Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation
Waste Discharge Requirements (WDR) Order 98-205
Technical Report

Jasmin Oil Field
Quinn Lease
Section 15 T25S/R27E MDB&M

6/15/2016
Hathaway, LLC
CERTIFICATION STATEMENT

Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation

June 15, 2016

Certification Statement

RWCQB Section 13267
Waste Discharge Requirements (WDR’s) Order 98-205
Quinn Lease and Davies Realty Co. Lease
Technical Report

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Chad Hathaway, President and CEO

Signature: [Signature]

Dated:

Company: Hathaway LLC
Address: 4205 Atlas Ct.
City/State/Zip: Bakersfield, California 93308
1 INTRODUCTION

1.1 PURPOSE

This report documents the existing operation of oilfield production wastewater for irrigation into surface impoundments at the Quinn Lease and Davies Realty Co. Lease. This report was prepared in response to a letter from the Regional Water Quality Control Board, dated May 2, 2016 in which the Water Board requested that the lease’s operator submit a technical report detailing the use of chemicals and/or additives used in the production, treatment, and transportation of oil field waters that are used in irrigation.

1.2 LIMITATIONS

This document was prepared in accordance with generally accepted standards of environmental practice for the exclusive use of and reliance upon by Hathaway LLC for specific application to the referenced site. No other warranty is either expressed or implied.

Reuse and reliance of this document by other parties, or for purposes other than those specified, without written authorization, will be at the sole risk of the party or parties utilizing this document. Hathaway LLC will incur no liability resulting from claims, damages, losses, and expenses that might arise from unauthorized use and reliance of this document.

To the best of our knowledge, information provided by others is true and accurate, unless otherwise noted.

2 SITE DESCRIPTION

2.1 FACILITY INFORMATION

The Quinn Lease has been operated Hathaway, LLC since 2006. Resolution No. 58-487 was adopted by the RWQCB for approval of the WDR for the Quinn Lease operator to discharge produced water for use by the Jasmin Ranchos Mutual Water Company (“JRMWC”) for beneficial reuse as irrigation water for tree crops.

According to the Tulare Lake Basin Plan, produced water from oil production activities is of suitable quality for beneficial reuse for permanent crop irrigation. After the produced water passes through the percolation ponds, it is discharged to a pond operated by the JRMWC.
2.2 PHYSICAL SETTING

The facility is in the ½ of Section 15 and the west ½ of Section 22, T25S, R27E, MDB&M, approximately 30 miles north of Bakersfield, 20 south of Porterville, and 10 miles east of Delano, near the intersection of Highway’s 155 and 65. There are no named surface waters or drainage courses in the immediate vicinity of JRMWC boundaries.

2.3 SURFACE IMPOUNDMENT INFORMATION

Oil and water are pumped from the oil producing wells to the tank facilities on the Quinn Lease. The oil and water are separated in the facilities’ above ground tanks. The oil is stored in above ground stock tanks for sale, while the water is discharged to surface impoundments for disposal by beneficial reuse, evaporation, or percolation. There are a total of eight unlined surface impoundments, which are operated as percolation ponds. All eight ponds are located on the Quinn Lease.

3 TOTAL VOLUME OF PRODUCED WATER

The throughput for the Quinn facility averages approximately 300 barrels of oil per day and approximately 35,000 barrels of water per day. For total volume of produced waste water provided to JRMWC for irrigation, see tables below:

- Table 1 - 2014 Waste Water
- Table 2 – 2015 Waste Water
- Table 3 – 2016 Waste Water (YTD)
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<td>1,118,810</td>
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<td>1,170,670</td>
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<td>4.33</td>
<td>1,170,670</td>
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<td>4.41</td>
<td>1,261,890</td>
<td>4.43</td>
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## Table 3

### Order for Irrigation

#### Table 3 - Order for Irrigation

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<th>Month</th>
<th>Waste Water Gauge - Yesterday</th>
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<td>February</td>
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### Additional Details

**Waste Water (sent to JRMWC):**
- January 2016: 1,110,870
- February 2016: 1,063,870
- March 2016: 930,370

**Daily Flow Average:**

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<th>Month</th>
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<td>120.74</td>
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<tr>
<td>May</td>
<td>124.72</td>
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**Acre Ft:**
- January 2016: 4.15896
- February 2016: 3.278
- March 2016: 3.787

