



**GeoDiscovery Group**

*Minerals exploration, discovery and management*

**EPM 14311, “Townley”, Northeast Queensland.**

**Annual Report for the Period Ended 29  
September 2006**



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On behalf of the holder Copper Strike Limited  
24 November 2006**

***COPPER STRIKE***

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## **SUMMARY**

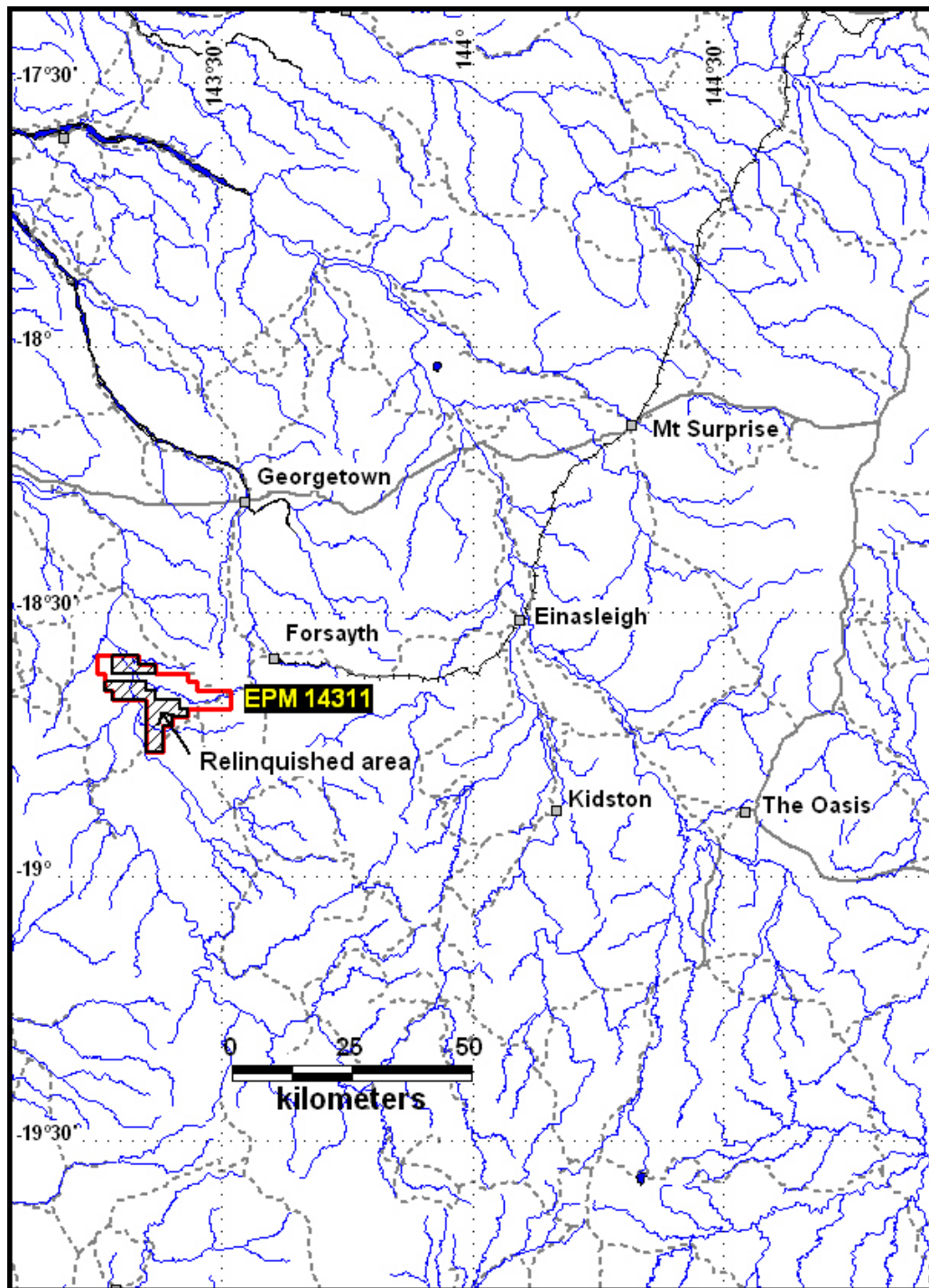
EPM 14311 was originally acquired by Teck Cominco Australia Pty Ltd to facilitate exploration for stratabound Zn-Pb-Ag mineralisation hosted within the Proterozoic Etheridge Group. In February 2005 the tenement was assigned to Copper Strike Limited following the successful float of that company.

