

**PIMA COUNTY
DEPARTMENT OF ENVIRONMENTAL QUALITY**



**RESPONSE TO COMMENTS
FOR
THE PROPOSED AIR QUALITY OPERATING PERMIT
FOR
MATERION CERAMICS, INC.
6100 S. TUCSON BOULEVARD
TUCSON, ARIZONA 85706**

October 09, 2012

INTRODUCTION

In 1979, Materion Ceramics Inc. (Materion), formerly known as Brush Ceramic Products (BCP), Inc. and Brush Wellman, Inc., notified the U.S. Environmental Protection Agency (EPA) and Pima County of its planned start-up of manufacturing operations in Tucson, Arizona. Materion utilizes beryllium oxide in producing ceramic components used in various markets such as medical products, aerospace and defense, electronics, telecommunications, solar energy, and oil and gas. Since Materion began its operations in 1980, it has been permitted by Pima County for its emissions of beryllium. Materion is subject to the federal National Emission Standards for Hazardous Air Pollutants (NESHAP) for beryllium. The federal NESHAP for beryllium of 10 grams per 24-hour period is codified in 40 CFR Part 61 Subpart C. To meet the NESHAP, Materion installed and maintains a dust collection system with cartridge filters. Materion relies upon the dust collection system and cartridge filters to collect airborne beryllium dust within its facility. In 1994, the Pima County Department of Environmental Quality (PDEQ) received an application for the renewal of Materion's air quality permit. The application was in response to a permit call issued by PDEQ as PDEQ began to transition facilities from one-year operating permits to five-year unitary permits. The five-year unitary permit requirements were included in the Pima County Code to comply with state law. After a lengthy public review and comment process, the permit was finally issued on November 8, 2006. On May 2, 2011, Materion submitted a renewal application for their facility. The application was found administratively complete on May 21, 2011.

The five-year renewal permit that has been developed for Materion includes the federal NESHAP standard of 10 grams per 24-hour period and additional monitoring and recordkeeping requirements regarding the dust collection system. The facility also includes an Aqua Regia Acid Cleaning Station that was added to the permit on July 22, 2010, through a minor permit revision.

PUBLIC PARTICIPATION

PDEQ published notice of its intention to issue an operating air quality permit to Materion on May 28 and June 4, 2012. On June 12 and 19, 2012, the public was also informed that an open house and public hearing would be held. The open house was held on Tuesday, July 10, 2012, from 5 – 7 p.m. and a public hearing was conducted on Thursday, July 12, 2012 from 5:30 – 6:30 p.m. Both events were held at Sunnyside High School, 1725 E. Bilby Rd in Tucson, Arizona. In addition, PDEQ issued news releases on June 28 and July 9, 2012, to publicize the meetings. The news releases generated stories on the local TV news and in the Arizona Daily Star, as well as other news media.

Public notices were prepared and submitted to local newspapers for publication. The *Arizona Daily Star* and the *Daily Territorial* are the two newspapers PDEQ uses to publish notices. Information was also available on the PDEQ website and included all documents received by the department from application submittal up to and including the proposed permit and technical support documents (TSD).

During the 45-day public comment period, PDEQ received eight comments. Two written comments were submitted on July 10, 2012, at the open house and six on July 12, 2012, at the hearing. The Environmental Justice Action Group (EJAG) submitted a written comment at the public hearing that they summarized by oral comment. Comments ranged from support of the

plant to stricter controls and not renewing the permit. PDEQ addresses each of these comments later in this document.

PDEQ appreciates the public input and would like to extend its thanks to the community for all comments received during the public comment period and at the public hearing.

SUMMARY OF CHANGES MADE TO THE PROPOSED FINAL RENEWAL PERMIT

Changes made to Materion's final permit, based upon information and comments received during the public comment period, are summarized below:

Part B, Section I, III Monitoring & Recordkeeping Requirements

1. Part B, Section I, III.I... Adds a new permit condition that prevents emissions of beryllium powder from any of the powered exhaust vents located in the areas listed in Table 3 of III.H.

Part B, Section I, III Monitoring & Recordkeeping Requirements

2. Part B, Section I, III.K (previously III.J) ... revises the condition to require that the Permittee test any of the powered exhaust vents listed in Table 3 rather than testing any of the vents designated number 1, 3 & 7.

