

## AIR QUALITY PERMIT

Issued To:	Howell Petroleum Corporation Elk Basin Tensleep Battery No. 2 & Madison Battery No. 9 P.O. Box 1330 Houston, TX 77251-1330	Permit: #3300-00 Application Complete: 03/04/04 Preliminary Determination Issued: 04/13/04 Department's Decision Issued: 05/14/04 Permit Final: 06/02/04 AFS: #0009-0006
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An air quality permit, with conditions, is hereby granted to Howell Petroleum Corporation (Howell), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

### SECTION I: Permitted Facilities

#### A. Permitted Equipment

Permit #3300-00 is issued to Howell for the operation of 2 oil and gas production tank batteries. The batteries are known as the Elk Basin Tensleep Battery No. 2 and the Madison Battery No. 9. A complete list of the permitted equipment is contained in Section I.A of the permit analysis.

#### B. Plant Location

The batteries are located approximately 3.5 miles Northwest of Elk Basin, Wyoming, in Section 35, Township 9 South, Range 23 East, in Carbon County, Montana. The battery's office is located approximately 16 miles North of Powell, Wyoming, on Highway 295.

### SECTION II. Conditions and Limitations

#### A. Emission Control Requirements

1. Howell shall limit the production through the 1,000 barrel (bbl) working oil tank (1-OT) to 292,000 barrels (bbls) during any rolling 12-month time period (ARM 17.8.749).
2. Howell shall limit the production through the 1,000 bbl working oil tank (6-OT) to 164,250 bbls during any rolling 12-month time period (ARM 17.8.749).
3. Howell shall limit the volume of gas exiting the 1,000 bbl bad oil tank (2-BT) to 187,650 standard cubic feet (Scf) during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).
4. Howell shall limit the volume of gas routed to the emergency flare pit (5-EF) to 4.42 million standard cubic feet (MMScf) of gas flaring during any rolling 12-month time period (ARM 17.8.749).
5. Howell shall limit the volume of gas exiting the 300 bbl emergency pop tank (11-PT) to 1.41 MMScf during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

6. Gas venting through the 1,000 bbl bad oil tank (2-BT) and the emergency 300 bbl pop tank (11-PT), and flaring of gas through the emergency flare pit (5-EF) shall only occur during emergency/non-routine operations (ARM 17.8.752).
7. Howell shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed on or before November 23, 1968, that exhibit an opacity of 40% or greater averaged over 6-consecutive minutes (ARM 17.8.304).
8. Howell shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6-consecutive minutes (ARM 17.8.304).
9. Howell shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).
10. Howell shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.8 (ARM 17.8.749).

B. Inspection and Repair Requirements

1. Each calendar month, all fugitive piping components (valves, flanges, pump seals, open-ended lines) shall be inspected for leaks. For purposes of this requirement, detection methods incorporating sight, sound, or smell are acceptable (ARM 17.8.752).
2. Howell shall (ARM 17.8.105 and ARM 17.8.752):
  - a. Make a first attempt at repair for any leak not later than 5 calendar days after the leak is detected; and
  - b. Repair any leak as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in Section II.B.3.
3. Delay of repair of equipment for which a leak has been detected will be allowed if repair is technically infeasible without a source shutdown. Such equipment shall be repaired before the end of the first source shutdown after detection of the leak (ARM 17.8.752).

C. Operational Reporting Requirements

1. Howell shall supply the Department of Environmental Quality (Department) with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis and sources identified in Section I.A of the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Howell shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).
3. Howell shall document, by month, the production of the 1,000 bbl working oil tank (1-OT). By the 25<sup>th</sup> day of each month, Howell shall total the production of the 1,000 bbl working oil tank (1-OT) during the previous 12 months to verify compliance with the limitation in Section II.A.1. A written report of the compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).
4. Howell shall document, by month, the production of the 1,000 bbl working oil tank (6-OT). By the 25<sup>th</sup> day of each month, Howell shall total the production of the 1,000 bbl working oil tank (6-OT) during the previous 12 months to verify compliance with the limitation in Section II.A.2. A written report of the compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).
5. Howell shall document, by month, the volume of gas routed to the 1,000 bbl bad oil tank (2-BT). By the 25<sup>th</sup> day of each month, Howell shall total the amount of gas routed to the 1,000 bbl bad oil tank (2-BT) during the previous 12 months to verify compliance with the limitation in Section II.A.3. A written report of the compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).
6. Howell shall document, by month, the volume of gas routed to the emergency flare pit (5-EF). By the 25<sup>th</sup> day of each month, Howell shall total the volume of gas routed to the emergency flare pit (5-EF) during the previous 12 months to verify compliance with the limitation in Section II.A.4. A written report of the compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).
7. Howell shall document, by month, the volume of gas routed to the 300 bbl emergency pop tank (11-PT). By the 25<sup>th</sup> day of each month, Howell shall total the volume of gas routed to the emergency pop tank (11-PT) during the previous 12 months to verify compliance with the limitation in Section II.A.5. A written report of the compliance verification shall be submitted along with the annual emission inventory (ARM 17.8.749).
8. Howell shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information (ARM 17.8.1204).

D. Recordkeeping Requirements

1. A record of each monthly leak inspection required by Section II.B.1 of this permit shall be kept on file with Howell. Inspection records shall include, at a minimum, the following information (ARM 17.8.749):
  - a. Date of inspection;
  - b. Findings (may indicate no leaks discovered or location, nature, and severity of each leak);
  - c. Leak determination method;
  - d. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 calendar days); and
  - e. Inspector's name and signature.
2. Howell shall maintain a record of the date and the reason that gas was either vented through the 1,000 bbl bad oil tank (2-BT), vented through the emergency 300 bbl pop tank (11-PT), or flared through the emergency flare to demonstrate compliance with Section II.A. 6 (ARM 17.8.749).
3. All records compiled in accordance with this permit must be maintained by Howell as a permanent business record for at least 5 years following the date of the measurement, must be available for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

E. Testing Requirements

1. The Department may require testing (ARM 17.8.105).
2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

SECTION III: General Conditions

- A. Inspection – Howell shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.
- B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Howell fails to appeal as indicated below.
- C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Howell of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

- D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq.*, MCA.
- E. Appeals – Any person or persons jointly or severally adversely affected by the Department’s decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department’s decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department’s decision until conclusion of the hearing and issuance of a final decision by the Board.
- F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.
- G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Howell may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

Permit Analysis  
 Howell Petroleum Corporation  
 Elk Basin Tensleep Battery No. 2 & Madison Battery No. 9  
 Permit #3300-00

I. Introduction/Process Description

Howell Petroleum Corporation (Howell) owns and operates 2 oil and gas production batteries located approximately 3.5 miles Northwest of Elk Basin, Wyoming, in Section 35, Township 9 South, Range 23 East, in Carbon County, Montana. The batteries are known as the Elk Basin Tensleep Battery No. 2 and the Madison Battery No. 9.

Both batteries were constructed prior to November 23, 1968; however, since 1968, new wells were drilled by both previous and current operators, which may have increased the facility's Potential to Emit (PTE) regulated air pollutants by more than 25 tons per year. Howell stated in Permit Application #3300-00 that an accurate assessment of the actual increases caused by the post 1968 facility modifications (drilling of new wells) is difficult to determine due to the number of new wells drilled and the various operators during this time period. Therefore, Howell submitted a permit application to ensure compliance with the Administrative Rules of Montana (ARM) 17.8.743(1)(d).

