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Environment Protection Authority



COMPLIANCE AUDIT PROGRAM

ENVIRONMENT PROTECTION AUTHORITY

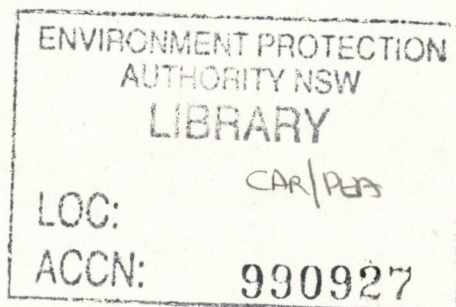
**FINAL
COMPLIANCE AUDIT REPORT**

PEAK GOLD MINES PTY LTD

COBAR

NSW

OCTOBER 1999



EXECUTIVE SUMMARY

An Environment Protection Authority (EPA) Compliance Audit was undertaken at the Peak Gold Mine, operated by Rio Tinto and located in Cobar. The site was audited as part of a statewide program of compliance audit. The main objectives of the audit were to assess compliance with the statutory requirements administered by the EPA and make recommendations for an action program to address any non-compliance identified during the audit.

Assessment of compliance was undertaken by a detailed site inspection, discussion with representatives of the Enterprise and review of all records and documentation required by the statutory instruments issued to the Enterprise. The site inspection was carried out by officers of the EPA on 20 May 1999.

The findings of the audit indicate that the Enterprise is not complying with some conditions attached to the pollution control licence issued under the Pollution Control Act, 1970. Issues of concern identified during the course of the audit include:

- The storage of fuel has not been carried out in a competent manner. The bulk fuel storage facility does not make an allowance for the trajectory of a liquid leak.
- The hydrochloric acid bund was not being operated in a proper and efficient manner. The relief valve in the bund housing the hydrochloric acid tank was open on the day of the inspection.

Further observations, beyond the scope of the compliance audit, are also presented in this report. Issues of concern in relation to further observations are:

- Unidentified air emissions observed from the gold room. The EPA is concerned that procedures to control the release of air pollutants may not be adequately implemented, pollution control equipment installed may not be adequate for the contaminants emitted, or that the inspection and maintenance of pollution control equipment may not be carried out adequately.
- Inadequate housekeeping observed in the process area. It is of concern to the EPA that inadequate housekeeping could allow the uncontrolled movement of contaminants, such as heavy metals and process chemicals, into the environment.

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1. INTRODUCTION

1.1 Purpose of the Report

This report has been prepared to present the findings of the compliance audit carried out at the Peak Gold Mine, a wholly owned subsidiary of Rio Tinto. The report also outlines a time frame for follow up action to address non-compliances identified during the audit and improve environmental performance.

The findings presented in this report are based upon information from the EPA's files, information supplied by employees of the Enterprise and information collected during the site inspection on 20 May 1999. Matters of non-compliance with environmental legislation which may have occurred before or after the site inspection are not addressed in this report.

This report has been prepared for the purpose described and no responsibility is accepted for use of any part of this report in any other context or for any other purpose.

1.2 Scope of the Audit

The scope of this audit was limited to an assessment of compliance by the Enterprise with legislation administered by the EPA and to the compliance of the Enterprise with the conditions attached to the statutory instruments issued by the EPA.

Activities examined during the audit included the following:

1. Aboveground crushing and screening of material
2. Transfer and storage of materials on site
3. Storage of fuel and chemicals
4. Water management
5. Tailings management
6. Dust control
7. Waste management
8. Rehabilitation

The objectives of the audit were:

- to assess whether the Enterprise is complying with all current legislation administered by the EPA;
- to determine whether the Enterprise has the appropriate statutory instruments for the activities carried out;
- to develop an action program to address any non-compliances and improve environmental performance.

1.3 Premises and Process Description

Peak Gold Mine is located approximately 8.5 km south of Cobar, within the Cobar Shire Council area. Peak Gold Mine is situated on a 12,000 ha mining lease (CML8) and located on the Cobar Pedi plain. The closest residential property is located approximately 5-6 km from the mine.

The Peak Gold Mine began operating in 1992. Current production is approximately 115,000 oz gold, 20,000 oz silver, 5,000 T copper and 5,000 tonnes lead/zinc concentrate per annum.

A summary of the process is as follows:

- Ore is extracted by blasthole stoping and crushed underground in a primary jaw crusher
- Ore from the mine is hoisted to the surface and stockpiled.
- Crushed ore is further ground using a semi-autogenous primary mill and a secondary ball mill
- Coarse free gold is separated using a gravity process
- Copper concentrates are produced using a series of floatation columns
- Residual gold and silver is leached from the copper tailings using a carbon-in-leach circuit
- Lead and zinc concentrates are produced using a series of floatation columns
- Tailings are cycloned to separate the coarse fraction from the slimes
- Remaining tailing slimes are thickened and pumped to the tailings dam

To control dust emissions from the crushed ore, automatically operated water sprays are installed in the ore conveyor. Water sprinklers are operated on an as-needs basis to suppress dust from stockpiles of waste rock and copper and lead/zinc concentrates. A water tanker is operated on a daily basis to suppress dust from unsealed areas.

All run-off from the processing plant and disturbed areas of the site is contained within the site and directed to the process water dam or tailings dam via diversion drains. Process water is treated and recycled through the plant. Tailings are piped to the tailings dam. Both dams are designed to contain the runoff from a one in a hundred year 72-hour storm event. Both the tailings and process water dams have emergency spillways.

Run-off not contaminated by site activities is diverted away from disturbed areas.

1.4 Statutory Instruments Issued to the Enterprise

The EPA has issued the following statutory instrument to the Enterprise:

- Pollution Control Licence No.003596 under the Pollution Control Act, 1970 which is renewable annually on 1 July. A copy of the licence is attached as **Appendix A**.

2. ASSESSMENT OF COMPLIANCE

2.1 Compliance with Statutory Instruments

Compliance was assessed against all conditions attached to Pollution Control Licence No. 003596.

Assessment of compliance was undertaken by a detailed site inspection and a review of the records and documentation required by the licence.

Assessment of compliance, details of non-compliance and recommendations are presented in Table 2.1.

2.2 Compliance with Statutory Legislation

Compliance was assessed against environmental legislation administered by the EPA.

The assessment involved a review of the EPA's records and site inspection to determine whether the Enterprise has applied for all of the necessary statutory instruments.

The EPA's records reveal that the Enterprise has applied for, and obtained all of the necessary statutory instruments for the premises.

2.3 Further Observations

Further observations are recorded where issues of environmental concern were observed which do not strictly relate to the scope of the audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where environmental performance may be improved.

Air emissions from the gold room

During the site inspection a yellow/brown plume was observed discharging from a stack on the gold room. The plume was visible for approximately 5-10 minutes. The constituents of the emission were not identified, but were likely to include oxides of sulphur and nitrogen. The EPA is concerned that procedures to control the release of air pollutants may not be adequately implemented, pollution control equipment installed may not be adequate for the contaminants emitted, or that the inspection and maintenance of pollution control equipment may not be carried out adequately.

The Enterprise must ensure that they are operating in compliance with the Clean Air (Plant and Equipment) Regulation 1997.

Note: The site representative advised the audit team that there are procedures in place to control emissions. The site representative also advised that, at the time of the visible plume, employees in the gold room were not following these procedures.

Inadequate housekeeping in process area

On the day of the site inspection it was observed that housekeeping within the process area was not adequate. Observations of inadequate housekeeping include:

(a) Ineffective collection of solids from the slurry separating filter

Mine waste, such as plastic, mixed up in the ore slurry is separated out through a series of filters before further processing. On the day of the inspection, this waste material was not adequately being contained. Mine waste, shredded plastic and fines, were overflowing on to the ground in the vicinity of the mill. The EPA is concerned that the uncontrolled discharge of wastes, whilst initially in slurry form, has potential to deposit and buildup around the premises and create dust during adverse wind conditions. Uncontrolled discharges of solids may also place an increased burden on both the capacity of the process water dam and dredging requirements.

(b) Spilt material from tailings sandbin not removed from sandbin area

On the day of the site inspection, it was observed that spilt material from the tailings sandbin had built up around the sandbin area. Although the spilt material was, to some extent, contained with the use of sandbags, it had overflowed the bund area and covered a series of drainage pipes. According to site representatives, the build up of sand occurred as a result of an uncontrolled discharge from the sandbin caused by a failure of the valve located at the base of the sandbin. It was not determined what contaminants were present in the dredged material however, the material was likely to contain cyanide. The EPA is concerned that the likelihood of contaminated material migrating off site, during windy conditions or heavy rainfall, is increased. The uncontrolled movement of contaminants into the environment has the potential to cause air, soil, surface water and groundwater pollution.