An evaluation of open-file geochemical data was undertaken. This work highlighted widespread Zn anomalism in stream sediment samples and soil samples previously collected by MIM and BHP in the Mosquito Creek area in the eastern part of the licence. A field program to investigate these areas of Zn anomalism involved the collection of seventeen (17) rock chip samples from four (4) locations within the tenement. Anomalous Zn values – up to 0.89% - were reported from two areas of previously reported soil anomalism (>500 ppm Zn) and were associated with Mn-rich gossaneous horizons within Townley Formation siltstones.

Based on the results of this work a 50% tenement reduction was undertaken retaining those areas of enhanced Zn anomalism for further evaluation.

## 1. INTRODUCTION

EPM 14311 – Townley – is located approximately 300km southwest of Cairns and 20km west of the town of Forsayth in northeast Queensland (Figure 1).



**Figure 1. Location of EPM 14311**

The tenement was initially acquired by Teck Cominco Australia Pty Ltd to explore for stratabound Zn-Pb-Ag mineralisation associated with the Palaeoproterozoic Etheridge Group that underlies much of the area. In February 2005 the tenement was transferred to Copper Strike Limited following the successful listing of that company on the Australian Stock Exchange. Apart from a technical review of previous

exploration data Teck Cominco Australia Pty Ltd did not undertake any field-based exploration activities.

## **2. TENEMENT DETAILS**

EPM 14311 was granted to Teck Cominco Australia Pty Ltd on 30<sup>th</sup> September 2004 for a period of five (5) years. On 28<sup>th</sup> February 2005 the tenement was assigned to Copper Strike Limited.

The tenement originally comprised 71 sub-blocks, occupying an area of 231 km<sup>2</sup>, as described in Table 1.

<b>Block ID Map</b>	<b>Block</b>	<b>Sub-blocks</b>
Normanton	2296	A B C D E F G H J K M N O P R S T U X Y Z
Normanton	2297	F G L M N O P Q R S T U V W X Y Z
Normanton	2298	L Q R V W X Y Z
Normanton	2299	V
Normanton	2369	B C D E G H J K M N O R S W X
Normanton	2370	A B C D E F
Normanton	2371	A
Normanton	2441	B C

**Table 1. Description of sub-blocks originally comprising EPM 14311**

At the end of the second term a 50% reduction in the tenement was undertaken such that the tenement now comprises 35 sub-blocks as described in Table 2.

<b>Block ID Map</b>	<b>Block</b>	<b>Sub-blocks</b>
Normanton	2296	A B F G M N O P
Normanton	2297	L M N O P R S T U X Y Z
Normanton	2298	L Q R V W X Y Z
Normanton	2299	V
Normanton	2370	A B C D E
Normanton	2371	A