A. Permitted Equipment

The facility consists of the following equipment:

Source I.D.	Description	Year Constructed	Battery
1-OT	1000-bbl Working Oil Tank	Before 11/23/68	Battery #2
2-BT	1000-bbl Bad Oil Tank	Before 11/23/68	Battery #2
3-HT	1.35 MMBtu/hr Heater Treater	Before 11/23/68	Battery #2
4-HT	2.5 MMBtu/hr Heater Treater	Before 11/23/68	Battery #2
5-EF	Emergency Flare Pit	Before 11/23/68	Battery #2
6-OT	1000-bbl Working Oil Tank	Before 11/23/68	Battery #9
7-BT	1000-bbl Bad Oil Tank	Before 11/23/68	Battery #9
8-HT	1.35 MMBtu/hr Heater Treater	Before 11/23/68	Battery #9
9-HT	1.35 MMBtu/hr Heater Treater	Before 11/23/68	Battery #9
11-PT	300-bbl Pop Tank	Before 11/23/68	Battery #9
12-FE	Fugitive Emissions	N/A	Battery #2 & #9
13-PD	Fugitive Emissions (Pneumatic Devices)	N/A	Battery #2 & #9

\*barrels (bbl)

\*\* Million British thermal units per hour (MMBtu/hr)

B. Source Description

The Elk Basin Tensleep Battery No. 2 and Madison Battery #9 are located on contiguous and adjacent properties within the same facility boundary, both batteries are owned and operated by Howell, and both batteries share the same control equipment (vapor recovery unit). Therefore, in accordance with ARM 17.8.740(6), the two batteries meet the definition of a facility and Howell applied for 1 Air Quality Permit for both batteries.

### Elk Basin Tensleep Battery No. 2

Oil and natural gas from nearby wells is received through a header at this battery and the oil and gas is then routed through the heater treaters. The heater treaters separate the oil and gas. The oil is then routed to a 1000 bbl working tank and the gas is routed to a gas separator to be sent to the Elk Basin Gas Plant, in Wyoming, via pipeline. Any fluids from the gas separator and/or the rejected oil from the lease operated custody transfer (LACT) unit are routed to a 1000 bbl bad oil tank. Water from the treaters is routed to an injection facility for water flood operations. Oil from the storage tanks is sold via LACT units. An electric powered vapor recovery unit captures the vapors from the working tank and the vapors are routed to the Elk Basin Gas Plant via pipeline to be processed. Any pressure relief gas and any vapors from the oil storage tank are routed to the emergency flare and/or vented to the atmosphere through the bad oil tank during emergency/non-routine operations.

### Madison Battery No. 9

Oil and natural gas from nearby wells is received through a header at this battery, and the oil and gas is then routed to a free-water knock out vessel to remove excess water. The oil and gas is then routed through heater treaters to separate the oil and gas. The oil is then routed to a 1000 bbl working tank and the gas is routed to a gas separator to be sent to the Elk Basin Gas Plant via pipeline. Any liquids from the gas separator and/or rejected oil from the LACT unit are routed to a 1000 bbl bad oil tank. Water from the free-water knockout vessel and the treaters is routed to an injection facility for water flood operations. Oil from the storage tanks is sold via LACT units. The same electric powered vapor recovery unit utilized by the Elk Basin Tensleep Battery No. 2 captures the vapors from the working tank and the vapors are routed to the Elk Basin Gas Plant via pipeline to be processed. Any pressure relief gas and any vapors from the oil storage tank are routed to the emergency flare and/or the atmosphere through the 300 bbl pop tank.

## II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

### A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.
3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

Howell shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.
5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM<sub>10</sub>

Howell must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Howell shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.
3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.
4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.316 Incinerators. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any incinerator, particulate matter in excess of 0.10 grains per standard cubic feet (gr/dscf) of dry flue gas, adjusted to 12% carbon dioxide (CO<sub>2</sub>) and calculated as if no auxiliary fuel had been used. Also, no person shall cause or authorize to be discharged into the outdoor atmosphere from any incinerator, emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes. This rule does not apply to the flares at the Howell facility because the emergency/safety flares are exempt from the incinerator definition contained in MCA 75-2-103.
6. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule.
7. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load, or permit the loading of, gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.
8. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS).

40 CFR 60, Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstructions, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978, does not apply because the facility was constructed prior to June 11, 1973. In addition, this subpart does not apply to storage vessels for petroleum or condensate stored, processed, or treated at production facilities prior to custody transfer.

40 CFR 60 Subpart Ka – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and prior to July 23, 1984, does not apply because the tanks were constructed prior to May 18, 1978. In addition, each petroleum liquid storage vessel with a capacity of less than 420,000 gallons used for petroleum or condensate stored, processed, or treated prior to custody transfer is exempt from the requirements of this subpart.

40 CFR 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, is not applicable to any of the tanks at the facility because the tanks were constructed prior to July 23, 1984. In addition, this subpart does not apply to vessels with a design capacity less than or equal to 1,589,874 cubic meters (M<sup>3</sup>) used for petroleum or condensate stored, processed, or treated prior to custody transfer.

9. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the

applicable provisions of 40 CFR Part 63, Subpart HH. In order for an oil and natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by Howell, the Elk Basin Tensleep Battery #2 & Madison Battery #9 facility is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Howell submitted the appropriate permit application fee for the current permit action.
2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.
2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. The Howell facility was constructed and operating prior to November 23, 1968. However, the drilling of new wells that occurred after November 23, 1968, represents a change in the method of operation (higher throughput through the production tanks) that increased the facility's PTE Volatile Organic Compounds (VOC) by more than 25 tons per year. Therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.
4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.
5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. Howell submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. Howell submitted an affidavit of publication of public notice for the December 18, 2003, issue of the *Carbon County News*, a newspaper of general circulation in the Town of Red Lodge in Carbon County, as proof of compliance with the public notice requirements.
6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility, or emitting unit, subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.
7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The BACT analysis is discussed in Section III of this permit analysis.
8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.
9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Howell of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.*
10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.
11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.
12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.
14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.
2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:
  - a. PTE > 100 tons/year of any pollutant;
  - b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or
  - c. PTE > 70 tons/year of PM<sub>10</sub> in a serious PM<sub>10</sub> nonattainment area.
2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3300-00 for Howell, the following conclusions were made:
  - a. The facility's PTE is less than 100 tons/year for any pollutant.
  - b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

- c. This source is not located in a serious PM<sub>10</sub> nonattainment area.
- d. This facility is not subject to any current NSPS.
- e. This facility is not subject to any current NESHAP standards.
- f. This source is not a Title IV affected source, nor a solid waste combustion unit.
- g. This source is not an EPA designated Title V source.
- h. As allowed by ARM 17.8.1204(3), the Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE.
  - i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's PTE, does not require the source to obtain an air quality operating permit.
  - ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

Howell's Elk Basin Tensleep Battery No. 2 and Madison Battery No. 9 Facility does not require a Title V Operating Permit because federally enforceable limitations have been established in the Montana Air Quality Permit that limit the source's PTE VOCs below the major source threshold. The Department placed annual reporting requirements contained in Sections II.A.5 and II.A.7 of the permit to track the facility's federally enforceable limitations that limit the facility's PTE VOC emissions below major source levels.

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness.

Howell shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204 (3)(b). The annual certification shall comply with requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information.