TABLE 2.1 ASSESSMENT OF COMPLIANCE – POLLUTION CONTROL LICENCE

Statutory Instrument: Licence under Pollution Control Act		Licence No. 003596	
Condition No.	Compliance	Comment	Action Required
S1	Yes		
S2(a)	No	<p>STORAGE OF MATERIALS Storage of fuel on site has not been carried out in a competent manner.</p> <p>Bulk Fuel Storage Facility Bulk quantities of diesel (85,000L), hydraulic oil (15,000L), engine oil (15,000L) and waste oil (15,000L) are stored in a designated bulk fuel storage facility.</p> <p>The storage facility is constructed to Australian Standard AS1940, <i>Storage and handling of flammable and combustible liquids</i>. However, AS 1940 requires, for the storage facility of liquids classed as dangerous goods, to make an allowance for the trajectory of a liquid leak. If the diesel tank, on site, leaked from an elevated point, the bunding provided would not adequately contain the liquid.</p>	The Enterprise must ensure that fuel is stored in a competent manner so as to adequately contain trajectory leaks.
S2(b)	Yes	TREATMENT, STORAGE AND DISPOSAL OF WASTES	
S3(a)	Yes	MAINTENANCE OF PLANT AND EQUIPMENT	
S3(b)	No	<p>OPERATION OF PLANT AND EQUIPMENT The hydrochloric acid bund was not being operated in a proper and efficient manner.</p> <p>Operation of hydrochloric acid tank bund The relief valve on the bund housing the hydrochloric acid tank was open on the day of the inspection. An open valve reduces the ability of the bund to contain the contents of a tank, should a spill occur.</p>	The Enterprise to ensure that the bund containing hydrochloric acid is operated in a proper and efficient manner.

Statutory Instrument: Licence under Pollution Control Act		Licence No. 003596	
Condition No.	Compliance	Comment	Action Required
S4	No	<p>Free and WAD cyanide</p> <p>There is no method set out in the Clean Waters Regulation specifying the test method for determining free and WAD cyanide. The licence does not specify a method by which free and WAD cyanide is to be determined. There is no information on EPA files to indicate that the licensee sought approval or that the EPA approved the methods, used to monitor free and WAD cyanide, in writing before monitoring commenced.</p>	The Enterprise must ensure that the monitoring of free and WAD cyanide, required by the licence, is carried out by methods approved of, in writing, by the EPA.
S5.1	This condition is a deeming clause which determines the applicability of Conditions S5.2-S5.4.		
S5.2	<p>The requirement of the condition did not apply at the time of the site inspection. The audit team was advised that no pollution complaints have been received by the licensee or agents or employees during the current licence period. The EPA does not have any evidence to indicate that any pollution complaints were received by the Enterprise which would require reporting.</p> <p>However, the Enterprise maintains a "Pollution Complaints Diary". The format of the Diary does not have a facility for recording details of actions taken by the Enterprise in relation to the complaint, as required by this condition.</p> <p>It is noted that, subsequent to the audit, the Enterprise has updated the format of their "Pollution Complaints Diary" to include a facility for this information to be recorded.</p>		
S5.3-S5.4	Yes		
S6.1-S6.4	Yes		
S7.1-S7.2	Yes		
S7.3	This is a deeming clause which determines the applicability of conditions S7.1-S7.2. No assessment of compliance is required.		

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
S8.1-S8.4		The requirement of this condition did not apply at the time of the site inspection. There is no evidence on EPA files that the EPA made a written request, during the current licence period, for a written report from the Enterprise in relation to any event described in this condition.	
S9.1-S9.3		The requirements of this condition did not apply at the time of the site inspection. The Certificate of Compliance (CoC) for the current licence period is due within six weeks after this licence expires on 1 July 1999.	
S9.4	Yes		
S9.5		The licensee is not a natural person. The licensee is Peak Gold Mines Pty Ltd.	
S9.6		This is a statement which describes the alternative methods that may be used to certify the Certificate of Compliance. No assessment of compliance is required.	
S10.1-S10.3	Yes		
S11.1		This condition is a deeming clause that determines the applicability of conditions S11.2 –S11.6. These conditions are applicable, as the licensee is a corporation. No assessment of compliance is required.	
S11.2	Not determined	It is not determined if the licensee has authorised at least two of the licensee's senior employees or agents to speak on behalf of the licensee and to provide any information or document required under this licence. Note: On the day of the inspection, Simon Bourke (Manager Metallurgy) indicated that himself and John Vale (General Manger) were authorised to represent the enterprise.	The enterprise must authorise at least two employees or agents to represent the licensee.

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
S11.3	No	There is no information on file to indicate that the licensee has formally advised the EPA of the names and telephone numbers of persons authorised to speak on behalf of the licensee and to provide any information or document required under this licence.	The enterprise must provide formal advice to the EPA of the names and telephone numbers of at least two authorised persons and their contact telephone numbers.
S11.4	This condition is a deeming clause which determines the applicability of condition S11.3 and S11.5. No assessment of compliance is required.		
S11.5-S11.6	The requirements of these conditions did not apply at the time of the audit, as the information required under condition S11.2 has not been provided.		
P1 (part 1)	No	<p>The Enterprise does not report all death or injury to fauna on or associated with the tailings dam to the Bathurst office of the EPA within one working day of the event, as required by this licence condition.</p> <p>The Enterprise reports loss of numbers above five or deaths in suspicious circumstances immediately. However, single or individual deaths or injuries, up to a total of five, are reported on a monthly basis.</p> <p>It is noted that the Enterprise's current procedure for reporting deaths and injuries to fauna is in accordance with a letter from the Bathurst office of the EPA, dated 1 July 1998.</p>	<p>The Enterprise must ensure that the reporting of death or injury to fauna to the EPA is in accordance with this condition</p> <p>Or</p> <p>Renegotiate the condition with the Central West Regional Office of the EPA.</p>
P1 (part 2)	Yes	Any telephone report must be confirmed by letter or facsimile within five (5) working days.	
P2	Yes		

Statutory Instrument: Licence under Pollution Control Act		Licence No. 003596	
Condition No.	Compliance	Comment	Action Required
P3	Yes		
P4	Yes		
A1	Yes		
A2	Yes		
A3 (part 1)	Yes	Four dust collection and sampling gauges must be established at separate locations approximately 90 degrees from the nearest location.	
A3 (part 2)	Yes	Establishment and maintenance of the four dust collection and sampling gauges as agreed by the EPA ...	
A3 (part 3)	Not Determined	<p>Establishment and maintenance of the four dust collection and sampling gauges as agreed by the DMR ... It has not been determined if the four dust collection and sampling gauges have been established and maintained as agreed by the DMR.</p> <p>There is no evidence on EPA files to indicate that the DMR has agreed to the establishment and maintenance of the four dust collection and sampling gauges. A letter sent to the Enterprise from the Bathurst Office of the EPA (dated 1 July 1998) does not confirm that the DMR has agreed to the establishment and maintenance of the dust collection and sampling gauges, as required by the licence condition. The letter states that the DMR accept the use of 2.5 litre bottles in place of the 4 litre bottles specified in the Australian Standard.</p>	<p>The Enterprise must ensure that dust collection and sampling gauges are established and maintained in accordance with this condition Or Renegotiate the condition with the Central West Regional Office of the EPA.</p>

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
A4	Yes		
A5		The requirements of this condition do not apply at the time of the audit. The site representative advised the audit team that no burning of vegetation or waste materials is carried out on site.	
A6	Yes		
A7		<p>The requirements of this condition did not apply at the time of the site inspection since there was no delivery of lime made on the day of the site inspection. The Enterprise advised that lime deliveries are made twice a week. According to the site representative, lime levels are measured by a digital measuring system, an alarm sounds when levels of lime have reached the high-level mark and a manual check is carried out using a dipstick. Any spills or leakage of lime are collected in the process water dam.</p> <p>The EPA has no reason to suspect that this condition is not complied with when lime deliveries are made.</p>	
A8		<p>The requirements of this condition did not apply on the day of the site inspection as windblown or traffic generated dust was not observed by the Audit team. The Enterprise advised that the Shire Council road cleaner is contracted on a weekly basis to clean sealed roads. In addition, a water tanker is employed to suppress dust, as part of a contract with a local haulage company. The water tanker is operated daily and was in use on the day of the site inspection.</p> <p>The EPA has no reason to suspect that this condition is not complied with if windblown or traffic generated dust was to occur.</p>	
A9		<p>The requirements of this condition did not apply at the time of the site inspection since the delivery of lime did not occur. According to the site representative, the pneumatic line to the lime silo is "blown through" into the silo by the truck driver after each delivery. On the day of the site inspection it was evident that the valve on the end of the pneumatic line was effectively closed.</p> <p>The EPA has no reason to suspect that this condition is not complied with when lime deliveries are made.</p>	

