

From: [Georges Cornelissen](#)
To: [Rykaart, Maritz](#)
Cc: [Wade, Lowell](#)
Subject: RE: Proposed format of deliverables from the Nuna Survey department
Date: Sunday, November 20, 2011 5:02:24 AM
Attachments: [image001.gif](#)
[image002.jpg](#)

Hello,

You are welcome - Best regards,

Georges

From: Rykaart, Maritz [mailto:mrykaart@srk.com]
Sent: Friday, November 18, 2011 5:14 PM
To: Georges Cornelissen
Cc: Miller, Megan; Kurylo, John; Bay, Hope; Chris Petrovic; Kevin Oakes; Bradford Watkin; Nick Stoneberger; Doug Haverland; Kyle Kuntz; Gary Sodhi; Mike Price; hopebay survey; Wade, Lowell; Simon Chipper; Matthew McKay
Subject: RE: Proposed format of deliverables from the Nuna Survey department

Georges

Thanks. Sounds like we have an effective plan going forward. We really appreciate that you took the time to put this together and look forward to working with you and your survey team on this.

Regards
Maritz

Maritz Rykaart *Ph.D., P.Eng.*
Principal Consultant



SRK Consulting (Canada) Inc.
Suite 2200, 1066 West Hastings Street, Vancouver, V6E 3X2, Canada
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 Please consider the environment before printing this e-mail.

From: Georges Cornelissen [mailto:georgesc@nunalogistics.com]
Sent: Friday, November 18, 2011 2:12 PM

To: Rykaart, Maritz

Cc: Miller, Megan; Kurylo, John; Bay, Hope; Chris Petrovic; Kevin Oakes; Bradford Watkin; Nick Stoneberger; Doug Haverland; Kyle Kuntz; Gary Sodhi; Mike Price; hopebay survey; Wade, Lowell; Simon Chipper; Matthew McKay

Subject: RE: Proposed format of deliverables from the Nuna Survey department

Hello Maritz,

I apologize for the delayed reply. Thank you your comments, yes we will implement this method. About your interrogations in the second paragraph, please note:

In regards of terminology, a distinction is made between the **quality control surveys** (work in progress) and the **record drawings** (work completed), aka the final as-builts.

As a supplement to the already mentioned data format, yes we will present the information for both types of surveys (either at the quality control stage or record drawing stage) with the standard design Vs. actual comparative method. The presented format will be based on the provided information in the IFC's, used as guidance. For examples, the North Dam drawings are provided with a plan view, a longitudinal profile and cross-sections at 5 m interval. That's what we will use. Other projects may only show a plan view and a few typical sections. In that case, we would use the plan view and cut our sections at the location of those typical sections for presentation of work.

In regards of time, I anticipate that when we schedule progress / quality control surveys, our design Vs. actual deliverables will be available on the same day or the next day if late pick-up of the field survey. This data will be made available as soon as possible so that the interested parties can have appropriate amount of time for reviewing and making the correct decisions. Due to their cosmetic requirements, the final record drawings may take longer to produce. Having said that, the final as-built data that makes those record drawings will be available digitally in the same timely manner as the QC surveys; the last QC survey being simply given the record drawing status (final as-built).

I am confident that this comprehensive package will be satisfactory to your engineering team. However, should you have a need for other type of presentation that you feel is more suitable to better reduce the risks of miss interpretation of the survey data, please do not hesitate to inform me. Our department will do the proper adjustments at that time.

Best regards,

Georges

Georges Cornelissen, C.E.T.

Survey Manager

Hope Bay, Nunavut

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From: Rykaart, Maritz [mailto:mrykaart@srk.com]

Sent: Wednesday, November 16, 2011 9:12 PM

To: Georges Cornelissen

Cc: Miller, Megan; Kurylo, John; Bay, Hope; Chris Petrovic; Kevin Oakes; Bradford Watkin; Nick Stoneberger; Doug Haverland; Kyle Kuntz; Gary Sodhi; Mike Price; hopebay survey; Wade, Lowell

Subject: RE: Proposed format of deliverables from the Nuna Survey department

Georges

Thank you very much for this comprehensive and thoughtful proposal to present your field survey data. Based on the feedback I got from our team the consensus is that what you have proposed would meet our needs and prevent the risk to both Owner, Nuna and SRK of SRK having to "interpret" the survey data.

