

APPENDIX A

Statement of Work (USACE)

PERFORMANCE WORK STATEMENT

Fort Wingate Depot Activity Task Order 0007 to W912PP-11-D-0024

Interim Facility Wide Ground Water Monitoring Plan Annual Updates and Revisions 2012 & 2013

Project Objectives

The *contractor* shall revise and update the Fort Wingate Depot Activity (FWDA) Interim Facility Wide Ground Water Monitoring Plan (GMP) for calendar years **2012** and **2013** in accordance with the Installation's Resource Conservation and Recovery Act (RCRA) Permit No. (NM 6213820974), Sections V and VIII.B.1. The Installation (Permittee) is required to revise and update its GMP annually within 90 days after each anniversary date of the effective date of this permit. NMED will review the revised Interim Plan under the procedures in Permit Section VII.L.3 [20.4.1.500 NMAC (incorporating 40 CFR 264.101)].

Background Information

The Secretary of the New Mexico Environment Department (NMED) issued this Permit to the United States, Department of the Army, the owner and operator of Fort Wingate Depot Activity (FWDA) (the Facility) (EPA ID No. NM6213820974) located in McKinley County, New Mexico.

Section V of the permit requires the Permittee to implement an NMED-approved Interim Facility-Wide GMP. The Plan shall provide for interim ground water monitoring for the entire facility prior to implementation of long-term monitoring. When preparing the Interim Plan, the Permittee shall consult with the Navajo Nation and Pueblo of Zuni according to the provisions of Permit Section VIII.B.1. [20.4.1.500 NMAC (incorporating 40 CFR 264.101)]

The initial 2008 FWDA Interim Facility-Wide GMP was developed by the U.S. Army Corps of Engineers (USACE), Fort Worth District. The Plan describes the proposed groundwater monitoring that would be conducted as part of the environmental restoration program at FWDA. The document was prepared and submitted to the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) for review and approval, as required by Section V.A of Resource Conservation and Recovery Act (RCRA) Permit, No. NM 6213820974.

The initial 2008 GMP incorporated subsequent annual updates and revisions for 2009, 2010, and 2011 as mandated by the permit. The revisions were based on an analysis of historic groundwater monitoring data, Data Quality Objectives (DQOs) assessments, sampling data and information provided by the USACE, and previous investigations.

1. Details of Performance

The *contractor* shall provide all the labor, materials, and equipment required to revise and update the 2011 Interim Facility-Wide GMP. The revisions and updates shall be in accordance with the permit provisions and shall include but not be limited to the following work products and deliverables:

- a) The *contractor* shall submit a Project Specific Abbreviated Health and Safety Plan.
- b) The *contractor* shall conduct an initial site visit of the installation Solid Waste Management Units (SWMUs), Areas of Concern (AOC), and monitoring well locations.
- c) The *contractor* shall conduct a civil survey of nine wells as part of the 2012 GMP, in accordance with ER 1110-2-1150.
- d) The *contractor* shall revise/update the GMP to reflect the **2012** calendar year updates/revisions and submit them to POCs as outlined in Section 4 (Submittals) for review. The *contractor* shall submit the following GMP versions for review:
 1. Army Draft
 2. Tribal Draft
 3. Final
- e) The *contractor* shall respond to reviewer's comments and incorporate subject comments into the GMP as deemed appropriate, for each of the versions listed above and for the Optional Revised Final if needed.
- f) The *contractor* shall submit a Final GMP approved by USACE with a USACE furnished cover Letter to NMED for review and approval by proposed project timelines.
- g) The *contractor* shall submit an **Optional Revised Final** to address NMED Notice of Deficiencies (NOD) if needed.
- h) The *contractor* shall revise/update the GMP to reflect the **2013** calendar year updates/revisions and complete requirements d through g listed above.

