



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

To: Interested Parties

Date: July 25, 2014

From: Matthew Stuckey, Chief
Permits Branch
Office of Air Quality

Source Name: Atlas Energy Indiana – W. Knox

Permit Level: Registration

Permit Number: 083-34674-00055

Source Location: Newell Road, 1/8 mile North of East Freelandville Road,
Oaktown, Indiana

Type of Action Taken: Initial Permit

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above.

The final decision is available on the IDEM website at: <http://www.in.gov/apps/idem/caats/>
To view the document, select Search option 3, then enter permit 34674.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

(continues on next page)

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



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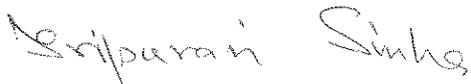
Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

REGISTRATION OFFICE OF AIR QUALITY

**Atlas Energy Indiana – W. Knox
Newell Rd., 1/8 mile N of E. Freelandville Rd
Oaktown, Indiana 47561**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

| | |
|--|------------------------------|
| Registration No. 083-34674-00055 | |
| Issued by:  Tripurari P. Sinha, Ph. D., Section Chief Permits Branch Office of Air Quality | Issuance Date: July 25, 2014 |

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary natural gas compressor station

| | |
|------------------------------|--|
| Source Address: | Newell Rd., 1/8 mile N of E. Freelandville Rd. |
| General Source Phone Number: | (412) 489-0311 |
| SIC Code: | 1311 |
| County Location: | Knox County |
| Source Location Status: | Attainment for all criteria pollutants |
| Source Status: | Registration |

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) Glycol Dehydration Process, identified as EU-DHYW1 consisting of:

One (1) glycol regenerator exhausting to stack SV-DHYW1V, with one (1) natural gas fired glycol reboiler, approved for construction in 2010, with a rated heat input capacity of 0.30 MMBtu/hr for the boiler and exhausting to stack SV-DHYW1R.

Under the NESHAP for Oil and Natural Gas Production Facilities (40 CFR 63, subpart HH), unit EU-DHYW1 is considered an affected facility.

- (b) Two (2) brine storage tanks, identified as EU-TNkW1 and EU-TNkW2, approved for construction in 2010, with a maximum capacity of 400 BBL each and venting via SV-TNkW1 and SV-TNkW2 respectively.
- (c) One (1) natural gas fired, four (4) stroke lean-burn, internal combustion engine, identified as EU-ENGW3, using spark ignition, with a heat input capacity of 7.29 MMBtu/hr, with an output of 1,005 horsepower, and exhausting to stack SV-ENGW3.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 083-34674-00055 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003

Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this registration:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

Testing Requirements [326 IAC 2-5.1-3(e)(2)]

C.3 Performance Testing [326 IAC 3-6]

- (a) For performance testing required by this registration, a test protocol, except as provided elsewhere in this registration, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date.

- (b) The Registrant shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Registrant submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)]

C.4 Instrument Specifications [326 IAC 2-1.1-11]

- (a) When required by any condition of this registration, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less

than twenty percent (20%) of full scale.

- (b) The Registrant may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Registrant can demonstrate that an alternative instrument specification will adequately ensure compliance with registration conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps

C.5 Response to Excursions or Exceedances [326 IAC 2-5.1-3(e)(2)]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this registration:

- (a) The Registrant shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Registrant has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the registration.
- (e) The Registrant shall record the reasonable response steps taken.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)]

C.6 General Record Keeping Requirements [326 IAC 2-5.1-3(e)(2)]

- (a) Records of all required monitoring data, reports and support information required by this registration shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Registrant, the Registrant shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this registration, for all record keeping requirements not already legally required, the Registrant shall be allowed up to ninety (90) days from the date of registration issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.7 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-5.1-3(e)(2)] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this registration shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) Unless otherwise specified in this registration, any notice, report, or other submission required by this registration shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The first report shall cover the period commencing on the date of issuance of this registration or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this registration. For the purpose of this registration, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

(a) One (1) Glycol Dehydration Process, identified as EU-DHYW1 consisting of:

One (1) glycol regenerator exhausting to stack SV-DHYW1V, with one (1) natural gas fired glycol reboiler, approved for construction in 2010, with a rated heat input capacity of 0.30 MMBtu/hr for the boiler and exhausting to stack SV-DHYW1R.

Under the NESHAP for Oil and Natural Gas Production Facilities (40 CFR 63, Subpart HH), unit EU-DHYW1 is considered an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.2.1 Particulate [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, the allowable particulate emissions from the one (1) glycol reboiler (EU-DHYW1), shall not exceed 0.6 pounds per million British thermal unit.