I did have one question of definition: You mention "record drawings"; do you mean those to be the "as-builts" for any given area/element? If this is what you mean, would these drawings include a comparison (i.e. red-line against the design? If not then that would be a piece that we believe Nuna should please also provide per the agreements between the Owner, Nuna and SRK early in 2011. SRK would then review those drawings and prepare the official as-builts that gets put on file and submitted to the Regulator. Finally, what do you anticipate the timeline to be for delivering of these products following completion of the physical surveys. We would ideally like these to be ready prior to Nuna requesting earthworks sign-off from SRK.

We know your site survey team work extremely hard to stay on top of their staggering workload and their willingness to help us whenever we ask for information has always been helpful, but with these proposed measures I am sure it would lead to even greater efficiency for both your and our team.

Regards

Maritz

Maritz Rykaart *Ph.D., P.Eng.*

Principal Consultant



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From: Georges Cornelissen [<mailto:georgesc@nunalogistics.com>]

Sent: Tuesday, November 15, 2011 11:50 AM

To: Rykaart, Maritz; Wade, Lowell

Cc: Miller, Megan; Kurylo, John; Bay, Hope; Chris Petrovic; Kevin Oakes; Bradford Watkin; Nick Stoneberger; Doug Haverland; Kyle Kuntz; Gary Sodhi; Mike Price; hopebay survey

Subject: Proposed format of deliverables from the Nuna Survey department

Good day,

Object: Proposed format of deliverables | Nuna Survey department | Hopebay mining project

Please see below and attachments for proposed format of deliverables to your office. The standard transmittal package will consist of five (5) files:

1. Record of data transmittal - *.pdf format
2. AutoCAD drawing – *.dwg format
3. Field survey data – *.csv format
4. Field survey data – *.pdf format
5. Civil data – *.xml format (LandXML)

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Details

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1. **RECORD OF TRANSMITTAL.** To validate and itemize the provided information, a record of transmittal of survey data will be included in the transmission.
2. **AUTOCAD DRAWING.** The drawing (*.dwg V2010) will be provided by using the AutoCAD e-transmit command. The accompanying text report created by the e-transmit will contain a description of the survey codes and additional information about the drawing if deemed necessary by the sender.

The following standard data will be presented in an orderly manner in the drawing:

- Survey points
- Survey breaklines (3D polylines: Crest, toe, break, etc.)
- Inclusive and exclusive (if applicable) boundaries of surface models

- Surface data (3D faces)
- If applicable: alignment, profiles and cross-sections data
- Any other relevant information

-
Please note:

-
 When record drawings will be produced, the same above-mentioned approach will be used with the following difference: A PDF drawing with layers controllable by the user in Adobe will be added to the package (see attached drawing *SM 110502 Status map of frozen core material placement.pdf* for details).
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3. **FIELD SURVEY DATA.** The survey data will be provided at a precision of two (2) decimal places in the standard format PNEZD (Point, Northing, Easting, Elevation, and Description). A precision of three (3) decimals places will be used in precise work applications such as leveling, anchor bolts layout / as-built, etc.

As mentioned above, the description of the codes will be included in the text report accompanying the e-transmitted AutoCAD file. The data will be provided in two different file formats: Comma delimited (*.csv) and Adobe (*.pdf). Both files will have the following information on the first line (header): *Pt# North East Elevation Desc [Units=Meters]*. The PDF file will be stamped as FINAL.

4. **CIVIL DATA.** For your convenience, as a supplement to the AutoCAD drawing and survey data point data files, when applicable, the civil data (surfaces, alignments, profiles, cross-sections) will also be provided in the LandXML version 1.1 format.



The surveyors have done and continue to do an outstanding job at the Hope Bay mine site. Using the above-mentioned procedure will help further reflect the quality and professionalism of their work in the digital records that are provided to interested parties.

If this proposed method of deliverables is acceptable to your firm, please have confirmation sent by senior staff member (Maritz or Lowell) via e-mail communications to my attention. Once confirmation is received, we will provide you with the implementation date at which you can expect to receive the survey data in this format.

Best regards,

Georges

Georges Cornelissen, C.E.T.

Survey Manager

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