DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
**Air Permit Hotline - 1-877-5PERMIT**

**PERMIT TO CONSTRUCT APPLICATION**
Revision 2
4/5/2007

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - FUGITIVE SOURCES**

| 1. | 2. | 3. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| **Fugitive Source Name** | **Fugitive ID** | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr |
| **Fugitive Source(s)** | | | | | | | | | | | | | |
| Cleaning | 13 | | | | | | | | | 0.46 | 2.00 | | |
| ıame of fugitive source2 | | | | | | | | | | | | | |
| ıame of fugitive source3 | | | | | | | | | | | | | |
| ıame of fugitive source4 | | | | | | | | | | | | | |
| ıame of fugitive source5 | | | | | | | | | | | | | |
| ıame of fugitive source6 | | | | | | | | | | | | | |
| ıame of fugitive source7 | | | | | | | | | | | | | |
| ıame of fugitive source8 | | | | | | | | | | | | | |
| ıame of fugitive source9 | | | | | | | | | | | | | |
| ıame of fugitive source10 | | | | | | | | | | | | | |
| ıame of fugitive source11 | | | | | | | | | | | | | |
| ıame of fugitive source12 | | | | | | | | | | | | | |
| ıame of fugitive source13 | | | | | | | | | | | | | |
| ıame of fugitive source14 | | | | | | | | | | | | | |
| ıame of fugitive source15 | | | | | | | | | | | | | |
| ıame of fugitive source16 | | | | | | | | | | | | | |
| ıame of fugitive source17 | | | | | | | | | | | | | |
| ıame of fugitive source18 | | | | | | | | | | | | | |
| ıame of fugitive source19 | | | | | | | | | | | | | |
| ıame of fugitive source20 | | | | | | | | | | | | | |
| ıame of fugitive source21 | | | | | | | | | | | | | |
| **insert more rows as needed)** | | | | | | | | | | | | | |
| **'otal** | | | | | | | | | | 0.46 | 2.00 | | |

| | | |
|---|---|---|
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| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - FUGITIVE SOURCES**

| 1. | 2. | 3. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| Fugitive Source Name | Fugitive ID | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr |
| Fugitive Source(s) | | | | | | | | | | | | | |

**Instructions for Form EI-CP2**

'his form is designed to provide the permit writer and air quality modeler with a summary of the criteria pollutant emissions of each emission unit/point located at the facility. This nformation may be used by the IDEQ to perform an air quality analysis or to review an air quality analysis submitted with the permit application or requested by the IDEQ.

'lease fill in the same company name, facility name, facility ID number, and brief project description as on form CS in the boxes provided. This is useful in case any pages of the application get eparated.

'ugitive emissions are those emissions that cannot reasonably be made to pass through a stack or vent or equivalent opening. Examples include coal piles, unpaved roads, etc. Fugitive emission ources at your plant must be included in this form.

. Provide the name of all fugitive sources at the facility. This name must match names on other submittals to IDEQ and within this application.

. Provide the identification number for the fugitive source. This ID number should match ID numbers on other submittals to IDEQ and within this application.

. Provide the emission rate in pounds per hour and tons per year for all criteria pollutants emitted by this fugitive source. In this form, emission rates for a fugitive source are the maximum allowable emissions for both short term (pounds per hour) and long term (tons per year). These emission rates are its permitted limits (if any). Otherwise, potential to emit should be shown. Potential to emit is defined as uncontrolled emissions at maximum design or achievable capacity (whichever is higher) and year-round continuous operation (8760 hours per year) if there are no federally enforceable permit limits on the emission point. If the emission point has or will have control equipment or some other proposed permit limitation such as hours of operation or material usage, then, the control efficiency or proposed permit limit(s) may be used in calculating potential to emit.

!OTE: Attach a separate sheet of paper, or electronic file, to provide additional documentation on the development of the emission rates. Documentation can include emissions factors, ıroughput, and example calculations.

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
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**PERMIT TO CONSTRUCT APPLICATION**
Revision 3
4/5/2007

