EPWM - 011

GENERAL CORRESPONDENCE

2013 - 2015

CH2M HILL
12301 Research Blvd
Building 4, Suite 250
Austin, Texas
78759
Tel: 512-453-1980
Fax: 512-453-4109

March 1, 2013

Brad Jones
Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: Part 34 Use Permit Application for Treating Produced Water Using H2prO ™ Technology

Dear Mr. Jones:

By this letter application, Devon Energy is requesting the Oil Conservation Division's approval of a Part 34 Use Permit for a project to treat and reuse produced water at the Turquoise 27-5 well site. The project will use Baker Hughes H2prO ™ water treatment technology. H2prO ™ uses proprietary treatment processes to generate water for reuse in fracturing fluids. By treating the water produced in oil and gas operations, H2prO ™ is intended to minimize oil and gas wastes and fresh water consumption. Devon anticipates beginning this operation on approximately March 10, 2013.

We understand that there is not an Oil Conservation Division form required to apply for a Part 34 Use Permit and that the information set forth below, which is consistent with information required under the Division's rules for management of produced water, including the division authorization allowed under New Mexico Administrative Code 19.15.34.12, is the information necessary to allow the Division to consider and authorize the project.

1. **Applicant:** Devon Energy
2. **Oil and Gas Registration Identification (OGRID) Number:** ~~15025~~ 6137
3. **Contact Persons**

   Kale Jackson
   Operations Engineer (SE New Mexico)
   Devon Energy
   Phone: 575-513-8236
   email: Kale.Jackson@dvn.com

   Kushal Seth
   Applications Lead: Water Management
   Baker Hughes
   Phone: 832-559-4681
   email: Kushal.Seth@bakerhughes.com

4. **Mailing Address:**

   Devon Energy
   200 N. Loraine, Ste. 800
   Midland, TX 79705

   Baker Hughes
   2107 City West Boulevard (4-1335A)
   Houston, TX 77042-3051

5. **Location of Proposed Project:**
   Lease: Turquoise PWU 27
   Well No: 005H (API 30-015-40583)
   Location: A-27-19S-29E (900 FNL and 50 FEL)

6. **Surface Owner:**

   NM State Land Office
   Attachment A: Approval to place H2prO™ on location

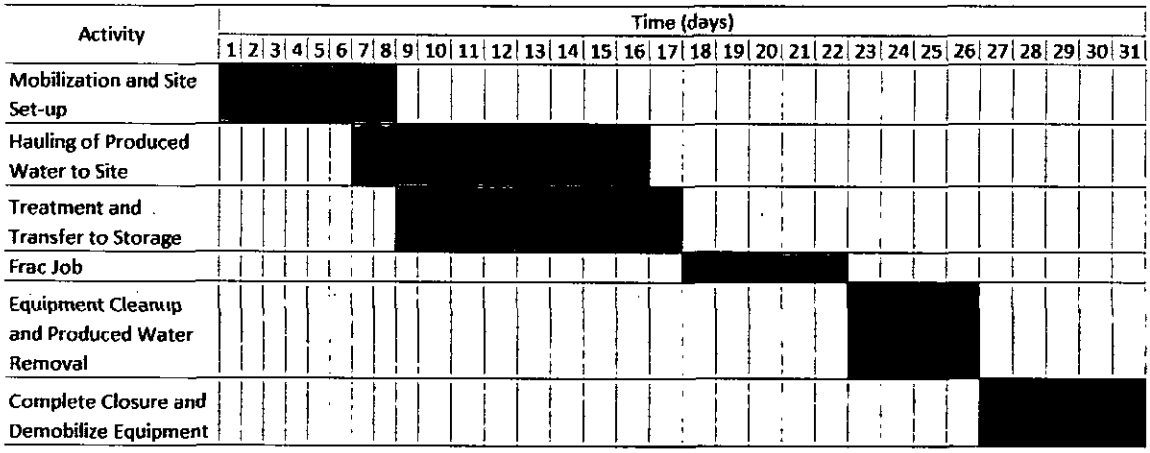
7. **Project Overview**

   Devon Energy will use produced water from up to 12 Devon operated wells to supply hydraulic fracturing operations at Devon's Turquoise 27-5 well. The project will consist of the produced water being trucked to the Turquoise 27-5 well site by Basic Energy Services, LP (C133-401). The produced water will be unloaded and stored in 1,000 bbl frac tanks (8) where it will be staged before being treated on-site through BHI's H2prO™ treatment system. BHI will treat the produced water at a rate of up to approximately 8,000 bbls per day. The treated produced water will be transferred into two 500 bbl frac tanks which will stage the water before it is transferred over into Poseidon Concepts' Atlantis modular impoundment system permitted under a separate C-144 application. A total volume of approximately 35,000 bbls of produced water will be treated by BHI's H2prO™ treatment system and transferred into the Atlantis modular impoundment. Fracturing operations will not begin until treatment operations have ended.

   All components of the mobile treatment system, including the frac tanks holding both raw and treated produced water, will be located on the production pad for the Turquoise 27-5 well. No additional site development will be required in order to accommodate the treatment system and supporting equipment. **Attachment A** illustrates the layout of the treatment and storage equipment on the Turquoise 27-5 well site.

   The project is expected to proceed over a period not exceeding 31 days. Site mobilization and set-up of the treatment equipment and frac tanks, and Poseidon modular impoundment erection will occur in approximately the first 8 days; produced water will begin to be trucked to the site on day 7 of the mobilization and set-up schedule. Following the mobilization and set up period, treatment of the produced water will commence and last for an estimated 9 days. Hydraulic fracturing of the well is expected to start once all water is transferred into the Poseidon unit and the two 500 bbl frac tanks; the frac job is anticipated to be completed in no more than 5 days. Immediately following the frac job, cleaning and waste removal, breakdown, and mobilization of all on-site treatment and storage equipment offsite will begin. Devon anticipates removing all treated and untreated produced water within 4 days following the end of the frac job. Breakdown and mobilization of all treatment and storage equipment offsite will occur during the last 5 days, thereby closing the project. **Table 1** presents a Gantt chart showing the general time requirements of the above mentioned activities.

TABLE 1
Project Schedule



8. Purpose and expected results of proposed project:

In order to reduce fresh water demand and the amount of wastewater that is required to be disposed of through injection wells, Devon Energy (Devon) would like to utilize produced water in their fracturing fluids. Devon is currently coordinating the logistics required to fracture a single well using treated produced water in eastern Eddy County, New Mexico.

