



## **Certificate of Qualified Person – Dr Dennis Arne**

As a Qualified Person of this Technical Report covering the Project named as the NI 43-101 Technical Report on the Macmillan Pass Project, Yukon Territory, Canada, I, Dennis Arne do hereby certify that:

I am a Principal Consultant of CSA Global Geosciences Canada Ltd, and carried out this assignment for CSA Global Geosciences Canada Ltd of Suite 610, 1155 West Pender Street, Vancouver, British Columbia, Canada (dennis.arne@csaglobal.com).

The Technical Report to which this certificate applies is titled “NI43-101 Technical Report on the Macmillan Pass Project, Yukon Territory, Canada” and is dated 23 May 2018 (“the effective date”).

I hold a BSc (Hons), MSc, PhD and Graduate Diploma, and am a registered Professional Geologist in good standing of the Engineers and Geoscientists British Columbia (#34686) and a Registered Professional Geoscientist of the Australian Institute of Geoscientists (#10064). I am familiar with NI 43-101 and, by reason of education, experience in exploration and evaluation of hydrothermal deposits, including sediment-hosted base metal deposits, and professional registration, I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes more than 35 years in geology.

I personally visited the project that is the subject of this Technical Report between 31 August 2011 and 2 September 2011, between 24 July 2017 and 28 July 2017, and between 25 June 2018 and 29 June 2018, for a total of 13 days.

I am responsible for Sections 1.3, 4, 5, 6, 7, 8, 9, 11, and 12 of the Report.

I am independent of the issuer and the Property as described in Section 1.5 of NI 43-101.

I co-authored the Issuer’s previous NI 43-101 technical report for the MacMillan Pass Project dated February 24, 2018.

I have read NI 43-101 and this Technical Report for which I am responsible has been prepared in compliance with NI 43-101.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 6<sup>th</sup> day of July 2018.

“Signed and Stamped”

Dr. Dennis Arne, PGeo (BC), MAIG (RPGeo)  
Principal Consultant - Geochemistry  
CSA Global Geosciences Canada Ltd

**CERTIFICATE OF QUALIFIED PERSON**

I, Kenneth Embree, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled “NI 43-101 Technical Report, Macmillan Pass Project, Yukon Territory, Canada” with an effective date of May 23, 2018, (the “Technical Report”) prepared for Fireweed Zinc Ltd.;
2. I am employed as Managing Principal of Knight Piésold Ltd. with an office at Suite 1400 - 750 West Pender Street, Vancouver, British Columbia, V6C 2T8, Canada.
3. I am a graduate of the University of Saskatchewan with a B.Sc. in Geological Engineering (1986). I have practiced my profession continuously since 1986. My experience includes tailings and waste and water management for mine developments in Canada, the US and South America.
4. I am a Professional Engineer in good standing with Engineers and Geoscientists of British Columbia in the area of geological engineering (No. 17439). I am also registered as a Professional Engineer in Ontario (No. 100040332), Yukon (No. 2694) and the Northwest Territories and Nunavut (No. L3766).
5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I visited the Macmillan Pass Project site September 5, 2017;
7. I am responsible for Sections 18.6, 18.7, 18.8 and 18.9 of this Technical Report.
8. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
9. I have had no involvement with the property that is the subject of this Technical Report;
10. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
11. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: May 23, 2018

Signing Date: July 6, 2018

***(Original signed and sealed) “Kenneth Embree, P.Eng.”***

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Kenneth Embree, P. Eng.



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## CERTIFICATE OF AUTHOR

I, Michael Levy, P. Eng., do hereby certify that:

1. I am currently employed as Geotechnical Engineering Manager with JDS Energy & Mining Inc. with an office at Suite 100 – 14143 Denver West Parkway, Golden, Colorado, 80401;
2. This certificate applies to the Technical Report entitled “NI 43-101 Technical Report, Macmillan Pass Project, Yukon Territory, Canada” with an effective date of May 23, 2018, (the “Technical Report”) prepared for Fireweed Zinc Ltd.;
3. I am a Professional Civil Engineer (P.Eng. #2692) registered with the Association of Professional Engineers Yukon and Colorado (P.E. #40268). I am a current member of the International Society for Rock Mechanics (ISRM) and the American Society of Civil Engineers (ASCE). I hold a bachelor’s degree (B.Sc.) in Geology from the University of Iowa in 1998 and a Master of Science degree (M.Sc.) in Civil-Geotechnical Engineering from the University of Colorado in 2004. I have practiced my profession continuously since 1999 and have been involved in a numerous mining and civil geotechnical projects across the Americas;
4. I visited the Macmillan Pass Project site September 5, 2017;
5. I am responsible for Section 16.4 of this Technical Report;
6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had no prior involvement with the property that is the subject of this Technical Report;
8. I have read the definition of “Qualified Person” set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association, and past relevant experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101;
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1; and,
10. As of the effective date of the Report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: May 23, 2018

Signing Date: July 6, 2018

***(Original signed and sealed) “Michael Levy, P. Eng.”***

Michael Levy, P. Eng.





