figure 15-5: Regional Natural Gas Supply

## 15.7 Diesel, Gasoline, and





## 15.9 Water Supply

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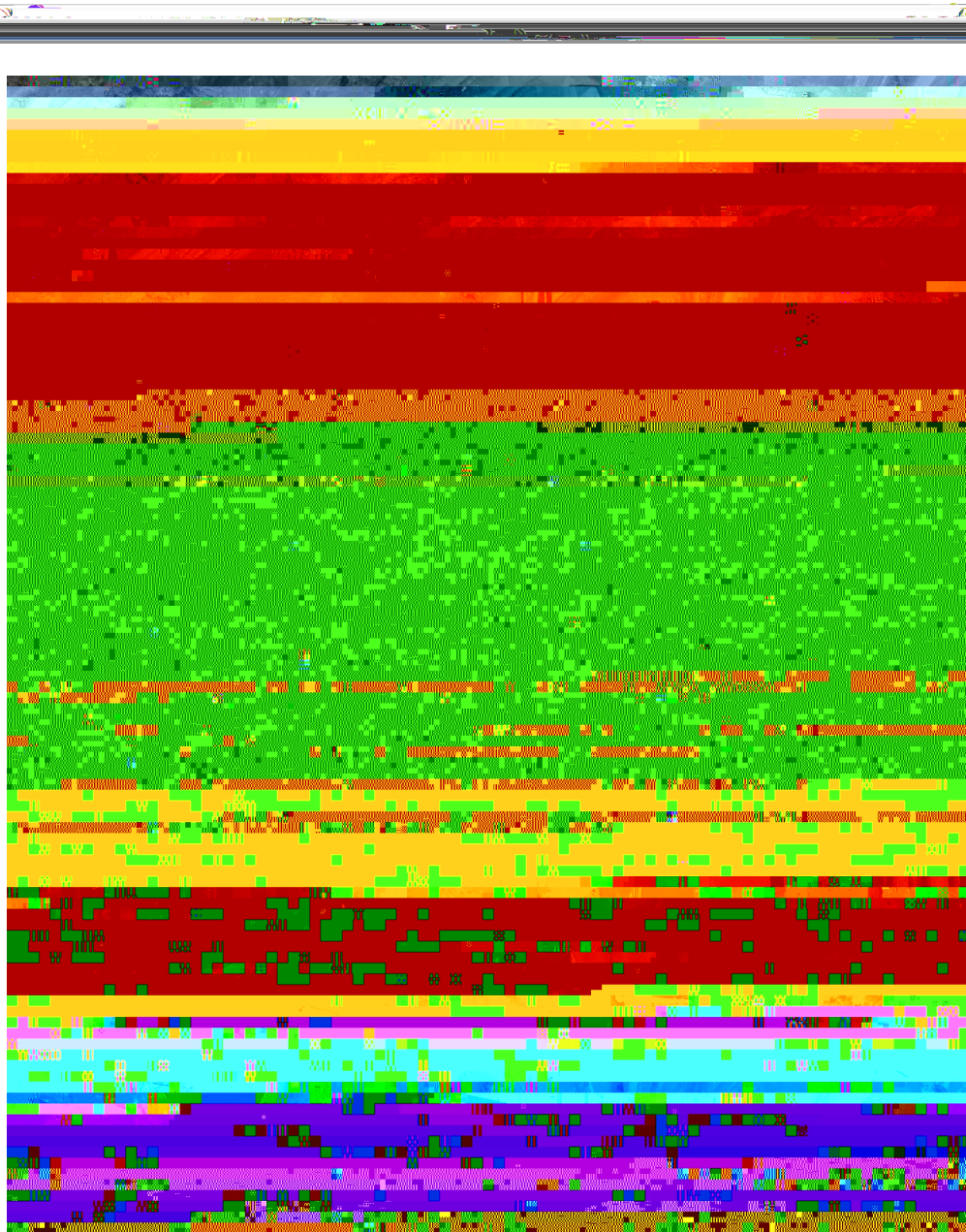


Figure 15-7: Fairlane Plant Facilities

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1"









Impacts to surr







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## 21. OTHER RELEVANT DATA AND INFORMATION

There is no S 2 n 2

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