The purpose of the project is to conserve the use of fresh water and minimize oil and gas waste in hydraulic fracturing operations in New Mexico. By some estimates, oil and gas wells may require as much as 4 million gallons to complete hydraulic fracturing operations. Between 10% and 40% of the fluid volume used in fracturing operations flows back during the subsequent clean-up. And for every barrel of oil produced, approximately four barrels of water are produced. Up to 98% of oil and gas waste is co-produced water. In a time of increasingly scarce water in New Mexico, the H2prO™ HMS Water Recycling Service (WRS) offers a promising solution for hydraulic fracturing water needs in the state.

The project is expected to result in only treated produced water being utilized for hydraulic fracturing operations and less disposal of oil and gas waste water. The project also expects to demonstrate the economic and technical viability of using produced water for hydraulic fracturing operations.

9. Engineering information:

Treatment of the produced water to be used for fracturing will be contracted to Baker Hughes. Baker Hughes will use their H2prO™ HMS (Heavy Metals and Solids), one of the technologies from a suite of services from H2prO™ Water Recycling Service (WRS). The following discussion is an overview of the treatment system as provided by Baker Hughes.

BHI's mobile H2prO™ HMS system incorporates an exclusive, non-scaling, electrochemical (EC) precipitation water treatment technology to remove suspended solids and heavy metals from produced water. In the H2prO HMS process, the coagulant is generated in situ through electrolytic oxidation of a proper anodic material. Water contaminants are ionic species like heavy metals and colloids (organic and inorganic) held in solution by electrical charges. H2prO HMS technology removes the contaminates from the water by allowing the reaction with an ion having opposite charge and/or with floc of metallic hydroxide generated within the water being treated. These reactants neutralize the electrostatic charges on suspended solids, oil droplets, colloids, etc., which facilitates agglomeration of coagulation, resulting in their separation from the aqueous phase.

Devon Energy's focus is to treat produced water to a standard suitable for reuse in fracturing. In doing so, the volume of wastewater sent for disposal is minimized. The treated produced water is used in fracturing, thus eliminating our need for freshwater.

10. **Design and construction information:**

Attachments A, B, & C (Site Layout, Topo, & Aerial Map) show the planned layout and design of the project equipment to be used at Devon Energy's well operations with information on the location and size of receiving, processing, and storage areas. Above grade 1,000 bbl frac tanks (8) will be used for storage of untreated produced water, while the treated produced water will also be temporarily stored in above grade 500 bbl frac tanks (2).

The frac tanks, treatment system, and ancillary facilities will be located by an earthen berm that is lined with a 35 mil polyurethane chemical resistant treated fabric. This is intended to provide secondary containment and lessen any impact by capturing fluids in the event of an unplanned release.

The two chemicals that will be on location are caustic soda and Spectra Floc™. The caustic soda will be used to regulate the pH balance of the produced water while the Spectra Floc™ will act as a flocculation agent, if needed, during the treatment process. The chemicals will be stored inside of BHI's chemical storage trailer.

Devon Energy will take reasonable actions to contain releases from known potential sources by using tarps, buckets, absorbent pads, diatomaceous earth, duck ponds at critical points to catch small leaks or spills until the source can by eliminated. Devon Energy will follow 19.15.29 and or 19.15.30 of NMAC for notification requirements of any release. Form C-141 (**Attachment D**) will be used for reporting.

11. **Operating information:**

Devon Energy anticipates processing a total volume of approximately 35,000 bbls of produced water. This produced water is supplied from 12 wells currently operated by Devon. The treated produced water from these wells will be used in fracking operations at the Turquoise 27-5 well. **Figure 1** presents the location of the produced water supply wells relative to the Turquoise 27-5 location where treatment and stimulation will occur.

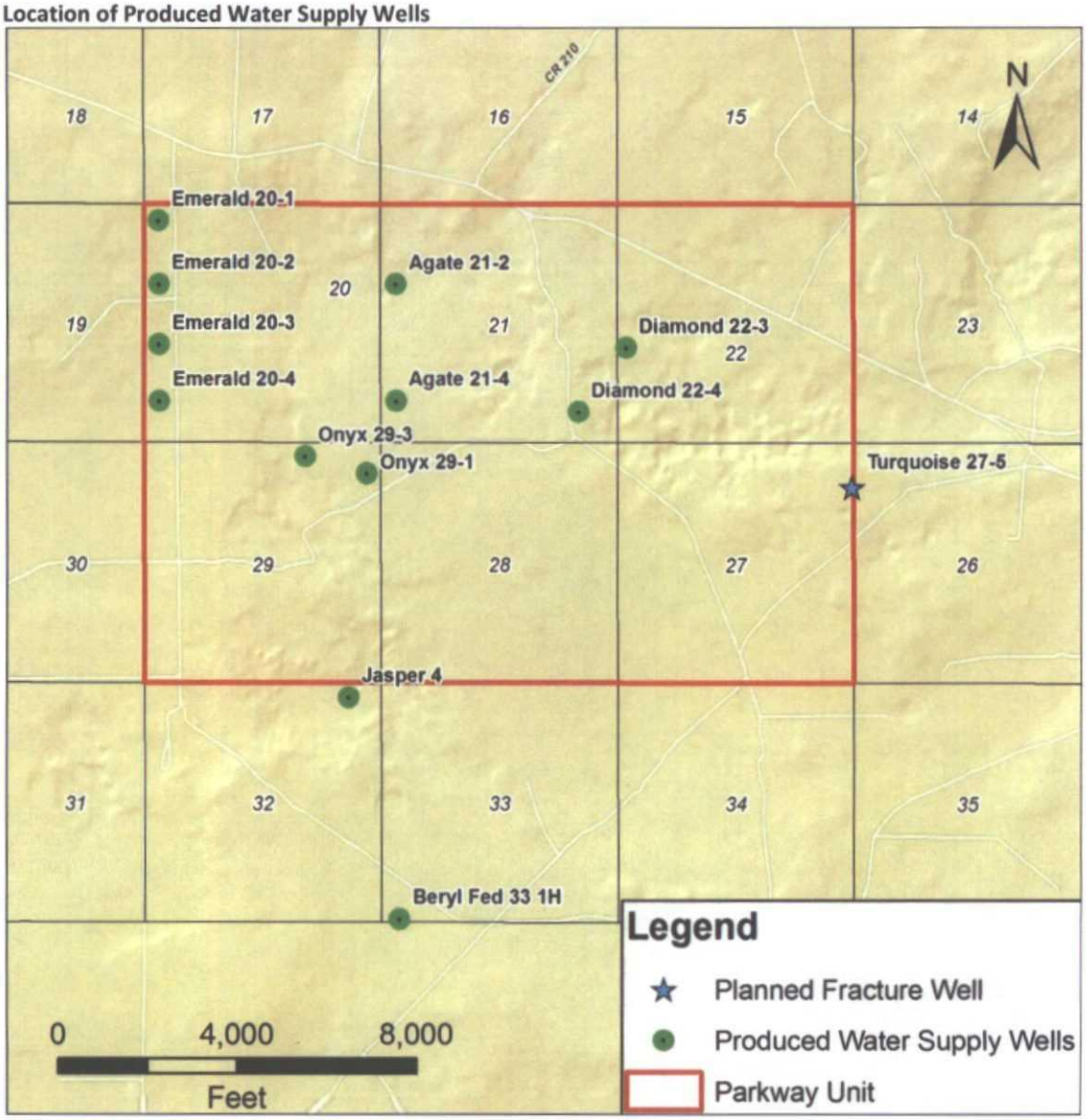
The estimated maximum volume of untreated produced water to be stored at the facility will be 8,000 bbl; this corresponds to 8 frac tanks which will stage the untreated produced water immediately prior to treatment.

