

LEO DROZDOFF, *Administrator*

(775) 687-4670

Administration
Facsimile 687-5856

Water Quality Planning
Water Pollution Control
Facsimile 687-4684

Mining Regulations and Reclamation
Facsimile 684-5259

STATE OF NEVADA

KENNY C. GUINN

Governor



ALLEN BIAGGI, *Director*

Air Pollution Control
Air Quality Planning
Facsimile 687-6396

Waste Management
Facsimile 687-6396

Corrective Actions
Facsimile 687-8335

ndep.nv.gov

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL PROTECTION

Las Vegas Office

1771 East Flamingo Road, Suite 121-A

Las Vegas, Nevada 89119-0837

May 6, 2005

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:
Conceptual Site Model dated February 28, 2005

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 no later than **June 30, 2005**. The response to this letter should be in the form of a "response to comments" letter. These changes can then be incorporated into the next version of this CSM at a date to be determined.

If there is anything further or if there are any questions please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Rakvica".

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

Ms. Susan Crowley

5/6/2005

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CC: Jim Najima, NDEP, BCA, Carson City
Todd Croft, NDEP, BCA, Las Vegas
Jennifer Carr, NDEP, BCA, Carson City
Jeff Johnson, NDEP, BCA, Carson City
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W.,
Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, 240 Water Street, Suite 210, Henderson, NV 89015
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5,
75 Hawthorne Street, San Francisco, CA 94105-3901
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
Mr. George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Mr. Lee Erickson, Stauffer Management Company, 1800 Concord Pike, Hanby 1, Wilmington,
DE 19850-5437
Mr. Chris Sylvia, Pioneer Americas LLC, 8000 Lake Mead Parkway, Henderson, Nevada 89015
Mr. Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California
95209

ATTACHMENT A

1. General comment, purpose and uses of the Conceptual Site Model (CSM), the NDEP has the following comments:
 - a. The NDEP believes that it is important to distinguish between intended use versus end use of the CSM. As discussed by KM the intended use appears to be a description of the end use. "The intended use of the CSM is to compile and integrate available Site information and to identify potential data gaps. Furthermore, the CSM ... in reducing the exposure of environmental receptors to contaminants." The intended use of a CSM is not "to compile and integrate available Site information." ASTM International (2003) guidance states, "The conceptual site model is used to integrate all site information and to determine whether information including data are missing (data gaps) and whether additional information needs to be collected at the site." Note that the ASTM International definition includes 1) the notion that the CSM is to integrate site data and 2) an end use, "to determine whether information including data are missing (data gaps)."
 - b. The NDEP believes that the definition should not include an end use and that no one definition adequately describes a CSM. Thus, the following definition is suggested. A conceptual model is a pictorial, graphical, and descriptive representation of an environmental system using site data "that identifies all potential or suspected sources of contamination, types and concentrations of contaminants detected at the site, potentially contaminated media, and potential exposure pathways, including receptors (EPA, 1989)." This definition does not include an end use. This distinction is important because the CSM has a number of potential uses including: identifying potential data gaps, identifying potential sample locations, identifying potential remedial alternatives, developing DQOs, assessing data usability, developing analytical/numerical models, and evaluating risk.
 - c. Please note that ASTM International states that "The quality of the information being assembled should be evaluated, preferably including quantitative methods, and the decision to use the information should be based on the data's meeting objective qualitative and quantitative criteria. For more information on assessing the quality and accuracy of data, see *Guidance for Data Useability in Risk Assessment (Part A)* and *Guidance for Data Useability in Risk Assessment (Part B)*. Methods used for obtaining analytical data should be described, and sources of information should be referenced" (ASTM International, 2003). The NDEP understands that KM plans on completing a data useability assessment in the future and assumes that the CSM will require revisions in the future based on this assessment and the collection of additional data.
2. General comment, CEM Jurat, the jurat should clarify who is the responsible CEM for this project. There are three signatures on the page and one of the signatures is by a non-CEM. Please revise.
3. General comment, Tables, it appears to the NDEP (based on a review of the tables and in a discussion with KM) that the tables generated for this report may not have utilized a database. If KM has not yet developed a project database, it is highly

encouraged to do so at this time. As the investigation progresses it may become very cumbersome to generate tables and figures from the "Mother-hen Database" (which appears to be a spreadsheet, not a database). Furthermore, in the future, KM will be required to submit data to the NDEP in an EQUIS-compatible format to comply with the NDEP Electronic Data Deliverables protocol (under development).

4. General comment, Tables, KM references the method detection limit (MDL) and the practical quantitation limit (PQL) for use as the "detection limit" in various tables. It is preferred that this issue be standardized. Also please be advised that per the USEPA *Guidance for Data Usability in Risk Assessment* (9285.7-09A, April 1992, USEPA Office of Emergency and Remedial Response), is recommended that the sample quantitation limit (SQL) be reported. The guidance goes on to state "the SQL is the most useful limit for the risk assessor and should always be requested...they are the most relevant quantitation limits for evaluating non-detected chemicals".
5. General comment, Soils Data, it would be helpful to include soil data on the plates that were developed for groundwater plume maps. TIMET has prepared figures that present similar data in an effective manner. These figures are located in the January 24, 2005 TIMET Environmental Conditions Investigation Addendum report and can be accessed through the NDEP offices or from TIMET (per previous correspondence it is preferred that this information be obtained directly from TIMET). In addition, there appears to be soil data that is available for a number of the LOU areas for common chemicals (arsenic, barium, chromium, etc). It would be helpful to present this information on figures (smaller paper sizes may be adequate depending on the spatial distribution of the data). Please note that some of the specific comments below are intended to help identify specific areas of the site, which may not have any soils data and may require additional characterization.
6. General comment, Discussion of LOU Areas, many LOU areas are discussed for several different site-related chemicals, however, the discussion is not tailored to the specific chemical of interest in that section. A more tailored discussion would result in the elimination of unnecessary text from the report and would provide a more concise description of the specific chemical that is being discussed. There are numerous examples of this issue, which will not be listed on a section-by-section basis (in general). For example, sections 4.2.6, 4.4.6, and 4.8.7 all address LOU #15 and each sections contains very similar information. Section 4.8.7 is meant to address "miscellaneous chemicals", however, the only specific data that is discussed is relative to chromium. It is suggested that KM tailor the discussion in each section to the chemical that is being focused on and provide a reference to other applicable sections. The comments below provide some specific examples, however, every instance in the CSM will not be discussed specifically in this comment letter.
7. General comment, Elevated Concentrations, throughout this comment letter the NDEP notes where chemical concentrations appear to be elevated. These comments are not meant to imply that the NDEP has reviewed every data point in the report for comparison to potential (non-site specific) risk-based concentrations. The NDEP's