1.1 References

1.1.1 FWDA's RCRA Permit EPA ID No. NM 6213820974.

1.1.2 NMED Position Paper: "Use of Low-Flow and Other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring."

- 1.1.3 Department of Defense Quality Systems Manual (QSM) including the National Environmental Laboratory Accreditation Conference (NELAC) Standard, Chapter 5 component.
- 1.1.4 Example “Plans” provided by the USACE Albuquerque District.
- 1.1.5 CADD and GIS Shapefiles
- 1.1.6 1981 Environmental Survey of FWDA 9 2-3
- 1.1.7 Groundwater Investigations at Building 6 UST Area 10 2-3
- 1.1.8 1997 Remedial Investigation/Feasibility Study Report and RCRA Corrective 11 Action Program Document 2-4 12
- 1.1.9 1998 Minimum Site Assessment Report 13 2-5
- 1.1.10 1999 RCRA Interim Status Closure Plan – Open Burning/Open Detonation 14 Area Phase IB Report 2-5 15
- 1.1.11 OB/OD Groundwater Monitoring – 1999 to 2005 16 2-6
- 1.1.12 2001 RCRA Facility Investigation Report of the TNT Leaching Beds Area 17 2-7
- 1.1.13 2002 Phase I RFI Report for Buildings 600 and 542 18 2-8
- 1.1.14 2005 Groundwater Investigation Report of the Eastern Landfill 19 2-8
- 1.1.15 2006 Administration and TNT Leaching Beds Areas Supplemental 20 Groundwater Characterization Report 2-8 21
- 1.1.16 2010 Parcel 11 RFI 22 2-9
- 1.1.17 2010 Parcel 22 RFI 23 2-10
- 1.1.18 Semi-Annual RCRA Groundwater Monitoring Reports and Updated 24 Groundwater Monitoring Plans

2. Site Specific Scope of Work

The initial 2008 Interim Facility-Wide GMP was approved by the NMED to include the subsequent annual updates and revisions for 2009, 2010, and 2011. The contractor shall revise and update the 2011 Interim GMP based on analyses of historic monitoring data, DQOs assessments, sampling data and information provided by the USACE, and previous investigations. These NMED approved plans shall be used as a reference and as a guide for the **2012 and 2013 GMPs**. The 2012 revision shall be a complete re-write of the plan. Previous monitoring shall be used as guidance only. Revisions and updates shall be in accordance with permit Section V and the provisions of Permit Section VIII.B.1. [20.4.1.500 NMAC (incorporating 40 CFR 264.101)]

2.1 Task 1 :Abbreviated Project Specific Abbreviated Health and Safety Plan (HASP) - The **contractor** shall submit a Project Specific Abbreviated Health and Safety Plan in accordance with EM 385-1-1. All field activities shall be coordinated through the USACE Project Technical Lead (PTL) and/or Contracting Officer Representative (COR). **Contractor** personnel conducting OB/OD site visits will be escorted by a USACE qualified Ordnance and Explosives Safety Specialist.

2.2 Task 2: Site Visit - The **contractor** shall conduct and initial site visit of the FWDA Solid Waste Management Units (SWMUs), Areas of Concern (AOC), and groundwater monitoring well locations, including well locations in the OB/OD area.

2.3 Task 3: Civil Survey - The *contractor* shall conduct a civil survey of nine wells as part of the 2012 GMP, in accordance to ER 1110-2-1150 and submit the survey report to the USACE PTL before proceeding with the subsequent tasks. The survey shall be conducted by a New Mexico State licensed surveyor.

2.4 Task 4: Revise and Update 2012 GMP – The *contractor* shall revise/update the GMP to reflect current conditions and include any other planned or anticipated changes within the 2012 calendar year. The *contractor* shall also provide the USACE with their recommendations to enhance the GMP. The revisions shall be based on analyses of historic groundwater monitoring data, Data Quality Objectives (DQOs) assessments, sampling data and information provided by the USACE, and previous investigations. The *contractor* shall use the 2008 and 2011 GMPs as templates for the 2012 GMP. The contractor shall submit the 2012 Interim GMP to the Points of Contact (POCs) as listed in Section 4 (Submittals) and in accordance with project schedule, Section 2.7 (Project Delivery Schedule). **The USACE COR will provide the contractor with a cover letter, on Department of Army letterhead, for all GMP versions submitted to reviewers and NMED. The contractor shall be aware that the USACE is responsible for coordinating with the Tribes, NMED, and all other agencies listed in Section 4.0 Submittals, for all issues and correspondence related to this work.** The *contractor* shall submit the following versions for review:

- a. Army Draft for review to POCs as outlined in Section 4. 1.1 (Army Draft).
- b. Tribal Draft for review to POCs as outlined in Section 4. 1.2 (Tribal Draft).
- c. Final to NMED and POCs as outlined in Section 4. 1.3 (Final) for review and comment.