The estimated maximum volume of treated produced water to be stored at the facility at any one time is not expected to exceed the planned volume of 35,000 bbl required for the frac job. The time required to store the produced and treated produced water, including the time required to remove water from the site after frac job is completed, is not expected to exceed 20 days. After the produced water has been treated, it will be pumped into an above ground modular impoundment, the Atlantis system from Poseidon Concepts, located on-site and maintained by Devon Energy.

Only produced water will be treated in the project.

Raw water is pumped from the 8 above ground raw water frac tanks into the H2prO HMS system with the help of a centrifugal pump. The incoming stream is adjusted for pH if needed by the addition of caustic soda. The water then enters the treatment cell of the H2prO HMS system. The design is such that water enters from the bottom, gets treated and leaves from the top. The water coming out of the cell then goes to a staging container, in this case a weir tank. This is where the flocs develop, coagulate, become heavy, and subsequently settle down. A coagulating aid might be added to bring the flocs together and hence decrease the flocculation time. An optional final stage may be needed to further allow any unsettled flocs to fall out of suspension. After treatment, the treated produced water will be pumped into (2) 500 bbl frac tanks to verify treatment. After verification of treatment, the treated produced water will then be pumped into the modular impoundment via leak proof hoses connected to 4" filler pipes mounted to the outside of the modular impoundment.

FIGURE 1
Location of Produced Water Supply Wells



Attachments F and G include the Material Safety Data Sheets for chemicals or additives used, if necessary, in the H2prO™ recycling process.

Devon Energy will be the sole user of the treated produced water from this operation. The treated produced water will only be used in fracturing operations at the Turquoise 27-5 well. Devon contracts with Basic Energy Services, LP (C133-401) for the hauling and disposal of waste fluids. Any excess produced water and treated produced water not used for fracturing will be disposed of at Basic Energy Services' SWD-964 (API 30-015-22955) or SWD-391 (API 30-015-21515) facilities. This will occur at the end of the fracturing job during project Closure. The removal process is discussed below in the Closure Plan.

Solids removed as part of the treatment process are expected to be less than 1% of the total volume of produced water treated. The solids adhere to the "bubbles" that are produced from the electro-coagulation process. These lighter solids float on top (electro-flotation) and accumulate at one end of the above grade weir tank. The heavier solids will slowly settle to the bottom of the filtration box. These solids will be removed as treatment progresses and transported offsite via permitted vacuum trucks. The fracturing operation will require approximately 35,000 bbl of treated produced water which will create about 350-1750 bbl of solids (sludge). The solids will be removed by a vacuum truck;

Devon will use Basic Energy Services, LP approved C133 Hauler (C133-401), for the solids removal. Basic will hook up a 3" vacuum hose to a 3" valve that draws from the bottom of the filtration box. About 350 bbls of solids will be "sucked" in along with up to 1400 bbls of water. This will remove the heavy solids. The hose is then connected to a 3" valve on the weir tanks. It draws from the top and will remove about 20 bbls of solids that are floating on top. Devon will use a 50/50 mixture of solids sludge to produced water, which will create about 40 bbls. The sludge/waste will be disposed of in an approved disposal facility operated by R360 Permian Basin, LLC (NM1-006/R-9166). This will be accompanied by a C-138 manifest (**Attachment E**).

Devon Energy's BMP (Best Management Practices) will be followed during the solids removal process. This means that a drip pan will be placed under each connection that is used on the weir tanks and filtration box. After the hose is disconnected, any remaining fluid in the hose will be caught in the drip pan. These fluids will then be pored over into the tanks. If Basic Energy Services has a more stringent method then their BMP will be followed.

12. Monitoring information:

Devon Energy will inspect equipment, processing, and storage areas as necessary. The treatment and transfer of produced water will only occur when Devon personnel are present on site. The total time required to treat and transfer the produced water into the modular impoundment is estimated to take 9 nine days. Devon Energy will monitor the treatment and transfer process to ensure no spillage or overflows occur. Produced water treatment units are equipped with emergency shutdown controls in each trailer that are automatically activated to prevent overflow of the system and any unplanned release.

Devon Energy will take reasonable actions to contain releases from known potential sources by using tarps, buckets, absorbent pads, diatomaceous earth, duck ponds at critical points to catch small leaks or spills until the source can be eliminated. Devon Energy will follow 19.15.29 and or 19.15.30 of NMAC for notification requirements of any release. Form C-141 (**Attachment D**) will be used for reporting.

Real time analysis will be carried out constantly to measure turbidity and pH of treated water. Samples will be taken on a daily basis and transferred to Baker Hughes' district field lab to measure various analytes to ensure that the proposed processing will result in a recyclable product that meets the engineering standards for the proposed use.

