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January 25, 2013

Mr. Matthew Higginbotham
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Cannon AFB, NM 88103-5003

RE: **Response to New Mexico Environment Department Comments**
Notice of Disapproval (*Dated September 26, 2012*)
December 2011 Annual Ground Water Monitoring Report
Melrose Air Force Range, New Mexico
USACE Contract No.: W9128F-10-D-0091, Task Order 006

Dear Mr. Higginbotham,

The New Mexico Environment Department (NMED) reviewed the *December 2011 Annual Ground Water Monitoring Report, Melrose Air Force Range, Roosevelt and Curry Counties, New Mexico* submitted to Cannon Air Force Base on January 11, 2011 and issued a Notice of Disapproval (NOD) on September 26, 2012. The document was reviewed by Ms. Lane Andrees and signed by Mr. John Kieling, Bureau Chief, Hazardous Waste Bureau.

Based on the comments and some recurrent comments, Trinity Analysis & Development Corp. (TRINITY) requested a meeting with NMED and Cannon to discuss the NOD with the intent to better understand NMED's position, prior to generating another version of the document. Personnel from Cannon Air Force Base (Mr. Matt Higginbotham) and TRINITY (Mr. Jonathan Kramer, and Mr. Richard Burdine, PG) met with personnel from NMED (Mr. Dave Cobrain, Ms. Leona Tsinnajinnie, Mr. Dan Comeau, and Ms. Neelam Dhawan) on January 10, 2013 at their office in Santa Fe, New Mexico. Based on NMED's initial comments and the discussions during our meeting on January 10, 2013, TRINITY has developed the following responses.

GENERAL COMMENTS

Comment 1:

On October 27, 2009 NMED issued a letter outlining requirements for future ground water monitoring reports at MELR. NMED subsequently issued two Notices of Disapproval (NODs) dated March 11, 2011 and August 19, 2011, respectively, for the 2010 Annual Groundwater Monitoring Report dated December 2010. These three letters described necessary changes to the presentation of data, historical data tables, well construction details table, sampling analytical suite for metals and the required sampling schedule for metals for MELR ground water monitoring and reports. Several of the requirements included in those letters were not met in either the revised

2010 GWMR or the 2011 GWMR. Incorporate comments from previous written communications in the revised 2011 Report as well as all future ground water monitoring reports and work plans. Use the NMED Position Paper *General Reporting Requirements for Routine Groundwater Monitoring Activities at RCRA Sites, February 14, 2003* as a guideline for all future ground water monitoring reports. A copy of this paper can be found on NMEDs website at this link: - http://www.nmenv.state.nm.us/HWB/data/General Reporting Requirements for%20Routine GW Monitoring.pdf

Response 1:

The 2011 Annual Ground Water Monitoring Report will be updated utilizing the NMED Position Paper *General Reporting Requirements for Routine Groundwater Monitoring Activities at RCRA Sites, February 14, 2003* as guidance. Previous NMED comments will be addressed utilizing the guidance.

Comment 2:

Appendix D Analytical Data; the laboratory reports included in the report total approximately 3,000 pages, this makes finding specific information difficult. Many of these laboratory reports are submitted in the form of Level 4 data packages. NMED does not require Level 4 data packages, Level 2 data packages from laboratory are preferred by NMED for inclusion in the reports. The Level 4 package must be stored either at the facility or contract laboratory for future reference.

Response 2:

All future submittals, beginning with the Revised *2011 Annual Ground Water Monitoring Report*, will include only Level 2 data packages with the Level 4 data available upon request.

Comment 3:

The Report contains several instances regarding the acceptability of laboratory results (see Comments 26, 27, 28). MELR is advised that re-sampling of the site may be required if data quality issues persist in future sampling events.

Response 3:

Please see Response to Comments 26, 27, and 28.

Comment 4:

Tables included in the report are difficult to read due to small font size. All tables must be legible in the revised Report and all future reports (e.g., by reducing margins, increasing font size, adjusting column widths, and adding additional pages per table).

Response 4:

Noted; all applicable tables will be revised so that they are more legible in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 5:

The Report does not contain a data table summarizing historical analytical results. NMED issued two NOD's to the Permittee for the 2010 GWMR (see Comment 1). Comment 5 of the first NOD letter dated March 11, 2011 instructed the Permittee to "[r]evise the Report to present the data in tables that allow for comparison of the results spatially through time." Comment 8 of the second NOD letter dated August 19, 2011 also instructed MELR to include data from previous sampling events. MELR's response to comments for the August 19, 2011 NOD letter states "TRINITY has pulled all available historical data into one location so that we can build on this data in the future." A table including historical analytical results is not included in the 2011 ground water monitoring Report.