**Table 2. Description of sub-blocks comprising EPM 14311 following second term relinquishment.**

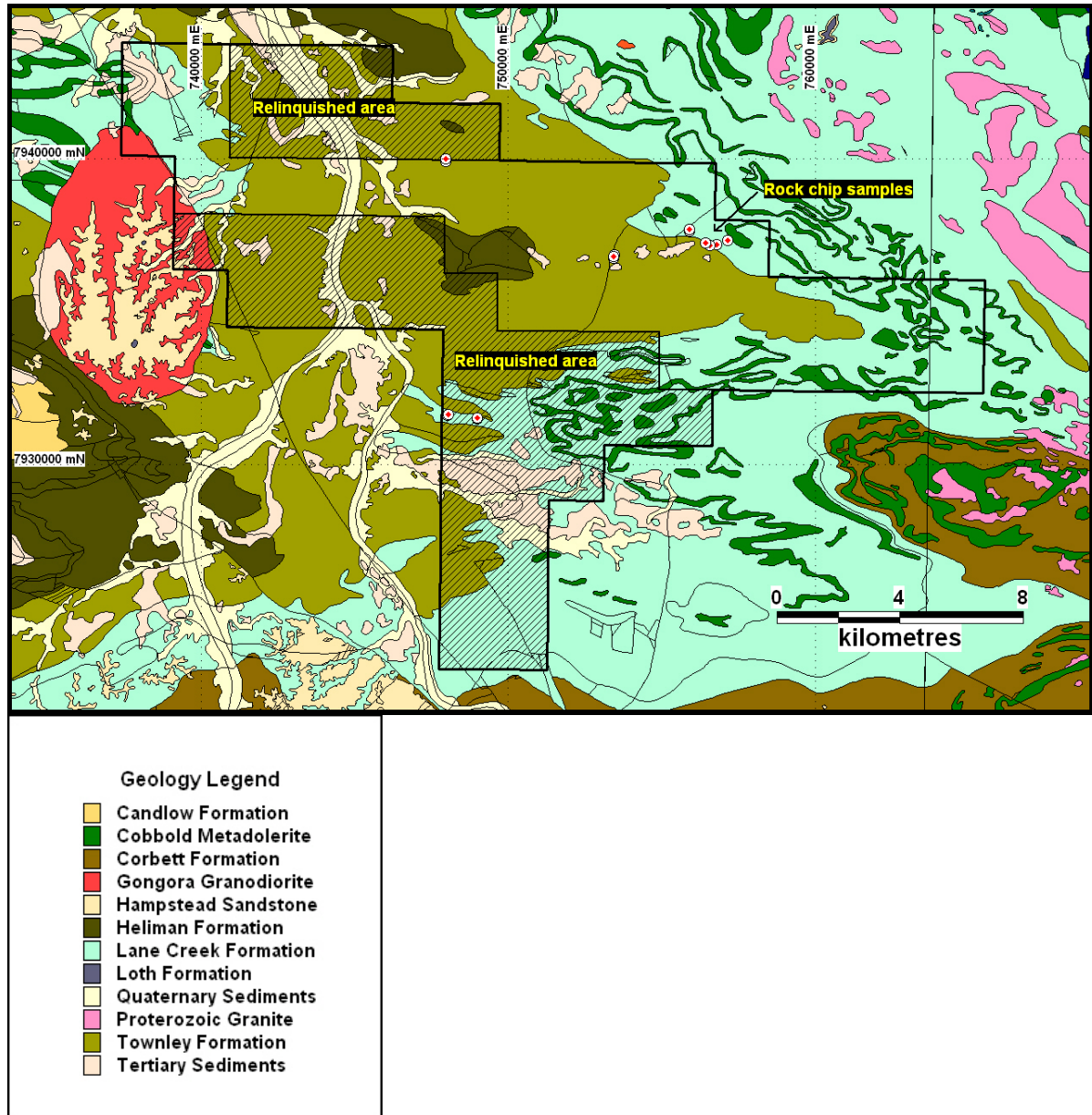
## **3. GEOLOGICAL SETTING**

The tenement area is mainly underlain by metasediments of the Palaeoproterozoic Etheridge Group (Figure 2) exposed in a series of west to northwest trending folds. The lowermost part of the Etheridge Group present in the area is the Lane Creek Formation, which occupies the southern and eastern parts of the tenement. It consists of mica schist and quartzite that grade into mudstone, siltstone and minor sandstone (1:100,000 North Head geology map). The schist is occasionally carbonaceous and calcareous.

Overlying the Lane Creek Formation is the Townley Formation that underlies much of the remainder of the tenement. It consists of sericitic to quartz-lithic siltstone and fine



sandstone, locally carbonaceous. A distinctive unit of pyritic siliceous siltstone occurs within the basal section of the Townley Formation and can be traced for tens of kms. This unit is anomalous in base metals and has been the focus of previous exploration activity.



**Figure 2. Geology of EPM 14311 (Datum: AGD84 Zone 54)**

The Heliman Formation overlies the Townley Formation. Within the tenement area it is represented by a restricted area of quartzose siltstone and fine sandstone in the centre of the area.

The Lane Creek Formation has been intruded by gabbro to dolerite sills, the Cobbold Metadolerite. The sills are restricted to the Lane Creek Formation and do not extend up into the Townley Formation. They have been deformed on west to northwest trending fold axes along with the Etheridge Group metasediments.

The elliptical shaped Gongora Granodiorite, which is located on the western boundary of the tenement, has intruded the Proterozoic sequence and is considered to be of early Permian age. The Jurassic-aged Hampstead Sandstone unconformably overlies the Gongora Granodiorite.

A number of small mineral occurrences are noted within the tenement area (Qmin database). For the most part they represent small vein-related occurrences of Pb-Ag±Cu±Zn±Au that are probably associated with Permian to Carboniferous intrusive activity in the district. Most occurrences are located in the Lane Creek Formation immediately below the Townley Formation.