### III. BACT Determination

A BACT determination is required for each new or modified source. Howell shall install on the new or modified source the maximum air pollution control capability that is technically feasible and economically practical, except that BACT shall be utilized. All of the sources at the Howell facility are considered existing emitting units; that is, all of the sources were in existence and operating, or capable of being operated, prior to March 16, 1979. However, the drilling of new wells that occurred after November 23, 1968, represents a change in the method of operation (higher throughput through the production tanks) that increased the facility's PTE by more than 25 tons per year. Therefore, the facility is subject to BACT.

VOC is the pollutant emitted in greatest quantity from the Howell facility, as well as from typical oil and gas field processing operations. The majority of VOC emissions from oil and gas field processing operations are typically generated from the production tanks and if present, truck loading operations.

A. 1,000 bbl Working Oil Tanks (1-OT and 6-OT)

Available control techniques to reduce VOC/HAP emissions from working oil tanks at oil and natural gas field processing operations include vapor recovery, flares, incinerators, internal floating roofs, carbon adsorption, and scrubbers. All of the previously mentioned VOC/HAP control technologies have very similar control efficiencies, between 98 and 99% depending on the design of the system. Flares are typically used as the control method for reducing VOC/HAP emissions from oil and gas field processing operations. However, in many instances, oil and gas field processing operations install VOC/HAP control equipment that typically exceeds BACT requirements because the VOC/HAP emissions are actually generated by reducing “saleable gas” or product that can be sent to a gas processing plant via pipeline, thereby generating revenue for the company.

Howell proposed to control VOC/HAP emissions from each of the two 1,000 bbl working oil tanks with a vapor recovery unit. Because all of the control technologies have a maximum control efficiency of 98-99%, the Department concurs with Howell’s BACT proposal and determined that vapor recovery to a pipeline constitutes BACT for VOC and HAP emissions from the two working oil tanks.

B. 1,000 bbl Bad Oil Tank (2-BT)

Emissions from the 1,000 bbl bad oil tank include working losses (0.05 tons per year), emergency venting (2.05 tons/year), and flashing losses (15.97 tons/year). Available control techniques to reduce VOC/HAP emissions from bad oil tanks at oil and natural gas field processing operations include vapor recovery, flares, incinerators, internal floating roofs, carbon adsorption, and scrubbers. All of the previously mentioned VOC/HAP control technologies have very similar control efficiencies, between 98 and 99% depending on the design of the system. No additional controls typically constitute BACT for reducing VOC/HAP emissions from bad oil tanks at oil and gas field processing operations due to the relatively small amount of emissions generated by typical bad oil tanks. However, Howell’s 1,000 bbl bad oil tank also functions as an emergency pop tank; therefore, emissions from Howell’s 1,000 bbl bad oil tank are comparatively larger than typical bad oil tanks.

Howell proposed no additional controls and venting only during emergency/non-routine operations to control VOC/HAP emissions from the 1,000 bbl bad oil tank. Because the working losses (0.5 tons per year) are the only routine emissions from the Howell facility, and because the emergency venting (2.05 tons per year) and the flashing losses (15.97 tons per year) only occur during facility upsets, the Department concurs with Howell’s proposal and determined that no additional controls and venting only during emergency/non-routine operations constitutes BACT for VOC and HAP emissions from the 1,000 bbl bad oil tank. In addition, at approximately 18.0 tons per year, add on control would be cost prohibitive.

C. 1.35 MMBtu/hr Heater Treaters (3-HT, 8HT, and 9HT)

Emissions from each of the 1.35 MMBtu/hr heater treaters include PM (0.09 tons per year), NO<sub>x</sub> (1.14 tons per year), CO (0.96 tons per year), VOC (0.06 tons per year), SO<sub>x</sub> (0.01 tons per year), and HAPs (0.02 tons per year). Howell proposed no additional controls as BACT for

controlling emissions from each of the 1.35 MMBtu/hr heater treaters. Due to the very small amounts of pollutants emitted by each of the 1.35 MMBtu/hr heater treaters, any add on control would be cost prohibitive. Therefore, the Department concurs with Howell's BACT proposal and determined that no additional controls will constitute BACT for controlling emissions from each of the 1.35 MMBtu/hr heater treaters.

D. 2.5 MMBtu/hr Heater Treater (4-HT)

Emissions from the 2.5 MMBtu/hr heater treater include PM (0.16 tons per year), NO<sub>x</sub> (2.11 tons per year), CO (1.77 tons per year), VOC (0.12 tons per year), SO<sub>x</sub> (0.01 tons per year), and HAPs (0.04 tons per year). Howell proposed no additional controls as BACT for controlling emissions from the 2.5 MMBtu/hr heater treater. Due to the very small amounts of pollutants emitted by the 2.5 MMBtu/hr heater treater, any add on control would be cost prohibitive. Therefore, the Department concurs with Howell's BACT proposal and determined that no additional controls will constitute BACT for controlling emissions from the 2.5 MMBtu/hr heater treater.

E. Emergency Flare Pit (5-EF)

Emissions from the emergency flare pit include PM (0.02 tons per year), NO<sub>x</sub> (0.34 tons per year), CO (0.68 tons per year), VOC (0.96 tons per year), and SO<sub>x</sub> (48.73 tons per year) (0.04 tons per year). No additional controls typically constitute BACT for reducing emissions from emergency flares because the flares only operate during emergency/non-routine operations.

Howell proposed no additional controls and using the emergency flare pit only during emergency/non-routine operations to control emissions from the emergency flare pit. Because the emergency flare pit only operates during facility upsets, the Department concurs with Howell's proposal and determined that no additional controls and using the emergency flare pit only during emergency/non-routine operations constitutes BACT for controlling emissions from the emergency flare pit.

F. 1,000 bbl Bad Oil Tank (7-BT)

Available control techniques to reduce VOC/HAP emissions from bad oil tanks at oil and natural gas field processing operations include vapor recovery, flares, incinerators, internal floating roofs, carbon adsorption, and scrubbers. All of the previously mentioned VOC/HAP control technologies have very similar control efficiencies, between 98 and 99% depending on the design of the system. No additional controls typically constitute BACT for reducing VOC/HAP emissions from bad oil tanks at oil and gas field processing operations due to the relatively small amount of emissions generated by typical bad oil tanks.

Howell proposed no additional controls to control VOC/HAP emissions from the 1,000 bbl bad oil tank. Because the working losses (0.50 tons per year) are the only emissions from the bad oil tank, any add on control would be cost prohibitive. Therefore, the Department concurs with Howell's proposal and determined that no additional controls constitutes BACT for controlling VOC and HAP emissions from the 1,000 bbl bad oil tank.

G. 300 bbl Pop Tank

Emissions from the 300 bbl pop tank include VOC (51.01 tons per year) and HAPs (0.03 tons per year). Available control techniques to reduce VOC/HAP emissions from emergency pop tanks at oil and natural gas field processing operations include vapor recovery, flares,

incinerators, carbon adsorption, and scrubbers. All of the previously mentioned VOC/HAP control technologies have very similar control efficiencies, between 98 and 99% depending on the design of the system. No additional controls typically constitute BACT for reducing VOC/HAP emissions from pop tanks at oil and gas field processing operations because the tanks are only operated during emergency/non-routine operations.

Howell proposed no additional controls and venting only during emergency/non-routine operations to control VOC/HAP emissions from the 300 bbl pop tank. Because the 300 bbl pop tank only operates during facility upsets, the Department concurs with Howell's proposal and determined that no additional controls and venting only during emergency/non-routine operations constitutes BACT for VOC/HAP emissions from the 300 bbl pop tank.