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## CERTIFICATE OF AUTHOR

I, Michael Makarenko, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled “NI 43-101 Technical Report, Macmillan Pass Project, Yukon Territory, Canada” with an effective date of May 23, 2018, (the “Technical Report”) prepared for Fireweed Zinc Ltd.;
2. I am currently employed as Project Manager with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a graduate of the University of Alberta with a B.Sc. in Mining Engineering, 1988. I have practiced my profession continuously since 1988;

I have worked in technical, operations and management positions at mines in Canada, the United States, Brazil and Australia. I have been an independent consultant for over ten years and have performed mine design, mine planning, cost estimation, operations & construction management, technical due diligence reviews and technical report writing for mining projects worldwide;

I am a Registered Professional Mining Engineer in Alberta (#48091) and the Northwest Territories (#1359);

I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101;

4. I visited the Macmillan Pass Project site September 5, 2017;
5. I am responsible for Sections 1.1, 1.2, 1.7, 1.9 to 1.13, 2, 3, 15, 16 (except 16.4), 18 (except 18.6, 18.7, 18.8, 18.9), 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 of this Technical Report;



6. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
7. I have had no involvement with the property that is the subject of this Technical Report;
8. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
9. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: May 23, 2018

Signing Date: July 6, 2018

**(Original signed and sealed) "Michael Makarenko, P. Eng."**

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Michael Makarenko, P. Eng.





### **Certificate of Qualified Person – Mr Leon McGarry**

As a Qualified Person of this Technical Report covering the Project named as the NI 43-101 Technical Report, Macmillan Pass Project, Yukon Territory, Canada, I, Leon McGarry do hereby certify that:

4. I am a Senior Consultant of CSA Global Geosciences Canada Ltd, and carried out this assignment for CSA Global Geosciences Canada Ltd of Suite 501, 365 Bay Street, Toronto, Ontario, Canada (leon.mcgarry@csaglobal.com).
5. The Technical Report to which this certificate applies is titled “NI 43-101 Technical Report Macmillan Pass Project, Yukon Territory, Canada” and is dated 23 May 2018 (“the effective date”).
6. I hold a BSc (Hons) and am a registered member of the Association of Professional Geoscientists of Ontario (2348) and the Association of Professional Engineers and Geoscientists of Saskatchewan (34929). I am familiar with NI 43-101 and, by reason of education, experience in exploration and evaluation of hydrothermal deposits, including sediment-hosted base metal deposits, and professional registration, I fulfil the requirements of a Qualified Person as defined in NI 43-101. My experience includes more than 10 years in geology.
7. I have not personally visited the project that is the subject of this Technical Report.
8. I am responsible for Sections 1.4, 1.6, 10 and 14 of the Report.
9. I am independent of the issuer, and the Property applying all the tests in section 1.5 of National Instrument 43-101.
10. I co-authored the Issuer’s previous NI 43-101 technical report for the MacMillan Pass Project dated February 24, 2018. I prepared the current Mineral Resource Estimate for the Project which has an effective date of 10 January 2018.
11. I have read NI 43-101 and this Technical Report for which I am responsible has been prepared in compliance with NI 43-101.
12. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 6th day of July 2018

“Signed and Stamped”

Leon McGarry, PGeo (ON, SK)  
Senior Consultant – Resources  
CSA Global Geosciences Canada Ltd



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## CERTIFICATE OF AUTHOR

I, Kelly McLeod, P. Eng., do hereby certify that:

1. This certificate applies to the Technical Report entitled “NI 43-101 Technical Report, Macmillan Pass Project, Yukon Territory, Canada” with an effective date of May 23, 2018, (the “Technical Report”) prepared for Fireweed Zinc Ltd.;
2. I am currently employed as a Senior Engineer, Metallurgy, with JDS Energy & Mining Inc. with an office at Suite 900 – 999 West Hastings Street, Vancouver, British Columbia, V6C 2W2;
3. I am a Professional Metallurgical Engineer registered with the APEGBC, P.Eng. #15868. I am a graduate of McMaster University with a Bachelors of Engineering, Metallurgy, 1984. I have practiced my profession intermittently since 1984 and have worked for the last 10 years consulting in the mining industry in metallurgy and process design engineering;
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of NI 43-101;
5. I have not personally visited the Macmillan Pass Project site;
6. I am responsible for Sections 1.5, 1.8, 13 & 17 of this Technical Report;
7. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101;
8. I have not had prior involvement with the property that is the subject of this Technical Report;
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading; and
10. I have read NI 43-101, and the Technical Report has been prepared in accordance with NI 43-101 and Form 43-101F1.

Effective Date: May 23, 2018

Signing Date: July 6, 2018

**(Original signed and sealed) “Kelly McLeod, P. Eng.”**

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Kelly McLeod, P.Eng.