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES**

| 1. | 2. | 3. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| **Emissions units** | **Stack ID** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** |
| **Point Source(s)** | | | | | | | | | | | | | |
| Boiler | 1 | 0.11 | 0.48 | 0.01 | 0.04 | 1.43 | 6.26 | 1.20 | 5.26 | 0.08 | 0.34 | 0.00 | 0.00 |
| Hot Oil Heater | 2 | 0.11 | 0.48 | 0.01 | 0.04 | 1.43 | 6.26 | 1.20 | 5.26 | 0.08 | 0.34 | 0.00 | 0.00 |
| M.G. Silicon Bin Vent | 3 | 0.05 | 0.22 | | | | | | | | | | |
| M.G. Silicon Primary Hopper | 4 | 0.01 | 0.04 | | | | | | | | | | |
| M.G. Silicon Secondary Hopper | 5 | 0.01 | 0.04 | | | | | | | | | | |
| Lime Storage Silo | 6 | 0.19 | 0.34 | | | | | | | | | | |
| Cooling Tower | 7 | 0.74 | 3.22 | | | | | | | | | | |
| Laboratory Venting System | 8 | 0.05 | 0.20 | 0.05 | 0.20 | 0.28 | 1.20 | | | | | | |
| Chlorosilane Venting System | 9 | 0.69 | 3.01 | | | | | | | | | | |
| Relief Vent System | 10 | 0.27 | 1.20 | | | | | | | | | | |
| Emergency Generator | 11 | 0.94 | 0.23 | 5.42 | 1.35 | 32.16 | 8.04 | 7.37 | 1.84 | 0.96 | 0.23 | | |
| Fire Water Pump | 12 | 0.66 | 0.17 | 0.61 | 0.15 | 9.30 | 2.33 | 2.00 | 0.50 | 0.74 | 0.18 | | |
| Name of the emissions unit13 | | | | | | | | | | | | | |
| Name of the emissions unit14 | | | | | | | | | | | | | |
| Name of the emissions unit15 | | | | | | | | | | | | | |
| Name of the emissions unit16 | | | | | | | | | | | | | |
| Name of the emissions unit17 | | | | | | | | | | | | | |
| Name of the emissions unit18 | | | | | | | | | | | | | |
| Name of the emissions unit19 | | | | | | | | | | | | | |
| Name of the emissions unit20 | | | | | | | | | | | | | |
| Name of the emissions unit21 | | | | | | | | | | | | | |
| **(Insert more rows as needed)** | | | | | | | | | | | | | |
| **Total** | | 3.81 | 9.61 | 6.10 | 1.78 | 44.60 | 24.08 | 11.77 | 12.86 | 1.85 | 1.11 | 0.00 | 0.00 |

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**PERMIT TO CONSTRUCT APPLICATION**
Revision 3
4/5/2007

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES**

| 1. | 2. | 3. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| Emissions units | Stack ID | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr | lb/hr | T/yr |
| Point Source(s) | | | | | | | | | | | | | |

**Instructions for Form EI-CP3**

This form is designed to provide the permit writer and air quality modeler with a summary of the change in criteria pollutant emissions of each emission unit/point associated with this permit application. This information may be used by the IDEQ to perfo

Please fill in the same company name, facility name, facility ID number, and brief project description as on form CS in the boxes provided. This is useful in case any pages of the application get separated.

1. Provide the name of the emission unit. This name should match names on other submittals to IDEQ and within this application.

2. Provide the identification number for the stack which the emission unit exits.

3. Provide the increase in emissions in pounds per hour and tons per year for all criteria pollutants emitted by this emission unit. In this form, increase in emissions for an emission unit are the proposed PTE - Previously modeled PTE. If the emis

NOTE: Attach a separate sheet of paper, or electronic file, to provide additional documentation on the development of the emission rates. Documentation can include emissions factors, throughput, and example calculations.

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

## SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - FUGITIVE SOURCES

| 1. | 2. | 3. Air Pollutant Maximum Change in Emissions Rate (lbs/hr or t/yr) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| **Fugitive Source Name** | **Fugitive ID** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** |
| Fugitive Source(s) | | | | | | | | | | | | | |
| Cleaning | 13 | | | | | | | | | 0.23 | 1.00 | | |
| name of fugitive source2 | | | | | | | | | | | | | |
| name of fugitive source3 | | | | | | | | | | | | | |
| name of fugitive source4 | | | | | | | | | | | | | |
| name of fugitive source5 | | | | | | | | | | | | | |
| name of fugitive source6 | | | | | | | | | | | | | |
| name of fugitive source7 | | | | | | | | | | | | | |
| name of fugitive source8 | | | | | | | | | | | | | |
| name of fugitive source9 | | | | | | | | | | | | | |
| name of fugitive source10 | | | | | | | | | | | | | |
| name of fugitive source11 | | | | | | | | | | | | | |
| name of fugitive source12 | | | | | | | | | | | | | |
| name of fugitive source13 | | | | | | | | | | | | | |
| name of fugitive source14 | | | | | | | | | | | | | |
| name of fugitive source15 | | | | | | | | | | | | | |
| name of fugitive source16 | | | | | | | | | | | | | |
| name of fugitive source17 | | | | | | | | | | | | | |
| name of fugitive source18 | | | | | | | | | | | | | |
| name of fugitive source19 | | | | | | | | | | | | | |
| ame of fugitive source20 | | | | | | | | | | | | | |
| ame of fugitive source21 | | | | | | | | | | | | | |
| **insert more rows as needed)** | | | | | | | | | | | | | |
| **otal** | | | | | | | | | | 0.23 | 1.00 | | |

| | | |
|---|---|---|
| | DEQ AIR QUALITY PROGRAM<br>1410 N. Hilton, Boise, ID 83706<br>For assistance, call the<br>**Air Permit Hotline - 1-877-5PERMIT** | **PERMIT TO CONSTRUCT APPLICATION**<br>Revision 3<br>4/5/2007 |