13. Closure plan:

Devon Energy will remove produced water, both untreated and treated, from all of the treating equipment (H2prO™ unit, settling/weir tanks) and storage facilities within 4 days of the frac job completion. This will be performed by using Basic Energy Services, LP approved C133 Hauler (C133-401) to pull the unused treated produced water from the filtration box and weir tank as well as any water standing in the frac tanks and existing modular impoundment on the same location. Devon Energy, in accordance with their BMP, will use a drip pan to catch any fluids that might drip out of the vacuum hose during connecting and disconnecting of the hose. The unused produced water will then be transported and disposed of in either Basic Energy Services' SWD-984 (API 30-015-22955) or SWD-391 (API 30-015-21515) facilities. Devon Energy will be responsible for the removal of treatment units and any equipment used during the produced water treatment and storage operation, including the frac tanks used for holding untreated and treated produced water and the modular impoundment. Once removed, the location will be reclaimed as an active production pad for the Turquoise 27-5 well. The 35-mil liner and berms will be removed from the site and hauled via Basic Energy Services to an approved disposal facility operated by R360 Permian Basin, LLC (NM1-006/R-9166). Any staining will be cleaned by digging up the stained soil, bagging it, and sending it via Basic Energy Services to the disposal facility operated by R360 Permian Basin. This will be accompanied by a C-138 manifest (**Attachment F**). The location will be inspected by Devon Energy to verify that no vegetation outside the existing location has been disturbed. If any disturbance exists, then it will be contoured and seeded with the approved seeding from the State Land Office. Mobilization of equipment offsite,

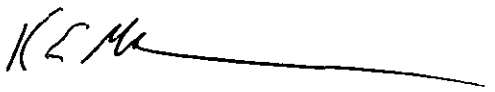
reclamation of the pad, and site closure is anticipated to occur over the remaining 5 days of the proposed 31 day schedule. The OCD will be notified of the closure within 10 days after closure completion; this will be done via a summary report that will include before and after photos.

Considering the information in this application, the Division's approval of this project permit would be appropriate for the following reasons:

- The Division has long encouraged oil and gas waste minimization through recycling (*See* OCD Environmental Handbook Categories and Disposal Methods for Oil Field Wastes);
- The treated product will meet engineering standards for its intended use;
- Similar mobile treat-and-use projects are being approved in other states with promising results; and
- The potential benefits of waste minimization and conservation of water will be significant under the project.

Please see the enclosed materials for further information on the H2prO™ process and the planned operations. If you have any questions, please contact Ken Nichols at 512-249-3338.

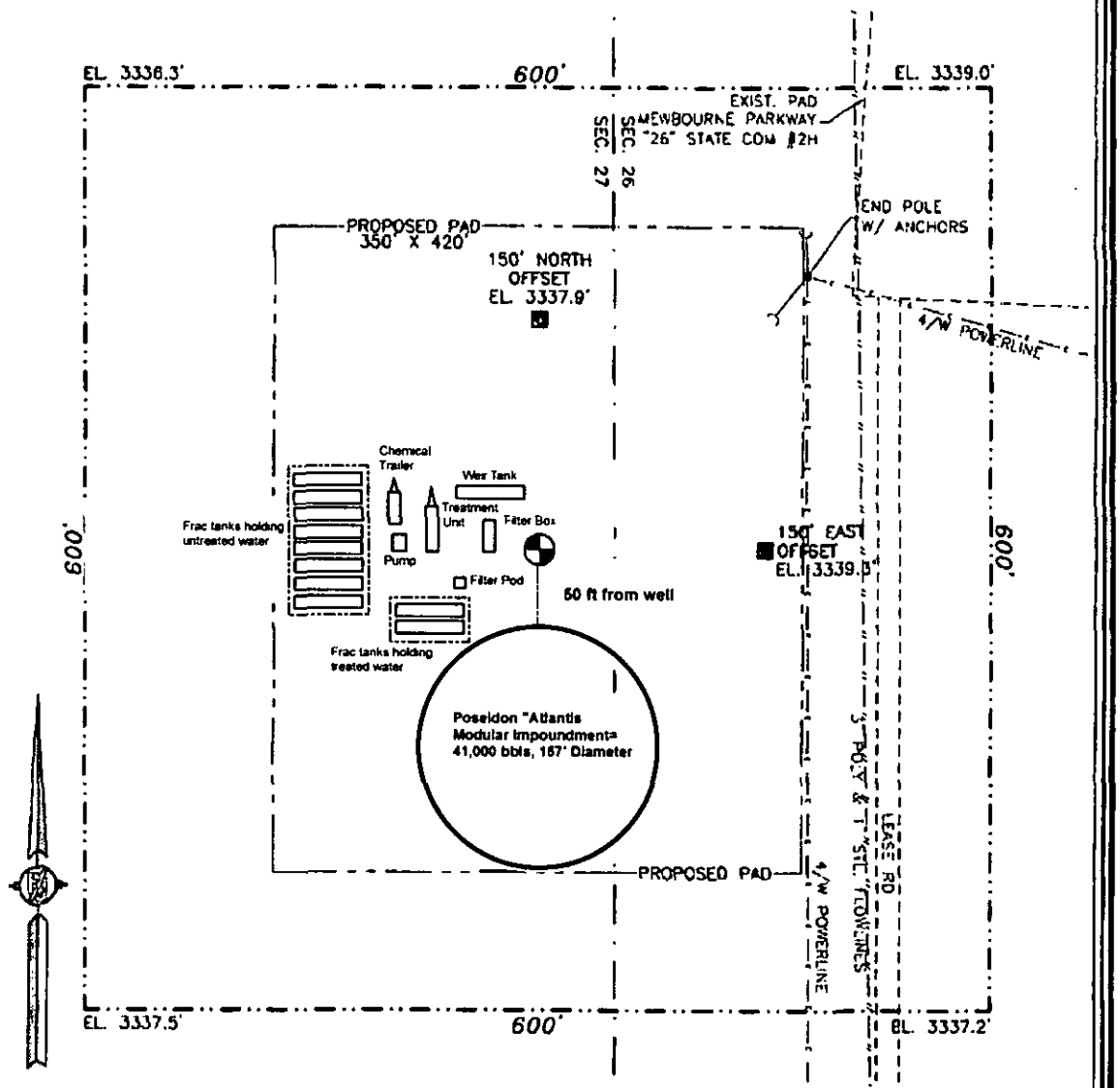
Sincerely,



Ken Nichols
CH2M HILL

Attachment A: H2prO™ System Site Layout

SECTION 27, TOWNSHIP 19 SOUTH, RANCE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO



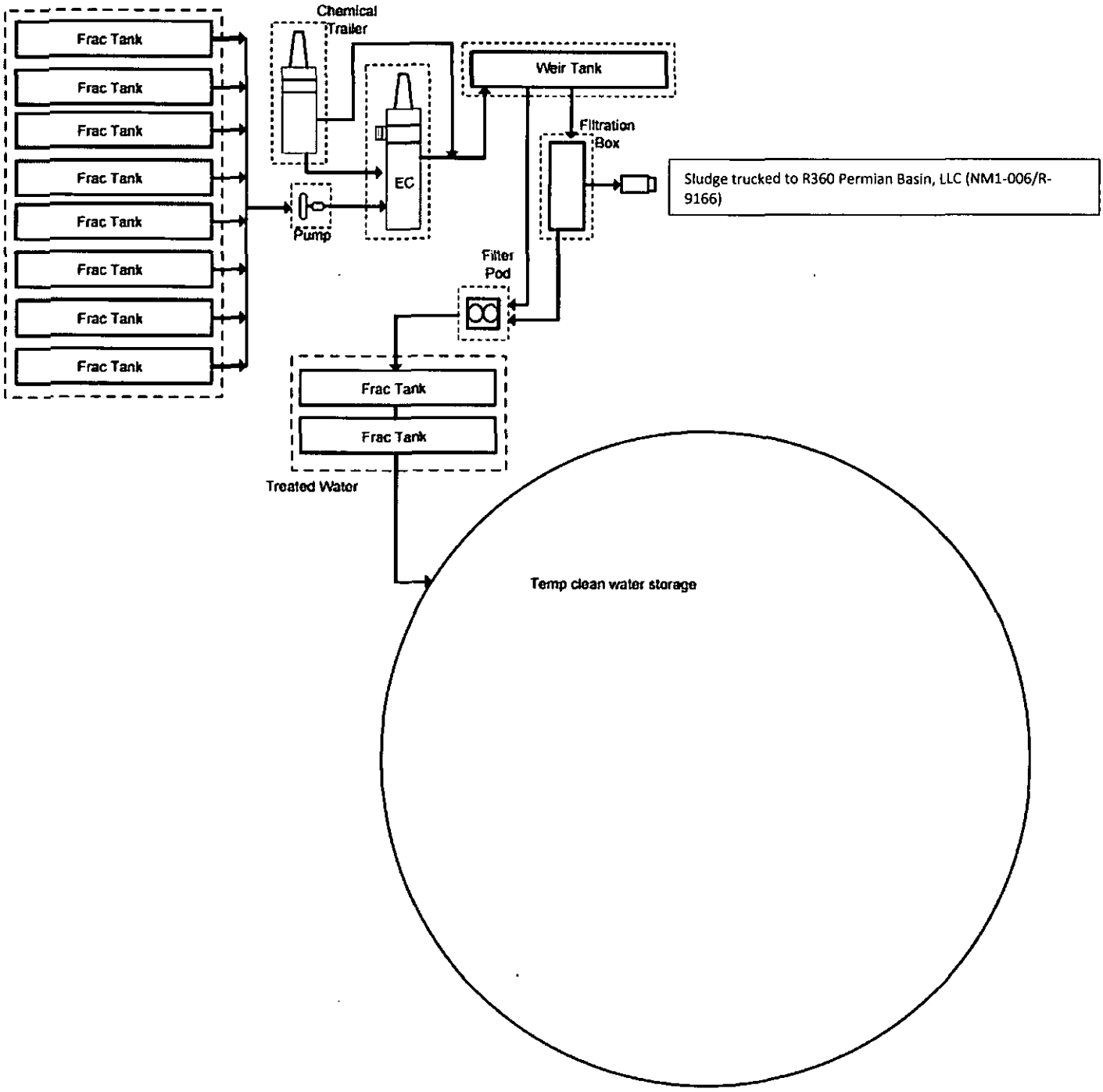
010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM THE INTERSECTION OF CR 210 (OLD LOCO) AND CR 235 (CURRY COMB) GO SOUTHEAST ON CR 235 FOR APPROX. 2.8 MILES, GO SOUTH APPROX. 0.4 OF A MILE, GO NORTHWEST APPROX. 0.7 OF A MILE TO MEWBOURNE PARKWAY "26" STATE COM #2H. LOCATION IS APPROX 500 FT SOUTHWEST.

DEVON ENERGY PRODUCTION COMPANY, L.P.
TURQUOISE PWU "27" #5H
LOCATED 990 FT. FROM THE NORTH LINE AND 50 FT. FROM THE EAST LINE OF SECTION 27, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 4, 2012

SURVEY NO. 964
MADRON SURVEYING, INC. 101 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO


Frac Tank
Frac Tank
Frac Tank
Frac Tank
Frac Tank
Frac Tank
Frac Tank
Frac Tank
Chemical Trailer
Pump
EC
Weir Tank
Filtration Box
Sludge trucked to R360 Permian Basin, LLC (NM1-006/R-9166)
Filter Pod
Frac Tank
Frac Tank
Treated Water
Temp clean water storage

Overview of the Set-up for Baker Hughes

1 Hoses

Baker Hughes will utilize 3-4" flexible pvc hoses and schedule 80 pvc pipe for transfer of water to and from its treatment system to the customer storage. Operational system checks will occur every four hours and include a review of the electrical system, pumps, tanks, hoses, fittings, connections, flow rates, produced volumes, and overall operational safety. Spill containment will be used when hoses and/or flow lines are unhooked to catch any spills and drips. Periodic system inspection will be recorded in the Daily Report Form.

2 Secondary Containment

Secondary containment will be constructed to protect against public health and safety by preventing contamination from treatment operations. Secondary containment will be provided by an earthen berm installed prior to placement of the Baker Hughes treatment system and ancillary facilities and equipment supporting treatment operations. The production pad and berms will then be lined with a 35-mil polyurethane chemical resistant treated fabric. Upon completion of operations, Devon will arrange for any water collected in the containment system to be transported off-site for waste disposal.

3 Extraction of Waste

Any solids resultant from the treatment process will be collected in the filtration box. Devon will arrange for offsite transport of solids to a solid waste disposal facility. After completing the treatment process, Baker Hughes will disconnect the system, empty all fluids from the tanks and hoses into Devon's storage system, and conduct demobilization of pump, flexible flowlines, and trailers.