3 CHEMICALS USED IN TREATMENT, FLOW, FREQUENCY & VOLUMES

3.1 CHEMICALS USED IN TREATMENT AND USE

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>Product Name:</th>
<th>Product Code:</th>
<th>Use:</th>
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<tr>
<td>Baker Petrolite A Baker Hughes Company</td>
<td>TRETOLITE</td>
<td>DMO7040</td>
<td>Demulsifier – Emulsion Breaker</td>
</tr>
<tr>
<td>Baker Petrolite A Baker Hughes Company</td>
<td>TRETOLITE</td>
<td>RBW264X</td>
<td>Water Clarifier – Reverse Emulsion Breaker</td>
</tr>
<tr>
<td>Baker Petrolite A Baker Hughes Company</td>
<td>TRETOLITE</td>
<td>RBW507</td>
<td>Water Clarifier – Polymer</td>
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</table>

Exhibit 1 – DMO0740
Exhibit 2 – RBW264X
Exhibit 3 – RBW507

3.1 CHEMICAL FLOW

Chemicals are pumped at a small rate from fixed tanks, from the north-end or south-end header system, and plant inlet, into a main line and is comingled with all produced fluids prior to entering the tank farm facility. The oil is separated and stored in above ground stock tanks for sale, while water is discharged through a Wemco then to surface impoundments for beneficial reuse. Water flows through seven ponds (Exhibit 4) in advance of discharge to the JRMWC irrigation pond.

3.2 FREQUENCY OF USE

Continuous chemical is slowly injected at a minimal rate into the main line over a twenty-four hour period. No chemicals are used for enhanced oil recovery.
## 3.3 Total Treatment Volumes

<table>
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<tr>
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<th>Product Code</th>
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<td>DMO 7040</td>
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Total BBLS of Water Sent 2014: 10,189,000
Total Gallons of Water Sent 2014: 427,998,000

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Total BBLS of Water Sent 2015: 10,823,711
Total Gallons of Water Sent 2015: 454,595,862

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Total BBLS of Water Sent 2016: 5,033,399
Total Gallons of Water Sent 2016: 211,402,758
Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation

Exhibit 1

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**SAFETY DATA SHEET**

Section 1. Identification

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<tr>
<th>Product name</th>
<th>TRETOLITE™ DMO7040 DEMULSIFIER</th>
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Relevant identified uses of the substance or mixture and uses advised against

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<th>Identified uses</th>
<th>Demulsifier.</th>
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Print date           | 11/3/2014.  |
Validation date      | 11/3/2014.  |
Version              | 1            |

Supplier's details

- Baker Petrolite
  - A Baker Hughes Company
  - 12645 W. Airport Blvd.
  - Sugar Land, TX 77478
  - For Product Information/MSDSs Call: 800-231-3606
  - (9:00 a.m. - 5:00 p.m. cest; Monday - Friday) 281-279-5400

Emergency telephone
number (with hours of
operation)

- CHEMTREC: 800-424-9300 (U.S. 24 hour)
- Baker Petrolite: 800-231-3606
- (011) 281-278-5400
- CANUTEC: 613-996-3666 (Canada 24 hours)
- CHEMTREC Intl 01-703-527-3887 (International 24 hour)

Section 2. Hazards identification

<table>
<thead>
<tr>
<th>OSHA/HCS status</th>
<th>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification of the substance or mixture</td>
<td>FLAMMABLE LIQUIDS - Category 3</td>
</tr>
<tr>
<td></td>
<td>SKIN CORROSION/IRRITATION - Category 2</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2</td>
</tr>
<tr>
<td></td>
<td>CARCINOGENICITY - Category 2</td>
</tr>
<tr>
<td></td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and narcotic effects] - Category 3</td>
</tr>
<tr>
<td></td>
<td>AQUATIC HAZARD (ACUTE) - Category 3</td>
</tr>
<tr>
<td></td>
<td>AQUATIC HAZARD (LONG-TERM) - Category 2</td>
</tr>
</tbody>
</table>

GHS label elements

| Hazard pictograms | |
|-------------------| |
| Signal word       | Warning |
TRETONITE DMONMS DEHMULISER

Section 2. Hazards Identification


Precautionary statements: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. > 0 hours (breakthrough time). Nitrile or Neoprene gloves. 4H gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.

