

June 6, 2007

Mr. Craig Wilkinson
TIMET
PO Box 2128
Henderson, NV 89009

Re.: Nevada Division of Environmental Protection Letter Regarding:
Conceptual Site Model
Dated April 25, 2007
NDEP Facility ID# H-000537

Dear Mr. Wilkinson:

The Nevada Division of Environmental Protection (NDEP) has completed a review of the aforementioned document. NDEP's comments are provided in Attachment A. A fully annotated response to comments letter is requested. In addition, specific requests are detailed in the body of the comments. It is suggested that a meeting be scheduled as soon as possible to review the NDEP's comments. Please contact the NDEP **by June 12, 2007**, to arrange this meeting.

Should you have any questions or concerns, please do not hesitate to contact me at (702) 486-2850x247.

Sincerely,

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions

BAR:s

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Attachment A

1. General comment, some of the appendices contain appendices. Please do not create an appendix to an appendix. These should be labeled as attachments to an appendix.
2. General comment, it would be helpful if there was a section of the report that described the path forward for the project. The CSM identifies a number of data gaps, however, the means to address these data gaps is not clear. In addition, the schedule for addressing these data gaps is not clear. In the response to comments letter, please explain how these data gaps will be addressed, as well as the proposed schedule.
3. General comment, it is obvious that TIMET invested a lot of time and effort in producing this document. NDEP is particularly impressed by the links in the PDF version; this feature greatly facilitates review by the NDEP.
4. General comment, in general the document is well referenced.
5. General comment, the CSM document uses secondary references, such as citing another consultant's report for evapotranspiration data. This should be avoided.
6. General comment, the report should use consistent units for measurement.
7. General comment, when reporting very small numbers scientific notation would be useful.
8. General comment, isoconcentration contours discussed in Section 4.3 do not always appear to honor the data and some contours exclude data.
9. General comment, TIMET would likely benefit through use of geochemical modeling as there are a number of chemical species that are affected by redox conditions.
10. General comment, Although site data are used to develop the preliminary CSMs, a data usability evaluation and data adequacy analysis have not been completed for any portion of the site. Recognition of uncertainties associated with this issue should be given and these evaluations should be conducted as a component of the next update of the CSMs.
11. Section 1.3.2.2, page 1-6, 2nd paragraph, TIMET states "From the 1940s to the mid-1970s, the unlined Upper and Lower Ponds were used as evaporation ponds of process effluent from the BMI Complex." Add infiltration with evaporation.
12. Section 1.4.3, page 1-11. "Several areas were excluded from the framework of this CSM." Specifically seven areas not "several." It would be helpful if the rationale for not including each area was included in the CSM.
13. Section 1.4.4, page 1-17, 1st paragraph, TIMET states "Waste solids from Francy's Mountain and the ponds were excavated, blended, and transported via railcar..." It would be helpful to specify what the blending process was and why this was completed.
14. Section 1.4.4, page 1-17, 1st paragraph, TIMET states "At the completion of the removal action, a soil boring was installed at the base of the North CSD Pond excavation (TMSB-123) for vertical delineation..." To clarify, a boring was not installed beneath the former Francy's Mountain.
15. Figure 1-2: Various areas labeled could be indicated via arrows for more clarity. Features such as Pittman Lateral should be indicated via a line showing this alignment.

16. Section 2.1.3, page 2-1, TIMET states “To characterize climate at TIMET, local weather observations from the meteorological monitoring station at McCarran Airport were used.” Please explain this statement with respect to the weather station located at TIMET.
17. Section 2.1.3, page 2-2, regarding “Evapotranspiration rates...” ERM is a secondary source and SNWA may have done some work along these lines; but Shevenell (1996) “Statewide Potential Evapotranspiration Maps for Nevada” may likely be a better source.
18. Section 2.2.1, pages 2-5, Transitional Muddy Creek Formation, the NDEP has the following comments:
 - a. TIMET states “The Transitional MCF is not readily distinguished from the MCF.” It would be helpful to present additional discussion regarding how TIMET did distinguish the Transitional MCF from the MCF.
 - b. TIMET states “As a result (although not specifically tested), it is suspected to be of sufficient permeability to transmit limited groundwater. Fine-grained MCF, which underlies the Transitional MCF, does not appear to yield appreciable groundwater.” The basis for these statements is not clear, see additional comments below.
19. Section 2.2.2, pages 2-5 through 2-7, the NDEP has the following comments:
 - a. TIMET states “most of the sand lenses in the upper portion of the Muddy Creek Formation appeared to be laterally discontinuous.” The basis and veracity of this statement are unclear. The NDEP is not aware of any data that have been collected to date to substantiate this statement.
 - b. TIMET discusses the TR series of wells at Tronox (TRX) and notes “the deeper portion of the Muddy Creek Formation contains thicker layers of coarse-grained sand and gravel”. It is not evident that this statement considers the fact that these wells were drilled utilizing air rotary casing hammer technology which may have biased the lithologic logs as being coarser than they actually are.
20. Section 2.3, pages 2-8 and 2-9, the NDEP has the following comments:
 - a. TIMET states “The Transitional MCF, although more permeable than the fine grained MCF facies, is much lower – perhaps 1 foot per day or less.” As TIMET has noted in Section 2.2.1, TIMET has no data to substantiate this statement. Unsupported statements will be rejected by the NDEP.
 - b. Page 2-8, TIMET states “Finally, in areas where sufficient Quaternary Alluvium exists to complete water table monitor wells, the wells are screened in Quaternary Alluvium only. Saturated Transitional MCF may exist in these locations, and may provide the ability to evaluate vertical concentration gradients for TIMET solute plumes via nested wells screened specifically in this interval.” Given the previous description of the relationship between the alluvial aquifer and transitional TMCf this may not provide much of an evaluation of the vertical concentration gradients.
 - c. Page 2-9, 2nd bullet, TIMET states “Fine-grained MCF facies provide aquicludes between the coarse-grained facies.” Based on the description

and occurrence of deep groundwater contamination, aquitard is a better descriptor than aquiclude.