A facility layout with the approximate location of the seven vents is included with the technical support document.

Part B, Section I, III Monitoring & Recordkeeping Requirements

3. Part B, Section I, adds a new condition under III.I. Consequently III.I, J and K have now been renumbered III.J, K and L.

RESPONSE TO COMMENTS

This summary presents PDEQ responses to written comments received during the 45-day public comment period.

July 10, 2012 Open House Written Comments

1. **Greg Evans – Tucson, AZ**

Given the problematic nature of beryllium, I do not believe that a manufacturing process using it should be located in a residential area. For this reason, I believe that the permit should not be renewed.

Pima County Response

The Materion facility has been permitted since 1980. The location of a business or manufacturing plant is not under the jurisdiction of PDEQ. Renewal of an air quality permit is based on whether the Materion plant can continue to meet the federal standard for beryllium and all other applicable air quality regulations. Materion has shown that they continue to meet all air quality regulations.

2. **Ethan Beasley – Tucson, AZ**

I'm very concerned that the beryllium standard is outdated and does not provide an adequate level of protection for the public's health.

Pima County Response

The beryllium standard was promulgated by the Environmental Protection Agency (EPA). Revision of the standard falls under the jurisdiction of the EPA. PDEQ does require that Materion perform a stack test annually to measure levels of beryllium emissions in the stack. The test results have consistently shown non-detect levels recently and less than the federal standard of 10 grams per day for more than the last 10 years.

In addition, Materion is required by the permit and federal regulations to install, operate and maintain equipment that prevents emissions of beryllium from exceeding the federal standard. In addition to this equipment, the permit requires that Materion follow approved operations and emissions prevention plans that require regular inspections of processes and emission points that have a potential for beryllium emissions.

1. **Yolanda D. Herrera – Tucson, AZ**

Please re-permit Materion Ceramics. They are true to their word to the community and a true community asset.

Pima County Response

Following PDEQ's review of comments received and revision of the proposed permit, the permit was issued on October 10, 2012.

2. **Environmental Justice Action Group (EJAG)**

Comments attached at the end of the Response to Comments

Pima County Responses

Inspection Frequency Comment (III.B – Page 20)

PDEQ has determined through historical inspections and review of facility operations that weekly inspections were adequate to assure compliance with air quality regulations. These inspections were and are required in addition to other facility monitoring requirements. Checks of the powered exhaust vents are incorporated with other requirements for collection and controlling of all emissions from any beryllium processing areas. Subsequent PDEQ inspections and performance test results have not shown the need to require more stringent monitoring.

Vent Testing Comment (III.J – Page 22)

PDEQ does not require periodic testing of the powered exhaust vents in these areas since there are no beryllium forming or machining processes in these areas and testing of the vents completed by testing companies in 2001 and 2010 has shown non-detect levels of beryllium emissions. The powered exhaust vents are in place to reduce the heat loading from the electric furnaces in these areas. The vents identified in Table 3 of the permit as 2 & 3 are close to the lapping room. Vents 2 & 3 are located above and outside the lapping room. The lapping room designation/ label is used to identify the approximate location of these two vents and not the rooms they draw air from. The affected room (large kiln room) contains electric furnaces that do not affect the interior of the lapping room. Lapping is performed in a self-contained lapping room within the large kiln room containing the kilns. The self-contained room has its own air intake and recirculating air handler that is HEPA filtered. PDEQ permitting staff confirmed this by physical inspection on September 17, 2012.

Similarly, vents 1, 4 and 5 are located in the same kiln rooms where no beryllium powder is handled. Vents 6 & 7 are also located in rooms containing kilns where no beryllium powder is handled.

With no beryllium forming or machining processes in these areas, it is highly unlikely that there will be any beryllium emissions found in the exhaust vents. In addition, PDEQ requires that Materion perform weekly inspections of the powered vents, as well as doorways, outside duct work, and pollution control devices for any maintenance needs or evidence of beryllium emissions. In addition to the monitoring requirements, should a powder spill occur, Materion is also required, by permit, to immediately activate a beryllium oxide spill response plan and isolate the area, turn off any powered exhaust vents that may be located in adjacent rooms, thoroughly clean the affected area, as well as follow thorough decontamination procedures, and document the spill in the facility Incident Management System.

