

# 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

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Response to RWCQB Section 13267  
Order for Irrigation

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:



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)

Hathaway LLC  
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Table 1

| JASMIN RANCHOS                         |                             |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|--|-----------------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2014 Total Waste Water (sent to JRMWC) | 10,189,530                  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| 2014 Total Acre Ft                     | 1,312                       |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
|  |                             | 1         | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21      | 22      | 23      | 24      | 25      | 26      | 27      | 28      | 29      | 30      | 31      |         |
| January 2014                           | Waste Water (sent to JRMWC) | 815,770   | 28410   | 25380   | 26950   | 26530   | 27100   | 24470   | 26540   | 27180   | 26760   | 27310   | 33980   | 22670   | 22370   | 26450   | 26990   | 23310   | 27290   | 27040   | 26620   | 24310   | 26790   | 27000   | 29610   | 24280   | 23150   | 26860   | 25960   | 26580   | 27140   | 26700   | 24040   |
|  | Acre Ft                     | 105.23433 | 3.66489 | 3.27402 | 3.47655 | 3.42237 | 3.4959  | 3.15663 | 3.42366 | 3.50622 | 3.45204 | 3.52299 | 4.38342 | 2.92443 | 2.88573 | 3.41205 | 3.48171 | 3.00699 | 3.52041 | 3.48816 | 3.43398 | 3.13599 | 3.45591 | 3.483   | 3.81969 | 3.13212 | 2.98635 | 3.46494 | 3.34884 | 3.42882 | 3.50106 | 3.4443  | 3.10116 |
| February 2014                          | Waste Water (sent to JRMWC) | 695,160   | 24010   | 27440   | 21950   | 24910   | 24480   | 25860   | 24850   | 22930   | 25020   | 21000   | 26780   | 26870   | 26830   | 27100   | 25100   | 27120   | 26620   | 25040   | 28780   | 9680    | 24810   | 26240   | 25920   | 24530   | 24880   | 26870   | 24730   | 24810   |         |         |         |
|  | Acre Ft                     | 89.67564  | 3.09729 | 3.53976 | 2.83155 | 3.21339 | 3.15792 | 3.33594 | 3.20565 | 2.95797 | 3.22758 | 2.709   | 3.45462 | 3.46623 | 3.46107 | 3.4959  | 3.2379  | 3.49848 | 3.43398 | 3.23016 | 3.71262 | 1.24872 | 3.20049 | 3.38496 | 3.34368 | 3.16437 | 3.20952 | 3.46623 | 3.19017 | 3.20049 |         |         |         |
| March 2014                             | Waste Water (sent to JRMWC) | 817,690   | 29110   | 26120   | 24890   | 26470   | 26700   | 26740   | 26670   | 26680   | 26010   | 26830   | 26730   | 26710   | 27780   | 21710   | 26460   | 26730   | 27410   | 27680   | 26140   | 29300   | 24820   | 25510   | 29460   | 21420   | 22040   | 27110   | 27010   | 26750   | 29650   | 24330   | 26720   |
|  | Acre Ft                     | 105.48201 | 3.75519 | 3.36948 | 3.21081 | 3.41463 | 3.4443  | 3.44946 | 3.44043 | 3.44172 | 3.35529 | 3.46107 | 3.44817 | 3.44559 | 3.58362 | 2.80059 | 3.41334 | 3.44817 | 3.53589 | 3.57072 | 3.37206 | 3.7797  | 3.20178 | 3.29079 | 3.80034 | 2.76318 | 2.84316 | 3.49719 | 3.48429 | 3.45075 | 3.82485 | 3.13857 | 3.44688 |
| April 2014                             | Waste Water (sent to JRMWC) | 777,960   | 27070   | 26980   | 26910   | 27760   | 26040   | 23980   | 25510   | 26880   | 26590   | 26200   | 27140   | 28210   | 24720   | 27150   | 25580   | 28340   | 25770   | 25900   | 25720   | 20810   | 27710   | 25870   | 27100   | 26820   | 23860   | 24000   | 26590   | 27240   | 19080   | 26430   |         |
|  | Acre Ft                     | 100.35684 | 3.49203 | 3.48042 | 3.47139 | 3.58104 | 3.35916 | 3.09342 | 3.29079 | 3.46752 | 3.43011 | 3.3798  | 3.50106 | 3.63909 | 3.18888 | 3.50235 | 3.29982 | 3.65586 | 3.32433 | 3.3411  | 3.31788 | 2.68449 | 3.57459 | 3.33723 | 3.4959  | 3.45978 | 3.07794 | 3.096   | 3.43011 | 3.51396 | 2.46132 | 3.40947 |         |
| May 2014                               | Waste Water (sent to JRMWC) | 819,190   | 26450   | 26480   | 26230   | 25390   | 26320   | 27450   | 27000   | 27620   | 22850   | 26100   | 27030   | 27030   | 26820   | 22280   | 27860   | 26490   | 27360   | 24760   | 27160   | 26820   | 26780   | 25170   | 27080   | 26620   | 26990   | 27520   | 24540   | 28880   | 25670   | 26650   | 27790   |
|  | Acre Ft                     | 105.67551 | 3.41205 | 3.41592 | 3.38367 | 3.27531 | 3.39528 | 3.54105 | 3.483   | 3.56298 | 2.94765 | 3.3669  | 3.48687 | 3.48687 | 3.45978 | 2.87412 | 3.59394 | 3.41721 | 3.52944 | 3.19404 | 3.50364 | 3.45978 | 3.45462 | 3.24693 | 3.49332 | 3.43398 | 3.48171 | 3.55008 | 3.16566 | 3.72552 | 3.31143 | 3.43785 | 3.58491 |
| June 2014                              | Waste Water (sent to JRMWC) | 890,470   | 28200   | 23170   | 27680   | 29330   | 29210   | 28720   | 32280   | 37530   | 28000   | 29280   | 35130   | 30300   | 28020   | 22900   | 30920   | 31890   | 36250   | 29060   | 28440   | 34800   | 27090   | 29800   | 26170   | 37380   | 24580   | 24880   | 31850   | 42220   | 17080   | 28310   |         |