- d. Page 2-9, 5th bullet, TIMET states “The flux of groundwater through the alluvial aquifer appears to be far more than can be sustained by natural recharge, and is thought to be related to upslope irrigation infiltration.” Does TIMET have information to document inflow from upgradient, off-site sources? What about potential on-site sources?
 - e. Page 2-9, 6th bullet, TIMET states “The flux of groundwater through these sediments at prevailing hydraulic gradients (one to three feet per hundred) is thought to be more in alignment with natural recharge.” What documentation does TIMET have for this statement?
21. Section 2.3.1, page 2-10, last paragraph in section. The measurement of pounds per square inch should be converted to feet and compared to land surface at this point.
 22. Section 2.3.2, page 2-11, 1st paragraph, TIMET states “As regards typical groundwater seepage velocities, this is on the high side.” Explain.
 23. Section 2.3.2, page 2-11, last paragraph on page. Strike the paragraph as the previous testing and analysis was never approved by the NDEP.
 24. Section 2.3.2, page 2-12, 1st paragraph. If TIMET plans to use the Montrose data then TIMET should re-evaluate that data.
 25. Section 2.3.2, page 2-12, 1st paragraph. The units of ft²/sec are incorrect for hydraulic conductivity.
 26. Section 2.3.2, page 2-12, 1st paragraph, last sentence, TIMET states “Based on laboratory tests, the vertical hydraulic conductivity of finer-grained clayey sediments that were cored at Montrose varied from 0.000000058 to 0.000002 centimeters per second (SECOR 2002a; Kleinfelder 1983).” Please report parameters in consistent units. Because the data are discredited in the footnote why include it here?
 27. Section 2.3.2, page 2-12, last paragraph of section. Refer to comment above.
 28. Figure 2-1, this Figure is labeled “Topographic Surface Map”, however, the topographic information is not readily discernable.
 29. Figure 2-5, the NDEP has the following comments:
 - a. The source(s) of the data on this Figure are not evident.
 - b. The temporal setting for this Figure is not evident.
 - c. It appears that the new wells installed by TIMET were not included in this Figure, please explain.
 30. Section 3.1.2.4, page 3-5, this Section, or a new Section, should discuss the discovery of decachlorobiphenyl in the dust recovered from the baghouse related to the magnesium recovery operations. The creation of this polychlorinated biphenyl (PCB) at levels exceeding TSCA should also be discussed.
 31. Section 3.2, page 3-8, please see comment below regarding Appendix D.
 32. Section 3.3, page 3-8, TIMET should discuss the usage of hexavalent chromium in cooling water historically used on Site.
 33. Section 3.4, page 3-9, please explain what the “near-surface soil source areas” includes. Specifically, what depths does this address?
 34. Section 3.5, pages 3-9 and 3-10, the NDEP has the following comments:
 - a. It is not clear to the NDEP how TIMET can develop a list of “principal chemicals” for potential source areas (PSAs) when very limited data is

available for many of the PSAs. In addition, generally, broad suite analyses have not been conducted at the Plant Site.

- b. The NDEP does not object to the optimization of resources, however, broad suite analyses will be necessary.
35. Table 3-1, the NDEP has the following comments:
- a. It would be helpful to have current, validated data for each of these waste streams. For those waste streams that no longer exist, historic data should be presented and caveated. This data should be compared to applicable metrics and the presented in tabular form.
 - b. It appears that the baghouse dust from the magnesium recovery building is not listed as a waste stream. Please include this and any other excluded waste streams.
 - c. Waste stream 3, please explain how this waste stream was handled from 2003 to the present.
 - d. Waste stream 4, please explain if the leach liquor collector was a container and if leaks could be reasonably expected. In addition, please specify the date that this waste stream was no longer generated.
 - e. Waste stream 5, it should also be noted that there is a pile of chlorinator dust adjacent the J2 Landfill.
 - f. Waste stream 7, please specify the method of disposition prior to 1970.
 - g. Waste stream 24, please specify if this process ceased in the mid-1980s.
36. Table 3-2, the NDEP has the following comments:
- a. It appears that the sub-surface area of TRECO is not included in this Table or the CSM. Please explain.
 - b. It appears that the former U.S. Vanadium facility is not addressed in this Table or in the CSM. Please explain.
 - c. It appears that the TIMET research and development facilities are not listed as potential source areas. The only area this is covered is under PSA 23 for Building K-53. Please explain where the chemical laboratory is addressed.
 - d. Source Area 2, TIMET indicates that the contents of the ponds were removed. It is the understanding of the NDEP that the total depth of these ponds may have not been removed. In addition, the sub-surface effects of these ponds has not yet been addressed.
 - e. Source Area 3, please note that the surface expression of Francy's Mountain was removed, however, sub-surface impacts from this source area have not yet been evaluated or addressed.
 - f. Source Area 4, the table indicates that this area was graded. Please explain if the slag was disposed of or relocated or graded in place.
 - g. Source Area 12, Alpha Ditch, TIMET lists a number of waste streams which have not necessarily been defined. For example, it is not possible for the reviewer to understand what "dewatering box water" might contain. If any waste stream is not defined on Table 3-1 please revise and expand Table 3-1.
 - h. Please note that the NDEP's review of this table does not imply that the source areas listed herein are the only source areas for the Site.

37. Section 4.2, pages 4-4 through 4-6, the NDEP has the following comments;
- a. Please note that comparison to the maximum portion of the background range is the least conservative comparison that can be made.
 - b. Please note that use of the DAF20 soil screening level is not consistent with USEPA guidance. Per the USEPA *Users' Guide and Background Technical Document for USEPA Region 9's Preliminary Remediation Goals (PRG) Table*, the following is noted:
 1. DAF1 values are appropriate for use at sites "where little or no dilution or attenuation of soil leachate concentrations is expected at a site (e.g.: sites with shallow water tables...or source size greater than 30 acres).
 2. Both of the listed criteria above appear to apply to the TIMET site.
 3. TIMET should either: use the DAF1 values; derive an appropriate set of site-specific screening levels for the leaching pathway; or perhaps compare to both the DAF20 and DAF 1 values.
 4. To be noted, the December 2004 *Technical Memorandum for Establishing a Screening Process for Soil and Groundwater data from On-Site and Off-Site Areas* did not specify or contemplate a specific DAF value that would be acceptable.
 5. NDEP is concerned that the discussions regarding the leaching pathway will be invalid or misleading.
 6. On page 4-6 TIMET proposes a hierarchy of screening values which includes the use of the DAF20
38. Section 4.3, general comment, the screening levels that are cited are often incorrect. It appears these errors are a function of rounding or perhaps transcription, examples follow:
- a. Section 4.3.2.4, manganese, TIMET cites a 19,000 mg/kg USEPA Region IX PRG; the PRG is actually 19,458 mg/kg.
 - b. Section 4.3.2.6, uranium, TIMET cites a 200 mg/kg USEPA Region IX PRG; the PRG is actually 204 mg/kg.
 - c. Section 4.3.2.7, vanadium, TIMET cites a 1,000 mg/kg USEPA Region IX PRG; the PRG is actually 7,153 mg/kg.
 - d. Section 4.3.2.8, antimony, TIMET cites a 410 mg/kg USEPA Region IX PRG; the PRG is actually 511 mg/kg.
 - e. Additional examples exist, however, the NDEP will not examine or list all issues herein. It is requested that TIMET review this issue in detail and describe what effects it has on the conclusions of the CSM.
39. Section 4.3, page 4-7. NDEP expects that before general inorganic data are used further for site evaluation, TIMET will make cation-anion balance calculations.
40. Section 4.3.1.1, pages 4-7 and 4-8, the NDEP has the following comments:
- a. Regarding groundwater, TIMET should discuss the possibility of off-Site sources and should either collect data to address this data gap or review data collected by others. Data collected by TRX as part of their Phase A