Response: Collect spillage. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Store locked up. Store in a well-ventilated place. Keep cool.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: Avoid contact with skin and clothing. Wash thoroughly after handling.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light aromatic naphtha</td>
<td>20-30</td>
<td>64742-95-6</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>10-20</td>
<td>95-03-6</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>5-10</td>
<td>64742-94-5</td>
</tr>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>5-10</td>
<td>106-67-6</td>
</tr>
<tr>
<td>Xylene</td>
<td>1-5</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>1,2,3-Trimethylbenzene</td>
<td>1-5</td>
<td>526-73-8</td>
</tr>
<tr>
<td>Naphthaene</td>
<td>0.1-1</td>
<td>91-20-3</td>
</tr>
<tr>
<td>Cumene</td>
<td>0.1-1</td>
<td>96-02-8</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>0.1-1</td>
<td>106-41-4</td>
</tr>
</tbody>
</table>

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Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact: Causes skin irritation. Defatting to the skin.

Ingestion: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: pain or irritation, watering, redness

Inhalation: respiratory tract irritation, coughing, nausea or vomiting, headache, drowsiness/tiredness, dizziness/vertigo, unconsciousness

Skin contact: irritation, redness, dryness, cracking

Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Additional information

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Section 4. First aid measures

If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs.

Section 5. Fire-fighting measures

**Extinguishing media**

- Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media: Do not use water jet.

**Specific hazards arising from the chemical**

- Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low- or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**

- Carbon dioxide, carbon monoxide

**Special protective actions for fire-fighters**

- Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters**

- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

- No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No fires, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**

- If specialised clothing is required to deal with the spillage, take note of any information in Section 5 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**

- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

**Methods and materials for containment and cleaning up**

**Small spill**

- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Section 6. Accidental release measures

Large spill: Stop leak if without risk. Move containers from spills area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled material. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1.800.424.8802.

Section 7. Handling and storage

Precautions for safe handling:

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store in unopened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters:

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredients:</th>
<th>List name</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>US ACGIH</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>US ACGIH</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td>Xylene</td>
<td>US ACGIH</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>435</td>
<td>1 mg/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>435</td>
<td>1 mg/L</td>
</tr>
<tr>
<td>1,2,3-Trimethylbenzene</td>
<td>US ACGIH</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL</td>
<td>25</td>
<td>123</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>435</td>
<td>1 mg/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>435</td>
<td>1 mg/L</td>
</tr>
</tbody>
</table>

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Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Substance</th>
<th>OSHA PEL 1989</th>
<th>US ACGIH</th>
<th>OSHA PEL 1999</th>
<th>US ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumene</td>
<td>10.0</td>
<td>60.0</td>
<td>15.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>50.0</td>
<td>245.0</td>
<td>50.0</td>
<td>245.0</td>
</tr>
<tr>
<td>OSHA PEL 1999</td>
<td>10.0</td>
<td>435.0</td>
<td>100.0</td>
<td>435.0</td>
</tr>
<tr>
<td>OSHA PEL 1999</td>
<td>100.0</td>
<td>125.0</td>
<td>100.0</td>
<td>545.0</td>
</tr>
</tbody>
</table>


Consult local authorities for acceptable exposure limits. Only components of this product with established exposure limits appear in the box above.

If OSHA permissible exposure levels are shown above they are the OSHA 1999 levels or are from subsequent OSHA regulatory actions. Although the 1999 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

**Appropriate engineering controls**

- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Individual protection measures**

**Hygiene measures**

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
- Appropriate techniques should be used to remove potentially contaminated clothing.
- Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**

- Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

**Hand protection**

- Chemical-resistant gloves: Nitrile or Neoprene gloves. 4H gloves.

**Skin protection**

- Wear long sleeves to prevent repeated or prolonged skin contact.

**Respiratory protection**

- If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

**Appearance**

- **Physical state**: Liquid.
- **Color**: Amber.
- **Odor**: Aromatic hydrocarbon.
- **Odor threshold**: Not available.
- **pH**: 5 to 6
- **Melting/freezing point**: Not applicable.
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Initial Boiling Point**: Not available.
- **Flash point**: Closed cup: 45°C (113°F) [PMCC]
- **Fire point**: Not applicable.
- **Explosion rate**: Not applicable.
- **Flammability (solid, gas)**: Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits: Not available.

Vapor pressure: Not available.

Vapor density: >1 [Air = 1]

Relative density: 0.93 (15.6°C)

Density: 7.75 (lbs/gal)

Solubility in water: Dispersible

Partition coefficient: n-octanol/water: Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Not available.

VOC: Not available.