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - FUGITIVE SOURCES**

| 1. | 2. | 3. Air Pollutant Maximum Change in Emissions Rate (lbs/hr or t/yr) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $PM_{10}$ | | $SO_2$ | | $NO_X$ | | CO | | VOC | | Lead | |
| **Fugitive Source Name** | **Fugitive ID** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** | **lb/hr** | **T/yr** |
| Fugitive Source(s) | | | | | | | | | | | | | |

## Instructions for Form EI-CP4

This form is designed to provide the permit writer and air quality modeler with a summary of the change in criteria pollutant emissions of each emission unit/point associated with this permit application. This information may be used by the IDEQ to perform an air quality analysis or to review an air quality analysis submitted with the permit application or requested by the IDEQ.

Please fill in the same company name, facility name, facility ID Number, and brief project description as on Form CS in the boxes provided. This is useful in case any pages of the application get separated.

1. Provide the name of the emission unit. This name should match names on other submittals to IDEQ and within this application.

2. Provide the identification number for the fugitive source. This ID should match IDs on other submittals to IDEQ and within this application.

3. Provide the increase in emissions in pounds per hour and tons per year for all criteria pollutants emitted by this fugitive source. In this form, increase in emissions for an emission unit are the proposed PTE - Previously modeled PTE. If the fugitive source has or will have control equipment or some other proposed permit limitation such as hours of operation or material usage, the control efficiency or proposed permit limit(s) may be used in calculating proposed potential to emit.

NOTE: Attach a separate sheet of paper, or electronic file, to provide additional documentation on the development of the emission rates. Documentation can include emissions factors, throughput, and example calculations.

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/26/07

*Please see instructions on page 2 before filling out the form.*

| IDENTIFICATION | | | |
|---|---|---|---|
| **Company Name:** | Hoku Materials, Inc. | **Facility Name:** Polysilicon Plant | **Facility ID No.:** 005-00058 |
| **Brief Project Description:** | Construction of a 4,000 Mton/yr Polysilicon Production Facility | | |

| IDENTIFICATION | | | | SCRUBBER | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9 | 10. |
| Emission Unit | EU ID No. | CE ID No. | Stack ID No. | Manufacturer Name | Model No. | Type | Dimensions In Feet (Ht x Dia x L) | Water Flow (gpm) | Pressure Drop (in $H_2O$) |
| **Lab Scrubber** | **8** | **8** | **8** | **TBD** | **TBD** | **Venturi and/or Spray Chamber** | **TBD** | **TBD** | **TBD** |
| **Chlorosilane Scrubber** | **9** | **9** | **9** | **TBD** | **TBD** | **Venturi and/or Spray Chamber** | **TBD** | **TBD** | **TBD** |
| **Relief Vent Scrubber** | **10** | **10** | **10** | **TBD** | **TBD** | **Venturi and/or Spray Chamber** | **TBD** | **TBD** | **TBD** |
| | | | | | | | | | |
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**DEQ AIR QUALITY PROGRAM**
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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
04/02/07

*Please see instructions on page 2 before filling out the form.*

| IDENTIFICATION | | |
|---|---|---|
| **Company Name:** Hoku Materials, Inc. Proj Description: Construction of a 4,000 Mton/yr Polysilicon Production Facility | **Facility Name:** Polysilicon Plant | **Facility ID No.:** 005-00058 |
| **Brief Project Description:** | | |

| IDENTIFICATION | | | | BAGHOUSE | | | BAGS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
| Emission Unit | EU ID No. | CE ID No. | Stack ID No. | Baghouse Manufacturer | Baghouse Model No. | Type | Type | Size (Dia x Ht) | No. of Bags | Air to Cloth |
| M.G. Silicon Bin Vent | 3 | 3 | 3 | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| Lime Storage Silo | 6 | 6 | 6 | TBD | TBD | TBD | TBD | TBD | TBD | TBD |
| | | | | | | | | | | |
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Emissions Unit - General **Form EU0**

**DEQ AIR QUALITY PROGRAM**
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For assistance, call the
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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | CHLOROSILANE VENTING SYSTEM |
| 2. EU ID Number: | 9 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | TBD |
| 7. Date of Construction: | MAY 1, 2008 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | Chlorosilane Scrubber CE ID No:9□ | | |
| 11. Date of Installation: | 8/14/07 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 9-Chlorosilane Venting System | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | | | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

**DEQ AIR QUALITY PROGRAM**
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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | CHLOROSILANE VENTING SYSTEM |
| 2. EU ID Number: | 9 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | TBD |
| 7. Date of Construction: | MAY 1, 2008 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | Lab Scrubber CE ID No:8☐ | | |
| 11. Date of Installation: | 8/14/07 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 8- Laboratory Venting System | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | | | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