- investigation may be useful for discussing this issue and refining the plume maps. This comment is applicable to a number of contaminants.
- b. Page 4-8, last paragraph of section, TIMET states “Based on the distribution of nitrate in groundwater, it appears that nitrate is elevated under the Ponds Area and J2 Landfill; however, soil data do not support this observation.” If this is a reference to vertical soil profiling, TIMET has not yet proven the methodology. There are elevated levels of nitrate in soils. Current soil conditions and current groundwater conditions may or may not be related as suggested herein.
 - c. Page 4-8, last paragraph of section, TIMET states “Moreover, groundwater concentrations downgradient of the Plant Site exceed those on the Plant Site.” This could simply be an indication that the plume has moved off-site and that there is not a continuing source.
41. Section 4.3.1.2, page 4-10, last paragraph of section, TIMET states “South of the Ponds Area and the J2 Landfill, chloride concentrations in groundwater, in conjunction with subsurface soil chloride profiles, indicate little migration to depth...” Figure 4-7 does not appear to support this conclusion.
 42. Section 4.3.1.3, pages 4-10 and 4-11, the NDEP has the following comments:
 - a. TIMET discusses elevated sulfate concentrations in two samples from boring TMSB-104. TIMET indicates that “these depths may be naturally high in gypsum, which is known to occur in local sediments.” It is unclear to the NDEP why there is ambiguity surrounding this issue. TIMET installed these borings using sonic drilling and the presence of gypsum should have been noted on the boring logs. If this is not the case it is unclear why this speculation is present in the report. Another hypothesis would be that sulfate has already migrated through the soil column to groundwater and the deeper sulfate impacts are what remain in the vadose zone.
 43. Section 4.3.1.4, pages 4-11 and 4-12, the NDEP has the following comments:
 - a. TIMET states “Perchlorate is not associated with TIMET processes or waste streams.” It should be noted that perchlorate has been present in the local drinking water supply for a number of years. Industrial use of this water and discharge throughout the Site may have resulted in minimal impacts to the Site. In addition, TIMET may have been impacted via windblown dust from the TRX facility. Large quantities of perchlorate were historically stored at the TRX facility and may have impacted TIMET. Relatively speaking these impacts are likely considered de minimus, however, the document should address these issues.
 - b. Page 4-12, paragraph under Shallow Soil, TIMET states “None of these samples exceeded the screening level of 100 mg/kg based upon the EPA Region 9 Industrial PRG.” This sentence and the previous sentence reference Table 4-2 which indicates that the screening level number comes from Nevada but the text indicates EPA Region IX PRG. Please clarify.
 44. Section 4.3.1.5, pages 4-13 and 4-14, the NDEP has the following comments:
 - a. NDEP has offered comments to TIMET and all of the remaining BMI Companies regarding conducting cation-anion balances. It is concerning

to the NDEP that TIMET has chosen not to include this evaluation in the CSM.

- b. TIMET notes that Stiff and Piper diagrams may be useful in determining impacts from the Tronox facility. This item should be addressed on table 6-1 (Data Gaps).
45. Section 4.3.2, pages 4-14 through 4-26, the NDEP has the following comments:
- a. It would be helpful to discuss the concentrations of the various metals (and radionuclides) in the TIMET ore as well as the waste streams.
 - b. Use of a DAF of 20 for this site may under predict the impacts to groundwater. Also, the DAF calculations do not account for solubility of a metallic element.
46. Section 4.3.2.1, pages 4-14 through 4-16, the NDEP has the following comments:
- a. TIMET indicates that “Arsenic has neither been suspected nor detected in historic or current waste streams.” Please discuss the presence of arsenic in historic and current raw materials. In addition a cross reference to data that supports TIMET’s statement is necessary (e.g.: data from Basic Magnesium operations through present for raw materials and waste streams). In addition, the ore used by Pioche Manganese may have been high in arsenic. Ore from the Three Kids Mine is known to contain elevated levels of arsenic.
 - b. Page 4-14, TIMET states “The distribution of arsenic in groundwater (solute plume) is shown on Figure 4-14.” NDEP notes that a number of arsenic values posted on Figure 4-14 have elevated detection levels and the area greater than 100 µg/L could potentially be much larger.
47. Section 4.3.2.2, the NDEP has the following comments:
- a. TIMET states that a screening level for trivalent chromium was not calculated for this CSM. Given the extremely extended time period that this CSM was in development it is not clear to the NDEP why this was not completed. Please explain.
 - b. Page 4-17, 1st full paragraph, TIMET states “The distribution of chromium in shallow soils is shown on Figure 4-15, in subsurface soils on Figure 4-16, and in groundwater on Figure 4-17.” Contours from the plant site area do not include POU-3 which was greater than 100 µg/L.
 - c. Page 4-17, 1st full paragraph, TIMET states “The fate and transport of chromium in the environment is strongly a function of the oxidation state. Chromium VI (hexavalent chromium) is considered mobile, whereas trivalent chromium (chromium III) is virtually immobile. The distribution coefficient between the two varies by orders of magnitude. Because of this behavior, the migration of chromium at the Plant Site is suspected to be limited.” Trivalent chromium can be oxidized to hexavalent chromium depending upon soil and groundwater redox conditions. What facts about soils and/or groundwater leads to this conclusion? Has TIMET been monitoring redox potential during groundwater sampling?
 - d. Page 4-18, last paragraph of section, TIMET states “TIMET has begun to conduct speciation of chromium in groundwater in Plant Site samples. More data are required; however, based on the analyses conducted so far

(Table 4-11), it appears that chromium in groundwater under the Plant Site is virtually all hexavalent chromium, and not trivalent chromium, trivalent chromium being the oxidation state of chromium in Plant Site waste streams.” Hexavalent chromium is more soluble than trivalent chromium, thus one would expect to see groundwater contaminated by hexavalent chromium. Please refer to comment #36 above. TIMET would benefit by conducting geochemical modeling to evaluate the redox environment and better understand fate of chromium in the soil and groundwater.

