From: Kristin Pope <kristin@rthicksconsult.com>
Sent: Thursday, October 19, 2017 2:07 PM
To: Griswold, Jim, EMNRD
Cc: Billings, Bradford, EMNRD; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Martin, Ed; agroves@slo.state.nm.us; Greg Boans; Randy Hicks
Subject: IN-PLACE CLOSURE NOTICE: Murchison - Jawbone St Com
Attachments: ClosureNoticeLetterJawbone.pdf

Mr. Griswold,

On behalf of Murchison, please find the attached notice of in-place closure of the **Jawbone State Com** temporary pit which is tentatively scheduled to begin on **Wednesday October 25, 2017**, depending on the availability of machinery. Per Pit Rule requirements, I will follow this email with a phone call to you on Monday. Thank you.

Kristin Pope
R.T. Hicks Consultants
Carlsbad Field Office
575.302.6755

From: Griswold, Jim, EMNRD [mailto:Jim.Griswold@state.nm.us]
Sent: Thursday, September 21, 2017 8:56 AM
To: 'Greg Boans' (gboans@jdmii.com); kristin@rthicksconsult.com
Cc: Billings, Bradford, EMNRD; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Martin, Ed
Subject: Jawbone State Com

Greg and Kristen,

The Oil Conservation Division (OCD) has reviewed RT Hicks Consultants, Ltd.'s submission dated July 25th, 2017 filed on behalf of Murchison Oil and Gas, Inc. regarding the combined burial of drill cuttings from the Jawbone State Com wells 1H, 3H, and 4H. Based upon the information at hand and after review of the definitions within our regulations (19.15.17.7 R. NMAC), the structure in question can be defined as a temporary pit used for multiple wells. 19.15.17.8 NMAC states "A person shall not construct or use a pit except in accordance with a division-issued permit." Such is not the case as the pit was constructed and used while the division had not issued a permit. Furthermore, a temporary pit "…must be closed within six months from the date the operator released the drilling or workover rig from the first [*emphasis added*] well using the pit." It appears the earliest rig release occurred on March 1st, 2017 from the Jawbone State Com 1H. This time period can be extended, but for no more than three months.

Nonetheless, the application indicates Murchison wishes to close the pit in-place and thereby dispose of drill cuttings from the three wells. The siting requirements for a temporary pit are contained within 19.15.17.10 A. NMAC exclude siting "within an unstable area, unless a variance is granted upon a demonstration that the operator has incorporated engineering measures into the design to ensure that the temporary pit's integrity is not compromised,…" In addition, the siting requirements for an in-place closure are contained in 19.15.17.10 C. NMAC which also excludes siting within an unstable area "unless the operator demonstrates that it has incorporated engineering measures into the design to ensure that the onsite closure method will prevent contamination of fresh water and protect public health and the

environment,…" The OCD considers locations potentially unstable when they are mapped as having a high karst potential by the Bureau of Land Management. The location is within an area of high karst potential and as such a variance is requested by Murchison. The NM Registered Professional Engineer retained by Murchison states that karst features are common in the region and while he did not observe any such features within the test hole to a depth of twelve feet below surface, it did not mean voids in the subsurface did not exist. He recommended during further excavation for the pit that the strata be inspected for voids, fractures, or other solution features. If such items were observed, the engineer was to be contacted for evaluation. He did not recommend any major changes to the construction design. The narrative in the application the Professional Engineer has reviewed the liner foundation and closure plans. The OCD approves the variance request.

The closure application is otherwise approved with the following conditions:

1. Drill cuttings from only the Jawbone State Com wells 1H, 3H, and 4H can be disposed of in this temporary pit.
2. The OCD assumes the existing liner is at least 20-mil in thickness, is string reinforced, made of LLDPE, impervious to petroleum and salt, resistant to ultraviolet light, and in serviceable condition.
3. Prior to closure, free liquids must be removed to a reasonable extent.
4. The contents of the pit may need to be stabilized before burial such that they can support the final cover. This can be done with unimpacted soil, cement kiln dust, or fly ash. The mixing ratio cannot exceed three to one. The mixture must pass a paint filter test.
5. The mixture must be properly sampled and analyzed to verify the concentrations of adsorbed chloride, benzene, toluene, ethylbenzene, total xylenes, gasoline range organics, diesel range organics, and total petroleum hydrocarbons are not higher than specified in Table II of 19.15.17.13 NMAC for depths to groundwater between 51 and 100 feet. Despite comments in the narrative of the application that this sampling had been completed and the waste met the Table II standards, documentation to verify this claim have not been provided.
6. Based upon a review of the "as built" survey provided of the pit and its contents, it appears the waste material needs to be redistributed such that once closed none will be situated less than four feet beneath the final grade. As part of Murchison's closure report (see Condition 13 below) verification of the waste distribution and overburden thickness must be provided.
7. The outer edges of the liner must be folded over the waste material.
8. An LLDPE string-reinforced geomembrane with a minimum 20-mil thickness must be installed atop the waste and folded edges.
9. The area must then be covered with a minimum thickness of four feet of uncontaminated soils with an adsorbed chloride concentration of less than 600 milligrams per kilogram including a minimum of one foot of soil at the top which is suitable for re-establishing vegetation. The covering soils must also re-establish the site's historic surface profile including restoration of the natural drainage.
10. Murchison must implement the closure plan described in the application. Murchison must appropriately revegetate the area and ensure the soil cover does not unreasonably erode. This will entail post-closure monitoring and reporting for several years thereafter.
11. An appropriate marker must be placed in the center of the burial area.
12. Murchison must notify the OCD and State Land Office at least 72 hours before closure begins.
13. No later than 60 days after closure is completed, a closure report with all necessary documentation must be submitted to the OCD.

These conditions do not supersede any obligations imposed by the surface owner provided those obligations provide equal or better protection of fresh water, human health, and the environment. I am confident Murchison agrees seeking OCD's approval prior to construction or implementation of many projects is most efficient, especially when interpretation of regulations are concerned. If you have any questions, please don't hesitate to call. Thanks.

Jim Griswold
Environmental Bureau Chief
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