SECTION E.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (b) One (1) natural gas four (4) stroke lean-burn internal combustion engine, identified as EUENGW3, approved for construction in 2014, using spark ignition, with a heat input capacity of 7.29 MMBtu/hr, with an output of 1,380 horsepower, and exhausting to stack SV-ENGW3.

Under NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ) and NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), EU-ENGW3 is considered an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.1.1 General Provisions Relating to New Source Performance Standards (NSPS) [40 CFR Part 60, Subpart A] [326 IAC 12-1]

Pursuant to 40 CFR Part 60 Subpart A, the Registrant shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, apply to the facilities described in this section, except when otherwise specified in 40 CFR Part 60, Subpart JJJJ.

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12 for the one (1) natural gas fired internal combustion engine, except as otherwise specified in 40 CFR Part 60, Subpart JJJJ.
- (b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 N. Senate Avenue
MC 61-53 IGCN 1001
Indianapolis, Indiana 46204-2251

E.1.2 New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines [40 CFR Part 60, Subpart JJJJ] [326 IAC 12-1]

The Registrant, which engages in natural gas compression, shall comply with the following provisions of 40 CFR Part 60, Subpart JJJ (included as Attachment A of this registration).

- (1) 40 CFR 60.4230(a)(iii) and (c)
- (2) 40 CFR 60.4233(e)
- (3) 40 CFR 60.4234
- (4) 40 CFR 60.4236(b)
- (5) 40 CFR 60.4244
- (6) 40 CFR 60.4245(a) and (d)
- (7) 40 CFR 60.4246
- (8) 40 CFR 60.4248

SECTION E.2

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (c) One (1) natural gas fired, four (4) stroke lean-burn, internal combustion engine, identified as EU-ENGW3, approved for construction in 2014, using spark ignition, with a heat input capacity of 7.29 MMBtu/hr, with an output of 1,005 horsepower, and exhausting to stack SV-ENGW3.

Under NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ) and NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), EU-ENGW3 is considered an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

- (a) Pursuant to 40 CFR 63, the Registrant shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1, except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

- (b) Pursuant to 40 CFR 63.10, the Registrant shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.2.2 NESHAP for Stationary Spark Ignition Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ]

The Registrant shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment B of this registration, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ):

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(2)(iii) and (c)(1)
- (4) 40 CFR 63.6595(a)(6)
- (5) 40 CFR 63.6665
- (6) 40 CFR 63.6670
- (7) 40 CFR 6675

SECTION E.3

OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) Glycol Dehydration Process, identified as EU-DHYW1 consisting of:

One (1) glycol regenerator exhausting to stack SV-DHYW1V, with one (1) natural gas fired glycol reboiler, approved for construction in 2010, with a rated heat input capacity of 0.30 MMBtu/hr for the boiler and exhausting to stack SV-DHYW1R.

Under the NESHAP for Oil and Natural Gas Production Facilities [40 CFR 63, Subpart HH], unit EU-DHYW1 is considered an affected facility.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

E.3.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAP) [326 IAC 20] [40 CFR Part 63 Subpart A]

The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated as 326 IAC 20, apply to this facility described in this section except when otherwise specified in 40 CFR Part 63, Subpart HH.

E.3.2 NESHAP for Oil and Natural Gas Production Facilities [40 CFR Part 63 Subpart HH] [326 IAC 20-30]

The Registrant which operates a natural gas compressor station shall comply with the following provision of 40 CFR Part 63, Subpart HH (included as Attachment C) of this permit.

- (1) 40 CFR 63.760(a)(1) and (3), (b)(2), (f)(3) through (6) and (h)
- (2) 40 CFR 63.761
- (3) 40 CFR 63.762(a), (c) and (e)
- (4) 40 CFR 63.764(a), (b), and (e)(1)(ii)
- (5) 40 CFR 63.772(b), (2)(i) or (ii)
- (6) 40 CFR 63.774(a), (d)(1)(i) or (ii)
- (7) 40 CFR 63.776

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

| | |
|--------------------------|---|
| Company Name: | Atlas Energy Indiana – W Knox |
| Address: | Newell Rd., 1/8 mile N of E. Freelandville Rd |
| City: | Oaktown, Indiana 47561 |
| Phone Number: | (812) 489-0324 |
| Registration No.: | 083-34674-00055 |

I hereby certify that Atlas Energy Indiana – W Knox is : still in operation.
 no longer in operation.
I hereby certify that Atlas Energy Indiana – W Knox is : in compliance with the requirements
of Registration No. 083-34674-00055.
 not in compliance with the requirements
of Registration No. 083-34674-00055.