48. Section 4.3.2.5, pages 4-20 and 4-21, the NDEP has the following comments:
 - a. Please discuss the background value of 1,010 mg/kg versus recently updated toxicity data for titanium. In addition, the USEPA region IX PRG is much higher than the background value. Please consider using a more appropriate screening level.
49. Section 4.3.2.7, pages 4-23 and 4-24, the NDEP has the following comments:
 - a. The basis for the screening level for vanadium in groundwater is not presented. TIMET uses a 100 ppb reference, whereas the USEPA PRG is 255 ppb. Please explain.
50. Section 4.3.3, pages 4-26 and 4-27, the NDEP has the following comments:
 - a. Please discuss what types of wastes were received in historic (unlined) landfill operations on Site and how this relates to VOCs on Site.
 - b. Please discuss where the wastes from the electrolytic cells are disposed of (currently and historically). It is the understanding of the NDEP that the electrolytic cells that were used to produce magnesium may have contained carbon tetrachloride and other wastes. Please discuss this as well as wastes relating to the magnesium recovery operation.
 - c. In addition, please discuss the historic use of VOCs as dust suppressants on roadways.
51. Section 4.3.3.1, pages 4-27 and 4-28, the NDEP has the following comments:
 - a. TIMET states that “Chloroform is not identified (by process knowledge) in historic or present-day Plant Site processes or waste streams.” Chloroform is a potential degradation by product from other compounds that are or have been used on Site. Please discuss chloroform in this fashion.
 - b. As noted previously, the screening levels presented are incorrect. TIMET states that the screening level is 100 ppb for total trihalomethanes in groundwater. This is incorrect. The MCL for total trihalomethanes in groundwater is 80 ppb. Groundwater data should hence be discussed as total trihalomethanes.
52. Section 4.3.3.2, page 4-29, section on tetrachloroethene in groundwater, TIMET states “The distribution of PCE in groundwater is shown on Figure 4-44.” Please note that the contours as drawn do not equally honor the data. The contours enclose a "J" flagged value to the east but to the west exclude such a value.
53. Section 4.3.3.2, page 4-29, section on tetrachloroethene in groundwater, TIMET states “Because the Used Paint and Solvent Area is contained within the landfill boundaries, it is possible that PCE undergoes reductive dechlorination under anaerobic conditions to some degree, the byproduct of which is trichloroethene

(TCE); and if the process continues, dichloroethene (DCE), then vinyl chloride (VC). There is no evidence of DCE or VC at the Plant Site, so reductive dechlorination, if occurring, appears limited.”

- a. The geochemical model for reductive dechlorination is far more complex than this statement implies.
 - b. Has TIMET collected geochemical data to support the argument of reductive dechlorination at the site?
 - c. As discussed in the following paragraph; if reducing conditions exist only under the landfill and oxidizing conditions exist downgradient of the landfill; the PCE could be reduced to TCE beneath the landfill and the DCE isomers and VC (if any were present) would be readily oxidized in the distal portions of the plume. Please note that VC only accumulates under reducing conditions.
54. Section 4.3.4.3, page 4-36 and 4-37, the NDEP has the following comments:
- a. Please generate a set of Figures for Uranium-235 (U-235).
55. Section 4.3.5, pages 4-37 and 4-38, the NDEP has the following comments:
- a. Please discuss if PAHs are formed in the magnesium recovery electrolytic cells or any other process on Site.
 - b. PAHs are the only semivolatile organic chemicals (SVOCs) mentioned in this section. Information should be provided as to whether other SVOCs have been associated with historical site activities.
 - c. In addition to physical/chemical properties, the distribution of SVOCs in soil should be used to support decisions regarding the leaching potential of these chemicals.
 - d. Page 4-38, TIMET states “However, PAHs as a class are hydrophobic and poorly soluble, and based upon their physical properties, would not be expected in groundwater at the TIMET Plant Site.” Technically, it would be best to avoid broad statements like this without supporting data. This is especially true when samples will be analyzed for the analytes in the future.
 - e. Page 4-38, section on groundwater. Technically, it would be best to avoid broad statements like this without supporting data. This is especially true when samples will be analyzed for the analytes in the future.
56. Section 4.3.6, pages 4-38 and 4-39, the NDEP has the following comments:
- a. It has been noted that PCBs (specifically decachlorobiphenyl) are formed in the electrolytic cells of the magnesium recovery operation. This issue needs discussion in this Section
57. Section 4.3.7, pages 4-39 and 4-40, the NDEP has the following comments:
- a. Regarding pesticide wastes, TIMET states “Wastewater discharges from these facilities traversed the Northern Storage Area via the Beta Ditch en route to the Pabco Ponds Area for evaporative treatment.” The NDEP disagrees with the assertion that any meaningful treatment occurred via evaporation for pesticides. Please note that the BMI Upper and Lower Ponds and ditches were infiltration ponds as well as evaporation ponds.

- b. Please discuss if any investigation has been completed in the ditches themselves. This may be a data gap if investigations have not been completed for broad suites in the ditches.
- 58. Section 4.3.9, page 4-41, the NDEP has the following comments:
 - a. It is not clear if the J2 landfill is the only potential source area for asbestos.
 - b. If there is potential for asbestos to be present in specific areas of the site, analytical data, using NDEP-approved methods, should be used as the basis for characterization rather than visual inspection.
- 59. Section 4.3.10, page 4-41, the NDEP has the following comments:
 - a. As the NDEP has noted previously, it is not clear to the NDEP that there are not additional sources of dioxins or furans. Please refer to NDEP's previous comments, which will not be repeated herein.
- 60. Table 4-2, the NDEP has the following comments:
 - a. Please add columns which present the USEPA Soil Screening Level DAF 1 and the applicable comparisons to this metric. This comment applies to this table and all similar tables.
 - b. In this table "--" is used interchangeable for "0" or "NA". It is requested that "NA" or "--" be used for instances where something is not applicable and "0" be used for when the indication is zero. This comment applies to this table and all similar tables.
- 61. Table 4-8, the NDEP has the following comments:
 - a. It is not clear to the NDEP why TIMET has not chosen an appropriate screening level for dioxins and furans. It is suggested that TIMET review the ATSDR guidance on this class of chemicals and select/justify a screening level.
 - b. Regarding PCBs it is not clear why TIMET has chosen to use TSCA as the basis for many screening levels except for Aroclors 1016, 1254 and 1260. It is not clear that this is appropriate. Please explain.
 - c. "water quality indicators" are not needed on this table.
 - d. It would seem appropriate that for asbestos the screening level would be "any detection".
 - e. Please note that the NEP has not comprehensively verified the values presented on this table.
- 62. Table 4-9, the NDEP has the following comments:
 - a. This table does not indicate what the selected screening level is and hence this table is of limited utility. This table should be reformatted to be consistent with Table 4-8.
 - b. Please note that the NDEP has not verified the values presented on this table.
- 63. Section 5.0, pages 5-1 and 5-2 and general comments, the NDEP has the following comments:
 - a. TIMET states "Data for the site indicate some COPCs detected in groundwater samples at the TIMET site are not associated with current or previous TIMET operations and are likely associated with off-site sources or have an unknown origin (such as chloroform)." NDEP agrees with this

in concept, however, NDEP does not agree with the statement about “chloroform”. TIMET has not yet demonstrated that chloroform is from an off-Site source, solely.

