Produced Water, Sour
Material Safety Data Sheet

SECTION I **PRODUCT IDENTIFICATION**

Manufacturer's Name: Countrymark Energy Resources, LLC
Address: 7116 Eagle Crest Blvd.
Suite C
Evansville, IN 47715

Emergency Telephone Number: 812-759-9441
800-424-9300 (CHEMTREC)

SECTION II **HAZARDOUS IDENTIFICATION**

Emergency overview WARNING

Potential Flammability Hazard
Production upsets can result in mixing of flammable liquids with produced water, resulting in a potentially flammability hazard. Vapors may cause flash fire or explosion. Will be easily ignited by heat, spark or flames.

Toxic by inhalation, causes skin, eye and respiratory tract irritation. May cause nervous system effects, such as headache, nausea, drowsiness. May contain high concentration of hydrogen sulfide, respiratory paralysis and death may occur.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication)

SECTION III

Regulatory Information All components are on the U.S. EPA TSCA Inventory List

US EPCRA (SARA Title III) Section 302 – Extremely Hazardous Spill: **Reportable quantity:**
Hydrogen sulfide (CAS 7783-06-4) 100 LBS
US EPCRA (SARA Title III) Section 302 – Extremely Hazardous Substance: Threshold Planning Quantity
Hydrogen Sulfide (CAS 7783-06-4) 500 LBS
CERCLA (Superfund) reportable quantity (lbs)
Hydrogen Sulfide: 100
Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories Immediate Hazard – Yes
Delayed Hazard – Yes
Fire Hazard – Yes
Pressure Hazard – No
Reactivity Hazard - No

HAZARD AND TOXIC MATERIALS NOTIFICATION (This may not be a complete list of components.)

Component	CAS Number	Volume Range
Water	7732-18-5	90
Calcium Chloride	10043-52-4	1 - <10
Potassium Chloide	7447-40-7	1 - <10
Hydrogen Sulfide	7783-06-4	>1

US RCRA Hazardous Waste U List: Reference

Hydrogen Sulfide (CAS 7783-06-04) U135

Disposal Considerations Do not dispose of waste into sewer. Do not allow this material to drain into sewer/water supply. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b) (4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of in accordance with all applicable regulations.

SECTION III **PHYSICAL DATA**

Boiling Point (°F)	-20°F to 800°F
Specific Gravity	0.6 – 0.8
Vapor Pressure	200 – 500 mmHg @ 68°F (20 °C)
Percent Volatile by Volume (%)	Varies
Solubility in Water	Insoluable

Appearance and Odor:
Produced water (Sour) is an amber colored clear liquid. In small quantities it may have an offensive odor similar to rotten egg smell.

SECTION IV **FIRE AND EXPLOSION HAZARD DATA**

Flash Point	-50°F (-45.6°C)
Classification:	Flammable Liquid UN 3287
Flammable Limits:	LEL N/A UEL N/A__

Flammability properties Containers may explode when heated. Vapor or gas may spread to distant ignition sources and flash back. In the event of a fire and/or explosion do not breathe fumes. In the event of fire, cool with water spray.

Extinguishing Media:

Suitable extinguisher media:	Water. Water fog, Dry powder, Carbon Dioxide (CO_2)
Unsuitable extinguishing media:	Do not use a solid water stream as it may scatter and spread fire

SECTION V **HEALTH HAZARD**

Potential health effects

Routes of exposure	Inhalation. Skin contact. Eye contact.
EYES	Causes eye irritation. Eye contact may result in corneal injury. Do not get this material in contact with eyes.
SKIN	Irritating to skin.

INHALATION	Toxic by inhalation. Irritating to respiratory system. Do not breathe dust, fume, gas, mist, vapor, spray
INGESTION	Do not ingest. May cause stomach distress, nausea or vomiting

Occupational exposure limits.

Components		
Hydrogen Sulfide (7783-06-4)	TWA	10 ppm
	STEL	15 ppm
	Ceiling	20 ppm

Emergency and First Aid Procedures:

IF IN EYES – Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention.

IF ON SKIN – Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persist.

IF INHALED – Move injured person into fresh air and keep person calm under observation. If breathing is difficult, give oxygen. Get medical attention immediately.

IF SWALLOWED – Give one or two glasses of water if patient is alert and able to swallow. Seek immediate medical attention. Do not induce vomiting.

