

Appendix A
Safety Data Sheets



Chemical Name :
Natural Gas (Sweet)

Manufacturer :
TransCanada PipeLines Ltd.

MaxCom ID # :
2000047753

Revision Date : 02/27/2006

PPE Respirator : See MSDS

PPE Other : See MSDS

PPE Eye / Face : See MSDS

Primary Hazards (Chemical Category)

Hazard Level : High Hazard  Red

Category : 2 - Highly Flammable Gases

Hazards :

Corrosive

N/A

Toxicity

SLIGHTLY TOXIC

active

POLYMERIZATION POSSIBLE, SUDDEN RELEASE OF PRESSURE

Target Organ Effects

BRAIN/CNS/PNS, LUNGS/RESPIRATORY SYSTEM,
CARDIOVASCULAR SYSTEM, REPRODUCTIVE, EYES,
CUTANEOUS HAZARD

Flammable/Combustible

AEROSOL

Other Hazards

SENSITIZER (ALLERGIC REACTION), ASPIRATION
POTENTIALLY LETHAL, TOXIC DECOMPOSITION
PRODUCTS, SPECIAL HAZARD

Routes of Entry

INHALATION, EYES, SKIN CONTACT

TransCanada PipeLines Limited Natural Gas MSDS



1. Product and Company Identification

Product Name: Natural Gas (Sweet)
Synonyms: Marsh Gas, Methane (CH₄), Fuel Gas
Intended Use: Fuel Gas
Chemical Family: Petroleum hydrocarbons
Supplier: TransCanada Pipelines Limited
450 – First Street S.W.,
P.O. Box 1000, Station M
Calgary, Alberta, CANADA, T2P 4K6

Emergency Phone: 1-888-982-7222 (24 Hour)

2. Composition/Information on Ingredients

Hazardous Ingredients:

Ingredient	CAS No	Concentration: %	Exposure Limits	LD50data	LC50 data
Methane	74-82-8	95-99	1000 ppm TLV-TWA (2005)	Not Applicable	Asphyxiant
Nitrogen	7727-37-9	0-2	1000 ppm TLV-TWA (2005)	Not Applicable	Asphyxiant
Ethane	74-84-0	0-3	Not Applicable Asphyxiant	Not Applicable	Asphyxiant
Propane	74-98-6	0-3	1000 ppm TLV-TWA (2005)	Not Available	Asphyxiant
Butane	106-97-8	0-3	1000 ppm TLV-TWA (2005)	Not Available	202,000 ppm/mouse/4 hrs
Pentane	109-66-0	0-3	600 ppm TLV-TWA (2005)	Not Available	117000 ppm/rat/4 hrs

Natural Gas is considered a complex mixture with the CAS Number 8006-14-2. The concentration ranges listed are regarded as typical for pipeline quality natural gas.



3. Hazards Identification Emergency Overview

Flammable Gas. Can cause flash fire. Contents under pressure. Keep away from heat, sparks, flames, static electricity or other sources of ignition. Health effects of Natural Gas below the Lower Explosive Limit (LEL) are minimal. At high concentrations Natural Gas will displace air thereby reducing oxygen available for breathing. Symptoms of overexposure, which are reversible if exposure is stopped in time, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, central nervous system depression, cardiac sensitization, unconsciousness and death.

Inhalation (Breathing): Asphyxiant – high concentrations in confined spaces may limit oxygen available for breathing.

Skin: Not known to be a skin irritant. Skin absorption is unlikely.

Eye: Not known to be an eye irritant.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Signs and Symptoms: Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, central nervous system depression, cardiac sensitization, unconsciousness and death.

Potential Health Effects

Cancer: Not considered Carcinogenic by IARC, NTP, ACGIH or OSHA.

Target Organs: No data available for this material.

Developmental: No data available for this material.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. Exposure during pregnancy to high concentrations of carbon monoxide or carbon dioxide, which are produced during the combustion of hydrocarbon gases, can also cause harm to the developing fetus. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Pre-Existing Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 – Note to Physicians).



4. First Aid Measures

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: First aid is not normally required. However, it is good practice to wash any chemical from the skin. Direct contact with rapidly depressurizing gas or liquefied gas can result in frostbite burns to the skin or eyes.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, qualified personnel should administer oxygen. Seek immediate medical attention.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Note to Physicians: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

5. Fire Fighting Measures

Flammability: Flammable Gas

Flash Point: Not applicable - Flammable Gas

Explosive Limits: LEL%: 5.3 / UEL%: 14.0

Autoignition Temperature: 537°C (999°F)

Unusual Fire & Explosion Hazards: It is extremely important to eliminate the fire fuel sources of compressed flammable gasses prior to extinguishing a fire to avoid another flammable gas cloud from forming.

Extinguishing Media: Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen; use caution when applying carbon dioxide in confined spaces. It is extremely important to eliminate the fire fuel sources of compressed flammable gasses prior to extinguishing a fire to avoid another flammable gas cloud from forming.

Fire Fighting Instructions: Natural gas is flammable and may be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, outdoors, or in sewers. If container is not properly cooled, it can explode in the heat of a fire. For fires beyond the initial stage, emergency responders in the immediate hazard area should wear bunker gear. For large fires nonessential personnel should be evacuated beyond 750 meters. When the potential



chemical hazard is unknown, in enclosed or confined spaces, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area; keep unauthorized personnel away. Stop spill/release if it can be done with minimal risk. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk.

6. Accidental Release Measures

Flammable Gas – Eliminate All Sources of Ignition. Stop spill/release if it can be done with minimal risk. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay up wind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. For large spills nonessential personnel should be evacuated beyond 750 meters. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Notify fire authorities and appropriate federal, provincial/state, and local agencies. Water spray may be useful in minimizing or dispersing vapors (see Section 5).

North American Emergency Response Guide (NAERG): 115

7. Handling and Storage

Handling: Do not cut, puncture or weld on containers without appropriate procedures. Ground and bond all lines and equipment. Keep away from heat, sparks, open flames and other sources of ignition. Rapid escape of gas may generate static charge. Use of explosion proof electrical equipment is required. Practice good personal hygiene. Wash hands after handling and before eating. Launder work clothes frequently.

Storage: Keep containers tightly closed and store in a cool, well ventilated area away from heat, incompatibles, sparks, open flames and other sources of ignition. Outside storage is preferred. All containers should be inspected for leakage on a regular basis. Ground all equipment containing materials. Contents under pressure. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.