Include a table summarizing historic analytical results in the revised Report and all future reports. The historic data table for analytical results must include a minimum of eight ground water sampling events (four years). NMED understands that at Melrose Air force Range, the 2009 baseline ground water monitoring event may be the earliest reliable data for the starting point for the historical tables. This is acceptable.

Response 5:

All available historical data was presented in tabular and graphical form in Appendix C of the report, albeit smaller font than desired. We have increased the font size and separated the trend graph onto a separate page as was provided in the meeting on January 10, 2013. All of the data tables will be revised accordingly.

Comment 6:

Individual Solid Waste Management Units (SWMUs) are not labeled on Figure 5 (Median Ground Water Flow Direction, 2002 to 2003 (USGS)), Figure 7 (Annual Ground Water Monitoring Well Network Locations), Figure 8 (Ground Water Flow Map 5-3-2011 to 5-16- 2011), or Figure 9 (Ground Water Flow Map 9-26-2011 to October 2, 2011) of the Report. Label all SWMUs on Figures 5, 7, 8 and 9 in the revised Report and on all relevant figures included in future work plans and reports.

Response 6:

All figures will have the SWMU's located on them in the *Revised 2011 Annual Ground Water Monitoring Report* and all future reports. Based on the NMED Position Paper a figure(s) presenting groundwater chemical analytical data for the current monitoring event should also be included. However, based on the discussion with NMED during the January 10, 2013 meeting this figure would not be necessary as there are no contaminants of potential concern (COPCs) identified, and thus to post on a figure, for Melrose AFR.

Comment 7:

Table 3 (Summary of Analytical Results (5/3/2011- 5/18/2011)) and Table 4 (Summary of Analytical Results (9/27/2011 -10/3/2011)) does not indicate if the table presents results from the annual or semi-annual sampling event. To avoid confusion, in the revised Report and all future reports, the tables must also be labeled as either the annual or semi-annual event for clarity

Response 7:

The top most row of Table 3 and 4 indicates if the table presents results from the annual or semi-annual sampling event. Additionally, Comment 32 below requests that these tables be removed from the report.

Based on the NMED Position Paper a table including remediation system monitoring data should also be included. There is no identified contamination at Melrose associated with this sampling and therefore no remediation system is required or exists. This table is not applicable and thus not included.

Comment 8:

Appendix C (Parameter Summary and Trends); on the analyte summary graphs only one well and one analyte is represented on each 1.5 inch by 3 inch graph. This makes comparison of changes in analyte concentrations vs. time between wells difficult. In the revised Report, and all future ground water monitoring reports, include one additional graph per analyte, which shows all monitoring wells on the same analyte graph for comparison purposes. This graph must be of a large enough size to be readable (e.g., 11 x 17" paper).

Response 8:

Noted; the additional graph showing all monitoring wells on the same analyte graph will be included for comparison purposes in the *Revised 2011 Annual Ground Water Monitoring Report.*

SPECIFIC COMMENTS

Comment 9:

Section 7.1.1, Background Water Quality, page 7-5, last paragraph states "[b]ased on major ion chemistry, temperature, specific conductance, and TDS, etc. it appears that the water quality associated with MWQ-23 is similar to ground water associated with the local flow system in the Impact Area ... MWQ-23 would therefore appear to be a viable option as a background well for the collection of ground water samples." According to the table General Background Water Quality-MWQ-23 on page 7-6, ground water quality indicators such as dissolved oxygen, conductivity, and sodium concentration differ by orders of magnitude between the Impact Area (MWQ8) and MWQ-23. Resolve this discrepancy in the revised Report.

Response 9:

Agreed. This has been overcome by events since TRINITY had previously requested NMEDs input on this matter in the previous two annual reports and the work plan, we proceeded to sample this well. This location was

tested in an attempt to save the USAF and the taxpayer approximately $50,000 in new well installation. However, based on review of the collected groundwater quality information from MWQ-23, we agree it does not appear to represent an ideal background water quality sampling location. In addition, no well construction details are known about this well.