Pour Point: Not available.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light aromatic naphtha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2900 mg/kg</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>18000 mg/m3</td>
<td>-</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>5 g/kg</td>
<td>Rat</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>LC50 Inhalation Vapor</td>
<td>&gt;11.4 mg/l</td>
<td>Rat</td>
<td></td>
<td>6 hours</td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>3200 mg/kg</td>
<td>Rat</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>LC50 Inhalation Vapor</td>
<td>&gt;2000 mg/kg</td>
<td>Rat</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Inhalation Gas.</td>
<td>5000 ppm</td>
<td>Rat</td>
<td></td>
<td>4 hours</td>
</tr>
<tr>
<td>LD50 Dermal</td>
<td>_</td>
<td>Rabbit</td>
<td>&gt;1700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>_</td>
<td>Male rat</td>
<td>3523 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>_</td>
<td>Rat</td>
<td>4300 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>LD50 Inhalation Vapor</td>
<td>_</td>
<td>Rabbit</td>
<td>&gt;20 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>LD50 Inhalation Vapor</td>
<td>_</td>
<td>Mouse</td>
<td>10000 mg/m3</td>
<td>7 hours</td>
</tr>
<tr>
<td>LC50 Inhalation Vapor</td>
<td>_</td>
<td>Rat</td>
<td>39000 mg/m3</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

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### Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Ethylbenzene</th>
<th>LD50 Dermal</th>
<th>Rabbit</th>
<th>LD50 Oral</th>
<th>Rat</th>
<th>LD50 Dermal</th>
<th>Rabbit</th>
<th>LD50 Oral</th>
<th>Rat</th>
<th>LD50 Oral</th>
<th>Rabbit</th>
<th>LD50 Oral</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Irritation/Corrosion
No applicable toxicity data

#### Sensitization
No applicable toxicity data

#### Mutagenicity
No applicable toxicity data

#### Carcinogenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>-</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td>-</td>
<td>2B</td>
<td></td>
</tr>
<tr>
<td>Cumene</td>
<td>-</td>
<td>2B</td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>-</td>
<td>2B</td>
<td></td>
</tr>
</tbody>
</table>

Reasonably anticipated to be a human carcinogen.

#### Reproductive toxicity
No applicable toxicity data

#### Teratogenicity
No applicable toxicity data

#### Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light aromatic naphtha</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Irritation</td>
</tr>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Xylene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract</td>
</tr>
<tr>
<td>1,2,3-Trimethylbenzene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Irritation</td>
</tr>
<tr>
<td>Cumene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract</td>
</tr>
</tbody>
</table>

#### Specific target organ toxicity (repeated exposure)
Not applicable.

#### Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light aromatic naphtha</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>Xylene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>1,2,3-Trimethylbenzene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>Cumene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

**Information on the likely routes of exposure**

Routes of entry anticipated: Dermal, Inhalation.
Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.
Potential chronic health effects
General : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>5476.4 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>3334.2 mg/kg</td>
</tr>
<tr>
<td>Inhalation (gases)</td>
<td>151564.8 ppm</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>35.43 mg/l</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>Acute LC50 4510 µg/l Marine water</td>
<td>Crustaceans - Eia astriata</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 22.4 µg/l Fresh water</td>
<td>Fish - Tilapia zillii</td>
<td>96 hours</td>
</tr>
<tr>
<td>1,3,5-Trimethylbenzene</td>
<td>Acute LC50 12520 to 15050 µg/l Fresh water</td>
<td>Fish - Carassius auratus</td>
<td>96 hours</td>
</tr>
<tr>
<td>Xylene</td>
<td>Chronic NOEC 400 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 8500 µg/l Marine water</td>
<td>Crustaceans - Palaemonetes pugio</td>
<td>48 hours</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Acute LC50 13400 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 1.6 ppm Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2350 µg/l Marine water</td>
<td>Crustaceans - Palaemonetes pugio</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 213 µg/l Fresh water</td>
<td>Fish - Molanotaenia fluviatilis - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td>Cumene</td>
<td>Chronic NOEC 0.67 ppm Fresh water</td>
<td>Fish - Oncorhynchus kisutch</td>
<td>40 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2600 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 7400 to 11290 µg/l Fresh water</td>
<td>Crustaceans - Artemia sp.</td>
<td>48 hours</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Acute LC50 30500 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2700 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 4600 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2930 to 4400 µg/l Fresh</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

11/3/2014. DMO7040
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Water</th>
<th>Crustaceans - Americanymysis bana</th>
<th>48 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute LC50 5200 µg/l Marine water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>90 hours</td>
</tr>
<tr>
<td>Acute LC50 4200 µg/l Fresh water</td>
<td>Algae - Pseudokirchnerella subcapitata</td>
<td>90 hours</td>
</tr>
<tr>
<td>Chronic NOEC 1000 µg/l Fresh water</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability
Not available.