- review is qualitative in nature and compares select data to available guidance levels such as USEPA PRGs and SSLs.
8. General comment, Total Petroleum Hydrocarbons (TPH) in Ground Water, in the future, please complete analyses for benzene, ethylbenzene, toluene and xylene (BTEX) in groundwater for areas where TPH is being characterized.
 9. Section 1.1, page 1-1, KM defines the purpose of the CSM to be to describe the Site, and document the sources, pathways, release mechanisms, exposure routes and receptors. It should also be noted that the CSM will likely be used to develop DQOs, workplans and risk assessments. In this case, the quality of the data used in developing the CSM needs to be assessed. This report should discuss how the quality of the data presented in this report will be assessed. It is the understanding of the NDEP that this data will be assessed in data usability and data quality assessments. In addition, it is requested that KM tie the use of the CSM to specific long-term goals rather than the generalized statements that are presented in the third paragraph of this section.
 10. Section 1.2, page 1-1, KM states that "Environmental investigations relating to the Site have been conducted since 1991." In section 3.1, page 3-1, KM states that environmental impacts were investigated in the 1970s. Please clarify this issue and revise the text accordingly.
 11. Section 2.5.2, page 2-5, KM states "Evapotranspiration concentrates the natural salts in the shallow aquifer, resulting in low-quality water with high total dissolved solids levels". It should be noted that evapotranspiration is not likely to be the driving force behind the elevated total dissolved solids (TDS) levels in the shallow aquifer in the vicinity of the site. Industrial activities have been contributing to the elevated levels of TDS in the vicinity of the site for over 60 years. Furthermore, background levels of TDS in groundwater have not yet been established by KM or approved by the NDEP. In addition, KM discusses TDS in terms of parts per million, however, Plate 9 presents groundwater conductivity in terms of mS/cm. It is requested that future discussions/presentations provide a presentation of TDS in terms of parts per million.
 12. Section 2.5.2, page 2-5, KM states "...groundwater can flow in these paleochannels at an average rate of 35 feet per day... Extrapolating this velocity over the total distance involved and assuming that perchlorate travels at the same velocity as the groundwater ... the residence time is about 6 months." The NDEP does not concur. The average velocity was used to calculate the residence time of six months. The calculation accounts only for contaminant advection and does not consider the effects of contaminant dispersion. Because of the effects of dispersion the contaminant front will arrive in advance of the "average" time (six months) and the tail will take longer than the "average" time. The total residence time would be the time required for the tail of the contaminant breakthrough curve to pass. This time would be in excess of six months. Total residence time could be calculated but would require the use of an advection-dispersion equation.
 13. Section 2.5.2, page 2-5 and 2-6, KM discusses salinity in terms of milligrams per liter (mg/l) and micro Siemens per centimeter interchangeably ($\mu\text{S}/\text{cm}$). It is requested that KM standardize this discussion with a uniform set of units. The NDEP prefers

- that KM use mg/l or provide the analyses required to support the conversion from $\mu\text{S}/\text{cm}$ to mg/l.
14. Section 3.1, page 3-1, it should also be noted that a variety of tenants have occupied portions of the BMI Complex. While it may not be possible to list all of the tenants that have occupied portions of the BMI Complex it is necessary to identify the tenants that have occupied portions of the KM site.
 15. Section 3.3, page 3-4, KM discusses LOU areas where "no further action is required at this time". This is also discussed in section 4.1.2 and other sections of the report. As the NDEP has noted previously to KM, previous designation as "no further action" does not exclude these LOU areas or any other portion of the site from additional characterization and remedial activities (if necessary). There are a number of technical issues relating to the site characterization (which have been discussed previously) that necessitate additional characterization and remedial activities (if necessary) at the site. It is the assumption of the NDEP that the statements contained in the CSM are meant to summarize the historic data collected and actions taken to date at the site.
 16. Section 3.4, page 3-8, KM states "Groundwater capture from the targeted buried alluvial channel underlying Athens Road appears to be complete." KM has stated in separate reports that the capture efficiency at the Athens Road well field is 97.5%. The NDEP is currently evaluating the efficiency of this well field to verify the capture efficiency. To state that capture is complete implies 100% capture. The NDEP requests that this statement be revised.
 17. Section 4.0, page 4-1, it should be noted that the analyses completed to date have not included the full suite of chemicals on the site-related chemical (SRC) list. In addition, the analyses completed to date have primarily focused on surface soil, near surface soil and groundwater samples. Once additional site characterization is completed, additional groupings of source areas may be applicable. Also, LOU areas may be found to be applicable to additional groups of source areas once site characterization is complete.
 18. Section 4.0, page 4-1, KM states "In response to an NDEP request in the February 11, 2004 letter, Table 6 summarizes the applicable 2004 EPA Region IX Preliminary Remediation Goals (PRGs) and Federal Maximum Contaminant Levels (MCLs) for drinking water." Please provide the comment number and actual NDEP comment for the basis of this statement. The NDEP has not found any text within the 2/11/04 letter that requested this table. It should be noted that this table is useful as a starting point for the tracking of ARARs and should remain in the document.
 19. Section 4.1, page 4-2, perchlorate is listed as being a "potential chemical contaminant". It is the opinion of the NDEP that sufficient data exists to identify perchlorate as a site-related chemical contaminant.
 20. Section 4.1.1, page 4-2, this section also discusses nitrate and chromium, it seems that this information would be better addressed in sections 4.8 and 4.4, respectively.
 21. Section 4.1.2, page 4-2, this section notes that the waste stored in this area may have been contaminated with "other industrial wastes, such as cooling tower sludge and iron oxide sludge." KM should describe the composition of the cooling tower sludge and iron oxide sludge as well as any other industrial wastes that may have