| |
|---------------------------------------|
| Authorized Individual (typed): |
| Title: |
| Signature: |
| Phone Number: |
| Date: |

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

| |
|-----------------------|
| Noncompliance: |
| |
| |
| |
| |

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a MSOP Transitioning to a
Registration

Source Description and Location

Source Name: Atlas Energy Indiana – W. Knox
Source Location: Newell Rd., 1/8 mile N of E. Freelandville Rd, Oaktown, IN 47561
County: Knox
SIC Code: 1311
Registration No.: R 0083-34674-00055
Permit Reviewer: John Yang

On June 26, 2014, the Office of Air Quality (OAQ) received an application from Atlas Energy Indiana – W. Knox related to the construction and operation of new emission units at an existing natural gas compressor station and transition from a MSOP to a Registration

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) MSOP No. 083-27810-00055, issued on March 16, 2010.
- (b) MSOP – Notice-Only Change No. 083-29286-00055, issued on June 17, 2010.
- (c) MSOP – Notice-Only Change No. 083-30140-00055, issued on February 16, 2011.

Due to this application, the source is transitioning from a MSOP to a Registration.

County Attainment Status

The source is located in Knox County.

| Pollutant | Designation |
|--|--|
| SO ₂ | Better than national standards. |
| CO | Unclassifiable or attainment effective November 15, 1990. |
| O ₃ | Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹ |
| PM _{2.5} | Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard. |
| PM _{2.5} | Unclassifiable or attainment effective December 13, 2009, for the 240hour PM _{2.5} standard |
| PM ₁₀ | Unclassifiable effective November 15, 1990 |
| NO ₂ | Cannot be classified or better than national standards. |
| Pb | Unclassifiable or attainment effective December 31, 2011. |
| ¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. | |

- (a) Ozone Standards
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Knox County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x

emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM_{2.5}**
Knox County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**
Knox County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

- (a) The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-5.5 (Registrations) applicability.
- (b) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Atlas Energy Indiana—W Knox on June 26, 2014, relating to the removal of an old natural gas unit (machine ID EU-ENGW2) from operation and to transition from a MSOP to a Registration.

The source consists of the following existing emission units:

- (a) One (1) Glycol Dehydration Process, identified as EU-DHYW1 consisting of:

One (1) glycol regenerator exhausting to stack SV-DHYW1V, with one (1) natural gas fired glycol reboiler, approved for construction in 2010, with a rated heat input capacity of 0.30 MMBtu/hr for the boiler and exhausting to stack SV-DHYW1R.

Under the NESHAP for Oil and Natural Gas Production Facilities (40 CFR 63, subpart HH), unit EU-DHYW1 is considered an affected facility.
- (b) Two (2) brine storage tanks, identified as EU-TNKW1 and EU-TNKW1, approved for construction in 2010, with a maximum capacity of 400 BBL each and venting via SV-TNKW1 and SV-TNKW2 respectively.
- (c) One (1) natural gas fired, four (4) stroke lean-burn, internal combustion engine, identified as EU-ENGW3, using spark ignition, with a heat input capacity of 7.29 MMBtu/hr, with an output of 1,005 horsepower, and exhausting to stack SV-ENGW3.

Under NSPS for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60, Subpart JJJJ) and NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZ), EU-ENGW3 is considered an affected facility.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Process/ Emission Unit | Potential To Emit of the Entire Source (tons/year) | | | | | | | | | |
|--|--|-------------|-------------|-----------------|-----------------|-------------|--------------|-----------------------------------|---------------|--------------------------------|
| | PM | PM10* | PM2.5* | SO ₂ | NO _x | VOC | CO | GHGs as CO ₂ e** | Total HAPs | Worst Single HAP |
| EU-ENGW3 | 0.00 | 0.33 | 0.33 | 0.02 | 17.47 | 3.30 | 20.38 | 4684.5 | 3.05 | 2.43 (Formaldehyde) |
| Glycol Reboiler (EU-DHYW1) | 0.00 | 0.01 | 0.01 | 0.00 | 0.13 | 0.01 | 0.11 | 155.51 | 0.00 | 0.00 (Hexane) |
| Glycol Regenerator (EU- DHYW1) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0033 | 0.0004 (Xylene) |
| Tanks*** | - | - | - | - | - | - | - | - | - | - |
| Unpaved Roads | 0.49 | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total PTE of Entire Source | 0.49 | 0.46 | 0.46 | 0.02 | 17.60 | 4.60 | 20.49 | 4839.99 | 3.05 | 2.43 (Formaldehyde) |
| Exemptions Levels** | < 5 | < 5 | < 5 | < 10 | < 10 | < 10 | < 25 | < 100,000 | < 25 | < 10 |
| Registration Levels** | < 25 | < 25 | < 25 | < 25 | < 25 | < 25 | < 100 | < 100,000 | < 25 | < 10 |
| negl. = negligible *Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant". **The 100,000 CO ₂ e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. ***The source consists of EU-TNKW1 and EU-TNKW2 that store produced brine prior to disposal. Brine is not considered a volatile organic compound and thus PTE was not calculated | | | | | | | | | | |