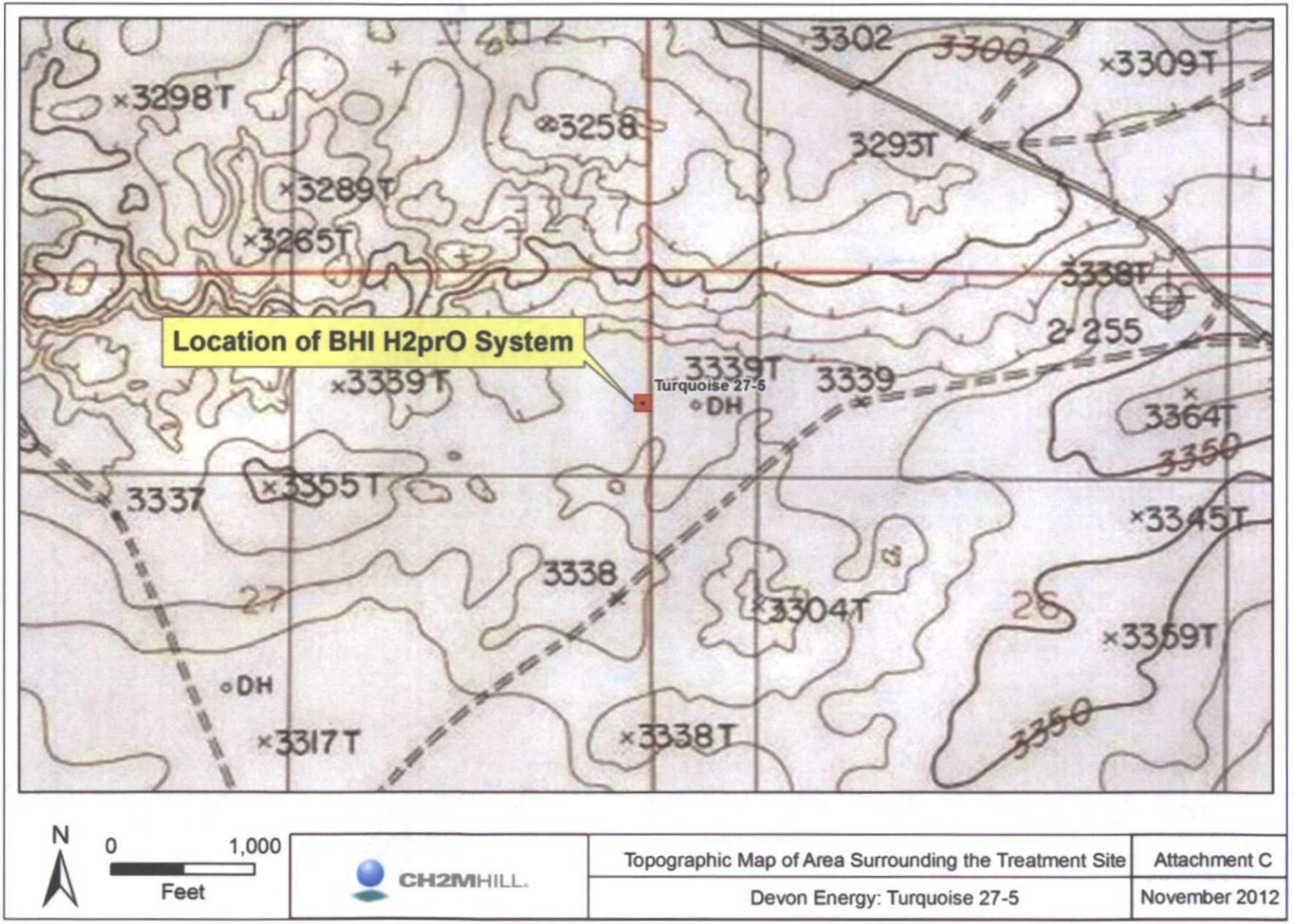
4 Site Dimensions

Baker Hughes typical treatment system includes the following components:

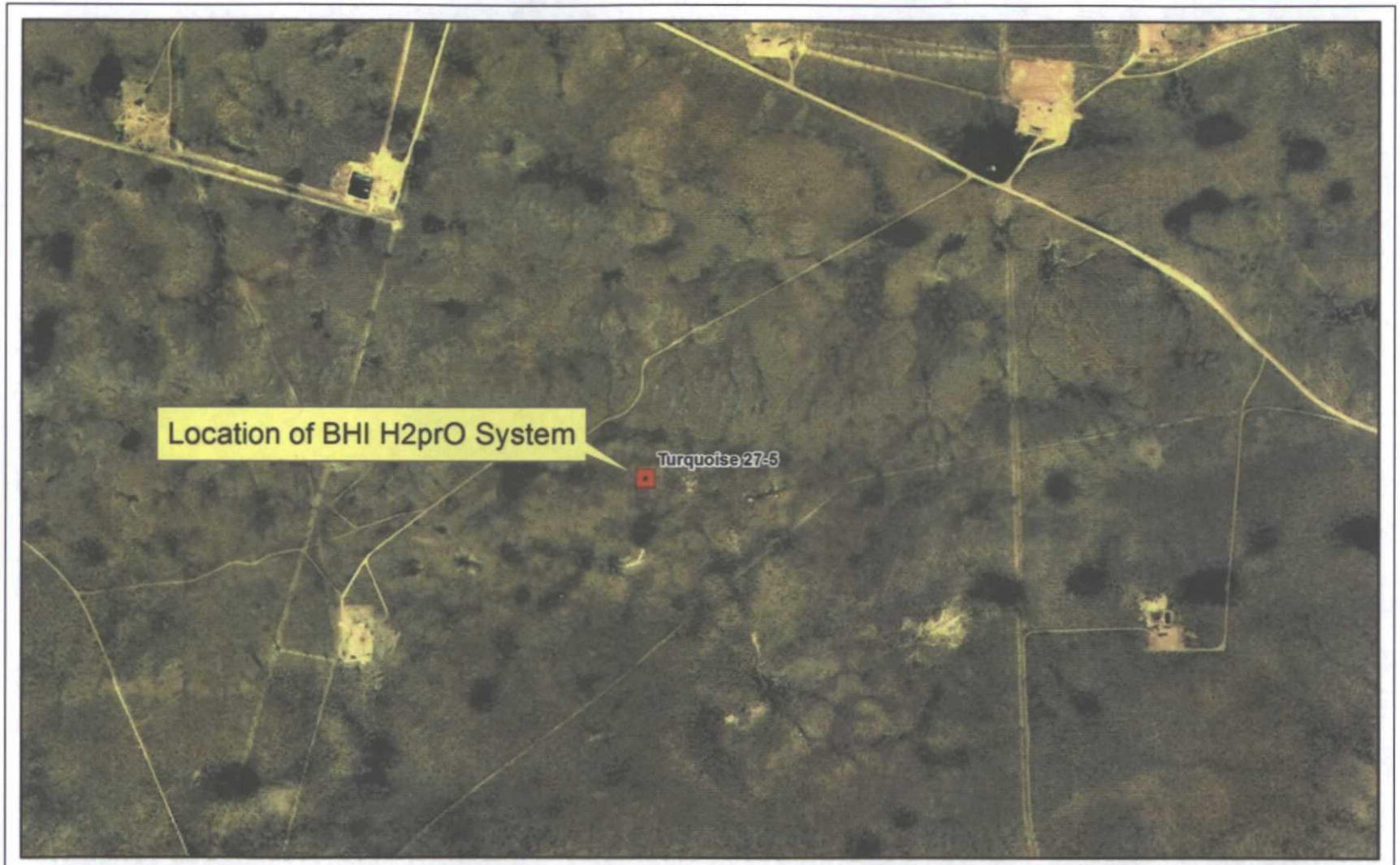
- 1- 4'x 4' transfer pump
- 1– 28'x 8' Chemical Trailer
- 1– 28' x 8' Electrocoagulation Unit
- 1– 40' x 8' Weir Tank
- 1– x 8' Filtration Box
- 1 - Filter Pod mounted on a 28' x 8' trailer
- 2 – 43' x 8' Frac Tanks