#### H. Fugitive Emissions (12-FE and 13-PD)

Fugitive emissions include VOC (7.14 tons per year) and HAPs (0.74 tons per year). Howell proposed no additional controls as BACT for fugitive VOC and HAP emissions. However, the Department does not agree that no additional control is appropriate. Based on BACT determinations for similar sources, the Department determined that inspecting all fugitive components for leaks, on a monthly basis, shall constitute BACT for the Howell facility. A first attempt at correcting a leak shall be conducted no later than 5 calendar days after the leak is detected. Leaks shall be repaired as soon as practicable, but no later than 15 calendar days after detection. Leaks that are technically infeasible to fix without a source shutdown shall be repaired before the end of the first source shutdown after detection of the leak.

The control options selected have controls and control costs similar to other recently permitted similar sources and are capable of complying with the appropriate emission standards.

IV. Emission Inventory

Tons/year								
Source I.D.#	Source	PM	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>	HAPs	H <sub>2</sub> S
1-OT	1000-bbl Working Oil Tank	-----	-----	-----	6.75	-----	0.01	0.90
2-BT	1000-bbl Bad Oil Tank	-----	-----	-----	18.07	-----	0.02	3.14
3-HT	1.35 MMBtu/hr Heater Treater	0.09	1.14	0.96	0.06	0.01	0.02	-----
4-HT	2.5 MMBtu/hr Heater Treater	0.16	2.11	1.77	0.12	0.01	0.04	-----
5-EF	Emergency Flare Pit	0.02	0.34	0.68	0.96	48.73	0.00	0.37
6-OT	1000-bbl Working Oil Tank	-----	-----	-----	12.33	-----	0.01	0.19
7-BT	1000-bbl Bad Oil Tank	-----	-----	-----	0.50	-----	0.00	-----
8-HT	1.35 MMBtu/hr Heater Treater	0.09	1.14	0.96	0.06	0.01	0.02	-----
9-HT	1.35 MMBtu/hr Heater Treater	0.09	1.14	0.96	0.06	0.01	0.02	-----
11-PT	300-bbl Pop Tank	-----	-----	-----	51.01	-----	0.03	2.74
12-FE	Fugitive Emissions (Piping)	-----	-----	-----	6.66	-----	0.74	0.57
13-PD	Fugitive Emissions (Pneumatic Devices)	-----	-----	-----	0.48	-----	0.00	-----
<b>Totals</b>		0.45	5.87	5.33	97.06	48.77	0.91	7.91

**1,000-bbl Working Oil Tank (1-OT)**

Permit Limitation – 800 bbl/day

(Requested by Company)

Control efficiency estimated to be 98% for Vapor Recovery Unit

(Company Information)

VOC Emissions:

Standing and working losses

VOC Emission Rate: 7,063.06 lb/yr (EPA Tanks Emission Estimation Program v. 4.0)  
 7,063.06 lb/yr \* 0.0005 ton/lb \* (1.0-0.98) = 0.07 ton/yr

Flashing losses

VOC Emission Rate: 76.22 lb/hr (HYSIS Flash Emission Estimation Program v.3.1)  
 76.22 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 6.68 ton/yr

Total losses = 0.07 ton/yr + 6.68 ton/yr = 6.75 ton/yr

HAP Emissions:

Standing and working losses

HAP Emission Rate: 0.001 lb/hr (HYSIS Flash Emission Estimation Program v.3.1)  
 0.001 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 0.0001

Flashing losses = 0.07 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 0.0061 ton/yr

Total losses = 0.0001 ton/yr + 0.0061 ton/yr = 0.01 ton/yr

H<sub>2</sub>S Emissions

H<sub>2</sub>S Emission Rate: 10.33 lb/hr (HYSIS Flash Emission Estimation Program V.3.1)  
 10.33 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 0.90

**1,000-bbl Bad Oil Tank (2-BT)**

VOC Emissions:

Standing and working losses

VOC Emission Rate: 1,005.23 lb/yr (EPA Tanks Emission Estimation Program v. 4.0)  
1,005.23 lb/yr \* 0.0005 ton/lb = 0.50 ton/yr

Emergency Venting

Gas Volume: 10000 Scf/day or 417 Scf/hr (Company Information)  
Hours of Operation: 450 hr/yr (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 32.49 lb/lb-mole (Gas Analysis)  
VOC Fraction: 0.2546 (Gas Analysis)

Calculations: 417 Scf/hr \* 1/379 Scf/lb-mole \* 32.49 lb/lb-mole \* 0.2546 VOC fraction = 9.10 lb/hr  
9.10 lb/hr \* 450 hr/yr \* 0.0005 ton/lb = 2.05 ton/year

Flashing losses

Gas Volume: 24,000 Scf/day or 1,000 Scf/hr (Company Information)  
Hours of Operation: 450 hr/yr (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 42.62 lb/lb-mole (HYSIS Flash Emission Estimation Program v.3.1)  
VOC Fraction: 0.6310 (HYSIS Flash Emission Estimation Program v.3.1)

Calculations: 1,000 Scf/hr \* 1/379 Scf/lb-mole \* 42.62 lb/lb-mole \* 0.6310 VOC fraction = 70.96 lb/hr  
70.96 lb/hr \* 450 hr/yr \* 0.0005 ton/lb = 15.97 ton/yr

Total losses = 0.05 ton/yr + 0.2.05 ton/yr + 15.97 = 18.07

HAP Emissions:

Standing and working losses

HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

Emergency Venting

HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

Flashing losses

Gas Volume: 24,000 Scf/day or 1,000 Scf/hr (Company Information)  
Hours of Operation: 450 hr/yr (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 42.62 lb/lb-mole (HYSIS Flash Emission Estimation Program v.3.1)  
HAP Fraction: 0.0007 (HYSIS Flash Emission Estimation Program v.3.1)

Calculations: 1,000 Scf/hr \* 1/379 Scf/lb-mole \* 42.62 lb/lb-mole \* 0.0007 HAP fraction = 0.08 lb/hr  
0.08 lb/hr \* 450 hr/yr \* 0.0005 ton/lb = 0.02

Total losses = 0.00 ton/yr + 0.00 ton/yr + 0.02 ton/yr = 0.02 ton/yr

H<sub>2</sub>S Emissions

Emergency Venting

H<sub>2</sub>S Emission Rate: 5.55 lb/hr (Gas Analysis)  
5.55 lb/hr \* 450 hr/yr \* 0.0005 ton/lb = 1.25 ton /yr

Flashing losses

H<sub>2</sub>S Emission Rate 8.38 lb/hr (HYSIS Flash Emission Estimation Program V.3.1)  
8.38 lb/hr \* 450 hr/yr \* 0.0005 ton/lb = 1.89 ton /yr

Total Losses = 1.25 ton/yr + 1.89 ton/yr = 3.14 ton/yr

**(3) 1.35 MMBtu/hr Heater Treaters (3-HT, 8-HT, and 9-HT)**

Fuel Consumption: 1.35 MMBtu/hr  
Fuel Heating Value: 520 MMBtu/MMScf

PM Emissions (PM emissions include PM<sub>10</sub> and PM<sub>2.5</sub>):

Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)  
Calculations:  $7.6 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.02 \text{ lb/hr}$   
 $0.02 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.09 \text{ ton/yr}$

NO<sub>x</sub> Emissions:

Emission Factor: 100 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $100 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.26 \text{ lb/hr}$   
 $0.26 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 1.14 \text{ ton/yr}$

CO Emissions:

Emission Factor: 84 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $84 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.22 \text{ lb/hr}$   
 $0.22 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.96 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)  
Calculations:  $5.5 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.01 \text{ lb/hr}$   
 $0.01 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.06 \text{ ton/yr}$

SO<sub>2</sub> Emissions:

Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $0.6 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.0016 \text{ lb/hr}$   
 $0.0016 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.01 \text{ ton/yr}$

HAP Emissions:

Emission Factor: 1.88 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98 (\*sum of all HAPs listed))  
Calculations:  $1.88 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 1.35 \text{ MMBtu/hr} = 0.0049 \text{ lb/hr}$   
 $0.0049 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.02 \text{ ton/yr}$

**2.5 MMBtu/hr Heater Treaters (4-HT)**

Fuel Consumption: 2.5 MMBtu/hr  
Fuel Heating Value: 520 MMBtu/MMScf

PM Emissions (PM emissions include PM<sub>10</sub> and PM<sub>2.5</sub>):

Emission Factor: 7.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)  
Calculations:  $7.6 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 2.5 \text{ MMBtu/hr} = 0.04 \text{ lb/hr}$   
 $0.04 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.16 \text{ ton/yr}$

NO<sub>x</sub> Emissions:

Emission Factor: 100 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $100 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 2.5 \text{ MMBtu/hr} = 0.48 \text{ lb/hr}$   
 $0.48 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.11 \text{ ton/yr}$

CO Emissions:

Emission Factor: 84 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations:  $84 \text{ lb/MMScf} * 1 \text{ MMScf}/520 \text{ MMBtu} * 2.5 \text{ MMBtu/hr} = 0.40 \text{ lb/hr}$   
 $0.40 \text{ lb/hr} * 8760 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 1.77 \text{ ton/yr}$

VOC Emissions:

Emission Factor: 5.5 lb/MMScf (AP-42, Chapter 1, Table 1.4-2, 7/98)  
Calculations: 5.5 lb/MMScf \* 1 MMScf/520 MMBtu \* 2.5 MMBtu/hr = 0.03 lb/hr  
0.03 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.12 ton/yr

SO<sub>2</sub> Emissions:

Emission Factor: 0.6 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98)  
Calculations: 0.6 lb/MMScf \* 1 MMScf/520 MMBtu \* 2.5 MMBtu/hr = 0.0029 lb/hr  
0.0029 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.01 ton/yr

HAP Emissions:

Emission Factor: 1.88 lb/MMScf (AP-42, Chapter 1, Table 1.4-1, 7/98 (\*sum of all HAPs listed))  
Calculations: 1.88 lb/MMScf \* 1 MMScf/520 MMBtu \* 2.5 MMBtu/hr = 0.009 lb/hr  
0.009 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.04 ton/yr

**Emergency Flare Pit (5-EF)**

Maximum Gas Rate: 785 MScf/day or 32,708 Scf/hr (Company Information)  
Hours of Operation: 135 hr/yr (Requested to limit SO<sub>2</sub> below modeling threshold)  
Fuel Gas Heating Value: 1,140 Btu/Scf or 36.5574 MMBtu/hr (Company Information)  
Molecular Weight: 32.49 lb/lb-mole (Gas Analysis)  
VOC Fraction: 0.2546 (Gas Analysis)  
Efficiency: 98% (AP-42, Chapter 13)  
Gas Usage (Combusted): 32,708 Scf/hr \* 0.98 = 32,054 Scf/hr  
Gas not combusted: 32,708 Scf/hr \* 0.02 = 654.16 Scf/hr

Combusted Gas

PM Emissions (Soot)

Emission Factor: 0.000011 lb/Scf (AP-42, Chapter 13, Table5-1, 1/95)  
Calculations: 0.000011 lb/Scf \* 32,054 Scf/hr \* 135 hr/yr \* 0.0005 ton/lb = 0.02 ton/yr

NO<sub>x</sub> Emissions

Emission Factor: 0.138 lb/MMBtu (Chemical Manufacturers Association (CMA), Flare Study)  
Calculations: 0.138 lb/MMBtu \* 36.5574 MMBtu/hr \* 135 hr/yr \* 0.0005 ton/lb = 0.34 ton/yr

CO Emissions

Emission Factor: 0.2755 lb/MMBtu (CMA Flare Study)  
Calculations: 0.2755 lb/MMBtu \* 36.5574 MMBtu/hr \* 135 hr/yr \* 0.0005 ton/lb = 0.68 ton/yr

SO<sub>x</sub> Emissions

Emission Factor: 0.02252 lb/Scf (Company Information (based on 15.2522 weight % H<sub>2</sub>S))  
0.02252 lb/Scf \* 32,054 Scf/hr \* 135 hr/yr \* 0.0005 ton/lb = 48.73 ton/yr

Non-combusted Gas

VOC Emissions

Calculations: 654.16 Scf/hr \* 1/379 Scf/lb-mole \* 32.49 lb/lb-mole \* 0.2546 VOC fraction = 14.28 lb/hr  
14.28 lb/hr \* 135 hr/yr \* 0.0005 ton/lb = 0.96 ton/year

HAP Emissions

HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

H<sub>2</sub>S Emissions

H<sub>2</sub>S Emission Rate: 5.55 lb/hr (Gas Analysis)  
5.55 lb/hr \* 135 hr/yr \* 0.0005 ton/lb = 0.37 ton /yr

**1,000-bbl Working Oil Tank (6-OT)**

Permit Limitation – 450 bbl/day (Requested by Company)  
Control efficiency estimated to be 98% for Vapor Recovery Unit (Company Information)

VOC Emissions:

Standing and working losses  
VOC Emission Rate: 5,313.28 lb/yr (EPA Tanks Emission Estimation Program v. 4.0)  
5,313.28 lb/yr \* 0.0005 ton/lb \* (1.0-0.98) = 0.05 ton/yr

Flashing losses  
VOC Emission Rate: 140.20 lb/hr (HYSIS Flash Emission Estimation Program v.3.1)  
140.20 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 12.28 ton/yr

Total losses = 0.05 ton/yr + 12.28 ton/yr = 12.33 ton/yr

HAP Emissions:

Standing and working losses  
HAP Emission Rate: 0.001 lb/hr (HYSIS Flash Emission Estimation Program v.3.1)  
0.001 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 0.0001

Flashing losses  
HAP Emission Rate: 0.14 lb/hr (HYSIS Flash Emission Estimation Program v.3.1)  
0.14 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 – 0.98) = 0.0123 ton/yr

Total losses = 0.0001 + 0.0123 = 0.0124

H<sub>2</sub>S Emissions

H<sub>2</sub>S Emission Rate: 2.18 lb/hr (HYSIS Flash Emission Estimation Program V.3.1)  
2.18 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb \* (1.0 - .98) = 0.19 ton/yr

**1,000-bbl Bad Oil Tank (7-BT)**

VOC Emissions:

Standing and working losses  
VOC Emission Rate: 1,005.23 lb/yr (EPA Tanks Emission Estimation Program v. 4.0)  
1,005.23 lb/yr \* 0.0005 ton/lb = 0.50

Flashing losses: No flash emissions result from this tank

Total losses = 0.05 ton/yr + 0.00 ton/yr = 0.50

HAP Emissions:

Standing and working losses  
HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

**300-bbl Emergency Pop Tank (11-PT)**

VOC Emissions:

Standing and Working Losses  
VOC Emission Rate: 1,005.23 lb/yr (EPA Tanks Emission Estimation Program v. 4.0)  
1,005.23 lb/yr \* 0.0005 ton/lb = 0.50 ton/yr