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of regulated pollutants are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Equipment Leaks of VOC from On Shore Natural Gas Processing Plants (40 CFR 60.630 - 60.636, Subpart KKK) (326 IAC 12) are not applicable to this source. This NSPS applies only to emission units located at a “natural gas processing plants,” which is defined in the rule as “any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products or both.” No extraction or fractionation of natural gas liquids (such as ethane, propane, or butane) will be conducted at this source.
- (b) The requirements of the New Source Performance Standards for Onshore Natural Gas Processing: SO₂ Emissions (40 CFR 60.640 - 60.648, Subpart LLL) (326 IAC 12) are not applicable to this source. This NSPS applies to facilities (called sweetening units) that separate H₂S and CO₂ from sour natural gas streams. This source does not plan to operate any sweetening units at this location.
- (c) The requirements of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60.4200 - 60.4219, Subpart IIII) (326 IAC 12) are not included in this permit, because the one natural gas fired 4-cycle lean burn reciprocating internal combustion engine (RICE) (EU-ENGW3) is a stationary spark internal combustion engine not a stationary compression ignition (CI) internal combustion engine (ICE).
- (d) The one (1) natural gas fired 4 cycle lean burn reciprocating internal combustion engine (RICE), identified as (EU-ENGW3) is subject to the New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines (40 CFR 0.4230 - 60.4248, Subpart JJJJ) (326 IAC 12) because the compressor engine (EU-ENGW1) was construction after January 1, 2008, and is a lean burn engine with a maximum engine power greater than or equal to 500 HS and less than 1,350 HP.

Applicable portions of the NSPS are the following:

- (1) 40 CFR 60.4230(a)(iii) and (c)
- (2) 40 CFR 60.4233(e)
- (3) 40 CFR 60.4234
- (4) 40 CFR 60.4236(b)
- (5) 40 CFR 60.4244
- (6) 40 CFR 60.4245(a) and (d)
- (7) 40 CFR 60.4246
- (8) 40 CFR 60.4248

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the one (1) natural gas fired 4-cycle lean burn reciprocating internal combustion engine (RICE), identified as EU-ENGW1 except as otherwise specified in 40 CFR 60, Subpart IIII.

- (e) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the registration.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (f) The dehydration unit, identified as EU-DHYW1 is subject to the National Emission Standards for Hazardous Air Pollutants for Oil And Natural Gas Production Facilities (40 CFR 63.760 - 63.776, Subpart HH) (326 IAC 20-30) because the source is an area source that has a glycol dehydration unit.

Applicable portions of the NESHAP are the following:

- (1) 40 CFR 63.760(a)(1) and (3), (b)(2), (f)(3) through (6) and (h)
- (2) 40 CFR 63.761
- (3) 40 CFR 63.762(a), (c) and (e)
- (4) 40 CFR 63.764(a), (b), and (e)(1)(ii)
- (5) 40 CFR 63.772(b), (2)(i) or (ii)
- (6) 40 CFR 63.774(a), (d)(1)(i) or (ii)
- (7) 40 CFR 63.776

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the glycol dehydration unit except as otherwise specified in 40 CFR 63, Subpart HH.

- (g) The requirement of the National Emission Standards for Hazardous Air Pollutants for Natural Gas Transmission and Storage Facilities (40 CFR 63.1270 - 63.1289, Subpart HHH) (326 IAC 20-31), are not included in this permit, since the source does not have the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.
- (h) The one (1) natural gas fired 4-cycle lean burn reciprocating internal combustion engine (RICE), identified as EU-ENGW3 is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6580 - 63.6675, Subpart ZZZZ) (326 IAC 20-82), because the source operates a stationary RICE at an area source of HAP emissions.

Applicable portions of the NESHAP are the following:

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(2)(ii) and (c)

- (i) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the Registration.

Compliance Assurance Monitoring (CAM)

- (j) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the registration, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

| |
|---|
| State Rule Applicability Determination |
|---|

The following state rules are applicable to the source:

- (a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this Registration:
 - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is subject to the requirements of 326 IAC 6-4, because the unpaved roads have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.

