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## **2017 SURFACE DRILLING**

## **WEST LIMB PROJECT**

**April, 2017**

**N.A. Guest**

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## SUMMARY

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From December 2016 to February 2017, a diamond drilling program was conducted to explore the up-plunge extension of known mineralization associated with the West Limb of the Northern Iron Formation (NIF). This program is a follow-up to surface drilling done in early 2016. Drilling was conducted near the southern shore of Opapimiskan Lake, ~300m south of the northern-most vent raise on the Musselwhite Mine property, which is owned and operated by Goldcorp Canada Ltd. The work completed comprises 2 separate mining leases. Drilling revealed similar geology and gold mineralization to what had been previously discovered down plunge of the target area.

## INTRODUCTION

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This report is written on behalf of Goldcorp Canada Ltd. by the staff of Musselwhite Mine. The report discusses work conducted within the boundaries of mining leases PA369746 and PA369767.

The program was designed and implemented by the exploration department at Musselwhite Mine. Drilling was performed by Boart Longyear. The core from this program is stored in the core racks adjacent to the exploration camp on the Musselwhite Mine property.

## LOCATION AND ACCESS

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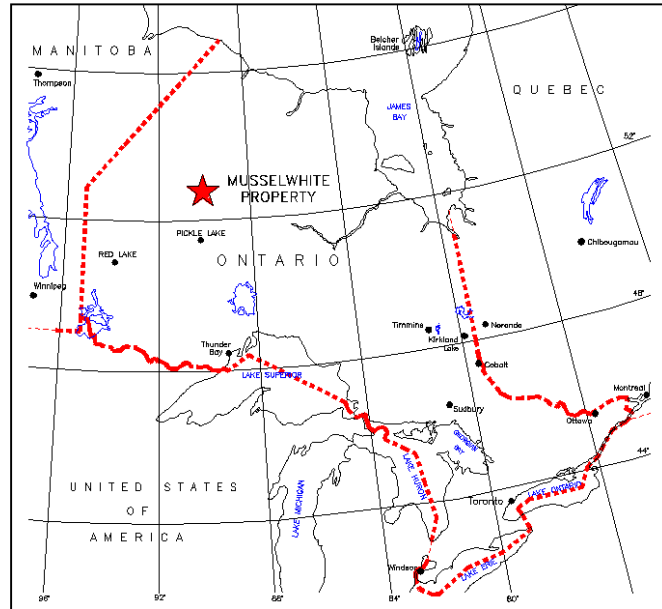
All work in this report was conducted within the boundaries of the Musselwhite Mine property. Musselwhite Mine is a gold producing mine that is 100% owned and operated by Goldcorp Canada Ltd. The mine is located approximately 480 km north-north-west of Thunder Bay and 103 km north of Pickle Lake with geographic coordinates of 52° 36' 50" N latitude and 90° 21' 43" W longitude (**Figure 1**), on the south shore of Opapimiskan Lake with the deposit plunging beneath the lake.

Drilling performed during this program took place within the boundaries of the above stated mining leases, located in the Zeemal Lake Area within the Patricia Mining Division, District of

Kenora, Northwestern Ontario. The mining lease is located on NTS map sheet 53 B/9 (Opapimiskan Lake) and is approximately 2.2 km from the mine portal.

The West Limb drill program was land based with mine roads and temporary access roads being used for access.

**Figure 1: General Location Map**



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## LAND TENURE & OWNERSHIP

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Mining lease PA369746 is ~11.23 ha (1 claim unit) and PA369767 is ~14.75 ha (1 claim unit) in size. Both claim blocks are owned by Goldcorp Canada Ltd. The tenure rights for this lease are mining and surface rights.

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## PROPERTY GEOLOGY

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The above mentioned mining leases are located within the south-central portion of the North Caribou Greenstone Belt.

The geology identified by this drill program consisted of a sequence of metasedimentary rocks, basalt and biotite-garnet schist. There were also minor felsic to intermediate volcanic rocks and silicate facies iron formations. Rocks have been metamorphosed to amphibolite grade. A cross section of the drilling can be seen in **Appendix 1** and drill logs in **Appendix 4**.

The various lithology codes used during logging are briefly described below:

2	Basalt
2H	Mafic tuff, lapilli tuff
2K	Mafic dykes, sills and small intrusions
2T	Biotite bearing metavolcanic
2U	Garnet bearing metavolcanic
3F	Felsic tuff/lapilli tuff
4E	Garnet-amphibole iron formation
4F	Garnet-biotite schist
4FE	Garnet-biotite schist with less than 50% intercalated Garnet-amphibole
6	Metasediment
6J	Garnet-rich layers associated with metapelites and/or banded iron formation
6W	Garnet-bearing mudstone/siltstone/sandstone
QTZ VN	Quartz vein

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## PROGRAM DESCRIPTION

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A series of drill holes were planned to intercept the West Limb of the highly folded “Northern Iron Formation” (NIF) in an attempt to define the up-plunge extension of known mineralization. The NIF units primarily host the ore at Musselwhite Mine.

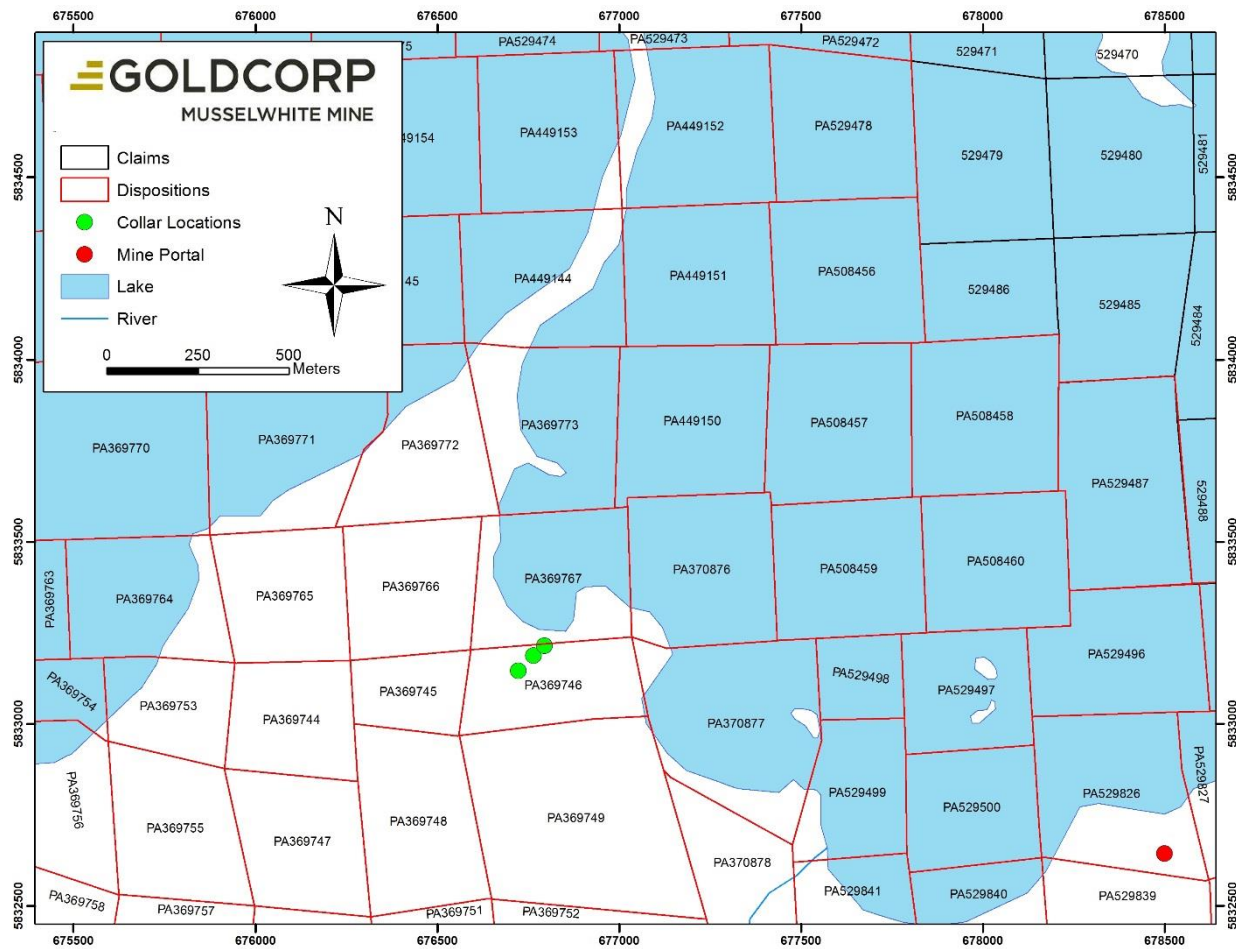
A total of 4 holes were drilled to depths ranging from 68m to 336m. Two drill holes were drilled from the same setup location. Drill hole information is shown below in **Table 1** and drill locations are shown in **Figure 2**.

**Table 1:** West Limb drill hole information.

Hole ID	UTM EASTING (NAD 83)	UTM NORTHING (NAD 83)	AZIMUTH	DIP	DEPTH
16-WEL-138	676765.0	5833186.5	90	-50	293
17-WEL-012	676795.1	5833214.4	90	-50	336
17-WEL-013	676795.1	5833214.5	90	-45	68
17-WEL-014	676723.0	5833145.5	90	-50	326



**Figure 2:** Map showing location of drill holes.



## RESULTS/RECOMMENDATIONS

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All holes intersected geology similar to what has been seen in previous West Limb exploration drilling. Assays results (**Appendix 2**) from the target area appear to represent a more poorly developed up-plunge extension of known West Limb mineralization. A summary of intervals containing significant gold mineralization is shown in **Table 2**.

**Table 2:** Significant intervals of Au mineralization.

Hole	From	To	Drilled Width	Au
16-WEL-138	180.5m	181.1m	0.6m	60.5g/t
16-WEL-138	185.8m	188.8m	3.0m	3.5g/t
17-WEL-012	42.7m	45.2m	2.5m	3.1g/t
17-WEL-014	11.2m	12.0m	0.8m	12.3g/t
17-WEL-014	294.0m	297.0m	3.0m	1.6g/t

These results indicate that an up-plunge extension of the West Limb is present, yet poorly developed. Currently, future drilling of this target is not anticipated.

## STATEMENT OF EXPENDITURES

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A total of \$255,111.00 was spent during this program, \$71,756.00 on PA369746 and \$183,355.00 on PA369767. **Table 3** provides basic details on expenditures. A complete breakdown of expenditures can be seen in **Appendix 3** and invoices in **Appendix 5**.

**Table 3:** Breakdown of expenditures.

Hole ID	Labour	Drilling	Other	Disposition	SUB TOTAL
16-WEL-138	\$1,860.00	\$12,646.00	\$3,399.00	PA369746	\$17,905.00
	\$5,604.00	\$38,110.00	\$9,772.00	PA369767	\$53,486.00
SUB TOTAL	\$7,464.00	\$50,756.00	\$13,171.00		\$71,391.00
17-WEL-012	\$225.00	\$1,437.00	\$3,399.00	PA369746	\$5,061.00
	\$6,647.00	\$42,461.00	\$9,772.00	PA369767	\$58,880.00
SUB TOTAL	\$6,872.00	\$43,898.00	\$13,171.00		\$63,941.00
17-WEL-013	\$177.00	\$2,467.00	\$3,399.00	PA369746	\$6,043.00
	\$1,027.00	\$14,311.00	\$9,772.00	PA369767	\$25,110.00
SUB TOTAL	\$1,204.00	\$16,778.00	\$13,171.00		\$31,153.00
17-WEL-014	\$4,492.00	\$34,856.00	\$3,399.00	PA369746	\$42,747.00
	\$4,122.00	\$31,985.00	\$9,772.00	PA369767	\$45,879.00
SUB TOTAL	\$8,614.00	\$66,841.00	\$13,171.00		\$88,626.00

PA369746 Total	\$71,756.00
PA369767 Total	\$183,355.00
<b>GRAND TOTAL</b>	<b>\$255,111.00</b>

## STATEMENT OF QUALIFICATIONS

---

I, Nicolas Guest, hereby certify that:

1. I am the author of this report.
2. I have a Bachelor of Science with Advanced Major in Earth Science and Business Administration from St. Francis Xavier University in Antigonish, Nova Scotia.
3. I have a Master of Science in Geology from Laurentian University in Sudbury, Ontario.
4. I am registered Professional Geologist #0228 of the Association of Professional Geoscientists of Nova Scotia.
5. I am employed by Goldcorp Canada Ltd. at Musselwhite Mine.
6. I agree with all the information contained within this report and believe that it is an accurate description of the worked performed.
7. I reside in the community of Lower Barneys River, Nova Scotia, Canada.

Name:



Date: April 21<sup>st</sup>, 2017

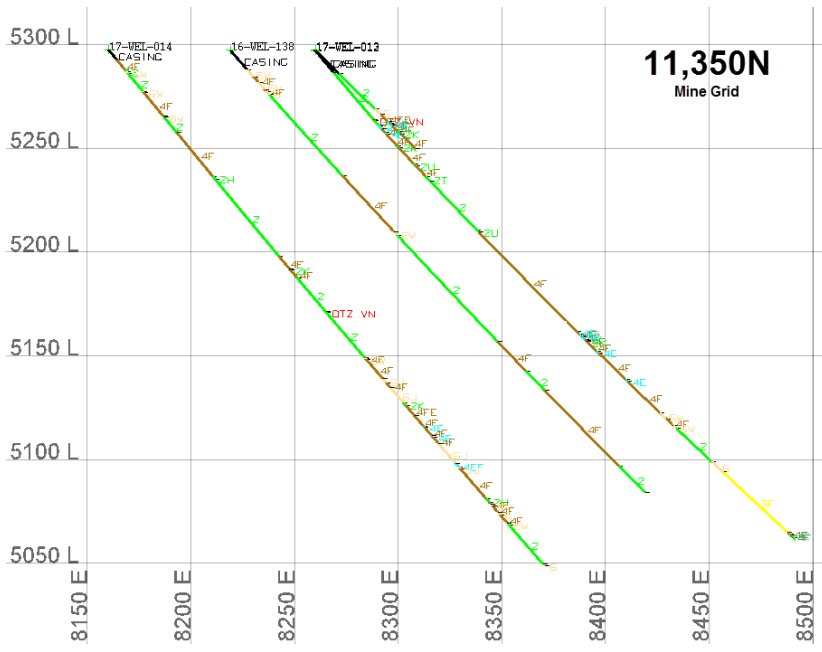
Goldcorp Canada Ltd.