**DEQ AIR QUALITY PROGRAM**
1410 N. Hilton, Boise, ID 83706
For assistance, call the
**Air Permit Hotline – 1-877-5PERMIT**

# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | Lime Storage Silo |
| 2. EU ID Number: | 6 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | 900 CU. FT. |
| 7. Date of Construction: | 5/1/08 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | Lime Storage Silo Baghouse CE ID No:6 | | |
| 11. Date of Installation: | 5/1/08 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 6- Lime Storage Silo | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | 0.02 gr/dscf | 0.02 gr/dscf | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency. Equipment selected will meet above mentioned control efficiency

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

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## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | CHLOROSILANE VENTING SYSTEM |
| 2. EU ID Number: | 9 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | TBD |
| 7. Date of Construction: | MAY 1, 2008 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | Relief Vent Scrubber CE ID No:10 | | |
| 11. Date of Installation: | 8/14/07 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 10-Relief Vent System | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | | | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency.

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

**DEQ AIR QUALITY PROGRAM**
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## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | M.G. Silicon Bin |
| 2. EU ID Number: | 3 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | 250 CU. FT. |
| 7. Date of Construction: | 5/1/08 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | M.G. Silicon Bin Vent Baghouse CE ID No:3 | | |
| 11. Date of Installation: | 5/1/08 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 3- M.G. Silicon Bin | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | 0.02 gr/dscf | 0.02 gr/dscf | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency. Equipment selected will meet above mentioned control efficiency

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

**DEQ AIR QUALITY PROGRAM**
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## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | M.G. SILICON PRIMARY HOPPER |
| 2. EU ID Number: | 4 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | 15 CU. FT. |
| 7. Date of Construction: | 5/1/08 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | M.G. Silicon Primary Hopper Filter CE ID No:4 | | |
| 11. Date of Installation: | 5/1/08 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 4- M.G. Silicon Primary Hopper | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | 0.02 gr/dscf | 0.02 gr/dscf | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency. Equipment selected will meet above mentioned control efficiency

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Unit - General **Form EU0**

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

## EMISSIONS UNIT (PROCESS) IDENTIFICATION & DESCRIPTION

| | |
|---|---|
| 1. Emissions Unit (EU) Name: | M.G. SILICON SECONDARY HOPPER |
| 2. EU ID Number: | 5 |
| 3. EU Type: | ☐ New Source ☐ Unpermitted Existing Source<br>☒ Modification to a Permitted Source -- Previous Permit #:P-2007-0075 Date Issued: 8/14/07 |
| 4. Manufacturer: | TBD |
| 5. Model: | TBD |
| 6. Maximum Capacity: | 20 CU. FT. |
| 7. Date of Construction: | 5/1/08 |
| 8. Date of Modification (if any) | MAY 1, 2008 |
| 9. Is this a Controlled Emission Unit? | ☐ No ☒ Yes If Yes, complete the following section. If No, go to line 18. |

## EMISSIONS CONTROL EQUIPMENT

| | | | |
|---|---|---|---|
| 10. Control Equipment Name and ID: | M.G. Silicon Secondary Hopper Filter CE ID No:5 | | |
| 11. Date of Installation: | 5/1/08 | 12. Date of Modification (if any): | May 1, 2008 |
| 13. Manufacturer and Model Number: | TBD | | |
| 14. ID(s) of Emission Unit Controlled: | 5- M.G. Silicon Secondary Hopper | | |
| 15. Is operating schedule different than emission units(s) involved? | ☐ Yes ☒ No | | |
| 16. Does the manufacturer guarantee the control efficiency of the control equipment? | ☐ Yes ☒ No (If Yes, attach and label manufacturer guarantee) | | |

| | Pollutant Controlled | | | | | |
|---|---|---|---|---|---|---|
| | PM | PM10 | $SO_2$ | NOx | VOC | CO |
| Control Efficiency | 0.02 gr/dscf | 0.02 gr/dscf | | | | |

17. If manufacturer's data is not available, attach a separate sheet of paper to provide the control equipment design specifications and performance data to support the above mentioned control efficiency. Equipment selected will meet above mentioned control efficiency

## EMISSION UNIT OPERATING SCHEDULE (hours/day, hours/year, or other)

| | |
|---|---|
| 18. Actual Operation | 8,760 HR/YR |
| 19. Maximum Operation | 8,760 hr/yr |

## REQUESTED LIMITS

| | |
|---|---|
| 20. Are you requesting any permit limits? | ☐ Yes ☒ No (If Yes, check all that apply below) |
| ☐ Operation Hour Limit(s): | |
| ☐ Production Limit(s): | |
| ☐ Material Usage Limit(s): | |
| ☐ Limits Based on Stack Testing | Please attach all relevant stack testing summary reports |
| ☐ Other: | |
| 21. Rationale for Requesting the Limit(s): | |