|  | Acre Ft                     | 114.87063 | 3.6378  | 2.98893 | 3.57072 | 3.78357 | 3.76809 | 3.70488 | 4.16412 | 4.84137 | 3.612   | 3.77712 | 4.53177 | 3.9087  | 3.61458 | 2.9541  | 3.98868 | 4.11381 | 4.67625 | 3.74874 | 3.66876 | 4.4892  | 3.49461 | 3.8442  | 3.37593 | 4.82202 | 3.17082 | 3.20952 | 4.10865 | 5.44638 | 2.20332 | 3.65199 |         |
| July 2014                              | Waste Water (sent to JRMWC) | 917,270   | 33080   | 25870   | 34710   | 35150   | 29260   | 29020   | 29410   | 38450   | 35220   | 12140   | 24990   | 28220   | 35110   | 28190   | 29060   | 30660   | 28920   | 29150   | 28860   | 35250   | 28160   | 19770   | 28760   | 29090   | 30290   | 28640   | 31120   | 29770   | 29020   | 28840   | 33090   |
|  | Acre Ft                     | 118.67613 | 4.26732 | 3.68553 | 4.47759 | 4.53435 | 3.77454 | 3.74358 | 3.79389 | 4.96005 | 4.54338 | 1.56606 | 3.22371 | 3.64038 | 4.52919 | 3.63651 | 3.74874 | 3.95514 | 3.73068 | 3.76035 | 3.72294 | 4.54725 | 3.63264 | 2.55033 | 3.71004 | 3.75261 | 3.90741 | 3.69456 | 4.01448 | 3.84033 | 3.74358 | 3.72036 | 4.26861 |
| August 2014                            | Waste Water (sent to JRMWC) | 870,540   | 29420   | 37310   | 39390   | 28130   | 29500   | 28880   | 27670   | 32050   | 30460   | 28290   | 29820   | 29170   | 29000   | 20170   | 20650   | 30670   | 22620   | 24400   | 28870   | 28610   | 29930   | 30520   | 30670   | 27910   | 3810    | 28530   | 29130   | 29190   | 28680   | 0       | 57090   |
|  | Acre Ft                     | 109.71966 | 3.79518 | 3.52299 | 3.79131 | 3.62877 | 3.8055  | 3.72552 | 3.56943 | 4.13445 | 3.92934 | 3.64941 | 3.84678 | 3.76293 | 3.741   | 2.60193 | 2.66385 | 3.95643 | 2.91798 | 3.1476  | 3.72423 | 3.69069 | 3.86097 | 3.93708 | 3.95643 | 3.60039 | 0.49149 | 3.68037 | 3.75777 | 3.76551 | 3.69972 | 0       | 7.36461 |
| September 2014                         | Waste Water (sent to JRMWC) | 923,450   | 30110   | 29140   | 28940   | 29330   | 29050   | 28760   | 29100   | 29720   | 31060   | 30890   | 31690   | 31780   | 31350   | 35410   | 24450   | 31440   | 30950   | 31340   | 30990   | 31310   | 31790   | 31110   | 34090   | 31910   | 31410   | 31680   | 31090   | 31640   | 30290   | 31630   |         |
|  | Acre Ft                     | 119.12505 | 3.88419 | 3.75906 | 3.73326 | 3.78357 | 3.74745 | 3.71004 | 3.7539  | 3.83388 | 4.00674 | 3.98481 | 4.08801 | 4.09962 | 4.04415 | 4.56789 | 3.15405 | 4.05576 | 3.99255 | 4.04286 | 3.99771 | 4.03899 | 4.10091 | 4.01319 | 4.39761 | 4.11639 | 4.05189 | 4.08672 | 4.01061 | 4.08156 | 3.90741 | 4.08027 |         |
| October 2014                           | Waste Water (sent to JRMWC) | 940,880   | 31650   | 31950   | 30660   | 22880   | 28710   | 28380   | 29770   | 31910   | 33020   | 32780   | 32560   | 33000   | 32970   | 33000   | 32830   | 32810   | 25110   | 23640   | 26000   | 28170   | 29550   | 29860   | 31800   | 32790   | 32620   | 32160   | 23790   | 32150   | 32050   | 30320   | 31990   |
|  | Acre Ft                     | 121.29612 | 4.08285 | 4.12155 | 3.95514 | 2.87412 | 3.70359 | 3.66102 | 3.84033 | 4.11639 | 4.25958 | 4.22862 | 4.20024 | 4.257   | 4.25313 | 4.257   | 4.23507 | 4.23249 | 3.23919 | 3.04956 | 3.354   | 3.63393 | 3.81195 | 3.85194 | 4.1022  | 4.22991 | 4.20798 | 4.14864 | 3.06891 | 4.14735 | 4.13445 | 3.91128 | 4.12671 |
| November 2014                          | Waste Water (sent to JRMWC) | 864,880   | 19570   | 21260   | 28670   | 33280   | 26320   | 28050   | 27740   | 28370   | 26120   | 31020   | 32400   | 29690   | 31570   | 27760   | 29840   | 31410   | 26390   | 28270   | 29570   | 29700   | 30010   | 30360   | 29840   | 29260   | 29810   | 26700   | 30260   | 32270   | 29070   | 30300   |         |
|  | Acre Ft                     | 111.56952 | 2.52453 | 2.74254 | 3.69843 | 4.29312 | 3.39528 | 3.61845 | 3.57846 | 3.65973 | 3.36948 | 4.00158 | 4.1796  | 3.83001 | 4.07253 | 3.58104 | 3.84936 | 4.05189 | 3.40431 | 3.64683 | 3.81453 | 3.8313  | 3.87129 | 3.91644 | 3.84936 | 3.77454 | 3.84549 | 3.4443  | 3.90354 | 4.16283 | 3.75003 | 3.9087  |         |
| December 2014                          | Waste Water (sent to JRMWC) | 856,270   | 33810   | 29000   | 28990   | 32380   | 30140   | 30800   | 30680   | 27680   | 29080   | 29890   | 29070   | 10150   | 0       | 18170   | 24010   | 30750   | 30550   | 28660   | 29850   | 30810   | 28190   | 32150   | 27540   | 30130   | 32640   | 28620   | 29230   | 31020   | 30680   | 27910   | 23690   |
|  | Acre Ft                     | 110.45883 | 4.36149 | 3.741   | 3.73971 | 4.17702 | 3.88806 | 3.9732  | 3.95772 | 3.57072 | 3.75132 | 3.85581 | 3.75003 | 1.30935 | 0       | 2.34393 | 3.09729 | 3.96675 | 3.94095 | 3.69714 | 3.85065 | 3.97449 | 3.63651 | 4.14735 | 3.55266 | 3.88677 | 4.21056 | 3.69198 | 3.77067 | 4.00158 | 3.95772 | 3.60039 | 3.05601 |