8. Exposure Controls/Personal Protection

Engineering controls: Use mechanical or natural ventilation to maintain airborne concentrations below the established exposure limits and below explosive limits. Use makeup air to balance air removed from exhaust system. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Where concentrations of components of natural gas may exceed occupational exposure limits ensure a flammable atmosphere does not exist, and wear a NIOSH approved positive pressure air supplied respirator.

Skin: Chemical resistant gloves are not needed for handling natural gas. They are not required based on the hazards of the material. However, it is considered good practice to wear gloves when handling chemicals. Flame retardant clothing should be worn in potentially flammable areas.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed. Users should check with specific manufacturers to confirm the performance of their products.

9. Physical and Chemical Properties

Appearance:	Colorless
Physical State:	Gas
Odour:	Slight hydrocarbon odour not detectable by all people
Vapor Pressure (mm Hg):	>1000
Vapor Density:	0.5 (Estimate)
Boiling Point/Range:	-259°F / -162°C (Estimate)
Freezing/Melting Point:	-305 to -295°F/-187 to -182°C (Estimate)
Solubility in Water:	Negligible
Specific Gravity:	0.74 (Estimate)
Percent Volatile:	100 vol. %
Evaporation Rate (nButAc=1):	>1

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).



10. Stability and Reactivity

Stability: This material is stable

Conditions To Avoid: High heat

Hazardous Decomposition Products: May release COx

Hazardous Polymerization: Flammable gas. Avoid all possible sources of ignition (see Sections 5 and 7). Prevent vapor accumulation. Combustion can yield carbon, nitrogen and sulfur oxides. Stable under normal ambient temperature and pressure. Values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents.

11. Toxicological Information

Inhalation (Breathing): Asphyxiant – high concentrations in confined spaces may limit oxygen available for breathing.

Skin: Not known to be a skin irritant. Skin absorption is unlikely.

Eye: Not known to be an eye irritant.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Signs and Symptoms: Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, central nervous system depression, cardiac sensitization, unconsciousness and death.

Potential Health Effects

Cancer: Not considered carcinogenic by IARC, NTP, ACGIH or OSHA.

Target Organs: Central nervous system depression and cardiac sensitization.

Developmental: No data available for this material.

Other Comments: High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. Exposure during pregnancy to high concentrations of carbon monoxide or carbon dioxide, which are produced during the combustion of hydrocarbon gases, can also cause harm to the developing fetus. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Pre-Existing Medical Conditions: Exposure to high concentrations of Natural Gas may increase the



sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).



12. Ecological Information

There is no information available on the ecotoxicological effects of petroleum gases. Because of their high volatility, they are unlikely to cause ground or water pollution. Petroleum gases released into the environment will rapidly disperse into the atmosphere and undergo photochemical degradation.

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13. Disposal Considerations

If permissible under applicable federal, provincial/state and municipal requirements, allow complete dissipation of natural gas. Vent gas to a safe location, preferably by burning in a flare. If gas cannot be flared, special care must be taken to ensure complete dissipation of the gas to a concentration below its flammable limits.

14. Transport Information

TDG Shipping Description: COMPRESSED GAS FLAMMABLE, N.O.S. (Methane), 2.1, UN1954

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SPOTLEAK® 1007**1. PRODUCT AND COMPANY IDENTIFICATION**Company

Odor-Tech, LLC.
7591 Esler Field Road
Pineville, LA 71360

Thio and Fine Chemicals

Customer Service Telephone Number: (800) 628-4453
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: SPOTLEAK® 1007
Synonyms: Not available
Molecular formula: Mixture
Chemical family: mercaptans
Product use: Odour agents

2. HAZARDS IDENTIFICATIONEmergency Overview

Color: colourless
Physical state: liquid
Odor: strong, stinging

*Classification of the substance or mixture:

Flammable liquid., Category 2, H225
Eye irritation, Category 2A, H319
Skin sensitisation, Category 1, H317
Chronic aquatic toxicity, Category 2, H411

*For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms:



Signal word:

Danger

Hazard statements:

- H225 : Highly flammable liquid and vapour.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H411 : Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements:

Objectionable odor may cause nausea, headache or dizziness. May displace oxygen and cause rapid suffocation.

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Precautionary statements:

Prevention:

- P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P233 : Keep container tightly closed.
- P240 : Ground/bond container and receiving equipment.
- P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242 : Use only non-sparking tools.
- P243 : Take precautionary measures against static discharge.
- P261 : Avoid breathing gas/mist/vapours/spray.
- P264 : Wash skin thoroughly after handling.
- P272 : Contaminated work clothing should not be allowed out of the workplace.
- P273 : Avoid release to the environment.
- P280 : Wear protective gloves/ eye protection/ face protection.

Response:

- P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 : If eye irritation persists: Get medical advice/ attention.
- P363 : Wash contaminated clothing before reuse.
- P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
- P391 : Collect spillage.

Storage:

- P403 + P235 : Store in a well-ventilated place. Keep cool.

Disposal:

- P501 : Dispose of contents/ container to an approved waste disposal plant.

Supplemental information:

Potential Health Effects:

Objectionable odor may cause nausea, headache or dizziness. Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing.
 May also cause: chest discomfort, accumulation of fluid in the lungs, (severity of effects depends on extent of exposure).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
2-Propanethiol, 2-methyl-	75-66-1	>= 79 - <= 80 %	H225, H317, H411

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Ethane, (methylthio)-	624-89-5	>= 19 - < 20 %	H225, H319, H412
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**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Inhalation:

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):

Carbon dioxide (CO2), Foam, Dry chemical

Extinguishing media (unsuitable):

High volume water jet

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Cool closed containers exposed to fire with water spray.
 Do not use a solid water stream as it may scatter and spread fire.
 Closed containers of this material may explode when subjected to heat from surrounding fire.
 After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.
 Do not allow run-off from fire fighting to enter drains or water courses.
 Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.
 Vapours may form explosive mixture with air.
 When burned, the following hazardous products of combustion can occur:
 Carbon oxides
 sulfur oxides
 hydrogen sulfide

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6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Eliminate all ignition sources. Ventilate area only if odor control is not an issue. Cover spill area with closed-cell foam to reduce odors (use of Aqueous Film Forming Foam (AFFF) with polymeric layer is acceptable). If foam is unavailable, absorb spill with liquid-binding material (e.g. diatomaceous earth, saw dust universal binder) and deodorize residue on ground with 3-10% hydrogen peroxide. Wash with water and recover it. If spill is contained within a large containment area, add 5% bleach solution (sodium hypochlorite) in a 50 parts bleach solution to one part product dilution ratio. Swimming pool chemicals (hypochlorite compounds) work effectively in deodorizing product. If these are applied to product, the crystals must be accompanied by sufficient water of dilution so that the considerable heat of reaction will be absorbed. Enzyme or bacteria based deodorizers are also acceptable for use. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. Place waste materials into Department of Transportation (DOT)-approved drums for disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

Handling

General information on handling:

- Avoid breathing vapor or mist.
- Avoid contact with eyes.
- Avoid prolonged or repeated contact with skin.
- Keep away from heat, sparks and flames.
- No smoking.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
- Container hazardous when empty.
- Emptied container retains vapor and product residue.
- Follow label warnings even after container is emptied.
- Do not enter confined spaces unless adequately ventilated.
- RESIDUAL VAPORS MAY EXPLODE ON IGNITION.**
- DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.**
- Improper disposal or reuse of this container may be dangerous and/or illegal.

