

Atmospheric Environment

Phase 2 Proposal / ဥပဒေရေးရာ အကဲဖြတ်ချက်

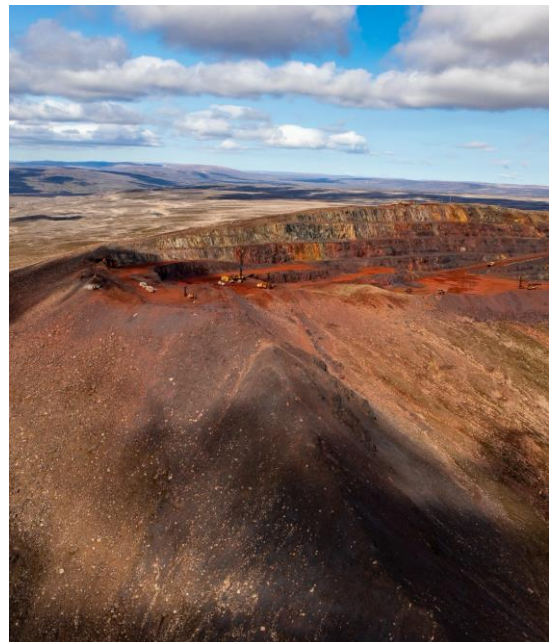
Public Hearing Iqaluit and Pond Inlet January 2021
ᐃᑲᓕᓴᖅᓂᓄᓐ ᐃᖅᑐᒃ ᐱᓚᑐ
ᓯᓦᓂᓚᓚᓦᓂᓄᓐ ኔᓐᑲᐱᓚ 2021



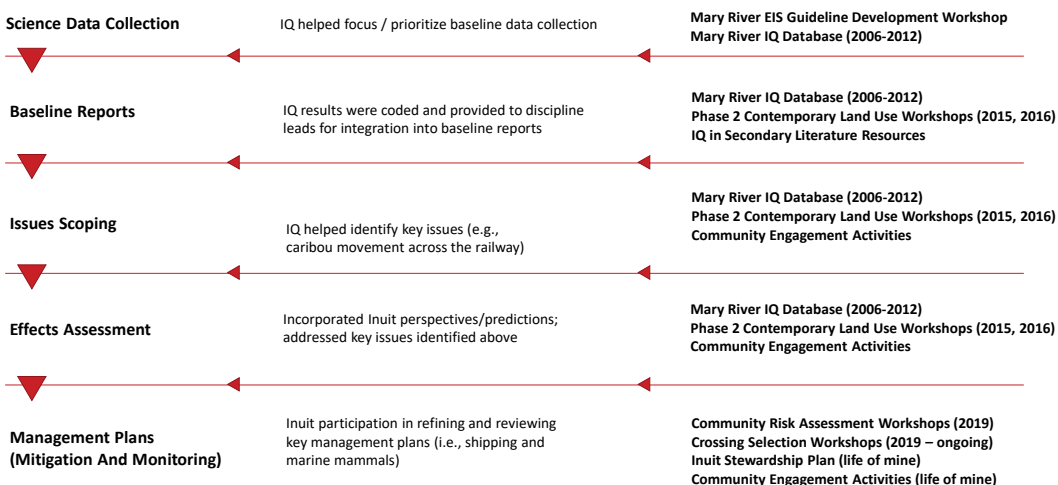
Presentation Overview

▷^ᶜᵇ▷ᶜ▷σ◁^ᶜ▷^ᶜ▷▷▷

- Description of Assessment
ፆፂረሁሴ ህጽጋኝፈረሰፊገጽጋጽ
- Mitigation and Monitoring
ፈጋጋፈጽፈገጽገጽገጽ ፈገገ ህጽጋኝፈረሰፊገጽጋጽ
- Technical Review Summary
ፆፂረሁሴጋገጽጋጽጋጽጋጽ ፆፂረሁሴጋገጽጋጽጋጽ
ፆፂረሁሴጋገጽጋጽጋጽ
- Project Certificate Conditions
ፆፂረሁሴጋገጽጋጽጋጽ ገገገጽጋጽጋጽ
- Summary
ፆፂረሁሴጋገጽጋጽጋጽ



$a \rightarrow a \Delta b^c \triangleright \sigma^a \rho^c$



[illegible]