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Table 2

| JASMIN RANCHOS                         |                             |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         |         |         |         |         |         |
|--|-----------------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2015 Total Waste Water (sent to JRMWC) | 10,823,711                  |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         |         |         |         |         |         |
| 2015 Total Acre Ft                     | 1,399                       |           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         |         |         |         |         |         |
|  |                             | 1         | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17      | 18      | 19      | 20      | 21     | 22      | 23      | 24      | 25      | 26      | 27      | 28      | 29      | 30      | 31      |         |
| January 2015                           | Waste Water (sent to JRMWC) | 985,980   | 34320   | 38910   | 21380   | 30980   | 23720   | 30080   | 31200   | 0       | 14060   | 24270   | 28920   | 29820   | 29410   | 30960   | 30640   | 39280   | 39430   | 37390   | 38880   | 37110  | 39440   | 39900   | 39320   | 36100   | 39890   | 40910   | 38390   | 37460   | 28120   | 28110   | 27580   |
|  | Acre Ft                     | 127.19    | 4.427   | 5.019   | 2.758   | 3.996   | 3.06    | 3.88    | 4.025   | 0       | 1.814   | 3.131   | 3.731   | 3.847   | 3.794   | 3.994   | 3.953   | 5.067   | 5.086   | 4.823   | 5.016   | 4.787  | 5.088   | 5.147   | 5.072   | 4.657   | 5.146   | 5.277   | 4.952   | 4.832   | 3.627   | 3.626   | 3.558   |
| February 2015                          | Waste Water (sent to JRMWC) | 777,240   | 28050   | 27440   | 28510   | 28820   | 30260   | 30040   | 28450   | 28710   | 29940   | 28560   | 31420   | 27120   | 30960   | 27890   | 28960   | 30510   | 11420   | 26320   | 30090   | 37220  | 36560   | 31630   | 29600   | 36250   | 3560    | 30480   | 19440   | 19030   |         |         |         |
|  | Acre Ft                     | 100.26    | 3.618   | 3.54    | 3.678   | 3.718   | 3.904   | 3.875   | 3.67    | 3.704   | 3.862   | 3.684   | 4.053   | 3.498   | 3.994   | 3.598   | 3.736   | 3.936   | 1.473   | 3.395   | 3.882   | 4.801  | 4.716   | 4.08    | 3.818   | 4.676   | 0.459   | 3.932   | 2.508   | 2.455   |         |         |         |
| March 2015                             | Waste Water (sent to JRMWC) | 862,570   | 28480   | 30470   | 32630   | 32000   | 32080   | 31980   | 31120   | 31440   | 32770   | 38670   | 25800   | 20830   | 15710   | 23750   | 24500   | 24550   | 26720   | 26470   | 25710   | 27930  | 27350   | 29690   | 25230   | 28070   | 24160   | 27440   | 29170   | 28960   | 29020   | 23070   | 26800   |
|  | Acre Ft                     | 111.27    | 3.674   | 3.931   | 4.209   | 4.128   | 4.138   | 4.125   | 4.014   | 4.056   | 4.227   | 4.988   | 3.328   | 2.687   | 2.027   | 3.064   | 3.161   | 3.167   | 3.447   | 3.415   | 3.317   | 3.603  | 3.528   | 3.83    | 3.255   | 3.621   | 3.117   | 3.54    | 3.763   | 3.736   | 3.744   | 2.976   | 3.457   |
| April 2015                             | Waste Water (sent to JRMWC) | 844,410   | 27790   | 28310   | 28630   | 28670   | 27930   | 29660   | 30250   | 29840   | 31800   | 30850   | 27290   | 32600   | 17450   | 14190   | 24670   | 28550   | 30000   | 27580   | 27910   | 28510  | 29540   | 29750   | 28410   | 27890   | 31220   | 25600   | 29520   | 29320   | 30800   | 29880   |         |
|  | Acre Ft                     | 108.93    | 3.585   | 3.652   | 3.693   | 3.698   | 3.603   | 3.826   | 3.902   | 3.849   | 4.102   | 3.98    | 3.52    | 4.205   | 2.251   | 1.831   | 3.182   | 3.683   | 3.87    | 3.558   | 3.6     | 3.678  | 3.811   | 3.838   | 3.665   | 3.598   | 4.027   | 3.302   | 3.808   | 3.782   | 3.973   | 3.855   |         |
| May 2015                               | Waste Water (sent to JRMWC) | 908,120   | 27780   | 33270   | 26790   | 28850   | 27600   | 29780   | 29120   | 29410   | 29350   | 29530   | 28800   | 27660   | 28580   | 29540   | 29210   | 27910   | 30170   | 28280   | 30630   | 27880  | 30790   | 28640   | 31000   | 26480   | 29850   | 27500   | 29830   | 31030   | 29450   | 32640   | 30770   |
|  | Acre Ft                     | 117.15    | 3.584   | 4.292   | 3.456   | 3.722   | 3.56    | 3.842   | 3.756   | 3.794   | 3.786   | 3.809   | 3.715   | 3.568   | 3.687   | 3.811   | 3.768   | 3.6     | 3.892   | 3.648   | 3.951   | 3.597  | 3.972   | 3.695   | 3.999   | 3.416   | 3.851   | 3.548   | 3.848   | 4.003   | 3.799   | 4.211   | 3.969   |
| June 2015                              | Waste Water (sent to JRMWC) | 876,630   | 27060   | 29110   | 28510   | 26990   | 27900   | 32460   | 30450   | 30660   | 31020   | 31320   | 32570   | 30170   | 28200   | 31430   | 21000   | 26830   | 31450   | 31040   | 30540   | 30990  | 30210   | 29650   | 28440   | 28390   | 28640   | 30300   | 29840   | 31530   | 20590   | 29340   |         |
|  | Acre Ft                     | 113.16    | 3.491   | 3.755   | 3.678   | 3.482   | 3.599   | 4.187   | 3.928   | 3.955   | 4.025   | 4.04    | 4.202   | 3.892   | 3.638   | 4.054   | 2.709   | 3.461   | 4.109   | 4.004   | 3.94    | 3.998  | 3.897   | 3.825   | 3.669   | 3.662   | 3.695   | 3.909   | 3.845   | 4.067   | 2.656   | 3.785   |         |
| July 2015                              | Waste Water (sent to JRMWC) | 914,500   | 29060   | 28790   | 21490   | 31420   | 30760   | 28700   | 31110   | 27830   | 30300   | 36700   | 29030   | 31400   | 35030   | 32230   | 30120   | 12630   | 0       | 28960   | 31920   | 32600  | 28050   | 27610   | 28420   | 35330   | 27340   | 26970   | 58550   | 29390   | 30360   | 31010   | 31390   |
|  | Acre Ft                     | 118       | 3.749   | 3.714   | 2.772   | 4.053   | 3.968   | 3.702   | 4.013   | 3.59    | 3.909   | 4.734   | 3.745   | 4.05    | 4.553   | 4.158   | 3.885   | 1.629   | 0       | 3.736   | 4.118   | 4.205  | 3.618   | 3.562   | 3.666   | 4.558   | 3.527   | 3.479   | 7.553   | 3.791   | 3.916   | 4       | 4.049   |
| August 2015                            | Waste Water (sent to JRMWC) | 916,620   | 29680   | 37320   | 30320   | 27860   | 33800   | 5180    | 26880   | 29240   | 29740   | 37320   | 26330   | 26780   | 30070   | 33320   | 27130   | 32460   | 29570   | 31220   | 30400   | 29800  | 28490   | 30740   | 28200   | 27600   | 29910   | 28900   | 29440   | 31440   | 32320   | 27330   | 37830   |
|  | Acre Ft                     | 116.84    | 3.829   | 3.524   | 3.911   | 3.594   | 4.36    | 0.668   | 3.468   | 3.772   | 3.836   | 4.814   | 3.397   | 3.455   | 3.879   | 4.298   | 3.5     | 4.187   | 3.815   | 4.027   | 3.922   | 3.728  | 3.675   | 3.965   | 3.638   | 3.56    | 3.858   | 3.728   | 3.798   | 4.056   | 4.169   | 3.526   | 4.88    |
| September 2015                         | Waste Water (sent to JRMWC) | 932,100   | 57440   | 30600   | 30730   | 28350   | 28870   | 30650   | 28880   | 30620   | 30730   | 26940   | 29350   | 29530   | 24920   | 31440   | 29200   | 29390   | 29230   | 29240   | 29620   | 28990  | 29970   | 30700   | 32590   | 34610   | 33140   | 30500   | 29280   | 26790   | 33740   | 36060   |         |
|  | Acre Ft                     | 120.24    | 7.410   | 3.947   | 3.964   | 3.657   | 3.724   | 3.954   | 3.726   | 3.950   | 3.964   | 3.475   | 3.786   | 3.809   | 3.215   | 4.056   | 3.767   | 3.791   | 3.771   | 3.772   | 3.821   | 3.740  | 3.866   | 3.960   | 4.204   | 4.465   | 4.275   | 3.935   | 3.777   | 3.456   | 4.352   | 4.652   |         |
| October 2015                           | Waste Water (sent to JRMWC) | 885,081   | 28730   | 28810   | 27980   | 27050   | 27660   | 27670   | 31790   | 30950   | 30360   | 30490   | 30970   | 31940   | 29970   | 33090   | 20520   | 31340   | 30870   | 29770   | 30270   | 30800  | 3081    | 28580   | 32810   | 29030   | 27950   | 27220   | 29190   | 26630   | 26050   | 30040   | 33470   |
|  | Acre Ft                     | 117.75249 | 3.70617 | 3.71649 | 3.60942 | 3.48945 | 3.56814 | 3.56943 | 4.10091 | 3.99255 | 3.91644 | 3.93321 | 3.99513 | 4.12026 | 3.86613 | 4.26861 | 2.64708 | 4.04286 | 3.98223 | 3.84033 | 3.90483 | 3.9732 | 3.97449 | 3.68682 | 4.23249 | 3.74487 | 3.60555 | 3.51138 | 3.76551 | 3.43527 | 3.36045 | 3.87516 | 4.31763 |
| November 2015                          | Waste Water (sent to JRMWC) | 922,630   | 31030   | 29620   | 31840   | 33050   | 29990   | 31510   | 30870   | 31820   | 31280   | 30870   | 30610   | 33430   | 31240   | 35300   | 31640   | 31640   | 33900   | 32900   | 32890   | 30290  | 28040   | 29610   | 29560   | 29560   | 29570   | 27180   | 31470   | 30330   | 31930   | 19660   |         |
|  | Acre Ft                     | 119.06    | 4.003   | 3.821   | 4.107   | 4.263   | 3.869   | 4.065   | 3.982   | 4.105   | 4.035   | 3.982   | 3.949   | 4.312   | 4.030   | 4.554   | 4.082   | 4.082   | 4.373   | 4.244   | 4.243   | 3.907  | 3.617   | 3.820   | 3.813   | 3.813   | 3.815   | 3.506   | 4.060   | 3.913   | 4.119   | 2.575   |         |
| December 2015                          | Waste Water (sent to JRMWC) | 997,830   | 31030   | 27930   | 31420   | 31420   | 34050   | 31880   | 38260   | 31880   | 27710   | 34230   | 32890   | 33340   | 32200   | 24540   | 32610   | 33040   | 2990    | 64570   | 32550   | 27040  | 38950   | 30480   | 29670   | 31550   | 32330   | 28910   | 33720   | 35750   | 32560   | 34810   | 33520   |
|  | Acre Ft                     | 128.72    | 4.003   | 3.603   | 4.053   | 4.053   | 4.392   | 4.113   | 4.936   | 4.113   | 3.575   | 4.416   | 4.243   | 4.301   | 4.154   | 3.166   | 4.207   | 4.262   | 0.386   | 8.330   | 4.199   | 3.488  | 5.025   | 3.932   | 3.827   | 4.070   | 4.171   | 3.729   | 4.350   | 4.612   | 4.200   | 4.490   | 4.324   |