The *contractor* shall prepare a written response to all comments received by the reviewers as outlined in Section 4 (Submittals) for each version listed above. Response to comments shall be reviewed and approved by the USACE before *contractor* proceeds with revisions/corrections. It shall be assumed that the comments will only require minor corrections and/or revisions to text, tables and figures.

2.5 Task 5: Revise and Update the 2013 GMP - The *contractor* shall revise/update the GMP to reflect current conditions and include any other planned or anticipated changes within the 2013 calendar year and fulfill the requirements outlined in Tasks 4.

2.6 Option 1 - Optional Revised Final GMP 2012 - The *contractor* shall submit an Optional Revised Final that addresses NMED Notice of Deficiencies (NOD) if needed.

2.7 Option 2 - Optional Revised Final GMP 2013 - The *contractor* shall submit an Optional Revised Final that addresses NMED Notice of Deficiencies (NOD) if needed.

2.8 Option 3 - Revise and Update the 2014 GMP - The *contractor* shall revise/update the GMP to reflect current conditions and include any other planned or anticipated changes within the 2014 calendar year and fulfill the requirements outlined in Tasks 4.

2.9 Option 4 - Revise and Update the 2015 GMP - The *contractor* shall revise/update the GMP to reflect current conditions and include any other planned or anticipated changes within the **2015** calendar year and fulfill the requirements outlined in Tasks 4.

2.10 2012 & 2013 Project Deliverables Schedule - The following 2012 & 2013 GMP schedule for delivery of the work items is in calendar days. The contractor shall note that the 2012 schedule on a request to NMED for extension to the RCRA Permit Schedule.

Item	Work Description	Due Date
1	Submit Draft Abbreviated Health and Safety Plan	13-Apr-2012
2	Respond to USACE comments and submit Final Abbreviated Health and Safety Plan	27-Apr-2012
3	Site Visit	30-Apr-2012
4	Perform Civil Survey of Nine Groundwater Monitoring Wells	7-May-2012
5	Submit Survey Report	18-May-2012
6	Revise/update 2012 GMP and submit Army Draft to reviewers as outlined in Section 4.1 Army Draft	21-May-2012
7	Respond to comments received from reviewers. When approved by USACE, submit revised version in accordance with Section 4 of the SOW	1-Jun-2012
8	Revise/update 2012 GMP and submit Tribal Draft to reviewers as outlined in Section 4.2 Tribal Draft	4-Jun-2012
9	Respond to comments received from reviewers. When approved by USACE, submit revised version in accordance with Section 4 of the SOW	3-Jul-2012
10	Submit Final, USACE-approved 2012 GMP Plan to NMED	6-Jul-2012
11	Revise/update 2013 GMP and submit Army Draft to reviewers as outlined in Section 4.1 Army Draft	14-Sep-2012
12	Respond to comments received from reviewers. When approved by USACE, submit revised version in accordance with Section 4 of the SOW	28-Sep-2012
13	Revise/update 2013 GMP and submit Tribal Draft to reviewers as outlined in Section 4.2 Tribal Draft	5-Oct-2012
14	Respond to comments received from reviewers. When approved by USACE, submit revised version in accordance with Section 4 of the SOW	16-Nov-2012
15	Submit Final, USACE-approved 2013 GMP Plan to NMED	21-Dec-2012

3. General

3.1 Points of Contact

The Contracting Officer Representative (COR) for the USACE, Albuquerque District, is Mr. Michael T. Goodrich at telephone number 505-343-6290 or e-mail michael.t.goodrich@usace.army.mil

The Project Technical Lead (PTL) for the USACE, Albuquerque District, is Mr. David Henry at telephone number 505-342-3139 or e-mail David.W.Henry@usace.army.mil.