Musselwhite Mine

PO Box 7500

Thunder Bay, ON

P7B 6S8





**Date Submitted:** 06-Feb-17  
**Invoice No.:** A17-01102  
**Invoice Date:** 14-Feb-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

195 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A17-01102**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with a large 'E' and 'S'.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
TELEPHONE +807 223-6168 or +1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E792501	0.010
E792502	0.005
E792503	0.006
E792504	0.007
E792505	0.092
E792506	< 0.005
E792507	0.012
E792508	0.006
E792509	0.010
E792510	3.26
E792511	0.009
E792512	0.057
E792513	0.027
E792514	1.29
E792515	2.26
E792516	3.46
E792517	0.135
E792518	0.053
E792519	0.069
E792520	< 0.005
E792521	0.019
E792522	0.104
E792523	0.040
E792524	0.024
E792525	0.080
E792526	0.025
E792527	0.150
E792528	0.023
E792529	0.105
E792530	7.41
E792531	0.250
E792532	0.161
E792533	0.348
E792534	0.274
E792535	0.960
E792536	0.011
E792537	0.196
E792538	0.186
E792539	0.051
E792540	< 0.005
E792541	0.066
E792542	0.051
E792543	0.825

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E792544	0.924
E792545	0.994
E792546	0.282
E792547	0.015
E792715	0.016
E792716	0.040
E792717	0.010
E792718	0.104
E792719	0.090
E792720	< 0.005
E792721	0.080
E792722	0.011
E792723	0.015
E792724	0.014
E792725	0.015
E792726	0.020
E792727	0.497
E792728	0.080
E792729	0.015
E792730	7.64
E792731	0.010
E792732	0.013
E792733	0.013
E792734	0.010
E792735	0.011
E792736	0.082
E792737	0.032
E792738	0.032
E792739	0.086
E792740	< 0.005
E792741	1.17
E792742	2.43
E792743	1.53
E792744	0.022
E792745	0.037
E792746	0.010
E792747	0.021
E792748	0.015
E792749	0.072
E792750	3.23
E792751	0.022
E792752	0.648
E792753	0.018



	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E792754	0.013
E792755	0.012
E792756	0.009
E792757	0.009
E792758	0.008
E792759	0.009
E792760	< 0.005
E792761	0.024
E792762	0.418
E792763	0.023
E792764	0.117
E792765	0.218
E792766	0.062
E792767	0.307
E792768	0.259
E792769	0.021
E792770	7.44
E792771	0.015
E792772	0.012
E792773	0.011
E792774	0.019
E792775	0.005
E792776	0.027
E792777	0.007
E792778	0.006
E792779	0.013
E792780	< 0.005
E792781	0.013
E792782	0.006
E792783	0.007
E792784	0.008
E792785	0.018
E792786	0.015
E792787	1.42
E792788	0.299
E792789	0.352
E792790	3.23
E792791	0.021
E792792	0.011
E792793	0.007
E792794	< 0.005
E792795	< 0.005
E792796	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E792797	0.013
E792798	0.008
E792799	0.722
E792800	< 0.005
E792801	0.638
E792802	0.017
E792803	0.012
E792804	0.012
E792805	0.014
E792806	0.271
E792807	0.069
E792808	0.009
E792809	0.008
E792810	3.22
E792811	0.010
E792812	0.036
E792813	0.140
E792814	0.021
E792815	0.011
E792816	0.006
E792817	0.010
E792818	0.408
E792819	0.116
E792820	< 0.005
E792821	0.006
E792822	0.006
E792823	0.009
E795256	< 0.005
E795257	0.006
E795258	< 0.005
E795259	0.019
E795260	< 0.005
E795261	< 0.005
E795262	< 0.005
E795263	< 0.005
E795264	< 0.005
E795265	< 0.005
E795266	0.008
E795267	< 0.005
E795268	0.021
E795269	0.088
E795270	7.44
E795271	0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E795272	0.051
E795273	0.014
E795274	0.120
E795275	< 0.005
E795276	0.025
E795277	0.072
E795278	0.007
E795279	0.009
E795280	< 0.005
E795281	0.011
E795282	0.114
E795283	0.016
E795284	0.031
E795285	0.015
E795286	0.007
E795287	0.014
E795288	< 0.005
E795289	< 0.005
E795290	3.36
E795291	< 0.005
E795292	0.007
E795293	0.006
E795294	0.010
OREAS 251(FA-Anaster) Meas	0.521
OREAS 251(FA-Anaster) Cert	0.504
OREAS 251(FA-Anaster) Meas	0.517
OREAS 251(FA-Anaster) Cert	0.504
OREAS 251(FA-Anaster) Meas	0.505
OREAS 251(FA-Anaster) Cert	0.504
OREAS 251(FA-Anaster) Meas	0.508
OREAS 251(FA-Anaster) Cert	0.504

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
OREAS 251(FA-Anaster) Meas	0.505
OREAS 251(FA-Anaster) Cert	0.504
OREAS 251(FA-Anaster) Meas	0.516
OREAS 251(FA-Anaster) Cert	0.504
Oreas 203 Meas	0.884
Oreas 203 Cert	0.871
Oreas 203 Meas	0.866
Oreas 203 Cert	0.871
Oreas 203 Meas	0.879
Oreas 203 Cert	0.871
OREAS 203 Meas	0.882
OREAS 203 Cert	0.871
OREAS 203 Meas	0.881
OREAS 203 Cert	0.871
OREAS 203 Meas	0.852
OREAS 203 Cert	0.871
E792511 Orig	0.009
E792511 Dup	0.012
E792520 Orig	< 0.005
E792520 Dup	< 0.005
E792529 Orig	0.105
E792529 Dup	0.099
E792717 Orig	0.013
E792717 Split	0.012
E792717 Orig	0.010
E792717 Dup	0.016
E792724 Orig	0.014
E792724 Dup	0.028
E792735 Orig	0.011
E792735 Dup	0.011
E792747 Orig	0.021
E792747 Dup	0.014
E792756 Orig	0.009
E792756 Dup	0.009
E792765 Orig	0.218
E792767 Orig	0.307
E792767 Split	0.410





**Date Submitted:** 07-Feb-17  
**Invoice No.:** A17-01116  
**Invoice Date:** 15-Feb-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

292 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Geraldton Au - Fire Assay AA

REPORT **A17-01116**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3



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E-MAIL Geraldton@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

CERTIFIED BY:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

Emmanuel Esemé , Ph.D.  
Quality Control

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795295	0.206	
E795296	0.014	
E795297	0.037	
E795298	0.036	
E795299	0.021	
E795300	0.005	
E795301	0.015	
E795302	0.009	
E795303	0.011	
E795304	0.017	
E795305	0.017	
E795306	0.020	
E795307	0.015	
E795308	0.018	
E795309	0.036	
E795310	3.43	
E795311	0.142	
E795312	0.117	
E795313	0.027	
E795314	0.021	
E795315	0.020	
E795316	0.067	
E795317	0.065	
E795318	0.025	
E795319	0.023	
E795320	< 0.005	
E795321	0.191	
E795322	0.014	
E795323	0.612	
E795324	2.27	
E795325	0.035	
E795326	0.013	
E795327	0.010	
E795328	0.012	
E795329	0.026	
E795330	7.63	
E795331	0.019	
E795332	0.012	
E795333	0.186	
E795334	0.073	
E795335	0.034	
E795336	0.014	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795337	0.005	
E795338	0.012	
E795339	< 0.005	
E795340	< 0.005	
E795341	< 0.005	
E795342	< 0.005	
E795343	< 0.005	
E795344	0.006	
E795345	< 0.005	
E795346	0.011	
E795347	< 0.005	
E795348	0.022	
E795349	0.006	
E795350	3.16	
E795351	0.007	
E795352	0.012	
E795353	0.009	
E795354	0.007	
E795355	0.005	
E795356	0.030	
E795357	0.006	
E795358	0.007	
E795359	0.006	
E795360	< 0.005	
E795361	0.007	
E795362	0.005	
E795363	0.006	
E795364	0.005	
E795365	0.006	
E795366	0.005	
E795367	0.006	
E795368	0.011	
E795369	0.057	
E795370	7.30	
E795371	0.010	
E795372	0.062	
E795373	0.013	
E795374	0.034	
E795375	0.033	
E795376	0.080	
E795377	0.120	
E795378	0.011	
E795379	1.62	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795380	< 0.005	
E795381	0.054	
E795382	0.050	
E795383	0.243	
E795384	0.107	
E795385	0.482	
E795386	3.55	
E795387	0.511	
E795388	2.39	
E795389	0.318	
E795390	3.31	
E795391	1.15	
E795392	0.065	
E795393	0.688	
E795394	0.031	
E795395	0.071	
E795396	0.060	
E795397	0.041	
E795398	0.394	
E795399	0.139	
E795400	< 0.005	
E795401	0.053	
E795402	0.104	
E795403	0.072	
E795404	0.183	
E795405	0.008	
E795406	0.019	
E795407	0.021	
E795408	0.019	
E795409	0.013	
E795410	3.15	
E795411	0.010	
E795412	0.016	
E795413	0.034	
E795414	0.006	
E795415	0.010	
E795416	0.277	
E795417	0.035	
E795418	0.038	
E795419	2.40	
E795420	< 0.005	
E795421	0.705	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795422	0.174	
E795423	0.923	
E795424	0.418	
E795425	0.612	
E795426	0.105	
E795427	0.079	
E795428	0.013	
E795429	0.028	
E795430	7.36	
E795431	0.964	
E795432	0.029	
E795433	0.101	
E795434	0.365	
E795435	0.042	
E795436	0.413	
E795437	1.13	
E795438	0.058	
E795439	0.147	
E795440	0.005	
E795441	0.078	
E795442	0.454	
E795443	0.120	
E795444	0.292	
E795445	0.910	
E795446	0.035	
E795447	0.055	
E795448	0.016	
E795449	0.016	
E795450	3.15	
E795451	0.021	
E795452	0.017	
E795453	0.050	
E795454	0.014	
E795455	> 10.0	60.5
E795456	0.320	
E795457	0.078	
E795458	0.087	
E795459	0.300	
E795460	< 0.005	
E795461	0.172	
E795462	2.50	
E795463	5.66	
E795464	2.42	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795465	0.855	
E795466	0.379	
E795467	0.892	
E795468	0.271	
E795469	0.028	
E795470	7.15	
E795471	0.028	
E795472	0.046	
E795473	0.025	
E795474	0.021	
E795475	0.066	
E795476	0.035	
E795477	0.030	
E795478	0.036	
E795479	0.029	
E795480	< 0.005	
E795481	0.026	
E795482	0.475	
E795483	0.018	
E795484	0.024	
E795485	0.016	
E795486	0.014	
E795487	0.019	
E795488	0.020	
E795489	0.020	
E795490	3.19	
E795491	0.027	
E795492	0.041	
E795493	0.041	
E795494	0.023	
E795495	0.015	
E795496	0.017	
E795497	0.209	
E795498	0.102	
E795499	0.019	
E795500	< 0.005	
E795501	0.138	
E795502	0.024	
E795503	0.019	
E795504	0.111	
E795505	0.130	
E795506	0.013	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795507	0.596	
E795508	0.040	
E795509	0.049	
E795510	3.30	
E795511	< 0.005	
E795512	0.013	
E795513	0.014	
E795514	0.016	
E795515	1.02	
E795516	0.025	
E795517	0.040	
E795518	2.94	
E795519	0.768	
E795520	< 0.005	
E795521	0.617	
E795522	0.013	
E795523	0.028	
E795524	0.022	
E795525	0.464	
E795526	0.012	
E795527	0.006	
E795528	0.064	
E795529	0.005	
E795530	7.49	
E795531	0.008	
E795532	0.027	
E795533	0.009	
E795534	0.007	
E795535	0.012	
E795536	0.046	
E795537	0.012	
E795538	0.012	
E795539	0.032	
E795540	0.007	
E795541	0.015	
E795542	0.022	
E795543	0.015	
E795544	0.012	
E795545	0.018	
E795546	0.011	
E795547	0.011	
E795548	< 0.005	
E795549	0.007	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795550	3.59	
E795551	0.009	
E795552	0.009	
E795553	0.010	
E795554	0.015	
E795555	0.027	
E795556	0.010	
E795557	0.008	
E795558	0.008	
E795559	0.010	
E795560	0.005	
E795561	0.009	
E795562	0.006	
E795563	0.007	
E795564	0.037	
E795565	0.010	
E795566	0.009	
E795567	0.015	
E795568	0.014	
E795569	0.015	
E795570	7.74	
E795571	0.043	
E795572	0.204	
E795573	0.013	
E795574	0.022	
E795575	0.011	
E795576	0.033	
E795577	0.026	
E795578	0.012	
E795579	0.029	
E795580	< 0.005	
E795581	0.029	
E795582	0.014	
E795583	< 0.005	
E795584	0.014	
E795585	0.014	
E795586	0.008	
OxK110 Meas		3.61
OxK110 Cert		3.602
OxP116 Meas		14.8
OxP116 Cert		14.92
OREAS 251(FA-Anaster)	0.524	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Meas		
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 16A (FA-Ancaster) Meas	1.90	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.85	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.74	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.74	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.81	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.81	
OREAS 16A (FA-Ancaster) Cert	1.80	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.85	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.81	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.82	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.81	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 251 Meas	0.500	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.500	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.483	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.531	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.475	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.517	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.508	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.513	
OREAS 251 Cert	0.50	
OREAS 251 Meas	0.480	
OREAS 251 Cert	0.50	
E795304 Orig	0.017	
E795304 Dup	0.017	
E795314 Orig	0.021	
E795314 Dup	0.021	
E795339 Orig	< 0.005	
E795339 Dup	< 0.005	
E795344 Orig	0.006	
E795344 Split	0.007	
E795349 Orig	0.006	
E795349 Dup	0.010	
E795359 Orig	0.006	
E795359 Dup	0.006	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795373 Orig	0.013	
E795373 Dup	0.014	
E795383 Orig	0.243	
E795383 Dup	0.249	
E795393 Orig	0.688	
E795393 Dup	0.667	
E795394 Orig	0.031	
E795394 Split	0.026	
E795407 Orig	0.021	
E795407 Dup	0.022	
E795417 Orig	0.035	
E795417 Dup	0.032	
E795427 Orig	0.079	
E795442 Orig	0.454	
E795442 Dup	0.443	
E795444 Orig	0.292	
E795444 Split	0.246	
E795452 Orig	0.017	
E795452 Dup	0.030	
E795455 Orig		60.5
E795455 Dup		60.7
E795462 Orig	2.50	
E795462 Dup	2.47	
E795476 Orig	0.035	
E795476 Dup	0.032	
E795486 Orig	0.014	
E795486 Dup	0.014	
E795494 Orig	0.023	
E795494 Split	0.015	
E795496 Orig	0.017	
E795496 Dup	0.015	
E795509 Orig	0.049	
E795509 Dup	0.049	
E795520 Orig	< 0.005	
E795520 Dup	< 0.005	
E795531 Orig	0.008	
E795531 Dup	0.006	
E795544 Orig	0.012	
E795544 Split	0.009	
E795545 Orig	0.018	
E795545 Dup	0.016	
E795555 Orig	0.027	
E795555 Dup	0.015	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795565 Orig	0.010	
E795565 Dup	0.011	
E795579 Orig	0.029	
E795579 Dup	0.028	
Method Blank	0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 08-Feb-17  
**Invoice No.:** A17-01181  
**Invoice Date:** 17-Feb-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

