

Table 1

# Analysis of Baghouse Dust

(Composite Sample September 1997)

Element	Unit	Giant Lab	Lakefield	Maxxam
Arsenic	%	66.09	68.50	58.10
Antimony	%	1.05	1.16	1.39
Iron	%	2.50	1.50	1.61
Aluminum	ppm		5500	2540
Barium	ppm		15	2
Beryllium	ppm		<1.0	<0.1
Cadmium	ppm		<5.0	1.1
Calcium			3900	3540
Chromium			14	11.3
Cobalt			20	17.1
Copper			350	143
Lanthanum			<50	1.61
Lead			490	453
Lithium				2.9
Magnesium			2600	2270
Manganese			80	94.1
Mercury				14.3
Molybdenum			<10	1.9
Nickel			44	41.3
Phosphorus			62	41
Potassium			1600	178
Selenium	ppm		<50	<1
Silicon	ppm			429
Silver	ppm			3.1
Sodium	ppm		390	185
Tellurium	ppm		<10	
Thallium	ppm			0.13
Tin	ppm		<20	
Titanium	ppm			12.7
Uranium	ppm			<50
Vanadium	ppm			10.9
Yttrium	ppm		<5.0	
Zinc	ppm		170	137
Zirconium	ppm			1.27

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 Baghouse dust anal.  
 BOOKS, MUSIC & MORE  
**amazon.com**

# BASIC ARSENIC FACTS.

Table 2

## Underground Arsenic Trioxide Inventory - December 31, 1997

Stope	Date Filled	Volume cu. ft.	Tons Dust	Percent Arsenic	Tons Arsenic	Tons Equiv. As2O3	opt Gold	Ounces Gold
B 230	Oct. 28/51-Dec. 15/52	100,000	3,125	45.31%	1,416	1,869	0.724	2,263
B 233	Dec. 16/52-Mar. 1/56	434,626	12,595	36.93%	4,651	6,139	1.671	21,046
B 234	Mar. 2/56-July 10/58	425,000	13,281	36.10%	4,794	6,328	2.332	30,971
B 235/236	July 11/58-Mar. 15/62	1,125,000	35,156	53.37%	18,763	25,852	0.790	27,773
B 235	Aug. 22/88-Nov. 29/88		1,160	60.78%	705		0.142	165
B 236	Dec. 12/88-Dec. 30/88		184	63.59%	117		0.228	42
B 208	Mar. 16/62-Dec. 31/64	806,840	25,033	65.75%	16,458	28,055	0.381	9,526
	Jan. 1/72-Sept. 1/72		4,704	64.86%	3,051		0.330	1,600
	July 1/75-July 31/75		394	63.71%	251		0.120	48
	Dec. 17/75-Jan. 9/76		355	65.92%	234		1.950	69
	Mar. 11/86-Sept. 26/86		1,882	66.95%	1,260		0.120	225
B 212/213/214	Jan. 1/65-Dec. 31/71	1,920,000	60,410	61.48%	37,141	53,269	0.468	28,273
	Sept. 1/72-June 14/73		4,945	64.99%	3,214		0.262	1,294
C 212	June 14/73-June 30/75	638,139	10,243	64.23%	6,579	16,175	0.217	2,224
	Aug. 1/75-Dec. 17/75		1,794	65.44%	1,174		0.130	234
	Jan. 10/76-May 21/76		1,875	65.12%	1,221		0.140	258
	June 1/80-Jan. 9/82		3,757	69.68%	2,618		0.101	378
	May 22/85-Mar. 1/86		1,011	65.48%	662		0.120	121
C 9	May 21/76-May 31/80	471,000	20,276	67.48%	13,683	18,062	0.124	2,512
C 10	Apr. 1/82-May 22/85	200,000	10,548	66.83%	7,049	9,305	0.134	1,408
B 11	Sept. 26/86-Aug. 22/88	347,250	6,331	67.52%	4,275	5,747	0.137	867
	Nov. 30/88-Dec. 12/88		128	61.72%	79		0.227	29
B 12	Dec. 30/88-Dec. 31/94	900,000	27,417	69.78%	18,048	23,823	0.174	4,769
	Nov. 15/97-Dec. 31/97		353	68.72%	243	321	0.133	47
B 14	Jan. 1/95-Nov. 14/97	424,000	10,036	65.48%	6,572	8,675	0.159	1,597
	Jan. 98 ==> active							
Total:	Oct. 28/51 - Dec. 31/98	7,791,855	256,993	60.02%	154,258	203,620	0.536	137,739
			Eq. % As2O3:	79.2%				