Emissions Units - Industrial Engine Information **Form EU1**

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

| IDENTIFICATION | | |
|---|---|---|
| Company Name: Hoku Materials, Inc. | Facility Name: Polysilicon Plant | Facility ID No: 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

**EXEMPTION**

**Please refer to IDAPA 58.01.01.222.01.c and d for a list of internal combustion engines that are exempt from the Permit to Construct requirements.**

**ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS**

1. Type of Unit: ☐ New Unit ☐ Unpermitted Existing Unit ☒ Modification to a Unit with Permit #:P-2007.0075 Date Issued: 8/14/07

2. Use of Engine: ☐ Normal Operation ☒ Emergency ☐ Back-up ☐ Other:

| 3. Engine ID Number: | 4. Rated Power: | |
|---|---|---|
| EU ID11 Emergency Generator | ☒ 800 Brake Horsepower(bhp) | ☐ 3,500 Kilowatts(kW) |
| 5. Construction Date: May 1, 2008 | 6. Manufacturer: TBD | 7. Model: TBD |
| 8. Date of Modification (if applicable): May 1, 2008 | 9. Serial Number (if available): NA | 10. Control Device (if any): NA |

**FUEL DESCRIPTION AND SPECIFICATIONS**

| 11. Fuel Type | ☒ Diesel Fuel (# ) (gal/hr) | ☐ Gasoline Fuel (gal/hr) | ☐ Natural Gas (cf/hr) | ☐ Other Fuels (unit: ) |
|---|---|---|---|---|
| 12. Full Load Consumption Rate | 14.9 | | | |
| 13. Actual Consumption Rate | 14.9 | | | |
| 14. Sulfur Content wt% | 0.5% | N/A | N/A | |

**OPERATING LIMITS & SCHEDULE**

15. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):

16. Operating Schedule (hours/day, months/year, etc.):

Emissions Units - Industrial Engine Information **Form EU1**

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 2 before filling out the form.*

| IDENTIFICATION | | |
|---|---|---|
| Company Name: Hoku Materials, Inc. | Facility Name: Polysilicon Plant | Facility ID No: 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

**EXEMPTION**

**Please refer to IDAPA 58.01.01.222.01.c and d for a list of internal combustion engines that are exempt from the Permit to Construct requirements.**

**ENGINE (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS**

1. Type of Unit: ☐ New Unit ☐ Unpermitted Existing Unit ☒ Modification to a Unit with Permit #:P-2007.0075 Date Issued: 8/14/07

2. Use of Engine: ☐ Normal Operation ☒ Emergency ☐ Back-up ☐ Other:

| 3. Engine ID Number: | 4. Rated Power: | |
|---|---|---|
| EU ID11 Emergency Generator | ☐ Brake Horsepower(bhp) | ☒ 3,500 Kilowatts(kW) |
| 5. Construction Date: May 1, 2008 | 6. Manufacturer: TBD | 7. Model: TBD |
| 8. Date of Modification (if applicable): May 1, 2008 | 9. Serial Number (if available): NA | 10. Control Device (if any): NA |

**FUEL DESCRIPTION AND SPECIFICATIONS**

| 11. Fuel Type | ☒ Diesel Fuel (# ) (gal/hr) | ☐ Gasoline Fuel (gal/hr) | ☐ Natural Gas (cf/hr) | ☐ Other Fuels (unit: ) |
|---|---|---|---|---|
| 12. Full Load Consumption Rate | 87.2 | | | |
| 13. Actual Consumption Rate | 87.2 | | | |
| 14. Sulfur Content wt% | 0.5% | N/A | N/A | |

**OPERATING LIMITS & SCHEDULE**

15. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.):

16. Operating Schedule (hours/day, months/year, etc.):

Emissions Units - Cooling Towers Information **Form EU4**

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
04/02/07

*Please see instructions on page 3 before filling out the form.*

| IDENTIFICATION | | |
|---|---|---|
| Company Name:<br>Hoku Materials, Inc. | Facility Name:<br>Polysilicon Plant | Facility ID No:<br>005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility | |

| COOLING TOWER IDENTIFICATION AND DESCRIPTION | | | | |
|---|---|---|---|---|
| | Tower 1 | Tower 2 | Tower 3 | Tower 4 |
| 1. Emission Unit Name | Colling Tower | | | |
| 2. Emission Unit ID Number | 7 | | | |
| 3. Stack/Vent ID Number | 7 | | | |
| 4. Tower Type (N: New, U: Unpermitted, M: Modification) | ☒ N, ☐ U, ☐ M | ☐ N, ☐ U, ☐ M | ☐ N, ☐ U, ☐ M | ☐ N, ☐ U, ☐ M |
| 5. Current Permit Number | P-2007.0075 | | | |
| 6. Tower Construction Date | August 14, 2007 | | | |
| 7. Tower Manufacturer | TBD | | | |
| 8. Tower Model Number | TBD | | | |
| 9. Number of Cells in Tower | 6 | | | |
| 10. Tower Maximum Water Flow Rate | 10,000 gpm/cell | | | |
| 11. Measured TDS Content (if known) | 12,000 ppm | | | |
| 12. Do you use additives in the water? If Yes, provide an MSDS form for each additive | ☐ No ☒ Yes | ☐ No ☐ Yes | ☐ No ☐ Yes | ☐ No ☐ Yes |
| **CONTROL EQUIPMENT INFORMATION** | | | | |
| 13. Control Equipment | ☐ No ☐ Yes | ☐ No ☐ Yes | ☐ No ☐ Yes | ☐ No ☐ Yes |
| 14. Control Equipment ID Number | | | | |
| 15. Control Equipment Efficiency | | | | |
| **OPERATING SCHEDULE** | | | | |
| 16. Actual Operation (hours per year) | 8,760 | | | |
| 17. Maximum Operation (hours per year) | 8,760 | | | |

| REQUEST FOR PERMIT LIMITATIONS | | | | |
|---|---|---|---|---|
| 18. Are you requesting any permit limits? | ☐ No ☐ Yes. If Yes, fill in all that apply below. | | | |
| Tower Served | Operation Hour Limits: | TDS Limits (ppm): | Material Usage Limits: | Other: |
| Tower 1 | | | | |
| Tower 2 | | | | |
| Tower 3 | | | | |
| Tower 4 | | | | |
| 19. Rationale for Requesting the | | | | |

| | |
|---|---|
| Limit(s): | |

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 3 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |

Brief Project Description: Construction of a 4,000 Mton/yr Polysilicon Production Facility

## EXEMPTION

**Please see IDAPA 58.01.01.222 for a list of industrial boilers that are exempt from Permit to Construct requirements.**

## BOILER (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

1. Type of Request: ☐ New Unit ☐ Unpermitted Existing Unit ☒ Modification to a Unit with Permit #:P-2007.0075

2. Use of Boiler: ☒ % Used For Process ☐ % Used For Space Heat ☐ % Used For Generating Electricity ☐ Other:

3. Boiler ID Number: EU ID 1

4. Rated Capacity: ☒ 55 Million British Thermal Units Per Hour (MMBtu/hr) ☐ 1,000 Pounds Steam Per Hour (1,000 lb steam/hr)

5. Construction Date: May 1, 2008

6. Manufacturer: TBD

7. Model: TBD

8. Date of Modification (if applicable): NA

9. Serial Number (if available): NA

10. Control Device (if any): Na
**Note: Attach applicable control equipment form(s)**

## FUEL DESCRIPTION AND SPECIFICATIONS

| 11. Fuel Type | ☐ Diesel Fuel (# ) (gal/hr) | ☒ Natural Gas (cf/hr) | ☐ Coal (unit: /hr) | ☐ Other Fuels (unit: /hr) |
|---|---|---|---|---|
| 12. Full Load Consumption Rate | | 52,381 | | |
| 13. Actual Consumption Rate | | 52,381 | | |
| 14. Fuel Heat Content (Btu/unit, LHV) | | 1,050 | | |
| 15. Sulfur Content wt% | | NA | | |
| 16. Ash Content wt% | | N/A | | |

## STEAM DESCRIPTION AND SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| 17. Steam Heat Content | NA | NA | | |
| 18. Steam Temperature ($^{o}$F) | N/A | N/A | | |
| 19. Steam Pressure (psi) | N/A | N/A | | |
| 20. Steam Type | N/A | N/A | ☐ Saturated ☐ Superheated | ☐ Saturated ☐ Superheated |

## OPERATING LIMITS & SCHEDULE

| |
|---|
| 21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): NA |
| 22. Operating Schedule (hours/day, months/year, etc.): 8,760 hr/yr |

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
03/27/07

*Please see instructions on page 3 before filling out the form.*

## IDENTIFICATION

| Company Name: | Facility Name: | Facility ID No: |
|---|---|---|
| Hoku Materials, Inc. | Polysilicon Plant | 005-00058 |

Brief Project Description: Construction of a 4,000 Mton/yr Polysilicon Production Facility

## EXEMPTION

**Please see IDAPA 58.01.01.222 for a list of industrial boilers that are exempt from Permit to Construct requirements.**

## BOILER (EMISSION UNIT) DESCRIPTION AND SPECIFICATIONS

1. Type of Request: ☐ New Unit ☐ Unpermitted Existing Unit ☒ Modification to a Unit with Permit #:P-2007.0075

2. Use of Boiler: ☒ % Used For Process ☐ % Used For Space Heat ☐ % Used For Generating Electricity ☐ Other:

| | | |
|---|---|---|
| 3. Boiler ID Number: EU ID 2- Hot Oil Heater | 4. Rated Capacity: ☒ 55 Million British Thermal Units Per Hour (MMBtu/hr) ☐ 1,000 Pounds Steam Per Hour (1,000 lb steam/hr) | |
| 5. Construction Date: May 1, 2008 | 6. Manufacturer: TBD | 7. Model: TBD |
| 8. Date of Modification (if applicable): NA | 9. Serial Number (if available): NA | 10. Control Device (if any): Na **Note: Attach applicable control equipment form(s)** |