245 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A17-01181**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is stylized with loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
264 Government Road, Dryden, Ontario, Canada, P8N 2R3  
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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796001	0.670	
E796002	1.85	
E796003	0.228	
E796004	0.651	
E796005	0.198	
E796006	0.208	
E796007	0.050	
E796008	0.286	
E796009	0.114	
E796010	3.28	
E796011	0.010	
E796012	0.006	
E796013	0.011	
E796014	0.599	
E796015	0.332	
E796016	0.093	
E796017	0.086	
E796018	0.102	
E796019	5.03	
E796020	< 0.005	
E796021	2.02	
E796022	2.64	
E796023	0.070	
E796024	0.015	
E796025	0.040	
E796026	0.197	
E796027	2.00	
E796028	0.025	
E796029	0.022	
E796030	3.32	
E796031	0.036	
E796032	0.148	
E796033	0.154	
E796034	0.126	
E796035	0.035	
E796036	0.010	
E796037	0.028	
E796038	0.017	
E796039	0.018	
E796040	< 0.005	
E796041	0.027	
E796042	0.019	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796043	0.012	
E796044	0.119	
E796045	0.583	
E796046	0.018	
E796047	0.014	
E796048	0.012	
E796049	0.012	
E796050	3.20	
E796051	0.016	
E796052	0.007	
E796053	0.113	
E796054	0.007	
E796055	0.106	
E796056	0.050	
E796057	0.026	
E796058	0.055	
E796059	0.029	
E796060	< 0.005	
E796061	0.016	
E796062	0.968	
E796063	0.010	
E796064	0.012	
E796065	0.009	
E796066	0.011	
E796067	0.005	
E796068	< 0.005	
E796069	0.005	
E796070	7.43	
E796071	0.286	
E796072	< 0.005	
E796073	< 0.005	
E796074	< 0.005	
E796075	< 0.005	
E796076	< 0.005	
E796077	0.006	
E796078	< 0.005	
E796079	0.008	
E796080	< 0.005	
E796081	0.009	
E796082	0.434	
E796083	0.031	
E796084	0.005	
E796085	0.006	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796086	0.009	
E796087	0.005	
E796088	0.005	
E796089	0.005	
E796090	3.29	
E796091	< 0.005	
E796092	0.005	
E796093	< 0.005	
E796094	< 0.005	
E796095	< 0.005	
E796096	0.007	
E796097	< 0.005	
E796098	0.007	
E796099	0.005	
E796100	< 0.005	
E796101	0.005	
E796102	0.014	
E796103	0.008	
E796104	0.016	
E796105	0.126	
E796106	0.109	
E796107	0.025	
E796108	0.170	
E796109	0.019	
E796110	3.29	
E796111	0.024	
E796112	0.010	
E796113	0.010	
E796114	0.011	
E796115	0.024	
E796116	0.032	
E796117	0.013	
E796118	0.021	
E796119	0.017	
E796120	< 0.005	
E796121	0.012	
E796122	0.019	
E796123	0.019	
E796124	0.015	
E796125	0.009	
E796126	0.008	
E796127	0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796128	0.007	
E796129	0.007	
E796130	7.82	
E796131	0.008	
E796132	0.006	
E796133	0.006	
E796134	0.005	
E796135	< 0.005	
E796136	0.005	
E795923	0.019	
E795924	0.059	
E795925	0.125	
E795926	0.061	
E795927	0.032	
E795928	0.232	
E795929	0.148	
E795930	7.60	
E795931	0.175	
E795932	< 0.005	
E795933	0.005	
E795934	< 0.005	
E795935	0.007	
E795936	0.005	
E795937	0.005	
E795938	0.019	
E795939	0.081	
E795940	< 0.005	
E795941	0.269	
E795942	0.027	
E795943	0.354	
E795944	0.334	
E795945	0.076	
E795946	0.089	
E795947	0.021	
E795948	0.142	
E795949	0.009	
E795950	3.23	
E795951	0.014	
E795952	0.025	
E795953	0.018	
E795954	0.069	
E795955	0.018	
E795956	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795957	0.008	
E795958	0.012	
E795959	0.009	
E795960	< 0.005	
E795961	0.200	
E795962	0.243	
E795963	0.501	
E795964	0.114	
E795965	0.163	
E795966	0.370	
E795967	0.090	
E795968	0.082	
E795969	0.225	
E795970	7.57	
E795971	0.057	
E795972	0.037	
E795973	0.622	
E795974	0.765	
E795975	1.47	
E795976	2.87	
E795977	1.51	
E795978	0.303	
E795979	0.892	
E795980	< 0.005	
E795981	> 10.0	10.4
E795982	0.879	
E795983	1.37	
E795984	2.82	
E795985	3.15	
E795986	0.160	
E795987	0.392	
E795988	0.060	
E795989	0.660	
E795990	3.25	
E795991	0.093	
E795992	0.117	
E795993	0.031	
E795994	< 0.005	
E795995	0.038	
E795996	0.054	
E795997	0.037	
E795998	0.160	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795999	0.102	
E796000	< 0.005	
E796265	0.051	
E796266	0.015	
E796267	< 0.005	
E796268	2.15	
E796269	0.095	
E796270	7.71	
E796271	0.012	
E796272	0.005	
E796273	< 0.005	
E796274	< 0.005	
E796275	0.006	
E796276	0.006	
E796277	0.005	
E796278	< 0.005	
E796279	0.048	
E796280	< 0.005	
E796281	0.155	
E796282	0.126	
E796283	0.008	
E796284	0.011	
E796285	0.008	
E796286	< 0.005	
E796287	0.005	
E796288	0.008	
E796289	0.372	
E796290	3.26	
E796291	0.383	
E796292	0.356	
E796293	0.025	
E796294	0.007	
E796295	0.006	
OREAS 251(FA-Anaster) Meas	0.527	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.520	
OREAS 251(FA-Anaster)	0.504	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Cert		
OREAS 251(FA-Anaster) Meas	0.518	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.507	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.519	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.525	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.517	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.525	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 214 Meas		3.05
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.83
OREAS 216 (Fire Assay) Cert		6.66
Oreas 203 Meas	0.876	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.864	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.875	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.889	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.897	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.892	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.882	
Oreas 203 Cert	0.871	
OREAS 203 Meas	0.914	
OREAS 203 Cert	0.871	
E796011 Orig	0.010	
E796011 Dup	0.010	
E796020 Orig	< 0.005	
E796020 Dup	< 0.005	
E796029 Orig	0.022	
E796029 Dup	0.021	
E796046 Orig	0.018	
E796046 Dup	0.018	
E796051 Orig	0.016	
E796051 Split	0.013	
E796064 Orig	0.012	
E796064 Dup	0.012	
E796080 Orig	< 0.005	
E796080 Dup	< 0.005	
E796089 Orig	0.005	
E796089 Dup	0.005	
E796098 Orig	0.007	
E796098 Dup	0.006	
E796101 Orig	0.005	
E796101 Split	0.005	
E796118 Orig	0.021	
E796118 Dup	0.021	
E796125 Orig	0.009	
E796125 Dup	0.010	
E796136 Orig	0.005	
E796136 Dup	< 0.005	
E795935 Orig	0.007	
E795935 Dup	0.005	
E795936 Orig	0.005	
E795936 Split	0.005	
E795944 Orig	0.334	
E795944 Dup	0.399	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E795953 Orig	0.018	
E795953 Dup	0.017	
E795969 Orig	0.225	
E795969 Dup	0.227	
E795978 Orig	0.303	
E795978 Dup	0.348	
E795986 Orig	0.160	
E795986 Split	0.188	
E795987 Orig	0.392	
E795987 Dup	0.416	
E796267 Orig	< 0.005	
E796267 Dup	< 0.005	
E796276 Orig	0.006	
E796276 Dup	0.005	
E796285 Orig	0.008	
E796285 Dup	0.008	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 13-Feb-17  
**Invoice No.:** A17-01353  
**Invoice Date:** 18-Feb-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

270 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A17-01353**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke at the end.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796522	0.073	
E796523	0.022	
E796524	0.071	
E796525	0.011	
E796526	0.081	
E796527	0.022	
E796528	0.148	
E796529	0.379	
E796530	7.71	
E796531	0.043	
E796532	0.024	
E796533	< 0.005	
E796534	< 0.005	
E796535	< 0.005	
E796536	< 0.005	
E796537	< 0.005	
E796538	0.046	
E796539	1.24	
E796540	< 0.005	
E796541	3.97	
E796542	0.392	
E796543	0.420	
E796544	1.88	
E796545	0.647	
E796546	2.52	
E796547	0.361	
E796548	0.053	
E796549	0.105	
E796550	3.25	
E796551	1.78	
E796552	0.035	
E796553	0.616	
E796554	0.186	
E796555	0.495	
E796556	0.063	
E796557	1.73	
E796558	0.019	
E796559	0.112	
E796560	< 0.005	
E796561	0.020	
E796562	0.018	
E796563	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796564	0.018	
E796565	0.046	
E796566	0.021	
E796567	0.205	
E796568	0.173	
E796569	0.045	
E796570	7.35	
E796571	0.063	
E796572	1.53	
E796573	0.021	
E796574	0.006	
E796575	0.006	
E796576	0.006	
E796577	0.021	
E796578	0.224	
E796579	0.035	
E796580	< 0.005	
E796581	0.023	
E796582	0.042	
E796583	0.248	
E796584	0.033	
E796585	0.161	
E796586	0.024	
E796587	0.058	
E796588	0.010	
E796589	0.007	
E796590	3.15	
E796591	< 0.005	
E796592	0.006	
E796593	0.006	
E796594	0.005	
E796595	0.006	
E796596	0.009	
E796597	0.052	
E796598	0.252	
E796599	0.021	
E796600	< 0.005	
E796601	0.045	
E796602	0.179	
E796603	0.132	
E796604	1.43	
E796605	0.252	
E796606	0.042	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796607	0.450	
E796608	> 10.0	13.6
E796609	0.453	
E796610	3.28	
E796611	0.135	
E796612	0.189	
E796613	0.487	
E796614	0.132	
E796615	0.023	
E796616	0.272	
E796617	0.117	
E796618	0.255	
E796619	0.741	
E796620	< 0.005	
E796621	1.52	
E796622	0.322	
E796623	0.082	
E796624	0.031	
E796625	0.056	
E796484	0.706	
E796485	0.082	
E796486	0.577	
E796487	0.008	
E796488	< 0.005	
E796489	< 0.005	
E796490	3.26	
E796491	< 0.005	
E796492	< 0.005	
E796493	0.021	
E796494	0.115	
E796495	0.078	
E796496	0.028	
E796497	0.060	
E796498	0.623	
E796499	0.112	
E796500	< 0.005	
E796501	0.057	
E796502	0.024	
E796503	0.026	
E796504	0.030	
E796505	0.013	
E796506	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796507	0.005	
E796508	0.013	
E796509	0.008	
E796510	3.31	
E796511	0.026	
E796512	0.083	
E796513	0.030	
E796514	0.011	
E796515	0.011	
E796516	0.033	
E796517	0.101	
E796518	0.038	
E796519	0.010	
E796520	< 0.005	
E796521	0.008	
E796137	< 0.005	
E796138	0.005	
E796139	< 0.005	
E796140	< 0.005	
E796141	0.005	
E796142	< 0.005	
E796143	< 0.005	
E796144	0.007	
E796145	0.008	
E796146	0.007	
E796147	0.382	
E796148	0.109	
E796149	0.020	
E796150	3.25	
E796151	0.021	
E796152	0.037	
E796153	0.013	
E796154	0.007	
E796155	0.007	
E796156	0.006	
E796157	0.007	
E796158	< 0.005	
E796159	0.015	
E796160	< 0.005	
E796161	0.006	
E796162	0.005	
E796163	0.006	
E796164	< 0.005	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796165	0.005	
E796166	0.009	
E796167	0.013	
E796168	0.007	
E796169	0.013	
E796170	3.24	
E796171	0.013	
E796172	0.016	
E796173	0.005	
E796174	0.009	
E796175	0.007	
E796176	0.014	
E796177	0.016	
E796178	0.010	
E796179	0.011	
E796180	< 0.005	
E796181	0.012	
E796182	0.033	
E796183	0.016	
E796184	0.012	
E796185	0.010	
E796186	0.014	
E796187	0.019	
E796188	0.029	
E796189	0.097	
E796190	3.30	
E796191	0.011	
E796192	0.013	
E796193	0.007	
E796194	0.008	
E796195	0.008	
E796196	0.006	
E796197	0.012	
E796198	0.008	
E796199	0.009	
E796200	< 0.005	
E796201	0.005	
E796202	0.006	
E796203	0.005	
E796204	0.005	
E796205	0.007	
E796206	0.009	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796207	0.007	
E796208	0.007	
E796209	0.010	
E796210	3.24	
E796211	0.006	
E796212	0.005	
E796213	< 0.005	
E796214	< 0.005	
E796215	0.096	
E796216	0.026	
E796217	0.007	
E796218	0.165	
E796219	0.023	
E796220	< 0.005	
E796221	0.063	
E796222	0.045	
E796223	0.055	
E796224	0.108	
E796225	0.034	
E796226	0.032	
E796227	0.029	
E796228	0.035	
E796229	0.015	
E796230	7.38	
E796231	0.009	
E796232	0.007	
E796233	0.012	
E796234	0.007	
E796235	0.010	
E796236	< 0.005	
E796237	< 0.005	
E796238	0.006	
E796239	0.005	
E796240	< 0.005	
E796241	0.005	
E796242	0.006	
E796243	< 0.005	
E796244	< 0.005	
E796245	< 0.005	
E796246	0.006	
E796247	0.017	
E796248	< 0.005	
E796249	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796250	3.21	
E796251	< 0.005	
E796252	< 0.005	
E796253	< 0.005	
E796254	< 0.005	
E796255	0.018	
E796256	0.022	
E796257	< 0.005	
E796258	< 0.005	
E796259	0.006	
E796260	< 0.005	
E796261	0.008	
E796262	< 0.005	
E796263	< 0.005	
E796264	< 0.005	
OREAS 251(FA-Anaster) Meas	0.516	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.513	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.528	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.523	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.511	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster)	0.525	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Meas		
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.509	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 251(FA-Anaster) Meas	0.520	
OREAS 251(FA-Anaster) Cert	0.504	
OREAS 214 Meas		2.95
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.57
OREAS 216 (Fire Assay) Cert		6.66
Oreas 203 Meas	0.888	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.892	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.886	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.873	
Oreas 203 Cert	0.871	
OREAS 203 Meas	0.883	
OREAS 203 Cert	0.871	
OREAS 203 Meas	0.875	
OREAS 203 Cert	0.871	
OREAS 203 Meas	0.903	
OREAS 203 Cert	0.871	
OREAS 203 Meas	0.884	
OREAS 203 Cert	0.871	
E796536 Orig	< 0.005	
E796536 Dup	< 0.005	
E796543 Orig	0.420	
E796543 Dup	0.416	
E796554 Orig	0.186	
E796554 Dup	0.240	
E796567 Orig	0.205	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796567 Dup	0.195	
E796571 Orig	0.063	
E796571 Split	0.076	
E796576 Orig	0.006	
E796576 Dup	0.005	
E796585 Orig	0.161	
E796585 Dup	0.145	
E796592 Orig	0.006	
E796592 Dup	0.008	
E796605 Orig	0.252	
E796605 Dup	0.385	
E796621 Orig	1.52	
E796621 Split	1.58	
E796624 Orig	0.031	
E796624 Dup	0.028	
E796493 Orig	0.021	
E796493 Dup	0.022	
E796502 Orig	0.024	
E796502 Dup	0.022	
E796511 Orig	0.026	
E796511 Dup	0.018	
E796143 Orig	< 0.005	
E796143 Dup	< 0.005	
E796144 Orig	0.007	
E796144 Split	0.007	
E796152 Orig	0.037	
E796152 Dup	0.042	
E796161 Orig	0.006	
E796161 Dup	0.007	
E796168 Orig	0.007	
E796168 Dup	0.008	
E796181 Orig	0.012	
E796181 Dup	0.012	
E796194 Orig	0.008	
E796194 Split	0.007	
E796200 Orig	< 0.005	
E796200 Dup	< 0.005	
E796205 Orig	0.007	
E796205 Dup	0.011	
E796221 Orig	0.063	
E796221 Dup	0.067	
E796232 Orig	0.007	
E796232 Dup	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796244 Orig	< 0.005	
E796244 Split	< 0.005	
E796244 Split	< 0.005	
E796245 Orig	< 0.005	
E796245 Dup	< 0.005	
E796255 Orig	0.018	
E796255 Dup	0.011	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
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Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03



**Date Submitted:** 07-Mar-17  
**Invoice No.:** A17-02155  
**Invoice Date:** 15-Mar-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

309 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A17-02155**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive style with some loops and flourishes.