The Alternate PTL for the USACE, Albuquerque District, is Mr. Ismael Delgado at telephone number 505-343-6274 or e-mail ismael.delgado@usace.army.mil

3.2 Safety

All work shall be conducted with the HASP requirements and in accordance with the requirements in EM 385-1-1, Safety and Health Requirements manual, dated 15 September 2008 and all applicable updates on the date of solicitation.

3.3 Travel

The **contractor** shall perform all necessary travel as part of the contract requirements, and the cost thereof shall be included in the contract price.

3.4 Contractor Project Manager

The **contractor** shall appoint a Project Manager to serve as a single point of contact and liaison between the **contractor** and the Contracting Officer and/or his representative(s) during the execution of the task order. The **contractor's** Project Manager shall be responsible for coordinating the work performed under this task order and ensuring work will be accomplished with technical accuracy and minimal conflicts, errors, and omissions. The **contractor** shall immediately furnish the name of the designated individual in writing to the Government's COR upon award of the task order.

3.5 Review of Progress and Technical Adequacy

At appropriate times, representatives of the Contracting Officer (KO) may review the progress and technical adequacy of the work. Such review shall not relieve the **contractor** from performing all contract requirements.

3.6 Government Furnished Information and Documents

- Cover Letters for all GMP versions submitted to reviewers as listed in Section 4.0 Submittals. **The contractor shall be aware that the USACE is responsible for coordinating with the Tribes, NMED, and all other agencies listed in Section 4.0 Submittals, for all issues and correspondence related to this SOW.**
- The *contractor* will be provided with a link to a USACE share point for access to references listed in Section 1.1 and for the contractor to place electronic copies of all documents associated with this SOW.

3.7 Progress Charts

Upon award of the task order, the *contractor* shall prepare a progress chart to show the proposed schedule for completion of the tasks identified in this scope of work. The progress chart shall be prepared in electronic format (PDF preferred) and submitted for approval. The actual progress shall be updated and submitted by the 15th of each month and may be included with the request for payment. Progress charts shall be revised to reflect modifications and other approved changes in scheduling in such a manner to permit easy tracking of any schedule revisions.

3.8 Progress Reports

The *contractor* shall submit electronic progress reports on a monthly basis to USACE. The progress reports shall indicate work performed and problems incurred during the time period. The *contractor*, under this contract, shall interpose no objection or restriction to the Contracting Officer's designation of another Contractor for the purpose of reviewing the adequacy and correctness of the work performed under this contract.

3.9 Conference Calls

The *contractor* shall participate in regularly scheduled TBD conference meetings with the USACE COR and PTL. The meetings will be held by telephone conference call to update all parties on work progress. The conference call phone number and pass code will be provided by the government. The *contractor* shall document these meetings per Section 3.10 of this Scope of Work. The *contractor* shall plan on an approximate number of six (6) 1-hr conference calls to discuss work progress.

3.10 Conference or Meeting Notes

The *contractor* shall be responsible for taking notes and preparing the notes for all conference or meetings. Conference and meeting notes shall be prepared in typed form and the original furnished electronically to the USACE PTL within five days after date of conference/meeting for concurrence prior to distribution to all attendees. The notes shall include the following items as a minimum:

- a. The date and place the conference/meeting was held with a list of attendees. The roster of attendees shall include each attendee's name, organization, and telephone number.

b. Description of all discussions and action items identified at the meeting.

3.11 Confirmation Notices

The **contractor** shall be required to provide a record of all discussions, verbal directions, telephone conversations, etc., participated in by the **contractor** and/or their representatives on matters relative to this contract and the work, irrespective of whom the other participants may have been. These records, entitled "Confirmation Notices," shall be numbered sequentially and shall fully identify participating personnel, subject discussed and any conclusions reached. The **contractor** shall forward a reproducible copy of said confirmation notices to the USACE Project Manager as soon as possible (not more than five work days). Distribution of said confirmation notices shall be made as necessary.

3.12 Access to Installation Solid Waste Management Units and Areas of Concern

The **contractor** shall coordinate with the USACE PTL or Alternate PTL before any on-site activities (site visits) are conducted.

3.13 USACE Property

All materials gathered and developed in the performance of this work shall be the property of the U.S. Army Corps of Engineers (USACE) and shall not be used or distributed by the **contractor** without specific permission from the Contracting Officer.