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
A10		<p>The requirements of this condition did not apply at the time of the site inspection, as there was no loading of stockpiled material carried out on the day of the site inspection. It is noted that, according to the site representative, a water sprinkler is used on the stockpiles on an as-needs basis.</p> <p>The EPA has no reason to suspect that this condition is not complied with when road truck loading operations from a stockpile is carried out.</p>	
A11	Yes		
A12 (part 1)	Yes	All dust equipment must be operable at all times...	
A12 (part 2)		<p>Planned maintenance shutdowns of dust control equipment...</p> <p>The requirements of this condition did not apply at the time of the site inspection as no maintenance shutdown of dust equipment was planned on the day of the site inspection.</p> <p>It is noted that, according to the site representative, maintenance shutdowns of dust equipment are not conducted during adverse weather conditions.</p> <p>The EPA has no reason to suspect that this condition is not complied with when wind speeds in excess of 10 metres per second are being experienced or are forecast to occur within the period of shutdown.</p>	
W1		<p>This condition is a statement which states that the Enterprise shall not make any alteration to the works and methods of disposal without the prior written approval of the EPA and as such no assessment of compliance is required.</p> <p>Note: EPA files indicate that the Enterprise has obtained prior written approval from the EPA for alterations to works and methods of disposal, carried out on site.</p>	
W2	Yes		

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
W3		<p>The requirements of this condition did not apply at the time of the site inspection, as there was no wastewater from workshops generated on the day of the site inspection, which would require collection. The site representative advised the audit team that any wastewater from workshops is collected in the process water dam.</p> <p>The EPA has no reason to suspect that this condition is not complied with when wastewater from a workshop is generated.</p>	
W4	Yes		
W5		<p>The requirements of this condition did not apply at the time of the site inspection, as there was no spillage of processing chemicals or liquors containing processing chemicals detected on the day of the site inspection.</p> <p>Chlorine is kept in the vicinity of the cyanide storage facility for the purpose of neutralising cyanide spills. Procedures for responding to uncontrolled chemical spills are included on the Enterprise's Environmental Contingency Response Plan. Neutralising agent and procedures were sited by the audit team.</p> <p>It is noted that all contaminated water on site drains to the process water dam.</p> <p>The EPA has no reason to believe that this condition would not be complied with if any spillage of processing chemicals or liquors containing processing chemicals was to occur.</p>	

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Statutory Instrument: Licence under Pollution Control Act		Licence No. 003596	
Condition No.	Compliance	Comment	Action Required
W6 (part 1)		<p>All drums and other containers holding any pollutant matter... The requirements of this condition did not apply at the time of the site inspection since no spillage or leakage from drums and other containers holding pollutant matter that needed to be collected and retained for subsequent disposal was occurring.</p> <p>The site representative advised that the Enterprise undertakes to ensure that drums and other containers holding any pollutant matter are promptly transferred to a designated bunded storage area.</p> <p>It is noted that any leakage or spillage from drums and other containers holding any pollutant matter on the premises would drain to the process water dam (providing secondary containment).</p> <p>The EPA has no reason to suspect that if a spillage or leak from drums and other containers holding any pollutant matter did occur it could not be collected and retained for subsequent disposal.</p>	
W6 (part 2)	No	<p>Effective measures must be taken to exclude rain... Measures are not taken to exclude rain from container storage areas. The bulk fuel storage facility and the majority of satellite container storage areas are not covered to exclude rain.</p>	<p>The Enterprise must ensure that effective measures are taken to exclude rain from container storage areas Or Renegotiate the condition with the Central West Regional Office of the EPA.</p>
W6 (part 3)	Yes	<p>Effective measures must be taken to exclude surface stormwater runoff...</p>	
W7 (part 1)	Yes	<p>... minimum of 700mm freeboard in tailings dam...</p>	
W7 (part 2)	Yes	<p>... minimum of 500 mm in concentrator water overflow dam...</p>	

Statutory Instrument: Licence under Pollution Control Act Licence No. 003596			
Condition No.	Compliance	Comment	Action Required
W8	Yes		
W9		This condition is a deeming clause which states that any annual reporting required by this licence would have been fulfilled if incorporated into the annual MREMP.	
W10	Yes		

3. ACTION PROGRAM FOR THE ENTERPRISE

Recommendations for an action program in relation to compliance are summarised in Table 3.1.

TABLE 3.1 ACTION PROGRAM

Condition No	Action details	Target date
POLLUTION CONTROL LICENCE No. 003596		
S2(a)	<p>The Enterprise must ensure that fuel is stored in a competent manner so as to adequately contain trajectory leaks.</p> <p>Note: PGM has subsequently advised the EPA that a work order to install deflection shields to allow for the trajectory of spills, has been raised. PGM intend completing this work by February 2000 (the date at which the Enterprise is required to renew its Dangerous Goods Licence).</p>	February 2000 and ongoing
S3(b)	<p>The Enterprise to ensure that the bund containing hydrochloric acid is operated in a proper and efficient manner.</p> <p>Note: PGM has subsequently advised the EPA that they have replaced the previous valve with a stainless steel valve and the valve has been locked in a closed position. The valve will only be opened on an as needs basis and closed afterwards.</p>	Completed No further action required
S4	<p>The Enterprise must ensure that the monitoring of free and WAD cyanide, required by the licence, is carried out by methods approved of, in writing, by the EPA.</p> <p>Note: PGM has subsequently requested and received written approval from the Bathurst Office of the EPA in regards to an approved cyanide monitoring methodology.</p>	Completed No further action required
S11.2 & S11.3	<p>The enterprise must authorise at least two employees or agents to represent the licensee and ensure that the EPA is formally advised of the names and contact telephone numbers of the authorised persons.</p> <p>Note: PGM has subsequently formally advised the EPA of the names and contact telephone numbers of two authorised persons.</p>	Completed No further action required
P1 (part 1)	<p>The Enterprise must ensure that the reporting of death or injury to fauna to the EPA is in accordance with this condition Or Renegotiate the condition with the Central West Regional Office of the EPA.</p>	31 October 1999 and ongoing
A3 (part 3)	<p>The Enterprise must ensure that dust collection and sampling gauges are established and maintained in accordance with this condition Or Renegotiate the condition with the Central West Regional Office of the EPA.</p>	31 October 1999 and ongoing
W6 (part 2)	<p>The Enterprise must ensure that effective measures are taken to exclude rain from container storage areas Or Renegotiate the condition with the Central West Regional Office of the</p>	31 October 1999 and ongoing

APPENDIX A

POLLUTION CONTROL LICENCE No 003596

Pollution Control Act, 1970.

Licence Number: 003596
File Number: 260771/B01
In Force From: 1 July, 1998
In Force Until: 1 July, 1999

Name and Address of Licensee:

PEAK GOLD MINES PTY LIMITED
P.O. BOX 328
COBAR NSW 2835

Name and Address of Premises, the subject of this Licence:

PEAK GOLD MINES PTY LIMITED
HILLSTON ROAD
COBAR NSW 2835

This licence under the Pollution Control Act 1970 ("the Act") is granted to: PEAK GOLD MINES PTY LIMITED ("the licensee") in respect of premises situated at: HILLSTON ROAD, COBAR ("the premises") subject to the conditions specified below:

Other than in accordance with section 17B of the Act this licence is not transferable.

The conditions of this licence may be varied or revoked, or new conditions attached, at any time by notice in writing given to the licensee.

DEFINITIONS

In this licence except in so far as the context or subject matter otherwise indicates or requires -

"EPA" means the Environment Protection Authority.

"regional office" means

Environment Protection Authority
CENTRAL WEST Regional Office
219 HOWICK STREET
BATHURST NSW 2795
Phone (02) 6332 1838 Fax (02) 6332 2387
After Hours 131 555

Postal Address
PO BOX 1388
BATHURST NSW 2795

"environment" includes all aspects of the surroundings of human beings, including:

- (a) the physical factors of those surroundings, such as the land, the waters and the atmosphere; and
- (b) the biological factors of those surroundings, such as the animals, plants and other forms of life; and
- (c) the aesthetic factors of those surroundings, such as their appearance, sounds, smells, tastes and textures.

Pollution Control Act, 1970.

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"harm" in relation to the environment, includes any direct or indirect alteration to the environment that has the effect of degrading the environment and, without limiting the generality of the foregoing, includes:

- (a) any act or omission that results in air pollution, within the meaning of the Clean Air Act 1961; and
- (b) any act or omission that results in the pollution of any water, within the meaning of the Clean Waters Act 1970.

"dry weather conditions" means less than ten millimetres of rain falling within a 24 hour period.

Pollution of waters

S1. The licensee must not pollute waters except as expressly permitted by this licence. (That is, the defence in section 16 (6) of the Clean Waters Act 1970 is available only if the licensee pollutes waters as expressly permitted by this licence.)

In this condition, the terms "**pollute**" and "**waters**" have the same meaning as in the Clean Waters Act 1970.

Activities must be carried out competently

S2. All activities carried out on the premises must be carried out in a competent manner.

In this condition, "**activities**" includes:

- (a) the processing, handling, movement and storage of materials and substances; and
- (b) the treatment, storage and disposal of wastes (including solid and liquid wastes).