- b. TIMET discusses “downgradient” receptors but not “downwind” receptors. Please clarify what is intended.
 - c. General comment, this Section could be much improved via a discussion of the structure of the Section “up front”. Section 5.1 is titled “Conceptual Site Model for Each Source Area”, however, this is not what is included in this Section. Perhaps the Section would be more accurately described as “Primary Source and Release Mechanisms”. Accurate titles and descriptions would facilitate review times and minimize NDEP comments.
 - d. General comment, please note that the NDEP’s specific comments on sub-Sections below may be addressed by TIMET in the remaining sub-Sections and Figures. NDEP apologizes for any inaccuracies in the comments, however, these comments are a function of the lack of clarity of the structure of this Section.
 - e. General comment, perhaps a new sub-section should be added to Section 5.5 which discusses groundwater as a receptor. Nevada has a non-degradation policy for groundwater and all groundwater is considered drinking water.
 - f. General comment, in addition to complete exposure pathways, potentially complete pathways should be included at this stage of the CSM.
 - g. General comment, the CSMs for each source area are correctly identified as preliminary CSMs. This is appropriate as (1) a data usability evaluation and documentation of adequate characterization for each exposure area has not been completed (accordingly data gaps may exist) and (2) a comprehensive exposure assessment has not been completed, which applies standard guidance to identify complete and potentially complete as well as insignificant pathways for both current and hypothetical future receptors.
 - h. General comment, mention is made of the California Regional Water Quality Control Board’s environmental screening levels (ESLs) document and that document’s discussion of the relationship between construction worker and short-term maintenance worker exposure. It is not clear what the intent of this reference is and why it is relevant for the CSM to assess the relationship of construction worker and short-term maintenance receptors.
64. Section 5.1.1, page 5-3, the NDEP has the following comments:
- a. This comment applies to this Section of the report and other Sections that are similar in nature (e.g.: Section 5.1.2, 5.1.3, etc.).
 - b. It is strange that each source area is described in terms of potential source areas within the source area and the waste streams associated with each source area. This does not appear to adequately address issues such as: windblown deposition of contaminants; overland transport of contaminants; volatilization of contaminants to the vadose zone from the water table (and vice versa); impacts to the vadose zone from upgradient

source areas; etc. Source areas cannot be evaluated in isolation from the remainder of the Site and additional discussion is necessary. It appears that this issue may be addressed in other sub-Sections of this Section, however, as discussed in the comments above for Section 5.0, the structure of Section 5.0 is not clear.

65. Section 5.1.1.1, page 5-3, the NDEP has the following comments:
 - a. This Section is titled “Principal Waste Streams” and there are other sub-sections with the same title for the remaining source areas of the Site. It is the belief that additional clarification is needed regarding the word “Principal”. It should be noted that additional waste streams, raw materials, degradation byproducts, chemical classes, etc. may have affected these areas and that the description of the “Principal Waste Streams” is not meant to be all inclusive.
66. Section 5.1.1.2, pages 5-3 and 5-4, the NDEP has the following comments:
 - a. This Source Area includes subsurface piping as one of the main potential source areas. Subsurface piping and pipe bedding material may act as a preferential pathway for contaminant transport.
 - b. This Source Area includes former drainage ditches. TIMET should discuss the potential for the ditches to act as preferential pathways for contaminants to leach to the sub-surface. In addition depressions in the ground surface tend to act as “sinks” for windblown contaminants (e.g.: heavy metals and radionuclides). These issues and others should be discussed in the context of the CSM.
 - c. This Section does not discuss trespassers or downgradient/downwind residents as receptors. Please explain. It is noted that some of these issues are covered in Section 5.0, however, it is confusing because a limited number of receptors and pathways are discussed in the specific sub-sections.
 - d. As applicable, the above comments also apply to the remainder of the Sections of Section 5 and will not be repeated.
67. Section 5.1.2.1, pages 5-5 and 5-6, the NDEP has the following comments:
 - a. TIMET discusses that the PCE and TCE plumes are present in this area. Other volatile compounds (e.g.: chloroform and radon) are not discussed, please explain. This comment applies to other Sections of the report as well.
68. Section 5.1.3.2, pages 5-8 and 5-9, the NDEP has the following comments:
 - a. TIMET discusses the emptying and relining of ponds HP-1 and HP-6, however, the reasoning for this is not included. Anomalous groundwater sampling results in this area were observed by the NDEP and investigations of these ponds ensued. Anomalous groundwater results continue to exist in this area (specifically, elevated TDS and uranium). This issue should be discussed.
69. Section 5.3.2, page 5-14 and 5-15, the NDEP has the following comments:
 - a. TIMET states “The only VOCs associated with the TIMET facility that have the potential to migrate into indoor air are PCE and TCE”. Please explain the rationale behind this statement.