Reciprocating Internal Combustion Engine Compressor

- (g) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The one (1) natural gas fired reciprocating internal combustion engine compressor, identified as EU-ENGW3, is not subject to 326 IAC 6-2-4, because it is not a source of indirect heating.
- (h) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The one (1) natural gas fired reciprocating internal combustion engine compressor, identified as EU-ENGW3 is not subject to 326 IAC 6-3-1, because the potential to emit of particulate matter from the engine is less than five-hundred fifty-one thousandths (0.551) lbs per hour. Therefore, this unit is exempt under 326 IAC 6-3-1(b)(14)
- (i) 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)
The one (1) natural gas fired reciprocating internal combustion engine compressor (EU-ENGW3) is not subject to 326 IAC 7-1.1-1, because the potential to emit of sulfur dioxide is less than twenty-five (25) tons per year and less than ten (10) pounds per hour.
- (j) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The one (1) natural gas fired reciprocating internal combustion engine compressor (EU-ENGW3) is not subject to 326 IAC 8-1-6, because the potential to emit of VOCs is less than twenty-five (25) tons per year.
- (k) 326 IAC 9-1-1 (Carbon Monoxide Emission Limits)

This one (1) natural gas fired reciprocating internal combustion engine compressor (EU-ENGW3) is not subject to 326 IAC 9-1-1, because there are no applicable emission limits for this source under 326 IAC 9-1-2.

Glycol Reboiler

- (l) 326 IAC 6-2 (Particulate Emission Limitations for Source of Indirect Heating)
The glycol reboiler (EU-DHYW1) is subject to 326 IAC 6-2-4.
This emission limitation is based on the following equation:

$$Pt = 1.09/Q_{0.26} = 1.49$$

Where:

Pt = emission rate limit (lbs/MMBtu)

Q = total source heat input capacity (0.30 MMBtu/hr)

Pursuant to this rule, the allowable particulate emissions from the one (1) glycol reboiler shall not exceed 0.6 pounds per million British thermal units (MMBtu) per hour if the total source heat input capacity is less than 10 MMBtu per hour,

The PM potential to emit from the one (1) glycol reboiler is 0.0025 pounds of PM per MMBtu per hour, which is less than the allowable of 0.6 pound per MMBtu per hour. Therefore this unit is able to comply with this rule.

- (m) 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)
The glycol reboiler, part of process EU-DHYW1, is not subject to 326 IAC 7-1.1-1, because the potential to emit of Sulfur Dioxide is less than twenty-five (25) tons per year and less than ten (10) pounds per hour.
- (n) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The glycol reboiler, part of process EU-DHYW1, is not subject to 326 IAC 8-1-6, because the potential to emit of VOCs from the glycol reboiler (EUDHYW1) is less than twenty-five (25) tons per year.

Glycol Regenerator

- (o) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The one glycol regenerator, part of process EU –DHYW1, is not subject to 326 IAC 6-2, because they are not a source of indirect heating.
- (p) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The one (1) glycol regenerator, part of process EU-DHYW1, is exempt under 326 IAC 6-3 because the source is a manufacturing process with potential emissions of less than five-hundred and fifty-one pounds (0.551) per hour.
- (q) 326 IAC 8-1-6 (New facilities; general reduction requirements)
The one (1) glycol regenerator, part of process EU-DHYW1, is exempt under 326 IAC 6-3 because they the potential to emit of VOCs from the glycol regenerator (EUDHYW1) is less than twenty-five (25) tons per year.

Tanks

- (r) 326 IAC 8-9-1 (Volatile Organic Liquid Storage Vessels)
The brine storage tanks are not subject to 326 IAC 8-9-1, because they do not store volatile organic liquid.

- (s) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (t) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on June 26, 2014

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 083-34674-00055. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed registration can be directed to John Yang at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317)-234-5401 or toll free at 1-800-451-6027 extension 4-5401.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

**Appendix A: Emission Calculations
Summary**

Company Name: Atlas Energy Indiana
Source Address: Newell Rd., 1/8 mile N of E. Freelandville Rd., Oaktown, Indiana 47561
Permit Number: 083-34674-00055
Reviewer: John Yang

| Uncontrolled Potential to Emit (tons/yr) | | | | | | | | | | | |
|--|-------------|------------------|-------------------|-----------------|-------------|--------------|--------------|----------------|-------------|------------------|---------------------|
| Emission Units (in tons/year) | PM | PM ₁₀ | PM _{2.5} | SO ₂ | VOC | CO | NOx | GHGs | HAPs | Single Worst HAP | |
| EU-ENGW3 | 0.00 | 0.33 | 0.33 | 0.02 | 3.30 | 20.38 | 17.47 | 4684.48 | 3.05 | 2.43 | Formaldehyde |
| Glycol Reboiler (EU-DHYW1) | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.11 | 0.13 | 155.51 | 0.00 | 0.00 | Hexane |
| Glycol Regenerator (EU-DHYW1) | 0.00 | 0.00 | 0.00 | 0.00 | 0.29 | 0.00 | 0.00 | 0.00 | 3.30E-03 | 4.00E-04 | Xylene |
| Tanks* | - | - | - | - | - | - | - | - | - | - | - |
| Unpaved Roads | 0.49 | 0.12 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | - |
| Total | 0.49 | 0.46 | 0.46 | 0.02 | 3.60 | 20.49 | 17.60 | 4839.99 | 3.05 | 2.43 | Formaldehyde |