- contaminated the trash stored in this area. If this is unknown it should be stated as such. The discussion on the (non-perchlorate) composition of these wastes should be contained in section 4.8 or whichever section is applicable. Also, this section does not provide any discussion on analytical data in this area. Additional characterization of this area may be necessary.
22. Section 4.1.3, pages 4-2 and 4-3, this section does not provide any discussion on analytical data collected for this area. Additional characterization of this area may be necessary.
 23. Section 4.1.4, page 4-3, this section contains a discussion on the impacts of iron oxide. It is the opinion of the NDEP that this discussion should be relegated to section 4.8.
 24. Sections 4.1.5, 4.1.6, 4.1.7, 4.1.8, 4.1.9, 4.1.10, and 4.1.11, pages 4-3 through 4-5, these sections do not provide any discussion on analytical data collected for these areas. Additional characterization of these areas may be necessary.
 25. Section 4.2, page 4-5, KM states "Kerr-McGee has focused groundwater remediation efforts on...containment and clean-up of the impacted groundwater downgradient from suspected source areas." Section 4.2 discusses chlorate. It should be noted that the operation of remedial systems, prior to the recent installation of the Fluidized Bed Reactor, did not address chlorate. This section of the report needs to be revised and clarified.
 26. Section 4.2.1, page 4-5, this section includes discussion on chromium. It is the belief of the NDEP that the discussion in this section and the remainder of section 4.2 should be limited to chlorate. It appears that, based on the discussion in the text, these LOU areas were investigated for chromium impacts to the environment but not chlorate.
 27. Section 4.2.3, page 4-6, please note that discoloration of soil is not an adequate means of delineation of the extents of contamination; human health or ecological risks associated with the soil; or the potential for the contaminants to migrate to groundwater. Also, no analytical data was presented or discussed for soil or groundwater in this area. Additional characterization may be necessary.
 28. Section 4.2.4, page 4-6, no analytical data was presented or discussed for soil or groundwater in this area. Additional characterization may be necessary.
 29. Section 4.2.5, page 4-7, please note that EP toxicity data is not an adequate means of delineation of the extents of contamination; human health or ecological risks associated with the soil; or the potential for the contaminants to migrate to groundwater. The NDEP has similar comments regarding TCLP concentrations and other statements throughout the report. Please refer to the NDEP's February 11, 2004 letter to KM. This comment will not be repeated for other sections of the CSM. It is the assumption of the NDEP that the statements contained in the CSM are meant to summarize the historic data collected and actions taken to date at the site.
 30. Sections 4.2.6 and 4.2.7, page 4-7, these sections contain no discussion on chlorate or any analytical data. Please see general comment above regarding "Discussion of LOU Areas".
 31. Section 4.2.8 and 4.2.9, pages 4-7 and 4-8, these sections do not reference any analytical data. These areas may require additional characterization.

32. Section 4.3, page 4-8, KM states "Kerr-McGee has focused groundwater remediation efforts on...are primarily focused on perchlorate and chromium." Please explain how this statement and the groundwater treatment systems relates to TDS. It is the understanding of the NDEP that none of the historic or existing groundwater treatment systems have ever addressed TDS as a contaminant. This comment also applies to sections 4.5, 4.6, 4.7 and 4.8.
33. Section 4.3.3, page 4-9, this section states that ponds WC-West and WC-East contained "process water". If the composition of this process water is known it should be summarized. KM discusses the contents of some of the ponds (e.g.: Pond Mn-1) and LOU areas but not consistently. If the composition of an area is not understood, that should be stated.
34. Section 4.3.3, page 4-9, KM discusses metals and VOCs for this LOU area. Section 4.3 of the report is intended to deal with TDS and the NDEP believes that the discussion on metals and VOCs should be relegated to their appropriate sections. In addition, the discussion on the spill of water treatment chemicals should be discussed in terms of the composition of the chemicals that were spilled.
35. Section 4.3.4, page 4-10, this section should specify which groundwater treatment unit is being discussed. The chromium treatment, the fluidized bed reactor, the GAC columns or some combination thereof? In addition, no analytical data is discussed for this area. This area may require additional characterization. This comment also applies to other discussions of the groundwater treatment unit throughout the report.
36. Section 4.3.5, page 4-10, no analytical data is discussed for this area. This area may require additional characterization.
37. Section 4.3.6, page 4-10, KM states "Removal of the impacted soil beneath these buildings would likely require destruction of each building." In section 4.5.3, KM describes a process by which the floor of Unit #6 was removed and sub-surface soil was contoured. It appears to the NDEP that a similar process could be undertaken beneath Units #4 and #5 (the floor could be removed) and an in-situ remedial technology could be implemented to address the large source area beneath these buildings. This process may not be feasible or warranted for other reasons, however, KM has not described these other reasons. It would be appropriate to discuss this issue under separate cover in conjunction with other source area removals or a remedial alternatives study.
38. Section 4.4.1, pages 4-11 and 4-12, KM compares chromium data to 100 mg/kg and 1,000 mg/kg. This comparison is repeated elsewhere in the document. The basis or significance for comparison to these numbers is not clear. KM proceeds to assert that "these results indicated that soils impacted with chromium...are primarily limited to the interior areas of the ponds." The NDEP does not agree with this statement. KM has not shown that a concentration of 100 mg/kg chromium is protective of human health or the environment. Furthermore, there is a large plume of chromium (primarily hexavalent) that emanates from the KM property and it has not been shown that a concentration of 100 mg/kg is protective of the migration to groundwater pathway. There is a significant amount of discussion by KM comparing site concentrations to 100 mg/kg. As stated above, this discussion is not pertinent.

39. Section 4.4.1, page 4-11, KM states that sample SB2-5 did not have a concentration above 100 mg/kg. The concentration listed on Table 8 for this sample is 131 mg/kg.
40. Section 4.4.1, page 4-12, KM states "The total chromium concentration in all samples from P-3 decreased with depth." The previous sentence states that samples SB2-2 and SB2-8 did not decrease with depth and that these samples were located in Pond P-2. Table 8 shows these samples as being located in Pond P-3. Please review this issue and revise the text and tables as necessary.
41. Section 4.4.1, page 4-12, KM states "elevated pH values tend to retard the mobility of chromium, especially trivalent chromium." No evidence has been presented to suggest that a majority of the plume is trivalent chromium, in fact the data presented to date suggest that the plume is nearly 100% hexavalent. Furthermore, since the existing plume covers several miles it is difficult to envision significant retardation of its migration due to elevated pH levels.
42. Section 4.4.1, pages 4-11 and 4-12, in summary, the NDEP believes that KM has not defined the extent and depth of contamination associated with these areas. As stated in previous comments, the NDEP encourages KM to investigate the feasibility of source removal in these areas.
43. Section 4.4.2, page 4-13, KM discusses the quarterly perchlorate monitoring in this section. The NDEP believes that this discussion would be better contained in the section on perchlorate rather than the section on chromium.
44. Section 4.4.3, page 4-13, see comment on Section 4.2.3.
45. Section 4.4.4, page 4-13, no analytical data is discussed for this area. This area may require additional characterization.
46. Section 4.4.5, pages 4-13 and 4-14, please note that EP Toxicity data may not be sufficient to characterize the nature and extent of contamination in this area. Additional sampling and analysis may be necessary.
47. Section 4.4.7, page 4-14, the concentrations of chromium in pond AP-3 are not discussed. The concentrations of chromium in ponds AP-1 and AP-2 (3.13 and 2.80 mg/liter, respectively) are elevated with respect to the applicable groundwater standards. It is the belief of the NDEP that these ponds should be included as a potential source of chromium. In addition, please describe the "statistical guidelines" that were used to determine the average concentrations of chromium in this area.
48. Section 4.4.8, page 4-14, please describe the composition of the flammable and "miscellaneous compatible" wastes used in this area. This description should be contained in the appropriate section of the report unless the flammable wastes contributed to the chromium impacts in this area.
49. Section 4.4.9, page 4-15, see comment on Section 4.3.4.
50. Sections 4.4.10 and 4.4.11, pages 4-15 and 4-16, no analytical data is discussed for this area. This area may require additional characterization.
51. Section 4.4.11, page 4-16, this section does not discuss how the old main cooling tower relates to the chromium issue. Please expand the discussion in this section.
52. Section 4.5.1, page 4-17, KM states that "Mn-1 does not appear to be contributing to groundwater impacts in the area." The NDEP would like to note that the detection limits used by KM for the purposes of the historical investigations are likely