A background monitoring well had initially been requested on October 27, 2009 when NMED provided a review of the *Initial Baseline Groundwater Monitoring, Melrose Air Force Range, New Mexico, June 2009* (URS, 2009). In that response NMED stated:

> *"NMED discourages including stock wells with steel casings in the Groundwater Quality Well Network, e.g., MWL-6, MWQ-4, MWQ-5, MWQ-6, MWQ-7, and MWQ-8, with the exception of MWQ-10. Although MWQ- 10 has a steel casing, it is currently the only productive well located up-gradient of the impact area.*
>
> *The Permittee must install a replacement monitoring well up-gradient of the impact area, then discontinue sampling and analysis of MWQ-10..."*

The subsequent contractor, Tidewater, Inc. was not under contract to install a background monitoring well as discussed in the *Response to Comments contained in the February 11, 2010 Notice of Disapproval to the Draft Work Plan, Groundwater Monitoring, Melrose Air Force Range, New Mexico, October 2009, (Tidewater, 2009).*

TRINITY is currently under contract to install this background monitoring well. Based on previous approval and the failed attempt to utilize existing resources, TRINITY will reiterate the agreed upon installation of MWQ-24 adjacent to MWQ-10 in the *Revised 2011 Annual Groundwater Monitoring Report.* Although TRINITY is currently funded to install this well, the original scope of work did not specify or require the need for a "Well Installation Work Plan." Dependent upon funding, which is currently being discussed with Cannon, TRINITY may submit a well installation work plan, under separate cover, to Cannon AFB for submittal to NMED. Additionally, based on NMED's comment in the October 27, 2009 review TRINITY will propose, in the *Revised 2011 Annual Groundwater Monitoring Report*, to remove MWL-6, MWQ-4, MWQ-5, MWQ-6, MWQ-7, and MWQ-8 from the monitoring network. A proposal to remove MWQ-10 from the network will not be requested until installation of the new background well has been completed.

Comment 10:

According to Table 1 (Well Construction Details) MWQ-23 is not-accessible. The "Notes" column of Table 1 indicates MWQ-23 is the new background well and according to Table 2 (Summary of Analytical Results- 2011) MWQ-23 was sampled on 5/3/11 and 9/29/11, and therefore accessible. Correct this discrepancy in the revised Report. Also, static depth to water measurements were not included on the field sampling forms for MWQ-23 for these sampling events. In the revised Report explain why depths to water (DTW) measurements were not collected at MWQ-23.

Response 10:

Ground water samples were collected from MWQ-23. NMED is correct, the well is accessible. The note on Table 1 should be more explicit and state that "*it was not possible to collect a water level from the well due to the*

construction details and having a dedicated pump system." The access plug on the steel case that normally allows for access appears fused to the well-head. Additionally, where access is possible on similarly constructed wells at Melrose AFR water level probes commonly get stuck in pump wiring and drop pipes. A more detailed discussion of well head accessibility will be included in the *Revised 2011 Annual Groundwater Monitoring Report* and all future reports. As discussed in Response 9, TRINITY will propose that MWQ-23 no longer be sampled and that the previously proposed background well be installed adjacent to MWQ-10.

NOTE: Please understand that due to the timing of receipt of these comments, decided responses, etc.....that MWQ-23 was sampled in the Fall 2012 sampling event. However, this data will be removed from the 2012 Annual Groundwater Monitoring Report to eliminate the possibility of a recurring comment.

Comment 11:

According to Table 1 (Well Construction Details) MWQ-2 is screened within the Chinle Group. On Figure 8 (Ground Water Flow Map 5-3-2011 to 5-16-2011) and Figure 9 (Ground Water Flow Map 9-26-2011 to October 3, 201[1]) MWQ-2 is being mapped with wells in the Ogallala aquifer to calculate ground water flow direction. Wells from different aquifers cannot be accurately combined on a single ground water flow map. Modify Figures 8 and 9 in the revised Report and all future reports accordingly.

Response 11:

Noted; well depths and screened intervals will be added to the groundwater elevation summary table as required by the NMED Position Paper *General Reporting Requirements for Routine Groundwater Monitoring Activities at RCRA Sites*, February 14, 2003. In addition, since we do not have or cannot obtain the original Boring Logs or Well Construction Detail forms for this well, we will not presume that any previous geologic/hydrogeologic interpolation was correct. Therefore, this well and any other wells that may or could be influenced by another aquifer will be removed from developing the ground water flow regime at Melrose.