**Emission Calculations
Fugitive Dust Emissions - Unpaved Roads**

Company Name: Atlas Energy Indiana - W Knox
Address City IN Zip: Newell Rd., 1/8 mile N of E. Freelandville Rd., Oaktown, Indiana 47561
Registration No.: 083-34674-00055
Reviewer: John Yang

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

| Type | Maximum number of vehicles | Number of one-way trips per day per vehicle | Maximum trips per day (trip/day) | Maximum Weight Loaded (tons/trip) | Total Weight driven per day (ton/day) | Maximum one-way distance (feet/trip) | Maximum one-way distance (mi/trip) | Maximum one-way miles (miles/day) | Maximum one-way miles (miles/yr) |
|---|----------------------------|---|----------------------------------|-----------------------------------|---------------------------------------|--------------------------------------|------------------------------------|-----------------------------------|----------------------------------|
| Vehicle (entering plant) (one-way trip) | 2.0 | 2.0 | 4.0 | 4.0 | 16.0 | 600 | 0.114 | 0.5 | 165.9 |
| Vehicle (leaving plant) (one-way trip) | 2.0 | 2.0 | 4.0 | 4.0 | 16.0 | 600 | 0.114 | 0.5 | 165.9 |
| | | | 0.0 | | 0.0 | | 0.000 | 0.0 | 0.0 |
| | | | 0.0 | | 0.0 | | 0.000 | 0.0 | 0.0 |
| Total | | | 8.0 | | 32.0 | | | 0.9 | 331.8 |

Average Vehicle Weight Per Trip = 4.0 tons/trip
 Average Miles Per Trip = 0.11 miles/trip

Unmitigated Emission Factor, $E_f = k * [(s/12)^a] * [(W/3)^b]$ (Equation 1a from AP-42 13.2.2)

| | PM | PM ₁₀ /PM _{2.5} | |
|-----------|------|-------------------------------------|---|
| where k = | 4.9 | 1.5 | lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads) |
| s = | 4.8 | 4.8 | % = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road) |
| a = | 0.7 | 0.9 | = constant (AP-42 Table 13.2.2-2) |
| W = | 4.0 | 4.0 | tons = average vehicle weight (provided by source) |
| b = | 0.45 | 0.45 | = constant (AP-42 Table 13.2.2-2) |

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [(365 - P)/365]$
 Mitigated Emission Factor, $E_{ext} = E * [(365 - P)/365]$

where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

| | PM | PM ₁₀ /PM _{2.5} | |
|--|------|-------------------------------------|---|
| Unmitigated Emission Factor, $E_f =$ | 2.94 | 0.75 | lb/mile |
| Mitigated Emission Factor, $E_{ext} =$ | 1.93 | 0.49 | lb/mile |
| Dust Control Efficiency = | 50% | 50% | (pursuant to control measures outlined in fugitive dust control plan) |

| Process | Unmitigated PTE of PM (tons/yr) | Unmitigated PTE of PM ₁₀ /PM _{2.5} (tons/yr) | Mitigated PTE of PM (tons/yr) | Mitigated PTE of PM ₁₀ /PM _{2.5} (tons/yr) | Controlled PTE of PM (tons/yr) | Controlled PTE of PM ₁₀ /PM _{2.5} (tons/yr) |
|---|---------------------------------|--|-------------------------------|--|--------------------------------|---|
| Vehicle (entering plant) (one-way trip) | 0.24 | 0.06 | 0.16 | 0.04 | 0.08 | 0.02 |
| Vehicle (leaving plant) (one-way trip) | 0.24 | 0.06 | 0.16 | 0.04 | 0.08 | 0.02 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 0.49 | 0.12 | 0.32 | 0.08 | 0.16 | 0.04 |