Other adverse effects
No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or linings may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1993</td>
<td>FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, 1,2, 4-Trimethylbenzene)</td>
</tr>
</tbody>
</table>

Transport hazard class(es) 3
Packing group III
Environmental hazards Yes. Yes. Yes. No.
Additional information -

Emergency schedules, (EnS) F-E-S-E
Section 14. Transport information

Special precautions for use: Transport within user’s premises: always transport in closed containers that are up right and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

DOT Reportable: Xylene, 301 gal of this product.

Quantity: Naphthalene, 1356 gal of this product.

Marine pollutant: Light aromatic naphtha
1,2,4-Trimethylbenzene

North America NAERG: 128

Section 15. Regulatory information

U.S. Federal regulations:
- TSCA 12(b) one-time export: No products were found.
- TSCA 12(b) annual export notification: No products were found.
- United States inventory (TSCA 8b): All components are listed or exempted.
- Clean Water Act (CWA) 307: Naphthalene, Ethylbenzene
- Clean Water Act (CWA) 311: Xylene, Naphthalene, Ethylbenzene, Potassium hydroxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs):
- SARA 302/304: No products were found.
- SARA 311/312 Classification: Fire hazard
  Immediate (acute) health hazard
  Delayed (chronic) health hazard

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Xylene</td>
<td>110-87-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>86-51-3</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>106-42-3</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

Canada

Canada (CEPA DSL): All components are listed or exempted.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

Flammability 3 0
Health 2 0
Instability/Reactivity
Special

History

Date of printing: 11/3/2014.

Indicates information that has changed from previously issued version.
Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation

<table>
<thead>
<tr>
<th>Section 16. Other information</th>
</tr>
</thead>
</table>

**Notice to reader**

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.
# SAFETY DATA SHEET

## Section 1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>TRETOLITE™ RBW264X WATER CLARIFIER™ a trademark of Baker Hughes Incorporated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>RBW264X</td>
</tr>
</tbody>
</table>

**Relevant identified uses of the substance or mixture and uses advised against**

- Identified uses: Water clarifier.

**Print date**

- 12/19/2014.

**Validation date**

- 10/27/2014.

**Version**

- 1

**Supplier's details**

- Baker Petrolie
  - A Baker Hughes Company
  - 12645 W. Airport Blvd.
  - Sugar Land, TX 77478
  - For Product Information/MSDSs Call: 800-231-3606
  - (8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400

**Emergency telephone number (with hours of operation)**

- CHEMTREC: 800-424-6300 (U.S. 24 hour)
- Baker Petrolie: 800-231-3606
- (01)281-276-5400
- CANUTEC: 613-696-6866 (Canada 24 hours)
- CHEMTREC Intl: 01-703-527-3887 (International 24 hour)

## Section 2. Hazards Identification

**OSHA/HCS status**

- This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture**

- **SKIN CORROSION/IRRITATION** - Category 2
- **SERIOUS EYE DAMAGE/EYE IRRITATION** - Category 2
- **SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [kidneys]** - Category 2
- **AQUATIC HAZARD (ACUTE)** - Category 2
- **AQUATIC HAZARD (LONG-TERM)** - Category 3

**GHS label elements**

**Hazard pictograms**

- ![Hazard pictogram](image)

**Signal word**

- Warning

**Hazard statements**

- Causes serious eye irritation.
- Causes skin irritation.
- May cause damage to organs through prolonged or repeated exposure. (kidneys)
- Toxic to aquatic life.
- Harmful to aquatic life with long lasting effects.

---

12/10/2014. | RBW264X | 1/10
TRETOLITE™ RBW264X WATER CLARIFIER

Section 2. Hazards identification


Response: Get medical attention if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Not applicable.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazard not otherwise classified: None known.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>10-20</td>
<td>107-21-1</td>
</tr>
<tr>
<td>Ammonium salt</td>
<td>10-20</td>
<td>Trade secret</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>0.1-1</td>
<td>7046-05-7</td>
</tr>
</tbody>
</table>

Section 4. First aid measures

**Description of necessary first aid measures**

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Check for and remove any contact lenses. Get medical attention.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or wai[...]

**Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or wai[...]

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Eye contact**: Causes serious eye irritation.
## Section 4. First aid measures

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
</tbody>
</table>

### Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Signs/Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>Pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Irritation, redness</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician:** In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments:** No specific treatment.

**Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- **Suitable extinguishing media:** Use an extinguishing agent suitable for the surrounding fire.
- **Unsuitable extinguishing media:** None known.

### Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

### Hazardous thermal decomposition products

- Carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds

### Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

### Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- **For emergency responders:** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

12/18/2014.  RBW264X  3/10
Section 6. Accidental release measures

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewage, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

If HQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8862.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully ressealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>List name</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³ Other</td>
<td>ppm mg/m³ Other</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td>US ACGIH</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL  1090</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>US ACGIH</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL  1090</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Form: [a]Aerosol [b]Fume

Consult local authorities for acceptable exposure limits.

12/10/2014. RBW264X 4/10
### Section 8. Exposure controls/personal protection

Only components of this product with established exposure limits appear in the box above. If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

**Appropriate engineering controls**: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures**

- **Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- **Eye/face protection**: Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

- **Hand protection**: Chemical-resistant gloves; Neoprene gloves.

- **Skin protection**: Wear long sleeves to prevent repeated or prolonged skin contact.

- **Respiratory protection**: If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### Section 9. Physical and chemical properties

**Appearance**

- **Physical state**: Clear to slightly hazy liquid.
- **Color**: Amber, Brown, [Dark]
- **Odor**: Sweet, [Slight]
- **Odor threshold**: Not available.
- **pH**: 4.5
- **Melting/freezing point**: Not available.
- **Boiling point**: Not available.
- **Initial Boiling Point**: Not available.
- **Flash point**: Closed cup: >83.4°C (>180.1°F) [SFCC]
- **Burning time**: Not applicable.
- **Burning rate**: Not applicable.
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

**Lower and upper explosive (flammable) limits**: Not available.

- **Vapor pressure**: Not available.
- **Vapor density**: >1 [Air = 1]
- **Relative density**: 1.1315 (15.6°C)
- **Density**: 9.43 (lbs/gal)
- **Solubility in water**: Soluble
- **Partition coefficient: n-octanol/water**: Not available.

12/18/2014.
Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation

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**Section 9. Physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
<tr>
<td>VOC</td>
<td>Not available.</td>
</tr>
<tr>
<td>Pour Point</td>
<td>-23.3°C (-9.9°F)</td>
</tr>
</tbody>
</table>

**Section 10. Stability and reactivity**

- **Reactivity**: No specific test data related to reactivity available for this product or its ingredients.
- **Chemical stability**: The product is stable.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
- **Conditions to avoid**: No specific data.
- **Incompatible materials**: Reactive or incompatible with the following materials: oxidizing materials, slightly reactive or incompatible with the following materials: acids.
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Section 11. Toxicological information**

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>350 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

No applicable toxicity data

**Sensitization**

No applicable toxicity data

**Mutagenicity**

No applicable toxicity data

**Carcinogenicity**

No applicable toxicity data

**Reproductive toxicity**

No applicable toxicity data

**Teratogenicity**

No applicable toxicity data

**Specific target organ toxicity (single exposure)**

Not applicable.

**Specific target organ toxicity (repeated exposure)**

---

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## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Kidneys</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Routes of entry anticipated: Dermal, Inhalation.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Short term exposure**

- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Potential chronic health effects**

- General: May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity: No known significant effects or critical hazards.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>3980.4 mg/kg</td>
</tr>
</tbody>
</table>

## Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>Acute LC50 100000 µg/l Marine water</td>
<td>Crustacea - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.050000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 26 µg/l</td>
<td>Algae - Navicula incerta</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 34 µg/l Fresh water</td>
<td>Algae - Chlorella vulgaris</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.0 µg/l Fresh water</td>
<td>Aquatic plants - Lemna</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 103 µg/l Fresh water</td>
<td>Aquatic plants - Lemna</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 49.99 µg/l Fresh water</td>
<td>Fish - Limanda punctatissima</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.027 mg/l Marine water</td>
<td>Algae - Chlorella sp.</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 20 µg/l Marine water</td>
<td>Crustacea - Procambarus darkii</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1000 µg/l Fresh water</td>
<td>Crustacea - Moina micrura</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 80 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 31.8 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>36 days</td>
</tr>
</tbody>
</table>

12/15/2014.
Section 12. Ecological information

Persistence and degradability
Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Inoculation or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Contains: Ethylene glycol)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes. No. No. No.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>Remarks: This material is Not Regulated if transported in a package that does not meet or exceed the Reportable Quantity (RQ).</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

DOT Reportable Quantity: Ethylene glycol, 4221 gal of this product.