Comment 12:

In Section 4.2, Hydrogeology, page 4-5, second paragraph, MELR states "[w]ater level contours for the unconfined Southern High Plains Aquifer indicate ground water flows predominantly to the northeast from the Mesa to the Portales Valley ... [t]he flow direction changes in the Portales Valley, indicating two flow systems are present, one local, and one regional ... [i]t appears that the direction of ground water flow reflects the contact between the Ogallala and Chinle formations ... " Section 4.2 Hydrogeology, page 4-6, second paragraph states "[r]esults of water quality analysis for samples collected ... indicate three areas or sources of different water types at Melrose APR: (1) local flow system near the Mesa and ephemeral channels, (2) local flow system in the impact area, and (3) regional flow in the Portales Valley." Section 7.1.1 Background Water Quality further states "[t]he difference in water quality is likely attributable to the upward potential/migration of ground water from the Chinle Formation." Section 7.1.4 Annual Ground water Quality Network, Page 7-19, 2nd paragraph " ... where mixing with ground water from the Chinle Formation may be occurring ... " and "The high variability of water quality, with respect to chloride, manganese, sulfate, and TDS appears to be attributable to variable degrees of "mixing" with ground water from the underlying Chinle Formation"

According to the data presented in Table 1 (Well Construction Details) the well screen intervals in wells being used for groundwater monitoring are unknown and therefore, the aquifers that the well screens intersect is also unknown. It is possible that the mixing could be occurring within wells screened across both the Chinle and Ogallala Formation, rather than upward migration of ground water from the Chinle into the overlying Ogallala.

Information such as the well screened intervals and well boring stratigraphy is crucial to a valid site conceptual model. Determine the screened intervals in each well and current total well depths for all wells being used for ground water monitoring to justify the current site conceptual model (see Comment 13).

Response 12:

TRINITY has made every attempt to retrieve well construction details (total depth, screened interval, e.g.) from the Cannon AFB/Melrose AFR Administrative Record, with limited success. The *Revised 2011 Annual Groundwater Monitoring Report* will be revised to emphasize these data gaps. NMED has suggested that in the updated 2011 Annual Report that TRINITY propose field methods (e.g. video log) for identifying well construction details, such as screened interval and total depth. In the updated *Revised 2011 Annual Groundwater Monitoring Report,* TRINITY will propose a combination of downhole video log and geophysical logs (natural gamma) to determine the total depth, screened interval, and in which formation (Ogallala or Chinle) the monitoring wells and USGS wells are installed.

As discussed in the January 10, 2013 meeting it is not practical to determine the screened interval from the livestock/irrigation wells. Additionally and as previously discussed in Response 9, based on NMED's comment in the October 27, 2009 review letter TRINITY will propose, in the revision to the *Revised 2011 Annual Groundwater Monitoring Report*, to remove MWL-6, MWQ-4, MWQ-5, MWQ-6, MWQ-7, and MWQ-8 from the monitoring network. A proposal to remove MWQ-10 from the network will not be requested until installation of the new background well has been completed.

It should also be noted that TRINITY is not currently funded to conduct additional investigations such as downhole video or geophysical logging at Melrose AFR. Dependent on funding, this work may or may not occur under TRINITY's current contract which expires in June 2013.

FIELD RELATED

Comment 13:

As discussed in Comment 12, well screened interval and total well depth is not known for several wells. MELR's response to Comment 3 from the March 11, 2011 NOD states "[d]uring the [20 11] spring Semiannual and Annual sampling event TRINITY will have more time on-site and will continue to refine/correct any discrepancies ... to confirm the well construction details." This information was not provided. Include this information in the 2012 GWMR. Section 6.4, Monitoring Network Well Inspection/Maintenance, page 6-9 states "[w]ell inspections sought to verify ... total well depth, well type completion ... etc. Well conditions ... are summarized in Table 1 ... " According to Table 1 (Well Construction Details) it appears that information regarding total well depth and well screen intervals of wells has not been further refined during the 2011 sampling events and a discussion was not provided in the 2011 GWMR regarding this matter.

Information such as depth to groundwater, total well depth, depth to top of well screen, depth to bottom of screen, screen length, and the most recent depth to ground water measurement (as opposed to ground water elevation) for all gauged wells must be included in Table 1 in the revised Report and all future ground water monitoring reports. Depth to water measurements must be collected in all accessible wells during each sampling event and included in all future ground water monitoring reports. A clear explanation must be provided in all future reports if this information is not obtained for specific wells. If this information or an explanation for omission of the data is not provided, the reports will be rejected with a requirement to submit a complete report included with the rejection. See Comment 12.