Mine Site

$\triangleright \zeta^b \sigma \triangleleft \zeta^b \Delta^b$

Increased Production Secondary Crusher Moving to Port

ለዲሮፋሽኖችና ሃይማኖቶች
የህይወት ሥድስት ልዩ ልዩ ስርዓተ ስላሳ
ጋራ ርዕሰ ጉዳይ

Increasing activity increases ore dust
Overall less dust than originally predicted

ለርቢ ልብና ምክር ቤቱ ምክር ቤቱ
 ሕግና ምክር ቤቱ ምክር ቤቱ
 ርዕሰ ምክር ቤቱ ሕግና ምክር ቤቱ
 ርዕሰ ምክር ቤቱ ሕግና ምክር ቤቱ



Rail/Road Corridor

Rail/Road Corridor

Structure and Modifications
Short-term Increase in Traffic
Long-term Decrease in Traffic

[illegible]

Short-term increase in road dust and emissions during rail construction

የቀርቦቱ ልዩነት የሚመስል ነው። ልዩነቱም ለጥራት ምርመራ ተገቢ ነው።

Long term reduction in dust and emissions by replacing road with rail

የቀርቦቱ ልዩነት የሚመስል ነው። ልዩነቱም ለጥራት ምርመራ ተገቢ ነው።



Milne Port

9P^aJ4σ 3C^bC^aΔ^b

Increased Development Area
Increased Activity

[illegible]

Increased activity increases Ore Dust
ከጋራ ስራው ይቀንሳል

Assessment Methodology

[illegible]

◀^{5b} C ▶ σ ▶ h^c

- [illegible]



Assessment Methodology

[illegible]

◀ᵇ▶σ▶ካኚ

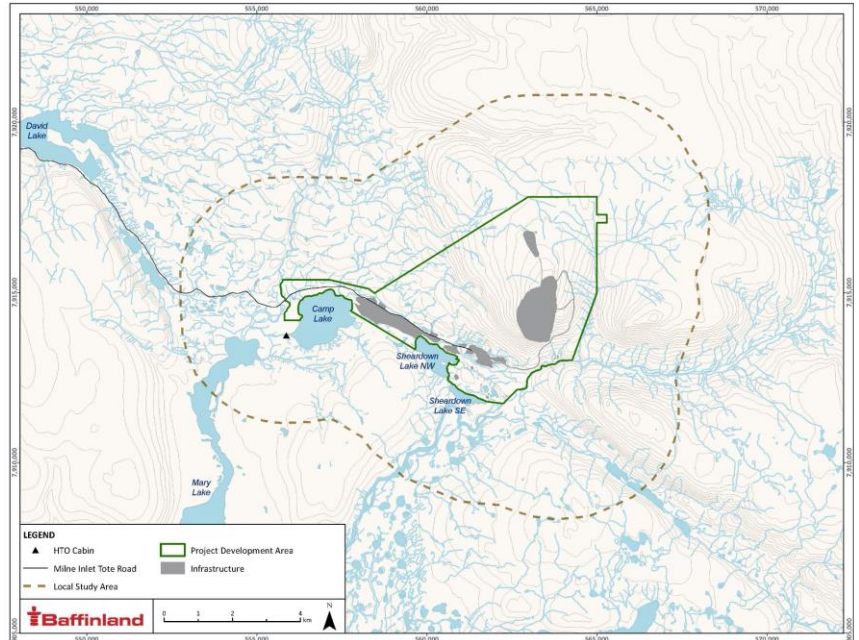
- Results compared to air quality thresholds
ክፍል ስርዓት የአየር ንብረት ደረጃ በአየር ንብረት ደረጃ ላይ ባለው አስተማማኝነት የሚመሰረት
- Results also used in other assessments
የአየር ንብረት ደረጃ በሌሎችም ማመልከቻዎች ውስጥ ተጠቅሞ መጠቀም