Storage

General information on storage conditions:

Keep in a dry, cool place. Keep away from direct sunlight. Keep container closed when not in use. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local

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conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

Storage incompatibility – General:

Store separate from: Strong oxidizing agents

Acids (concentrated solutions)

Alkaline earth metals

Bases

Reducing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Monitor carbon monoxide and oxygen levels in tanks and enclosed spaces. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection:

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: colourless

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Physical state:	liquid
Odor:	strong, stinging
Odor threshold:	0.1 ppb
Flash point	< 0 °F (< -18 °C) (Tag closed cup)
Auto-ignition temperature:	460 °F (238 °C)
Lower flammable limit (LFL):	Not determined
Upper flammable limit (UFL):	Not determined
pH:	not determined
Density:	not determined
Specific Gravity (Relative density):	0.815 (68 °F(20 °C))
Vapor pressure:	294 mmHg (100 °F (38 °C))
Relative vapor density:	3 (Air = 1.0)
Vapor density:	not determined
Boiling point/boiling range:	145 - 158 °F (63 - 70 °C)
Freezing point:	< -51 °F (< -46 °C)
Melting point/range:	not determined
Evaporation rate:	No data available
Solubility in water:	68 °F (20 °C) insoluble
Solubility in other solvents: [qualitative and quantative]	Soluble in: Alcohols Ethyl ether
Refractive index:	1.427 68 °F (20 °C)
Viscosity, dynamic:	0.55 mPa.s 68 °F (20 °C)
Oil/water partition coefficient:	No data available
Thermal decomposition	No data available

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Flammability: See GHS Classification in Section 2

10. STABILITY AND REACTIVITY**Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions.

Materials to avoid:

- Reacts violently with :
Strong oxidizing agents
Acids (concentrated solutions)
Bases
Reducing agents
Alkaline earth metals

Conditions / hazards to avoid:

Keep away from heat and sources of ignition. To avoid thermal decomposition, do not overheat.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products
Carbon oxides
sulfur oxides
hydrogen sulfide

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Oral:

Acute toxicity estimate > 5,000 mg/kg.

Data for 2-Propanethiol, 2-methyl- (75-66-1)**Acute toxicity****Dermal:**

No deaths occurred. (Rabbit) LD0 > 2,000 mg/kg.

Inhalation:

Practically nontoxic. (Rat) 4 h LC50 = 82 - 98 mg/l. (vapor)

Skin Irritation:

Not irritating. (Rabbit) Irritation Index: 0/8. (4 h) (occluded exposure)

Eye Irritation:

Causes mild eye irritation. (Rabbit)

Skin Sensitization:

May cause an allergic skin reaction. Buehler method. (Guinea pig) Skin allergy was observed.

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May cause allergic skin reaction. LLNA: Local Lymph Node Assay. (Mouse) Produced an allergic reaction.

Repeated dose toxicity

Subchronic inhalation administration to Rat / affected organ(s): kidney / signs: inflammation, degeneration, increased organ weight / (not considered relevant to humans)

Repeated oral administration to Rat / affected organ(s): kidney / signs: hyaline droplet nephropathy / (not considered relevant to humans)

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in laboratory tests using: mice

Developmental toxicity

Exposure during pregnancy. inhalation (rat and mouse) / No birth defects were observed.
Reproductive/Developmental Effects Screening Assay. oral (Rat) / No birth defects were observed.

Reproductive effects

Reproductive/Developmental Effects Screening Assay. oral (Rat) / No toxicity to reproduction.

Other information

Due to the viscosity, this substance may present an aspiration hazard.

Symptoms of aspiration may include increased breathing and heart rate, coughing and related signs of respiratory distress.

Data for Ethane, (methylthio)- (624-89-5)**Acute toxicity****Dermal:**

Practically nontoxic. (rat) LD0 > 2,000 mg/kg. (occluded exposure)

Inhalation:

Practically nontoxic. (rat) 4 h LC0 > 21.7 mg/l. (vapor)

Skin Irritation:

Causes mild skin irritation. (rabbit) Irritation Index: 3,4/8,0. (4 h)

Eye Irritation:

Causes serious eye irritation. (rabbit) Irritation Index: 16/110. (24 h)

Skin Sensitization:

Not a sensitizer. Guinea pig maximization test. (guinea pig) No skin allergy was observed

Genotoxicity

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Assessment in Vitro:

No genetic changes were observed in laboratory tests using: bacteria, human cells

Other information

Due to the viscosity, this substance may present an aspiration hazard.
 Symptoms of aspiration may include increased breathing and heart rate, coughing and related signs of respiratory distress.

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway

Data on this material and/or its components are summarized below.

Data for 2-Propanethiol, 2-methyl- (75-66-1)

Biodegradation:

Not readily biodegradable. (63 d) biodegradation 6 %

Data for Ethane, (methylthio)- (624-89-5)

Biodegradation:

Not readily biodegradable. (28 d) biodegradation 41 %

Octanol Water Partition Coefficient:

log Pow = 1.54

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for 2-Propanethiol, 2-methyl- (75-66-1)

Aquatic toxicity data:

Harmful. Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 34 mg/l

Aquatic invertebrates:

Toxic. Daphnia magna (Water flea) 48 h EC50 = 6.7 mg/l

Algae:

Harmful. Pseudokirchneriella subcapitata (green algae) 72 h EC50 = 24 mg/l

Data for Ethane, (methylthio)- (624-89-5)

Aquatic toxicity data:

Practically nontoxic. Danio rerio (zebra fish) 96 h LC0 > 49.8 mg/l

Aquatic invertebrates:

Harmful. Daphnia magna (Water flea) 48 h EC50 = 16 mg/l

Algae:

Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 72 h EC50 > 500 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h EC50 > 1,000 mg/l

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Chronic toxicity to aquatic plants:

Pseudokirchneriella subcapitata (green algae) 72 d NOEC (growth rate) = 76 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal:

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number : 3336
 Proper shipping name : Mercaptan mixture, liquid, flammable, n.o.s.
 Technical name : (tert-Butylmercaptan, Methylene sulfide)
 Class : 3
 Packaging group : II
 Marine pollutant : yes

International Maritime Dangerous Goods Code (IMDG)

UN Number : 3336
 Proper shipping name : MERCAPTANS, LIQUID, FLAMMABLE, N.O.S.
 Technical name : (t-Butylmercaptan, METHYL ETHYL SULPHIDE)
 Class : 3
 Packaging group : II
 Marine pollutant : yes
 Flash point : < 0 °F (< -18 °C) Tag closed cup

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
United States TSCA Inventory	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL.