The previous permit condition addressing testing, identified vents 1, 3 & 7 as vents to be tested. Should there ever be a requirement to test the vents, PDEQ has revised previous permit condition III.J (now III.K) to read as follows:

“...the Permittee shall perform testing on any of the powered exhaust vents listed in Table 3...”

Vent Testing Comment (III.A – Page 4 of TSD)

In the previous TSD, a hypothetical number using the lowest detection limit of 0.145 grams of beryllium per 24-hour period from tested vents was used to estimate the potential to emit (PTE) from all the vents (tested and untested). This led to a number of 0.4 grams of beryllium per 24-hour period. This methodology was revisited following public comment during the renewal permit process. Upon further review, the Control Officer is clarifying this methodology. Testing of the vents completed by testing companies in 2001 and 2010 has shown non-detect levels of beryllium emissions. Therefore the Control Officer has determined there are no potential beryllium emissions from these vents.

Directing of Beryllium Emissions to Exhaust Stack Comment (VI, Part B.A – Page 7 of TSD)

PDEQ has provided more clarification to the statement in VI, Part B.A of the Technical Support Document that... “Materion direct emissions from all operations that have the slightest potential for beryllium release to the stack...” A new permit condition has been added in III.I of the permit that states:

“The Permittee shall not allow any emissions of beryllium powder from any of the powered exhaust vents located in the areas listed in Table 3 of III.H above.”

As discussed previously under *Vent Testing Comment (III.A – Page 4 of TSD)*, there are no potential beryllium emissions from the vents. Therefore this new permit condition clarifies that all emissions are directed to the stack and no beryllium emissions are allowed from the vents.

PDEQ appreciates the diligence given to the permit documents by commenters in order to clarify terms and requirements in the permit.

The following summary presents PDEQ's responses to oral comments received at the public hearing held on July 12, 2012. A summary of the oral comments follows identification of the speaker. Please refer to the Materion Ceramics Public Hearing Transcript for the full transcription of each speaker's comments.

July 12, 2012 Public Hearing Oral Comments

1. **Speaker 1 - Rob Kulakofsky**

These oral comments were a repetition of EJAG's written comments discussed above. See PDEQ's responses in previous section.

2. **Speaker 2 – Eva Dong**

Importance of continuing the monitoring of the air.

PDEQ's Response:

PDEQ appreciates your monitoring concerns. PDEQ continually monitors the ambient air in the vicinity of the facility through the beryllium monitoring network. Information and results are available on PDEQ's website at:

<http://www.deq.pima.gov/Regulations/BrushCeramicProductsMonitoring.htm>

3. **Speaker 3 – Brian Blank**

Standard is too old and State or Feds can actually lower the standard. Beryllium/beryllium oxide is toxic and can accumulate in various crawl spaces. Standard should be zero and plant should be moved. No powered air vents in production areas.

PDEQ's Response

As the standard is a federal standard, revisions to the federal regulation can only be initiated and finalized by the EPA.

PDEQ recognizes the public health threat that uncontrolled beryllium emissions possess to the community. By requiring Materion to maintain and operate air pollution control equipment, conduct visual checks and inspections of the facility and maintain records to demonstrate compliance with all permit conditions. PDEQ ensures that there are no emissions from the plant other than the stack. Stack testing results have been below analytical detection levels.

PDEQ has reviewed the application, facility records and physically inspected the facility to ensure that there are no powered air vents in beryllium forming or machining

processing areas. As explained earlier, this inspection was completed by permitting staff on September 17, 2012.

4. **Speaker 4 – Andres Cano**

Monitoring of air quality in the region and vent testing in beryllium production rooms.

PDEQ's Response

PDEQ appreciates your monitoring concerns. PDEQ continually monitors the ambient air in the vicinity of the facility through the beryllium monitoring network. Information and results are available on PDEQ's website at:

<http://www.deq.pima.gov/Regulations/BrushCeramicProductsMonitoring.htm>

Regarding testing of the vents in production areas:

PDEQ does not require periodic testing of the powered exhaust vents in these areas since there are no beryllium forming or machining processes in these areas. Testing of the vents completed by testing companies in 2001 and 2010 has shown non-detectable levels of beryllium emissions. The powered exhaust vents are in place to reduce the heat loading from the electric furnaces in these areas.