### 3 CHEMICALS USED IN TREATMENT, FLOW, FREQUENCY & VOLUMES

#### 3.1 CHEMICALS USED IN TREATMENT AND USE

| <b>Manufacturer:</b>                      | <b>Product Name:</b> | <b>Product Code:</b> | <b>Use:</b>                                   |
|---|----------------------|----------------------|---|
| Baker Petrolite<br>A Baker Hughes Company | TRETOLITE            | DMO7040              | Demulsifier –<br>Emulsion Breaker             |
| Baker Petrolite<br>A Baker Hughes Company | TRETOLITE            | RBW264X              | Water Clarifier –<br>Reverse Emulsion Breaker |
| Baker Petrolite<br>A Baker Hughes Company | TRETOLITE            | RBW507               | Water Clarifier –<br>Polymer                  |

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.

Hathaway LLC  
 Response to RWCQB Section 13267  
 Order for Irrigation

### 3.3 TOTAL TREATMENT VOLUMES

|                                   |              |             |        |      |      |      |      |           |               |                             |  |
|-----------------------------------|--------------|-------------|--------|------|------|------|------|-----------|---------------|-----------------------------|--|
| Total BBLs of Water Sent 2014:    |              | 10,189,000  |        |      |      |      |      |           |               |                             |  |
| Total Gallons of Water Sent 2014: |              | 427,938,000 |        |      |      |      |      |           |               |                             |  |
| <b>2014</b>                       |              | Actual      | Actual |      |      |      |      | Total QTS | Total Gallons | Total PPM on Gross Flow     |  |
| LOCATION                          | Product Code | Q/D         | GPD    | 1Q14 | 2Q14 | 3Q14 | 4Q14 | 2014      | 2014          | 2014                        |  |
| Jasmine North Header              | DMO 7040     | 5           | 1.25   | 65   | 65   | 65   | 65   | 260       | 65.00         | 0.00000151891162            |  |
| Jasmine North Header              | RBW 264X     | 8           | 2.00   | 104  | 104  | 104  | 104  | 416       | 104.00        | 0.00000243025859            |  |
| Jasmine South Header              | DMO 7040     | 4           | 1.00   | 52   | 52   | 52   | 52   | 208       | 52.00         | 0.00000121512929            |  |
| Jasmine South Header              | RBW 264X     | 10          | 2.50   | 130  | 130  | 130  | 130  | 520       | 130.00        | 0.00000303782324            |  |
| Jasmin Plant Inlet                | RBW 507      | 10          | 2.50   | 130  | 130  | 130  | 130  | 520       | 130.00        | 0.00000303782324            |  |
| Total BBLs of Water Sent 2015:    |              | 10,823,711  |        |      |      |      |      |           |               |                             |  |
| Total Gallons of Water Sent 2015: |              | 454,595,862 |        |      |      |      |      |           |               |                             |  |
| <b>2015</b>                       |              | Actual      | Actual |      |      |      |      | Total QTS | Total Gallons | Total PPM on Gross Flow     |  |
| LOCATION                          | Product Code | Q/D         | GPD    | 1Q15 | 2Q15 | 3Q15 | 4Q15 | 2015      | 2015          | 2015                        |  |
| Jasmine North Header              | DMO 7040     | 5           | 1.25   | 65   | 65   | 65   | 65   | 260       | 65.00         | 0.00000142984144            |  |
| Jasmine North Header              | RBW 264X     | 8           | 2.00   | 104  | 104  | 104  | 104  | 416       | 104.00        | 0.00000228774630            |  |
| Jasmine South Header              | DMO 7040     | 4           | 1.00   | 52   | 52   | 52   | 52   | 208       | 52.00         | 0.00000114387315            |  |
| Jasmine South Header              | RBW 264X     | 10          | 2.50   | 130  | 130  | 130  | 130  | 520       | 130.00        | 0.00000285968287            |  |
| Jasmin Plant Inlet                | RBW 507      | 10          | 2.50   | 130  | 130  | 130  | 130  | 520       | 130.00        | 0.00000285968287            |  |
| Total BBLs of Water Sent 2016:    |              | 5,033,399   |        |      |      |      |      |           |               |                             |  |
| Total Gallons of Water Sent 2016: |              | 211,402,758 |        |      |      |      |      |           |               |                             |  |
| <b>2016</b>                       |              | Actual      | Actual |      |      |      |      | Total QTS | Total Gallons | Total PPM on Gross Flow YTD |  |
| LOCATION                          | Product Code | Q/D         | GPD    | 1Q16 | 2Q16 | 3Q16 | 4Q16 | 2016      | 2016 YTD      | 2016                        |  |
| Jasmine North Header              | DMO 7040     | 5           | 1.25   | 65   | 55   |      |      | 120       | 30.00         | 0.00000141909218            |  |
| Jasmine North Header              | RBW 264X     | 8           | 2.00   | 104  | 88   |      |      | 192       | 48.00         | 0.00000227054748            |  |
| Jasmine South Header              | DMO 7040     | 4           | 1.00   | 52   | 44   |      |      | 96        | 24.00         | 0.00000113527374            |  |
| Jasmine South Header              | RBW 264X     | 10          | 2.50   | 130  | 110  |      |      | 240       | 60.00         | 0.00000283818435            |  |
| Jasmin Plant Inlet                | RBW 507      | 10          | 2.50   | 130  | 110  |      |      | 240       | 60.00         | 0.00000283818435            |  |

Exhibit 1



# SAFETY DATA SHEET

## Section 1. Identification

**Product name** : TRETOLITE™ DMO7040 DEMULSIFIER  
™ a trademark of Baker Hughes, Inc.  
**Product code** : DMO7040

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

**Identified uses** : Demulsifier.

**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  
(8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400

**Emergency telephone number (with hours of operation)** : CHEMTREC: 800-424-9300 (U.S. 24 hour)  
Baker Petrolite: 800-231-3606  
(001)281-276-5400  
CANUTEC: 613-996-6666 (Canada 24 hours)  
CHEMTREC Int'l 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** : FLAMMABLE LIQUIDS - Category 3  
SKIN CORROSION/IRRITATION - Category 2  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
CARCINOGENICITY - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3  
AQUATIC HAZARD (ACUTE) - Category 3  
AQUATIC HAZARD (LONG-TERM) - Category 2