Marine pollutant: Not available.

North America NAERG: 171

Section 15. Regulatory information

U.S. Federal regulations: TSCA 12(b) once-time export: No products were found.
TSCA 12(b) annual export notification: No products were found.
United States inventory (TSCA 8(b)): All components are listed or exempted.
Clean Water Act (CWA) 307: zinc chloride
Clean Water Act (CWA) 311: zinc chloride

Clean Air Act Section 112 (B) Hazardous Air Pollutants (HAPs):
SARA 302/304: No products were found.
SARA 311/312: Immediate (acute) health hazard
SARA 313: Delayed (chronic) health hazard

<table>
<thead>
<tr>
<th>Supplier notification</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>10 - 20</td>
</tr>
</tbody>
</table>

Canada:
Canada (CEPA DSL): All components are listed or exempted.

Section 16. Other information

National Fire Protection Association (U.S.A.)

Flammability Health

Inertibility/Reactivity

Special

History

Date of printing: 12/18/2014.

Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or

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Hathaway LLC
Response to RWCQB Section 13267
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Section 16. Other information

disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.
**SAFETY DATA SHEET**

### Section 1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>TRETOLITE™ RBWS07 WATER CLARIFIER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>RBWS07</td>
</tr>
</tbody>
</table>

**Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Water clarifier.

Print date: 1/22/2015.
Validation date: 1/22/2015.
Version: 1

Supplier’s details:
Baker Petrolite
A Baker Hughes Company
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/MSDSs Call: 800-231-3606
(8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 291-276-5400

Emergency telephone number (with hours of operation):
CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petro: 800-231-3606
(001)281-376-5400
CANUTEC: 613-986-6666 (Canada 24 hours)
CHEMTREC Intl 01-703-527-3867 (International 24 hour)

### Section 2. Hazards identification

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
- Skin corrosion/irritation - Category 2
- Specific target organ toxicity (single exposure) [narcotic effects] - Category 3

GHS label elements:

**Hazard pictograms**:

![Pictogram](image)

Signal word: Warning
Hazard statement: Causes skin irritation. May cause drowsiness and dizziness.

Precautionary statements:

**Prevention**: Wear protective gloves: > 8 hours (breakthrough time); Nitrile or Neoprene gloves... Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

**Response**: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention.
Section 2. Hazards Identification

Storage: Store locked up.
Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements:
Hazardous not otherwise classified: Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillate</td>
<td>20 - 30</td>
<td>84742-47-8</td>
</tr>
<tr>
<td>Oxyalkylated alkylphenol</td>
<td>0.1 - 1</td>
<td>Trade secret</td>
</tr>
</tbody>
</table>

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Check for and remove any contact lenses. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.
Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: Causes skin irritation. Drying to the skin.

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Section 4. First aid measures

Ingestion: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms
Eye contact: pain or irritation, watering, redness
Inhalation: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness
Skin contact: irritation, redness, dryness, cracking
Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary
Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments: No specific treatment.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)
Additional information
If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs.

Section 5. Fire-fighting measures

Extinguishing media
Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical
Hazardous thermal decomposition products: In a fire or if heated, a pressure increase will occur and the container may burst.
Carbon dioxide, carbon monoxide, nitrogen oxide, halogenated compounds

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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Section 6. Accidental release measures

Environmental precautions: Avoid dispersal of spilled material and run off and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 9). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or in an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 9 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Additional information: Spills of this product are very slippery. Spilled material should be absorbed onto an inert material and scooped up. The area should be thoroughly flushed with water and washed to remove residue. If area is still slippery, apply more dry sweeping compound.

Section 8. Exposure controls/personal protection

Control parameters

<table>
<thead>
<tr>
<th>Ingredients:</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Celing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>list name</td>
<td>ppm</td>
<td>mg/ml</td>
</tr>
<tr>
<td>Petroleum distillates, as total hydrocarbon vapor</td>
<td>USACGHS</td>
<td>-</td>
<td>200</td>
</tr>
</tbody>
</table>


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Section 8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits. Only components of this product with established exposure limits appear in the box above.

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

Appropriate engineering controls:
- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures:
- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection:
- Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Hand protection:
- Chemical-resistant gloves: Nitrile or Neoprene gloves.