Maintenance of plant and equipment

S3. All plant and equipment installed or used in or on the premises:
(a) must be maintained in a proper and efficient condition;
and
(b) must be operated in a proper and efficient manner.

In this condition, "**plant and equipment**" includes drainage systems, infrastructure, pollution control equipment and fuel burning equipment.

Testing methods

S4. Any monitoring required by this licence must be carried out:
(a) in accordance with any relevant testing methods set out in the New South Wales Clean Air (Plant and Equipment) Regulation 1997, the Clean Waters Regulations 1972 or the

Pollution Control Act, 1970.

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- (b) Noise Control Regulation 1975; or
in accordance with any method set out in any condition of this licence; or
- (c) if no compulsory method is set out in those Regulations or in this licence, in a manner approved by the EPA in writing before any tests are conducted.

Record of pollution complaints

- S5.1 The licensee must keep a legible record of all complaints received by the licensee or by any employee or agent of the licensee, in relation to pollution from or on the premises.
- S5.2 The record must include details of the following:
- (a) the date and time of the complaint;
 - (b) the method by which the complaint was lodged;
 - (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - (d) the nature of the complaint;
 - (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant.
- S5.3 The record of each complaint must be kept for at least 2 years after the complaint was received.
- S5.4 The records must be produced to any officer of the EPA who asks to see them.

Records

- S6.1 The results of any monitoring required by this licence must be recorded.
- S6.2 All records required to be kept by this licence must be kept in a legible form or in a form that can readily be reduced to a legible form.
- S6.3 The records must be kept for at least 3 years after the monitoring or event to which they relate took place.
- S6.4 The records must be produced in a legible form to any officer of the EPA who asks to see them.

Reporting of environmental harm

- S7.1 If anything happens on the premises that has caused, is causing or is likely to cause harm to the environment, whether the harm occurs on or off the premises, the licensee must report the event to the EPA as soon as practicable after it becomes known to the licensee or to one of the licensee's employees or agents.

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- S7.2 The event must be reported by telephoning:
- (a) the regional office of the EPA on the phone number specified on the front of this licence, if the event is reported during office hours;
 - (b) the after hours telephone number specified on the front of this licence, if after office hours;
 - (c) in the event that an EPA officer cannot be contacted at either of those numbers, the EPA's "Pollution Line" service on 131 555.
- S7.3 This condition does not apply when the harm caused or likely to be caused to the environment is expressly permitted by this licence.

Written report

- S8.1 The EPA may make a written request that the licensee prepare a written report of any event on the premises that, in the opinion of the EPA, has caused, is causing or is likely to cause harm to the environment, whether the harm occurs on or off the premises.
- S8.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within 21 days of the request, or within such shorter time as may be specified in the request.
- S8.3 The report must include the following information:
- (a) all details known to the licensee of the cause, time and duration of the event;
 - (b) all details known to the licensee of the type, volume and concentration of every pollutant released as a result of the event;
 - (c) the name, address and telephone number of every employee or agent of the licensee who witnessed the event;
 - (d) the name, address and telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
 - (e) details of any remedial action taken by the licensee or any other person in relation to the event;
 - (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event.
- S8.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

Pollution Control Act, 1970.

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Certificate of compliance

S9.1 The licensee must supply the following particulars to the EPA, and must provide a certificate to the EPA, certifying that those particulars are correct:

Monitoring conditions

- (a) whether all monitoring required by this licence has been carried out;
- (b) if all the monitoring has not been carried out, what monitoring has not been carried out and the reasons why the monitoring has not been carried out;
- (c) whether all the monitoring data required to be reported to the EPA by this licence has been reported to the EPA;
- (d) whether all that monitoring data was reported within the time specified by this licence;
- (e) if all the monitoring data has not been reported to the EPA, or has not been reported within the time specified, the reasons why the monitoring data has not been so reported;
- (f) whether all the monitoring data reported to the EPA was derived from monitoring carried out in accordance with this licence;
- (g) if any of the monitoring data reported to the EPA was not derived from monitoring carried out in accordance with this licence, what monitoring data was not so derived and the reasons why the monitoring data was not so derived;

Compliance with conditions

- (h) whether every condition of this licence has been complied with;
- (i) if one or more conditions have not been complied with, in relation to each such condition:
 - (i) the nature of the non-compliance; and
 - (ii) the reasons for that non-compliance; and
 - (iii) any action taken to prevent, control or mitigate the non-compliance; and
 - (iv) any action that has been or will be taken to prevent a recurrence of the non-compliance.

S9.2 The certificate must be in the form entitled "Pollution Control Act 1970 - Certificate of Compliance" available from any office of the EPA.

S9.3 The certificate must be provided to the EPA no later than 6 weeks

Pollution Control Act, 1970.

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after the date of expiry of this licence.

- S9.4 If this licence is a renewed licence, the certificate required by any previous licence held by the licensee must be provided to the EPA no later than 6 weeks after the date of expiry of the previous licence.
- S9.5 If the licensee is a natural person, the certificate must be signed by the licensee.
- S9.6 If the licensee is a corporation, the certificate may, as an alternative to the affixing of the corporate seal, be signed:
- (a) by the chief executive officer of the corporation; or
 - (b) by any other person approved by the EPA in writing.

NOTE: **The certificate must not be completed or signed before the licence expires, as you must report your compliance with licence conditions for the entire licence period.**

Licence must be kept at premises

- S10.1 A copy of this licence must be kept at the premises.
- S10.2 The licence must be produced to any officer of the EPA who asks to see it.
- S10.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Responsible employees

- S11.1 This condition does not apply if the licensee is a natural person who conducts the operation by himself or herself.
- S11.2 The licensee must authorise at least two of the licensee's senior employees or agents:
- (a) to speak on behalf of the licensee; and
 - (b) to provide any information or document required under this licence.
- S11.3 The licensee must authorise those persons, and inform the EPA of the names and telephone numbers of those authorised persons, within 14 days of the date of this licence coming into force.
- S11.4 If this licence is a renewed licence, and the licensee has previously authorised persons and informed the EPA of their names and addresses, the licensee is not required to again inform the EPA if those people continue to be authorised and their telephone numbers have not changed.

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S11.5 The licensee must inform the EPA of any change in the information provided under this condition within 14 days of the change.

S11.6 Any person authorised by the licensee must be readily contactable on the person's nominated telephone number during regular working hours.

SPECIAL CONDITIONS

- P1. The licensee must report any deaths or injury (including bogging or miring) to fauna (avian and terrestrial) on or associated with the tailings dam to the Bathurst office of the EPA within one working day of the event. Any telephone report must be confirmed by letter or facsimile within five (5) working days.
- P2. The discharge to the tailings dam must be sampled once per calendar month. This sample must be analysed for both free and WAD cyanide.
- P3. The tailings runoff dam must be sampled once per calendar month. This sample must be analysed for both free and WAD cyanide.
- P4. The results of the monthly measurements of cyanide must be reported in the annual licence report or at other times as requested by the EPA in writing.

Pollution Control Act, 1970.

Further conditions with respect to the Clean Air Act 1961
Licence Number: 003596 **In Force Until:** 1 July, 1999

Prescribed Use Classification: GRINDING AND MILLING WORKS PROCESSING
MORE THAN 50 TONNES PER ANNUM

Operational Scale: more than 500 kilotonnes per annum

- A1. Dust samples from the five dust gauge and collection sites must be collected for the determination of the mass deposition rate and analysis for dissolved and total solids for lead on a minimum three monthly basis.
- A2. A control for the four on site dust collection gauges must be located at a suitable site agreed to in writing by the EPA and established in accordance with Australian Standard "Ambient air-particulate method" 2724.1 - 1984.
- A3. Four dust collection and sampling gauges must be established at separate locations approximately 90 degrees from the nearest location. They must be established and maintained as agreed by the Department of Mineral Resources and EPA.
- A4. Access to areas awaiting or undergoing rehabilitation shall be restricted by suitable markers.
- A5. No vegetation or waste materials, except for explosive wastes, may be disposed of by burning without the written approval of the EPA.
- A6. All inspection ports and hatches on material storage vessels must be effectively sealed at all times when not in use for routine inspection of material levels or maintenance.
- A7. An inspection of the lime level in the silos must be made prior to delivery to ensure that it is capable of holding the volume of material which is to be discharged from the tanker.
- A8. All sealed roads and other sealed areas within the compound area shall be regularly cleaned by washdown to prevent windblown or traffic generated dust.
- A9. All pneumatic lines to the silos must be blown through into the silos and the ends capped after each delivery.
- A10. The undisturbed surface layer of a stockpile must be thoroughly wet before road truck loading operations from that stockpile is commenced.
- A11. Air flow from the radiator fans and the exhaust gases from the

Pollution Control Act, 1970.

Further conditions with respect to the Clean Air Act 1961

Licence Number: 003596

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plant or equipment used in operation of the premises must be directed away from road surfaces and stockpiles.