elevated and need to be revised in order to make meaningful conclusions about the impacts of manganese in site groundwater. A review of the guidance values which may be applicable to manganese are listed below. It should be noted that half of these values are below the detection limit (0.15 mg/liter) used by KM.

- a. USEPA Tap Water PRG = 0.876 mg/liter
 - b. National Secondary Drinking Water Regulation = 0.05 mg/liter
 - c. Nevada Beneficial Use Standard for the Las Vegas Wash = 0.2 mg/liter
 - d. Nevada Secondary Drinking Water Standard = 0.1 mg/liter
53. Section 4.5.2, page 4-17, KM states "there is no significant manganese impact to groundwater in the vicinity of the tailings." It is difficult for the NDEP to determine what the specific source of manganese in groundwater is. Well M32 is downgradient of a number of source areas and it is difficult to determine whether or not the eastern portion of LOU #34 is contributing to the elevated concentrations of manganese in this well. In addition, there is very limited data in the vicinity of the western portion of LOU #34. This comment also applies to Section 4.5.5.
54. Section 4.5.4, page 4-18, and Table 18, please provide any radionuclide analysis associated with the ore. To be noted, Pioche Manganese historically operated on the TIMET Plant Site and a radionuclide survey of the former operations areas revealed elevated levels of radionuclides. If no radionuclide data is available it is suggested that the analyses be completed.
55. Section 4.5.4, page 4-18, KM discusses the concentrations of manganese that various workers are exposed to on the site (0.058 – 1.74 mg/m³), however, these concentrations are not discussed in terms of acceptable risk. In addition, no data is presented to discuss airborne off-site impacts to workers and residents. As a point of reference, the USEPA Ambient Air PRG for manganese is 0.0000511 mg/m³.
56. Section 4.6, page 4-18, the only potential source area discussed for boron is Pond C-1 and associated piping. Please explain if other areas of the site could be a potential source of boron. For example, the building in which the boron is produced; the area in which raw products are received, and any waste disposal areas associated with the boron production. These are only examples of potential sources of boron on the site, it is the responsibility of KM to thoroughly review all historic records to determine the possible sources of boron.
57. Section 4.6.1, pages 4-18 and 4-19, the composition of pond C-1 is not discussed. In addition, pond C-1 is not discussed in terms of boron (section 4.6 refers to boron). In addition, this section directs the reviewer to Table 13 which does not contain any analytical information on boron.
58. Section 4.7.1, page 4-19, KM states "Arsenic was detected at 0.124 mg/l, which is within the expected range." The USEPA MCL for arsenic is currently 50 µg/l (to be reduced to 10 µg/l in 2006) and it is not clear what the basis for the "expected range" is. Please clarify.
59. Section 4.7.1, page 4-19, KM states "the constituents of concern were either not detected, were detected at low levels as a result of laboratory procedures, or were not representative of adverse environmental conditions." The NDEP does not agree with this statement for the following reasons:

- a. Constituents of concern have not been identified yet. The list of site-related chemicals has not been reduced to a list of constituents (chemicals) of potential concern (COPCs) or chemicals of concern (COCs). KM is advised to utilize the approved USEPA methodology and terminology consistent with its intent.
 - b. Chemicals present in groundwater may or may not present an "adverse environmental condition", however, this is currently not known. KM has not analyzed for a broad suite of chemicals and the chemicals that have been detected are present at concentrations that may be of concern. See comment above regarding arsenic concentrations. Chromium was detected at concentrations near its MCL, perchlorate concentrations are elevated, electro-conductivity levels are elevated, and chloroform concentrations may or may not be elevated (present at 22.5% of the Total Trihalomethane (TTHM) MCL).
60. Section 4.7.3, page 4-20, KM discusses a historic excavation project to address TPH-impacted soils. These soils had elevated levels of diesel and motor oil, however, the second confirmation sample only analyzed for diesel. It appears to the NDEP that additional characterization in this area may be warranted. This comment also applies to section 4.7.5.
61. Section 4.7.5, page 4-21, please note that the NDEP action level for TPH is 100 mg/kg, therefore, the sample that was collected was at the action level not below the action level. This comment also applies to Section 4.7.8. and will not be repeated for other occurrences throughout the report.
62. Section 4.7.5, page 4-21, KM states that the samples were analyzed for "polychlorinated biphenyls (PAHs)". Please note that this should read "polynuclear aromatic hydrocarbons (PAHs)" or "polycyclic aromatic hydrocarbons (PAHs)".
63. Section 4.7.5, page 4-21 and table 23, Table 23 presents a generalized column titled "PAHs" and all of the results of listed as ND(<0.5) in terms of µg/l. It is necessary to list each of the chemicals that were analyzed for as different PAHs exhibit different toxicities.
64. Section 4.7.6, page 4-22, this section (and others throughout the report) discuss composite sampling (or averaged data) and draw conclusions from this composite sampling regarding the potential environmental effects from areas of the site. As the NDEP has discussed previously, composite sampling may not be appropriate for risk based closures. Please refer to the NDEP's February 11, 2004 letter for all such instances within the CSM.
65. Section 4.7.6, page 4-23, KM discusses metal concentrations with respect to "average background concentrations in Western U.S. soils." This is not appropriate. Please refer to the NDEP's February 11, 2004 letter for additional information. This comment applies to Section 4.8.1 as well as any other occurrences within this report.
66. Section 4.7.6, page 4-23, KM discusses a chromium concentration (composite, surface sample) of 42.9 mg/kg and states that this "is not at concentrations likely to represent an environmental concern." As a point of reference, this concentration exceeds the USEPA SSL DAF1 of 2.0 mg/kg. In addition, a composite sample has the potential to mask elevated concentrations in some locations through the act of mixing these soils with soils of lower concentrations.