#### **4. WORK DONE**

##### **Review of Previous Exploration**

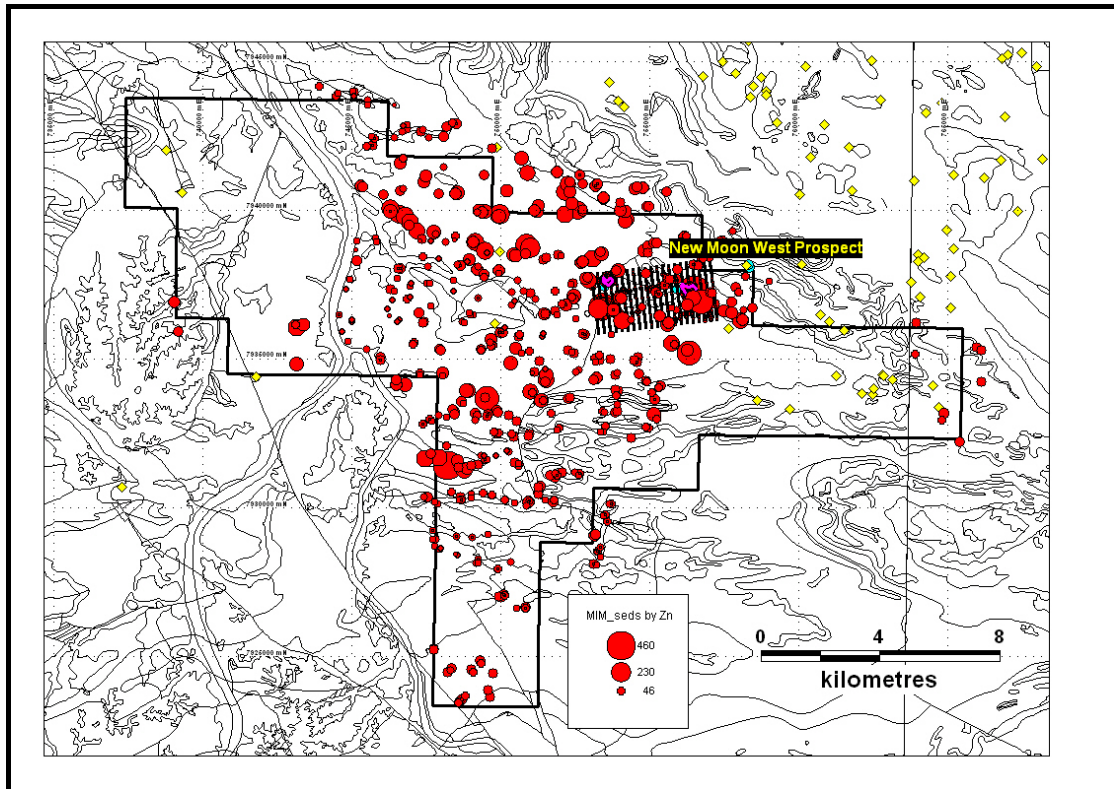
MIM and BHP Minerals undertook the most comprehensive exploration programs during the periods 1991-1992 and 1992-1994 respectively. Both companies' programs were focused on evaluating the Proterozoic stratigraphy – Etheridge Group – for stratabound Zn-Pb-Ag mineralisation. Exploration prior to MIM's activity had involved programs of stream geochemistry but little in the way of follow-up evaluation of anomalies.

MIM's Gilbert River Base Metals Project comprised nine adjoining EPMs one of which, EPM 7783, covered part of EPM 14311. Work undertaken by MIM involved stream sediment sampling, prospect-specific airborne EM surveying using the QUESTEM system, follow-up soil and rock chip sampling, geological mapping, ground magnetic surveying and RC drilling at the New Moon West Prospect (Figure 3).