Mine Site Local Study Area

ᐅᑦᑦᑦᑦᑦᑦᑦᑦ
ᑦᑦᑦᑦᑦᑦᑦᑦ

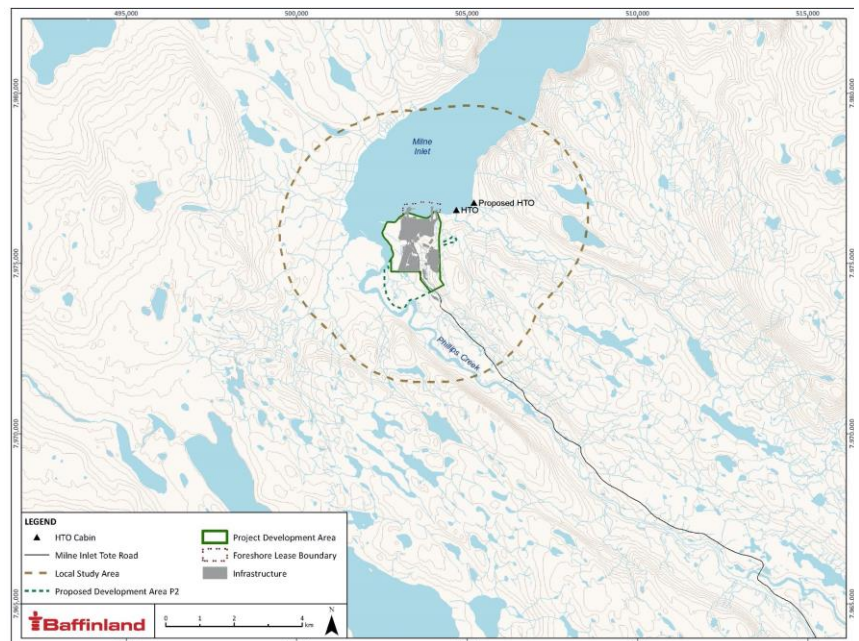
Taken from TSD 07, App. A, Fig. 2
ᐱᑦᑦᑦᑦ ᑦᑦᑦᑦᑦᑦ TSD 07, App. A, ᑦᑦᑦᑦᑦᑦ 2



Milne Port Local Study Area

ᑦᑦᑦᑦᑦᑦᑦᑦᑦᑦ
ᑦᑦᑦᑦᑦᑦᑦᑦ

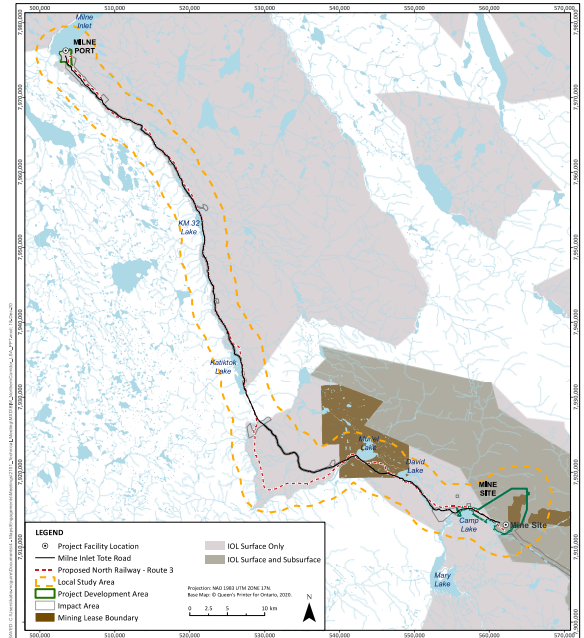
Taken from TSD 07, App. A, Fig. 1
ᐱᑦᑦᑦᑦ TSD 07, App. A, ᑦᑦᑦᑦᑦᑦ 1



Transportation Corridor Local Study Area

[illegible]

ጠቅላይ ሚኒስትር ኃይለማርያም ሥላሴ



Key Elements /

Additional Assessment Information / ማጠቃለያና ማጠቃለያ

- Updated air quality and noise abatement management plan
ጋዖሪባልፕሮጀክት ለውጤቶችና ለአድራሻዊነት ማስተካከያ ዘመናዊ የአየር ንፁህነትና ብኝት መቀነስ ማሳሰቢያ
 - Black carbon emissions estimate
ንፁህ አየር ውስጥ የሆሎኒየም ንፍቃት መጠን
 - Phase 2 passive dustfall monitoring
ጋዢባልፕሮጀክት ለውጤቶችና ለአድራሻዊነት ማስተካከያ የንፁህነት መለኪያ
 - Estimate of mobile equipment by emissions class (tier)
የውጤቶችና የአድራሻዊነት ማስተካከያ የውጤቶችና የአድራሻዊነት ማስተካከያ
- Review of mitigation options for reducing black carbon emissions from shipping
የውጤቶችና የአድራሻዊነት ማስተካከያ ማስተካከያ
 - Detailed summary of 2017 continuous ambient air quality monitoring results
2017-2018 የውጤቶችና የአድራሻዊነት ማስተካከያ
 - Climate and wind data summary
የውጤቶችና የአድራሻዊነት ማስተካከያ