1. It is not clear to the NDEP why chloroform is not included in this statement. Perhaps this is due to TIMET's assertion that this is not site-related. As noted previously, the NDEP does not concur with this.
 2. It is not clear to the NDEP why radon is not included in this statement, other than the fact that it is not a VOC per say. Nevertheless it is volatile and presents the same sorts of risks to inhabitants.
- b. In addition, modeling (analytical or numeric) has not been conducted to evaluate the impacts to downgradient or Site receptors for this pathway.
70. Section 5.3.4, page 5-15, the NDEP has the following comments:
- a. TIMET states "Impacted subsurface soil is only present within the TIMET property boundaries". It is not clear to the NDEP that there is any basis for this information.
 - b. Volatile compounds emanating from the TIMET Site may be impacting sub-surface soils downgradient of the Site. Please explain this with respect to the statement above.
 - c. Compounds in groundwater may be impacting sub-surface soils downgradient of the Site via fluctuating water table elevations. Compounds in groundwater may contaminate sub-surface soils as the water table re-wets portions of the vadose zone. Please explain this with respect to the statement above.
71. Section 5.3.6, page 5-16, the NDEP has the following comments:
- a. TIMET should discuss groundwater in terms of the State's non-degradation policy for groundwater and the fact that all water in the State (with some specific exceptions) is considered drinking water.
 - b. Please note that shallow groundwater is known to interact with the Las Vegas Wash irrespective of the presence of seeps.
72. Figures 5-1 through 5-5, the NDEP has the following comments:
- a. Please note that comments that apply to footnotes common to the figures reference the footnote numbers used in Figure 5-1.
 - b. The figure legend indicates a category for a "C" that has no box around it and a "C" that has a box around it. In the figure itself, these two categories are not apparent.
 - c. Some receptors and some pathways are different for the current scenario and the future scenario. Accordingly, the two scenarios should be split out on the figures and all potential pathways for hypothetical future receptors should be included as "C". For example, a hypothetical future commercial/industrial worker could be exposed to indoor air at any location on the site where a building could be built in the future.
 - d. Many of the pathways identified as "I" (incomplete) are more correctly identified as insignificant. In order to classify a pathway as insignificant, the USEPA exposure assessment guidance (USEPA, 1992a) should be used and adequate rationale should be provided. For some pathways for which data are still inadequate, the pathway may need to be identified as a potentially complete pathway for purposes of the preliminary CSM. An

example of this is windblown dust and deposition onto surface soil at offsite residential locations. Following completion of characterization and an evaluation of data usability and data adequacy, USEPA criteria for an insignificant pathway may be met.

- e. More detail (i.e., rationale) should be provided for areas that have surface water identified as a secondary source with no secondary release mechanism and/or tertiary source listed.
 - f. More detail (i.e., rationale) should be provided for areas that have subsurface soil identified as a secondary source with no secondary release mechanism and/or tertiary source listed.
 - g. For potential VOC sources (e.g., petroleum mixtures, etc.), VOC data should be used to support the conclusion that VOC pathways are insignificant.
 - h. Footnote d: Default pathways for the future commercial/industrial worker receptor should be included (USEPA, 2002).
 - i. Footnote f: This footnote states that the construction worker is not evaluated in the human health risk assessment. The reviewer is unaware of a risk assessment that has been conducted for the site, or any portion thereof.
 - j. Footnote g: This footnote identifies 0-1 foot bgs as “surface soil” and 1-10 feet bgs as “subsurface” soil. In the future, soil depth intervals should match those identified by USEPA as receptor-specific exposure depth intervals (i.e., 0-2 feet bgs for non-intrusive activities and 0-10 feet bgs for intrusive activities) (USEPA, 2002).
 - k. Footnote 1: Potential migration and exposure pathways associated with surface water should be included in the preliminary CSM. Pathways for both current and default future scenarios should be included.
73. Section 5.2, The term COPCs is used throughout this section (and others in the document). It is more appropriate to use an alternate term for purposes of the subject document, as the term Chemicals of Potential Concern (COPCs) has a specific definition within the risk assessment framework and implies that a specific selection process has been applied (USEPA, 1989).
74. Section 5.2.1, page 5-13, is stated that “For areas subject to direct disposal of solid waste and liquid or slurry, the residual soil, solid waste, or sludge directly in contact with the waste stream would represent a primary release mechanism because human receptors could come into contact with COPCs present in this material”. To be more correct, the environmental release of chemicals associated with solid waste disposal, wastewater discharge, and other disposal methods described represents a *primary* release because this is the first point of chemical release from site operations, not because there is human exposure.
75. Section 5.3, the NDEP has the following comments:
- a. This section should be entitled “Complete and Potentially Complete Exposure Pathways”.
 - b. All potentially complete pathways should be included in the preliminary CSMs at this time. Incomplete and insignificant pathways generally require completed site characterization before categorized as such.

76. Section 5.3.1, page 5-14, Soil and/or soil gas data should be used as the basis for determining if inhalation of outdoor air is an insignificant pathway.
77. Section 5.3.2, the NDEP has the following comments:
 - a. Page 5-14, since COPCs have not been formally identified, the indoor air pathway should not be limited to PCE and TCE, particularly since there is potential for breakdown products to be present.
 - b. Page 5-15: For the hypothetical future scenario, a commercial/industrial worker could be exposed to indoor air at any location on the site where a building could be built in the future.
78. Section 5.3.3, soil depth intervals for exposure assessment should match those identified by USEPA as receptor-specific exposure depth intervals (i.e., 0-2 feet bgs for non-intrusive activities and 0-10 feet bgs for intrusive activities) (USEPA, 2002).
79. Section 5.5.1.2, page 5-21, please delete the following sentences from the second paragraph, which do not add relevant information to the preliminary CSM and are not consistent with USEPA guidance (USEPA 1996, 2005) or other NDEP projects: "Exposures from ingestion of future hypothetical homegrown produce would be highly variable because of the long list of exposure assumptions and extrapolations necessary to predict risk. Further, inclusion of the homegrown produce consumption pathway often results in unrealistically elevated risk estimates that have the potential to drive risk because of the pathway's uncertainty." Determination of whether the homegrown produce pathway is complete should be based on the potential for source (i.e., soil and/or air) contamination.
80. Section 5.5.2, page 5-23, the potential for impact to aquatic receptors in the Las Vegas Wash is not mentioned.
81. Section 6.0, page 6-1, a comprehensive data gap analysis based on a data usability evaluation of existing data (USEPA, 1992b), analysis of spatial distributions of contaminants in relation to (1) all source areas, release mechanisms and migration and exposure pathways, and (2) risk benchmark and/or background concentrations, has not been conducted. Therefore, the information provided in Section 6 should be considered as a preliminary data gap analysis.
82. Table 6-1, Data Gaps, the NDEP has the following comments:
 - a. Please note that the NDEP's comments on this Section should not be considered as a comprehensive list of data gaps. Additional comments above could also be used to formulate additional data gaps.
 - b. General comment, text in some cells is hidden.
 - c. Problem Statement #1, regarding PCB distribution at the Site. TIMET does not discuss the discovery of decachlorobiphenyl at the Site. In addition, no data has been collected regarding the presence of this chemical in soils and/or groundwater. This is an issue that is not adequately discussed in this data gap. Also, TIMET's proposed action for this data gap is insufficient.
 - d. Problem Statement #1, please note that elimination of specific chemicals from further consideration should not be conducted as a component of a preliminary CSM. TIMET should determine if characterization is complete for certain chemicals in specific exposure areas as part of the phased RI process.