67. Section 4.7.6, page 4-23, KM states "the former J.B. Kelley Trucking operation has not affected surface and subsurface soil." The NDEP does not agree with this conclusions based on the reasons outlined above and due to incomplete characterization (limited suite of analytes and limited depth of sampling) of the entire KM site.
68. Section 4.7.7, page 4-23, please see previous comments regarding the use of staining as a means to delineate the extents of contamination. It should be noted that concentrations of hexachlorobenzene (a persistent, bio-accumulative and toxic compound) appear to be elevated in this area (above USEPA PRGs and SSLs). Please note that PAH and dioxin/furan analysis would be appropriate for an asphalt emulsion plant (and the surrounding area).
69. Section 4.7.9, page 4-24, no data is presented for this area of the site. Please provide the available data for this area.
70. Section 4.7.10, please describe if this business is still in operation. Also, please describe what action was taken to address TPH releases in this area (if any). Please note that any release (or series of releases) that exceeds 25 gallons of TPH or 3 cubic yards of TPH-impacted soils is required to be reported to the State of Nevada Spill Hotline. If these releases appear to exceed these criteria, KM must contact the Spill Release Hotline at 1-888-331-6337. It is possible that the site soils are also impacted from glycols (antifreeze) and other automotive fluids. KM should discuss these other chemicals as well.
71. Section 4.8.1, page 4-25, KM describes the fluid conveyed to the Trade Effluent Ponds as "acid waste neutralized with caustic liquor". It is the understanding of the NDEP that the liquid wastes conveyed to the Trade Effluent Ponds contained a variety of chemicals. The NDEP requests that KM include additional detail on the composition of the liquid wastes conveyed to the Trade Effluent Ponds.
72. Section 4.8.1, page 4-25, the detection limits for the pesticides and Silvex analyses appear to be elevated and may not be useful for qualitative or quantitative assessment of this area of the site.
73. Section 4.8.1, page 4-25 and Table 26, please note that the concentrations of arsenic, barium, cadmium (elevated detection limits and detections), chromium, and selenium (elevated detection limits) appear to be elevated when qualitatively compared against applicable USEPA PRGs and SSLs. Please see general comment above regarding the NDEP's review of site data.
74. Section 4.8.2, page 4-25, see comment for Section 4.8.1.
75. Section 4.8.3, a figure which presents a depiction of the air emission model (as well as an attachment with the associated back up data and calculations) would be helpful.
76. Section 4.8.4, pages 4-26 and 4-27, please note that the data associated with the Beta Ditch will likely need to be re-evaluated once KM derives appropriate risk-based screening levels. Also, please note the following comments on Table 28.
 - a. Asbestos – no units are provided.
 - b. Detection limits are not provided.
 - c. Blank contamination is widespread.
 - d. Concentrations are elevated for most analytes including (but not limited to): arsenic, barium, chromium, lead, alpha-BHC, beta-BHC, DDT, and

hexachlorobenzene. Please see general comment above regarding the NDEP's review of site data.

77. Section 4.8.5, page 4-27 and Table 29, please see previous comments on "contaminants of concern". Also, please be advised that additional sampling of this ditch was completed by the American Pacific Corporation (AmPac). Data may be obtained from the NDEP files or from AmPac. The NDEP offers the following comments on Table 29:
 - a. Concentrations of several chemicals appear elevated in groundwater, including but not limited to: chloroform, arsenic, chromium, and manganese.
 - b. Concentrations of several chemicals appear elevated in soil, including but not limited to: antimony, arsenic, barium, chromium, alpha-BHC, beta-BHC, gamma-BHC, and hexachlorobenzene. Please see general comment above regarding the NDEP's review of site data.
 - c. This table includes a column that lists "All Others" with a value of "ND". This is not useful information unless the specific chemicals and their associated detection limits are listed. This issue is repeated elsewhere in the document and this comment applies to all occurrences.
78. Section 4.8.6, page 4-27 and Table 30, the concentrations of perchlorate, chromium, and manganese appear elevated. In addition, a brief discussion of the annual sampling conducted for the hazardous waste landfill would be helpful.
79. Section 4.8.9, page 4-28, please describe what "miscellaneous contaminants" are associated with this area. This comment also applies to Section 4.8.10.
80. Sections 4.8.11, 4.8.12, 4.8.13, and 4.8.14, pages 4-28 and 4-29, no analytical data has been provided for these areas of the site. Please provide any available analytical data.
81. Section 4.8.15, page 4-30, KM notes that this area may have been impacted by TPH, flammable solvents, hexavalent chromium, and miscellaneous wastes, however, data is presented only for TPH and PCBs. This area will require additional characterization.
82. Section 4.8.16, page 4-30, KM states that some of the dumpsters historically used in this area were used for "common trash". Over the past 60 years the definition of "common trash" has evolved. It is reasonable to assume that wastes that were considered "common trash" in the past may now be considered hazardous waste. In addition, no analytical data has been presented for this area of the site. This area should be characterized in the future.
83. Section 4.8.17 and 4.8.18, pages 4-30 and 4-31, these sections do not discuss any analytical data or which "miscellaneous contaminants" would be associated with these portions of the site.
84. Section 4.8.19, page 4-31 and Table 31, please refer to previous comments regarding background concentrations of metals in soil. The NDEP offers the following comments on Table 31:
 - a. The footnotes state that ND = not determined. Please clarify if this is correct and how this differs from NA = not analyzed. This is somewhat confusing as ND typically represents "not detected".