The previous permit condition addressing testing, identified vents 1, 3 & 7 as vents to be tested. Should there ever be a requirement to test the vents, PDEQ has revised previous permit condition III.J (now III.K) to read as follows:

“...the Permittee shall perform testing on any of the powered exhaust vents listed in Table 3...”

PDEQ has removed the requirement to only test vents 1, 3 & 7. PDEQ will require Materion to test any of the vents when the Control Officer requires a test. In addition, a new condition has been added that states:

“The Permittee shall not allow emissions of beryllium powder from any of the powered exhaust vents located in the areas listed in Table 3 of III.H above.”

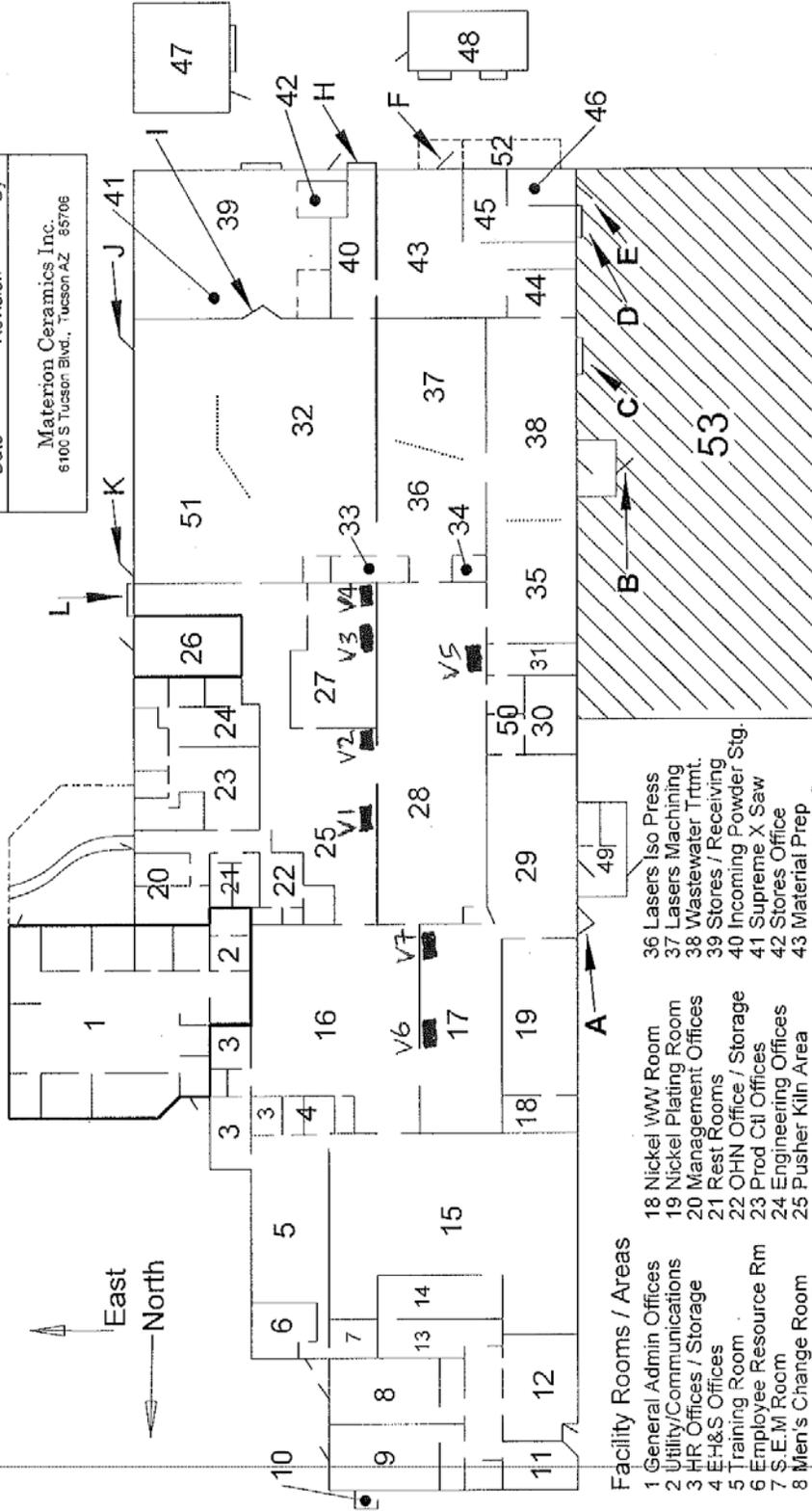
To assist the public in understanding the location of the powered exhaust vents, a facility layout with the approximate vent locations V1 – V7 highlighted is enclosed at the end of this document. As noted before, it is important to note that vents 2, 3 and 4 are located above and outside the Lapping room identified as room number 27 on the facility layout.