\* data compiled from historic, daily mill reports

→ About 261,000 short tons  
(237,000 tonnes)  
TO MAY 1999

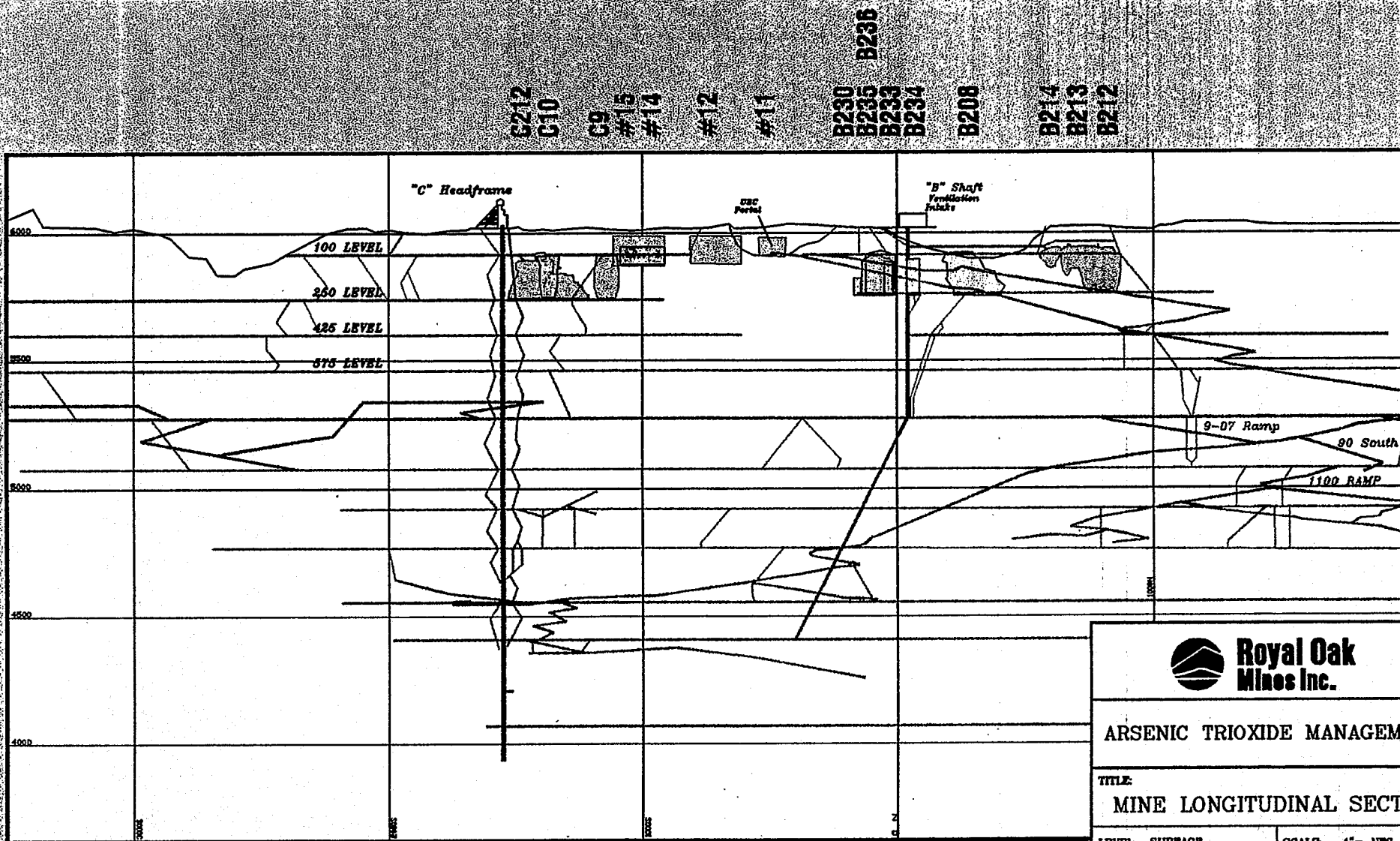
# Table 5

## Summary of Conditions of Arsenic Chambers - Geocon Test in 1981

Chamber	Geocon Hole #	Density (range) (lb./cu.ft.)	Specific Gravity	Angle of Repose	Moisture Content
B 230	#5	48.3 - 77.3	3.17	47.7	6.4% (wet on bottom)
B 233	#6	50.7 - 82.3	3.15	46.7	2-6% (wet on bottom)
B 234	#7	55.6 - 85.3	3.23	46.1	1-4% (moister on top)
B 235 / 236	#8	53.3 - 84.2	2.59	46.7	<2%
	#9	41.6 - 74.6	3.79	48.7	<1%
B 208	#4	39.7 - 69.1	3.22	46.4	2.8% (wet on bottom)
C 9	#11	55.1 - 91.1	3.06	48.0	1-2%