---

Emmanuel Esemé , Ph.D.  
Quality Control

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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E792025	0.096	
E792026	0.009	
E792027	0.018	
E792028	0.009	
E792029	0.006	
E792030	7.43	
E792031	0.011	
E792032	0.005	
E792033	0.128	
E792034	0.009	
E792035	0.011	
E792036	0.011	
E792037	1.67	
E792038	0.239	
E792039	0.015	
E792040	< 0.005	
E792041	0.011	
E792042	0.006	
E792043	0.006	
E792044	0.010	
E792045	0.013	
E792046	0.030	
E792047	0.007	
E792048	0.010	
E792049	0.019	
E792050	3.34	
E792051	0.021	
E792052	0.021	
E792053	0.016	
E792054	0.008	
E792055	0.012	
E792056	0.006	
E792057	< 0.005	
E792058	0.011	
E792059	< 0.005	
E792060	0.005	
E792061	0.005	
E792062	0.005	
E792063	0.006	
E792064	0.008	
E792065	0.006	
E792066	0.028	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E792067	0.007	
E792068	0.010	
E792069	0.008	
E792070	7.51	
E792071	0.009	
E792072	0.011	
E792073	0.012	
E792074	0.006	
E792075	0.009	
E792076	0.014	
E792077	0.009	
E792078	0.022	
E792079	0.777	
E792080	< 0.005	
E792081	0.030	
E792082	1.22	
E792083	> 10.0	18.0
E792084	7.55	
E792085	0.723	
E792086	3.92	
E792087	0.208	
E792088	0.076	
E792089	0.817	
E792090	3.12	
E792091	0.036	
E792092	0.155	
E792093	0.009	
E792094	0.015	
E792095	0.009	
E792096	0.011	
E792097	0.011	
E792098	0.013	
E792099	0.015	
E792100	< 0.005	
E792101	0.005	
E792102	0.005	
E792103	0.007	
E792104	0.018	
E792105	0.018	
E792106	0.012	
E792107	0.011	
E792108	0.010	
E792109	0.030	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E792110	3.09	
E792111	0.065	
E792112	1.55	
E792113	0.022	
E792114	0.093	
E792115	0.134	
E792116	0.012	
E792117	0.057	
E792118	0.014	
E792119	< 0.005	
E792120	< 0.005	
E792121	0.065	
E792122	> 10.0	53.7
E792123	1.49	
E792124	0.009	
E792125	0.013	
E792126	< 0.005	
E792127	0.015	
E792128	> 10.0	12.9
E792129	5.02	
E792130	7.16	
E792131	0.226	
E792132	0.073	
E792133	0.006	
E792134	0.009	
E792135	0.007	
E792136	0.005	
E792137	0.011	
E792138	0.833	
E792139	0.027	
E792140	< 0.005	
E792141	0.013	
E792142	0.019	
E792143	0.009	
E792144	0.102	
E792145	1.28	
E792146	0.038	
E792147	0.013	
E792148	0.367	
E792149	0.008	
E792150	3.16	
E792151	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E792152	0.013	
E792153	0.007	
E792154	0.006	
E792155	0.007	
E792156	1.29	
E792157	0.111	
E792158	0.068	
E792159	0.490	
E792160	0.008	
E792161	0.694	
E792162	7.71	
E792163	> 10.0	11.7
E792164	0.592	
E792165	0.320	
E792166	0.666	
E792167	3.38	
E792168	5.30	
E792169	7.01	
E792170	7.45	
E792171	3.63	
E792172	1.33	
E792173	0.110	
E792174	0.199	
E792175	0.363	
E792176	0.243	
E792177	0.515	
E792178	2.41	
E792179	0.173	
E792180	< 0.005	
E792181	0.882	
E792182	0.136	
E792183	0.113	
E792184	0.790	
E792185	1.30	
E792186	0.506	
E796776	0.023	
E796777	0.152	
E796778	0.112	
E796779	1.19	
E796780	0.006	
E796781	0.038	
E796782	> 10.0	12.3
E796783	2.63	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796784	0.699	
E796785	0.324	
E796786	0.493	
E796787	0.534	
E796788	0.358	
E796789	0.028	
E796790	3.22	
E796791	0.017	
E796792	0.027	
E796793	0.011	
E796794	0.608	
E796795	0.080	
E796796	0.045	
E796797	0.024	
E796798	1.33	
E796799	0.176	
E796800	< 0.005	
E796801	0.171	
E796802	3.35	
E796803	0.031	
E796804	0.218	
E796805	0.047	
E796806	0.018	
E796807	0.017	
E796808	0.083	
E796809	0.014	
E796810	3.26	
E796811	0.014	
E796812	0.987	
E796813	0.409	
E796814	0.021	
E796815	0.051	
E796816	0.008	
E796817	0.010	
E796818	0.007	
E796819	< 0.005	
E796820	< 0.005	
E796821	< 0.005	
E796822	0.005	
E796823	0.014	
E796824	0.008	
E796825	0.014	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E796826	0.016	
E796827	0.032	
E796828	0.036	
E796829	0.053	
E796830	7.56	
E796831	0.034	
E796832	0.013	
E796833	< 0.005	
E796834	< 0.005	
E796835	< 0.005	
E796836	< 0.005	
E796837	< 0.005	
E796838	0.037	
E796839	0.071	
E796840	< 0.005	
E796841	< 0.005	
E796842	0.008	
E796843	< 0.005	
E796844	< 0.005	
E796845	< 0.005	
E799431	0.007	
E799432	0.069	
E799433	0.047	
E799434	2.26	
E799435	0.018	
E799436	0.059	
E799437	0.008	
E799438	0.080	
E799439	0.309	
E799440	< 0.005	
E799441	0.010	
E799442	< 0.005	
E799443	0.337	
E799444	< 0.005	
E799445	0.031	
E799446	0.023	
E799447	0.049	
E799448	2.50	
E799449	1.98	
E799450	3.15	
E799451	0.052	
E799452	0.151	
E799453	0.341	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E799454	2.15	
E799455	2.61	
E799456	0.045	
E799457	0.015	
E799458	0.062	
E799459	0.755	
E799460	< 0.005	
E799461	0.017	
E799462	0.297	
E799463	0.009	
E799464	0.006	
E799465	0.122	
E799466	0.006	
E799467	0.006	
E799468	< 0.005	
E799469	0.010	
E799470	7.35	
E799471	0.045	
E799472	2.51	
E799473	0.078	
E799474	0.570	
E799475	0.010	
E799476	0.040	
E799477	0.067	
E799478	0.188	
E799479	0.008	
E799480	< 0.005	
E799481	0.023	
E799482	0.011	
E799483	0.035	
E799484	0.050	
E799485	0.029	
E799486	0.098	
E799487	0.108	
E799488	0.239	
E799489	0.868	
E799490	3.26	
E799491	0.038	
E799492	0.424	
E799493	0.101	
E799494	0.948	
E799495	0.064	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E799496	0.723	
E799497	0.244	
E799498	4.59	
E799499	0.205	
E799500	< 0.005	
E799501	0.063	
E799502	0.043	
E799503	0.008	
E799504	< 0.005	
E799505	< 0.005	
E799506	< 0.005	
E799507	< 0.005	
OREAS 16A (FA-Ancaster) Meas	1.80	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.81	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.74	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.75	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.82	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.80	
OREAS 16A (FA-Ancaster) Cert	1.81	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
OREAS 16A (FA-Ancaster) Meas	1.77	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.83	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.80	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.82	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 16A (FA-Ancaster) Meas	1.78	
OREAS 16A (FA-Ancaster) Cert	1.81	
OREAS 214 Meas		3.04
OREAS 214 Cert		3.03
OREAS 214 Meas		2.94
OREAS 214 Cert		3.03
OREAS 216 (Fire Assay) Meas		6.71
OREAS 216 (Fire Assay) Cert		6.66
OREAS 216 (Fire Assay) Meas		6.70
OREAS 216 (Fire Assay) Cert		6.66
Oreas 203 Meas	0.867	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.865	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.846	
Oreas 203 Cert	0.871	



	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Oreas 203 Meas	0.869	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.863	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.867	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.880	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.860	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.859	
Oreas 203 Cert	0.871	
Oreas 203 Meas	0.848	
Oreas 203 Cert	0.871	
OREAS 203 Meas	0.875	
OREAS 203 Cert	0.871	
E792039 Orig	0.015	
E792039 Dup	0.015	
E792046 Orig	0.030	
E792046 Dup	0.033	
E792057 Orig	< 0.005	
E792057 Dup	< 0.005	
E792071 Orig	0.009	
E792071 Dup	0.007	
E792074 Orig	0.006	
E792074 Split	0.006	
E792079 Orig	0.777	
E792079 Dup	0.444	
E792088 Orig	0.076	
E792088 Dup	0.092	
E792108 Orig	0.010	
E792108 Dup	0.010	
E792115 Orig	0.134	
E792115 Dup	0.094	
E792124 Orig	0.009	
E792124 Split	0.010	
E792126 Orig	< 0.005	
E792126 Dup	< 0.005	
E792142 Orig	0.019	
E792142 Dup	0.017	
E792149 Orig	0.008	
E792149 Dup	0.007	
E792160 Orig	0.008	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
E792160 Dup	0.006	
E792174 Orig	0.199	
E792174 Split	0.153	
E792177 Orig	0.515	
E792177 Dup	0.476	
E792184 Orig	0.790	
E792184 Dup	0.850	
E796784 Orig	0.699	
E796784 Dup	0.660	
E796796 Orig	0.045	
E796796 Dup	0.042	
E796805 Orig	0.047	
E796805 Dup	0.015	
E796813 Orig	0.409	
E796813 Split	0.336	
E796814 Orig	0.021	
E796814 Dup	0.020	
E796831 Orig	0.034	
E796831 Dup	0.034	
E796839 Orig	0.071	
E796839 Dup	0.067	
E799433 Orig	0.047	
E799433 Dup	0.049	
E799448 Orig	2.50	
E799448 Split	2.95	
E799454 Orig	2.15	
E799454 Dup	2.14	
E799461 Orig	0.017	
E799461 Dup	0.019	
E799472 Orig	2.51	
E799472 Dup	2.56	
E799495 Orig	0.064	
E799495 Dup	0.071	
E799498 Orig	4.59	
E799498 Split	5.01	
E799498 Dup	4.59	
E799506 Orig	< 0.005	
E799506 Dup	0.008	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	

	FA-AA	FA- GRA
SAMPLE	Au	Au
DESCRIPTION	g/mt	g/tonne
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank	< 0.005	
Method Blank		< 0.03
Method Blank	< 0.005	



**Date Submitted:** 13-Mar-17  
**Invoice No.:** A17-02334  
**Invoice Date:** 23-Mar-17  
**Your Reference:** Exploration

**GOLDCORP Canada Ltd--Musselwhite Mine**  
**P.O. Box 7500**  
**Thunder bay Ontario P7B 6S8**  
**Canada**

**ATTN: Katie Lucas**

## CERTIFICATE OF ANALYSIS

318 Core samples were submitted for analysis.

The following analytical package(s) were requested:

Code 1A2-GC Musselwhite Dryden Au - Fire Assay AA

REPORT **A17-02334**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written in a cursive, somewhat stylized font.

---

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**  
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E-MAIL Dryden@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797501	0.007
E797502	0.007
E797503	0.007
E797504	0.009
E797505	0.010
E797506	0.007
E797507	0.006
E797508	0.006
E797509	0.007
E797510	3.18
E797511	0.006
E797512	0.007
E797513	0.018
E797514	0.007
E797515	0.008
E797516	0.008
E797517	0.006
E797518	0.052
E797519	0.012
E797520	0.006
E797521	0.177
E797522	0.049
E797523	0.026
E797524	0.012
E797525	0.022
E797526	0.017
E797527	0.026
E797528	0.015
E797529	0.025
E797530	7.48
E797531	0.029
E797532	0.028
E797533	0.073
E797534	0.040
E797535	0.046
E797536	0.012
E797537	0.060
E797538	0.013
E797539	0.014
E797540	< 0.005
E797541	0.014
E797542	0.257
E797543	0.017

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797544	0.021
E797545	0.311
E797546	0.010
E797547	0.007
E797548	0.011
E797549	0.011
E797550	3.16
E797551	0.052
E797552	0.011
E797553	0.007
E797554	0.008
E797555	0.005
E797556	0.008
E797557	0.011
E797558	0.007
E797559	0.007
E797560	< 0.005
E797561	0.009
E797562	0.014
E797563	0.010
E797564	0.007
E797565	0.013
E797566	0.013
E797567	0.009
E797568	0.010
E797569	0.014
E797570	7.48
E797571	0.007
E797572	0.009
E797573	0.014
E797574	0.010
E797575	0.010
E797576	< 0.005
E797577	< 0.005
E797578	< 0.005
E797579	0.007
E797580	< 0.005
E797581	0.011
E797582	0.019
E797583	0.007
E797584	0.071
E797585	0.158
E797586	0.038

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797587	0.016
E797588	0.029
E797589	0.097
E797590	3.23
E797591	0.204
E797592	0.053
E797593	0.045
E797594	1.61
E797595	0.152
E797596	0.011
E797597	0.021
E797598	0.051
E797599	0.083
E797600	< 0.005
E797601	0.059
E797602	0.007
E797603	0.008
E797604	0.011
E797605	0.399
E797606	0.373
E797607	0.130
E797608	0.062
E797609	0.087
E797610	3.18
E797611	0.017
E797612	0.506
E797613	0.012
E797614	0.018
E797615	0.007
E797616	0.009
E797617	0.022
E797618	0.023
E797619	< 0.005
E797620	< 0.005
E797621	0.013
E797622	0.019
E797623	0.020
E797624	0.254
E797625	0.029
E797626	0.005
E797627	0.005
E797628	0.008
E797629	0.006

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797630	7.42
E797631	0.009
E797632	0.010
E797633	0.014
E797634	0.007
E797635	0.024
E797636	0.009
E797637	0.020
E797638	0.014
E797639	0.065
E797640	< 0.005
E797641	0.029
E797642	0.016
E797643	0.009
E797644	0.009
E797645	0.010
E797646	0.006
E797647	0.012
E797648	0.193
E797649	0.133
E797650	3.16
E797651	0.009
E797652	0.007
E797653	0.037
E797654	0.236
E797655	0.034
E797656	0.023
E797657	0.083
E797658	0.913
E797659	0.117
E797660	< 0.005
E797661	1.57
E797662	0.015
E797663	0.021
E797664	0.021
E797665	0.446
E797666	0.055
E797667	0.014
E797668	1.30
E797669	< 0.005
E797670	7.26
E797671	< 0.005
E797672	< 0.005



	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797673	0.777
E797674	0.018
E797675	0.629
E797676	0.031
E797677	0.036
E797678	0.212
E797679	0.362
E797680	< 0.005
E797681	0.008
E797682	0.013
E797683	0.095
E797684	0.112
E797685	0.024
E797686	0.023
E797687	< 0.005
E797688	0.005
E797689	0.009
E797690	3.23
E797691	0.016
E797692	0.014
E797693	0.009
E797694	0.051
E797695	0.203
E797696	0.144
E797697	0.010
E797698	0.011
E797699	0.013
E797700	< 0.005
E797701	0.018
E797702	0.022
E797703	0.019
E797704	0.058
E797705	0.024
E797706	0.007
E797707	0.012
E797708	0.011
E797709	< 0.005
E797710	3.19
E797711	0.022
E797712	0.006
E797713	0.008
E797714	0.040
E797715	0.008

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797716	0.021
E797717	< 0.005
E797718	0.008
E797719	0.007
E797720	< 0.005
E797721	0.020
E797722	0.010
E797723	0.006
E797724	0.007
E797725	0.006
E797726	< 0.005
E797727	0.005
E797728	0.006
E797729	< 0.005
E797730	7.38
E797731	< 0.005
E797732	< 0.005
E797733	< 0.005
E797734	0.012
E797735	0.019
E797736	0.024
E797737	0.024
E797738	0.015
E797739	0.942
E797740	< 0.005
E797741	0.317
E797742	0.014
E797743	1.16
E797744	0.239
E797745	0.046
E797746	0.006
E797747	< 0.005
E797748	0.005
E797749	0.019
E797750	3.26
E797751	0.033
E797752	1.12
E797753	1.10
E797754	0.020
E797755	0.020
E797756	0.218
E797757	0.190
E797758	0.222

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797759	0.006
E797760	< 0.005
E797761	0.019
E797762	0.017
E797763	0.007
E797764	0.006
E797765	0.024
E797766	0.007
E797767	0.599
E797768	< 0.005
E797769	< 0.005
E797770	7.54
E797771	0.012
E797772	0.005
E797773	0.275
E797774	0.005
E797775	0.006
E797776	0.007
E797777	< 0.005
E797778	0.233
E797779	2.61
E797780	< 0.005
E797781	0.018
E797782	2.23
E797783	0.083
E797784	0.275
E797785	0.028
E797786	0.129
E797787	0.098
E797788	0.033
E797789	0.023
E797790	3.17
E797791	0.263
E797792	0.086
E797793	0.021
E797794	0.012
E797795	0.013
E797796	0.019
E797797	0.023
E797798	0.038
E797799	0.017
E797800	< 0.005
E797801	0.014