This concludes PDEQ's Response to Comments for the proposed renewal of Materion Ceramic's air quality operating permit.

Materion Ceramics Inc. Facility Layout

Drawing for Illustration Purposes Only
Sections May Not be to Scale

03/15/2011	Current Layout	RN
Date	Revision	By
Materion Ceramics Inc. 6100 S Tucson Blvd., Tucson AZ 85706		



Facility Rooms / Areas

- 1 General Admin Offices
- 2 Utility/Communications
- 3 HR Offices / Storage
- 4 E&S Offices
- 5 Training Room
- 6 Employee Resource Rm
- 7 S.E.M. Room
- 8 Men's Change Room
- 9 Women's Change Rm
- 10 N Boiler Room
- 11 Laundry Room
- 12 Lunch Room
- 13 Respirator Storage
- 14 AS / Wk Boot Storage
- 15 Complex Machining
- 16 Extrusion
- 17 Small Kiln Room
- 18 Nickel WW Room
- 19 Nickel Plating Room
- 20 Management Offices
- 21 Rest Rooms
- 22 OHN Office / Storage
- 23 Prod Ctl Offices
- 24 Engineering Offices
- 25 Pusher Kiln Area
- 26 Shipping
- 27 Lapping
- 28 Large Kiln Room
- 29 Metalizing Firing
- 30 Met. Clean Room
- 31 Met. Office / Lab
- 32 Dry Pressing (all)
- 33 Tool Room
- 34 Metrology Room
- 35 Machine Services
- 36 Lasers Iso Press
- 37 Lasers Machining
- 38 Wastewater Trmt.
- 39 Stores / Receiving
- 40 Incoming Powder Stg.
- 41 Supreme X Saw
- 42 Stores Office
- 43 Material Prep
- 44 Storage / Lab Pac
- 45 Mechanical Room
- 46 S Boiler Room
- 47 Maintenance Bldg.
- 48 Chemical Storage
- 49 Met. Rest Rooms
- 50 Metalizing Prep Rm
- 51 Inspection / Parts Cing
- 52 Compressors / Strm Blrs
- 53 Fenced Yard Area

Production Area Exit Doors

- A. Metalizing Firing*
- B. Wastewater Trmt**
- C. Wastewater Trmt**
- D. Mechanical Room**
- E. Boiler Room
- F. Material Prep
- H. Material Prep Rec**
- I. Press Room*
- J. Press Rm - S
- K. Press Rm - N
- L. East Service**

* Double Door ** Roll-Up Door

■ Vent Locations



**PDEQ Hearing: Materion Ceramics, Inc.
Proposed Air Quality Permit**

Note: PDEQ will review all comments received during this hearing procedure, including oral and written comments.

In order to be notified of actions related to the Materion Ceramics, Inc. Air Quality Permit or appeal the permit decision, your name and address must be provided as required under state law.

Date: 7-10-12

Name: Greg Evans

E-mail: [REDACTED]

Phone Number: [REDACTED]

Mailing Address: [REDACTED]

Tucson AZ 85745

COMMENTS:

Given the problematic nature of beryllium, I do not believe that a manufacturing process using it should be located in a ~~residential~~ residential area. For this reason, I believe that the permit should not be renewed.