The revised Report must provide documentation of which old stock-wells are screened & which are open hole and provide documentation of well screen intervals for all wells being used for ground water monitoring (e.g., copies of field documents, boring logs, well construction records, reports). If this information remains unavailable after a thorough records search, propose field methods to identify well construction details (e.g., video log) in the revised Report.

Response 13:

See Response 12. Water levels, including depth to water below top of casing and elevation were provided in the water elevation summary table. The table will be updated to include known well construction details as previously discussed in Response 6. Data gaps will clearly be outlined in the *Revised 2011 Annual Groundwater Monitoring Report* and all future reports.

Comment 14:

Section 7.1.3.1, SWMU 114, page 7-14, bottom of page states "[g]round water quality in the immediate vicinity of SWMU 114 ... comparison to the background ground water quality at MWQ-23 is most representative." According to Table 1 (Well Construction Details) the well screen information and total depth of the well is currently unknown. To determine whether MWQ-23 is representative of the hydrogeologic conditions at SWMU 114 the total depth of the well and well screen intervals must be determined (see Comments 12 and 13). This information must be determined in order to continue using MWQ-23 as a background well. Include this information in the 2012 groundwater monitoring report. Revise this statement accordingly in the revised Report.

Response 14:

See Response 9, 12 and 13. TRINITY agrees MWQ-23 does not meet the criteria for a background well and will proceed with preparations to install the previously approved location adjacent to MWQ-10, pending funding for a Well Installation Work Plan, etc.

Comment 15:

In Section 6.3, Ground Water Elevation Measurements, page 6-9 no detail is given on how ground water elevation measurements were obtained from wells containing dedicated pumps. Include a description of water elevation measurement methods for wells with dedicated pumps and identify the wells that contain dedicated pumps. Table 5 (Ground Water Levels) contains several blank cells, it is not clear if this indicates that a ground water

measurement was not obtained or why no measurement was taken. Depth to water measurements must be collected in all accessible wells during each sampling event and included in all future ground water monitoring reports. A clear explanation must be provided in all future reports if this information is not obtained for specific wells. If this is not included in the reports, the reports will be rejected (see Comment 13). Revise Table 5 to indicate the meaning of blank cells and explain why ground water measurements were not obtained for these wells in the footnotes. Additionally, MWQ-23 is not included on Table 5 Ground Water Levels; revise Table 5 to include MWQ-23.

Response 15:

A general discussion of methods for collecting ground water levels will be included in the *Revised 2011 Annual Groundwater Monitoring Report* and Table 5 will be updated to exclude blanks cells and include clear descriptions of why a water level could not be collected. Please note that Melrose AFR is an active military bombing and training range and that access to portions of the range is commonly restricted or limited. Additionally, water levels are not typically collected from wells with integral plumbing due to the high likelihood that the water level tape will become entangled in the electrical wiring. A more detailed discussion of well access issues will be included in the updated *Revised 2011 Annual Groundwater Monitoring Report.*

Comment 16:

Table 1 (Well Construction Details) includes an incomplete explanation (key). Include the entire key with Table 1. Table 2 (Summary of Analytical results- 2011) has no key. Revise Table 2 to include a key. The key on Table 5 (Ground Water Levels) does not indicate what units the measurements are in or what the blank cells indicate. Revise Table 5 to define units and the significance of blank cells. Include the revised tables in the revised Report.

Response 16:

Noted; based on NMED's comments all tables will be revised in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 17:

Section 6.3, Ground Water Elevation Measurements, page 6-9, first paragraph states "[t]he probes were decontaminated before use, between wells, and at the conclusion of measurement activities." The Report does not indicate whether the water level indicator tape was decontaminated in the same manner. Include this information in the revised Report.

Response 17:

Noted; the text will be more explicit in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 18:

Section 6.1.1, 2011 Semiannual Spring-Ground Water Quality Network, page 6-4, first paragraph following the table and Section 6.1.3 2011 Semiannual Fall-Ground Water Quality Network, page 6-7, first paragraph after the table state "[a]ll monitoring wells were sampled within the screened interval." This statement is unsupported. According to Table 1 (Well Construction Details) the well screen information is currently unknown. Resolve this.