## FUEL DESCRIPTION AND SPECIFICATIONS

| 11. Fuel Type | ☐ Diesel Fuel (# ) (gal/hr) | ☒ Natural Gas (cf/hr) | ☐ Coal (unit: /hr) | ☐ Other Fuels (unit: /hr) |
|---|---|---|---|---|
| 12. Full Load Consumption Rate | | 52,381 | | |
| 13. Actual Consumption Rate | | 52,381 | | |
| 14. Fuel Heat Content (Btu/unit, LHV) | | 1,050 | | |
| 15. Sulfur Content wt% | | NA | | |
| 16. Ash Content wt% | | N/A | | |

## STEAM DESCRIPTION AND SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| 17. Steam Heat Content | NA | NA | | |
| 18. Steam Temperature (°F) | N/A | N/A | | |
| 19. Steam Pressure (psi) | N/A | N/A | | |
| 20. Steam Type | N/A | N/A | ☐ Saturated ☐ Superheated | ☐ Saturated ☐ Superheated |

## OPERATING LIMITS & SCHEDULE

| |
|---|
| 21. Imposed Operating Limits (hours/year, or gallons fuel/year, etc.): NA |
| 22. Operating Schedule (hours/day, months/year, etc.): 8,760 hr/yr |

DEQ AIR QUALITY PROGRAM
1410 N. Hilton, Boise, ID 83706
For assistance, call the
**Air Permit Hotline - 1-877-5PERMIT**

# PERMIT TO CONSTRUCT APPLICATION

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

## SUMMARY OF AIR IMPACT ANALYSIS RESULTS - CRITERIA POLLUTANTS

| | | 1. | | 2. | 3. | 4. | | 5. |
|---|---|---|---|---|---|---|---|---|
| **Criteria Pollutants** | **Averaging Period** | **Significant Impact Analysis Results (µg/m3)** | **Significant Contribution Level (µg/m3)** | **Full Impact Analysis Results (µg/m3)** | **Background Concentration (µg/m3)** | **Total Ambient Impact (µg/m3)** | **NAAQS (µg/m3)** | **Percent of NAAQS** |
| $PM_{10}$ | 24-hour | | 5 | 45.30 | 94.60 | 139.90 | 150 | 93% |
| | Annual | | 1 | 9.60 | 25.00 | 34.60 | 50 | 69% |
| $SO_2$ | 3-hr | | 25 | 86.30 | 34.00 | 120.30 | 1300 | 9% |
| | 24-hr | | 5 | 24.90 | 26.00 | 50.90 | 365 | 14% |
| | Annual | | 1 | 0.50 | 8.00 | 8.50 | 80 | 11% |
| $NO_2$ | Annual | | 1 | 8.20 | 32.00 | 40.20 | 100 | 40% |
| CO | 1-hr | | 2000 | 464.00 | 5,000.00 | 5,464.00 | 40000 | 14% |
| | 8-hr | | 500 | 136.00 | 2,000.00 | 2,136.00 | 10000 | 21% |

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**PERMIT TO CONSTRUCT APPLICATION**
Revision 3
3/27/2007

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| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