SPOTLEAK® 1007

China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Fire Hazard

SARA Title III – Section 313 Toxic Chemicals:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>Reportable quantity</u>
Benzene	71-43-2	10 lbs
2-Propanethiol, 2-methyl-	75-66-1	100 lbs

United States – State Regulations

New Jersey Right to Know

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propanethiol, 2-methyl-	75-66-1

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New Jersey Right to Know – Special Health Hazard Substance(s)

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propanethiol, 2-methyl-	75-66-1

Pennsylvania Right to Know

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propanethiol, 2-methyl-	75-66-1

Ethane, (methylthio)-	624-89-5
-----------------------	----------

Benzene	71-43-2
---------	---------

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

<u>Chemical Name</u>	<u>CAS-No.</u>
----------------------	----------------

Benzene	71-43-2
---------	---------

Pennsylvania Right to Know – Special Hazardous Substance(s)

<u>Chemical Name</u>	<u>CAS-No.</u>
Benzene	71-43-2

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Chemical Name</u>	<u>CAS-No.</u>
Benzene	71-43-2

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapour.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Miscellaneous:

Other information:	Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.
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Latest Revision(s):

Reference number:	000000035652
Date of Revision:	05/15/2015
Date Printed:	05/15/2015

SPOTLEAK® 1007

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Appendix B
Agency Consultations



May 27, 2016

Peter Fasbender, Field Office Supervisor
U.S. Fish and Wildlife Service
Ecological Services Field Office
4101 American Boulevard East
Bloomington, MN 55425

Re: Great Plains Natural Gas Co.
Fergus Falls Pipeline Replacement Project, Otter Tail County, Minnesota

Dear Mr. Fasbender:

Merjent, Inc. is writing to request a project review for federally-listed species on behalf of Great Plains Natural Gas Co. (Great Plains) who is planning to conduct the Fergus Falls Pipeline Replacement Project (Project). The purpose of the Project is to maintain conformance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration regulations. After conducting integrity assessments of its pipelines, Great Plains determined the need to replace a segment of existing pipeline between its existing Fergus Falls town border station and its Green Plains Ethanol tap. Approximately 2.9 miles of new 8-inch steel pipeline would be installed in new right-of-way in Sections 27, 28, and 29, Township 133 North, Range 43 West, Otter Tail County, Minnesota. New pipeline pigging launcher and receiver facilities would also be constructed at the beginning and ending points of the replacement segment. A new route is necessary for this segment of pipeline due to encroachment of business/commercial structures over the years. The existing pipeline would be reclassified from transmission line to distribution line and operated at lower pressures in order to adhere to Pipeline and Hazardous Materials Safety Administrations (PHMSA) definitions outlined in 49 CFR Part 192.3. Aerial photo-based maps depicting the Project are attached.

Threatened and Endangered Species Review: A desktop analysis for federally listed species was conducted for the Project in May 2016. Field-based habitat assessments will be performed for the Project May 31, 2016. As part of this analysis, the U.S. fish and Wildlife Service (FWS) Environmental Conservation Online System: *Information for Planning and Conservation* (IPaC) was accessed to obtain information regarding listed species that may be present within the Project's construction footprint area. This review identified two threatened species with the potential to occur in the vicinity of the proposed Project, including the northern long-eared bat (*Myotis septentrionalis*) and Gray Wolf (*Canis lupus*). No endangered or candidate species or critical habitat were identified. Available data describing the life history, critical habitat, and conservation

measures associated with each species were reviewed. Merjent's evaluation of potential Project effects on these species is provided below.

Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is a medium-sized bat of the Vespertilionidae family. Approximately 3.0 to 3.7 inches in length with a wingspan of 9 to 10 inches, the species derives its name from oversized ears relative to other members of the genus *Myotis*. The species overwinters in small crevices or cracks in hibernacula, such as caves and mines. In summer, the species roosts either singly or in colonies under loose bark or in crevices and hollows in both live trees and snags. A habitat generalist, roost tree selection appears also to be opportunistic; the species uses a variety of tree sizes and species. Migration to summer habitat occurs between mid-March and mid-May^{1,2}. In Minnesota, the species is most likely to be found in forested wetlands and riparian areas.

The primary threats to the northern long-eared bat are white-nose syndrome, alteration/loss of habitat, and wind energy turbines. Potential impacts to individual bats may occur if clearing or construction takes place when the species is breeding, foraging, or raising pups in its summer habitat. Bats may be injured or killed if occupied trees are cleared during this active window, and the species may be disturbed during clearing or construction activities due to noise or human presence.

The FWS and Minnesota Department of Natural Resources List of Townships Containing Documented NLEB Maternity Roost Trees and/or Hibernacula Entrances in Minnesota³ was reviewed. No maternity roost trees or hibernacula entrances are documented in Ottertail County and the Project is not within 150 feet of a documented maternity roost tree or within ¼ mile of a hibernaculum entrance. Great Plains has designed its Project to largely avoid impacting potential bat habitat by drilling beneath forested areas and establishing workspace in clearings. However one location of trees in a planted windbreak will need to be removed to maintain a 50-foot wide cleared open corridor above the pipeline for future inspection purposes.

Great Plains is seeking to work with the FWS to develop mitigation measures that avoid or minimize the potential for impacts on the bats where clearing is required, which we believe will be minimal, if any, and very localized and not likely to cause long-term declines in the northern long-eared bat population. If necessary, Great Plains would request a “may affect, but take not prohibited” determination and submit a Northern Long-

¹ U.S. Fish and Wildlife Service. (2014). Retrieved from USFWS. 2014d. Northern Long-eared Bat Interim Conference and Planning Guidance. USFWS Regions 2, 3, 4, 5, & 6.:

<http://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf>

² U.S. Fish and Wildlife Service. (2014). Retrieved from Northern Long-eared Bat Fact Sheet:

<http://www.fws.gov/midwest/endangered/mammals/nlba/nlbaFactSheet.html>

³ U.S. Fish and Wildlife Service and Minnesota Department of Natural Resources. (2016). Retrieved from MDNR. 2016. List of Townships Containing Documented NLEB Maternity Roost Trees and/or Hibernacula Entrances in Minnesota: http://files.dnr.state.mn.us/eco/ereview/minnesota_nleeb_township_list_and_map.pdf

earled Bat 4(d) Rule Streamlined Consultation Form allowing Great Plains to conduct tree clearing any time of year after the 30-day review period has lapsed.