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

TRETOLITE™ DMO7040 DEMULSIFIER

## Section 2. Hazards identification

- Hazard statements** : Flammable liquid and vapor.  
 Causes serious eye irritation.  
 Causes skin irritation.  
 Suspected of causing cancer.  
 May cause respiratory irritation.  
 May cause drowsiness and dizziness.  
 Toxic to aquatic life with long lasting effects.
- Precautionary statements**
- Prevention** : 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: > 8 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.
- Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name        | %       | CAS number |
|------------------------|---------|------------|
| Light aromatic naphtha | 20 - 30 | 64742-95-6 |
| 1,2,4-Trimethylbenzene | 10 - 20 | 95-63-6    |
| Heavy aromatic naphtha | 5 - 10  | 64742-94-5 |
| 1,3,5-Trimethylbenzene | 5 - 10  | 108-67-8   |
| Xylene                 | 1 - 5   | 1330-20-7  |
| 1,2,3-Trimethylbenzene | 1 - 5   | 526-73-8   |
| Naphthalene            | 0.1 - 1 | 91-20-3    |
| Cumene                 | 0.1 - 1 | 98-82-8    |
| Ethylbenzene           | 0.1 - 1 | 100-41-4   |

TRETOLITE™ DMO7040 DEMULSIFIER

## 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/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** : 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

TRETOLITE™ DMO7040 DEMULSIFIER

#### 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, CO<sub>2</sub>, 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 flares, 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 8 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.

TRETOLITE™ DMO7040 DEMULSIFIER

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill 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 product. 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. 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.

## Section 8. Exposure controls/personal protection

### Control parameters

| Occupational exposure limits |               | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       |           |
|------------------------------|---------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredients:                 | List name     | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other | Notations |
| 1,2,4-Trimethylbenzene       | US ACGIH      | 25            | 123               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                              | OSHA PEL 1989 | 25            | 125               | -     | -              | -                 | -     | -       | -                 | -     |           |
| 1,3,5-Trimethylbenzene       | US ACGIH      | 25            | 123               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                              | OSHA PEL 1989 | 25            | 125               | -     | -              | -                 | -     | -       | -                 | -     |           |
| Xylene                       | US ACGIH      | 100           | 434               | -     | 150            | 651               | -     | -       | -                 | -     |           |
|                              | OSHA PEL      | 100           | 435               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                              | OSHA PEL 1989 | 100           | 435               | -     | 150            | 655               | -     | -       | -                 | -     |           |
| 1,2,3-Trimethylbenzene       | US ACGIH      | 25            | 123               | -     | -              | -                 | -     | -       | -                 | -     |           |
|                              | OSHA PEL 1989 | 25            | 125               | -     | -              | -                 | -     | -       | -                 | -     |           |
| Naphthalene                  | US ACGIH      | 10            | 52                | -     | -              | -                 | -     | -       | -                 | -     | [1]       |
|                              | OSHA PEL      | 10            | 50                | -     | -              | -                 | -     | -       | -                 | -     |           |

| TRETOLITE™ DMO7040 DEMULSIFIER                   |               |     |     |   |     |     |   |   |   |   |     |
|--|---------------|-----|-----|---|-----|-----|---|---|---|---|-----|
| Section 8. Exposure controls/personal protection |               |     |     |   |     |     |   |   |   |   |     |
| Cumene   | OSHA PEL 1989 | 10  | 50  | - | 15  | 75  | - | - | - | - |     |
|  | US ACGIH      | 50  | -   | - | -   | -   | - | - | - | - |     |
|  | OSHA PEL      | 50  | 245 | - | -   | -   | - | - | - | - | [1] |
| Ethylbenzene                                     | OSHA PEL 1989 | 50  | 245 | - | -   | -   | - | - | - | - | [1] |
|  | US ACGIH      | 20  | -   | - | -   | -   | - | - | - | - |     |
|  | OSHA PEL      | 100 | 435 | - | -   | -   | - | - | - | - |     |
|  | OSHA PEL 1989 | 100 | 435 | - | 125 | 545 | - | - | - | - |     |

[1] Absorbed through skin.

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. 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  
 : in IPA/water

**Melting/freezing point** : Not available.

**Boiling point** : Not available.

**Initial Boiling Point** : Not available.

**Flash point** : Closed cup: 45°C (113°F) [PMCC]

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Evaporation rate** : Not available.

**Flammability (solid, gas)** : Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

TRETOLITE™ DMO7040 DEMULSIFIER

## Section 9. Physical and chemical properties

|   |                  |
|---|------------------|
| <b>Lower and upper explosive (flammable) limits</b> | : Not available. |
| <b>Vapor pressure</b>                               | : Not available. |
| <b>Vapor density</b>                                | : >1 [Air = 1]   |
| <b>Relative density</b>                             | : 0.93 (15.6°C)  |
| <b>Density</b>                                      | : 7.75 (lbs/gal) |
| <b>Solubility in water</b>                          | : Dispersible    |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available. |
| <b>Auto-ignition temperature</b>                    | : Not available. |
| <b>Decomposition temperature</b>                    | : Not available. |
| <b>Viscosity</b>                                    | : Not available. |
| <b>VOC</b>  | : Not available. |
| <b>Pour Point</b>                                   | : Not available. |

## Section 10. Stability and reactivity

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

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name | Result                | Species  | Dose                    | Exposure |
|-------------------------|-----------------------|----------|-------------------------|----------|
| Light aromatic naphtha  | LD50 Oral             | Rat      | 2900 mg/kg              | -        |
|                         | LC50 Inhalation Vapor | Rat      | 18000 mg/m <sup>3</sup> | 4 hours  |
| 1,2,4-Trimethylbenzene  | LD50 Oral             | Rat      | 5 g/kg                  | -        |
|                         | LC50 Inhalation Vapor | Rat      | >11.4 mg/l              | 6 hours  |
| Heavy aromatic naphtha  | LD50 Oral             | Rat      | 3200 mg/kg              | -        |
|                         | LC50 Inhalation Vapor | Rat      | >2000 mg/kg             | -        |
| 1,3,5-Trimethylbenzene  | LD50 Oral             | Rat      | 24000 mg/m <sup>3</sup> | 4 hours  |
|                         | LC50 Inhalation Vapor | Rat      | 5000 mg/kg              | -        |
| Xylene                  | LD50 Oral             | Rat      | 5000 ppm                | 4 hours  |
|                         | LC50 Inhalation Gas.  | Rat      | 5000 ppm                | 4 hours  |
|                         | LD50 Dermal           | Rabbit   | >1700 mg/kg             | -        |
|                         | LD50 Oral             | Male rat | 3523 mg/kg              | -        |
| Naphthalene             | LD50 Oral             | Rat      | 4300 mg/kg              | -        |
|                         | LD50 Dermal           | Rabbit   | >20 g/kg                | -        |
|                         | LC50 Inhalation Vapor | Mouse    | 10000 mg/m <sup>3</sup> | 7 hours  |
| Cumene                  | LC50 Inhalation Vapor | Rat      | 39000 mg/m <sup>3</sup> | 4 hours  |

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**Section 11. Toxicological information**

|              |             |        |             |   |
|--------------|-------------|--------|-------------|---|
| Ethylbenzene | LD50 Dermal | Rabbit | 10600 mg/kg | - |
|              | LD50 Oral   | Rat    | 2.9 g/kg    | - |
|              | LD50 Dermal | Rabbit | 15400 mg/kg | - |
|              | LD50 Oral   | Rat    | 3500 mg/kg  | - |