- e. Problem Statement #2, regarding PAH contamination. It is not clear that PAH contamination has been addressed throughout the Plant Site and it is not clear why this data gap applies solely to the Northern Storage Area. PAHs may also be present in other areas of the Site (e.g.: the S-17 landfill, ditch segments, drum storage areas, etc.). Please discuss.
- f. Problem Statement #3, regarding asbestos in the Northern Storage Area. Please note that asbestos has been found throughout the BMI Complex and Common Areas. It is prudent to expand the asbestos investigation to cover large tracts of the Site. In addition, it is not clear that a visual observation for asbestos containing material will address the needs of a risk assessment.
- g. Problem Statement #3: Visual observation is proposed as the only means of determining whether asbestos has been released at the site. If, based on historical information, there is potential for asbestos to have been released (and there is sufficient information), decisions should be based on analytical data and not limited to visual observations.
- h. Problem Statement #4: Specific analytical methods should be included in the proposed action.
- i. Problem Statement #5: The need for groundwater sampling for PCBs should be based on whether the vertical gradient for PCBs in soil indicates the potential for PCBs to have migrated to groundwater. In addition, it should be noted that PCBs have been detected in groundwater downgradient of the Site. This must also be considered.
- j. Problem Statement # 6: Specific analytical methods should be included in the proposed action.
- k. Problem Statement #6, this statement does not address the inclusion of waste solvents used on Site roadways. Please discuss.
- l. Problem Statements #7 and #9: “principal chemicals” should be specifically identified.
- m. Problem Statement #8, perhaps this statement could be expanded to address the storage of chlorinator dust and CSD solids in other areas. For example, chlorinator dust stored east of the WCF.
- n. Problem Statement #11: The extent of arsenic contamination (i.e., to risk-based, leaching-based and/or background-based concentrations) should be delineated for all arsenic source areas.
- o. Problem Statements #12 and #13: The proposed action should be more specific than “Soil gas sampling (if possible) may be necessary to pinpoint PCE” (note typo for Problem Statement #13 under Proposed Action: “PCE” should be “TCE”).
- p. Problem Statement #15: When testing soil for CrVI, ensure that EPA Method 3060A is used for the extraction and that appropriate ancillary parameters (e.g., pH) are collected.
- q. Problem Statement #15, TIMET should also investigate the possibility of an off-Site source of nitrates.
- r. Problem Statement #18: The problem statement asks if sufficient data have been collected to determine background levels for certain

- constituents in the Qal aquifer, but the Proposed Action identifies statistical analysis of the soil data. Please clarify the rationale for the Proposed Action and the specific statistical analyses to be conducted.
- s. Problem Statement #18, the extent of the influence of off-Site plumes is an important data gap that may need to be addressed via invasive investigations. It appears that insufficient control exists on the western side of the TIMET site.
 - t. Page 2 of 4, 2nd row. Vertical soil profiling has not been proven to NDEP as a substitute for groundwater monitor wells.
 - u. Page 2 of 4, 3rd row, 2nd column. Unable to read all the text.
 - v. Page 2 of 4, 6th row, 2nd column. What were the detection limits?
 - w. Page 2 of 4, 6th row, 3rd column. Low concentrations are not necessarily indicative of vapor phase transport.
 - x. Page 2 of 4, 6th row, 4th column. What would prevent vapor phase sampling?
 - y. Page 3 of 4, 1st row, 1st column. Does TIMET have geochemical data to support reductive dechlorination?
 - z. Page 3 of 4, 1st row, 4th column. What would prevent vapor phase sampling?
 - aa. Page 3 of 4, 2nd row, 2nd column. Vertical soil profiling has not been proven to NDEP as a substitute for groundwater monitor wells.
 - bb. Page 3 of 4, 2nd row, 3rd column. Concentrations could increase downgradient of the plant because there is not a continuing source and the plume is migrating.
 - cc. Page 3 of 4, 4th row, 2nd column. Given the statement in Section 2.3 Hydrogeology, page 2-9, last paragraph; this statement may have not meaning if the groundwater elevation in the alluvial aquifer is higher than the TMCf water bearing zones.
 - dd. Page 3 of 4, 4th row, 4th column. Reviewer assumes that the reference is to the first water bearing zone below the transitional TMCf.
 - ee. Page 3 of 4, 6th row, 4th column. Conduct comparison statistics for all NDEP approved site related background data sets.
 - ff. In addition to the data gaps listed by TIMET, the NDEP offers additional consideration for data gaps as follows:
 - 1. The permeability of the transitional MCF and the MCF are unknown. In addition, vertical gradient data is unknown. These data are necessary to address hydrogeologic and chemodynamic issues.
 - 2. Deep soils and groundwater chemical data has not been collected and Site impacts to these horizons is unknown.
 - 3. The hydraulic communication between water bearing zones is unknown.
 - 4. Soil data with broad suite analyses is largely lacking throughout the Site. This is especially true in the sub-surface. The basis for limited suite analyses is unclear.

5. Soil data beneath the existing Unit Buildings has not been collected. These buildings are a likely source area.
 6. Background groundwater data (multiple horizons) has not been collected and is necessary to address certain compounds which may be naturally or anthropogenically elevated in groundwater.
 7. Background soils data for the MCF is unknown.
 8. The extent of natural bioremediation in the vicinity of the landfill is unknown. In addition, the source of the high methane gas concentrations has not been determined.
 9. It is not evident that data has been collected in the various ditches that cross the Site. The influence of these sources is unknown.
 10. Dioxin and furan data has not been collected and the extents of the impacts of this important chemical class is unknown. Dioxins and furans have been detected throughout the BMI Complex in soils and in some case, in groundwater.
 11. Validated, usable data for the current and historic waste streams may or may not be available.
 12. It appears that no characterization has been completed in the vicinity of the former acid tank farm. The releases of acids in this area may have impacts to the chemodynamic environment.
83. Appendix A, the NDEP has the following comments:
- a. Section 2.4, page 4, TIMET indicates that the PID readings are located in Appendix B to Appendix A. The actual results are not discussed in the Appendix or in the main body of the report. Additional comments are provided below on Appendix B.
 - b. Section 2.5, pages 4 through 7, where are the results of the XRF analyses discussed and correlated to the soil data? It appears that this issue is not addressed in this Appendix or the main body of the report. The Appendix notes that these issues will be discussed in the CSM, however, this discussion could not be found.
 - c. Section 2.5.3, page 7, TIMET notes that the XRF device did not capture total uranium results. Please discuss the source of this error and if this error could have affected any of the remaining results.
 - d. Appendix A (Field Forms) to Appendix A, the NDEP has the following comments:
 1. Please do not create Appendicies to an Appendix. Please label the primary section as an Appendix and the subjugated sections as Attachments.
 2. January 12, 2006 field notes, page 3, TIMET notes that the boreholes are backfilled with the cuttings. This practice is not allowed in the State of Nevada. Please refer to NAC 534.4371. This practice is listed several other times in the field forms.
 - e. Appendix B (Borehole Lithologic Logs and Construction Diagrams) to Appendix A, the NDEP has the following comments:

1. As discussed above regarding Section 2.4 of Appendix A, there is no discussion of PID results in the Appendix or in the main body of the report.
 2. Examples of boreholes with notable PID concentrations are as follows:
 1. TMPZ-107 – 24-25' bgs
 2. TMPZ-108 – 13-19' bgs
 3. TMPZ-112 – 19.5 – 24' bgs
 3. In addition, a number of locations indicated that the PID reading was “not measured”. This is especially evident in lower sampling intervals. Please explain the basis for this. The approved May 2005 work plan did not contemplate this.
84. Appendix B, the NDEP has the following comments:
- a. This Data Validation Summary Report (DVSR) should be revised and resubmitted under separate cover **by July 6, 2007**.
 - b. Section B2.1.8. Other Qualifications. pages B-13 to B-14 under other qualification for radiochemistries. This section references Table B-14 instead of Table B-15. Please correct the text and link.
 - c. Tables. Most of the tables present a Result column containing the result and a second sub-column with a qualifier that appears to be the lab qualifier. Please provide additional clarification as to what this qualifier means.
 - d. Tables B-5, B-7, B-8, B-9, B-10, B-11, B-12, B-14, B-15 . Each table should specify the data quality indicator and objective. (See NDEP’s letter titled *Additional Details on Requirements for DVSR* for more information.) It is important to provide this information so that the reason the data is qualified is transparent. Transparency is important so we can check accuracy and so that it is easy to evaluate usability.
 1. Table B-5. In Table B-5, “Qualifications Based on Holding Time Exceedences,” please include either the sample date or the number of days the holding time was exceeded. Each table should specify the data quality indicator and objective.
 2. Tables B-7 and B-8. In Tables B-7 and B-8, it is not clear which, if any, sample ID numbers correspond to blank samples and which sample ID numbers correspond to the samples associated with the blank contamination. The table should clearly show the results of the blanks as well as the associated samples. In cases where the sample values are censored due to blank contamination (U) and the value is near either a screening level value or may be important in comparison with the background the sample results should be included in these tables. This information needs to be provided so that the reader can understand why sample results were qualified based on blank contamination and can be used in the future with the data usability evaluation.

3. Table B-9. In Table B-9, Matrix Spike and Laboratory Control Exceedances, please provide the percent recovery results for the matrix spike and laboratory control samples that exceeded recovery limits. Also provide the recovery limits.
 4. Table B-10. Table B-10 for surrogate recovery needs information on the surrogate recoveries. Please present the percent recovery results as well as the percentile limits for the surrogates that were outside the recovery limits
 5. Table B-11. Table B-11, Tracer Yield Exceedances, should contain the tracer yields as well as the acceptable yield range for those tracer yields that were outside the acceptable limits.
 6. Table B-14. In Table B-14, please include the percent difference between the original analysis and the required ICP serial dilution with the QC limit for the metals. For the pesticides, include the percent differences between the results of the two columns with the QC limit.
 7. Table B-15. In Table B-15, information should be provided for transparency for the results qualified based on the density of the sample and LCS criterion and for the results qualified because of the MDC. (See Section B2.1.8 bullets 3 and 4.)
- e. Table B-5. In Table B-5 there is an “o” qualifier comment. The footnotes to this table state “o Comment code representing qualification of radiochemistry data for reasons specified in Table 14.” There is no Table 14 in this appendix. Please include the correct table reference.
 - f. Table B-9, page 2 of 7, Antimony, Sample ID No. TMSB-109-10. In Table B-9, page 2 of 7, the Qualifier for Antimony for Sample ID No. TMSB-109-10 is given as J, however in the data base the qualifier for this sample is given as J-. Please resolve this discrepancy in data qualifiers.
 - g. Appendix B1, XRF Summary and Findings. For several of the analytes the report states, “All the XRF reporting limits were greater than the corresponding laboratory, indicating that the XRF did not have any false negative results.” This sentence required clarification. What is “... the corresponding laboratory?” Does this refer to the corresponding laboratory reporting limit or concentration? How does an XRF reporting limit that is greater than either the laboratory reporting limit or laboratory derived concentration show there is no evidence of false negative values?
85. Appendix C, the NDEP has the following comments:
- a. Pages in this appendix are not numbered.
 - b. Introduction, 2nd paragraph, please note that groundwater characterization is broader in scope than conducting and analyzing aquifer tests.
 - c. Appendix C, Aquifer Testing Report, Field Methods states that the pumps were equipped with a check valve. Appendix A, Sampling and Analysis Plan on page 17 states that “Where practical, the pump was equipped with a check valve...” Was a check valve used for all tests and if not were there any noticeable affects on the test results?

- d. Appendix C, Aquifer Testing Report, Results – The NDEP would prefer results to be provided in consistent units, *e.g.*, for aquifer transmissivity ft²/day in lieu of gpd/ft.
 - e. Appendix C, Appendix A, Calculations. Calculations checked and appear correct.
 - f. Appendix C, Appendix B, Recovery Plots. Water level recovery curves appear very uniform. Straight line analysis method used late-time data for curve fit. All data plots and curve fit appear very reasonable.
 - g. Appendix C, Appendix D, Drawdown/Recovery Plots. All data plots look reasonable.
86. Appendix D, the NDEP has the following comments:
- a. It would be helpful if this information was summarized in a tabular form.
 - b. It is important to denote the status of this data. For example, NDEP believes that none of this data has been validated and the usability of this data is unclear. Since this data is used as the basis for a number of decisions in the CSM it is important to address these issues.

Select References

USEPA, 1989. Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response, December.

<http://www.epa.gov/oswer/riskassessment/ragsa/index.htm>

USEPA, 1992a. Guidelines for Exposure Assessment. Federal Register 51(185) CFR 34028-34031. <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=15263>

USEPA, 1992b. Guidance for Data Usability in Risk Assessment (Part A), Final. Office of Emergency and Remedial Response, April.

<http://www.epa.gov/oswer/riskassessment/datause/parta.htm>

USEPA, 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, May.

<http://www.epa.gov/superfund/resources/soil/index.htm>

USEPA, 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response, December.

<http://www.epa.gov/superfund/resources/soil/index.htm>

USEPA, 2005. Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Office of Solid Waste and Emergency Response, September. EPA530/R-05-006.

<http://www.epa.gov/epaoswer/hazwaste/combust/risk.htm>