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PTE = Potential to Emit

**Emissions Calculations
 Natural Gas Combustion
 Glycol Regenerator (EU-DHYW1)**

Company Name: Atlas Energy Indiana - W, Knox Co
Source Address: Newell Rd., 1/8 mile N of E. Freelandville Rd., Oaktown, Indiana 47561
Permit Number: 083-34674-00055
Reviewer: John Yang

| Emission | | | |
|--------------------|--------------------|---------------------|---------------------|
| Unit | VOC (tons/year) | HAPs (tons/year) | Single worst HAP |
| Glycol Regenerator | 0.29 | 3.30E-03 | 0.0004 (xylene) |

Note: PTE from gri-clyCalc 3.0 calculations submitted by Atlas Energy Indiana - W Knox

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Atlas Energy Indiana - W Knox
Address City IN Zip: Newell Rd., 1/8 mile N of E. Freelandville Rd., Oaktown, Indiana 47561
Registration No.: 083-34674-00055
Reviewer: John Yang

| | | |
|---------------------------------|-----------------------|---------------------------------|
| Heat Input Capacity MMBtu/hr | HHV mmBtu mmscf | Potential Throughput MMCF/yr |
| 0.3 | 1020 | 2.6 |

| Emission Factor in lb/MMCF | Pollutant | | | | | | |
|-------------------------------|-----------|-------|---------------|-----|-------------|-----|-----|
| | PM* | PM10* | direct PM2.5* | SO2 | NOx | VOC | CO |
| | 1.9 | 7.6 | 7.6 | 0.6 | 100 | 5.5 | 84 |
| | | | | | **see below | | |
| Potential Emission in tons/yr | 0.002 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 |

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
 PM2.5 emission factor is filterable and condensable PM2.5 combined.
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
 Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

| Emission Factor in lb/MMcf | HAPs - Organics | | | | | Total - Organics |
|-------------------------------|-----------------|-----------------|--------------|-----------|-----------|------------------|
| | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene | |
| | 2.1E-03 | 1.2E-03 | 7.5E-02 | 1.8E+00 | 3.4E-03 | |
| Potential Emission in tons/yr | 2.705E-06 | 1.546E-06 | 9.662E-05 | 2.319E-03 | 4.380E-06 | 2.424E-03 |

| Emission Factor in lb/MMcf | HAPs - Metals | | | | | Total - Metals |
|-------------------------------|---------------|-----------|-----------|-----------|-----------|------------------|
| | Lead | Cadmium | Chromium | Manganese | Nickel | |
| | 5.0E-04 | 1.1E-03 | 1.4E-03 | 3.8E-04 | 2.1E-03 | |
| Potential Emission in tons/yr | 6.441E-07 | 1.417E-06 | 1.804E-06 | 4.895E-07 | 2.705E-06 | 7.060E-06 |

Methodology is the same as above.

| | |
|-------------------|------------------|
| Total HAPs | 2.431E-03 |
| Worst HAP | 2.319E-03 |

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

| Emission Factor in lb/MMcf | Greenhouse Gas | | |
|---------------------------------------|----------------|-----|-----|
| | CO2 | CH4 | N2O |
| | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 155 | 0.0 | 0.0 |
| Summed Potential Emissions in tons/yr | 155 | | |
| CO2e Total in tons/yr | 156 | | |

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
4-Stroke Lean-Burn (4SLB) Engines
EU-ENGW3**

Company Name: Atlas Energy Indiana
Source Address: Newell Rd., 1/8 mile N of E. Freelandville Rd., Oaktown, Indiana 47561
Permit Number: 083-34674-00055
Reviewer: John Yang

| | |
|--|-------|
| Maximum Output Horsepower Rating (hp) | 1005 |
| Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr) | 7500 |
| Maximum Hours Operated per Year (hr/yr) | 8760 |
| Potential Fuel Usage (MMBtu/yr) | 66029 |
| High Heat Value (MMBtu/MMscf) | 1020 |
| Potential Fuel Usage (MMcf/yr) | 64.73 |

| Criteria Pollutants | Pollutant | | | | | | |
|---|-----------|----------|----------|----------|----------|----------|----------|
| | PM* | PM10* | PM2.5* | SO2 | NOx | VOC | CO |
| Emission Factor (lb/MMBtu)(from AP-42) | 7.71E-05 | 9.99E-03 | 9.99E-03 | 5.88E-04 | 4.08E+00 | 1.18E-01 | 3.17E-01 |
| Emission Factor (lb/bHP-hr)(from manufacturer's data) | | | | | 1.50E+00 | 3.40E-01 | 2.10E+00 |
| Potential Emissions from AP-42 (ton/yr) | 0.0025 | 0.33 | 0.33 | 0.02 | 134.70 | 3.90 | 10.47 |
| Potential Emissions from manufacturer's data(tons/yr) | - | - | - | - | 17.47 | 3.30 | 20.38 |