**Irritation/Corrosion**

No applicable toxicity data

**Sensitization**

No applicable toxicity data

**Mutagenicity**

No applicable toxicity data

**Carcinogenicity**

| Product/ingredient name | OSHA | IARC | NTP  |
|-------------------------|------|------|--|
| Xylene                  | -    | 3    | -  |
| Naphthalene             | -    | 2B   | Reasonably anticipated to be a human carcinogen. |
| Cumene                  | -    | 2B   | Reasonably anticipated to be a human carcinogen. |
| Ethylbenzene            | -    | 2B   | -  |

**Reproductive toxicity**

No applicable toxicity data

**Teratogenicity**

No applicable toxicity data

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

| Name   | Category                 | Route of exposure                  | Target organs                                    |
|--|--------------------------|------------------------------------|--|
| Light aromatic naphtha<br>1,2,4-Trimethylbenzene | Category 3<br>Category 3 | Not applicable.<br>Not applicable. | Narcotic effects<br>Respiratory tract irritation |
| Heavy aromatic naphtha<br>1,3,5-Trimethylbenzene | Category 3<br>Category 3 | Not applicable.<br>Not applicable. | Narcotic effects<br>Respiratory tract irritation |
| Xylene<br>1,2,3-Trimethylbenzene                 | Category 3<br>Category 3 | Not applicable.<br>Not applicable. | Narcotic effects<br>Respiratory tract irritation |
| Cumene   | Category 3               | Not applicable.                    | Respiratory tract irritation                     |

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

Not applicable.

**Aspiration hazard**

| Name                   | Result                         |
|------------------------|--------------------------------|
| Light aromatic naphtha | ASPIRATION HAZARD - Category 1 |
| Heavy aromatic naphtha | ASPIRATION HAZARD - Category 1 |
| Xylene                 | ASPIRATION HAZARD - Category 1 |
| 1,2,3-Trimethylbenzene | ASPIRATION HAZARD - Category 1 |
| Cumene                 | ASPIRATION HAZARD - Category 1 |

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

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## 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

| Route               | ATE value     |
|---------------------|---------------|
| Oral                | 5476.4 mg/kg  |
| Dermal              | 33344.2 mg/kg |
| Inhalation (gases)  | 151564.8 ppm  |
| Inhalation (vapors) | 95.43 mg/l    |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name | Result                                     | Species                                  | Exposure |
|-------------------------|--|--|----------|
| 1,2,4-Trimethylbenzene  | Acute LC50 4910 µg/l Marine water          | Crustaceans - Elasmopus pecteniscus      | 48 hours |
| 1,3,5-Trimethylbenzene  | Acute LC50 22.4 mg/l Fresh water           | Fish - Tilapia zillii                    | 96 hours |
|                         | Acute LC50 12520 to 15050 µg/l Fresh water | Fish - Carassius auratus                 | 96 hours |
| Xylene                  | Chronic NOEC 400 µg/l Fresh water          | Daphnia - Daphnia magna                  | 21 days  |
|                         | Acute LC50 8500 µg/l Marine water          | Crustaceans - Palaemonetes pugio         | 48 hours |
| Naphthalene             | Acute LC50 13400 µg/l Fresh water          | Fish - Pimephales promelas               | 96 hours |
|                         | Acute EC50 1.6 ppm Fresh water             | Daphnia - Daphnia magna                  | 48 hours |
|                         | Acute LC50 2350 µg/l Marine water          | Crustaceans - Palaemonetes pugio         | 48 hours |
| Cumene                  | Acute LC50 213 µg/l Fresh water            | Fish - Melanotaenia fluviatilis - Larvae | 96 hours |
|                         | Chronic NOEC 0.67 ppm Fresh water          | Fish - Oncorhynchus kisutch              | 40 days  |
|                         | Acute EC50 2600 µg/l Fresh water           | Algae - Pseudokirchneriella subcapitata  | 72 hours |
| Ethylbenzene            | Acute LC50 7400 to 11290 µg/l Fresh water  | Crustaceans - Artemia sp.                | 48 hours |
|                         | Acute LC50 30500 µg/l Fresh water          | Daphnia - Daphnia magna                  | 48 hours |
|                         | Acute LC50 2700 µg/l Fresh water           | Fish - Oncorhynchus mykiss               | 96 hours |
|                         | Acute EC50 4600 µg/l Fresh water           | Algae - Pseudokirchneriella subcapitata  | 72 hours |
|                         | Acute EC50 2930 to 4400 µg/l Fresh         | Daphnia - Daphnia magna                  | 48 hours |

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|------------------------------------|--|---|----------------------|
| Section 12. Ecological information |  |   |                      |
|                                    | water<br>Acute LC50 5200 µg/l Marine water                             | Crustaceans - Americamysis bahia                                      | 48 hours             |
|                                    | Acute LC50 4200 µg/l Fresh water<br>Chronic NOEC 1000 µg/l Fresh water | Fish - Oncorhynchus mykiss<br>Algae - Pseudokirchneriella subcapitata | 96 hours<br>96 hours |

**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 liners 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**

|                                   | DOT Classification   | TDG Classification   | IMDG  | IATA   |
|-----------------------------------|--|--|---|--|
| <b>UN number</b>                  | UN1993   | UN1993   | UN1993  | UN1993   |
| <b>UN proper shipping name</b>    | FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)  | FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)  | FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, Xylene)   | FLAMMABLE LIQUID, N.O.S. (Contains: Light aromatic naphtha, 1,2, 4-Trimethylbenzene)       |
| <b>Transport hazard class(es)</b> | 3<br>  | 3<br>  | 3<br>  | 3<br> |
| <b>Packing group</b>              | III  | III  | III   | III  |
| <b>Environmental hazards</b>      | Yes.   | Yes.   | Yes.  | No.  |
| <b>Additional information</b>     | -  | -  | <b>Emergency schedules (EmS)</b><br>F-E S-E   | -  |

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### Section 14. Transport information

**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** : Not available.

**DOT Reportable Quantity** Xylene, 391 gal of this product.  
 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)** : Listed

**SARA 302/304** : No products were found.

**SARA 311/312**

**Classification** : Fire hazard  
 Immediate (acute) health hazard  
 Delayed (chronic) health hazard

**SARA 313**

|                              | Product name           | CAS number | %       |
|------------------------------|------------------------|------------|---------|
| <b>Supplier notification</b> | 1,2,4-Trimethylbenzene | 95-63-6    | 10 - 20 |
|                              | Xylene                 | 1330-20-7  | 1 - 5   |
|                              | Naphthalene            | 91-20-3    | 0.1 - 1 |
|                              | Ethylbenzene           | 100-41-4   | 0.1 - 1 |

**Canada**

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

### Section 16. Other information

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



**History**

**Date of printing** : 11/3/2014.

Indicates information that has changed from previously issued version.

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## Section 16. Other information

### [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.

Exhibit 2



## SAFETY DATA SHEET

### Section 1. Identification

**Product name** : TRETOLITE™ RBW264X WATER CLARIFIER  
™ a trademark of Baker Hughes Incorporated.  
**Product code** : RBW264X

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

**Identified uses** : Water clarifier.

**Print date** : 12/18/2014.

**Validation date** : 10/27/2014.

**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  
(8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400

**Emergency telephone number (with hours of operation)** : CHEMTREC: 800-424-9300 (U.S. 24 hour)  
Baker Petrolite: 800-231-3606  
(001)281-276-5400  
CANUTEC: 613-996-6666 (Canada 24 hours)  
CHEMTREC Int'l 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** :



**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.

Precautionary statements

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**Section 2. Hazards identification**

- Prevention** : Wear protective gloves: > 8 hours (breakthrough time): Neoprene gloves.. Wear eye or face protection. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.
- 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.
- Hazards not otherwise classified** : None known.

**Section 3. Composition/information on ingredients**

**Substance/mixture** : Mixture

| Ingredient name | %       | CAS number    |
|-----------------|---------|---------------|
| Ethylene glycol | 10 - 20 | 107-21-1      |
| Amine salt      | 10 - 20 | Trade secret. |
| Zinc chloride   | 0.1 - 1 | 7646-85-7     |

**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 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** : 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 waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.