Gray Wolf

The gray wolf (*Canis lupus*) is a large canine species that is federally listed as endangered due to habitat destruction, human interference, and overhunting. The gray wolf is identifiable by its canine body shape, long bushy tail with a black tip, and a mix of gray and brown coat colors. The average size of a gray wolf is 3 to 5 feet in length and weighing approximately 60 to 145 pounds. This species prefers a wide range of habitat, including forests, plains, prairies, agricultural areas, swamps, and barren lands, but has been extirpated from most of its historic range. Dens are located near water and dug into well-drained soil on a south-facing slope, under boulders, among tree roots, or in cut banks, hollow logs, or other natural structures. This species is a roaming animal, therefore are wide-ranging and rare to encounter.

The current density of the gray wolf is approximately 1 per 10 square miles. Minnesota's gray wolf range has expanded from a 12,000 square mile area in the 1950s to over 27,000 square miles. As of 2013, the population is estimated at 2,200, which exceeds the federal delisting goal of 1,250 to 1,400. Minnesota's gray wolf population has remained stable over the last 10 years, with most areas of suitable habitat in the state now occupied. These data suggest that the population has fully recovered. The gray wolf was removed from Minnesota special concern status in 2013⁴. According to the Minnesota Department of Natural Resources 2001 Wolf Management Plan, human-caused accidental mortality (i.e., motor vehicle hits) is not expected to significantly affect wolf population dynamics in Minnesota.

Because the Project is located outside of the 2013 wolf range⁴ discussed in the foregoing, Minnesota's population estimate exceeds the federal delisting goal and its stability over the past 10 years, and the wolf's tendency to avoid human activity, we believe that the Project will have *no effect* on the gray wolf.

FWS Managed Lands: Great Plains understands that conservation programs such as Waterfowl Production Areas and wetland and grassland easements represent an important tool used by the FWS to identify and manage high quality wildlife habitat. Merjent has reviewed publicly available information and we do not believe FWS managed lands are affected by the Project, but we request a review of the Project area for the presence or absence of lands and projects under the direction of these programs.

Migratory Bird and Raptor Considerations: Great Plains understands that the FWS administers various wildlife-related mandates of national concern including the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. In order to avoid the potential for impacts during the nesting season for migratory birds, which in Minnesota is

⁴ Erb, J. and Sampson, B. 2013. Distribution and Abundance of Wolves in Minnesota, 2012-13. Minnesota Department of Natural Resources.

generally from April 15 to August 1. Great Plains has not developed a construction schedule for the Project yet, but will factor the nesting season into its construction planning.

To assess the potential for impact to raptors, Great Plains will conduct field surveys for the Project in May 2016 including 0.5-mile line of site raptor nest surveys. Great Plains understands that raptors often establish new nests and proposes to conduct follow-up surveys immediately prior to construction as part of their migratory bird nest inspections described above and will similarly contact the FWS for further input if any occupied nests are identified within 0.5 mile of construction work areas. Based on these measures, we believe the Project will have *no effect* on migratory birds or raptors.

Great Plains plans to file its Minnesota Public Utilities Commission (PUC) application in July 2016 and therefore, we would appreciate receiving any comments or questions you may have within 30 days. This will help us address any concerns in advance of our PUC application. If you have questions regarding the Project or require additional information, please contact me at (612) 354-4284 or jkamm@merjent.com.

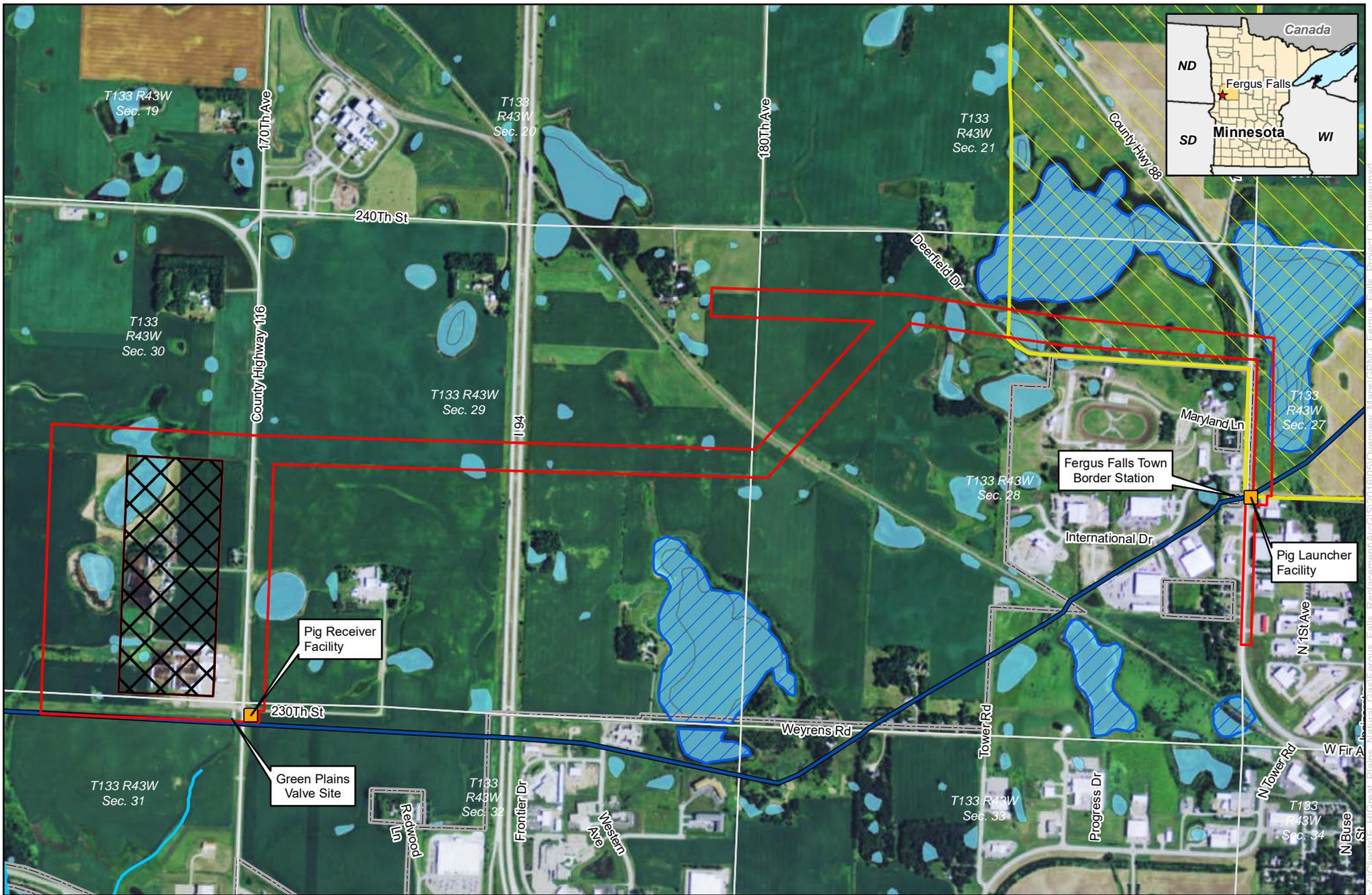
Sincerely,
Merjent, Inc.