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797802	0.031
E797803	0.028
E797804	0.065
E797805	0.011
E797806	0.011
E797807	0.027
E797808	0.025
E797809	0.129
E797810	7.36
E797811	0.157
E797812	0.135
E797813	0.145
E797814	0.037
E797815	0.025
E797816	0.122
E797817	0.425
E797818	0.466
OREAS 16A (FA-Ancaster) Meas	1.84
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.89
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.73
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.77
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.81
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A	1.75

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
(FA-Ancaster) Meas	
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.77
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.76
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.78
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.72
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.91
OREAS 16A (FA-Ancaster) Cert	1.81
OREAS 16A (FA-Ancaster) Meas	1.80
OREAS 16A (FA-Ancaster) Cert	1.81
Oreas 203 Meas	0.855
Oreas 203 Cert	0.871
Oreas 203 Meas	0.871
Oreas 203 Cert	0.871
Oreas 203 Meas	0.849
Oreas 203 Cert	0.871
Oreas 203 Meas	0.854
Oreas 203 Cert	0.871

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
Oreas 203 Meas	0.861
Oreas 203 Cert	0.871
Oreas 203 Meas	0.850
Oreas 203 Cert	0.871
Oreas 203 Meas	0.874
Oreas 203 Cert	0.871
Oreas 203 Meas	0.873
Oreas 203 Cert	0.871
OREAS 203 Meas	0.892
OREAS 203 Cert	0.871
OREAS 203 Meas	0.873
OREAS 203 Cert	0.871
OREAS 203 Meas	0.856
OREAS 203 Cert	0.871
OREAS 203 Meas	0.901
OREAS 203 Cert	0.871
E797511 Orig	0.006
E797511 Dup	0.006
E797520 Orig	0.006
E797520 Dup	0.006
E797529 Orig	0.025
E797529 Dup	0.025
E797546 Orig	0.010
E797546 Dup	0.009
E797551 Orig	0.052
E797551 Split	0.041
E797555 Orig	0.005
E797555 Dup	0.005
E797564 Orig	0.007
E797564 Dup	0.008
E797584 Orig	0.071
E797584 Dup	0.072
E797591 Orig	0.204
E797591 Dup	0.160
E797601 Orig	0.059
E797601 Split	0.042
E797602 Orig	0.007
E797602 Dup	0.006
E797618 Orig	0.023
E797618 Dup	0.027
E797625 Orig	0.029
E797625 Dup	0.018
E797636 Orig	0.009

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
E797636 Dup	0.009
E797651 Orig	0.009
E797651 Split	0.009
E797653 Orig	0.037
E797653 Dup	0.037
E797660 Orig	< 0.005
E797660 Dup	< 0.005
E797671 Orig	< 0.005
E797671 Dup	< 0.005
E797687 Orig	< 0.005
E797687 Dup	< 0.005
E797701 Orig	0.018
E797701 Split	0.018
E797705 Orig	0.024
E797705 Dup	0.031
E797721 Orig	0.020
E797721 Dup	0.015
E797728 Orig	0.006
E797728 Dup	< 0.005
E797741 Orig	0.317
E797741 Dup	0.348
E797751 Orig	0.033
E797751 Split	0.038
E797751 Orig	0.033
E797751 Dup	0.033
E797761 Orig	0.019
E797761 Dup	0.018
E797771 Orig	0.012
E797771 Dup	0.021
E797791 Orig	0.263
E797791 Dup	0.376
E797797 Orig	0.023
E797797 Dup	0.021
E797801 Orig	0.014
E797801 Split	0.011
E797808 Orig	0.025
E797808 Dup	0.013
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005

	FA-AA
SAMPLE	Au
DESCRIPTION	g/mt
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005
Method Blank	< 0.005



**LABOUR**

Drill Hole ID	Item	Unit	Cost/Unit	Total
16-WEL-138	Field Technician	21 hours	\$36.00	\$756.00
16-WEL-138	Logging Geologist	33 hours	\$50.00	\$1,650.00
16-WEL-138	Core Cutter	26 hours	\$26.00	\$676.00
16-WEL-138	Assay (External)	298 samples	\$13.50	\$4,172.00
16-WEL-138	Sr. Geologist	3 hours	\$70.00	\$210.00
<b>SUB TOTAL</b>				<b>\$7,464.00</b>
17-WEL-012	Field Technician	24 hours	\$36.00	\$864.00
17-WEL-012	Logging Geologist	37 hours	\$50.00	\$1,850.00
17-WEL-012	Core Cutter	21 hours	\$26.00	\$546.00
17-WEL-012	Assay (External)	238 samples	\$13.50	\$3,332.00
17-WEL-012	Sr. Geologist	4 hour	\$70.00	\$280.00
<b>SUB TOTAL</b>				<b>\$6,872.00</b>
17-WEL-013	Field Technician	5 hours	\$36.00	\$180.00
17-WEL-013	Logging Geologist	8 hours	\$50.00	\$400.00
17-WEL-013	Core Cutter	3 hours	\$26.00	\$78.00
17-WEL-013	Assay (External)	34 samples	\$13.50	\$476.00
17-WEL-013	Sr. Geologist	1 hour	\$70.00	\$70.00
<b>SUB TOTAL</b>				<b>\$1,204.00</b>
17-WEL-014	Field Technician	23 hours	\$36.00	\$828.00
17-WEL-014	Logging Geologist	36 hours	\$50.00	\$1,800.00
17-WEL-014	Core Cutter	31 hours	\$26.00	\$806.00
17-WEL-014	Assay (External)	350 samples	\$13.50	\$4,900.00
17-WEL-014	Sr. Geologist	4 hour	\$70.00	\$280.00
<b>SUB TOTAL</b>				<b>\$8,614.00</b>
<b>TOTAL LABOUR</b>				<b>\$24,154.00</b>

**DRILLING**

Drill Hole ID	Item		Cost
16-WEL-138	Move		\$18,301.00
16-WEL-138	Drilling		\$19,759.00
16-WEL-138	Standby		\$4,660.00
16-WEL-138	Grout/Survey		\$2,599.00
16-WEL-138	Supervision		\$2,732.00
16-WEL-138	Site Prep		\$1,340.00
16-WEL-138	Rentals		\$1,364.00
<b>SUB TOTAL</b>			<b>\$50,755.00</b>
17-WEL-012	Move		\$7,743.00
17-WEL-012	Drilling		\$23,348.00
17-WEL-012	Standby		\$3,877.00
17-WEL-012	Grout/Survey		\$3,015.00
17-WEL-012	Supervision		\$1,835.00
17-WEL-012	Site Prep		\$3,125.00
17-WEL-012	Rentals		\$955.00
<b>SUB TOTAL</b>			<b>\$43,898.00</b>
17-WEL-013	Move		\$430.00
17-WEL-013	Drilling		\$13,801.00

17-WEL-013	Grout/Survey			\$1,292.00
17-WEL-013	Supervision			\$470.00
17-WEL-013	Rentals			\$784.00
<b>SUB TOTAL</b>				<b>\$16,777.00</b>
17-WEL-014	Move			\$21,430.00
17-WEL-014	Drilling			\$22,491.00
17-WEL-014	Standby			\$13,435.00
17-WEL-014	Grout/Survey			\$2,000.00
17-WEL-014	Supervision			\$2,766.00
17-WEL-014	Site Prep			\$1,786.00
17-WEL-014	Rentals			\$2,933.00
<b>SUB TOTAL</b>				<b>\$66,841.00</b>

**TOTAL DRILLING \$178,271.00**

**OTHER**

Item	Unit		Cost/Unit	Total
Core Shack Rental	2 month		\$4,700.00	\$9,400.00
Cut Shack Rental	1 month		\$2,600.00	\$2,600.00
Drill Mobilization (3 trucks)	flat rate/truck		\$7,880.00	\$23,640.00
Camp costs for Drillers (5)	34 days (5 people)		\$80/day	\$13,600.00
Report Writing - Sr. Geo	20 hours		\$70/hr	\$1,400.00
Core Boxes - NQ two row	341		\$6/box	\$2,046.00

**TOTAL OTHER \$52,686.00**

**GRAND TOTAL \$255,111.00**

# MUSSELWHITE MINE - GEOLOGY

Hole: **16-WEL-138**

Project: **WEL**

Mine Grid Easting: 8219.049

Planned Depth(m): 240

Drill Start Date: 12/30/2016

Mine Grid Northing: 11350.508

Actual Depth (m): 293

Drill End Date: 1/11/2017

Elevation: 5297.346

Core Diameter: NQ2

UTM East:

Plugged: UNKNOWN

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	91.2	-50.6	MAXI
3	91.1	-49.6	MAXI
6	91.1	-49	MAXI
9	91.1	-48.7	MAXI
12	91.2	-48.4	MAXI
15	91.2	-48.4	MAXI
18	91.3	-48.4	MAXI
21	91.3	-48.4	MAXI
24	91.4	-48.3	MAXI
27	91.4	-48.4	MAXI
30	91.5	-48.4	MAXI
33	91.5	-48.1	MAXI
36	91.6	-48.2	MAXI
39	91.6	-48.2	MAXI
42	91.7	-48	MAXI
45	91.7	-48.1	MAXI
48	91.8	-47.9	MAXI
51	91.8	-48	MAXI
54	91.9	-48	MAXI
57	91.9	-48	MAXI
60	92	-47.8	MAXI
63	92	-47.8	MAXI
66	92.1	-47.9	MAXI
69	92.1	-47.9	MAXI
72	92.2	-47.8	MAXI
75	92.2	-47.7	MAXI
78	92.3	-47.7	MAXI
81	92.3	-47.6	MAXI
84	92.3	-47.4	MAXI
87	92.3	-47.4	MAXI
90	92.3	-47.4	MAXI
93	92.3	-47.3	MAXI
96	92.3	-47.3	MAXI
99	92.3	-47.2	MAXI
102	92.3	-47.2	MAXI
105	92.3	-47.2	MAXI
108	92.4	-47.2	MAXI
111	92.4	-47.2	MAXI
114	92.5	-47.2	MAXI
117	92.5	-47.2	MAXI
120	92.5	-47.1	MAXI
123	92.6	-47.1	MAXI
126	92.6	-46.8	MAXI
129	92.7	-46.8	MAXI
132	92.7	-47	MAXI
135	92.8	-47.1	MAXI
138	92.8	-46.7	MAXI
141	92.8	-46.8	MAXI
144	92.9	-46.8	MAXI
147	92.9	-46.8	MAXI
150	93	-46.6	MAXI
153	93	-46.6	MAXI
156	93	-46.6	MAXI
159	93.1	-46.5	MAXI

# MUSSELWHITE MINE - GEOLOGY

Hole: **16-WEL-138**

Project: **WEL**

Mine Grid Easting: 8219.049

Planned Depth(m): 240

Drill Start Date: 12/30/2016

Mine Grid Northing: 11350.508

Actual Depth (m): 293

Drill End Date: 1/11/2017

Elevation: 5297.346

Core Diameter: NQ2

UTM East:

Plugged: UNKNOWN

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
162	93.2	-46.5	MAXI
165	93.3	-46.5	MAXI
168	93.3	-46.5	MAXI
171	93.4	-46.4	MAXI
174	93.4	-46.4	MAXI
177	93.5	-46.4	MAXI
180	93.5	-46.3	MAXI
183	93.6	-46.3	MAXI
186	93.6	-46.3	MAXI
189	93.6	-46.2	MAXI
192	93.7	-46.2	MAXI
195	93.7	-46.1	MAXI
198	93.7	-46.1	MAXI
201	93.8	-46	MAXI
204	93.8	-46	MAXI
207	93.9	-46	MAXI
210	94	-45.9	MAXI
213	94	-45.9	MAXI
216	94	-45.8	MAXI
219	94.2	-45.8	MAXI
222	94.2	-45.7	MAXI
225	94.3	-45.7	MAXI
228	94.3	-45.7	MAXI
231	94.4	-45.6	MAXI
234	94.4	-45.6	MAXI
237	94.4	-45.6	MAXI
240	94.5	-45.5	MAXI
243	94.6	-45.5	MAXI
246	94.6	-45.4	MAXI
249	94.7	-45.5	MAXI
252	94.7	-45.4	MAXI
255	94.8	-45.4	MAXI
258	94.8	-45.3	MAXI
261	94.8	-45.3	MAXI
264	94.9	-45.3	MAXI
267	94.95	-45.25	MAXI
270	95	-45.21	MAXI
273	95.05	-45.18	MAXI
276	95.09	-45.15	MAXI
279	95.14	-45.12	MAXI
282	95.19	-45.09	MAXI
285	95.24	-45.06	MAXI
288	95.29	-45.02	MAXI
291	95.34	-44.99	MAXI













Sample	Assay			MAJOR UNIT						MINOR UNIT				ALTERATION							
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
E795479	200	201	0.029	190.9	210.6	4F	B	POR BL	Brown-pink; fine grained; well foliated - weakly banded. Well-developed 4F. Mod ampb with stronger bedding at contacts - bordering on SW. Mod folding of poorly developed compositional banding - 1-4cm ampb-grun. Trace stringers and blebs of	fine grained po+cp scattered throughout. Diffuse LC											
E795481	201	202	0.026																		
E795482	202	203	0.475																		
E795483	203	204	0.018																		
E795484	204	205	0.024																		
E795485	205	206	0.016																		
E795486	206	207	0.014																		
E795487	207	208	0.019																		
E795488	208	209	0.02																		
E795489	209	210	0.02																		
E795491	210	210.6	0.027	210.6	223.6	2	DG	MA	Dark green; fine grained; massive to weakly foliated. Mafic volcanic. Strongly silicified. Weak to mod biotite - intensified proximal to crnt + 1-2% anhedral vein controlled grts. Trace fine grained wavy threads of po associated with qtz veins.	1-2 veins/meter - approx. foliation parallel, poorly developed elastic intervals intercalated in lower 2m. 2-3% blebby elongate stringers of po +/- as-cp proximal to LC. Sharp LC											
E795492	210.6	211.6	0.041																		
E795493	211.6	212.6	0.041																		
E795494	212.6	213.6	0.023																		
E795495	213.6	214.1	0.015																		
E795496	214.1	214.8	0.017																		
E795497	214.8	215.8	0.209																		
E795498	215.8	216.8	0.102																		
E795499	216.8	217.8	0.019																		
E795501	217.8	218.8	0.138																		
E795502	218.8	219.8	0.024	223.6	274.6	4F	B	POR BL	Brown-pink; fine grained; mod to strong fol'n - mod banding. Well-developed heterogeneous 4F - 1-5cm 4E bands scattered throughout - up to 10% over 1m. Sporadic quartz veining - 1-5meter. Mod to strong folding. Garnets locally form mod to tight bands.	-1.5cm mafic dyke at 250.5m. Moderate patchy sericite/muscovite alt. Trace to 5% blebby threads and disseminated po-as +/- cp. Gradational LC - grts decrease - become more sporadic and rarely occur as bands - poorly developed 4F/6W.											
E795503	219.8	220.8	0.019																		
E795504	220.8	221.7	0.111																		
E795505	221.7	222.7	0.13																		
E795506	222.7	223.6	0.013																		
E795507	223.6	224.6	0.596																		
E795508	224.6	225.6	0.04																		
E795509	225.6	226.2	0.049																		
E795511	226.2	227	0.005																		
E795512	227	228	0.013																		
E795513	228	229	0.014	223.6	274.6	4F	B	POR BL	Brown-pink; fine grained; mod to strong fol'n - mod banding. Well-developed heterogeneous 4F - 1-5cm 4E bands scattered throughout - up to 10% over 1m. Sporadic quartz veining - 1-5meter. Mod to strong folding. Garnets locally form mod to tight bands.	-1.5cm mafic dyke at 250.5m. Moderate patchy sericite/muscovite alt. Trace to 5% blebby threads and disseminated po-as +/- cp. Gradational LC - grts decrease - become more sporadic and rarely occur as bands - poorly developed 4F/6W.											
E795514	229	230	0.016																		
E795515	230	231	1.02																		
E795516	231	232	0.025																		
E795517	232	232.6	0.04																		
E795518	232.6	233.1	2.94																		
E795519	233.1	234	0.768																		
E795521	234	235	0.617																		
E795522	235	236	0.013																		
E795523	236	237	0.028																		
E795524	237	238	0.022	223.6	274.6	4F	B	POR BL	Brown-pink; fine grained; mod to strong fol'n - mod banding. Well-developed heterogeneous 4F - 1-5cm 4E bands scattered throughout - up to 10% over 1m. Sporadic quartz veining - 1-5meter. Mod to strong folding. Garnets locally form mod to tight bands.	-1.5cm mafic dyke at 250.5m. Moderate patchy sericite/muscovite alt. Trace to 5% blebby threads and disseminated po-as +/- cp. Gradational LC - grts decrease - become more sporadic and rarely occur as bands - poorly developed 4F/6W.											
E795525	238	239	0.464																		
E795526	239	240	0.012																		
E795527	240	241	0.006																		