፲፰

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$\triangleright^c \neg \Gamma \triangleright \neg^{\text{fb}} \triangleleft^b \supset \Delta \sigma^{\text{fb}} b^L L \neg \triangleleft^{\text{fb}} \Delta \cap^c \cap \sigma \gg^c$

- Low-emission vehicles
ፌዴራል ሽብርተኝ ምርመራ
- Idling policy
ፌዴራል ሽብርተኝ ምርመራ
ፌዴራል ሽብርተኝ ምርመራ
- LED lighting and other energy reduction measures
ፌዴራል ሽብርተኝ ምርመራ
ፌዴራል ሽብርተኝ ምርመራ
- Compliance with International Marine Organization regulations & guidelines
ፌዴራል ሽብርተኝ ምርመራ
ፌዴራል ሽብርተኝ ምርመራ

[illegible]

New Mitigation for Phase 2 Dust & Emissions Reduction

ፊርጽ ልጋጋፊ ርዕሰ ጉዳዮች
 ጋራ ሲሆን ለራሳቸው ልማት
 ምክንያት ሆኖ ሊገለጽ ይችላል።

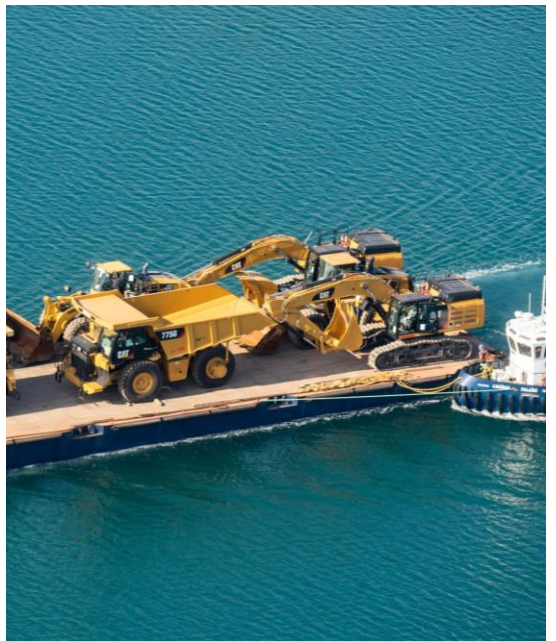
- Switch from use of ore trucks to rail
ጠቀሰበርኮር ልክናጋርናር ለጋንዳውት-ጋብ ካልነካሽም ድረስጋር ጠቀሰም
- Enclosed secondary crushing at Milne Port
ኃይር-ጋሙ ለኑር ሆድባለል የሚሞረው