**POINT SOURCE STACK PARAMETERS**

| 1. | 2. | 3a. | 3b. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|---|---|---|---|---|
| **Emissions units** | **Stack ID** | **UTM Easting (m)** | **UTM Northing (m)** | **Base Elevation (m)** | **Stack Height (m)** | **Modeled Diameter (m)** | **Stack Exit Temperature (K)** | **Stack Exit Flowrate (acfm)** | **Stack Exit Velocity (m/s)** | **Stack orientation (e.g., horizontal, rain cap)** |
| **Point Source(s)** | | | | | | | | | | |
| Boiler | 1 | 377688.0 | 4750349.0 | 1353.6 | 6.1 | 0.91 | 478 | 20000 | 14.3 | Horizontal |
| Hot Oil Heater | 2 | 377679.0 | 4750356.0 | 1353.3 | 6.1 | 0.91 | 478 | 20000 | 14.3 | Horizontal |
| M.G. Silicon Bin Vent | 3 | 377463.0 | 4750554.0 | 1350.7 | 7.3 | 0.15 | 293 | 800 | 20.7 | Horizontal |
| M.G. Silicon Primary Hopper | 4 | 377460.0 | 4750520.8 | 1349.7 | 19.8 | 0.05 | 293 | 200 | 44.8 | Horizontal |
| M.G. Silicon Secondary Hopper | 5 | 377470.0 | 4750519.0 | 1350.0 | 18.3 | 0.05 | 293 | 150 | 33.6 | Horizontal |
| Lime Storage Silo | 6 | 378143.0 | 4750055.0 | 1353.0 | 6.1 | 0.30 | 293 | 1200 | 7.8 | Horizontal |
| Cooling Tower 1 | 7 | 377558.5 | 4750476.0 | 1354.1 | 9.1 | 10.67 | 302 | | 5.3 | Horizontal |
| Cooling Tower 2 | 7 | 377566.0 | 4750487.5 | 1354.5 | 9.1 | 10.67 | 302 | | 5.3 | Horizontal |
| Cooling Tower 3 | 7 | 377574.0 | 4750500.0 | 1354.3 | 9.1 | 10.67 | 302 | | 5.3 | Horizontal |
| Laboratory Venting System | 8 | 377923 | 4750113 | 1352.6 | 6.1 | 0.30 | 293 | 2600 | 16.8 | Horizontal |
| Chlorosilane Venting System | 9 | 377618 | 4750300 | 1352 | 8.2 | 0.36 | 293 | 3200 | 15.1 | Horizontal |
| Relief Vent System | 10 | 377646 | 4750273 | 1352.1 | 8.2 | 0.36 | 293 | 3200 | 15.1 | Horizontal |
| Emergency Generator | 11 | 377521 | 4750503 | 1352.4 | 7.9 | 0.61 | 700 | 21000 | 34.0 | Horizontal |
| Fire Water Pump | 12 | 378118 | 4750038 | 1353 | 6.1 | 0.30 | 700 | 4500 | 29.1 | Horizontal |
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| **(insert more rows as needed)** | | | | | | | | | | |

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# PERMIT TO CONSTRUCT APPLICATION

Revision 3
4/5/2007

*Please see instructions on page 2 before filling out the form.*

| | |
|---|---|
| Company Name: | **Hoku Materials, Inc** |
| Facility Name: | Polysilicon Plant |
| Facility ID No.: | 005-00058 |
| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

## FUGITIVE SOURCE PARAMETERS

| 1. | 2. | 3a. | 3b. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|---|---|---|---|---|---|---|---|---|---|---|
| **Emissions units** | **Stack ID** | **UTM Easting (m)** | **UTM Northing (m)** | **Base Elevation (m)** | **Release Height (m)** | **Easterly Length (m)** | **Northerly Length (m)** | **Angle from North ( ° )** | **Initial Vertical Dimension (m)** | **Initial Horizontal Dimension (m)** |
| **Area Source(s)** | | | | | | | | | | |
| HCL from Valves | 13 | 377,686 | 4,750,248 | 1,350.30 | 1.52 | 45.72 | 51.82 | 35.00 | 2.44 | |
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| **Volume Source(s)** | | | | | | | | | | |
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| **(insert more rows as needed)** | | | | | | | | | | |

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| Brief Project Description: | Construction of a 4,000 Mton/yr Polysilicon Production Facility |

## BUILDING AND STRUCTURE INFORMATION

| 1. | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|
| **Building ID Number** | **Length (ft)** | **Width (ft)** | **Base Elevation (m)** | **Building Height (m)** | **Number of Tiers** | **Description/Comments** |
| POSTPROC | 180.00 | 168.00 | 1354.00 | 3.6576 | 1 | Post Processing Building |
| POLYROOM | 200.00 | 100.00 | 1353.00 | 24.384 | 1 | Poly Building |
| COOLTWOR | 65.00 | 216.00 | 1353.00 | 9.144 | 1 | Cooling Tower |
| DMWATER | 103.00 | 148.00 | 1353.00 | 5.49 | 1 | D.M. Water Building |
| SHIPWRHS | 123.00 | 186.00 | 1353.00 | 6.096 | 1 | Shipping Warehouse |
| PUMPHS12 | 44.00 | 79.00 | 1353.00 | 3.66 | 1 | Pump House 1 and 2 |
| WWTREAT | 38.00 | 82.00 | 1353.00 | 3.66 | 1 | Waste Water Treatment Building |
| SUPERSAC | 72.00 | 56.00 | 1350.30 | 6.10 | 1 | Super Sack Staging |
| GDHOUSE | 50.00 | 23.00 | 1350.60 | 3.66 | 1 | Guard House |
| MNTWRHS | 138.00 | 79.00 | 1351.90 | 10.36 | 1 | Maintenance and Warehouse |
| BLRBLDG | 23.00 | 32.80 | 1353.20 | 5.49 | 1 | |
| BRCHLLRS | 60.00 | 72.00 | 1352.90 | 6.10 | 1 | Brine Chillers |
| ADMIN | 72.00 | 33.00 | 1349.92 | 22.86 | 1 | Administration Building |
| LAB | 115.00 | 66.00 | 1350.43 | 3.05 | 1 | TCS Lab |