Assay	MAJOR UNIT								MINOR UNIT				ALTERATION										
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments		
E795527	240	241	0.006	223.6	274.6	4F	B	POR BL	Brown-pink; fine grained; mod to strong fol'n - mod banding. Well-developed heterogeneous 4F - 1.5cm 4E bands scattered throughout - up to 10% over 1m. Sporadic quartz veining - 1-5meter. Mod to strong folding. Garnets locally form mod to tight bands.														
E795528	241	242	0.064																				
E795529	242	243	0.005																				
E795531	243	244	0.008																				
E795532	244	245	0.027																				
E795533	245	246	0.009																				
E795534	246	247	0.007																				
E795535	247	248	0.012																				
E795536	248	249	0.046																				
E795537	249	250	0.012																				
E795538	250	251	0.012																				
E795539	251	252	0.032																				
E795541	252	253	0.015																				
E795542	253	254	0.022																				
E795543	254	255	0.015																				
E795544	255	256	0.012																				
E795545	256	257	0.018																				
E795546	257	258	0.011																				
E795547	258	259	0.011																				
E795548	259	260	0.005																				
E795549	260	261	0.007																				
E795551	261	262	0.009																				
E795552	262	263	0.009																				
E795553	263	264	0.01																				
E795554	264	265	0.015																				
E795555	265	266	0.027																				
E795556	266	267	0.01																				
E795557	267	268	0.008																				
E795558	268	269	0.008																				
E795559	269	270	0.01																				
E795561	270	271	0.009																				
E795562	271	272	0.006																				
E795563	272	273	0.007																				
E795564	273	274	0.037																				
E795565	274	274.6	0.01																				
E795566	274.6	275	0.009																				
E795567	275	276	0.015																				
E795568	276	277	0.014																				
E795569	277	278	0.015	274.6	293	2	DG	FOL	Dark green; fine to med grained; well foliated. Mafic volcanic. Elongated amphibole filled phenocrysts up to 5mm. Moderate to strongly silicified. 2-5 grz carb veins/meter - parallel to foliation. <1% millimeter scale cross cutting carb veinlets.	Trace fine grained diss po. EOH													
E795571	278	279	0.043																				
E795572	279	280	0.204																				
E795573	280	281	0.013																				

Sample	Assay			MAJOR UNIT					MINOR UNIT				ALTERATION								
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
E795573	280	281	0.013	274.6	293	2	DG	FOL	Dark green: fine to med grained; well foliated. Mafic volcanic. Elongated amphibole filled phenocrysts up to 5mm. Moderate to strongly silicified. 2-5 qtz carb veins/meter - parallel to foliation. <1% millimeter scale cross cutting carb veinlets.	Trace fine grained diss po. EOH											
E795574	281	282	0.022																		
E795575	282	283	0.011																		
E795576	283	284	0.033																		
E795577	284	285	0.026																		
E795578	285	286	0.012																		
E795579	286	287	0.029																		
E795581	287	288	0.029																		
E795582	288	289	0.014																		
E795583	289	290	0.005																		
E795584	290	291	0.014																		
E795585	291	292	0.014																		
E795586	292	293	0.008																		



















# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-012**

Project: **WEL**

Mine Grid Easting: 8260.064

Planned Depth(m): 174

Drill Start Date: 1/12/2017

Mine Grid Northing: 11349.599

Actual Depth (m): 336

Drill End Date: 2/17/2017

Elevation: 5297.171

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	90.6	-50.6	MAXI
3	90.6	-50.8	MAXI
6	90.8	-50.3	MAXI
9	91.1	-49.8	MAXI
12	91.4	-50.7	MAXI
15	91.5	-49.9	MAXI
18	91.5	-49.7	MAXI
21	91.7	-49.9	MAXI
24	91.7	-49.6	MAXI
27	91.7	-49.7	MAXI
30	91.7	-49.5	MAXI
33	91.7	-49.7	MAXI
36	91.6	-49.4	MAXI
39	91.6	-49.2	MAXI
42	91.6	-49.1	MAXI
45	91.5	-48.8	MAXI
48	91.5	-48.6	MAXI
51	91.6	-48.4	MAXI
54	91.6	-48.3	MAXI
57	91.7	-47.8	MAXI
60	91.7	-47.3	MAXI
63	91.8	-47.1	MAXI
66	91.8	-46.8	MAXI
69	91.8	-46.8	MAXI
72	91.7	-46.8	MAXI
75	91.8	-46.7	MAXI
78	91.7	-46.5	MAXI
81	91.7	-46.2	MAXI
84	91.7	-46.7	MAXI
87	91.7	-46.6	MAXI
90	91.7	-46.5	MAXI
93	91.7	-46.5	MAXI
96	91.8	-46	MAXI
99	91.8	-46.5	MAXI
102	91.9	-46.4	MAXI
105	92	-46.4	MAXI
108	92.1	-46.4	MAXI
111	92.2	-46.2	MAXI
114	92.3	-46	MAXI
117	92.5	-46	MAXI
120	92.6	-46.3	MAXI
123	92.7	-45.7	MAXI
126	92.8	-45.7	MAXI
129	92.9	-45.7	MAXI
132	93	-45.6	MAXI
135	93.1	-45.4	MAXI
138	93.1	-45.4	MAXI
141	93.2	-45.4	MAXI
144	93.2	-45.2	MAXI
147	93.2	-45.2	MAXI
150	93.3	-45.2	MAXI
153	93.3	-45.2	MAXI
156	93.3	-45.2	MAXI
159	93.3	-45.1	MAXI

# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-012**

Project: **WEL**

Mine Grid Easting: 8260.064

Planned Depth(m): 174

Drill Start Date: 1/12/2017

Mine Grid Northing: 11349.599

Actual Depth (m): 336

Drill End Date: 2/17/2017

Elevation: 5297.171

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
162	93.3	-45.1	MAXI
165	93.3	-45.1	MAXI
168	93.3	-45.3	MAXI
171	93.3	-45.1	MAXI
174	93.3	-45	MAXI
177	93.2	-45	MAXI
180	93.2	-44.8	MAXI
183	93.2	-44.8	MAXI
186	93.2	-44.9	MAXI
189	93.2	-44.7	MAXI
192	93.2	-44.6	MAXI
195	93.3	-44.7	MAXI
198	93.3	-44.7	MAXI
201	93.4	-44.6	MAXI
204	93.5	-44.6	MAXI
207	93.5	-44.5	MAXI
210	93.6	-44.5	MAXI
213	93.6	-44.3	MAXI
216	93.6	-44.4	MAXI
219	93.6	-44.5	MAXI
222	93.6	-44.3	MAXI
225	93.6	-44.2	MAXI
228	93.7	-44.1	MAXI
231	93.7	-44	MAXI
234	93.7	-43.8	MAXI
237	93.7	-43.6	MAXI
240	93.7	-43.6	MAXI
243	93.7	-43.5	MAXI
246	93.7	-43.4	MAXI
249	93.8	-43.3	MAXI
252	93.9	-43.3	MAXI
255	93.9	-43.2	MAXI
258	94	-43.2	MAXI
261	94	-43.2	MAXI
264	94	-43.2	MAXI
267	94	-43.1	MAXI
270	94	-43.2	MAXI
273	94	-43.1	MAXI
276	94	-43.1	MAXI
279	94	-43	MAXI
282	94.1	-43	MAXI
285	94.1	-42.9	MAXI
288	94.1	-42.9	MAXI
291	94.1	-42.8	MAXI
294	94.1	-42.8	MAXI
297	94.2	-42.8	MAXI
300	94.2	-42.8	MAXI
303	94.2	-42.8	MAXI
306	94.3	-42.8	MAXI
309	94.3	-42.7	MAXI
312	94.3	-43	MAXI
315	94.4	-42.9	MAXI
318	94.4	-42.8	MAXI
321	94.44666667	-42.89333333	MAXI

# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-012**

Project: **WEL**

Mine Grid Easting: 8260.064

Planned Depth(m): 174

Drill Start Date: 1/12/2017

Mine Grid Northing: 11349.599

Actual Depth (m): 336

Drill End Date: 2/17/2017

Elevation: 5297.171

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: WEL**

UTM North:

Grout Test: YES

**Target 2:**

Result: GOOD

**Target 3:**

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
324	94.48380952	-42.91047619	MAXI
327	94.52095238	-42.92761905	MAXI
330	94.55809524	-42.9447619	MAXI







Elev	Assay				MAJOR UNIT							MINOR UNIT				ALTERATION						
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E796066	79.9	80.7	0.011	73.6	80.7	1-1	B	POR	porphyroblastic biotite garnet schist, a heterogeneous distribution of the constituent mineral phases creates a strong compositional banding, this banding betrays intense internal folding throughout the unit.												
	E796067	80.7	81.7	0.005					BL													
	E796068	81.7	82.7	0.005	80.7	84.1	2-1	B	FOL	intensely foliated mafic metavolcanics, intense biotite alteration occurs as medium grained books elongated along the foliation, 1-5 foliation parallel carbonate veins are present per meter, typically 5-15mm wide.												
	E796069	82.7	83.7	0.005																		
85																						
90																						
95																						
100					84.1	116.4	2	DG	FOL	fine grained, dark green, mafic metavolcanic, 5-10 qtz carb veins per meter typically 1-3cm wide and commonly displaying irregular folding, the unit is strongly foliated and weakly biotite altered.												
105																						
110																						
115																						
118	E796071	115	115.7	0.286																		
	E796072	115.7	116.4	0.005																		
	E796073	116.4	117	0.005	116.4	118	2U	B	FOL	dark green mafic metavolcanic unit with strong to intense folding, there is intense biotite alteration present throughout the unit and a ten percent abundance of medium grained garnet porphyroblasts.												
	E796074	117	118	0.005																		
	E796075	118	119	0.005																		
	E796076	119	120	0.005	118	185	3	B	POR	intensely deformed biotite garnet schist, dominantly the unit is composed of fine to medium grained garnet set in a fine grained groundmass of biotite, garnets are often grouped to form compositional banding, intense ductile folding deforms the unit.												
	E796077	120	121	0.006					BL													

It is inferred that the intense biotite and garnet grains are present as a result of sedimentary contamination at this contact with a clastic metasedimentary unit. Rarely 2-5cm bands of intercalated 4E are observed. PO occurs in trace abundances of fine to medium disseminated grains or blebs with local concentration approaching 1% associated with weak qtz veining.





Sample	Assay			MAJOR UNIT						MINOR UNIT				ALTERATION							
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
E796173	199.9	200.9	0.005	199.9	218.3	4F	B	POR BL	porphyroblastic biotite garnet schist. weak compositional banding observed. garnet abundances typically range from 30-50%. 1-5 lamination parallel qtz veins per meter typically 5-15mm wide. intense isoclinal folds are observed sparsely.												
E796174	200.9	201.6	0.009																		
E796175	201.6	202.3	0.007																		
E796176	202.3	203	0.014																		
E796177	203	204	0.016																		
E796178	204	205	0.01																		
E796179	205	206	0.011																		
E796181	206	207	0.012																		
E796182	207	208	0.033																		
E796183	208	209	0.016																		
E796184	209	210	0.012																		
E796185	210	211	0.01																		
E796186	211	212	0.014																		
E796187	212	213	0.019																		
E796188	213	214	0.029																		
E796189	214	215	0.097																		
E796191	215	216	0.011																		
E796192	216	217	0.013																		
E796193	217	217.7	0.007																		
E796194	217.7	218.3	0.008																		
E796195	218.3	219	0.008	218.3	219.6	4E	DG	POR BL	poorly developed intercalated 4E unit. very weak banding. dominantly the unit retains a typical 4F texture but features a groundmass of dark green amphibole in place of biotite.												
E796196	219	219.6	0.006																		
E796197	219.6	220	0.012																		
E796198	220	221	0.008																		
E796199	221	222	0.009																		
E796201	222	223	0.005																		
E796202	223	224	0.006																		
E796203	224	225	0.005																		
E796204	225	226	0.005																		
E796205	226	227	0.007																		
E796206	227	228	0.009																		
E796207	228	229	0.007																		
E796208	229	230	0.007	219.6	241.4	4F	B	POR BL	weak to moderate compositional banding created by heterogeneous distribution of constituent phases. fine to medium grained garnet porphyroblasts range in abundance from 30-50%. strong to intense folding observed throughout.												the groundmass is 30-40% composed of a soft grey alteration mineral with a silky appearance. below 235m the unit is abundantly crosscut by folded qtz veins and features moderate to strong CPY mineralization in the form of fine disseminated grains.
E796209	230	231	0.01																		
E796211	231	232	0.006																		
E796212	232	233	0.005																		
E796213	233	233.7	0.005																		
E796214	233.7	234.4	0.005																		
E796215	234.4	234.9	0.096																		
E796216	234.9	235.9	0.026																		
E796217	235.9	236.9	0.007																		
E796218	236.9	237.7	0.165																		
E796219	237.7	238.5	0.023																		
E796221	238.5	239.5	0.063																		
E796222	239.5	240.3	0.045																		





Sample	Assay			MAJOR UNIT							MINOR UNIT				ALTERATION						
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
E796252	322.3	323.3	0.005	282.9	325.5	3F	G	FOL	fine grained, mesocratic grey, felsic lapilli tuff, strongly foliated. no notable veining. rare stringers of PY. relict lapilli are abundantly observable as fine, attenuated, white clasts.	10% fine wispy PO and PY in lowermost 20cm											
E796253	323.3	324.3	0.005																		
E796254	324.3	325.2	0.005																		
E796255	325.2	325.5	0.018																		
E796256	325.5	326.3	0.022	325.5	327.1	4F	B	POR	Porphyroblastic biotite garnet schist. 35-40% medium grained, weakly attenuated garnets set in a fine grained, well foliated groundmass of black biotite. traces of fine PO occur as sparse foliation parallel wisps.												
E796257	326.3	327.1	0.005																		
E796258	327.1	327.5	0.005	327.1	327.5	4E	DG	DI	moderately well banded 4E, the unit is strongly to intensely deformed by ductile folding. 1% PO occurring as finely disseminated grains and fine banding parallel wisps. moderate carbonante alteration within 15cm of the lower contact.												
E796259	327.5	328.5	0.006																		
E796261	328.5	329.4	0.008	329.4	336	2	DG	FOL	fine grained, dark green mafic metavolcanic unit, the unit is weakly to moderately biotite altered, strongly foliated. fine carbonate veinlets occur abundantly.	carb veins increase in width and decrease in abundance downhole. there appears to be intercalated sedimentary components proximal to the upper contact.											
E796262	329.4	330.4	0.005																		
E796263	330.4	331.4	0.005																		
E796264	331.4	332.4	0.005																		