*PM emission factor is for filterable PM. PM10 emission factor is filterable PM10 + condensable PM.
 PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

| Pollutant | Emission Factor (lb/MMBtu)(from AP-42) | Emission Factor (lb/bHP-hr)(from manufacturer's data) | Potential Emissions (tons/yr) |
|------------------------|--|---|-------------------------------|
| Acetaldehyde | 8.36E-03 | - | 0.276 |
| Acrolein | 5.14E-03 | - | 0.170 |
| Benzene | 4.40E-04 | - | 0.015 |
| Biphenyl | 2.12E-04 | - | 0.007 |
| 1,3-Butadiene | 2.67E-04 | - | 0.009 |
| Formaldehyde | 5.28E-02 | 2.50E-01 | 2.426 |
| Methanol | 2.50E-03 | - | 0.083 |
| Hexane | 1.10E-03 | - | 0.036 |
| Toluene | 4.08E-04 | - | 0.013 |
| 2,2,4-Trimethylpentane | 2.50E-04 | - | 0.008 |
| Xylene | 1.84E-04 | - | 0.006 |
| Total | | | 3.05 |

HAP pollutants consist of the eleven highest HAPs included in AP-42 Table 3.2-2.

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
 Potential Fuel Usage (MMBtu/yr) = [Maximum Output Horsepower Rating (hp)] * [Brake Specific Fuel Consumption (Btu/hp-hr)] * [Maximum Hours Operated per Year (hr/yr)] / [1000000 Btu/MMBtu]
 Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

| Greenhouse Gases (GHGs) | Greenhouse Gas (GHG) | | |
|---------------------------------------|----------------------|-------|------|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/MMBtu* | 110 | 1.25 | |
| Emission Factor in lb/MMcf** | | | 2.2 |
| Potential Emission in tons/yr | 3631.57 | 41.27 | 0.07 |
| Summed Potential Emissions in tons/yr | 3672.91 | | |
| CO2e Total in tons/yr | 4684.48 | | |

Methodology

*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
 **The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
 For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Abbreviations

| | | |
|------------------------------------|----------------------------------|---------------------------------|
| PM = Particulate Matter | NOx = Nitrous Oxides | CO2 = Carbon Dioxide |
| PM10 = Particulate Matter (<10 um) | VOC = Volatile Organic Compounds | CH4 = Methane |
| SO2 = Sulfur Dioxide | CO = Carbon Monoxide | N2O = Nitrous Oxide |
| | | CO2e = CO2 equivalent emissions |



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TO: Warren Hanks
Atlas Energy Indiana – W. Knox
32 S. Court Street, Suite F
Sullivan, IN 47882

DATE: July 25, 2014

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration
083-34674-00055

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Carla Suszkowski, Director of Environmental and Regulatory Affairs
Donald Schuster, Consultant
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

Mail Code 61-53

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| Name and address of Sender |  | Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204 | Type of Mail: CERTIFICATE OF MAILING ONLY | |

| Line | Article Number | Name, Address, Street and Post Office Address | Postage | Handing Charges | Act. Value (If Registered) | Insured Value | Due Send if COD | R.R. Fee | S.D. Fee | S.H. Fee | Rest. Del. Fee | Remarks |
|------|----------------|---|---------|-----------------|----------------------------|---------------|-----------------|----------|----------|----------|----------------|---------|
| 1 | | Warren Hanks Atlas Energy Indiana- W Knox 32 S Court Street, Suite F Sullivan IN 47882 (Source CAATS) | | | CONFIRMED DELIVERY | | | | | | | |
| 2 | | Carla Suszkowski Director of Envrnmtl and Regulatory Affairs Atlas Energy Indiana- W Knox 1000 Commerce Dr Pittsburgh PA 15275 (RO CAATS) | | | | | | | | | | |
| 3 | | Knox County Health Department 520 S. 7th Street Vincennes IN 47591-1038 (Health Department) | | | | | | | | | | |
| 4 | | Knox County Commissioners 111 Washington Ave Vincennes IN 47591 (Local Official) | | | | | | | | | | |
| 5 | | Mr. Mark Wilson Evansville Courier & Press P.O. Box 268 Evansville IN 47702-0268 (Affected Party) | | | | | | | | | | |
| 6 | | Oaktown Town Council PO Box 150 Oaktown IN 47561 (Local Official) | | | | | | | | | | |
| 7 | | Donald Schuster 6 White Tail Lane Monticello IL 61856 (Consultant) | | | | | | | | | | |
| 8 | | John Blair 800 Adams Ave Evansville IN 47713 (Affected Party) | | | | | | | | | | |
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