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Zirconium	ppm			1.27



**Royal Oak  
Mines Inc.**

**ARSENIC TRIOXIDE MANAGEMENT**

**TITLE:**  
**MINE LONGITUDINAL SECTION**

<b>LEVEL:</b> SURFACE	<b>SCALE:</b> 1" = NTS
<b>DRAWN:</b> MSL	<b>CHECK:</b> DATE: JAN. 29, 1997

**Figure 9**

File Name: MASTER\ARSENIC\ARLONG97.DWG

**Table 3**  
**Crown Pillar Dimensions**

Chamber	Chamber Dimension (Plan)	Vertical Pillar Thickness (ft)	Rock Type	Overburden Conditions	General Comments
B 208	irregular shape 125' long x 60 to 80' wide	35	chlorite-sericite shist	up to 50 ft of clay, with sands and gravel	- located at SE corner of B1 Pit
B 212	140' x 40'	30	chlorite-sericite shist	up to 60 ft of clay, with sands and gravel	- located at N end of B1 Pit
B 213	45' x 80'	25 - 40	chlorite-sericite shist	up to 60 ft of clay, with sands and gravel	- located at N end of B1 Pit
B 214	35' x 100'	30	chlorite-sericite shist	up to 50 ft of clay, with sands and gravel	- located at immediate N end of B1 Pit
B 230	25' x 75'	188	mafic volcanic	no overburden	- located directly under the baghouse
B 233	15 to 20' x 105'	115	mafic volcanic	no overburden	- located slightly north of the baghouse
B234	25 to 30' x 105'	72	mafic volcanic	minor till at contact, clay up to 30' thick	- located slightly north of the baghouse and B 233
B 235	115 x 40'	83	mafic volcanic	up to 30'	- located slightly NW of baghouse, by B 235
B 236	115 x 40'	103	mafic volcanic	15 to 20'	- located slightly NW of baghouse, by B 236
C 212	150' x 20 to 25'	30 to 70	chlorite-sericite shist	25 to 35'	- located NW of C Shaft, partly under Baker Creek
C 9	80' x 10' (at level) (slope widens below)	70	mafic volcanic	15'	- located N of C Shaft, and N of # 10
C 10	80' x 10' (at level) (slope widens below)	70	mafic volcanic	est. 15' (no drill info)	- located N of C Shaft
B 11	125' x 45'	70	mafic volcanic	no overburden	- located in bedrock knob between UBC and Baker Creek, west of C Shaft
B 12	200' x 40 to 45'	75	mafic volcanic	no overburden	"
B 14	175' x 40'	105	mafic volcanic	no overburden	"
B 15 (under construction)	200' x 45'	75	mafic volcanic	no overburden	"

# FRACFlow

Table 5.1. Void space calculations and predicted time to fill the mine after closure.

Mine Level	Open Space (ft <sup>3</sup> )	Open Space (m <sup>3</sup> )	Cumulative Volume		Cumulative Filling Time (Days)	
			(m <sup>3</sup> )	(%)	Minimum Inflow (1537 m <sup>3</sup> /day)	Maximum Inflow (2235 m <sup>3</sup> /day)
2000	1,398,164	39,593	39,593	1.03	25.8	17.7
1650	2,407,803	68,184	107,777	2.8	70.1	48.2
1500	5,038,451	142,678	250,455	6.5	163.	112.
1250	8,609,512	243,803	494,258	12.8	321.	221.
1100	10,450,480	295,935	790,194	20.5	514.	354.
950	9,513,476	269,401	1,059,595	27.5	689.	474.
750	22,534,236	638,122	1,697,717	44.1	1105.	760.
575	13,649,134	386,515	2,084,232	54.1	1356. <sup>3.7</sup>	932. <sup>2.6</sup>
425	10,456,456	296,105	2,380,336	61.8	1549. <sup>4.2</sup>	1065. <sup>2.9</sup>
250	12,822,409	363,103	2,743,440	71.2	1785. <sup>4.9</sup>	1227. <sup>3.4</sup>
100	14,896,018	421,824	3,165,263	82.2	2059.	1416.
Surface	24,213,841	685,685	3,850,948	100.	2505.	1723.
Totals	135,989,980	3,850,948			6.9 years	4.7 years

Notes:

1. Void space calculations were performed by, and supplied courtesy of, Royal Oak Mines Inc.
2. Minimum estimated filling time assumes inflow from groundwater seepage only. Maximum estimated filling time assumes inflow from groundwater seepage and existing seepage from the Northwest Tailings Pond.