17-WEL-012

Elev m	MAJOR UNIT			MINERALS						QTZ VEINING							FABRIC						FOLD						FAULT											
	From	To	Unit	As%	Cp%	Mt%	Po%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Tex	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments				
85	73.6	80.7	3A																81.9	82	40	INT	S1																	
	80.7	84.1	2T																87.7	87.8	50	INT	S1																	
95	80.7	111	QZ-C A								80.7	111	QZ-C A	5																										
100	84.1	116.4	2																102.3	102.4	40	INT	S1																	
116.4	118	2U																																						
118	185	4R																																		119.6	119.7	10	INT	FD







Elev. (ft)	MAJOR UNIT			MINERALS					QTZ VEINING					FABRIC					FOLD					FAULT										
	From	To	Unit	As%	Cp%	Mt%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments
245	219.6	241.4	46		1		0.1		lithology hosted but strongly associated with qtz veining.	233	240.3	OZ	10			veins are strongly folded.							242.2	242.3	50	INT	ME							
	241.4	245.8	6W																															
	245.8	250.2	46														249.4	249.5	40	INT	S1													
	250.2	252.3	6W																															
	252.3	275.7	2														259.4	259.5	45	INT	S1													
	275.7	282.9			0.5		2				276	277.7	OZ	15									276.5	276.6	45	MO D	FD							







# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-013**

Project: **WEL**

Mine Grid Easting: 8260.132

Planned Depth(m): 66

Drill Start Date: 1/17/2017

Mine Grid Northing: 11349.639

Actual Depth (m): 68

Drill End Date: 2/19/2017

Elevation: 5297.41

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: WEL**

UTM North:

Grout Test: YES

**Target 2:**

Result: GOOD

**Target 3:**

Drill Instructions: Drill as shallow as possible with 3m core barrel (we want it to lift)

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	91.7	-45.9	MAXI
3	91.6	-45.6	MAXI
6	91.5	-45	MAXI
9	91.5	-44.7	MAXI
12	91.5	-44.8	MAXI
15	91.5	-44.8	MAXI
18	91.6	-44.9	MAXI
21	91.6	-44.8	MAXI
24	91.7	-44.7	MAXI
27	91.8	-44.5	MAXI
30	92	-44.6	MAXI
33	92	-44.5	MAXI
36	91.7	-44.5	MAXI
39	91.4	-44.3	MAXI
42	91.4	-44.2	MAXI
45	91.5	-44.2	MAXI
48	91.6	-44.1	MAXI
51	91.4	-44	MAXI
54	91.4	-43.9	MAXI
57	91.38571429	-43.81428571	MAXI
60	91.36071429	-43.725	MAXI
63	91.33571429	-43.63571429	MAXI
66	91.31071429	-43.54642857	MAXI
68	91.28571429	-43.45714286	MAXI









# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-014**

Project: **WEL**

Mine Grid Easting: 8160.343

Planned Depth(m): 325

Drill Start Date: 1/19/2017

Mine Grid Northing: 11350.391

Actual Depth (m): 326

Drill End Date: 2/8/2017

Elevation: 5297.468

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
0	89.9	-50.9	MAXI
3	90.2	-50.4	MAXI
6	90.4	-50.5	MAXI
9	90.5	-50.9	MAXI
12	90.5	-50.6	MAXI
15	90.4	-50.5	MAXI
18	90.5	-50.5	MAXI
21	90.5	-50	MAXI
24	90.5	-50.5	MAXI
27	90.6	-50.5	MAXI
30	90.6	-50.5	MAXI
33	90.7	-50.5	MAXI
36	90.8	-50.5	MAXI
39	90.9	-50.5	MAXI
42	91	-50.5	MAXI
45	91.2	-50.4	MAXI
48	91.2	-50.2	MAXI
51	91.3	-50.6	MAXI
54	91.4	-50.5	MAXI
57	91.5	-50.6	MAXI
60	91.5	-50.6	MAXI
63	91.5	-50.6	MAXI
66	91.5	-50.6	MAXI
69	91.5	-50.6	MAXI
72	91.6	-50.6	MAXI
75	91.6	-50.5	MAXI
78	91.5	-50.5	MAXI
81	91.6	-50.5	MAXI
84	91.5	-50.5	MAXI
87	91.5	-50.4	MAXI
90	91.5	-50.4	MAXI
93	91.5	-50.4	MAXI
96	91.5	-50.4	MAXI
99	91.5	-50.4	MAXI
102	91.6	-50.4	MAXI
105	91.5	-49.9	MAXI
108	91.5	-50.3	MAXI
111	91.5	-50.3	MAXI
114	91.6	-50.3	MAXI
117	91.6	-50.2	MAXI
120	91.6	-50.4	MAXI
123	91.6	-50.2	MAXI
126	91.6	-50.2	MAXI
129	91.6	-50.1	MAXI
132	91.7	-50.1	MAXI
135	91.8	-50	MAXI
138	91.8	-50	MAXI
141	91.8	-49.9	MAXI
144	91.9	-49.9	MAXI
147	92	-49.9	MAXI
150	92	-49.8	MAXI
153	92.1	-49.8	MAXI
156	92.1	-49.7	MAXI
159	92.1	-49.7	MAXI

# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-014**

Project: **WEL**

Mine Grid Easting: 8160.343

Planned Depth(m): 325

Drill Start Date: 1/19/2017

Mine Grid Northing: 11350.391

Actual Depth (m): 326

Drill End Date: 2/8/2017

Elevation: 5297.468

Core Diameter: NQ2

UTM East:

Plugged: YES

Target 1: **WEL**

UTM North:

Grout Test: YES

Target 2:

Result: GOOD

Target 3:

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
162	92.2	-49.7	MAXI
165	92.2	-49.7	MAXI
168	92.3	-49.7	MAXI
171	92.3	-49.7	MAXI
174	92.4	-49.7	MAXI
177	92.4	-49.2	MAXI
180	92.4	-49.7	MAXI
183	92.4	-49.6	MAXI
186	92.5	-49.5	MAXI
189	92.5	-49.6	MAXI
192	92.6	-49.5	MAXI
195	92.6	-49.2	MAXI
198	92.6	-49.4	MAXI
201	92.6	-49.4	MAXI
204	92.7	-49.4	MAXI
207	92.7	-49.3	MAXI
210	92.8	-49.3	MAXI
213	92.8	-49.3	MAXI
216	92.8	-49.6	MAXI
219	92.9	-49.3	MAXI
222	92.9	-49.3	MAXI
225	93	-49.3	MAXI
228	93.1	-49.3	MAXI
231	93.1	-49.2	MAXI
234	93.1	-49.2	MAXI
237	93.1	-49.2	MAXI
240	93.2	-49.2	MAXI
243	93.2	-49.2	MAXI
246	93.3	-49.1	MAXI
249	93.3	-49.1	MAXI
252	93.3	-49.2	MAXI
255	93.3	-49.2	MAXI
258	93.4	-49.1	MAXI
261	93.4	-49.1	MAXI
264	93.4	-49.1	MAXI
267	93.4	-49.1	MAXI
270	93.5	-49.1	MAXI
273	93.5	-49	MAXI
276	93.5	-49.1	MAXI
279	93.5	-49	MAXI
282	93.5	-49	MAXI
285	93.5	-49	MAXI
288	93.5	-49	MAXI
291	93.5	-49	MAXI
294	93.5	-48.9	MAXI
297	93.6	-48.9	MAXI
300	93.6	-48.9	MAXI
303	93.7	-48.9	MAXI
306	93.7	-48.9	MAXI
309	93.8	-48.9	MAXI
312	93.8	-48.9	MAXI
315	93.9	-48.9	MAXI
318	93.9	-48.9	MAXI
321	94	-48.9	MAXI



# MUSSELWHITE MINE - GEOLOGY

Hole: **17-WEL-014**

Project: **WEL**

Mine Grid Easting: 8160.343

Planned Depth(m): 325

Drill Start Date: 1/19/2017

Mine Grid Northing: 11350.391

Actual Depth (m): 326

Drill End Date: 2/8/2017

Elevation: 5297.468

Core Diameter: NQ2

UTM East:

Plugged: YES

**Target 1: WEL**

UTM North:

Grout Test: YES

**Target 2:**

Result: GOOD

**Target 3:**

Drill Instructions: EOH is Geo Call

Collar Comments:

## Survey

Depth	Azimuth	Dip	SurveyType
324	94	-48.9	MAXI



Sample	Assay			MAJOR UNIT					MINOR UNIT				ALTERATION							
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments
E796818	40	41	0.007	26.5	41.5	4F	B	POR	Brown-maroon; fine to mg; well foliated. Heterogeneous well-developed garnet-biotite schist. Sporadic grt size and concentrations - 1-15mm at 5-25% - locally form tight bands. Light green mineral on fractures - luchstite? Patchy fine to mg staurolite. Brown-green; fine grained; well foliated. Garnetiferous meta-sediment - transitional unit from clastic sediment to tuff. Alternating bio and amph bands - possibly mafic tuff sediment. ~5% grts - fine to mg grts constrained to bio bands -	Trace fg diss po. Mod fault at 40.6m - 1-3mm gouge. Sharp LC larger grts within amph bands up to 15mm. Sharp LC										
E796819	41	41.5	0.005					BL												
E796821	41.5	42.1	0.005	41.5	42.1	6W	B	FOL												
E796822	42.1	43	0.005																	
E796823	43	44	0.014																	
E796824	44	45	0.008																	
E796825	45	46	0.014																	
E796826	46	47	0.016	42.1	51.7	2	DG	FOL			Dark green-brown; fine grained; well foliated. Mafic volcanic. Mod to strong biotite alteration. Rare irregular qtz veins +/- pale anhedral grts and amph selvages. Trace fg diss po. Lower contact is strongly faulted - moderate slicken surfaces 3-5mm  carb rich gouge.									
E796827	47	48	0.032																	
E796828	48	49	0.036																	
E796829	49	50	0.053																	
E796831	50	51	0.034																	
E796832	51	51.7	0.013																	
E796833	51.7	52.7	0.005																	
E796834	52.7	53.7	0.005																	
E796835	53.7	54.7	0.005																	
E796836	54.7	55.7	0.005																	
E796837	55.7	56.7	0.005																	
E796838	56.7	57.7	0.037																	
E796839	57.7	58.7	0.071																	
E796841	58.7	59.7	0.005																	
E796842	59.7	60.7	0.008																	
E796843	60.7	61.7	0.005																	
E796844	61.7	62.7	0.005																	
E796845	62.7	63.7	0.005																	
E797501	63.7	64.7	0.007																	
E797502	64.7	65.7	0.007	51.7	79.1	4F	B	POR	Brown-maroon; fine to med grained; mod to strongly foliated. Mod to poorly developed garnet-biotite schist. Foliation varies from 0 to 25 degrees TCA. Garnets locally form tight bands. 5-3cm. 3-15% grts - weakest proximal to UC up to 15mm.  Weak fg staurolite. 1-3mm talc filled vuggy fractures occur locally. Weakly folded. Low angle joint splits core from 66.7-68m. Sharp LC											
E797503	65.7	66.7	0.007					BL												
E797504	66.7	67.7	0.009																	
E797505	67.7	68.7	0.01																	
E797506	68.7	69.7	0.007																	
E797507	69.7	70.7	0.006																	
E797508	70.7	71.7	0.006																	
E797509	71.7	72.7	0.007																	
E797511	72.7	73.7	0.006																	
E797512	73.7	74.7	0.007																	
E797513	74.7	75.7	0.018																	
E797514	75.7	76.7	0.007																	
E797515	76.7	77.7	0.008																	
E797516	77.7	78.5	0.008																	
E797517	78.5	79.1	0.006																	
E797518	79.1	79.6	0.052																	
E797519	79.6	80	0.012																	
E797521	80	80.7	0.177	79.1	80.7	2H	DG	LA	Dark green-brown; fine grained; well banded to laminated - well foliated. Bedded mafic tuff. Mod to strong pervasive biotite alt. Strongly folded. 5-1% fine grained wispy threads of po +/- py. 3-5 Qtz-carb stringers/meter.  Biotite rich intervals likely due to clastic input. Gradational LC											



Assay	Assay			MAJOR UNIT						MINOR UNIT				ALTERATION									
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments		
E797566	120	121	0.013	80.7	128.9	2	DG	FOL	Dark green; fine to med grained; mod to well foliated. Homogeneous mafic volcanic. Weak to moderate local pervasive biotite - spotty texture. Weak to mod methane splay occur from 89-116 at variable angles TCA - majority are very weak.	1-4mm. Trace fine grained diss po +/- lesser vein controlled py. Sharp LC													
E797567	121	122	0.009																				
E797568	122	123	0.01																				
E797569	123	124	0.014																				
E797571	124	125	0.007																				
E797572	125	126	0.009																				
E797573	126	127	0.014																				
E797574	127	128	0.01																				
E797575	128	128.9	0.01	128.9	137.1	4F	B	POR BL	Brown; fine to med grained; mod to well foliated. Garnet-biotite schist. 5-15% 1-5mm grt porphyroblasts - locally form light folded bands. 5-10% fine to med grained staurolite. Trace vfg needle like diss po locally and	fg wispy threads/diss py-po associated with veins. Strain fabric increasing downhole. 2-5 smoky qtz veins per meter 5-1.5cm. Sharp LC													
E797576	128.9	129.9	0.005																				
E797577	129.9	130.9	0.005																				
E797578	130.9	131.9	0.005																				
E797579	131.9	132.9	0.007																				
E797581	132.9	133.9	0.011																				
E797582	133.9	134.9	0.019																				
E797583	134.9	135.9	0.007																				
E797584	135.9	136.5	0.071																				
E797585	136.5	137.1	0.158	137.1	137.6	2K	DG	Dark green; fine grained; well foliated. Mafic dyke? Sharp contacts - due to mod to strong strain fabric and folding in surrounding 4F could be an interval of Bvol structurally introduced. Moderate biotite altered bands 2-5cm.	2-4mm qtz stringers semi-parallel to fol'n. No min. Sharp LC														
E797586	137.1	137.6	0.038																				
E797587	137.6	138.3	0.016																				
E797588	138.3	139	0.029																				
E797589	139	140	0.097																				
E797591	140	141	0.204																				
E797592	141	142	0.053																				
E797593	142	142.7	0.045																				
E797594	142.7	143.4	1.61																				
E797595	143.4	144	0.152	137.6	142.7	4F	B	POR BL	Brown; fine to med grained; mod to strong strain fabric. Garnet-biotite schist. Mod to strong local folding. Strain fabric increasing downhole. Up to 7% quartz veins locally +/- fg wispy threads/diss po-py. Weak to mod compositional	banding/laminae developing downhole. 5-10% fine to med grained gits - decreasing in size and abundance downhole. Lower 1m poorly developed - bordering on 6W. Sharp LC													
E797596	144	145	0.011																				
E797597	145	146	0.021																				
E797598	146	147	0.051																				
E797599	147	148	0.083																				
E797601	148	149	0.059																				
E797602	149	150	0.007																				
E797603	150	151	0.008																				
E797604	151	152	0.011	142.7	164.1	2	DG	FOL	Dark green; fine grained; weak to moderately foliated mafic volcanic. Mod to strong biotite alteration - spotty texture - enhanced locally by qtz veins and HZ's. Strongly silicified. 1-3 qtz-carb veins/meter up to 5cm - foliation parallel.	Trace vfg diss po within veins. Sharp LC													
E797605	152	153	0.399																				
E797606	153	154	0.373																				
E797607	154	154.8	0.13																				
E797608	154.8	155.6	0.082																				
E797609	155.6	156.4	0.087																				
E797611	156.4	157.4	0.017																				
E797612	157.4	158.4	0.506																				
E797613	158.4	159.4	0.012																				
E797614	159.4	160.4	0.018																				