Response 18:

The text will be revised to state something along the lines that "Due to the lack of definitive screen intervals on the majority of wells, an assumption was made based on industry standards that the monitoring well screens are located at the bottom 5, 10, 15 or possibly 20 feet of the wells. Therefore, to try to obtain as representative of a sample as possible, TRINITY installed the sampling pumps to a depth within 5 feet of the bottom of the well." In addition, the data gaps will be clearly defined in the *Revised 2011 Annual Groundwater Monitoring Report.*

Comment 19:

Section 8.0, Conclusions/recommendations, page 8-4, third bullet states "[l]ow-flow sampling techniques were previously proposed for several wells within the Annual Ground Water Quality Network that are used for cattle stock water supply and are installed within subsurface vaults ...it is not possible to adjust the flow rate at the well head ...it was necessary to sample these wells first by evacuating a well volume and then collecting well stabilization parameters." Identify which wells were sampled in this manner in the revised Report.

Response 19:

Noted; this will be made very explicit in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 20:

The last sentence of Section 7.3, Well Condition Inspection/Maintenance, page 7-22, second paragraph, last sentence states "[a]dditional wells previously identified as open were also properly secured." Explain specifically which wells were found open in the revised Report

Response 20:

Noted; this will be made very explicit in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 21:

Section 8.0, Conclusions/recommendations, bottom of page 8-1, third bullet, MELR states "[s]everal wells are currently being utilized for the collection of water levels but have not been surveyed; these wells include MWL-11, MWQ-11, MWL-12, MWQ-12, and MWQ-13. The addition of these wells to ground water flow determinations would be beneficial." NMED concurs. The Permittee must prepare a work plan to survey the

locations and well casing elevations for these wells plus a minimum of five selected other wells (currently included in potentiometric surface mapping) to verify that the previous survey data is valid for the wells used for potentiometric surface mapping. The work plan must be submitted to NMED no later than December 3, 2012.

Response 21:

Based on conversations between Cannon AFB and NMED in late 2012, it was agreed that a Work Plan for the surveying of the wells was not necessary. All accessible wells were surveyed on December 4, 2012. The results and details of the survey will be submitted to Cannon under separate cover for submittal to NMED. Since we have the new survey data available prior to finalizing the *Revised 2011 Annual Groundwater Monitoring Report,* TRINITY is proposing inclusion of the new top of casing elevations, well locations, etc. and re-creating all appropriate figures that utilize this information. This will be clearly explained in the text and the Survey Report submittal will be referenced.

Comment 22:

In Section 6.1.1, 2011 Semiannual Spring- Ground Water Quality Network, Page 6- 4, last paragraph and Section 6.1.2, 2011 Annual Spring- Ground Water Quality Network, page 6-7, last paragraph, MELR has apparently inserted the section of the approved work plan detailing field procedures to be performed rather than describing the field activities that were actually performed. For example: future tense is used rather than past tense on both pages 6-4 & 6-7 stating " ... the spigot closest to the pump will be opened ... [s]tabilization parameters will then be collected ... " Also when describing purging and sampling activities for MWQ-23 in both sections on the same pages the Permittee states "[i]ncorporating maximum expected well and tank parameters purge volume of approximately 100 gallons." According to the Ground Water Sampling Logs provided in Appendix A(Field Data) 84.00 gallons were purged from MWQ-23 during the May 2011 sampling event and 49.22 gallons were purged from MWQ-23 during the September 2011 sampling event. In the revised Report and all future report the Permittee must describe what actually took place during field activities.

Response 22:

Noted; the *Revised 2011 Annual Groundwater Monitoring Report* will provide a detailed accounting of what and how the field activities were completed with proper verb tense.

Comment 23:

In Section 7.1.4, Annual Ground Water Quality Network, page 7-20, third paragraph, perchlorate results for the annual (spring) sampling event are discussed; however, the results are not included on the associated table on page 7-19. In the revised Report include the perchlorate results in this table.