- b. The following chemicals appear to be elevated in concentration: arsenic, barium, chromium, and selenium. Please see general comment above regarding the NDEP's review of site data.
85. Sections 4.8.20, 4.8.21, 4.8.22, and 4.8.23 page 4-32, KM does not present any data for these areas of the site. These areas may require additional characterization.
86. Section 4.8.24, page 4-33, this section references the analytical data for the manganese ore composition, however, there does not appear to be any analytical data referenced for site characterization. This area may require additional characterization.
87. Section 4.8.25, page 4-33 and Table 32, the NDEP offers the following comments:
- a. This laboratory historically used a septic tank and leach field for the purposes of disposal of wastewater effluent, however, KM states "hazardous solutions were collected and shipped to an appropriate disposal facility." Please explain how the "hazardous solutions" were collected and disposed of historically. It would seem to the NDEP that it is likely that a number of "hazardous" chemicals were likely disposed of in the facility's septic system (historically) and this provided a pathway to groundwater.
 - b. None of the analytical data for VOCs or SVOCs were presented, therefore, it is not possible for the NDEP to review this data. Historic data often has elevated detection limits (relative to risk based concentrations) and an analysis that is historically non-detect may require re-characterization. Please summarize the available VOC and SVOC data. In addition, KM may not have analyzed for all applicable site-related chemicals and additional characterization may be necessary in this area.
 - c. KM compares metals data to ASTM ranges of data. As stated previously, this is not appropriate.
 - d. The locations of the soil borings are not shown on any of the referenced plates.
 - e. The pH of sample SB6-1 appears to be slightly elevated at depth.
 - f. The following chemicals may have elevated concentrations: arsenic, barium, chromium, and selenium. Please see general comment above regarding the NDEP's review of site data.
88. Section 4.8.26 and 4.8.27, page 4-34, KM does not present any data for these areas of the site. These areas may require additional characterization.
89. Section 4.8.28, page 4-34 and Table 33, the NDEP offers the following comments;
- a. The locations of the soil borings are not shown on any of the referenced plates.
 - b. The pH of several samples appears to be low.
 - c. It appears that analysis for cyanide was never conducted. It is the understanding of the NDEP that cyanide is a chemical associated with the historic use of the site in this area.
 - d. Analyses were completed for beryllium, cobalt, molybdenum, and vanadium in this area. It is understood that these chemicals are site-related chemicals and are contained in the manganese ore. Please explain if these chemicals were associated with State Industries operations as well.
 - e. The following chemicals may have elevated concentrations: arsenic, barium, chromium, nickel, selenium, silver, PCE, and TCE. Please see general comment above regarding the NDEP's review of site data.

90. Section 4.8.29, page 4-35, see comments above on Section 4.7.6.
91. Sections 4.8.30, 4.8.31, and 4.8.32, pages 4-35 and 4-36, KM does not present any data for these areas of the site. These areas may require additional characterization.
92. Section 4.8.33, page 4-36 and Table 34, All of the analytical data is not summarized on this table. Chemicals that are not detected should be listed with their corresponding detection limits.
93. Section 5.4, page 5-2, KM states "several remediation systems have been set up to control, capture and treat the impacted groundwater." This statement should be qualified because the treatment systems have not been demonstrated to treat all contaminants in the groundwater that is being captured.
94. Section 5.5, page 5-2, this pathway should also include microbial organisms which can affect the bioconcentration, bioaccumulation and biomagnification processes.
95. Section 7.0, page 7-1, 2nd paragraph, KM should note that these figures also present the soil pathway.
96. Section 7.0, page 7-1, 3rd paragraph, KM discusses possible mechanisms for vadose zone transport of site-related chemicals. Additional mechanisms include: leaking sewer, water or process piping. In addition, the NDEP does not agree that it is necessary to have a "rainstorm of sufficient quantity and duration to saturate the soil beyond its field capacity". The NDEP believes that rainstorms allow water to infiltrate or percolate into the subsurface soils and possibly drive contaminants in the vadose zone towards the water table.
97. Section 7.0, page 7-1, 4th paragraph, KM states "As discussed Flingin Section 3..." Please clarify this sentence.
98. Section 7.0, page 7-1, 4th paragraph, KM states "the interceptor well field/groundwater barrier wall...effectively capture groundwater". The NDEP offers the following comments:
 - a. KM has not demonstrated that the on-site well field and barrier wall provide effective capture for all site-related chemicals in groundwater.
 - b. The perchlorate plume maps are delineated to 1 ppm and the provisional state action level for perchlorate in drinking water is 18 µg/l. The mapping generated by KM does not show complete capture at the 1 ppm or 10 ppm contours for perchlorate.
 - c. In addition, for total chromium, the contouring is still being refined and adjacent data suggest that the 0.1 ppm contour is not being captured at this well field and barrier wall. Data provided by KM suggest that this chromium plume is nearly 100% hexavalent and this 0.1 ppm contour is not likely to represent an acceptable risk-based concentration.
 - d. A number of other site-related chemicals may not be fully captured either, however, KM has not presented adequate data to support or refute this statement.
 - e. A number of other site-related chemicals may be captured, however, the current remediation systems may not be adequately treating these chemicals. KM has not presented adequate data to support or refute this statement.
99. Section 7.0, pages 7-1 and 7-2, 4th paragraph, KM discusses the Seep area capture systems. The NDEP would like to note the following:

- a. The nine recovery wells that are described in the CSM have not been shown to fully capture the plumes associated with the KM site. The capture efficiencies at these points in the plume have not yet been quantified.
 - b. The surface water collection and recovery sump has not been shown to fully capture the plumes associated with the KM site. The capture efficiencies at these points in the plume have not yet been quantified.
 - c. See also comments above regarding site-related chemicals capture and treatment.
100. Section 7.0, page 7-2, please note that microbial organisms, verticulture, and insects are also potential receptors.
 101. Section 7.0, page 7-2, KM states "the groundwater pathway is the predominant one for transporting constituents of concern from the Site." Please see previous comments on the use of the words "constituents of concern". The NDEP has not seen data to suggest that KM can conclude that groundwater is the predominant pathway for contaminant transport.
 102. Section 7.0, page 7-2, KM states "If impacted groundwater emerges off site in Las Vegas Wash, the surface water pathway grows in significance." KM has demonstrated (in the investigation of the perchlorate plume) that impacted groundwater does emerge in the Las Vegas Wash. Please revise this statement and any related text.
 103. Section 7.0, page 7-2, regarding surface water, KM should note that the storms that occurred in late 2004 and early 2005 demonstrated that soils from the BMI sites can be transported via overland flow of storm water. This surface water flow was not confined to the historic ditch system and transported sediments/surface soils from the sites to off-site areas. It is likely that some portion of these sediments were conveyed to off-site storm sewer systems (which convey water and sediments to the Las Vegas Wash). In addition, KM discusses the Beta Ditch but does not discuss the Northwestern ditch. Please clarify this paragraph.
 104. Section 7.0, page 7-2, KM states "Historic transport of selected Site-related chemicals via surface water also occurred when impacted groundwater day lighted in a spring close to the Las Vegas Wash." It is the understanding of the NDEP that groundwater continues to daylight (seasonally) near the Las Vegas Wash. This statement requires clarification.
 105. Section 8.0, page 8-1, Data Gap #3, the NDEP offers the following comments:
 - a. This data gap is labeled "Chemicals of Potential Concern", please see previous comments on the use of this terminology.
 - b. KM states "it is expected that the remedial actions addressing chromium and perchlorate impacts will also address other chemicals of concern." This CSM does not discuss the mechanisms by which the existing treatment system will address other site-related chemicals with a few exceptions. It is known that the existing Fluidized Bed Reactor addresses nitrate and chlorate. KM should investigate what other chemicals (besides nitrate and chlorate) are addressed by the existing remedial systems and submit a detailed report to the NDEP on this subject. This report should include analytical data and a comparison to applicable discharge limitations.

