



## **METAL SANDS Pty LTD**

A.C.N. 095 423 551

P.O. Box 1691 West Perth, WA. 6872

Telephone: (61) 8 9486 4177 Facsimile: (61) 8 9486 4188

# **ANNUAL REPORT**

## **EL56/2004**

### **King Island Project**

**15 February 2007 to 14 February 2008**

Author:	Lindsay Cahill
Tenement Holder:	Metal Sands Pty Ltd
Operator:	Metal Sands Pty Ltd
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## TABLE OF CONTENTS

<b>1</b>	<b>Abstract</b> .....	<b>3</b>
<b>2</b>	<b>Introduction</b> .....	<b>3</b>
2.1	Exploration Rationale .....	3
2.2	Geological Setting .....	3
2.3	Tenement Details .....	3
2.4	Location.....	3
<b>3</b>	<b>Previous Exploration</b> .....	<b>4</b>
3.1	Prior to Current Tenement.....	4
3.2	During Current Tenement.....	5
<b>4</b>	<b>Current Exploration</b> .....	<b>5</b>
<b>5</b>	<b>Results</b> .....	<b>5</b>
<b>6</b>	<b>Conclusions</b> .....	<b>8</b>
<b>7</b>	<b>Environment</b> .....	<b>8</b>
<b>8</b>	<b>Expenditure</b> .....	<b>8</b>

## TABLE OF FIGURES

<b>Figure 1: Location Plan</b> .....	<b>4</b>
<b>Figure 2: Sample Location Plan – South</b> .....	<b>6</b>

## APPENDICES

<b>Appendix 1 – Results</b> .....	<b>9</b>
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## 1 ABSTRACT

Metal Sands has completed a shallow beach sampling programme within its tenement in Sea Elephant Bay with the aim of characterising the HM content of the active deposit. Results from the southern portion of the tenement are encouraging and the Company will move to carry out metallurgical sampling and a programme of sub-sea sampling.

## 2 INTRODUCTION

### 2.1 Exploration Rationale

Metal Sands' King Island Project is for zircon- and rutile-rich HMs known to be present in the surficial seafloor sediments of Sea Elephant Bay on the east coast of King Island. Previous exploration has shown the HM content of the top 1.5 metres of the unconsolidated material to be as high as 25%. Additional targets are mineralised strands that may be present beneath the surficial layer.

### 2.2 Geological Setting

King Island contains a suite of rocks similar to those of the northwest of Tasmania, some 200 km to the south. Precambrian metamorphic rocks and granites comprise the majority of the island's bedrock. Cambrian volcanics and Devonian granites are present in the southeast, where the world-class King Island scheelite-molybdenite deposits occur as skarns near the margins of intrusive granite stocks.