3.14 Contact with Regulatory Agencies

All contacts with Tribal, Federal and/or State regulatory agencies shall be coordinated by the USACE PTL or Alternate Leads. This includes all correspondence to these agencies relevant to this SOW.

3.15 Public Affairs

The **contractor** shall not make available to the news media or publicly disclose any data generated in the performance of this work without specific approval from the Government. When approached by the news media, the **contractor** shall refer them to the USACE PTL for response and coordination. USACE PAO shall have the responsibility to coordinate responses to news media inquiries.

3.16 Authorities

No person other than the Government Contracting Officer has the authority to make any changes to this contract action that impact cost or schedule. Authority from the Contracting Officer to the **contractor** to make changes will be in the form of an official, signed modification.

4. Submittals

4.1 Submittals

A letter of transmittal shall accompany each project deliverable to USACE. The letter shall reference the project by title and location and include the contract and task order number, as will the cover sheet of each submittal. The letter of transmittal shall certify that all documents have undergone Quality Control review by the **contractor** and coordinated prior to submittal. The letter shall also include a listing of material being submitted. Submissions to other agencies shall have a Army cover letter, on Department of the Army letterhead, in the quantities indicated to each office as designated in the following Section 4 Submittals distribution list. Submittals shall be furnished directly to the following addresses via a carrier service that shall provide overnight service.

4.1.1 **Army Drafts** - Copies of the Preliminary Draft shall be submitted to the following POCs for review and comments

- a. U. S. Army Corps of Engineers, Albuquerque District (1 hard copy, 1 electronic copy):
ATTN: Mike Goodrich
4101 Jefferson Plaza NE
Albuquerque, NM 87109
- b. U. S. Army Corps of Engineers, Albuquerque District (2 hard copies, 1 electronic copy):
ATTN: David Henry
4101 Jefferson Plaza NE
Albuquerque, NM 87109
- c. Mike Kipp
U.S. Army Environmental Center (1 hard copy, 1 electronic copy):
SFIM-AEC-ERA

5179 Hoadley Rd.
APG (EA), MD 21010-5401

- d. Mark Patterson
FWDA BRAC Environmental Coordinator (1 hard copy, 1 electronic copy):
Ravenna Army Ammunition Plant
Building 1037, 8451 State Route 5
Ravenna, OH 44266
- e. Bill O'Donnell (1 electronic copy):
Program Manager
Dept of Army DAIM-ODB
Taylor Building
2530 Crystal Drive, Room 5064A
Arlington, VA 22202
- f. Steven Smith (1 hard copy, 1 electronic copy):
CESWF-PER-D, Room 3B06
819 Taylor Street
Fort Worth, Texas 76102
817/886-1879

The *contractor* shall prepare written responses to address reviewers' comments using a table format. Once the response to comments is approved by the USACE PM, the *contractor* shall make changes and provide a copy to the POCs listed above and to the reviewers listed in 4.1.2 Tribal Draft.

4.1.2 Tribal Draft - Copies of this Draft shall be submitted to the following POCs for review and comments

- a. All POCs listed in 4.1.1 (First Distribution)
- b. Darrell Tsabetsaye (1 hard copy, 8 electronic copy):
Attn: Governor's Office
P.O. Box 339
1203B State Hwy 53
Zuni, NM 87327
Phone 505-573-3122
- c. Tony Perry (1 hard copy, 7 electronic copies):
Navajo Nation Wingate Project Coordinator
Navajo Nation Division of Economic Development
100 Taylor Road
Saint Michael, AZ. 86511

- d. Clayton Seoutewa (1 hard copy, 1 electronic copy):
BIA Zuni Agency
P.O. Box 369
1203B State Hwy 53
Zuni, NM 87327

The *contractor* shall prepare written responses to address reviewers' comments using a table format. Once the response to comments is approved by the USACE PM, the *contractor* shall make changes and provide a copy to the POCs listed above and to the reviewers listed in 4.1.3 Final Draft.