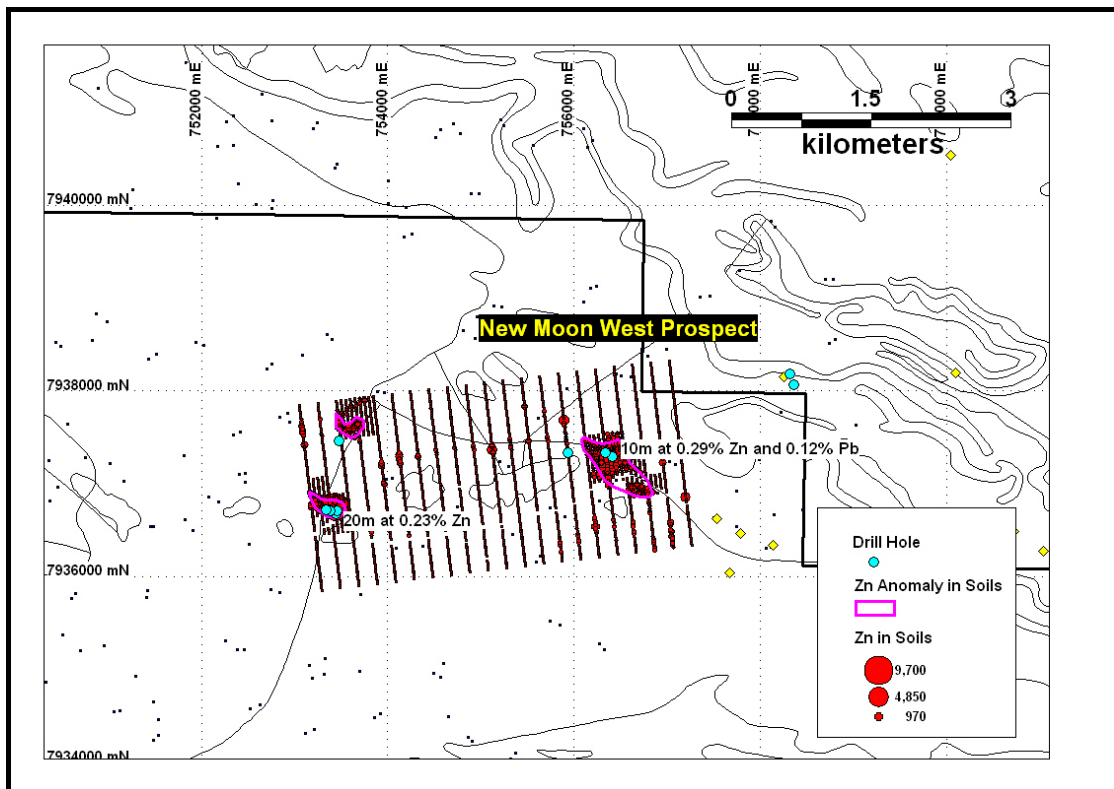
The soil sampling was undertaken over an area of 4km by 2km identified from Zn and Pb anomalous stream sediment samples (Figure 3). Zn soil anomalies were related to pyritic and sericitic units within the basal Townley Formation and Pb anomalies were related to faults that cross cut the stratigraphy. A total of ten RC holes were drilled by MIM to test a number of soil anomalies. Two of these holes were drilled outside the boundaries of EPM 14311 at the Lodestone prospect.

All eight holes drilled at New Moon West intersected anomalous Zn up to 0.3% over widths varying from 4m to 22m. Pb values were less anomalous with the best being a 10m interval of 0.12% (Figure 4).

MIM also investigated the sources of EM conductors generated from the QUESTEM survey but ascribed these to distinctive carbonaceous and graphitic intervals within the Townley Formation.



**Figure 3. MIM stream sediment sampling showing Zn anomalism and location of New Moon West Prospect relative to boundaries of EPM 14311 (Datum: AGD84 Zone 54)**



**Figure 4. MIM's New Moon West Prospect showing Zn anomalies in soils and RC drill holes relative to the boundary of EPM 14311 (Datum: AGD84 Zone 54)**



The work done by BHP Minerals in the period 1992 to 1994 was undertaken on EPMs 7890 and 9059 which covered the eastern area of EPM 14311. This work consisted of a combined airborne EM and aeromagnetic survey, semi-regional soil sampling with accompanying rock chip sampling and more detailed follow-up soil sampling where appropriate. One of the areas of detailed follow-up was the Mosquito Creek prospect which, to some extent, coincides with MIM's New Moon West prospect.

Soil data from the BHP work has been grided and the Zn values are shown in Figure 5. The stratabound nature of the Zn anomalism is clearly demonstrated when the data is grided with a directional bias consistent with the general west northwest strike of the strata across much of the area.