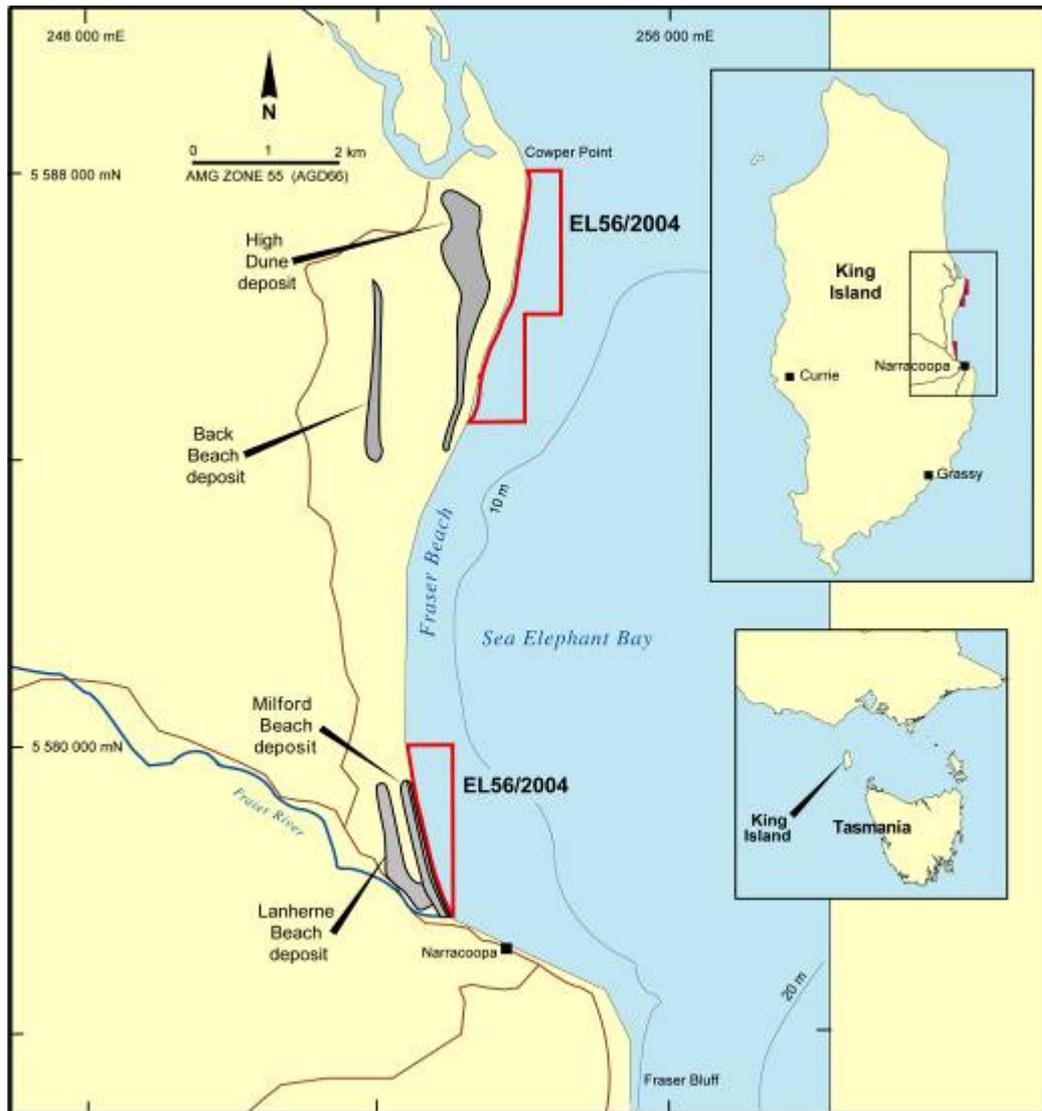
Quaternary beach deposits along the east coast, adjacent to Sea Elephant Bay, include strand, dune and paralic sediments. HMs are concentrated in now-onshore strands at both the north and south ends of Sea Elephant Bay, and the active beach to the north of Naracoopa has been mined for rutile and zircon (Figure 23). Strand-line sediments will also have been deposited to the east of the present coastline during Quaternary regressions and transgressions. Portions of these strands are expected to be present offshore, buried beneath recent surficial marine deposits.

### 2.3 Tenement Details

Tenement Number	EL56/2004
Holder	Metal Sands Pty Ltd
Operator	Metal Sands Pty Ltd
Date of Grant	15 February 2006
Area	3 km <sup>2</sup>

### 2.4 Location

The tenement, which is granted in two sections, is located on the east coast of King Island between Cowper Point to the north and Naracoopa to the south, Figure 1.



**Figure 1: Location Plan**

### **3 PREVIOUS EXPLORATION**

#### **3.1 Prior to Current Tenement**

Reconnaissance exploration of the floor of Sea Elephant Bay has been carried out by a number of companies.

In 1966, Ocean Mining AG carried out bathymetry, seismic reflection and shallow sub-sea drilling around King Island. Twelve holes were drilled in the Sea Elephant Bay area, all well offshore from the Metal Sands tenement areas. The work established the presence of both a general thin blanket of surficial sediment and underlying, thicker sediment bodies with channel- and bar-like morphologies.