Jennifer Kamm
Senior Analyst

Enclosures: Project map

cc: Jesse Volk, Great Plains Natural Gas Company



Great Plains Natural Gas Co.
Fergus Falls Pipe Replacement
Otter Tail County, Minnesota



- | | | | |
|---|--------------------------|---|---------------------------------------|
|  | Environmental Study Area |  | Fergus Falls Wildlife Management Area |
|  | Non-Project Area |  | NWI Wetland |
|  | Existing Pipeline |  | Section Boundary |
|  | NHD Waterbody |  | Fergus Falls City Limits |
|  | PWI Waterbody | | |


 For Environmental Review Purposes Only

Source: z:\clients\121\m\create_farms_natural_gas\fergus_falls_replacement\arcgis\2016\05\Overview_Maps\GPNG_Fergus_Scale_Project_Overview.mxd
 Date: (5/25/2016)



Telephone Log

Date:

July 22, 2016

To:

Andrew Horton, Conservation Planning Assistance

Agency:

U.S. Fish and Wildlife Service

Phone Number:

952-252-0092 ext. 208

From:

Jennifer Kamm

Company:

Merjent, Inc.

Phone Number:

612-354-4284

Subject:

Great Plains Natural Gas Co. Fergus Falls Replacement Project

Ms. Kamm called Mr. Andrew Horton, U.S. Fish and Wildlife Service (FWS), inquiring if the FWS had received Great Plains Natural Gas Co.'s notification letter for the Fergus Falls Replacement Project requesting review of the project for concerns related to federally-listed species and designated critical habitat. Ms. Kamm also asked if the project would qualify for a "may affect, but take not prohibited" determination for the northern long-eared bat and if a Northern Long-eared Bat 4(d) Rule Streamlined Consultation Form should be submitted to the FWS. Mr. Horton stated that there are no FWS managed lands within the project area and that because there is no federal action for the Project, under the 4(d) rule Great Plains may proceed with the Project, and no permit is needed.



May 27, 2016

Ms. Lisa Joyal
Endangered Species Review Coordinator
NHIS Data Distribution Coordinator
Division of Ecological and Water Resources
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155

Re: Great Plains Natural Gas Co.
Fergus Falls Pipeline Replacement Project
Otter Tail County, Minnesota

Dear Ms. Joyal:

Merjent, Inc. is writing to request a project review for state-listed species on behalf of Great Plains Natural Gas Co. (Great Plains) who is planning to conduct the Fergus Falls Pipeline Replacement Project (Project). The purpose of the Project is to maintain conformance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration regulations. After conducting integrity assessments of its pipelines, Great Plains determined the need to replace a segment of existing pipeline between its existing Fergus Falls town boarder station and its Green Plains Ethanol tap. Approximately 2.9 miles of new 8-inch steel pipeline would be installed in new right-of-way in Sections 27, 28, and 29, Township 133 North, Range 43 West, Otter Tail County, Minnesota. New pipeline pigging launcher and receiver facilities would also be constructed at the beginning and ending points of the replacement segment. A new route is necessary for this segment of pipeline due to encroachment of business/commercial structures over the years. The existing pipeline would be reclassified from transmission line to distribution line and operated at lower pressures in order to adhere to Pipeline and Hazardous Materials Safety Administrations (PHMSA) definitions outlined in 49 CFR Part 192.3. Aerial photo-based maps depicting the Project are attached.

State Listed Threatened and Endangered Species Review: A desktop analysis for state listed species was conducted for the Project in May 2016. Field-based habitat assessments will be performed for the Project May 31, 2016. Merjent receives annual updates of the Minnesota Natural Heritage Inventory System (NHIS) data. Results of the query for NHIS occurrences located within one mile of the Project area included the Small white lady's-slipper (*Cypripedium candidum*), state special concern; the Fluted-shell (*Lasmigona costata*), state threatened; and the Black sandshell (*Ligumia recta*), state special concern. Available data describing the life history, critical habitat, and conservation measures associated with each species were reviewed. The evaluation of potential Project effects on these species is provided below.

Small White Lady's Slipper

The Small white lady's-slipper is a slow growing, long-lived plant that requires an estimated 12 years or more to reach maturity. Germination of the seeds requires ideal moisture conditions and the presence of a specific mycorrhizal soil fungus. Peak anthesis for Small white lady's-slipper in Minnesota is usually about June 1, but flowers start developing in mid to late May. Small white lady's-slipper primarily occurs in deep-soil mesic prairies. Wet prairies, certain types of sedge meadows, and calcareous fens (in the south) can also support this species. It does not occur in habitats with a history of livestock grazing or crop production. The soils are primarily calcareous till or lacustrine clays, or occasionally fibric, sedge-derived peat¹.

According to the NHIS query, a population was identified approximately 1 mile northwest of the Project in the Wildung Wildlife Protection Area which is managed by the U.S. Fish and Wildlife Service. This population was last observed in June, 1980. Field surveys will be conducted for this species on May 31, 2016. If any Small white lady's-slipper are identified within the Project area during this survey, Great Plains will contact the MDNR to develop mitigation measures that avoid or minimize the potential for impacts on the Small white lady's-slipper.

Fluted-shell

The Fluted-shell is a relatively widespread but uncommon species in Minnesota, occurring in the Red, Minnesota, St. Croix, and Mississippi (below St. Anthony Falls) river drainages. Mussels are long-lived, many species of which may live for several decades and in some instances, a century or more. They spend most of their lives buried in the bottom sediments of permanent water bodies, and often live in multi-species communities called mussel beds. The Fluted-shell prefers habitats of medium to large rivers, dominated by gravel substrates in areas with swift currents and water that is at least 0.6 m (2 ft.) deep¹.