106. Section 8.0, pages 8-1 and 8-2, the NDEP suggests that the following data gaps be considered:
 - a. Las Vegas Wash, the potential exists for some site-related chemicals to be transported to the Las Vegas Wash and to accumulate in the sediments of the Las Vegas Wash. Sediment sampling of the Las Vegas Wash has not been completed by any of the BMI Companies. KM needs to determine the applicability and logistics for sampling of the Las Vegas Wash sediments. This may be an issue that the BMI Companies may decide to work cooperatively on. In addition, the waters of the Las Vegas Wash are sampled extensively by the Southern Nevada Water Authority (SNWA). KM needs to determine if supplemental sampling of this surface water body is necessary and to what extent this sampling is needed.
 - b. Influence of off-site impacts, KM should consider the possible impacts to the site and the co-mingling of plumes downgradient of the site due to impacts from off-site sources. A substantial amount of information has been collected by the other BMI Companies, BMI, the American Pacific Corporation, SNWA and others. This information may be valuable to the further development of KM's CSM.
 - c. The influence of subsurface utilities and tunnels have not been investigated as preferential pathways for contaminant migration. Often, subsurface utilities are bedded with highly permeable backfill, which can act as a preferential migration pathway. This pathway may require additional investigation as site characterization progresses.
107. Figure 5, many of the colors on this figure are similar and it is difficult to interpret what color applies to a particular zoning area. It would be helpful if the colors on the figure were labeled with a numeric code.
108. Figure 6, please note the following examples of items that appear to be missing from this figure.:
 - a. Lined, leaking surface impoundments are another source of contaminant loading to the subsurface that is not covered by this figure.
 - b. Volatilization of chemicals in to buildings or low-lying areas is not addressed by this figure.
 - c. Stack emissions and deposition of contaminants (such as dioxins/furans) is not addressed by this figure.
 - d. The materials used to construct the railroad (typically containing PAHs, arsenic, etc.), the operation of coal-fired rail equipment (historically?), and discharges associated with railroad operations can also represent a source of contamination.
109. Figures 6 and 8, it should be noted that these figures do not include all source areas and are only examples of potential exposure areas, pathways and receptors.
110. Figure 7, the NDEP offers the following comments:
 - a. It appears to the NDEP that it is reasonable to assume that a terrestrial receptor could have dermal contact or ingestion of shallow groundwater.
 - b. Please note that as the understanding of sources and release mechanisms is refined, this figure may also be refined.

- c. It is suggested that KM consider grouping the LOU areas into broad categories for the purpose of this figure. For example, waste storage areas, surface impoundments, industrial production areas, etc. This should also be discussed in section 4.0 of the text as some LOU areas may fall into more than one of these broad categories. It is the belief of the NDEP that this will aid in the understanding of source types and release mechanisms. This will also aid KM in knowing that the CSM has been appropriately completed with the correct release mechanisms and pathways.
111. Table 1, the NDEP would like to note (as stated previously) that areas listed as "no further action required" may require additional characterization and/or remediation due to the reasons outlined above and in previous letters to KM. This same comment applies to Table 3.
112. Table 2, the NDEP requests that the description of the wastes be expanded. Please provide a description of the composition of each of the waste streams. If KM does not have a full understanding of the composition of the waste streams, please state as such.
113. Table 6, the NDEP has the following comments:
 - a. Please provide the reference for the MCLs that are listed for hexavalent chromium and monochlorobenzene.
 - b. Please explain the comment "free product" in the cyanide row and "phosphorous white" in the phosphorous row. Please explain if KM has reason to believe that white phosphorous would be present at the site.
 - c. The applicable standards for radionuclides are not listed on this table. Uranium is listed as chemical toxicity only. Uranium exhibits toxicity from a chemical and radionuclide perspective.
 - d. Rows for total trihalomethanes, TPH, DDD, DDE, etc. should be added to this table.
 - e. For standards and guidance with several leading zeros, scientific notation is preferred. For example, dioxins/furans.
 - f. Please note that the NDEP did not verify all of the standards and guidance that is listed on this table and requests that KM thoroughly review the site-related chemicals list versus applicable guidance and standards.
 - g. It should be noted that Nevada has standards which differ from MCLs, PRGs and SSLs. KM should review the applicable Nevada drinking water standards. In addition, for surface water, the Nevada Beneficial Use Standards for the Las Vegas Wash should be reviewed.
114. Table 8, the NDEP has the following comments:
 - a. Footnote 1 states the regulatory limit for chromium in soil is 0.5 ppm. This corresponds to the SSL DAF1, however, this is not a regulatory limit. The SSLs can be used to guide decisions, however, they are not regulatory limits. Please clarify.
 - b. Data qualifiers are included on this table, however, they are not defined in the notes section. Please include the definitions in the revised table.
115. Table 9, the units for EC are not listed. This same comment applies to Table 13. Additional instances of this issue will not be repeated.

116. Table 15, the title of this table is "Manganese in Groundwater Analytical Data". This table contains a number of other types of data and should be renamed. In addition, the units for "Total Depth" and "Depth to Water" are not listed. Please identify if this is depth below ground surface, from top of casing or some other measurement. This comment applies to other tables and will not be repeated.
117. Table 18, lead mono-oxide is listed at 0.00%. Please clarify if this compound is present or not. The NDEP would like to note that other compounds may be present at levels below 0.002% (e.g.: radionuclides) but are not listed in this table. Additional analysis of the ore material may be warranted prior to additional site characterization.
118. Table 30, in the "location" field KM uses statements such as "further upgradient" or "just downgradient". It is suggested that KM apply a distance to this field. For example, "100' upgradient" instead of "upgradient".
119. Table 31, please explain the significance of the bolded values on this table.
120. Plate 3, this plate appears to require revision, examples are provided below. Please note that the NDEP has not verified all contours and all data points. KM should review this figure to insure that the contour that are presented are reasonable.
 - a. The 30' contour is drawn between a 21' and 26' data point at wells PG201 and PG202, respectively.
 - b. The 30' contour is drawn between a 32' and 31.5' data point at wells M86 and M81A, respectively.
 - c. The 30' contour is represented as three isolated 30' contours in the vicinity of the on-site barrier wall. It is not clear to the NDEP that the data support such a depiction.
 - d. There is a 20' contour drawn in the vicinity of well M92. There is also a 40' contour, however, there is no 30' contour in this area. It appears that a 30' contour should be drawn and the 20' contour should be revised.
 - e. A 50' contour is drawn around a data point of 36' at MTC-3.
 - f. A 40' contour separates data points of 59.5' and 48' at locations J2U2 and J2U1, respectively.
 - g. A 40' contour separates data points of 44' and 45.5' at locations H22 and H21R, respectively.
 - h. There is a contour in the vicinity of well H42 that is not labeled.
 - i. There is a contour in the vicinity of well PC40 that is not labeled.
 - j. There is a 50' data point a location DW-1 which is between a 30' and a 40' contour.
 - k. A 30' contour separates data points of 31' and 41' at locations PC1 and PC6, respectively.
 - l. There appears to be a 34' data point between the 40' and 50' contours in the vicinity of location PC61.
121. Plate 4A, there are a number of abbreviations on this plate and there are no definitions. This comment applies to other figures and plates as applicable.
122. Plates 4A, 4B, 4C and 4D, the yellow line is not defined on these plates.
123. Plate 5, the NDEP offers the following comments for areas of the figure that appear to require revision.