During 1976, Amdex Mining Ltd drilled 25 holes between 0.5 and 1.5 metres in length into the seafloor sediments at the southern end of Sea Elephant Bay. Of those holes, nine were sited within the Metal Sands project area. The HM grades within the sediments varied from 1.0% to 8.3%.

In 1992, Australian Zircon Pty Ltd drilled more 1.5-metre deep holes in the bay, and the five samples with the highest visual HM contents underwent mineralogical testwork. The HM contents of those samples varied from 5.7% to 15.3%. One sample, with 6.2% HM, came from within Metal Sands' tenement. A composite HM sample contained 16% ilmenite, 22% altered ilmenite, 5% leucoxene, 10% rutile and 22% zircon for a valuable HM total of 75%. Although rather fine, with a median grain size of 90 to 100 µm, the HMs were reported to be of a size reasonably amenable to conventional gravity separation.

In 1997, Stephenson EMF Consultants drilled a 20-metre hole at the seaward end of the Naracoopa jetty as part of a geotechnical investigation. The hole intersected silty sand and minor gravel to a depth of 2.4 metres, followed by better sorted but more indurated sand to 8.5 metres, "harder" sand to 11.8 metres and, finally, stiff hard clay.

Also in 1997, Australian Titanium Minerals Ltd carried out seafloor sampling at 20 sites within the southern portion of the bay, obtaining a maximum grade of 24.7% HM. The two samples collected from within Metal Sands' area returned 1.05% and 7.1% HM. Composite concentrates from the samples averaged 9% ilmenite, 12% altered ilmenite, 5% leucoxene, 8% rutile and 7% zircon.

### **3.2 During Current Tenement**

Metal Sands has commenced compilation of all open file reports and is assembling a digital database of previous exploration. In December 2006 the Company carried out reconnaissance sampling of the beaches that edge the tenement. Samples were taken between the high and low water marks using a 50mm PVC tube to sample to depths of 300mm.

## **4 CURRENT EXPLORATION**

A total of 38 spear samples were submitted to Western Geolabs Pty Ltd of 28 Wells Street Bellevue, WA, 6056 for HM separation. The location of the sample sites is shown in Figures 2 and 3. Sample spacing is 100m in the southern tenement area and 250m in the north.

Samples were dried then crushed and riffle split to obtain a 100gm sub-sample which was de-slimed at 45 micron and screened for oversize removal above 1mm. The percentage of heavy minerals in the –1mm/+45 micron fraction was determined using tetrabromoethane.

## **5 RESULTS**

The HM content of the 23 samples collected in the southern tenement area averaged 35.64% HM over a length of 2.2km of beach. In the northern part of the tenement the HM content of the samples is substantially lower with the 15 samples collected along nearly 4km of beach averaging 0.62% HM.

Slimes contents are very low and typical of this style of deposit. The slimes content of the beach sand of the southern section averaged 0.8% and the oversize content averaged 0.4%.

Full results are contained in Appendix 2.