A typical minimum spacing of 4'-6' is provided between each component for access. This will create a standard rectangular footprint of approximately 64' x 64' which may be adjusted in either dimension to fit the particular needs of each site.

Attachment B: Topography Map of Water Treatment Site


Location of BHI H2prO System
Turquoise 27-5
DH
DH
3302
3300
×3309T
×3298T
3258
3293T
×3289T
×3265T
3338T
2255
3339T
3339
×3339T
3364T
3350
3337
×3355T
×3345T
3338
27
×3304T
26
×3369T
×3317T
×3338T
3350
N
0
1,000
Feet
CH2MHILL.
Topographic Map of Area Surrounding the Treatment Site
Devon Energy: Turquoise 27-5
Attachment C
November 2012

Attachment C: Aerial of the Water Treatment Site



N

0 1,000

Feet

CH2MHILL.

Aerial Around Water Treatment Site	Attachment D
Devon Energy: Turquoise 27-5	November 2012

Attachment D: C-141 Form

istrict I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR ☐ Initial Report ☐ Final Report

Name of Company	Contact
Address	Telephone No.
Facility Name	Facility Type

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Describe Area Affected and Cleanup Action Taken.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	**OIL CONSERVATION DIVISION**	
Printed Name:	Approved by Environmental Specialist:	
Title:	Approval Date:	Expiration Date:
E-mail Address:	Conditions of Approval:	Attached ☐
Date: Phone:		

* Attach Additional Sheets If Necessary

Attachment E: C-138 Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised August 1, 2011

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

2. Originating Site:

3. Location of Material (Street Address, City, State or ULSTR):

4. Source and Description of Waste:

Estimated Volume _____ yd^3 / bbls Known Volume (to be entered by the operator at the end of the haul) _ yd^3 / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, _____, representative or authorized agent for _____ do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load*

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for _____ do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #:

Address of Facility:

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: _____ TITLE: _____ DATE: _____

SIGNATURE: _____ TELEPHONE NO.: _____

Surface Waste Management Facility Authorized Agent

Attachment F: MSDS for Caustic Soda

Material Safety Data Sheet

1. Product and company identification

Product name : CAUSTIC SODA, 5% LIQUID

Supplier : 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

Material Uses : Special: Neutralizer.

Code : NAOH5

Validation date : 2/25/2010.

Print date : 2/25/2010.

Version : 3

Responsible name : Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606

In case of emergency : 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)

2. Hazards identification

Physical state : Liquid. [Clear to hazy.]

Odor : Acrid. [Slight]

Color : Colorless.

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

Emergency overview : DANGER!

CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Do not breathe vapor or mist. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Corrosive to the respiratory system.

Ingestion : May cause burns to mouth, throat and stomach.

Skin : Corrosive to the skin. Causes burns.

Eyes : Corrosive to eyes. Causes burns.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

Target organs : Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.

Over-exposure signs/symptoms

Inhalation : respiratory tract irritation, coughing

Ingestion : stomach pains

Skin : pain or irritation, redness, blistering may occur

Eyes : pain, watering, redness

6 . Accidental release measures

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material. 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.) 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.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully reseated and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	Other	Notations
Sodium hydroxide	US ACGIH	-	-	-	-	-	-	-	2	-	
	OSHA PEL	-	2	-	-	-	-	-	-	-	
	OSHA PEL 1989	-	-	-	-	-	-	-	2	-	

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.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. 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.

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. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before re-use.

8 . Exposure controls/personal protection

Personal protection

Respiratory	:	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. 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.
Hands	:	Chemical-resistant gloves: Nitrile or Neoprene gloves.
Eyes	:	Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
Skin	:	Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

Physical state	:	Liquid. [Clear to hazy.]
Flash point	:	Not available.
Auto-ignition temperature	:	Not available.
Flammable limits	:	Not available.
Color	:	Colorless.
Odor	:	Acrid. [Slight]
pH	:	13.5
	:	Neat-without dilution.
Boiling/condensation point	:	Not available.
Initial Boiling Point	:	Not available.
Melting/freezing point	:	Not available.
Relative density	:	1.058 (15.6°C)
Density	:	8.81 (lbs/gal)
Vapor density	:	Not available.
Odor threshold	:	Not available.
Evaporation rate	:	Not available.
VOC	:	Not available.
Viscosity	:	Not available.
Solubility (Water)	:	Soluble
Vapor pressure	:	Not available.
Pour Point	:	Not available.
Partition coefficient (LogKow)	:	Not available.

10 . Stability and Reactivity

Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	:	No specific data.
Materials to avoid	:	Highly reactive or incompatible with the following materials: acids. Reactive or incompatible with the following materials: moisture.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	:	Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11 . Toxicological information

No additional information.

Chronic toxicity Remarks

1) Sodium hydroxide

Sodium hydroxide is a component of this product. A 63-year-old man exposed to sodium hydroxide mist (as boiling lye solution) for 20 years had severe obstructive airway disease. This is the only known report of potential respiratory effects with chronic occupational sodium hydroxide exposure (Rubin et al, 1992).

