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May 11, 2015

Mr. Mike Bratcher  
NMOCD District II  
811 South First Street  
Artesia, NM 88210

Re: Compromise SWD # Well Site  
30-015-25665  
Section 30, T18S-R27E  
Eddy County, New Mexico

Dear Mr. Bratcher:

Yates Petroleum Corporation would like to submit the following plan of work to you regarding the release that occurred at the above mentioned facility on January 16, 2015 (2RP-2797).

### **Background**

On January 27, 2015 Yates' Environmental personnel found out that there was a release on January 16, 2015 at this well site location. The release was approximately 2,500 barrels of produced water, with 2,300 barrels of produced water recovered via vacuum truck. As soon as the Environmental Division was made aware of the release, it was visited and site pictures were taken. Yates' Production personnel were questioned about the release so that Environmental could get it submitted to NMOCD. On February 4, 2015 Katie Parker and Bob Asher visited with Mike Bratcher at the NMOCD District II offices located in Artesia about this release.

Below is a timeline of the initial vertical delineation that was completed. A Google Earth map is attached in Appendix A showing the approximate location of each sample point (16 points). Analytical results and a table summarizing the analytical results from all sampling events are attached for your review in Appendix B.

- On February 12, 2015 initial vertical delineation occurred for TPH, BTEX, and Chlorides with a backhoe and soil samples were sent to a NMOCD approved laboratory. The site had a total of sixteen (16) grab sample points. Each sample point had soil samples pulled from 1' and 3' below surface level (BSL). Yates received the analytical results for these samples on February 20, 2015. Analytical results showed TPH and BTEX levels to be below NMOCD's RRAL's for a site ranking of 20. These initial results did show

elevated levels of chlorides in sections 1-14. Sections 15 and 16 showed chlorides to be below 1,000 ppm.

- On March 11, 2015 Yates completed further chloride vertical delineation of sections 1-14, sampling each of these sample points at 5', 7', and 9' BSL with a backhoe. On March 13, 2015 Yates sent the 5' samples to the laboratory and received the 5' analytical results on March 18, 2015. These results showed that chlorides in sections 8 and 14 were now below 1,000 ppm, with all other sections remaining above 1,000 ppm.
- On March 20, 2015 Yates sent the 7' samples for sections 1-7, 9-13 to the laboratory and received the 7' analytical results on March 24, 2015. These results showed that chlorides in section 1 were now below 1,000 ppm, with all other sections remaining above 1,000 ppm.
- On March 27, 2017 Yates sent the 9' samples for sections 2-7, 9-13 to the laboratory and received the 9' analytical results on March 31, 2015. These results showed that chlorides in sections 5 and 11 were now below 1,000 ppm, with all other sections remaining above 1,000 ppm.
- Yates returned to the site on April 30, 2015 and attempted to further delineate sections 2, 3, 4, 6, 7, 9, 10, 12, and 13 for chlorides with a backhoe. Yates started in the area of section 2 and dug with a backhoe to depths of 11', 13', and 15' BSL. At 11' BSL Yates started noticing that soils were more saturated than the previous depths. Yates continued to dig to 13' and 15' and found soils were still saturated, and sidewalls of the holes kept caving in making it impossible for Yates to obtain discrete soil samples. Yates moved to a new hole in the area of section 3 and found the same signs of saturated soils at these depths. Yates then moved to one more section within the release area, section 10, and found the same results. All three of these test holes were abandoned and backfilled due to safety reasons as the holes would continuously cave in from the bottom as a result of the saturated soils found at 11' – 15'. At this time, Yates abandoned the process of further vertical delineation and has been in the process of determining a better way to further delineate the areas that still show elevated chloride levels.

### **Soil Types**

The soils encountered during sample events at 1' – 9' primarily consisted of clay content. At approximately 11' – 15' the soils consisted more of mixed sand/clay content.

Yates used the USDA Natural Resources Conservation Service Web Soil Survey and found that soils in this area are from the Arno-Harkey complex. Information pulled from the soil survey is included in Appendix C.

### **State Engineer's Website**

Yates researched the New Mexico Office of the State Engineer's New Mexico Water Rights Reporting System for any reported water wells in the general vicinity of this well site. A total of

nine (9) wells with well log information were found within Sections 19, 29, 31 of T18S, R27E and Sections 24, 25 of T18S, R26E.

The depth to water is recorded for six (6) of these wells. The depths to water of these six (6) drilled wells range from 18'-90'. The actual depths of the drilled wells range from 90'-845'. Well information that we found on the State Engineer's website are included in Appendix D. In Appendix D, we've also included Google Earth and All Topo maps showing the locations of these water wells in reference to the Compromise SWD #1 location.

### **Plan of Action**

To move forward, Yates is going to conduct background sampling around the Compromise SWD #1 well site. Yates will obtain a core rig to complete this sampling. Yates may drill up to three test holes, depending on results from the first test hole, (1) approximately 200' west (up gradient) of the production pad, (2) approximately 150' feet southeast of the production pad, and (3) approximately 400' feet east of the production pad. Appendix E includes a Google Earth map showing the approximate location of the background sampling Yates plans to do.

Yates will have a dirt work contractor prepare the background areas by removing any weeds/brush to allow the core rig to access these sampling points.

Each background test hole will have soil samples pulled starting at 3' BSL and every three feet thereafter. Each soil sample pulled will be field tested using Chloride QuanTab® Test Strips, 30-600 mg/L or Chloride QuanTab® Test Strips, 300-6,000 mg/L. Field testing will allow Yates to have an idea of what the chloride levels look like in the field and give us a determination if we should keep drilling deeper with the core rig for soil samples. After all soil field sampling is completed, samples will be sent to Cardinal Laboratories in Hobbs, NM for official third party lab results.

Should soil and water quality be found poor in the samples taken west (up gradient) of the production pad, Yates would submit notification to NMOCD that no further work would be completed as background would prove the area already contained elevated chloride levels. If the area to the west of the location shows low levels of chlorides, Yates would continue with delineation sampling of the release area and determine the full vertical extent of contamination within the actual release area.

Yates will also use the core rig to drill to determine the quality of the water found during our April 30 sampling event. Water samples would be taken from all of the background holes drilled in the plan above. Any water samples taken would be sent to Cardinal Laboratories in Hobbs, NM for official third party lab results.

Yates has scheduled a core rig to be on location Tuesday, May 19, 2015 at 9:00am. We request that a NMOCD representative be present to witness sampling.

If Yates does not receive an objection from NMOCD by 5:00 PM Wednesday, May 13, 2015, Yates will proceed with the plan outlined above.

If you have any questions or concerns, I can be reached at (575) 748-4111 or by email at [acannon@yatespetroleum.com](mailto:acannon@yatespetroleum.com).

Thank You,



Amber Cannon  
Environmental Regulatory Agent  
Yates Petroleum Corporation