**Metal Sands Pty Ltd  
King Island Project  
E56/2004  
Sample Location Plan  
Southern Area**

0 50 100 200 metres  
Scale 1:10,000

GDA94 Zone 55



Figure 2

**Metal Sands Pty Ltd  
King Island Project  
E56/2004  
Sample Location Plan  
Northern Area**

0 125 250 500  
metres Scale 1:20,000

GDA94 Zone 55

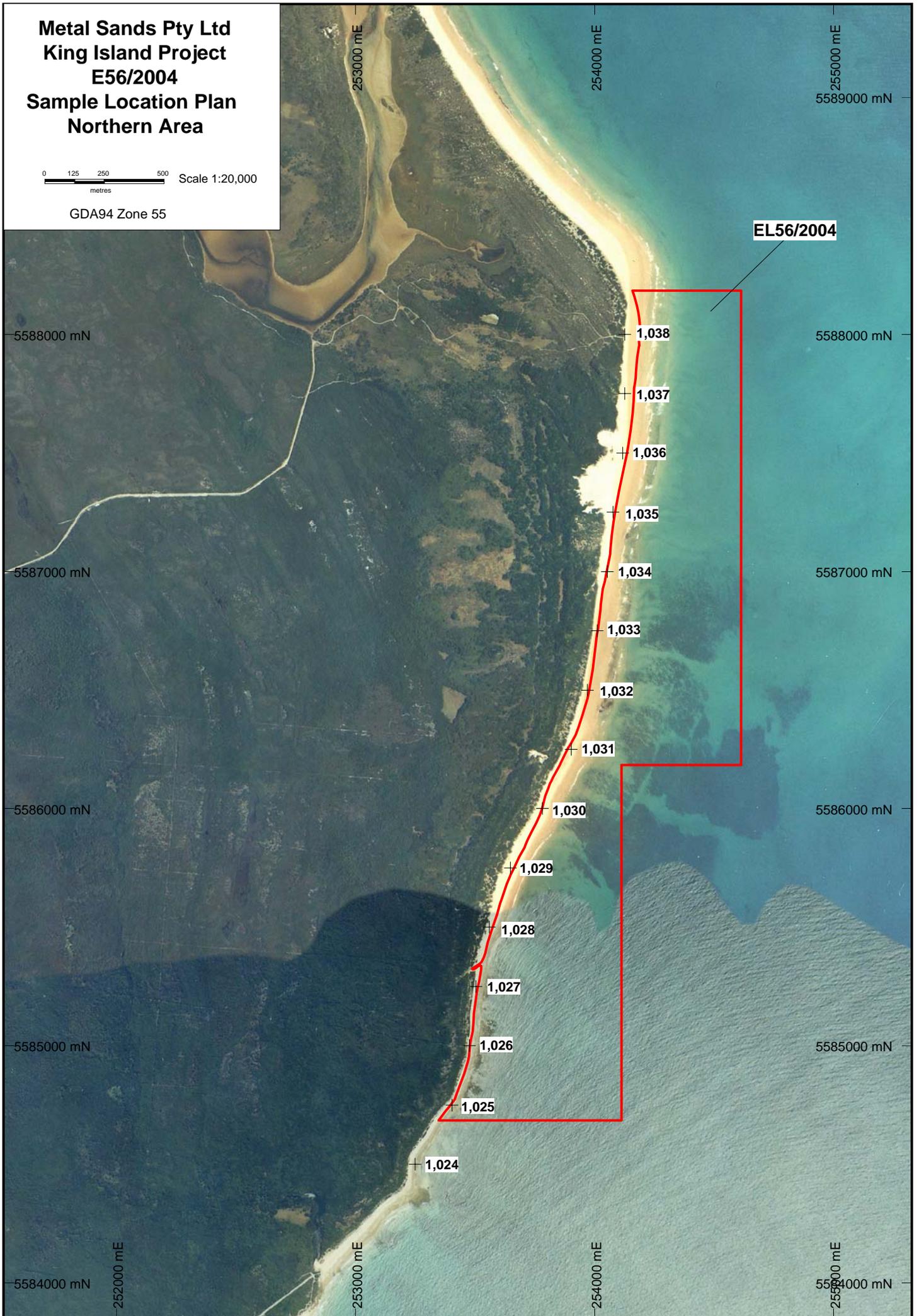


Figure 3

## **6 CONCLUSIONS**

Surface beach sand samples from the southern end of Sea Elephant Bay contain substantial concentrations of HM and there is potential to establish a HM resource within the sea floor sediments of the tenement.

In the north the HM potential, based on current sampling, does appear to be reduced although there is no record of any sampling of the sea floor sediments in this area.

Metal Sands will undertake mineralogical studies to characterise HM suite and carry out sub-sea sampling in Sea Elephant Bay.

## **7 ENVIRONMENT**

The nature of the exploration has not resulted in any surface disturbance.

## **8 EXPENDITURE**

Exploration expenditure for the year was \$12,329.