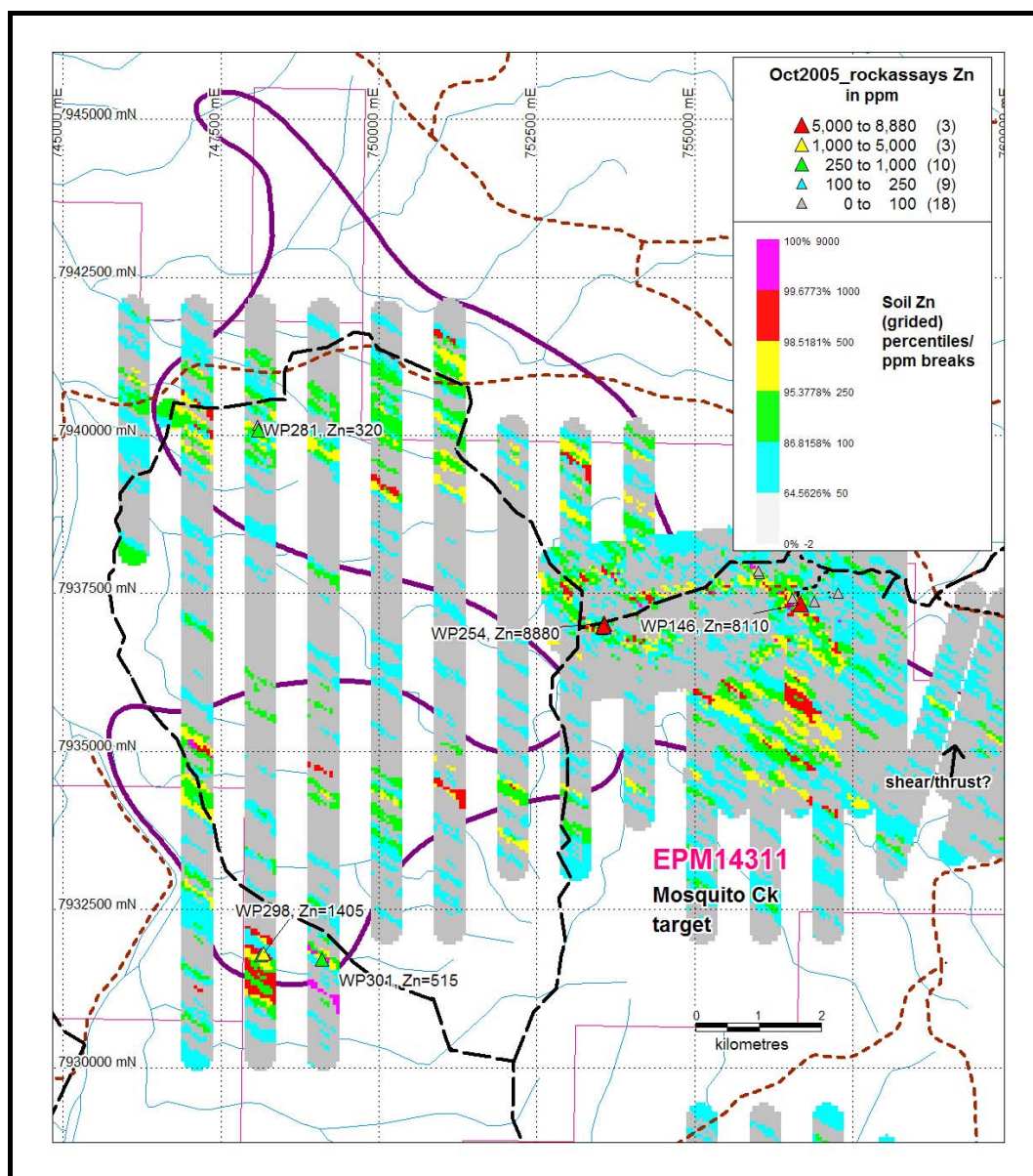


Figure 5. Grided BHP soil Zn data in the Mosquito Creek area. Copper Strike's rock chip samples are prefixed WP (Datum: AGD84 Zone 54).

## Reconnaissance Sampling

A reconnaissance survey was undertaken in October 2005 to visit target areas identified from the evaluation of the open-file geochemical data. Four areas were visited within EPM 14311 and a total of seventeen (17) rock chip samples were collected from interesting looking lithologies. The location of the samples is shown in Figure 6 and prefixed WP. The full analytical results are presented in Appendix 1.

The most interesting results, in terms of Zn, were reported from samples WP156 and WP 254 (Figure 6) in the vicinity of the Mosquito Creek target area that corresponds with the New Moon prospect. This area coincides with significant Zn soil anomalism. Values of 0.81% and 0.89% Zn are associated with Mn-rich gossaneous units that appear to have developed from a coarse-grained precursor – possibly a ferroan dolomite with sulphide. Elevated Zn values may, so some extent, be the result of Mn scavenging.