- A12. All dust control equipment must be operable at all times with the exception of shutdowns required for maintenance. Planned maintenance shutdowns of dust control equipment must not be scheduled to commence during periods when wind speeds in excess of 10 metres per second are being experienced or are forecast to occur within the period of shutdown.

Pollution Control Act, 1970.

Further conditions with respect to the Clean Waters Act 1970

Licence Number: 003596

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A total of 1 point(s) of discharge, the locations of which are specified individually hereafter, are authorised by this licence. The licensee may discharge in accordance with the conditions of this licence the volume, concentration or type of pollutants described below.

Location of authorised discharge point:

OVERFLOW FROM THE STOCK WATER DAM AS IT DISCHARGES TO AN UNNAMED WATER COURSE.

Code number of authorised discharge point: 001

Discharge Classification: ANY OTHER TYPE OF DRAIN SITUATION

OPERATIONAL CONDITIONS

- W1. No alteration to the works or methods of disposal shall be made without the prior written approval of the EPA.
- W2. There must be no discharges, other than uncontaminated stormwater, from the premises.
- W3. Wastewaters from workshops must be collected prior to reuse on site.
- W4. All contaminated waters, including stormwater run-off, seepages and leachates, must be collected and treated prior to reuse on site.
- W5. Any spillage of processing chemicals or liquors containing processing chemicals shall be immediately neutralised, pumped to the tailings dam or recycled.
- W6. All drums and other containers holding any pollutant matter must be stored in such a manner that any leakage or spillage must be collected and retained for subsequent disposal by means which do not pollute waters. Effective measures must be taken to exclude rain and surface stormwater runoff from container storage areas.
- W7. A minimum of 700 millimetres freeboard must be maintained in the tailings dam and a minimum of 500 millimetres freeboard maintained in the concentrator water overflow dam.
- W8. All units of the water pollution control system must be inspected at least once per working day shift. The condition of all units must be noted in a ledger kept for the purpose. The ledger must be maintained in a legible condition at all times and retained for a period of not less than three (3) years. The ledger must be

Pollution Control Act, 1970.

Further conditions with respect to the Clean Waters Act 1970
Licence Number: 003596 **In Force Until:** 1 July, 1999

made available to any authorised officer of the EPA on demand.

REPORTING CONDITIONS

- W9. For the purpose of this licence, any annual reporting requirements will be deemed to have been fulfilled if such reporting requirements are incorporated into the Annual Mining Rehabilitation and Environmental Management Plan.
- W10. A copy of the Annual Mining Rehabilitation and Environmental Management Plan (MREMP) must be sent to the Bathurst Office of the EPA at 219 Howick Street Bathurst prior to the annual MREMP meeting.

APPENDIX B

ENTERPRISE RESPONSE



PEAK GOLD MINES PTY. LIMITED
ACN 001 533 777

Catherine Davis
Technical Officer Environment
Peak Gold Mines
P.O. Box 328
Cobar N.S.W. 2835

Liesl Truscott
Compliance Audit Officer
Environment Protection Authority
Civic Tower, Cnr Jacobs St and Rickard Rd
Bankstown NSW 2200

21/09/99

Response to "Draft Compliance Audit Report-Peak Gold Mines" May 1999

Dear Ms Truscott,

Please find attached the following Peak Gold Mines, Response to your draft "Compliance Audit Report-Peak Gold Mines" for the audit conducted by the EPA in May 1999 that we received on 6th September 1999.

Peak Gold Mines thanks you for the opportunity to correct aspects of the draft and supply further explanatory information for the purpose of responsible and accurate reporting.

Yours sincerely

A handwritten signature in black ink, appearing to be "Catherine Davis", written over a horizontal line.

Catherine Davis
Technical Officer Environment.

CC Luke Goodwin EPA Dubbo ; Environmental Files PGM.

Peak Gold Mines Pty Limited

A.C.N. 001 553 777

A Member of the Rio Tinto Group

Response to The Environmental Protection Authority's Draft Compliance Audit – Peak Gold Mines Pty Ltd – May 1999

Author: C. Davis & C.L. Stegman
Date: September 1999
Copies: Peak Management Team x 4
EPA x 2

Submitted by: _____

Accepted by: _____

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PGM Report No. 1110

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1 INTRODUCTION

The Environmental Protection Authority (EPA), New South Wales conducted an unannounced compliance audit of Peak Gold Mines Pty Ltd (PGM) mining operations located within Consolidated Mining Lease (CML) 8 on 17 May 1999. Specifically, the Compliance Audit assessed PGM's compliance to its Pollution Control Licence No. 003596, which covers PGM's mining operations at the Peak Mine.

EPA officers Liesl Truscott as lead auditor, Lucy Silk as support auditor and Luke Goodwin from the Central West District Operations Office conducted the audit. Graeme Hewitt, Manager-Commercial and Simon Bourke, Manager-Metallurgy represented PGM.

PGM received a copy of the Draft Compliance Audit Report on its operations from the EPA on 6 September 1999. The EPA has provided PGM with an opportunity to respond to the Draft Report by 20 September 1999 and PGM understands that its comments will be included as an appendix within the final EPA Compliance Report.

This report documents PGM's response to issues raised by the EPA in their audit of PGM's mining operations.

2 PEAK GOLD MINES' RESPONSE

2.1 Compliance with Statutory Instruments (Licence No. 003596)

2.1.1 Condition No S2 (a)

PGM's bulk fuel storage facility was constructed in 1992 to AS1490-1988. The main storage facility comprises separate tanks that contain 85,000 litres of diesel, 15,000 litres of hydraulic oil, 15,000 litres of engine oil and 15,000 litres of waste oil respectively, for a total maximum capacity of 130,000 litres. The dimensions and calculations provided by PGM to the EPA at the time of the audit are incomplete, even though all the requisite data is provided on the plans submitted with the calculations (see PK-525-ST30008). The main bund has two compartments separated by a bund wall that is a lesser height than the height of the main perimeter bund. The internal dimensions of the larger bunded area are 14.75 metres by 13.00 metres by 0.60 metres, indicating a total capacity of 115,000 litres. This clearly satisfies the current AS1490-1993 in that the capacity of the bunded compound is at least 100% of the capacity of the largest tank (85,000 litres).

Based on the designs provided, the fuel storage facility does not make adequate allowance for the trajectory of a liquid leak (crest locus minimum is less than 26.5 degrees) and as such does not satisfy AS1490-1993. This had already been identified in a Dangerous Goods Storage Facilities Audit commissioned by PGM and completed on the 24th September 1998. This audit suggested that deflection shields should be installed to satisfy this requirement. PGM has already raised a workorder to install deflection shields (W/order No.55208 – Parent W/order DGAUDT99). However, before proceeding with the installation of these shields PGM is seeking WorkCover approval that these shields will satisfy the intent of AS1490-1993. PGM is required to renew its Dangerous Goods Licence with WorkCover in February 2000 and intends completing this work by this date.

2.1.2 Condition No S2 (b)

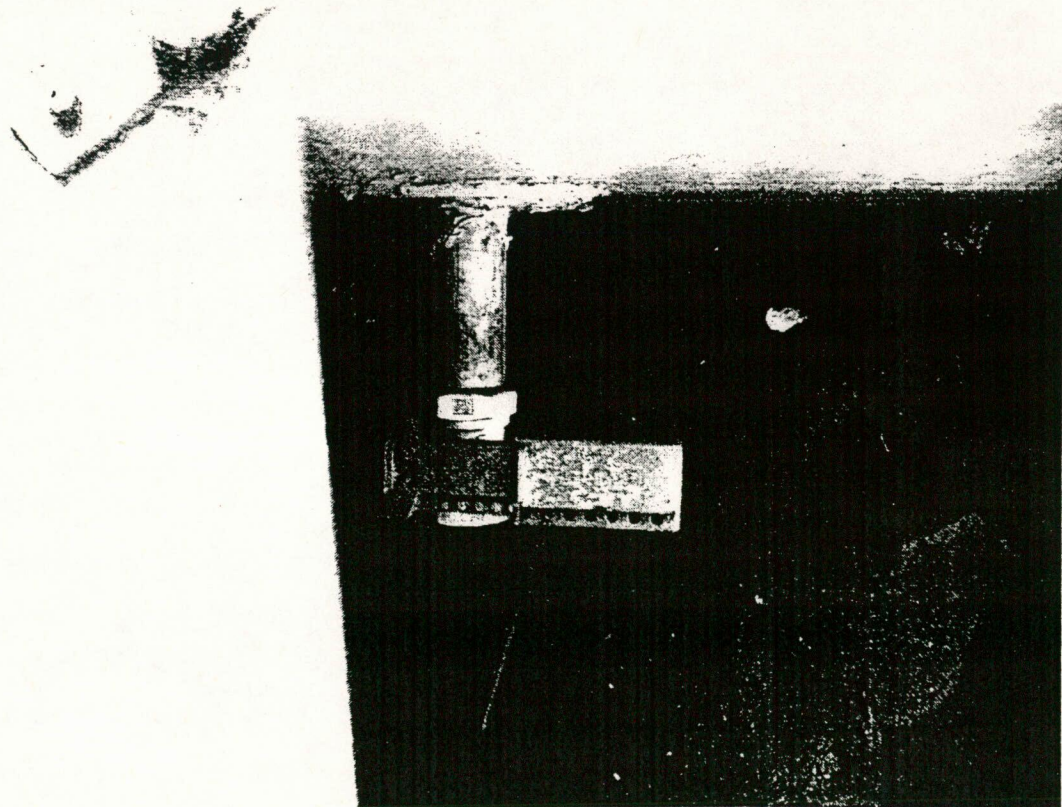
The hydrochloric acid bund has a capacity of 11,000 litres (see Plan PK-262-CI20002) which is sufficient for the 3000 litre hydrochloric acid tank located within the bund. Acidified water from the acid wash hopper TA-90 (see Plan PK-311-ST30003) is back-fed into the hydrochloric acid bund for disposal to the process water dam (diluted hydrochloric acid is used to clean the carbon of carbonate precipitates). This tank has a capacity of 5,760 litres. Therefore, the hydrochloric acid bund has sufficient capacity for both the hydrochloric acid tank and the acid wash hopper tank and the capacity of the bund will not be exceeded during a simultaneous spill from both the acid wash hopper and the hydrochloric acid tank.