## Appendix 1 – Results

GDA94_55 East	GDA94_55 North	Sample Number	Mass (gm)	Oversize +1mm_gm	Slimes +45um_gm	HM (gm)	Oversize %	Slimes %	HM %
253114.77	5577800	1001	111.04	3.70	107.17	98.06	3.33	0.15	88.31
253038.87	5577900	1002	112.22	0.01	111.60	100.95	0.01	0.54	89.96
252984.28	5578000	1003	103.17	0.01	102.61	76.74	0.01	0.53	74.38
252948.24	5578100	1004	118.79	0.01	118.28	110.36	0.01	0.42	92.90
252910.81	5578200	1005	116.13	0.01	115.59	96.48	0.01	0.46	83.08
252881.87	5578300	1006	111.79	0.01	111.12	68.69	0.01	0.59	61.45
252852.98	5578400	1007	118.87	0.02	118.18	68.53	0.02	0.56	57.65
252818.37	5578500	1008	111.86	0.01	111.12	43.88	0.01	0.65	39.23
252802.25	5578600	1009	118.75	0.03	117.99	20.54	0.03	0.61	17.30
252781.85	5578700	1010	105.99	0.57	104.89	12.63	0.54	0.50	11.92
252755.78	5578800	1011	109.71	0.02	108.38	20.74	0.02	1.19	18.90
252738.35	5578900	1012	110.19	0.01	108.89	4.12	0.01	1.17	3.74
252719.33	5579000	1013	117.59	0.04	116.29	6.83	0.03	1.07	5.81
252689.06	5579100	1014	114.30	0.01	113.17	9.06	0.01	0.98	7.93
252663	5579200	1015	111.14	0.01	109.98	6.02	0.01	1.03	5.42
252638.32	5579300	1016	116.21	0.01	115.45	38.11	0.01	0.65	32.79
252615.1	5579400	1017	112.61	0.01	112.28	42.47	0.01	0.28	37.71
252600	5579500	1018	120.97	0.06	120.30	43.00	0.05	0.50	35.55
252574.42	5579600	1019	111.62	0.30	109.67	11.39	0.27	1.48	10.20
252564	5579700	1020	114.67	0.10	113.10	6.71	0.09	1.28	5.85
252546.5	5579800	1021	120.20	1.26	117.47	16.89	1.05	1.22	14.05
252531.81	5579900	1022	112.98	0.31	111.56	26.54	0.27	0.98	23.49
252517.19	5580000	1023	113.35	2.78	109.22	2.47	2.45	1.19	2.18
253249.23	5584500	1024	117.27	0.45	116.03	0.74	0.38	0.67	0.63
253403.91	5584750	1025	114.10	1.05	112.58	1.13	0.92	0.41	0.99
253477.2	5585000	1026	113.26	0.05	112.37	0.92	0.04	0.74	0.81
253503.37	5585250	1027	119.63	0.44	118.28	0.74	0.37	0.76	0.62
253559.62	5585500	1028	115.64	16.42	97.96	0.51	14.20	1.09	0.44
253647.21	5585750	1029	116.40	0.44	115.38	1.04	0.38	0.50	0.89
253781.92	5586000	1030	117.16	2.44	114.07	0.62	2.08	0.55	0.53

<b>GDA94_55 East</b>	<b>GDA94_55 North</b>	<b>Sample Number</b>	<b>Mass (gm)</b>	<b>Oversize +1mm_gm</b>	<b>Slimes +45um_gm</b>	<b>HM (gm)</b>	<b>Oversize %</b>	<b>Slimes %</b>	<b>HM %</b>
253902.36	5586250	1031	120.04	5.20	114.48	0.48	4.33	0.30	0.40
253970.04	5586500	1032	117.44	0.23	116.95	1.19	0.20	0.22	1.01
254010.44	5586750	1033	59.19	1.14	57.84	0.34	1.93	0.35	0.57
254053.82	5587000	1034	115.15	2.20	112.92	0.47	1.91	0.03	0.41
254077.26	5587250	1035	118.44	19.10	98.81	0.21	16.13	0.45	0.18
254117.83	5587500	1036	117.97	0.58	117.20	0.42	0.49	0.16	0.36
254126.39	5587750	1037	117.94	6.61	110.23	0.67	5.60	0.93	0.57
254125.46	5588000	1038	112.61	0.63	111.15	0.93	0.56	0.74	0.83