Skin protection:
- Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory protection:
- If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state: Liquid.
Color: Milky-white.
Odor: Aliphatic solvent.
Odor threshold: Not available.
pH: 4 to 6
- 5% of product

Melting/freezing point: Not available.
Boiling point: Not available.
Initial boiling point: Not available.
Flash point: Closed cup: >93.4°C (>200.1°F) [TCC]
 Burning time: Not applicable.
 Burning rate: Not applicable.
Evaporation rate: Not available.
Flammability (solid, gas): Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

Lower and upper explosive (flammable) limits: Not available.

Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 1.035 (15.6°C)
Density: 8.62 (lbs/gal)
Solubility in water: Soluble
**Section 9. Physical and chemical properties**

- Partition coefficient: n-octanol/water: Not available.
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- Viscosity: Not available.
- VOC: Not available.
- Pour Point: Not available.

**Section 10. Stability and reactivity**

- Reactivity: No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability: The product is stable.
- Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid: No specific data.
- Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Section 11. Toxicological information**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

No applicable toxicity data

**Sensitization**

No applicable toxicity data

**Mutagenicity**

No applicable toxicity data

**Carcinogenicity**

No applicable toxicity data

**Reproductive toxicity**

No applicable toxicity data

**Teratogenicity**

No applicable toxicity data

**Specific target organ toxicity (single exposure)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>Category 3</td>
<td>Not applicable</td>
<td>Narcotic effects</td>
</tr>
</tbody>
</table>
Hathaway LLC
Response to RWCQB Section 13267
Order for Irrigation

TRETOLITE™ RBW507 WATER CLARIFIER

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)
Not applicable.

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure: Routes of entry anticipated: Dermal, Inhalation.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects:

General: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>50000 mg/kg</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>Acute LC50 2200 µg/l Fresh water</td>
<td>Fish - Leptomis macrochirus</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2900 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability

Not available.

Other adverse effects: No known significant effects or critical hazards.

1/22/2015. RBW507
### Section 13. Disposal considerations

**Disposal methods**: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional/local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### Section 14. Transport information

<table>
<thead>
<tr>
<th></th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Special precautions for user**: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

**DOT Reportable Quantity**: Not applicable.

**Marine pollutant**: Not available.

**North-America NAERG**

Not available.
### TRETOLITE™ RBW507 WATER CLARIFIER

#### Section 15. Regulatory information

<table>
<thead>
<tr>
<th>U.S. Federal regulations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA 12(b) one-time export</td>
<td>No products were found.</td>
</tr>
<tr>
<td>TSCA 12(b) annual export notification</td>
<td>No products were found.</td>
</tr>
<tr>
<td>United States inventory (TSCA 9b)</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Clean Water Act (CWA) 307</td>
<td>No products were found.</td>
</tr>
<tr>
<td>Clean Water Act (CWA) 311</td>
<td>No products were found.</td>
</tr>
<tr>
<td>Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)</td>
<td>Not listed</td>
</tr>
<tr>
<td>SARA 302/304</td>
<td>No products were found.</td>
</tr>
<tr>
<td>SARA 311/312 Classification</td>
<td>Immediate (acute) health hazard</td>
</tr>
<tr>
<td>SARA 313</td>
<td></td>
</tr>
<tr>
<td>Supplier notification</td>
<td>No products were found.</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td>Canada (CEPA DSL)</td>
<td>All components are listed or exempted.</td>
</tr>
</tbody>
</table>

#### Section 16. Other information

**National Fire Protection Association (U.S.A.)**

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Instability/Reactivity</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**History**

- Date of printing: 1/22/2015.

- Indicates information that has changed from previously issued version.

**Notice to reader**

**NOTE:** The information on this MSDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.
Hathaway LLC
Response to RWCQB Section 13267

Legend
- Quinn Lease
- Pond #1
- Pond #2
- Pond #3
- Pond #4
- Pond #5
- Pond #6
- Pond #7

Prepared by:
EnviroTech Consultants, Inc.

<table>
<thead>
<tr>
<th>TITLE</th>
<th>Quinn Ponds</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL FIELD</td>
<td>Jasmin</td>
</tr>
<tr>
<td>COUNTY</td>
<td>Kern</td>
</tr>
<tr>
<td>DRIN BY</td>
<td>Ashley Bylow</td>
</tr>
<tr>
<td>DATE</td>
<td>December 2, 2015</td>
</tr>
<tr>
<td>SCALE</td>
<td>1 inch = 550 feet</td>
</tr>
</tbody>
</table>