Notes to physician - Keep victim warm. Symptoms may be delayed.

SECTION VI REACTIVITY DATA

Stable X Unstable _____
Incompatibility (Materials to avoid): Heat, Sparks, Flames. Avoid strong oxidizing agents
Hazardous Decomposition Products: Carbon monoxide. Sulfur dioxide
Hazardous Polymerization: May Occur _____ Will Not Occur X__

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released:
Small Spill: Clean contaminated surface thoroughly. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste.
Large Spill: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
Waste Disposal Method:
Small Spill: Contaminated absorbent may be deposited in a landfill in accordance with local, state and federal regulations.
Large Spill: Reclaim as much as possible for reprocessing or salvage. Contaminated absorbent may be deposited in a landfill in accordance with local, state and federal regulations.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection:
Not needed for normal exposure. A NIOSH/MSHA jointly approved air supplied respirator is advised in absence of proper environmental control. Firefighters require SCBA Positive Pressure Breathing Apparatus when involved in petroleum fires.

Ventilation:

Ventilation is not required for normal conditions of use. If ventilation is needed, explosion-proof motors and fans are required to provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(S).

Personal Protective Equipment and Apparel:

Gloves: Wear petroleum resistant gloves such as: Neoprene, Nitrile, rubber gloves, etc.

Eye Protection: Safety goggles or face shield for protection from splashing in eyes.

Other Protective Equipment: Flame resistant clothing is required during daily activity. Impervious Tyvex outwear may be used according to working conditions.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be taken when handling and storing:

Keep all containers in upright position with storage in cool, dry, well ventilated area away from heat, ignition, and strong oxidizers. Do not allow smoking in areas of use or dispensing.

Other Precautions:

Have written confined space and tank entry procedures. Never enter confined space unless properly trained in confine space entry and respiratory training. Complete a confined space permit when applicable.

OXYGEN AND VAPOR levels.

WARNING: Hydrogen Sulfide (H2S) and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. Hydrogen sulfide is an extremely flammable and highly toxic gas.

SECTION X

Toxicological Information

Components	**Test Results**
Calcium Chloride (10043-52-4)	Acute Oral LD 50 Rat: 1000 mg/kg Acute Other LD50 Mouse: 42 mg/kg Acute Oral
Potassium Chloide (7447-40-7)	LD50 Guinea pig: 2500 mg/kg Acute Oral LD50 mouse: 383 mg/kg Acute Oral LD50 Rat: 2600 mg/kg
Hydrogen Sulfide (7783-06-4)	Acute inhalation LC50 Monkey 0.7 mg/l 35 minutes Acute inhalation LC50 Mouse > 0.024 mg/l 960 minutes Acute inhalation LC50 Rat > 0.38 mg/l 960 minutes

Sensitization	Not available
Acute effects	Toxic by inhalation. Causes skin, eye and respiratory tract irritation. May contain harmful concentrations of hydrogen sulfide, which can accumulate in the head space.
Chronic effects	Hazardous by OSHA criteria. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effect.
Carcinogenicity	This product is not listed to be a carcinogen by IARC, ACHIS, NTP, or OSHA
Neurological effects	Hazardous chemical by OSHA criteria
Reproductive effect	Not available
Further information	Symptoms may be delayed

Ecological Information Components	**Test Results**
Calcium Chloride (10043-52-4)	EC50 Water flea (Daphnia magna): 52 mg/l 48 hours LC50 Fathead minnow (Pimephales promelas): 3930-5360 mg/l 96 hours
Potassium Chloide (7447-40-7)	EC50 Water flea (Daphnia magna): 83 mg/l 48 hours LC50 Western mosquitofish (Gambusia affinis): 435 mg/l 96 hours
Hydrogen Sulfide (7783-06-4)	LC50 Lake white fish (Coregonus clupeaformis): 0.002 mg/l 96 hours

Ecotoxicity This product contains a substance which is toxic to aquatic organisms

SECTION XI **DOT LABELING INFORMATION**

Proper Shipping Name:	Produced Water, Sour
Hazardous Classification:	Toxic liquid, inorganic, UN 3287 (Hydrogen Sulfide RQ=) (DOT ERG No. 27)
Identification Number:	UN 3287
Label(s) Required:	Hazard class 6.1 group III

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