NHIS query results show that this species was identified in the Otter Tail River in 1994 (three live individuals) and during the Statewide Mussel Survey in 2004 (empty shells collected). The Otter Tail River is approximately 0.6 mile south of the Project area at its closest point. Great Plains will install temporary and permanent erosion and sediment control measures and will obtain a NPDES Stormwater Permit. Based on these measures and the distant proximity to the Otter Tail River, the potential for erosion and sedimentation to adversely affect waterbodies and mussels that may be present will be minimized to the extent practicable. Therefore, we believe that the Project will have no effect on the Fluted-shell.

Black Sandshell

The Black sandshell was once common in all but the smallest rivers in Minnesota. The Black sandshell mussel is also a long-lived species and is usually found in the riffle and run areas of medium to large rivers in areas dominated by sand or gravel. Viability of this species is threatened by degradation of mussel habitat in streams throughout its known range. Declines in habitat conditions are associated with management of the Mississippi River as a navigational canal, and with non-point source water pollution and sediment pollution. The Black sandshell is also being impacted by the infestation of non-native zebra mussels (*Dreissena polymorpha*) in the Mississippi River and its tributaries¹.

¹Minnesota Department of Natural Resources. (2016). Rare Species Guide. Accessed online at <http://www.dnr.state.mn.us/rsg/index.html>.

NHIS query results show that this species was identified in the Otter Tail River in 1994 (one live individual collected) and during the Statewide Mussel Survey in 2004 (one dead individual). As described above, the Otter Tail River is approximately 0.6 mile south of the Project area at its closest point. Great Plains will install temporary and permanent erosion and sediment control measures and will obtain a NPDES Stormwater Permit. Based on these measures and the distant proximity to the Otter Tail River, the potential for erosion and sedimentation to adversely affect waterbodies and mussels that may be present will be minimized to the extent practicable. Therefore, we believe that the Project will have no effect on the Black sandshell.

Great Plains is preparing to file an application for a route permit with the Minnesota Public Utilities Commission and would appreciate receiving any comments or questions you may have regarding potential impacts on state-listed species or habitats within 30 days. Great Plains is also consulting with the U.S. Fish and Wildlife Service (FWS) Twin Cities Field Office regarding federally listed species and designated critical habitat. If you have questions regarding the Project or require additional information, please contact me at jkamm@merjent.com or by phone at (612) 354-4284.

Sincerely,
Merjent, Inc.



Jennifer Kamm
Senior Analyst

Enclosures: Project Maps

cc: Jesse Volk, Great Plains Natural Gas Co.

From: [Joyal, Lisa \(DNR\)](#)
To: [Jennifer Kamm](#)
Cc: jesse.volk@gpng.com; [Bill Regan](#)
Subject: RE: Great Plains Natural Gas Fergus Falls Replacement Project - MNDNR NHI Review
Date: Wednesday, June 29, 2016 2:24:44 PM
Attachments: [image001.gif](#)
[GPNG Fergus Falls MNDNR NHI Final 05272016.pdf](#)

Live state-listed threatened mussels have been documented in the Otter Tail River as recently as 2004. Given the erosion and sediment control measures identified in the attached document, I concur with your assessment that impacts to state-listed species are not anticipated.

Thank you for notifying us of this project, and for the opportunity to provide comments.