### Emergency Venting

Gas Volume: 75,000 Scf/day or 3,125 Scf/hr (Company Information)  
Hours of Operation: 450 hours per year (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 29.22 lb/lb-mole (Gas Analysis)  
VOC Fraction: 0.3643 (Gas Analysis)

Calculations:  $3,125 \text{ Scf/hr} * 1/379 \text{ Scf/lb-mole} * 29.22 \text{ lb/lb-mole} * 0.3643 \text{ VOC fraction} = 87.77 \text{ lb/hr}$   
 $87.77 \text{ lb/hr} * 450 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 19.75 \text{ ton/year}$

### Flashing Losses

Gas Volume: 40,000 Scf/day or 1,667 Scf/hr (Company Information)  
Hours of Operation: 450 hr/yr (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 43.57 lb/lb-mole (HYSIS Flash Emission Estimation Program v.3.1)  
VOC Fraction: 0.7133 (HYSIS Flash Emission Estimation Program v.3.1)

Calculations:  $1,667 \text{ Scf/hr} * 1/379 \text{ Scf/lb-mole} * 43.57 \text{ lb/lb-mole} * 0.7133 \text{ VOC fraction} = 136.70 \text{ lb/hr}$   
 $136.70 \text{ lb/hr} * 450 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 30.76$

Total losses = 0.50 + 19.75 ton/yr + 30.76 ton/yr = 51.01 ton/yr

### HAP Emissions:

#### Standing and working losses

HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

#### Emergency Venting

HAP Emission Rate: 0.00 lb/yr (Gas Analysis)

#### Flashing losses

Gas Volume: 40,000 Scf/day or 1,667 Scf/hr (Company Information)  
Hours of Operation: 450 hr/yr (Requested to limit VOC below 100 ton/yr)  
Molecular Weight: 43.57 lb/lb-mole (HYSIS Flash Emission Estimation Program v.3.1)  
VOC Fraction: 0.0007 (HYSIS Flash Emission Estimation Program v.3.1)

Calculations:  $1,667 \text{ Scf/hr} * 1/379 \text{ Scf/lb-mole} * 42.62 \text{ lb/lb-mole} * 0.0007 \text{ HAP fraction} = 0.13 \text{ lb/hr}$   
 $0.13 \text{ lb/hr} * 450 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.03$

Total losses = 0.00 ton/yr + 0.00 ton/yr + 0.03 ton/yr = 0.03

### H<sub>2</sub>S Emissions

#### Emergency Venting

H<sub>2</sub>S Emission Rate: 10.29 lb/hr (Gas Analysis)  
 $10.29 \text{ lb/hr} * 450 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 2.32 \text{ ton/yr}$

#### Flashing losses

H<sub>2</sub>S Emission Rate: 1.85 lb/hr (HYSIS Flash Emission Estimation Program V.3.1)  
 $1.85 \text{ lb/hr} * 450 \text{ hr/yr} * 0.0005 \text{ ton/lb} = 0.42 \text{ ton/yr}$

Total Losses = 2.32 ton/yr + 0.42 ton/yr = 2.74 ton/yr

## Fugitive Emissions – Piping (12-FE)

### VOC Emissions

Basis for Emission Factors: EPA Protocol for Equipment Leak Emission Estimates, November 1995 (EPA-453/R-95-017)

Connector (Oil): 241 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.000210 kg/hr - component or 0.0111 lb/day - component  
Calculation: 241 components \* 0.0111 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.49 ton/yr

Connector (Gas): 232 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0002 kg/hr - component or 0.0106 lb/day - component  
Calculation: 232 components \* 0.0106 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.45 ton/yr

Total connector emissions (Oil & gas) = 0.49 ton/yr + 0.45 ton/yr = 0.94 ton/yr

Flange (Oil): 99 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.00011 kg/hr - component or 0.0058 lb/day - component  
Calculation: 99 components \* 0.0058 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.11 ton/yr

Flange (Gas): 38 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.00039 kg/hr - component or 0.0206 lb/day - component  
Calculation: 38 components \* 0.0206 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.14 ton/yr

Total flange emissions (Oil & gas) = 0.11 ton/yr + 0.14 ton/yr = 0.25 ton/yr

Open-Ended Lines (Oil): 9 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0014 kg/hr - component or 0.0741 lb/day - component  
Calculation: 9 components \* 0.0741 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.12 ton/yr

Open-Ended Lines (Gas): 8 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.002 kg/hr - component or 0.1058 lb/day - component  
Calculation: 8 components \* 0.1058 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.16 ton/yr

Total open-ended line emissions (Oil & gas) = 0.12 ton/yr + 0.16 ton/yr = 0.28 ton/yr

Pumps (Oil): 3 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.013 kg/hr - component or 0.6878 lb/day - component  
Calculation: 3 components \* 0.6878 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.38 ton/yr

Pumps (Gas): 0 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0024 kg/hr - component or 0.127 lb/day - component  
Calculation: 0 components \* 0.127 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.00 ton/yr

Total pump emissions (Oil & gas) = 0.38 ton/yr + 0.00 ton/yr = 0.38 ton/yr

Valves (Oil): 80 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0025 kg/hr - component or 0.1323 lb/day - component  
Calculation: 80 components \* 0.1323 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 1.93 ton/yr

Valves (Gas): 50 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0045 kg/hr - component or 0.2381 lb/day - component  
Calculation: 50 components \* 0.2381 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 2.17 ton/yr

Total valve emissions (Oil & gas) = 1.93 ton/yr + 2.17 ton/yr = 4.10 ton/yr

Others (Oil): 4 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0075 kg/hr - component or 0.3968 lb/day - component  
Calculation: 4 components \* 0.3968 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.29 ton/yr

Others (Gas): 5 components in light oil service ( $\geq 20$  API Gravity)  
Emission Factor: 0.0088 kg/hr - component or 0.4656 lb/day - component  
Calculation: 5 components \* 0.4656 lb/day-component \* 365 day/yr \* 0.0005 ton/lb = 0.42 ton/yr

Total other emissions (Oil & gas) = 0.29 ton/yr + 0.42 ton/yr = 0.71 ton/yr

Total fugitive emissions – piping (12-FE) = 0.94 ton/yr + 0.25 ton/yr + 0.28 ton/yr + 0.38 ton/yr +  
4.10 ton/yr + 0.71 ton/yr = 6.66 ton/yr

HAP Emissions

Basis for Emission Factors: EPA Protocol for Equipment Leak Emission Estimates, November 1995 (EPA-453/R-95-017)

HAP	Speciation Factor (% HAP in vapor phase)	VOC Emissions (ton/yr)	Control Efficiency (%)	HAP Emissions (ton/yr)
Benzene	0.0054	6.66	0	0.0360
Toluene	0.0559	6.66	0	0.3723
Ethylbenzene	0.0073	6.66	0	0.0486
Xylene	0.0089	6.66	0	0.0593
Tolulene	0.0303	6.66	0	0.2218
Total HAPs from fugitives				0.7380 ton/yr

H<sub>2</sub>S Emissions

Calculation: 0.13 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.57 ton/yr (HYSIS Flash Emission Estimation Program V.3.1)

**Fugitive Emissions – Pneumatic Devices (13-PD)**

VOC Emissions

Fuel Consumption Rate: 0.2 Scf/min or 12 Scf/hr (Company Information (EPA Estimate))  
 Fuel Gas MW: 24.84 lb/lb-mole  
 # of Pneumatic Devices: 13  
 VOC Weight %: 0.0109