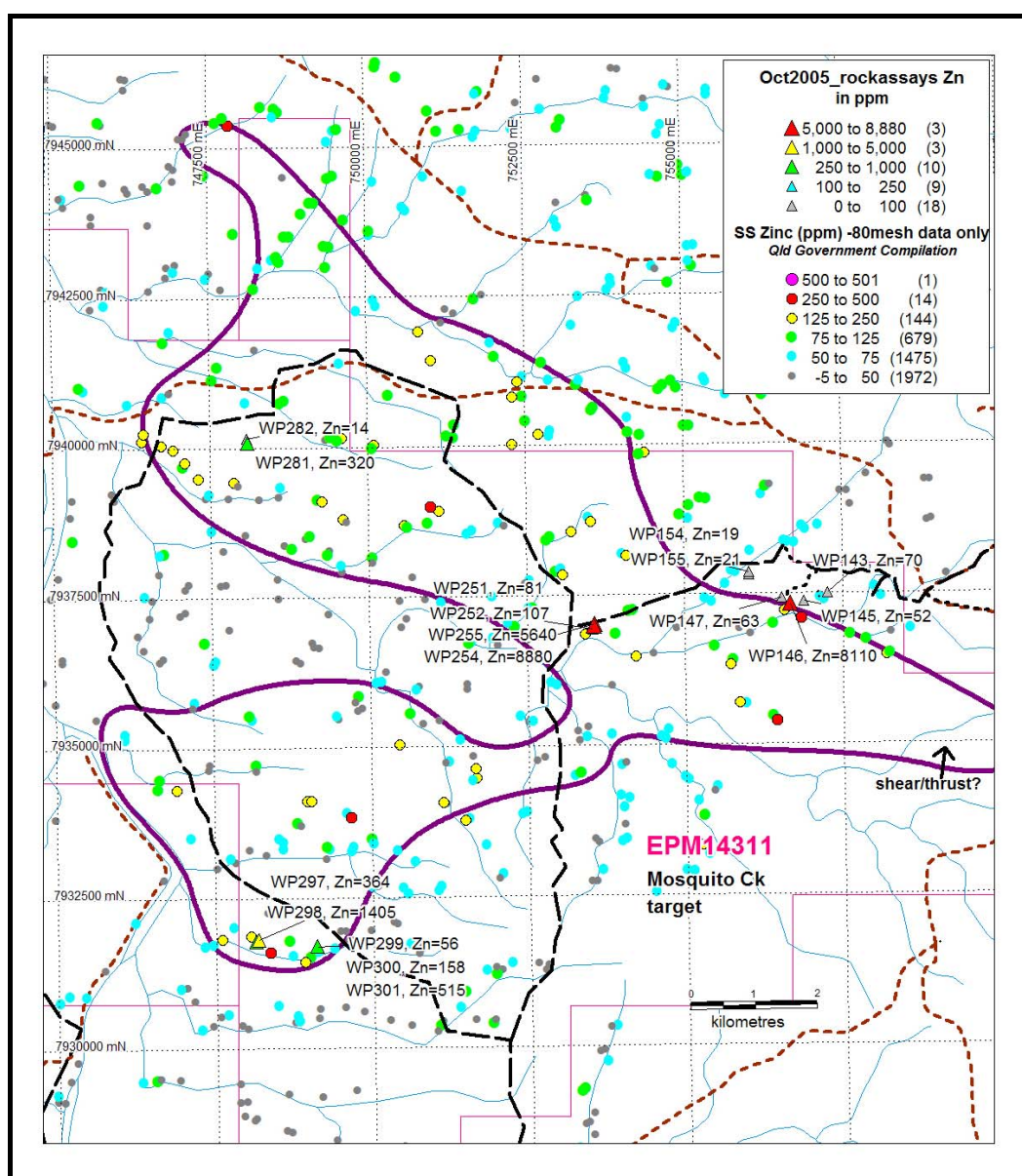


Figure 6. Location of rock chip samples (prefixed WP) with associated Zn values (Datum: AGD84 Zone 54).