From original construction a pump has been installed within the sump in the hydrochloric acid bund and this pump is activated when water levels in the sump exceed the top of the sump. PGM will review directly feeding the carbon wash water from the acid wash hopper to the process water dam.

2.1.3 Condition No S3 (b)

During the EPA audit the valve between the hydrochloric acid bund and the adjacent bund was found to be open. This valve is normally closed but was left open to allow rain water from the adjacent bund to drain into the hydrochloric acid bund for disposal. PGM has now replaced this valve with a stainless steel valve and the valve has been locked in a closed position (see Figure 1). This valve will only be opened on an as needs basis and closed afterwards.

Figure 1: Locked Valve fitted to Hydrochloric Acid Bund



2.1.4 Condition No S4

The Department of Mineral Resources Development Laboratory performs all cyanide analyses of samples collected by PGM in order to satisfy EPA cyanide monitoring requirements. These analyses are carried out at a NATA registered laboratory (see letter of confirmation from the DMR presented in Appendix 1).

The EPA has indicated that they believe the DMR's assay procedures are satisfactory (see letter from EPA dated 17 September 1999 presented in Appendix 2). PGM has advised the EPA that it uses the DMR to undertake cyanide analyses during previous MREMP meetings (see same letter from EPA) and Licence Review meetings. Details of these assay procedures are also included in its previous MREMP documentation.

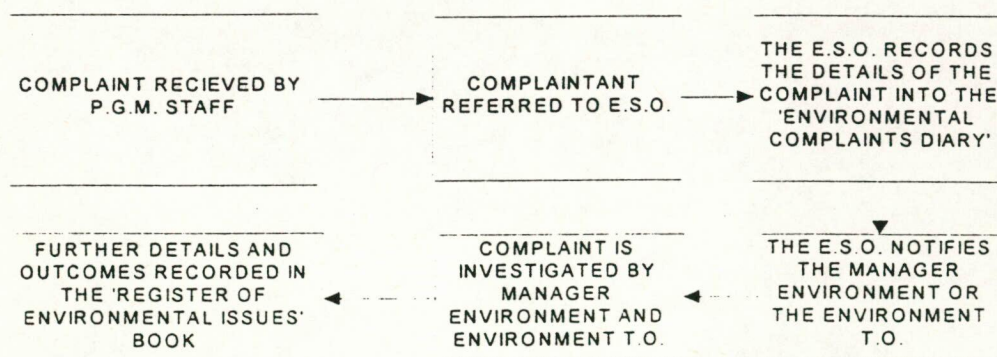
PGM concedes that at the time of the audit it had not received written approval for its cyanide assay procedures from the EPA. Written confirmation from the EPA has subsequently been received and is presented in Appendix 2.

2.1.5 Condition No S5.2 (e)

PGM maintains a "Pollution Complaints Diary" and has an established procedure for recording and responding to pollution complaints. No pollution complaints have been received in relation to the PGM's operations within CML8 during the licence period.

PGM concedes that its "Pollution Complaints Diary" does not satisfy this condition in relation to providing a column to record actions taken by PGM in response to a complaint, including follow-up contact with the complainant. However, PGM's process for handling complaints clearly includes recording details of all subsequent follow-up (see Figure 2). PGM has rectified its "Pollution Complaints Diary" to incorporate this column and a copy of the updated diary is presented in Appendix 3 as verification.

Figure 2: Environmental Complaints flow chart



2.1.6 Condition No S11.2

The EPA requires that PGM authorise at least two senior PGM personnel who are authorised to provide any information or document required under the Licence.

PGM had previously verbally indicated that Simon Bourke, Manager-Metallurgy and John Vale, General Manager were PGM's authorised representatives. On the 2nd July 1999 PGM subsequently advised the EPA by facsimile that Craig Stegman, Manager-

Geology and John Vale, General Manager were PGM's authorised representatives. A copy of this facsimile is appended in Appendix 4.

2.1.7 Condition No S11.3

The EPA requires that PGM must provide formal advice to the EPA of the names and telephone numbers of at least two senior PGM personnel who are authorised to provide any information or document required under the Licence.

PGM concedes that it had not previously advised the EPA in writing as to the names and telephone numbers of its authorised representatives. On the 2nd July 1999 PGM subsequently advised the EPA by facsimile that Craig Stegman, Manager-Geology and John Vale, General Manager were PGM's authorised representatives. A copy of this facsimile is appended in Appendix 4.

2.1.8 Condition No P1 (Part 1)

PGM believes that the EPA's comment in relation to this condition that "*Fauna deaths or injuries associated with the tailings dam may have occurred but have not been observed by the audit team during the site inspection*" is misleading, especially when taken in the context of Condition No P1 (Part 2). If such injuries or deaths had occurred then the EPA would have received a written report within 24 hours if a total of five fauna deaths in suspicious circumstances had occurred. Otherwise, the EPA would have received notification of a fauna death in a "Fauna Death Summary" at the end of the month. There were no fauna deaths recorded for the month of May. PGM has always complied with its licence conditions in relation to notifying the EPA of fauna deaths and this is reinforced by the historical records maintained by PGM.

2.1.9 Condition No A2 (Part 1)

PGM is required to locate a control dust collection gauge for its 4 dust collection gauges at a suitable site agreed to in writing by the EPA. The EPA contends that there is no letter on the EPA files that indicates that PGM has complied with this condition.

PGM verbally informed the EPA of the location of its control dust collection gauge in a telephone conversation on June 1998 and subsequently received written confirmation on July 1998 from the EPA that they regarded location of all PGM's dust collection gauges as satisfactory. A copy of this letter is shown in Appendix 5.

2.1.10 Condition No A3 (Part 1)

PGM must ensure that its dust collection gauges are established at separate locations approximately 90 degrees from the nearest location.

PGM has indicated that one of its gauges is not located at 90 degrees from the nearest location. The location of this gauge was modified in order to optimise the monitoring of dust fallout in relation to the mine site. PGM sought approval from the EPA for this modification and received approval in writing on July 1998. A copy of this letter is shown in Appendix 5.

2.1.11 Condition No A3 (Part 2)

PGM is required to ensure that the dust collection and sampling gauges have been established and maintained as agreed by the DMR and EPA. The EPA contends that there is no evidence on the EPA files that indicates that PGM has complied with this condition.

PGM received written confirmation on July 1998 from the EPA that both the EPA and DMR are satisfied with PGM's dust measurement system. A copy of this letter is shown in Appendix 5. PGM has documented its procedures for establishing and maintaining its dust collection gauges in its MREMP documentation.

2.1.12 Condition No A9

PGM is required to cap the ends of its pneumatic lines to the lime silo bin after deliveries of lime. The EPA acknowledged that the valve on the end of the pneumatic line was effectively closed, however, it was not "*capped*". PGM believes that the intent of this condition is being met and that it is a matter of opinion as to whether a closed valve does not constitute a cap. PGM will request that this condition be amended to read "effectively closed" instead of "capped".

2.1.13 Condition No A12

PGM is required to ensure that its dust suppression equipment is operable at all times, except in the event of maintenance, which should only occur when wind speed is less than 10m/second.

PGM contends that its ore is sufficiently moist so that it does not require the use of dust suppression equipment on its ore conveyor systems. PGM believes that it would be more appropriate for the EPA to stipulate maximum dust deposition levels for PGM's mining operations. PGM will write to the EPA and attempt to change this Licence condition.

2.1.14 Condition No W6 (Part 1)

PGM is required to store all drums and other containers holding any pollutant matter in such a manner that any spillage or leakage is collected and retained for subsequent disposal.