Weight % of VOC based on analysis of the fuel gas from the Elk Basin Gas Plant

Calculation: 12 Scf/hr \* lb-mole/379 Scf \* 24.84 lb/lb-mole \* 0.0109 \* 13 = 0.11 lb/hr  
 0.11 lb/hr \* 8760 hr/yr \* 0.0005 ton/lb = 0.48 ton/yr

Hap Emissions

0 % Haps based on analysis of the fuel gas from the Elk Basin Gas Plant

V. Existing Air Quality

The Howell facility is located in eastern Montana in a sparsely populated area with generally very good ventilation throughout the year. The legal description of the facility is Section 35, Township 9 South, Range 23 East, in Carbon County, Montana. Carbon County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The Department determined, based on the relatively small amount of emissions and the existing air quality in the area, that the impact from this permitting action will be minor. The Department believes the Howell facility will not cause or contribute to a violation of any ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Permitting and Compliance Division**  
**Air Resources Management Bureau**  
**P.O. Box 200901, Helena, Montana 59620**  
**(406) 444-3490**

**FINAL ENVIRONMENTAL ASSESSMENT (EA)**

*Issued To:* Howell Petroleum Corporation  
Elk Basin Tensleep Battery No. 2  
& Madison Battery No. 9  
P.O. Box 1330  
Houston, TX 77251-1330

*Air Quality Permit Number:* 3300-00

*Preliminary Determination Issued:* April 13, 2004

*Department Decision Issued:* May 14, 2004

*Permit Final:* June 2, 2004

1. *Legal Description of Site:* Howell's Elk Basin Tensleep Battery No. 2 & Madison Battery No. 9 Facility is located approximately 3.5 miles Northwest of Elk Basin, Wyoming, in Section 35, Township 9 South, Range 23 East, in Carbon County, Montana.
2. *Description of Project:* Both batteries were constructed prior to November 23, 1968; however, since 1968, new wells were drilled by both previous and current operators, which may have increased the facility's PTE regulated air pollutants by more than 25 tons per year. Howell stated in Permit Application #3300-00 that an accurate assessment of the actual increases caused by the post 1968 facility modifications (drilling of new wells) is difficult to determine due to the number of new wells drilled and the various operators during this time period. Therefore, Howell submitted a permit application to ensure compliance with ARM 17.8.743(1)(d).
3. *Objectives of Project:* The proposed project would allow Howell to continue to generate business and revenue for the company by allowing them to continue to extract crude oil from the oil field and transport the oil through an existing pipeline.
4. *Alternatives Considered:* In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Howell demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.
5. *A Listing of Mitigation, Stipulations, and Other Controls:* A list of enforceable conditions, including a BACT analysis discussion, would be included in Permit #3300-00.
6. *Regulatory Effects on Private Property:* The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			√			Yes
B	Water Quality, Quantity, and Distribution			√			Yes
C	Geology and Soil Quality, Stability and Moisture			√			Yes
D	Vegetation Cover, Quantity, and Quality			√			Yes
E	Aesthetics				√		Yes
F	Air Quality			√			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			√			Yes
H	Demands on Environmental Resource of Water, Air and Energy			√			Yes
I	Historical and Archaeological Sites			√			Yes
J	Cumulative and Secondary Impacts			√			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic life and Habitats

The facility is an existing facility and the proposed project would not involve additional land disturbance. Therefore, the proposed project would not have any impacts on terrestrial and aquatic life and habitats from facility construction because any impacts associated with facility construction would already have been realized (construction of concrete pads, the pipeline, etc.).

Impacts would be expected on terrestrial and aquatic life and habitats from facility operation because the facility would continue to be a source of air pollution. The facility would continue to produce air emissions and corresponding deposition of pollutants would continue to occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of the pollutants and the atmosphere and due to conditions that would be included in Permit #3300-00.

Overall, any impacts on terrestrial and aquatic life and habitats associated with the proposed project would be minor.

B. Water Quality, Quantity and Distribution

The facility is an existing facility and the proposed project would not involve additional land disturbance. Therefore, the proposed project would not have any impacts on water quality, quantity, and distribution from facility construction because any impacts associated with facility construction would already have been realized (construction of concrete pads, the pipeline, etc.).

Impacts would be expected on water quality, quantity, and distribution from facility operation because the facility would continue to be a source of air pollution. The nearest surface water is Silver Tip Creek, which is approximately 1 mile from the facility. The facility would continue

to produce air emissions and corresponding deposition of pollutants would continue to occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of the pollutants and the atmosphere and due to conditions that would be included in Permit #3300-00.

In addition, impacts to water quality, quantity, and distribution would be expected because ground water that is commingled with the oil is extracted from the ground. However, any impacts associated with the removal of ground water would be minor due to the small amount of water that is typically removed as part of the oil extraction process. Further, impacts to water quality, quantity, and distribution would be expected because Permit #3300-00 would require Howell to use water and/or chemical dust suppressant to control fugitive dust emissions from roads and the general facility property. However, any impacts associated with using water to control fugitive dust would be minor due to the nature of the industry. Typically, these facilities do not require daily activities, which would reduce the amount of dust that would be generated by daily activity at the facility. In addition, any impacts to water quantity and distribution associated with using water for dust suppression would be minimized by utilizing the ground water that is removed as part of the oil extraction process for dust suppression application.

Overall, any impacts on water quality, quantity, and distribution associated with the proposed project would be minor.

#### C. Geology and Soil Quality, Stability and Moisture

The facility is an existing facility and the proposed project would not involve additional land disturbance. Therefore, the proposed project would not have any impacts on geology and soil quality, stability, and moisture from facility construction because any impacts associated with facility construction would already have been realized.

Impacts would be expected on geology and soil quality, stability, and moisture from facility operation because the facility would continue to be a source of air pollution. The facility would continue to produce air emissions and corresponding deposition of pollutants would continue to occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of the pollutants and the atmosphere and due to conditions that would be included in Permit #3300-00.

Overall, any impacts on geology and soil quality, stability, and moisture associated with the proposed project would be minor.

#### D. Vegetation Cover, Quantity, and Quality

The facility is an existing facility and the proposed project would not involve additional land disturbance. Therefore, the proposed project would not have any impacts on vegetation cover, quantity, and quality from facility construction because any impacts associated with facility construction would already have been realized.

Impacts would be expected on vegetation cover, quantity, and quality from facility operation because the facility would continue to be a source of air pollution. The facility would continue to produce air emissions and corresponding deposition of pollutants would continue to occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor due to dispersion characteristics of the pollutants and the atmosphere and due to conditions that would be included in Permit #3300-00.

Overall, any impacts on vegetation cover, quantity, and quality associated with the proposed project would be minor.

E. Aesthetics

No impacts would result on the aesthetics of the area because the proposed facility is an existing facility and new equipment would not be installed as part of the proposed project. In addition, because new equipment would not be installed as part of the proposed project, additional noise would not be expected. Overall, the proposed project would not have any impacts on the aesthetics of the area.