Response 23:

Noted; TRINITY will ensure that the perchlorate results are included in all appropriate tables in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 24:

In Section 6.2, Investigative Derived Waste, page 6-8, last paragraph states "TRINITY has submitted copies of the laboratory data to NMED ... " This is not correct; TRINITY submitted laboratory results to CAFB, who in turn submitted them to NMED via email correspondence on March 28, 2012. Correct this section in the revised Report

Response 24:

Noted; based on NMED's comment the text will be revised appropriately in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 25:

In Section 7.0, Monitoring Results, page 7-2, 3rd and 4th paragraphs, top of page 7-3 through 2nd paragraph, MELR discusses the rationale for collecting samples for both dissolved and total metals analyses. RCRA regulations require the determination of total metal concentrations. Comment 5 from the February 11, 2010 Final Work Plan NOD requires the Permittee to "analyze both total and dissolved RCRA metals [and include] total and dissolved (TAL) metals [in] the year 2010 and every sixth year thereafter (i.e., 2016, 2022 and so on)." This was reiterated in Comment 4 from the August 19, 2011 Second NOD. Because total and dissolved metals were collected as required in 2010 and collected again in 2011, the Permittee is not required to collect samples for dissolved metals until 2016. Analyses for total metals must continue to be collected each year.

Response 25:

We appreciate NMED pointing this out in the attempt to minimize the Air Forces overall monitoring costs. However, it is TRINITY's advice to Cannon AFB that scientifically it would be in their best interest to collect enough total and dissolved data to be able to develop a trend for each per well. For the minimal additional cost, this information can be useful in planning well redevelopment schedules, analyte reduction proposals, etc.

Comment 26:

Section 7.1.2.1, Holding Times, page 7-7, bullet number 1 (Annual Spring (SDG 2112050426)) states "MWQ-4, MWQ-5, MWQ-5-DUP, MWQ-6, and MWQ-7 were received within the 24-hour holding time but were not processed through receiving prior to expiration of the holding time. Accordingly the sample results were estimated "J" or estimated non-detect "UJ." No explanation is given for the 24- hour holding time, which doesn't correlate with normal holding times for metals, or what methods/analyses were affected. In the revised Report provide an explanation which includes specific information (e.g., were samples preserved or unpreserved, were containers glass or plastic, what analyses were being performed) as well as a discussion on the implications the qualified results has on the conclusions of the Report. See Comment 3.

Response 26:

The analyte (hexavalent chromium) is provided in the first sentence of bullet one. On page 6-3 of the 2011 Annual Report there is an inserted table titled "Appropriate Sample Containers, Preservatives, and Holding Times." To comply with the previously approved sampling requirements it is necessary to analyze hexavalent chromium by colorimetric method EPA 7196A which doesn't typically allow for preservative; therefore, there is a 24-hour hold time. Due to the remoteness of the range, location of appropriately certified laboratories, etc., it is not possible to collect, pack, and ship samples from Melrose AFR and NOT exceed the 24-hour hold time. TRINITY has proposed an alternative methodology (EPA Method 218.6) in the past that allows for preservation and longer (28-days) hold times. For a more detailed discussion on hold time issues associated with hexavalent chromium please refer to: http://water.epa.gov/scitech/methods/cwa/questions-cr6.cfm.

In the *Revised 2011 Annual Groundwater Monitoring Report,* TRINITY will include additional discussion on the implications that the missed holding times has on the quality and reliability of the data. Additionally, in the *Revised 2011 Annual Groundwater Monitoring Report,* TRINITY will identify this as a data gap or issue that needs to be reconciled in the future. Based on our meeting with NMED on January 10, 2013, the annual monitoring plan is supposed to be updated each year and this is where it is appropriate to request changes to the monitoring program. TRINITY is not currently funded to recommend utilizing alternative methodology that allows for longer hold times.

Comment 27:

In Section 7.1.2.1, Holding Times, page 7-8, bullet number 2 (Annual Fall (SDG 2110928048)) MELR states "[r]ecovery of the surrogate analyte in samples MWQ-23, MA01- MW002, MW114MW002 and MW114MW003 exceeded lower acceptance criteria." This statement is also repeated in Section 7.1.2.3, Surrogate Compounds, page 7-12, third bullet (2011 Annual Fall (SDG 2110928048)). MELR does not state which analysis this statement references. Specify which methods and surrogate analyte(s) did not meet acceptance criteria and discuss the implications this has on the quality of data presented in the revised Report. See Comment 3.