The EPA noted the presence of several drums containing waste oil matter in the concentrator area that were not stored within a bunded area. These drums were not being stored in the concentrator area and were in transit to the fuel and oils systems storage area, which contains a separate bunded area for the storage and disposal of such waste material. PGM undertakes to ensure that drums and other container holding any pollutant matter are promptly transferred to the fuel and oils systems storage area. It is also important to note that the compound area has been designed so its entire catchment may flow into the process water dam as a secondary contingency to contain any spillage.

2.1.15 Condition No W6 (Part 2)

PGM is required to exclude rainwater from container storage areas. The EPA has highlighted that the fuel and oils systems storage area and the majority of satellite container storage areas are not covered to exclude rain.

PGM believes that covering its fuel and oils systems storage area and other satellite container storage areas is impractical and unnecessary. Peak mine is located in the central west of New South Wales and has a semi-arid climate. The area receives a mean annual rainfall of 407mm and has a mean annual evaporation rate of 2548mm, causing a pronounced water deficit. As a consequence, it is unlikely that rainwater will significantly contribute to reducing the capacity of the storage areas. In addition, all storage areas have a reasonable safety margin inherent in their design.

All container storage areas are located within the mine compound, which surrounded by a perimeter bund that focuses all run-off into the process water dam. The Peak mine site is a zero discharge site and as such no contaminated water leaves site.

PGM will request that this condition be amended to exclude the requirement to exclude rain from container storage areas.

2.1.16 Condition No W7

PGM is required to maintain a 700 mm freeboard on its tailings dam (tailings decant dam). The EPA contends that it could not determine that this condition was being met because PGM does not record the freeboard on the tailings decant dam.

PGM undertakes daily inspections of its tailings impoundment system including visual checks of the water level in the tailings decant dam against clearly marked level poles. In the history of operations, the water level in the tailings decant dam has never exceeded the required 700mm freeboard, as evidenced by watermarks on the dam wall. The dam level has not been recorded as the water level in the decant dam has never been close to the 700mm level. As the EPA notes, this dam is currently empty.

PGM agrees to record the depth of the freeboard on the tailings decant dam in its daily inspections of the tailings impoundment system. A copy of the amended impoundment checklist is presented in Appendix 6 as confirmation of the change to the inspection process.

2.2 Compliance with Statutory Legislation

PGM complied with all statutory legislation.

2.3 Further Comments

2.3.1 Air emissions from the gold room

On the day of the Compliance Audit the EPA observed a yellow-brown gaseous plume emitting from the gold processing room. Site personnel indicated that the intensity of this plume was abnormally excessive and reflected the increased volume of product being washed with acid on the day of the audit. Under normal circumstances the operators would clean the gold in smaller batches. The resultant emissions are therefore of a lesser intensity and shorter duration.

These gas emissions are a by-product of cleaning the gravity gold concentrate with nitric acid. The reaction between the nitric acid and the small amount of basemetal sulphides present in the concentrate produces a gaseous discharge comprised largely nitrous oxide (NO₂), sulfur dioxide (SO₂) and sulfur trioxide (SO₃). The nitrous oxide gas is predominantly yellow-brown colour. For these reasons PGM has various pollution

control devices installed in the gold processing room including a fume extraction hood fitted with scrubbers which remove particulate matter, which largely comprises sulphates of iron, lead and copper and silver nitrate and silver chloride from the gas emissions.

These gas emissions represent a very small volume of gas. Given typical mine production rates, gas emissions associated with the cleaning of gold concentrate are of approximately five minutes duration every one to two days.

2.3.2 Inadequate housekeeping in the process area

2.3.2.1 Ineffective collection of solids from the slurry separating filter

The EPA observed that mine waste, including plastic, that was being separated out of the ore slurry using a screen, was not being adequately collected and contained. The EPA's concern that excessive overflow of this material could result in uncontrolled discharge of wastes and contribute to an increased burden on the capacity of the process water dam is noted. However, this material, which constitutes less than 5 kilograms of waste per day, is collected and placed in a waste bin for subsequent disposal. Any overflow that is not immediately collected from the screen is subsequently collected in a sump below the work area.

2.3.2.2 Dredged material from sandbin not removed from process area

The EPA observed that significant sand from the tailings sandbin had been dumped around the base of the sandbin instead of being disposed of in a controlled manner. The EPA were concerned that the sand contained heavy metals, cyanide and other processing reagents.

The tailings sandbin contains concentrator tailings that have been washed and cycloned to remove fines. This bin is used to store coarse tailings sand for dispatch underground to be used as mine back-fill. The sand is thoroughly washed to reduce cyanide levels to a safe level for use underground. As a consequence, the sand contains very low levels of cyanide and processing reagents. Its heavy metal content is the same as that of any other mine tailings in that most of the sulphide has already been removed. These sands will be assayed to confirm their metal content.

The build up of sand around the base of the tailings bin occurred as a result of an uncontrolled discharge from the sandbin caused by a failure of the valve located at the base of the sandbin. PGM has rectified the valve on the bin and cleaned up the bulk of the spilt tailings. However, a small proportion of this sand is located in and around a series of drainage pipes and it is not possible to use earthmoving equipment to remove this sand. PGM had already raised a workorder (WO No. 54418) within its maintenance system for the manual clean-up of this sand.

2.3.3 Access to the tailings dam area

The EPA has expressed concern about the effectiveness and condition of the fence and gate surrounding the Peak tailings impoundment system, noting that the EPA files contain reports of death, bogging and miring of terrestrial fauna, and vandalism, destruction and removal of the tailings area boundary fence and gate.

PGM advise that there have been no incidences of vandalism, destruction and removal of the Peak tailings area boundary fence and gate. These incidents refer to the New Occidental minesite tailings area, an area of historical mining activity located 3 kilometres to the north of the Peak tailings impoundment. Since PGM improved security at the New Occidental minesite there have been only limited incidents of vandalism in the last 2 years. There have been no reports of death, bogging and miring of terrestrial fauna associated with the New Occidental minesite tailings area.

PGM believes that the fence and gate around the Peak tailings area is adequate and satisfactorily excludes neighbouring stock. This fence is inspected on a weekly basis to ensure its integrity.

2.4 General Comments

PGM believes that the current audit assessment process employed by the EPA could be improved by the use of risk rating. For example, the Assessment Compliance undertaken by the EPA and tabulated in Table 2.1 of their audit report could be significantly enhanced by risk rating the individual areas of non-compliance. At the moment, no distinction is made between the various non-compliance issues raised by the EPA even though these issues range from representing a very low level of environmental risk through to those that can be considered to be significant. The DMR employs the CCH/Alara Workplace Risk Assessment and Control risk rating system in its risk assessments. PGM uses the same risk rating in the analysis of HSE incidents. This risk rating comprises a matrix that combines frequency of exposure with severity of the consequence of the incident (see Table 1). Once an environmental hazard/non-compliance has been risk rated the risk rating can be used to prioritise the response to the hazard/non-compliance.

Table 1: CCH/Alara Workplace Risk Assessment and Control Risk Matrix

Consequence	Probability				
	A	B	C	D	E
1	1	2	4	7	11
2	3	5	8	12	16
3	6	9	13	17	20
4	10	14	18	21	23
5	15	19	22	24	25

Probabilities:

- A - Common or repeating occurrence (happens weekly or more often)
- B - Known to occur, or "it has happened" (happens monthly)
- C - Could occur, or I've heard of it happening (happens annually)
- D - Not likely to occur (happens every 5 years)
- E - Practically impossible

Consequences:

People:

- 1 - Fatality or permanent disability
- 2 - Serious Lost Time incident
- 3 - Moderate Lost Time incident
- 4 - Minor Lost Time incident
- 5 - No lost time

Equipment, Assets or Environment:

- 1 - More than \$500K damage
- 2 - \$100-500K damage
- 3 - \$50-100K damage
- 4 - \$5-50K damage
- 5 - Less than \$5K damage

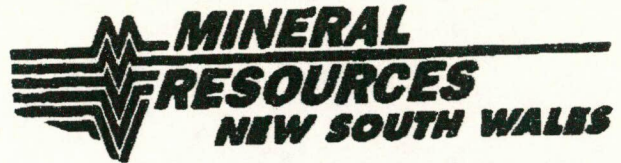
Production:

- 1 - More than \$500K production delay
- 2 - \$100-500K delay
- 3 - \$50-100K delay
- 4 - \$5-50K delay
- 5 - Less than \$5K delay

Environment:

- 1 -
- 2 -
- 3 -
- 4 -
- 5 -

Appendix 1: Letter from DMR confirming Analysis Methodologies used in PGM's Environmental Monitoring Program



NSW DEPARTMENT OF MINERAL RESOURCES
Cnr Joseph Street & Weeroona Road
(P.O. Box 76), Lidcombe, NSW 2141 Australia
Environmental Geochemistry Services
Phone (02) 9646 1344 - Fax (02) 8749 1405

Ms Catherine Davis
Peak Gold Mines
Hillston Rd,
PO Box 328
COBAR NSW 2835

Ref No: R991709A

Date : 17 September, 1999

Dear Ms Davis

Re : Environmental Monitoring at Peak Gold Mine : Methods of Analyses

This is to confirm that the analytical methods used in the Environmental Monitoring Program at Peak Gold Mine are all carried out at a NATA registered laboratory (Environmental Geochemistry Services, Lidcombe, NSW) and all methods are approved by the Department of Mineral Resources.