F. Air Quality

The air quality of the area would realize impacts from the proposed project because the facility would continue to be a source of air pollution. The facility would continue to emit PM, oxides of nitrogen NO<sub>x</sub>, CO, VOC, SO<sub>x</sub>, and HAPs. While the facility would continue to be a source of air pollution and corresponding deposition of pollutants would continue to occur, any air quality impacts from deposition of pollutants would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.) and the atmosphere (wind speed, wind direction, ambient temperature, etc.) and due to conditions that would be placed in Permit #3300-00. Conditions would include, but would not be limited to, a barrel per day (bbl/day) production limit for each of the 1,000-bbl working oil tanks (1-OT and 2-OT), a gas venting limitation on the 1,000-bbl bad oil tank (2-BT) and the 300-bbl pop tank (11-PT), and a flaring limitation on the emergency flare (5-EF). Permit #3300-00 would also include conditions requiring Howell to use reasonable precautions to control fugitive dust emissions, as well as requiring inspection and repair requirements for fugitive VOC emissions. Overall, any impacts to air quality resulting from the proposed project would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique, endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS). The NRIS search did not identify any species of special concern in the vicinity of the project area. In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. Because the facility is an existing facility and additional land disturbance would not be required as part of the proposed project, the Department determined that the proposed project would not impact any unique, endangered, fragile, or limited environmental resources due to facility construction. In addition, due to dispersion characteristics of pollutants and the atmosphere and due to conditions that would be placed in Permit #3300-00, and because the NRIS search did not identify any species of special concern in the vicinity of the project area, the Department determined that the chance of the proposed project having any impacts to any unique, endangered, fragile, or limited environmental resources from facility operations would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would have impacts on the demands on the environmental resources of water and air because the facility would continue to produce air emissions and corresponding deposition would continue to occur. However, the proposed project would not increase the facility's PTE and as explained in Sections 7. B and 7.F of this EA, the Department determined that the chance of the proposed project impacting demands on air and water resources would be minor.

The proposed project would also have impacts on the demand on the environmental resource of energy because the facility utilizes several pieces of equipment that consume natural gas. However, any impacts to the non-renewable resource of natural gas would be minor due to the very small size of the equipment that consumes natural gas. In addition, the non-renewable resources of crude oil and natural gas would be impacted because the facility would extract commingled crude oil/natural gas. Overall, any impacts to the non-renewable resources of crude oil and natural gas would be minor due to the relatively small size of the operation.

I. Historical and Archaeological Sites

In an effort to identify any historical and archaeological sites near the proposed project area, the Department contacted the Montana Historical Society, State Historic Preservation Office (SHPO). According to SHPO records, there have been a few previously conducted cultural resource inventories conducted in or near the proposed area that indicated a few historic or archaeological sites. However, SHPO stated that because the facility is an existing facility there would be low likelihood that cultural properties would be impacted. Therefore, the Department determined that the chance of the project impacting any cultural or historic sites would be minor.

J. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts on the physical and biological aspects of the human environment in the immediate area would be minor because the facility is an existing facility and emissions from the facility would not increase. In addition, potential emissions from the facility would be relatively small by industrial standards. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3300-00.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The “no-action” alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				√		Yes
B	Cultural Uniqueness and Diversity				√		Yes
C	Local and State Tax Base and Tax Revenue				√		Yes
D	Agricultural or Industrial Production			√			Yes
E	Human Health			√			Yes
F	Access to and Quality of Recreational and Wilderness Activities				√		Yes
G	Quantity and Distribution of Employment				√		Yes
H	Distribution of Population				√		Yes
I	Demands for Government Services			√			Yes
J	Industrial and Commercial Activity				√		Yes
K	Locally Adopted Environmental Plans and Goals				√		Yes
L	Cumulative and Secondary Impacts			√			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed project would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because the facility is an existing facility and new equipment and or processes would not be part of the proposed project. Because the facility is an existing facility, there would be no change in the impacts to existing social structures and mores.

B. Cultural Uniqueness and Diversity

The cultural uniqueness and diversity of the area would remain unchanged (no impact) because the facility is an existing facility and new equipment and/or processes would not be part of the proposed project. Because the facility is an existing facility, there would be no change in the impacts to the existing cultural uniqueness and diversity of the area.

C. Local and State Tax Base and Tax Revenue

The local and state tax base and tax revenue would remain unchanged (no impact) because the facility is an existing facility. Because the facility is an existing facility, any impacts to the local and state tax base and tax revenue would already have been realized. In addition, because the facility is an existing facility and construction would not be required for the proposed project, new employees would not be hired.

D. Agricultural or Industrial Production

Because the facility is an existing facility, the proposed project would not displace any agricultural or industrial land. Therefore, the proposed project would not have any impacts to agricultural or industrial production associated with facility construction.

However, the source would continue to be a source of air emissions and corresponding deposition of pollutants would continue to occur. Therefore, agricultural production could be impacted through deposition of pollutants. However, as Section 7.F of this EA explains, the Department determined that the chance of deposition of pollutants impacting agricultural or industrial production in the areas surrounding the site would be minor due to dispersion characteristics of pollutants, the atmosphere, and conditions that would be placed in Permit #3300-00.

Overall, any impacts to agricultural or industrial production would be minor.

E. Human Health

The proposed project would result in impacts to human health because of the facility would continue to be a source of air pollution. As explained in Section 7.F of this EA, deposition of pollutants would occur. However, the Department determined that the chance of deposition of the pollutants impacting human health would be minor due to dispersion characteristics of pollutants, the atmosphere, and conditions that would be placed in Permit #3300-00. In addition, the proposed project, permitted by Permit #3300-00, would comply with all applicable air quality rules, regulations, and standards. These rules, regulations, and standards are designed to be protective of human health. Therefore, the Department determined that the chance of the proposed project impacting human health would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

Access to and quality of recreational and wilderness activities in the area of the proposed project would remain unchanged (no impact) because the facility is an existing facility. Because the facility is an existing facility, any impacts to the access to and quality of recreational and wilderness activities in the area of the proposed project would already have been realized.

G. Quantity and Distribution of Employment

The quantity and distribution of employment in the area of the proposed project would remain unchanged (no impact) because the facility is an existing facility. Because the facility is an existing facility, any impacts to the quantity and distribution of employment in the area of the proposed project would already have been realized. The proposed project would not create any new permanent or temporary employment in the area.

H. Distribution of Population

The distribution of employment in the area of the proposed project would remain unchanged (no impact) because the facility is an existing facility. Because the facility is an existing facility, any impacts to the quantity and distribution of employment in the area of the proposed project would already have been realized. The proposed project would not create any new permanent employment that would cause an increase in population in the area. In addition, the proposed project would not have impacts that would cause a decrease in the distribution of population in the surrounding area because the facility is an existing facility and the facility's PTE would not increase.

I. Demands for Government Services

There would be minor impacts on demands of government services because additional time would be required by government agencies to issue Permit #3300-00 and to monitor compliance with applicable rules, standards, and Permit #3300-00. In addition, the roads in the area may realize a minor increase in vehicle traffic because Permit #3300-00 would require monthly inspections for fugitive emission leaks to be conducted by the company. However, any impacts on government services to regulate the potential minor increase in traffic would be minor due to the small size of the operation. Overall, any impacts on the demands for government services would be minor.

J. Industrial and Commercial Activity

No impacts would be expected on the local industrial and commercial activity in the area because the facility is an existing facility and would not represent an increase in the industrial and commercial activity in the area.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans and goals that would be affected by issuing Permit #3300-00. The state standards would protect the proposed site and the environment surrounding the site.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project would result in minor impacts to the economic and social aspects of the human environment in the immediate area because the facility is an existing facility. Because the facility is an existing facility, the majority of cumulative

and secondary impacts would already have been realized. The Department would not expect other industries to be impacted by the proposed project and the Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3300-00.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the operation of two existing tank batteries. Permit #3300-00 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with the proposed project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: Dave Aguirre  
Date: March 9, 2004