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## Section 4. First aid measures

- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.
- Over-exposure signs/symptoms**
- Eye contact** : pain or irritation, watering, redness
- Inhalation** : No specific data.
- Skin contact** : irritation, redness
- 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. 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 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 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.

### 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 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). 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 resealed 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

| Occupational exposure limits |                           | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       |           |
|------------------------------|---------------------------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredients:                 | List name                 | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other | Notations |
| Ethylene glycol              | US ACGIH<br>OSHA PEL 1989 | -             | -                 | -     | -              | -                 | -     | -       | 100               | -     | [a]       |
| Zinc chloride                | US ACGIH                  | -             | 1                 | -     | -              | 2                 | -     | -       | -                 | -     | [b]       |
|                              | OSHA PEL                  | -             | 1                 | -     | -              | -                 | -     | -       | -                 | -     | [b]       |
|                              | OSHA PEL 1989             | -             | 1                 | -     | -              | 2                 | -     | -       | -                 | -     | [b]       |

Form: [a]Aerosol [b]Fume

Consult local authorities for acceptable exposure limits.

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## 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. 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: 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** : Neat - without dilution.
- Boiling point** : Not available.
- Initial Boiling Point** : Not available.
- Flash point** : Closed cup: >93.4°C (>200.1°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.

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## Section 9. Physical and chemical properties

**Auto-ignition temperature** : Not available.  
**Decomposition temperature** : Not available.  
**Viscosity** : Not available.  
**VOC** : Not available.  
**Pour Point** : -23.3°C (-9.9°F)

## 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

| Product/ingredient name | Result    | Species | Dose       | Exposure |
|-------------------------|-----------|---------|------------|----------|
| Ethylene glycol         | LD50 Oral | Rat     | 4700 mg/kg | -        |
| Zinc chloride           | LD50 Oral | Rat     | 350 mg/kg  | -        |

#### 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)

TRETOLITE™ RBW264X WATER CLARIFIER

**Section 11. Toxicological information**

| Name            | Category   | Route of exposure | Target organs |
|-----------------|------------|-------------------|---------------|
| Ethylene glycol | Category 2 | Not determined    | kidneys       |

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

| Route | ATE value    |
|-------|--------------|
| Oral  | 3980.4 mg/kg |

**Section 12. Ecological information**

Toxicity

| Product/ingredient name            | Result                               | Species                               | Exposure |
|------------------------------------|--------------------------------------|---------------------------------------|----------|
| Ethylene glycol                    | Acute LC50 100000 µg/l Marine water  | Crustaceans - Crangon crangon         | 48 hours |
|                                    | Acute LC50 10000000 µg/l Fresh water | Daphnia - Daphnia magna               | 48 hours |
| Zinc chloride                      | Acute LC50 8050000 µg/l Fresh water  | Fish - Pimephales promelas            | 96 hours |
|                                    | Acute EC50 26 µg/l                   | Algae - Navicula incerta              | 96 hours |
|                                    | Acute EC50 34 µg/l Fresh water       | Algae - Chlorella vulgaris            | 72 hours |
|                                    | Acute EC50 1.8 mg/l Fresh water      | Aquatic plants - Lemna aequinoctialis | 96 hours |
|                                    | Acute EC50 100 µg/l Fresh water      | Daphnia - Daphnia magna               | 48 hours |
|                                    | Acute LC50 49.99 µg/l Fresh water    | Crustaceans - Moina irrasa            | 48 hours |
|                                    | Acute LC50 0.027 mg/l Marine water   | Fish - Limanda punctatissima          | 96 hours |
|                                    | Chronic NOEC 20 µg/l Marine water    | Algae - Chlorella sp.                 | 72 hours |
|                                    | Chronic NOEC 1000 µg/l Fresh water   | Crustaceans - Procambarus clarkii     | 21 days  |
|                                    | Chronic NOEC 80 µg/l Fresh water     | Daphnia - Daphnia magna               | 21 days  |
| Chronic NOEC 31.5 µg/l Fresh water | Fish - Oncorhynchus mykiss           | 30 days                               |          |

TRETOLITE™ RBW264X WATER CLARIFIER

**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. 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**

|                                   | DOT Classification  | TDG Classification | IMDG           | IATA           |
|-----------------------------------|---|--------------------|----------------|----------------|
| <b>UN number</b>                  | UN3082  | Not regulated.     | Not regulated. | Not regulated. |
| <b>UN proper shipping name</b>    | ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Contains: Ethylene glycol)  | -                  | -              | -              |
| <b>Transport hazard class(es)</b> | 9<br>  | -                  | -              | -              |
| <b>Packing group</b>              | III   | -                  | -              | -              |
| <b>Environmental hazards</b>      | Yes.  | No.                | No.            | No.            |
| <b>Additional information</b>     | <b>Remarks</b><br>This material is Not Regulated if transported in a package that does not meet or exceed the Reportable Quantity (RQ). | -                  | -              | -              |

**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) 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: zinc chloride  
Clean Water Act (CWA) 311: zinc chloride

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

SARA 302/304 : No products were found.

SARA 311/312

Classification : Immediate (acute) health hazard  
Delayed (chronic) health hazard

SARA 313

|                       | Product name    | CAS number | %       |
|-----------------------|-----------------|------------|---------|
| Supplier notification | Ethylene glycol | 107-21-1   | 10 - 20 |

Canada

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

## Section 16. Other information

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



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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### **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.**

Exhibit 3



# SAFETY DATA SHEET

## Section 1. Identification

**Product name** : TRETOLITE™ RBW507 WATER CLARIFIER  
™ a trademark of Baker Hughes Incorporated.  
**Product code** : RBW507

### 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) 281-276-5400

**Emergency telephone number (with hours of operation)** : CHEMTREC: 800-424-9300 (U.S. 24 hour)  
Baker Petrolite: 800-231-3606  
(001)281-276-5400  
CANUTEC: 613-996-6666 (Canada 24 hours)  
CHEMTREC Int'l 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  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : 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.

TRETOLITE™ RBW507 WATER CLARIFIER

## 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** : Avoid contact with skin and clothing. Wash thoroughly after handling.
- Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name          | %       | CAS number    |
|--------------------------|---------|---------------|
| Petroleum distillates    | 20 - 30 | 64742-47-8    |
| Oxyalkylated alkylphenol | 0.1 - 1 | Trade secret. |

## 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. Defatting 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** : In a fire or if heated, a pressure increase will occur and the container may burst.

**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 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 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).

### 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 8). 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 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. 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

| Occupational exposure limits                      |           | TWA (8 hours) |                   |       | STEL (15 mins) |                   |       | Ceiling |                   |       |           |
|---|-----------|---------------|-------------------|-------|----------------|-------------------|-------|---------|-------------------|-------|-----------|
| Ingredients:                                      | List name | ppm           | mg/m <sup>3</sup> | Other | ppm            | mg/m <sup>3</sup> | Other | ppm     | mg/m <sup>3</sup> | Other | Notations |
| Petroleum distillates, as total hydrocarbon vapor | US ACGIH  | -             | 200               | -     | -              | -                 | -     | -       | -                 | -     | [1]       |

[1] Absorbed through skin.

TRETOLITE™ RBW507 WATER CLARIFIER

## 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

TRETOLITE™ RBW507 WATER CLARIFIER

### 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

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result    | Species | Dose        | Exposure |
|-------------------------|-----------|---------|-------------|----------|
| Petroleum distillates   | LD50 Oral | Rat     | >5000 mg/kg | -        |

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)

| Name                  | Category   | Route of exposure | Target organs    |
|-----------------------|------------|-------------------|------------------|
| Petroleum distillates | Category 3 | Not applicable.   | Narcotic effects |

TRETOLITE™ RBW507 WATER CLARIFIER

**Section 11. Toxicological information**

Specific target organ toxicity (repeated exposure)

Not applicable.