Response 27:

Noted; based on NMED's comment the text will be revised appropriately in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 28:

Section 7.1.4, Annual Ground Water Quality Network, Page 7-19, third paragraph, MELR states "[a]luminum (total) has been detected in two of the 14 wells sampled during the 2011 Annual sampling event at concentrations above the screening criteria." According to the analytical results presented in Table 3 (Summary of Analytical Results (5/3/2011 - 5/18/2011)) 24 wells were sampled in the Spring (Annual) sampling event and ten wells were sampled in the Fall (Semi-Annual) sampling event; aluminum (total) was detected at concentrations above screening criteria in samples collected from three of the 24 wells during the spring (Annual) sampling event and

in two of the ten wells during the fall (Semi-Annual) sampling event. Correct this error in the revised report. See Comment 3.

Response 28:

Noted; however, Comment 32 requests that these tables be removed. Table 3 and Table 4 will be removed from the *Revised 2011 Annual Groundwater Monitoring Report.*

Comment 29:

According to Section 7.1.2, Suitability of the Data, pages 7-7 through top of page 7-14, laboratory data was qualified for various reasons (see Comments 27 & 28, above) Identification of these data quality qualifications does not appear on analytical results tables in the report. In the text of the revised Report include a description of sample collection and analytical methods. MELR must also revise the analytical results table(s) to include footnotes which indicate which data are qualified and the type of data qualification. Include the modified tables in the revised Report.

Response 29:

Noted; the tables will be revised in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 30:

Section 7.1.4, Annual Ground Water Quality Network, bottom of page 7-19 and top of page 7-20, MELR states "[t]he only exceedance for antimony is in MWQ-20, which as previously discussed has been excluded from this discussion based on its installation in the Chinle formation." This is incorrect, antimony also was detected at concentrations above screening criteria in the ample collected from MA01MW002 during the annual sampling event. Correct this error in the revised report.

Response 30:

Noted; based on NMED's comment the text will be revised appropriately in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 31:

In Section 8.0, Conclusions/recommendations, page 8-4, first bullet the Permittee states "[d]uring the Fall 2011 sampling event thallium was analyzed using a MDL slightly higher than the screening guideline. Future testing will attempt to utilize a lower MDL." MELR must utilize MDLs that are lower than the associated screening levels for all analytes in all future monitoring events.

Response 31:

Noted; this will be clarified and pointed out as a data gap or deficiency that needs to be rectified in future sampling events

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Comment 32:

Table 3 (Summary of Analytical results (5/3/2011-5/18/2011)) and Table 4 (Summary of Analytical results (9/27/2011-10/3/2011)) are redundant, the data is already concisely presented in Table 2 (Summary of Analytical results-2011). Remove Tables 3 and 4 from the revised Report.

Response 32:

Noted; Tables 3 and 4 will be removed from the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 33:

On Table 2 (Summary of Analytical Results- 2011) the columns listing sampling dates for M114MW002 are reversed. Correct this error in the revised Report.

Response 33:

Noted; the table will be revised in the *Revised 2011 Annual Ground Water Monitoring Report.*

Comment 34:

The table (Summary of Water Quality Test Events) on page 5-3 does not have an explanation for the symbols "x" and"---", which are used in the table. Include a definition for these symbols in the footnotes for this table in the revised Report.

Response 34:

Noted; definition of these symbols will be included in the footnotes of the Revised *2011 Annual Groundwater Monitoring Report.*

Comment 35:

MWQ-23 is not included in the table (Summary of Water Quality Test Events) on page 5-3. MWQ-23 was gauged and sampled during the annual and semiannual 2011 sampling events; therefore, MWQ-23 must be added to this table in the revised Report

Response 35:

MWQ-23 is included in the table (Summary of Water Quality Test Events) on page 5-3. However, in the *Revised 2011 Annual Groundwater Monitoring Repor,* it will be denoted on this table and within the text that this well was sampled to determine its value as a possible background well, however based on review of multiple sampling events it does not appear to be a viable location for background groundwater quality data collection. It will be clearly identified, as previously discussed in responses above, that this is a data gap and the originally proposed background well near MWQ-10 will be pursued.

Comment 36:

On Figure 10 (Generalized Cross Sections), the key identifies the Blackwater Draw Formation with dashed lines; however, the labels on the cross sections identify the Blackwater Draw Formation with a stippled pattern. Correct this discrepancy in the revised Report.

Response 36:

Noted; the figure will be revised in the *Revised 2011 Annual Ground Water Monitoring Report.*

If you have any questions or need further assistance, please do not hesitate to contact me at 850-613-6800.

Respectfully,

TRINITY Analysis & Development Corp.

Richard L. Burdine
Senior Vice President