Samples with moderate levels of Zn anomalism – in the order of 250 to 1500 ppm – are typically weathered quartz-micaceous-kaolinite siltstones with specks of goethite probably after pyrite. Associated Mn values are generally typical of fine grained sediments suggesting that Zn anomalism is less likely to be attributed to Mn scavenging.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

Further work is justified in the vicinity of the New Moon prospect (Mosquito Creek target) to determine whether a coherent drill target can be identified. It is recommended that a field program be undertaken next field season and that a more systematic program of rock chip sampling be undertaken in the vicinity of the anomalism in conjunction with geological mapping.

**APPENDIX 1**

**Rock Chip Sampling Results**

SAMPLE	East	North	sample type	Au_ppm	Ag_ppm	As_ppm	Bi_ppm	Ca_%	Cd_ppm	Co_ppm	Cu_ppm	Fe_%
	<b>MGA94z54</b>	<b>MGA94z54</b>		Au-TL43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43
WP143	757269	7937506	rock chip	0.001	-0.2	7	-2	0.03	-1	5	29	1.61
WP145	756891	7937368	rock chip	-0.001	-0.2	8	-2	0.02	-1	4	46	0.55
WP146	756675	7937329	rock chip	0.032	0.2	219	6	0.07	2	26	40	20.01
WP147	756540	7937422	rock chip	0.004	0.2	3	-2	0.04	-1	1	17	0.65
WP154	756017	7937816	rock chip	0.001	-0.2	3	-2	0.02	-1	1	22	1.9
WP155	756013	7937859	rock chip	0.002	-0.2	4	-2	1.92	-1	2	10	0.88
WP251	753541	7936932	rock chip	0.001	-0.2	11	-2	0.01	-1	5	19	2.6
WP252	753541	7936932	rock float	0.001	-0.2	57	-2	0.02	-1	9	28	3.08
WP254	753566	7937017	rock chip	0.003	1.9	29	10	0.1	14	35	66	20.01
WP255	753555	7936987	rock chip	0.003	0.7	28	10	0.04	-1	-1	71	20.01
WP281	748098	7940086	rock chip	0.002	-0.2	22	-2	0.02	-1	2	30	3.25
WP282	748083	7940158	rock chip	0.001	-0.2	4	-2	0.15	-1	1	4	0.42
WP297	748133	7931781	rock chip	0.002	-0.2	2	-2	0.04	-1	5	33	1.58
WP298	748172	7931810	rock chip	0.004	-0.2	45	4	0.04	-1	-1	139	20.01
WP299	749104	7931689	rock chip	0.001	-0.2	3	-2	0.01	-1	1	7	1.36
WP300	749104	7931692	rock chip	0.002	0.4	4	-2	0.04	-1	2	19	1.06
WP301	749099	7931708	rock chip	0.002	-0.2	15	-2	0.04	-1	-1	29	7.94



<b>SAMPLE</b>	<b>Mg_%</b>	<b>Mn_ppm</b>	<b>Mo_ppm</b>	<b>Ni_ppm</b>	<b>P_ppm</b>	<b>Pb_ppm</b>	<b>S_%</b>	<b>Sb_ppm</b>	<b>U_ppm</b>	<b>Zn_ppm</b>
	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43	ME-ICP43
WP143	0.67	290	2	10	130	28	0.02	-2	-10	70
WP145	0.04	204	1	5	130	25	0.08	-2	-10	52
WP146	0.08	8770	11	112	1940	1075	0.1	9	-10	8110
WP147	0.08	86	-1	2	80	16	0.01	-2	-10	63
WP154	0.02	414	-1	3	50	14	0.02	-2	-10	19
WP155	0.04	848	-1	3	130	19	0.3	-2	-10	21
WP251	-0.01	453	1	6	30	21	0.01	-2	-10	81
WP252	0.29	393	1	7	160	31	0.01	-2	-10	107
WP254	0.08	20001	9	46	510	2540	0.05	-2	-10	8880
WP255	0.06	7930	12	10	430	2420	0.16	-2	-10	5640
WP281	0.08	277	3	4	230	120	0.02	-2	-10	320
WP282	0.05	246	1	2	140	45	0.01	-2	-10	14
WP297	0.44	467	2	13	200	84	0.06	-2	-10	364
WP298	0.14	254	9	14	1300	284	0.05	-2	-10	1405
WP299	0.03	233	1	2	40	27	0.02	-2	-10	56
WP300	0.24	197	1	4	110	60	0.06	-2	-10	158
WP301	0.03	282	3	3	420	227	0.37	3	-10	515