Sample	Assay			MAJOR UNIT						MINOR UNIT				ALTERATION																					
	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments															
E797614	159.4	160.4	0.018	142.7	164.1	2	DG	FOL	Dark green; fine grained; weak to moderately foliated mafic volcanic. Mod to strong biotite alteration - spotty texture - enhanced locally by qtz veins and HZ's. Strongly silicified. 1-3 qtz-carb veins/meter up to 5cm - foliation parallel.	Trace vfg diss po within veins. Sharp LC																									
E797615	160.4	161.4	0.007																																
E797616	161.4	162.4	0.009																																
E797617	162.4	163.4	0.022																																
E797618	163.4	164.1	0.023																																
E797619	164.1	164.4	0.005																																
E797621	164.4	165	0.013																																
E797622	165	166	0.019																																
E797623	166	167	0.02																																
E797624	167	168	0.254																																
E797625	168	169	0.029																																
E797626	169	170	0.005																																
E797627	170	171	0.005																																
E797628	171	172	0.008																																
E797629	172	173	0.006																																
E797631	173	174	0.009																																
E797632	174	175	0.01																																
E797633	175	176	0.014																																
E797634	176	177	0.007																																
E797635	177	178	0.024																																
E797636	178	179	0.009	164.4	193	2	DG	FOL	Dark green; fine grained; weak to moderately foliated mafic volcanic. Weak to mod biotite alteration - spotty texture - enhanced locally by qtz veins. Strongly silicified. 1-3 qtz-carb veins/meter up to 5-1cm - semi-parallel foliation.	Trace vfg diss po within veins - rare wispy threads of fg po 1-2%. Sharp LC																									
E797637	179	180	0.02																																
E797638	180	180.7	0.014																																
E797639	180.7	181.2	0.065																																
E797641	181.2	182	0.029																																
E797642	182	183	0.016																																
E797643	183	184	0.009																																
E797644	184	185	0.009																																
E797645	185	186	0.01																																
E797646	186	187	0.006																																
E797647	187	188	0.012																																
E797648	188	189	0.193																																
E797649	189	190	0.133																																
E797651	190	191	0.009																																
E797652	191	192	0.007																																
E797653	192	193	0.037																																
E797654	193	193.4	0.236	193.4	194	B	POR	Brown; fine grained; well foliated - moderately banded. Heterogeneous garnet-biotite schist. 5-7% fine to coarse grained anhedral to euhedral grts. Upper 15cm moderately amph altered - likely due to proximity to Bvol - possible mafic sulf component.	Trace to .5% fn diss po. Sharp LC																										
E797655	193.4	194	0.034																																
E797656	194	195	0.023																																
E797657	195	196	0.083																																
E797658	196	197	0.913																																
E797659	197	198	0.117																																
E797661	198	199	1.57																																
E797662	199	200	0.015																																
E797663	200	201	0.021																																
E797654	193	193.4	0.236																	194	206.5	B	POR	Brown; fine grained; well foliated to locally banded. Garnet-biotite schist. 5-5cm grt-amph bands occur throughout at abundances of 5-15% +/- grunerite sit on margins. 10-20% fine to med grained grts - locally form tight bands. Mod local folding.	1-3% wispy and blebby stringers of pyrrhotite associated with sporadic qtz veins and on margins of compositional banding - 5-20cm veins. Sharp LC										
E797655	193.4	194	0.034																																
E797656	194	195	0.023																																
E797657	195	196	0.083																																
E797658	196	197	0.913																																
E797659	197	198	0.117																																
E797661	198	199	1.57																																
E797662	199	200	0.015																																
E797663	200	201	0.021																																

No	Assay				MAJOR UNIT					MINOR UNIT				ALTERATION								
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
	E797663	200	201	0.021	194	206.5	4E	B	POR BL	Brown; fine grained; well foliated to locally banded. Garnet-biotite schist. 5-5cm grt-amph bands occur throughout at abundances of 5-15% +/- grunerite all on margins. 10-20% fine to med grained grts - locally form tight bands. Mod local folding.	1-3% wispy and blebby stringers of pyrrhotite associated with sporadic qtz veins and on margins of compositional banding - 5-20cm veins. Sharp LC											
	E797664	201	202	0.021																		
	E797665	202	203	0.446																		
	E797666	203	204	0.055																		
	E797667	204	205	0.014																		
	E797668	205	206	1.3	206.5	209	6J	B	FOL	Brown; fine grained; moderately foliated. Garnetiferous Metasediment - 5-10% semi-angular to rounded clasts of chert and quartz 3-50mm across. 1-3 regular quartz veins/meter +/- amph selvages. 2-3% anhedral grts scattered throughout.	0.5-1% fine grained wispy disseminations and threads of po. Sharp LC											
	E797669	206	206.5	0.005																		
	E797671	206.5	207.5	0.005																		
	E797672	207.5	208.5	0.005																		
	E797673	208.5	209	0.777																		
	E797674	209	210	0.018	209	212.3	4E	B	POR BL	Brown; fine grained; moderately foliated. Garnet-biotite schist. 10-15% anhedral grts - locally form 1-2cm tight bands. Weak patchy fine grained diss staurolite 5-7%. Moderately folded. Trace threads of fg po - associated with rare quartz veins	and on compositional margins. Sharp LC - appearance of rounded quartz and chert clasts.											
	E797675	210	211	0.629																		
	E797676	211	211.8	0.031																		
	E797677	211.8	212.3	0.036																		
	E797678	212.3	213	0.212																		
	E797679	213	214	0.362	212.3	221.7	6J	B	RG	Brown-green; fine grained; Strongly deformed - weak to mod strain fabric. Clastic biotitic meta-sediment - 5-25% rounded attenuated chert + amphib rich clasts. Unit is likely strongly boudinaged and folded causing the appearance of clasts.	Amph all increasing downhole - transitioning towards weakly developed clastic 4E. 1-10cm patches of wispy threads of fg po associated with sporadic qtz veins. Groundmass has slight volcanic appearance - wispy bio +/- grts - 2U?. Sharp LC											
	E797681	214	215	0.008																		
	E797682	215	216	0.013																		
	E797683	216	217	0.095																		
	E797684	217	218	0.112																		
	E797685	218	219	0.024	221.7	223.6	2K	DG	FOL	Dark green; fine grained; moderately foliated. Mafic dyke. Weak bleached brittle fractures crosscutting foliation - possible weak methane splay. No visible min. Non-mag. Sharp LC												
	E797686	219	220	0.023																		
	E797687	220	221	0.005																		
	E797688	221	221.7	0.005																		
	E797689	221.7	222.7	0.009																		
	E797691	222.7	223.6	0.016	223.6	230.1	4E	B	BA	Brown-green; fine grained; well foliated - mod banding. Garnet-biotite schist - 10-25% 4E bands intercalated throughout - 1-30cm - 30cm quartz clastic 4E at 228.1m - moderate grunerite alteration.	5-15cm intervals containing 5-10% rounded chert clasts from 224.5m to 226.4m - analogous to 6J above. Trace blebby threads of po.											
	E797692	223.6	224.6	0.014																		
	E797693	224.6	225.6	0.009																		
	E797694	225.6	226.6	0.051																		
	E797695	226.6	227.6	0.203																		
	E797696	227.6	228.6	0.144	230.1	236.6	4E	B	POR BL	Brown-maroon; fine grained; moderately foliated - locally banded. Moderately heterogeneous Garnet-biotite schist - 1-5cm bands of 4E - narrower bands exhibit strong grunerite all. Weak to mod S-folding. 1-5cm sporadic qtz veins + blebby stringers of po.	Moderately silicified. Grts mod to strongly attenuated. Sharp LC											
	E797697	228.6	229.6	0.01																		
	E797698	229.6	230.1	0.011																		
	E797699	230.1	231	0.013																		
	E797701	231	232	0.018																		
	E797702	232	233	0.022	236.6	237.2	4E	DG	DL	Dark green; fine grained; weakly banded. Quartz clastic grt-amph IF. 10-15% rounded mod to strongly attenuated qtz clasts. -5% sub-rounded to rounded clasts of chert contains vlg diss po and vlg magnetite. 1-2% blebby stringers of po. Sharp LC												
	E797703	233	234	0.019																		
	E797704	234	235	0.058																		
	E797705	235	236	0.024																		
	E797706	236	236.6	0.007																		
	E797707	236.6	237.2	0.012	237.2	242.8	4E	B	POR BL	Brown-maroon-green; fine grained; moderately banded. Well-developed garnet-biotite schist - 20-30% 4E style grunerite-amph altered bands throughout. Mod to strong folding throughout. Trace to 1% blebby threads of po associated with 4E bands.	Sporadic qtz veins - 1-3/meter +/- blebby po. Sharp LC											
	E797708	237.2	238	0.011																		
	E797709	238	239	0.005																		
	E797711	239	240	0.022																		
	E797712	240	241	0.006																		

Assay	MAJOR UNIT										MINOR UNIT				ALTERATION							
	Sample	From	To	AU ppm	From	To	Unit	Col	Text	Comments	Comments	Unit	Comments	Bio	Car	Chl	Gru	Hem	Ser	Si	Comments	
E797712	240	241	0.006	237.2	242.8	4E	B	POR BL	Brown-maroon-green; fine grained; moderately banded. Well-developed garnet-biotite schist - 20-30% 4E style grunerite-amph altered bands throughout. Mod to strong folding throughout. Trace to 1% blebby threads of po associated with 4E bands.	Sporadic qtz veins -1-3/meter +/- blebby po. Sharp LC												
E797713	241	242	0.008																			
E797714	242	242.8	0.04																			
E797715	242.8	243.6	0.008	242.8	243.6	4E	DG	DI	Dark green-brown; fine grained; well foliated. Clastic garnet-amphibole F - 15-20% grt-bio bands. 5-10% attenuated quartz clasts - 2-3% of the clasts appear to be recrystallized chert. Clasts range from 5-4cm. 1-2% wispy threads and disseminations	of po throughout. Sharp LC												
E797716	243.6	244.6	0.021																			
E797717	244.6	245.6	0.005	243.6	247.9	4E	B	POR BL	Brown; fine grained; moderately foliated. Well-developed garnet-biotite schist. 5-15% fine to med grained grts 1-5mm. 5-10cm amph altered bands scattered throughout - increased frequency proximal to LC - associated with stringers of po 2-3%.	Gradational LC												
E797718	245.6	246.6	0.008																			
E797719	246.6	247.4	0.007																			
E797721	247.4	247.9	0.02																			
E797722	247.9	248.6	0.01																			
E797723	248.6	249.6	0.006																			
E797724	249.6	250.6	0.007																			
E797725	250.6	251.6	0.006	247.9	260.6	6J	B	FOL	Brown; fine grained; mod to well foliated. Quartz clastic Garnetiferous Metasediment 2-5% mg anhedral grts. 5-15% sub-angular to rounded quartz clasts - increasing in frequency and size downhole with a corresponding increase in amph. 2-3%	sub-rounded chert clasts. Similar in composition to 6J previous logged with less chert and more rounded qtz clasts. 0.5-3% wispy disseminations - blebby stringers proximal to LC.												
E797726	251.6	252.6	0.005																			
E797727	252.6	253.6	0.005																			
E797728	253.6	254.6	0.006																			
E797729	254.6	255.6	0.005																			
E797731	255.6	256.6	0.005																			
E797732	256.6	257.6	0.005																			
E797733	257.6	258.6	0.005																			
E797734	258.6	259.6	0.012	260.6	262.5	4EF	DG	BA	Dark green-brown; fine grained; moderately banded. Intercalated bands of grt-amph + grt-bio. Banding is oriented at 5-20 degrees TCA. 15-20% anhedral fine to med grained garnets - primarily hosted in biotite bands. Sharp irregular LC	with larger and more abundant qtz clasts. 1-3% wispy disseminations and threads of po. Sharp LC												
E797735	259.6	260.6	0.019																			
E797736	260.6	261.6	0.024																			
E797737	261.6	262.5	0.024																			
E797738	262.5	263.2	0.015																			
E797739	263.2	263.9	0.942																			
E797741	263.9	264.5	0.317																			
E797742	264.5	265	0.014																			
E797743	265	266	1.16	263.9	282.9	4E	B	POR BL	Brown-maroon; fine grained; weak to moderate banded. Heterogeneous garnet-biotite schist. 15-20% grts - locally form tight bands. 1-5cm amph-grun altered bands intercalated throughout - 5-10% decreasing in frequency downhole.	Strongly folded - intensity decreasing downhole - lg wispy threads and disseminations of po associated with 4E bands up to 10% over 10cm. Sporadic qtz veins. Diffuse LC												
E797744	266	267	0.239																			
E797745	267	268	0.046																			
E797746	268	269	0.006																			
E797747	269	270	0.005																			
E797748	270	271	0.005																			
E797749	271	272	0.019																			
E797751	272	273	0.033																			
E797752	273	274	1.12																			
E797753	274	275	1.1																			
E797754	275	276	0.02																			
E797755	276	277	0.02																			
E797756	277	278	0.218																			
E797757	278	279	0.19																			
E797758	279	280	0.222																			
E797759	280	281	0.006																			









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Elev. (ft)	MAJOR UNIT			MINERALS						QTZ VEINING						FABRIC						FOLD						FAULT												
	From	To	Unit	As%	Cp%	Mt%	Po%	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments					
40	26.5	41.5	2H																																40.6	40.7	20	MOD E	GG	
45	41.5	42.1	5V																					41.9	42	55	MOD D	ZF												
50	42.1	51.7	2														48.2	48.3	40	MOD S1														51.2	51.7	20	MOD E	GG		
55																	55	56	0	MOD S1																				
60																	57.2	57.3	25	MOD S1																				
65	51.7	79.1	4H														63.9	64	20	MOD S1																				
70																																								
75																	73.1	73.2	20	MOD S1																				
80	79.1	80.7	2H																					79.1	80.7	50	MOD D	ZF												

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Elev m	MAJOR UNIT			MINERALS					QTZ VEINING						FABRIC					FOLD					FAULT											
	From	To	Unit	As%	Cp%	Mt%	Po %	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments	
85	79.1	80.7	2H				1											81.9	82	45	MOD	S1		79.1	80.7	50	MOD	ZF		80.6	80.8	45	MOD	E	HZ	
90																		91.6	91.7	35	MOD	S1								89.5	90	75	WEK		Meth ane Fault	
95																		101.2	101.3	35	MOD	S1								96.7	96.8	35	WEK		Meth ane Fault	weak vuggy methane - minor hematite on vuggy surfaces
100	80.7	128.9	2															101.2	101.3	35	MOD	S1							98.3	100	30	WEK		Meth ane Fault		
105																														106.3	107.1	30	MOD	E	Meth ane Fault	erratic weakly vuggy methane splays.
110																													108.1	108.2	40	MOD	E	Meth ane Fault	oriented at 10 to 40 degrees TCA	
115																		111.2	111.3	27	MOD	S1														
																														118.5	121	60	WEK		BR	





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Elev. (ft)	MAJOR UNIT			MINERALS					QTZ VEINING					FABRIC					FOLD					FAULT										
	From	To	Unit	As%	Cp%	Mt%	Po %	Py%	VG Specks	Comments	From	To	Vein Type	Vein %	Contact Type	Alpha deg	Comments	From	To	Alpha deg	Int	Type	Comments	From	To	Alpha deg	Int	Type	Comments					
194	206.5	4F					1										202.9	203	50	MOD	S1													
205																		204.3	204.4	65	MOD	FD												
	206.5	6J					1											206	206.5	65	MOD	SF		206.5	209	60	WEK	HZ						
210	209	4F																209.6	210	60	MOD	FD												
215																		213.9	214	50	MOD	FD												
215	212.3	6J																214.9	215	60	WEK	S1		213	221.5	60	WEK	HZ						
220																																		
	221.7	2K																223.1	223.2	45	WEK	S1												
225																			223.8	224	70	MOD	SF											
230	223.6	4FE																	228	228.1	60	MOD	SF											
																			230.9	231	65	MOD	SF											
																			231.3	231.4	45	WEK	SF											
235	230.1	4F																232.9	233	55	MOD	S1												
	236.6	4I					1																											
	237.2	4F																																
																			238.8	238.9	55	MOD	FD											
	237.8	4F																	239.7	241.3	65	MOD	FD											

possible weak methane splay  
possible weak methane splay