Squamous cell carcinomas arise frequently in tissue healing from sodium hydroxide burns (Benedict, 1941; Bigelow, 1953; Gerami et al, 1971; Lansing et al, 1969; Schmidt-Bumler, 1970). These cicatricial (scar or relating to a scar) cancers probably arise as a result of nonspecific irritant action on the tissue and abnormalities in the regenerative process, rather than due to a specific carcinogenic effect of sodium hydroxide. Sodium hydroxide is not regarded as a human carcinogen.

Sodium hydroxide when injected directly into the amniotic fluid (0.001 M) on day 13 of pregnancy was teratogenic in rats, and slightly embryotoxic (Dostal, 1973). Boar sperm incubated directly with sodium hydroxide were destroyed (Okauchi & Ochiai, 1972).

12 . Ecological information

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1824	Sodium hydroxide solution	8	II		-
TDG Classification	UN1824	Sodium hydroxide solution	8	II		-
IMDG Class	UN1824	Sodium hydroxide solution	8	II		-

14 . Transport information

PG* : Packing group

DOT Reportable Quantity Sodium hydroxide, 2270 gal of this product.

Marine pollutant Not applicable.

North-America NAERG : 154

15 . Regulatory information

HCS Classification : Corrosive material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Sodium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: CAUSTIC SODA, 5% LIQUID: Immediate (acute) health hazard

CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (454 kg);
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Sodium hydroxide
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

WHMIS (Canada) : Class E: Corrosive material

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

16 . Other information

Label requirements : CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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

Date of printing : **2/26/2010.**

▽ Indicates information that has changed from previously issued version.

Notice to reader

16 . Other information

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.

Attachment G: MSDS for SpectraFloc™

Material Safety Data Sheet

1. Product and company identification

Product name : SpectraFloc™ 875 FLOCCULANT
™ a trademark of Baker Hughes, Inc.

Supplier : 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

Material Uses : Special: Water clarifier.

Code : SPC875

Validation date : 7/14/2011.

Print date : 7/14/2011.

Version : 6

Responsible name : Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606

In case of emergency : 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)

2. Hazards identification

Physical state : Liquid. [Opaque.]

Odor : Aliphatic hydrocarbon.

Color : White.

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

Emergency overview : WARNING!

INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE EYE AND SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Can cause central nervous system (CNS) depression. Irritating to respiratory system.

Ingestion : Can cause central nervous system (CNS) depression.

Skin : Moderately irritating to the skin.

Eyes : Moderately irritating to eyes.

Potential chronic health effects

Chronic effects : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Over-exposure signs/symptoms

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

Ingestion : None known.

Skin : irritation, redness, dryness, cracking

2 . Hazards identification

Eyes : irritation, watering, redness

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Petroleum distillates	64742-47-8	10 - 30

4 . First aid measures

Eye contact : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : 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.

Hazardous thermal decomposition products : carbon dioxide,carbon monoxide,nitrogen oxides,metal oxide/oxides

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.

6 . Accidental release measures

Personal precautions : 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Dispose of via a licensed waste disposal contractor.

6 . Accidental release measures

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.) 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.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). 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. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). 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.

8 . Exposure controls/personal protection

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m³	Other	ppm	mg/m³	Other	ppm	mg/m³	Other	Notations
Petroleum distillates	US ACGIH	-	200	-	-	-	-	-	-	-	[1]

[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.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : 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.

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. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before reuse.

Personal protection

Respiratory : 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.

8 . Exposure controls/personal protection

Hands	: Chemical-resistant gloves: Nitrile or Neoprene gloves.
Eyes	: Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
Skin	: Wear long sleeves and other protective clothing to prevent repeated or prolonged skin contact.

9 . Physical and chemical properties

Physical state	: Liquid. [Opaque.]
Flash point	: Closed cup: >93.4°C (>200.1°F) [SFCC]
Auto-ignition temperature	: Not available.
Flammable limits	: Not available.
Color	: White.
Odor	: Aliphatic hydrocarbon.
pH	: 6 to 8
	: 5 g/L
Boiling/condensation point	: Not available.
Initial Boiling Point	: Not available.
Melting/freezing point	: 0°C (32°F)
Relative density	: 1.05 (15.6°C)
Density	: 8.75 (lbs/gal)
Vapor density	: >1 [Air = 1]
Odor threshold	: Not available.
Evaporation rate	: Not available.
VOC	: Not available.
Viscosity	: Dynamic: 1200 cP
Solubility (Water)	: Soluble
Vapor pressure	: Not available.
Pour Point	: Not available.
Partition coefficient (LogKow)	: Not available.

10 . Stability and Reactivity

Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: No specific data.
Materials to avoid	: 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.
Conditions of reactivity	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
SpectraFloc™ 875 FLOCCULANT	LD50 Oral	Rat	5000 mg/kg	-

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Petroleum distillates	A3	-	-	-	-	-

Chronic toxicity Remarks

1) Petroleum distillates

These petroleum distillates may cause slight irritation of the eyes. Repeated or prolonged skin contact with the liquid may cause irritation, reddening, and dermatitis. Inhalation of high vapor concentrations may cause headaches, stupor, irritation of the throat, central nervous system depression, and kidney effects. Extreme aspiration into the lungs may cause chemical pneumonia or death. Low order of oral toxicity. Ingestion can cause irritation of the stomach and intestines which can produce nausea and vomiting. Vomiting should be avoided since aspiration of ingested material into the lungs may produce chemical pneumonia.

12 . Ecological information

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Petroleum distillates	Acute LC50 2200 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 35 to 75 mm	4 days
SpectraFloc™ 875 FLOCCULANT	Acute EC50 >100 mg/L	Daphnia - Daphnia magna	48 hours
	Acute IC50 >100 mg/L	Algae - Scenedesmus subspicatus	72 hours
	Acute LC50 >100 mg/L	Fish - Danio rerio.	96 hours

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-

14 . Transport information

IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

DOT Reportable Quantity Not applicable.

Marine pollutant Not applicable.

North-America NAERG : Not available.

15 . Regulatory information

HCS Classification : Irritating material

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Distillates (petroleum), hydrotreated light
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: SpectraFloc™ 875 FLOCCULANT: Immediate (acute) health hazard

CERCLA: Hazardous substances.: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) :
Not listed

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

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

16 . Other information

Label requirements : INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE EYE AND SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

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

Date of printing : **7/14/2011.**

☑ Indicates information that has changed from previously issued version.

Notice to reader

16 . Other information

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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.