New Mitigation for Phase 2 Dust & Emissions Reduction

**ፊርማ ቅጂ ላይ ርዕሰ ምኞትነትና
ጋራ ስራ ርዕሰ ምኞትነት ሆኖ
የተቀረበውን ምኞትነት &
መስሪያ ስራ ሲያስተካክል**

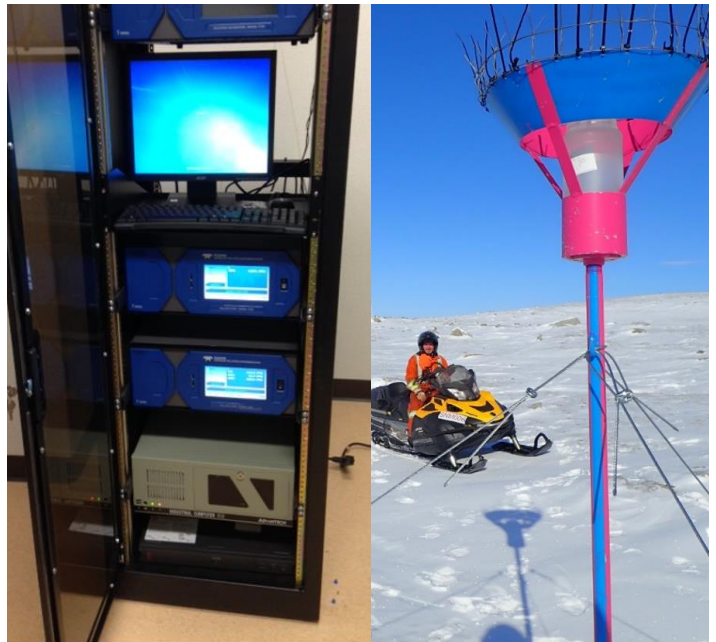
- New/replacement equipment will meet strict emissions standards
ፌዴራል ኢንቨስትመንት ባንክ ለፖርቶፖርት መሳሪያዎች የሚሰጥ ድጋፍ ለአጠቃላይ አጠቃቀም በተለየ የኮሙኒኬሽን ቴክኖሎጂዎች ማጠናከሩን ያረጋግጣል
- New equipment will meet (Tier 4) standard or better
ፌዴራል ኢንቨስትመንት ባንክ የሚሰጥ ድጋፍ ለፖርቶፖርት መሳሪያዎች የሚሰጥ ድጋፍ ለአጠቃላይ አጠቃቀም በተለየ የኮሙኒኬሽን ቴክኖሎጂዎች ማጠናከሩን ያረጋግጣል



Monitoring and Follow-up Programs

ፍፅላትና ልማት ማረጋገጫ
ፍፅላትና ልማት ማረጋገጫ
ለፍፅላትና ልማት ማረጋገጫ

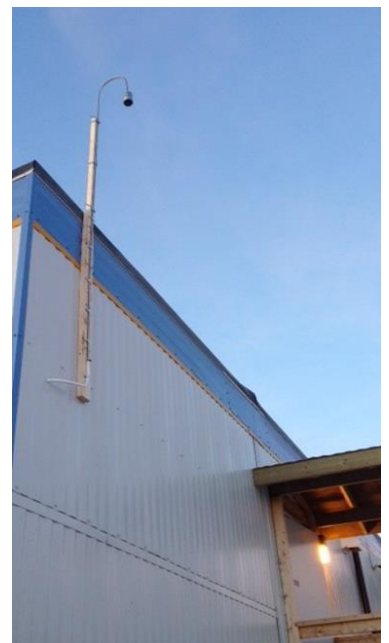
- Six meteorological stations
ᐃᓄᓂᑦ (6) ᑭᓪᓈᓂᐃᓪ
- Continuous on-site air quality monitoring
ᕐᔨᒋᓂᐅᓇ ᐅᙳᚿᓂᐃᓪᐱᑦ ᑭᓪᓂᑭ
ᖃᓄᐸᑲᑯᓂᓴᓄᑦ ᖃᐅᐱᐱᐃᓪᓇᖅᑐᑦ



Monitoring and Follow-up Programs

ፍጥረትና ሕይወት ለሕዝብ ጥቅም

- Seasonal off-site air quality monitoring
ፋኛታ ልዩ ዓመት በአየር ባለሙያዎች ሥልጠና ስራ
በስተ-አካባቢው የአየር ንፁህነት መለኪያ
- Monthly dustfall samples
የአየር ንፁህነት የወር አካባቢ ንፁህነት ምርመራ
የወር የአየር ንፁህነት ምርመራ
- Noise monitoring at accommodations
የእንግዲህ የአካባቢ ምርመራ ምርመራ