- a. There is a 1761' data point at location M97 between the 1755 and 1760 contours.
 - b. The 1790 contour does not appear to be appropriately located in the vicinity of location M10.
 - c. There is a 1715' data point at location I-A-R between the 1725 and 1730 contours.
 - d. The eastern portion of the following contours appears to be inferred and should be dashed: 1665, 1670, 1675, 1680, 1685, 1690, 1705, 1710 and 1715. This may apply to other contours as well (for example, the 1640, 1645, and 1650 contours). It is requested that KM review and revise this figure as appropriate.
 - e. The 1665 contour does not intersect the 1665 data point at location H50.
 - f. It appears that the 1575 and 1580 contours can be extended to the west.
 - g. There is a 1563' data point at location PC112 between the 1565 and 1570 contours.
 - h. The 1550 data point at location PC99R2/R3 appears to conflict with the contouring in that area.
124. Plate 6, this plate is described as "source areas identified in the LOU". The LOU (letter of understanding) is a letter that was written by the NDEP in 1994. Identification of source areas is the responsibility of KM. This plate should not be limited to source areas identified by the NDEP. It appears that there may be additional source areas that have not been identified. For example, the gasoline tank west of the administration building; the railroad tracks; air emissions from process operations; new AP-6 pond; the GW-11 pond; the Chemstar facility; the TIMET facility; the Pioneer-Stauffer-Montrose facility; the former U.S. Vanadium facility; historic BMI operation; etc. Some of these areas may not have enough data to determine if they are source areas or not. If an area is a suspected (or possible) source area it may be helpful to show these areas on this figure in a different color or hatching.
125. Plate 7, the NDEP offers the following comments for areas of the figure that appear to require revision. Please note that the comments that apply to this plate may also be applicable to other iso-concentration contour maps. Also, please note that the NDEP has not verified every data point and contour presented on the plate. It is requested that KM review the entire plate and address any issues that are discovered. The comments below are intended to be examples of issues that may need to be resolved.
- a. As stated previously, it is requested that this figure (and others, as applicable) include data collected by others such as TIMET and BMI. As stated previously, this will dramatically change the depiction of the 0.05 and 0.1 ppm contours on the eastern side of the plant site area.
 - b. The 0.01 ppm contour nearly passes through location PC73 which has a concentration of 0.3 ppm.
 - c. The 1 ppm contour in the vicinity of well M44 appears to be too close to well M44 and too far away from well PC71. A similar comment also applies to location PC54. Please verify these occurrences and the development of the contours on the remainder of the plate.

- d. Data in the vicinity of the on-site well field and the Athens Road well field is nearly illegible and it is difficult to correlate data to a location identifier. The data needs to be presented in an alternate format in these areas.
 - e. Please see additional comments (dated February 9, 2005 and March 2, 2005) developed by the NDEP with regard to the semi-annual chromium performance reports.
126. Plate 9, the NDEP offers the following comments for areas of the figure that appear to require revision.
- a. The contour that passes through location PC50 appears to be a 10 mS/cm contour and there appear to be additional 10 mS/cm contours directly to the west and the east.
 - b. Contours in the vicinity of the on-site well field are not labeled. There are contours in the vicinity of the Athens Road well field that are labeled elsewhere on the figure, however, it is requested that labels be added in the vicinity of the Athens Road well field.
 - c. The 5 mS/cm contour passes through location MC22 (3.4 mS/cm).
 - d. The contour that passes through location MW-TWE-15 is not labeled.
 - e. The 15 and 20 mS/cm contours in the vicinity of locations MC65, MC50, MC27, MC6, MC7 and MC69 appear to require revision. There are several locations below 15 mS/cm which are located between the 15 and 20 mS/cm contours.
 - f. It appears that the 5 mS/cm contour surrounding location PC56 could be combined with the 5 mS/cm contour in the Seep area. This contour may be able to be continued south towards location PC53 or the 10 mS/cm contour which ends at location MW-K5 may need to be extended north and east.
 - g. A 5 mS/cm contour passes through locations PC94 and MW-K8 (4.6 and 4.9 mS/cm, respectively). It is not clear how this contour was developed.
127. Plate 10, it is not clear why this Plate was not combined with Plate 7. Also, please see comments above regarding Plate 7. This same comment applies to Plates 11 and 12.
128. Plate 14, this plate does not present any of the TPH data that is provided in the text. Please explain. This comment may also apply to Plate 15 if data is available.
129. Plate 18, it appears that this Plate could be combined with Plates 1 and 6.
130. Appendix A, the NDEP offers the following comments:
- a. In the "Drilled By" column please explain what is meant by "other". Please explain if "other" is meant to imply "unknown".
 - b. The top of casing elevation is missing for some wells including some wells that are listed as "active". KM should plan on gathering this information as part of a future workplan.
 - c. Total depth is not listed for some wells, including some wells that are listed as "active". KM should plan on gathering this information as part of a future workplan.
 - d. Table A-2 is titled "Groundwater Analytical Data", however, this table does not include all of the data that is available for groundwater. There is a significant amount of data that is described in the text and tables that is not

included on this table. The purpose and content of this table should be clarified.

131. Appendix D, the sample locations from previous reports should be incorporated in to the applicable figures and plates. It is not clear if this has already been completed. If these sample locations are included in the applicable plates and figures, Appendix D may not be necessary. Please clarify.
132. Appendix E, the NDEP has not verified the completeness of the biological surveys that are presented in this Appendix. As the project progresses towards ecological risk assessment (qualitative or quantitative), the NDEP will review these reports in detail. It is likely that additional work will be completed by others (BMI) in the future on this subject and this information may be useful to KM.