Sincerely,

Lisa Joyal

~~~~~

Lisa Joyal  
Endangered Species Review Coordinator  
NHIS Data Distribution Coordinator  
Division of Ecological and Water Resources  
Minnesota Department of Natural Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155

phone: 651-259-5109  
[lisa.joyal@state.mn.us](mailto:lisa.joyal@state.mn.us)  
[www.mndnr.gov/eco](http://www.mndnr.gov/eco)

---

**From:** Jennifer Kamm [mailto:[jkamm@merjent.com](mailto:jkamm@merjent.com)]  
**Sent:** Friday, May 27, 2016 3:34 PM  
**To:** Joyal, Lisa (DNR)  
**Cc:** [jesse.volk@gpng.com](mailto:jesse.volk@gpng.com); [Bill Regan](#)  
**Subject:** Great Plains Natural Gas Fergus Falls Replacement Project - MNDNR NHI Review

Ms. Joyal,

Merjent, Inc. is writing to request a project review for state-listed species on behalf of Great Plains Natural Gas Co. who is planning to conduct the Fergus Falls Pipeline Replacement Project in Otter Tail County. Please find the attached letter which provides a description of the project, results of a desktop analysis for state listed species, and project maps. If you have questions regarding the Project or require additional information, please contact me at [jkamm@merjent.com](mailto:jkamm@merjent.com) or by phone at (612) 354-4284.

Best regards,  
Jennifer



## **Jennifer Kamm**

TractorWorks Building      612.746.3660 main  
800 Washington Avenue N.   612.354.4284 direct  
Suite 315                      612.875.0543 cell  
Minneapolis, MN 55401      612.746.3679 fax

[www.merjent.com](http://www.merjent.com)

[jkamm@merjent.com](mailto:jkamm@merjent.com)

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August 30, 2016

Ms. Sarah Beimers  
Manager of Government Programs and Compliance  
State Historic Preservation Office  
Minnesota Historical Society  
345 Kellogg Blvd. W.  
St. Paul, MN 55102-1903

Re: Fergus Falls Pipeline Replacement Project  
Phase I Archaeological Reconnaissance Survey

Dr. Ms. Beimers,

Great Plains Natural Gas Co. (Great Plains) is planning to construct the Fergus Falls Pipeline Replacement Project (Project) in Fergus Falls, Minnesota. The purpose of the Project is to maintain conformance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations. After conducting integrity assessments of its pipelines, Great Plains determined the need to replace a segment of existing pipeline between its existing Fergus Falls town boarder station and its Green Plains Ethanol tap.

Approximately 3 miles (mi) (4.8 kilometers [km]) of new 8-inch steel pipeline would be installed within a new right-of-way in Sections 27, 28, and 29, Township 133 North, Range 43 West in Ottertail County, Minnesota. New pipeline pigging launcher and receiver facilities would also be constructed at the beginning and ending points of the replacement segment. A new route is necessary for this segment of pipeline due to encroachment of business/commercial structures over the years. The existing pipeline would be reclassified from transmission line to distribution line and operated at lower pressures in order to adhere to PHMSA definitions outlined in 49 Code of Federal Regulations (CFR) Part 192.3.

### **Supporting Fieldwork Summary and Review Request**

Great Plains contracted with Merjent, Inc. (Merjent) to perform a Phase I archaeological reconnaissance survey of the project's workspace. Phase I archaeological survey of the proposed Project area was conducted by Merjent personnel between May 31 and June 1 and August 16 and 17, 2016. No cultural materials were observed in the area of potential effect. A copy of the survey report is attached for your review. Based on the survey results, Merjent recommends a determination of No Historic Properties Affected for this project. The documentation of the Merjent field review includes:

- Phase I Archaeological Reconnaissance Survey Technical Report

With this submittal, Great Plains requests concurrence from the SHPO that the proposed project will not affect properties listed on, or eligible for listing on, the National Register of Historic Places.

If you have any questions or concerns regarding this summary, please feel free to contact me at (612) 924-3976, or electronically at [alanguemuller@merjent.com](mailto:alanguemuller@merjent.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Allison Lange Mueller". The signature is written in a cursive, flowing style with a long horizontal line extending to the right.

Allison Lange Mueller, M.S., RPA  
Principal Investigator/ Senior Cultural Resources Specialist  
Merjent, Inc.

cc: Bill Regan, Merjent  
Jesse Volk, Great Plains Natural Gas Co.

STATE HISTORIC PRESERVATION OFFICE

September 30, 2016

Ms. Allison Lange Mueller  
Merjent, Inc.  
800 Washington Ave N, Suite 315  
Minneapolis, MN 55401

RE: Great Plains Natural Gas Company - Fergus Falls Pipeline Replacement Project  
T133 R43 S27, 28, 29  
Fergus Falls Twp., Otter Tail County  
SHPO Number: 2016-3488

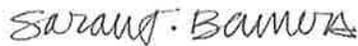
Dear Ms. Mueller:

Thank you for the opportunity to comment on the above project. It has been reviewed pursuant to the responsibilities given to the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800.

We have reviewed the cultural resources survey report that was prepared for this project. Based on the results of the survey, we conclude that **no properties** eligible for or listed in the National Register of Historic Places are within the area of potential effect for the project.

Please contact our Compliance Section at (651) 259-3455 if you have any questions on our review of this project.

Sincerely,



Sarah J. Beimers, Manager  
Government Programs and Compliance



July 22, 2016

Mr. Bob Patton  
Minnesota Department of Agriculture  
625 North Robert Street  
St. Paul, Minnesota 55155

Re: Great Plains Natural Gas Co.  
Fergus Falls Pipeline Replacement Project  
Otter Tail County, Minnesota

Dear Mr. Patton:

Merjent, Inc. is writing to request a project review for agricultural related concerns on behalf of Great Plains Natural Gas Co. (Great Plains) who is planning to conduct the Fergus Falls Pipeline Replacement Project (Project). The purpose of the Project is to maintain conformance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration regulations. Approximately 2.9 miles of new 8-inch steel pipeline would be installed in new right-of-way in Sections 27, 28, and 29, Township 133 North, Range 43 West, Otter Tail County, Minnesota. An aerial photo-based map depicting the Project is attached.

Approximately 2.0 miles of the proposed Project route are located on agricultural land. Merjent has reviewed the Minnesota Department of Agriculture's (MDA) Directory of Minnesota Organic Farms and FieldWatch, Inc.'s Driftwatch website map viewer to assess organic farm locations in the Project area. Based on review of these sources, no organic farms were identified. Could you please confirm this conclusion, and identify if the MDA is aware of any particular agricultural practices, soils and other agricultural concerns within the Project location? Merjent is also assisting Great Plains with developing an Agriculture Impact Mitigation Plan.

Great Plains is preparing to file an application for a route permit with the Minnesota Public Utilities Commission and would appreciate receiving any comments or questions you may have within 30 days. If you have questions regarding the Project or require additional information, please contact me at [jkamm@merjent.com](mailto:jkamm@merjent.com) or by phone at (612) 354-4284.

Sincerely,  
Merjent, Inc.

Jennifer Kamm  
Senior Analyst

Enclosures: Project Map

cc: Jesse Volk, Great Plains Natural Gas Co.



**From:** [Patton, Bob \(MDA\)](#)  
**To:** [Jennifer Kamm](#)  
**Cc:** [Volk, Jesse](#); [Bill Regan](#)  
**Subject:** RE: Great Plains Natural Gas Company - Fergus Falls Pipeline Replacement Project, Project Review Request  
**Date:** Friday, July 22, 2016 4:20:06 PM  
**Attachments:** [image003.gif](#)  
[image001.jpg](#)

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Dear Jennifer:

I am unaware of any special concerns in the project location that would not be addressed by an agricultural impact mitigation plan. I'm afraid I will be unable to confirm your conclusion regarding the absence of organic farms, and appreciate your diligence in establishing their presence along the route.

Please let me know if you have any questions as you develop an AIMP.

Thanks.

Bob

**Robert Patton, AICP**

Supervisor, Energy and Environment Section  
Agricultural Marketing and Development Division  
Minnesota Department of Agriculture  
625 Robert Street North  
Saint Paul, MN 55155-2538  
Ph: 651-201-6226



[www.mda.state.mn.us](http://www.mda.state.mn.us)

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**From:** Jennifer Kamm [mailto:[jkamm@merjent.com](mailto:jkamm@merjent.com)]  
**Sent:** Friday, July 22, 2016 9:31 AM  
**To:** Patton, Bob (MDA) <[bob.patton@state.mn.us](mailto:bob.patton@state.mn.us)>  
**Cc:** Volk, Jesse <[Jesse.Volk@gpng.com](mailto:Jesse.Volk@gpng.com)>; Bill Regan <[bregan@merjent.com](mailto:bregan@merjent.com)>  
**Subject:** Great Plains Natural Gas Company - Fergus Falls Pipeline Replacement Project, Project Review Request

Dear Mr. Patton,

Merjent, Inc. is writing to request a project review for agricultural related concerns on behalf of Great Plains Natural Gas Co. who is planning to conduct the Fergus Falls Pipeline Replacement Project. Please find the attached letter describing the project and the information we are seeking. If you have any questions or need further information you can contact me by email or by phone at 612.354.4284.

Best Regards,

Jennifer



**Jennifer Kamm**

TractorWorks Building      612.746.3660 main  
800 Washington Avenue N.   612.354.4284 direct  
Suite 315                      612.875.0543 cell  
Minneapolis, MN 55401      612.746.3679 fax

[www.merjent.com](http://www.merjent.com)

[jkamm@merjent.com](mailto:jkamm@merjent.com)

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