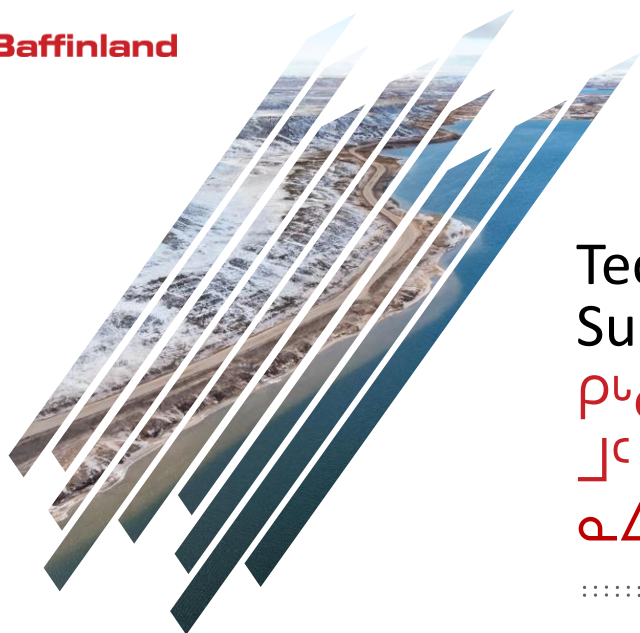


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Adaptive Management

[illegible]

- Proposed enhancements include air quality management action trigger levels for:
 - Sulphur Dioxide / ሲሆር ዳይኦክሳይድ / ሲዩኤስዲኤስ
 - Nitrogen Dioxide / ሲኒትሮጅን ዳይኦክሳይድ
 - Dustfall / ኃረር
 - Total suspended particulate (TSP) / ጠባብሶ የሚቆይ ተሰራጭ ተሰራጭ ተሰራጭ
 - Fine dust / ሲኒትሮጅን ዳይኦክሳይድ
 - Corrective actions for each trigger level / ለእያንዳንዱ የሚከተለውን ትኩረት



Technical Review Summary

ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय
 ॐ नमो भगवते वासुदेवाय

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Assessment Conclusions

፪፻፺፰ ምዕራባውያን ክርስትና

- Lasting effects on noise, vibration and air quality in the local study area are not expected to be significant, according to the assessment methodology

[illegible]

- Dust emissions along the transportation corridor will be substantially reduced compared to the Early Revenue Phase

[illegible]

- Phase 2 will not significantly add more greenhouse gas emissions to the region

ጋራ ሲገናኙ ለሲብራሪያቸው ልዩ ልዩ ምርጫ ማድረግ ለማድረግ ማዘጋጀት ይችላሉ።

Key Issues Summary

ለፎታባሊ ጋራ ልማት

- Key issues raised in intervenor reviews

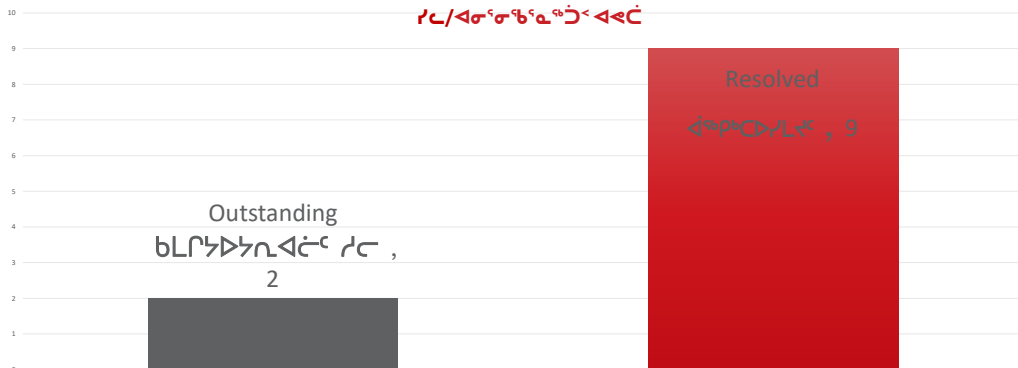
[illegible]

- Sulphur Dioxide / ሲሆልፊክስ ዳይኦክሳይድ
- Climate change action plan/ የአየር ንብረት ጥበቃና አስተዳደር
- Potential human exposure / የህዝብ ተጠባቂነት

Mitigating ship, generator and other equipment emissions /

[illegible][illegible]

- Key issues raised in intervenor reviews
ለኒብሮርጋን ልዩነት ይጨምራል፡ ተመሳሳይ የአየር ንፍረት መስተጠንቀቂያ
- Canadian Ambient Air Quality Standards / በዓለም አቀፍ የአየር ንፍረት ስጦታ
- dust levels / ንፍረት መስተጠንቀቂያ
- air quality monitoring and adaptive management thresholds, triggers and actions / የአየር ንፍረት መስተጠንቀቂያ ስጦታ፣ የማስተካከል እና የመቆጣጠር ስልጣን