Aspiration hazard

| Name                  | Result                         |
|-----------------------|--------------------------------|
| Petroleum distillates | ASPIRATION HAZARD - Category 1 |

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

| Route | ATE value   |
|-------|-------------|
| Oral  | 50000 mg/kg |

**Section 12. Ecological information**

Toxicity

| Product/ingredient name | Result                           | Species                    | Exposure |
|-------------------------|----------------------------------|----------------------------|----------|
| Petroleum distillates   | Acute LC50 2200 µg/l Fresh water | Fish - Lepomis macrochirus | 4 days   |
|                         | Acute LC50 2900 µg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |

Persistence and degradability

Not available.

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

TRETOLITE™ RBW507 WATER CLARIFIER

### 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

|                            | DOT Classification | TDG Classification | IMDG           | IATA           |
|----------------------------|--------------------|--------------------|----------------|----------------|
| UN number                  | Not regulated.     | Not regulated.     | Not regulated. | Not regulated. |
| UN proper shipping name    | -                  | -                  | -              | -              |
| Transport hazard class(es) | -                  | -                  | -              | -              |
| Packing group              | -                  | -                  | -              | -              |
| Environmental hazards      | No.                | No.                | No.            | No.            |
| Additional information     | -                  | -                  | -              | -              |

**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** : Not available.

**DOT Reportable Quantity** : Not applicable.

**Marine pollutant** : Not available.

**North-America NAERG** : Not available.

TRETOLITE™ RBW507 WATER CLARIFIER

## 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: No products were found.  
Clean Water Act (CWA) 311: No products were found.
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed
- SARA 302/304** : No products were found.
- SARA 311/312 Classification** : Immediate (acute) health hazard
- SARA 313 Supplier notification** : No products were found.
- Canada (CEPA DSL):** : All components are listed or exempted.

## Section 16. Other information

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



### History

Date of printing : 1/22/2015.

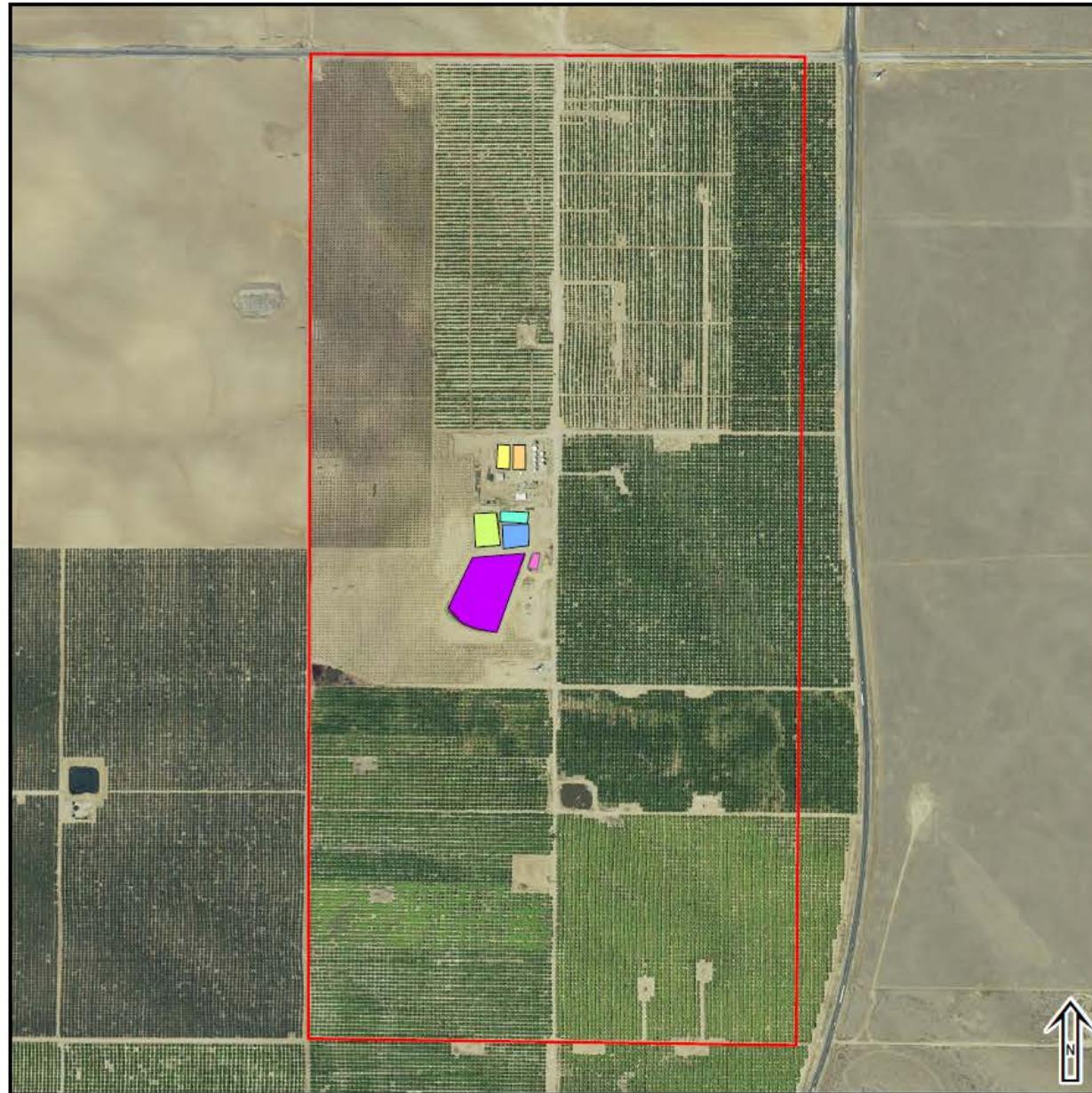
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### Notice to reader

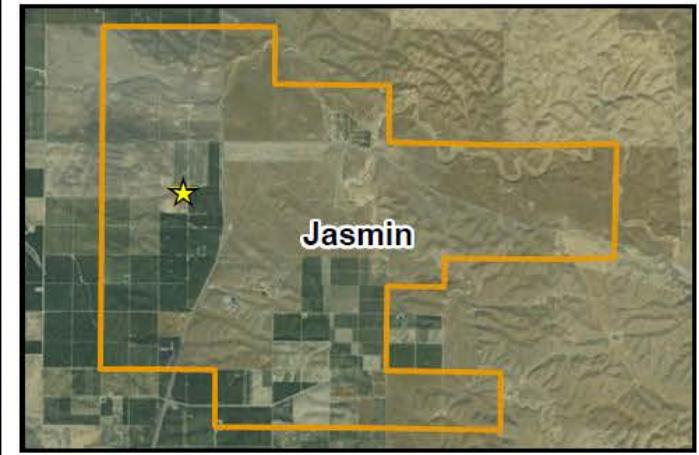
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The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or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

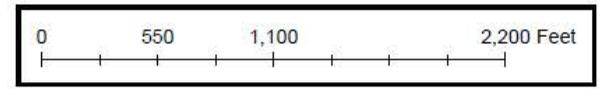


**Hathaway LLC**



**Legend**

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



|                        |  |            |                   |
|------------------------|--|------------|-------------------|
| Prepared By:           | <b>EnviroTech</b><br>Consultants, Inc. | TITLE:     | Quinn Ponds       |
|                        |  | OIL FIELD: | Jasmin            |
|                        |  | COUNTY:    | Kern              |
| Section/Township/Range |  | DRN BY:    | Ashley Bylow      |
| Section 15 - T25S/R27E |  | DATE:      | December 2, 2015  |
|                        |  | SCALE:     | 1 inch = 550 feet |