

September 8, 2004

Ms. Susan Crowley
Kerr-McGee Chemical LLC
PO Box 55
Henderson, Nevada 89009

Re: **Kerr-McGee Chemical Corporation LLC (KM)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Kerr-McGee Semi-Annual Performance Report –Chromium Mitigation Program
– *January to June, 2004* dated July 26, 2004

Dear Ms. Crowley,

The NDEP has received and reviewed KM's correspondence identified above and provides comments in Attachment A. The NDEP requests that KM respond to these issues **by October 22, 2004**.

If there is anything further please do not hesitate to contact me.

Sincerely,

Brian A. Rakvica, P.E.
Staff Engineer III
Remediation and LUST Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office

Ms. Susan Crowley

5/17/2013

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CC: Jim Najima, NDEP, BCA, Carson City
Jon Palm, NDEP, BWPC, Carson City
Todd Croft, NDEP, BCA, Las Vegas
Jennifer Carr, NDEP, BCA, Carson City
Jeff Johnson, NDEP, BCA, Carson City
Valerie King, BWPC, Carson City
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Brenda Pohlmann, City of Henderson, 240 Water Street, Suite 210, Henderson, NV 89015
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Carrie Stowers, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-
1741
Ranjit Sahu, BEC, 875 West Warm Springs Road, Henderson, Nevada 89015
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015

ATTACHMENT A

1. Page 8, second paragraph, it is requested that a more detailed description be provided for the treatment of hexavalent chromium at the Athens Road well field.
2. Table 4, the average total chromium treated outflow concentration has exceeded the USEPA MCL of 0.1 mg/L for the months of May and June 2004. The NDEP understands that this water is currently being impounded in pond GW-11, however, KM has been discharging from pond GW-11 periodically over the past few months. Please explain the excursions noted in May and June 2004 and what is planned (if anything) to mitigate this issue.
3. Plate 1, the NDEP advises KM to review the available TIMET data for total chromium concentrations on their property (adjacent the KM site). Incorporation of this data would significantly revise the way that the 0.05, 0.1 and 1 mg/L contours are portrayed. As noted previously, the NDEP is concerned that the existing groundwater capture system is not addressing the far eastern and western portions of the plume. Please review this data and respond. See also comments below. Also, please show the locations of Ponds P-2 and P-3 on this figure.
4. Plates 1 and 2, the NDEP needs a potentiometric surface map (of the same scale and orientation as Plates 1 and 2) to match the mapped areas of Plates 1 and 2. It is suggested that (in the future) the concentration contours map and the potentiometric surface maps be generated at the same scale as the annual perchlorate map.
5. Plate 2, it appears to the NDEP that the delineation of the chromium plume is not complete. It appears to the NDEP that the plume may continue from the Athens Road area, through well PC53, towards well PC58. Also, the plume is not defined east of wells PC53 or PC58 or west of wells M76 or PC73. This delineation is necessary for future submittal. Also, sampling of wells PC93, PC94 and MW-K8 would be useful in the delineation of this plume. If KM believes this to be unnecessary a justification should be provided.
6. Appendix B, response #1a, while the NDEP appreciates the fact that determination of the capture efficiency of the on-site well field may be difficult, the NDEP would like to note that this determination is necessary. The NDEP has no quantitative or qualitative information to suggest that the chromium (or perchlorate) plume is not traveling around the eastern and western extents of the slurry wall. The NDEP requests that a net drawdown map be submitted in response to this letter and that a complete evaluation be presented in the January 2005 chromium report.
7. Appendix B, response #1b, please refer to the NDEP's comment #3 above regarding the TIMET chromium data. Also, it appears that part of the issue with increased capacity of the chromium system is the capacity of pond GW-11. The NDEP believes that the capacity of pond GW-11 should not be the driving issue behind the design of the capture system. KM should contemplate operational changes to allow for the maximum capture of chromium (and perchlorate)-impacted water in the on-site wells.
8. Appendix B, response #1c, KM suggests that natural attenuation will be one of the mechanisms to deal with the downgradient portion of their plume. KM should

explain what chemical or microbial processes will result in the attenuation of the total and hexavalent chromium.

9. Appendix B, response #1d, please provide a schedule for the completion of the testing of the ferrous sulfate process. Also, per KM's statements in response #1b, won't this flow rate still be limited by the capacity of pond GW-11? Please explain.
10. Appendix B, response #2b, please provide the documentation or correspondence to substantiate this response. Also, please note that the chromium concentrations detected on the TIMET site appear to match the KM contours very well. Also, please be advised that the NDEP has asked TIMET to look into the issue of chromium impacted cooling water on their site.
11. Appendix B, response #3b, the NDEP would like to note that regardless of the decreases in wells M-11 and M-76 these are still significant sources of chromium concentrations in groundwater (over 50 times higher than the USEPA MCL) and nearby wells have even higher concentrations of chromium. Furthermore, it appears that well M12A would also be representative of conditions downgradient of Units 4 and 5 and this well is approximately 180 times higher than the USEPA MCL.
12. Appendix B, response #3b, the NDEP is concerned that given the distance that the plume has traveled that there is an additional 50+ years of travel time for the tail end of this plume to reach the on-site capture system. The NDEP recommends that KM perform a quantitative evaluation of the effectiveness of operating this pump-and-treat system until the tail end of the plume reaches the on-site capture system. It is suggested that KM develop a model to determine the approximate travel time for the remainder of the plume to be captured. If KM finds that continued operation of this pump-and-treat system is the most effective way to move forward it is suggested that KM contemplate additional wells installed upgradient of the slurry wall.
13. Appendix B, response #3c, the NDEP would welcome a proposal for in-situ chromium remediation. It is suggested that this remedial alternative be explored for impacted areas (soils and groundwater) downgradient of Ponds P-2 and P-3 as well. Please provide a schedule for the evaluation of the feasibility of these processes.