[illegible]

Outstanding and Under Review – Physical Environment

[illegible]

Comment Topic / ፎክሎር ስራ	Related ID's / ጋራ ስራ
Setting of emissions reduction targets / ፎክሎር ስራ ለፎክሎር ስራ ስራ	WWF-FWS 08
Use of lighter distillate fuels / ፎክሎር ስራ ለፎክሎር ስራ	WWF-06

Key Commitments

ᑲᓚᒃᑦᑲᑦᓂᐱᑦᓂᕐᕋᓚᐱᐸᑦᓂᑦᓂᑦ

- [illegible]

ለሥራ ጥሩነት
ለሥራ ጥሩነት
ለሥራ ጥሩነት

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፲፭. ለጥራ ልዩነቶች ልዩነቶችን ማስረጃ ለጥራ

- Climate change and greenhouse gases (Condition #1 to 4) / ሥራው ለጥቅም ላይ የዋለው የክሊማት ለውጥና የኒውክሌር ኃይል (ኤሌክትሪክ ሥልጣን #1-4 ለሥራው)
- Accessible weather information (Condition #5) / ለአድራሻው ሥራ ላይ የሚያገለግል የአየር ንብረት (ኤሌክትሪክ ሥልጣን #5)
- Annual emission calculations (Condition #6 and 9) / የአየር ንብረት ለውጥ ለውጥ ለውጥ (ኤሌክትሪክ ሥልጣን #6 ለሥራው)
- Monitoring SO₂ and NO₂ (Conditions #7 & 8) / የኤሌክትሪክ ሥልጣን SO₂ ለሥራው NO₂ (ኤሌክትሪክ ሥልጣን #7 & 8)
- Dust management and monitoring plan (Condition #10) / ለኃይል ለውጥ ለውጥ ለውጥ (ኤሌክትሪክ ሥልጣን #10)
- Incineration management and testing (Conditions #11 & 12) / ለኃይል ለውጥ ለውጥ ለውጥ (ኤሌክትሪክ ሥልጣን #11 & 12)
- Noise and vibration management (Conditions #14 and 15) / ለኃይል ለውጥ ለውጥ ለውጥ (ኤሌክትሪክ ሥልጣን #14 ለሥራው)

Proposed Changes to Certificate Conditions

ጋህናፍር፡፡ ልግገገጋ፡፡
 ልሮከቢ፡፡ ልግገገጋ፡፡ ልሮከቢ፡፡

- Consolidate Conditions 2 to 4 and Conditions 6 to 9
 ከቦርድ ስርዓት ለራሱ የሚገኙት 2-ኛ ሰዎች 4 ልዩ ለራሱ የሚገኙት 6-ኛ 9-ኛ
- Remove redundant Conditions (#11, 14(a) and 15)
 ለራሱ የሚገኙት ስርዓት ስርዓት ስርዓት ስርዓት ስርዓት
 (#11, 14(a) ልዩ 15)



Proposed Changes to Certificate Conditions

**ጋህናር፡ ልዎልብ
ፊክሪ፡ ኢፍራን**

- Update Condition 12 (stack testing of incinerators)
 ፎርሞላላሽን ለከተለው ሰነድ 12 (ፍጅጋሳንጋሽን ማረጋገጫ ለፍጅጋሳንጋሽን)
- Update Condition 10 (Air Quality And Noise Abatement Management Plan)
 ፎርሞላላሽን ለከተለው ሰነድ 10 (የአየር ንፍቀጽና የድምፅ ማቆላሰፊያ ማስፈጸሚያ ስራ ማስፈጸሚያ ሰነድ)
- Introduces adaptive management
 ለፍጅጋሳንጋሽን ማስፈጸሚያ ስራ ማስፈጸሚያ ሰነድ



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Summary

- [illegible]

Thank you

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2275 የቦታ ልማት ልማት ልማት ልማት
ፊት ለፊት 300
ፊት ለፊት ልማት ልማት ልማት ልማት
ፊት ለፊት ልማት ልማት ልማት ልማት

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ልጋ፣ ልክጋጥሥ 622, ልጌጋ፣ ልጋ፣ጋጥሥ,
 ልጋ፣ጋ፣ ልክጋጥሥ 102
 ልጌጋ፣, ልጋ፣ X0A 0H0