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Date: 7-10-12

Name: ETHAN BEASLEY

E-mail: [REDACTED]

Phone Number: [REDACTED]

Mailing Address: [REDACTED]

APT. A TULSON, AZ 85745

COMMENTS:

I'm very concerned that the beryllium standard is outdated and does not provide an ~~adequate~~ adequate level of protection for the public's health.



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Date: 7/12/12

Name: Yolanda D. HEURERA

E-mail: [REDACTED]

Phone Number: [REDACTED]

Mailing Address: [REDACTED]

COMMENTS: PLEASE REPERMIT MATERION CERAMICS
they are true to their word to the
community & A ~~TRULY~~ TRUE
COMMUNITY ASSET

ENVIRONMENTAL JUSTICE ACTION GROUP
P.O. BOX 85513, TUCSON, AZ, 85754

July 12, 2012

Ms Ursula Kramer, Director
Pima County Department of Environmental Quality
33 N. Stone #700
Tucson, AZ 85701

RE: Materion Ceramics Air Permit

Dear Ms Kramer:

Thank you for the opportunity to comment on the Proposed Air Quality Operating Permit and Technical Support Document (TSD) for Materion Ceramics.

We are heartened by the inclusion of III.B. (page 20). which states the requirement for "checks of the powered exhaust vents ... doorways, and outside duct work ... for evidence of any emissions." We think weekly inspections are too infrequent, but are grateful that regular inspections for fugitive emissions are required.

The requirement in III.D.2 - 4 (page 20) of photohelic gauges for continuous monitoring for pressure drops in the air pollution control system and the immediate shutdown when pressure drops occur are sound industrial safety practices that make sense for the Materion plant. Also, the signing of power switches for each of the powered exhaust vents located in production areas listed in Table 3 (page 21), and the requirement for immediate shutting off of these vents in the event of a spill, are very welcome.

The Annual Beryllium Technology Assessment in IV.C. (page 23) is very much appreciated. We are hopeful that an accurate, continuous, real time testing method will be discovered and implemented in the future. It is our belief that this form of testing will be beneficial to the Permittee, the PDEQ and the public.

We are concerned about the statement in III.J. (page 22) that only three of the seven powered vents in beryllium production areas listed in Table 3 (page 21) would be eligible for testing. Not only that, but these would only be tested when requested by the Control Officer. We believe regular periodic testing of all powered exhaust vents in all production areas should be included as a requirement in the final Permit. As per Section III.A. (page 3) of the Technical Support Document, only 5 of the twelve vents in the Materion Ceramics plant have ever been tested, and that was in May of 2001.

Although the amount of beryllium in the tests was below the detection level, it is stated in Section III.A. (page 4) of the Technical Support Document that "The maximum beryllium emissions that could be expected would be less than 0.145 grams of beryllium per 24-hour period for all the tested vents. Extrapolating that emission rate over the remaining untested vents would provide an overall estimate of no more than approximately 0.4 grams of beryllium being vented from all powered exhaust vents combined each 24 hour period." The TSD goes on to state that because there is no beryllium "powder" being used in the areas where there are powered vents, emissions are not a concern. However, the fact remains that beryllium products are ground and fired in those areas, which creates dangerous beryllium bearing dust.

Although the emissions stated in the TSD are far below the EPA standard, this assessment flies in the face of the statement in VI, Part B. A. (page 7) of the Technical Support Document "PDEQ has required that Materion Ceramics direct emissions from all operations that have the slightest potential for beryllium release to the stack. The 10 grams per 24 hour period is measured at the stack to include all emissions from all processes." It seems to us that this statement suggesting that all beryllium emissions go through the stack is misleading. In order to be accurate, the statement: "PDEQ has required that Materion Ceramics direct emissions from all operations that have the slightest potential for beryllium release to the stack" must be changed to:

With the exception of powered exhaust vents, PDEQ has required that Materion Ceramics direct emissions from all operations that have the slightest potential for beryllium release to the stack.

We have previously stated that all the exhaust vents should be directed through the air handling/filtering system and out the stack. Once again, we are asking for that provision. Especially, since the TSD states that some beryllium would be expected to escape through powered exhaust vents.

Sincerely,
Pat Birnie, Facilitator

A handwritten signature in cursive script that reads "Pat Birnie". The signature is written in dark ink and is positioned below the typed name.