Yours sincerely

A handwritten signature in black ink that reads "K A Brooks".

17/9/99

K A Brooks
Principal Environmental Officer
Manager, Environmental Geochemistry Group
ENVIRONMENTAL UNIT

Appendix 2: Letter from EPA confirming Cyanide Analysis Methodologies

**FACSIMILE MESSAGE FROM:**

Terry Knowles
Central West
Tel : 02 6332 1838
Fax: 02 63322387

Environment Protection Authority
219 Howick Street
BATHURST NSW 2795

To: Ms C Davis
Peak Gold Mine
02 6830 2297

Date: 17 September 1999

No of pages 1 including this page

Message:

Catherine.

In response to your enquiry concerning the analytical methods used for monitoring, the Environment Protection Authority agreed at the 1997 MREMP Committee meeting that the methods used by the Department of Mineral Resource as being acceptable for the purposes of your Pollution Control Licence. The Interagency MREMP Committee adopted the procedure and the Minister of Mines signed off. This issue was again raised at the 1998 MREMP Committee meeting and the position was again confirmed.

There are a number of reasons for this approach that involved the Department of Minerals Laboratory being the premier analytical laboratory for analysing material from mines, anomalies in cyanide (free and WAD) analysis as a consequence of the Peak Gold Mines mineralogy and for historical continuity. Because of the cyanide anomalies, all Standard Methods as required by the licence gave inaccurate results.

The EPA, through an oversight, did not follow up the verbal advice in writing that the analytical methods used by the Department of Mineral Resources were the appropriate methods. We will alter this when we convert your licence to the new Protection of the Environment Operations Act format.

Should you have any enquires in relation to this matter, please do not hesitate to contact me at the Bathurst Regional Office of the EPA by telephoning (02) 6332 1838.

Regards

A handwritten signature in cursive script, appearing to read 'Terry Knowles', written over a horizontal line.

This facsimile may contain PRIVILEGED AND/OR CONFIDENTIAL INFORMATION intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering it to the person to whom it is addressed, YOU MAY NOT COPY OR DELIVER THIS MESSAGE TO ANYONE ELSE. If you receive this facsimile by mistake please telephone the nominated office (reverse charges). Thank you.

Appendix 3: Updated "Pollution Complaints Diary" Form

**Appendix 4: Facsimile to EPA recording PGM authorised personnel for
Licence No. 003596**



PEAK GOLD MINES PTY. LIMITED

ACN 001 533 777

Peak Gold Mines Pty. Limited.
Hillston Road (P.O.Box 328)
COBAR NSW AUSTRALIA 2835

Telephone: (02) 68 302 204
Facsimile: (02) 68 302 297

FACSIMILE TRANSMISSION

TO: The Regional Manager
CC. Terry Knowles
Luke Goodwin
Frank Robertson

REF NO:

COMPANY: EPA

FAX NO: 02 63322387

FROM: Catherine Davis

URGENT: Yes

DATE: 2/07/99

PAGES: 1 Including this page

SUBJECT: Change of nomination for responsible persons as required for licence.

MESSAGE:

The Regional Manager,

As a result of recent staff turn over the "contactable senior persons" for the purposes of licence no 003596 section S11.1 – 6 shall now be:

1. John Vale (General Manager)
Phone (w) 0268302200 (h) 026836362751
2. Craig Stegman (Manager Geology)
Phone (w) 0268302241 (h) 0268361960

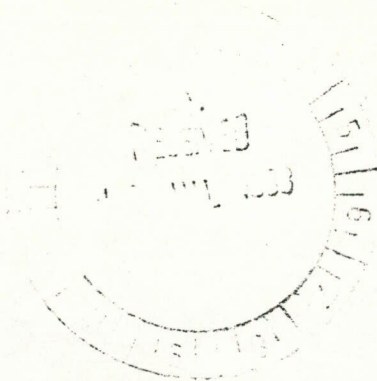
If I can be of any further assistance please do not hesitate to contact me.

Regards Catherine Davis
Technical Officer Environment
Ph 02 68 302 204
Fax 02 68 302 297
E-mail catherine.davis@peak.riotinto.com.au

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Appendix 5: Letter from the EPA confirming PGM's Dust Monitoring Protocols.



Environment
Protection
Authority
New South Wales

219 Howick Street
PO Box 1388
Bathurst
NSW 2795

Telephone .063. 321 838
Facsimile .063. 322 387

Mr Graham Hewitt
Peak Gold Mines Pty Ltd
PO Box 328
COBAR NSW 2835

Our Reference: 260771B1

Your Reference:

Dear Mr Hewitt

During recent discussions with Mr Frank Robinson of the Environment Protection Authority (EPA) it has been agreed that the dust monitoring locations as currently exist at this point in time are agreed to by EPA.

Further it is agreed that following discussions between yourself, the Department of Mineral Resources Mr Kerry Brooks and Mr Robinson of the EPA, a 2 ½ litre bottle is acceptable in place of the 4 litre bottle specified in the Australian Standard "Ambient air- particulate method" 2724.1 1984.

Another matter discussed between yourself and Mr Robinson was the disposal of hard, inert wastes such as plastic pipe and other non reactive materials in the tailings facility. Also the disposal of waste tyres which are greater than 1.2 metres in diameter in the tailings facility. The EPA has no objection to these practices providing the on each occasion that disposal is undertaken the location is marked on the mine plan clearly identifying the point and the nature of the materials disposed off.

As to the reporting of fauna deaths to the EPA, it is acceptable to report single or individual deaths up to a total of five (5) on a monthly basis. Loss numbers above five (5) or deaths in suspicious circumstances must be reported immediately.

If you have any enquiries please do not hesitate to contact Mr Frank Robinson at the above address or phone on 02 63 321 838.

Yours sincerely

DAVID COOK
Head Regional Operations Unit Central West
for Director-General
1 July 1998

Appendix 6: PGM Tailings Impoundment System Checklist.

STANDARD JOB ONLY
DO NOT UNDERTAKE WORK FROM THIS DOCUMENT

JOB CARD FOR STANDARD JOB 270IN TASK 001

DAILY INSPECTION OF TAILINGS DAM AREA
INSPECTION

Work Group:

Assign To :

Originator: MOSSMAN, GEOFFREY JAMES

C/Account:

Resource Type	No. Required	Est. Hours	Resource Type	No. Required	Est. Hour
TECHNICAL OFFICE	1	1.00			
Rate	Offset				
Raised	Days	Priority	Work Order Type	Shutdown Type	Shutdown Equip
4/08/95	0	A	SAFETY	CONC PLANNED	270

-- SAFETY INSTRUCTIONS --

SAFETY ON THE JOB

- *****
- 1 Do you understand the work to be carried out? Yes No
Note: If in doubt, seek assistance.
 - 2 Lock out at the correct isolation points. Yes No
 - 3 Always wear the correct PPE for the job. Yes No
 - 4 Is local isolator labelled correctly? Yes No
 - 5 Is the main isolator in the MCC labelled correctly? Yes No
- Note: If the answer to 4 or 5 is NO note problem in Comments below.

-- JOB INSTRUCTIONS --

DAM INSPECTION	DAY							
INSPECT DAM	1	2	3	4	5	6	7	8
CHECK WALL	1	2	3	4	5	6	7	8
CHECK FLOW OF SOLIDS	1	2	3	4	5	6	7	8
FILTRATE DAM DEPTH	—	—	—	—	—	—	—	—
FLOW OPERATING MAX								IN MM
TAILINGS LINE INSPECTIONS								
DAY SHIFT	1	2	3	4	5	6	7	8
NIGHT SHIFT	1	2	3	4	5	6	7	8

SIGNATURE

DAY SHIFT _____

NIGHT SHIFT _____

THIS IS AN EPA REQUIREMENT AND MUST BE COMPLETED EVERY SHIFT

-- COMPLETION INSTRUCTIONS --

CONCENTRATOR TASK

- *****
- 1 Raise WORK REQUEST for maintenance work. Yes No

Please note that plans:

PK-262-CI20002

Peak Gold Mine Desorption Area Acid Wash Hopper and Thermocal Header Tank Arrangement Details

and

PK-525-ST30008

Peak Gold Mines Fuel and Oil Systems Surface Storage Area General Arrangements Plan

were supplied to the Compliance Audit Unit of the EPA. However, due to the size of these plans they have not been attached to the final report.