4.1.3 Final Draft - Copies of this Draft shall be submitted to the following POCs for review and comments (1 hard copy, 1 electronic copy):

- a. All POCs listed in 4.1.1 (First Distribution) and 4.1.2 (Second Distribution list)
- b. John Kieling (2 hard copies, 2 electronic copies):
New Mexico Environment Dept., HWB
2905 Rodeo Park Drive, East, Bldg. 1
Santa Fe, NM 87505-6303
505-428-2552
- c. Chuck Hendrickson (1 hard copy, 1 electronic copy):
U.S. EPA, Region 6
NM & Federal Facilities Section
1445 s Ave., Suite 1200
Dallas, TX 75202-2733
- d. ***To Be Determined*** (1 electronic copy):
Chief, Division Real Estate Services
Bureau of Indian Affairs
Central Office
1849 C Street NW, MS4639-MIB
Washington, D.C., 20240
- e. Micki Gonzales (Admin Record) (1 hard copy, 1 electronic copy):
Ft. Wingate Army Depot
7 Miles East of Gallup, Bldg. 1
Ft. Wingate, NM 87316
- f. Steven Smith (1 hard copy, 1 electronic copy):
CESWF-PER-D, Room 3B06
819 Taylor Street

Fort Worth, Texas 76102

- g. Rose Duwyenie (1 hard copy, 2 electronic copies):
BIA/NRO/DECSM
Gallup Federal Building Room 116
301 West Hill
Gallup, NM 87301
- h. Chuck Hendrickson (1 hard copy, 1 electronic copy):
U.S. EPA, Region 6
NM & Federal Facilities Section (6PD-F)
1445 Ross Ave., Suite 1200
Dallas, TX 75202-2733
- i. Pat Ryan (1 electronic copy):
Science Applications International Corporation
151 Lafayette Drive (or P.O. Box 2501)
Oak Ridge, TN 37830

The *contractor* shall prepare written responses to address reviewers' comments using a table format. Once the response to comments is approved by the USACE Technical or Alternate Leads, *contractor* shall make changes and provide a copy to the POCs listed above and to the NMED. The USACE will provide a cover letter for NMED submission.

The *contractor* shall submit an **Optional Revised Final** that addresses NMED Notice of Deficiencies (NOD) if needed. Copies of this version shall be provided to the POCs listed in 4.1.3 Final Draft.

4.1.4 Submittal Format - Unless otherwise stated, reports shall be prepared in a standard format using as template the 2008 & 2011 GMP. All site drawings shall be of engineering quality with sufficient detail to show interrelations of major features on the site map (i.e., north arrows, keys, scales, etc.). When drawings are required, data may be combined to reduce the number of drawings. Reports shall consist of 8-1/2" by 11" pages with drawings folded, if necessary, to this size in a 3-ring binder. Both draft and final reports shall be submitted single-spaced – only revised pages need be reissued. Reports covers shall be of durable quality to hold pages firmly while allowing easy removal, addition, or deletion of revised pages. In addition to the paper copies, electronic copies shall be provided on CD in PDF format.

4.2. Schedule (based on calendar days, not working days)

The **contractor** shall prepare and submit a proposed schedule for this project within 10 days of contract award to the USACE Technical or Alternate Leads for review and approval. The proposed schedule will be provided in PDF format electronically to the reviewers listed in Section 4.1 Submittals above.

The schedule will be updated as needed and provided with the progress report described in Section 3.8. Upon award of one or more of the options, the **contractor** shall prepare a proposed schedule that includes the option(s) within 10 days of Contract Award for review and approval.

5. Period of Performance

The period of performance for the base scope of work shall be for 365 days from the date of Task Order Award for Base Tasks. The period of performance will be re-evaluated when and if an option is exercised.

6. Contract Payments/Milestone Achievement

The **contractor** shall submit monthly invoice(s) once a Milestone Achievement report is provided by the KO, with an acceptable or higher performance rating, (see attached QASP Section 4.0) to include estimates for the value of each task performed/detailed narrative description of work being billed to the USACE Finance Center in Millington, TN as required per the contract, upon receipt of acceptable MAR. A copy of this invoice shall be forwarded to the USACE COR.

The price for each of the tasks described on the Price Schedule shall include all costs (including project management costs) and profit pertaining to that particular task. The Contractor may invoice for partial performance of a task (including partial performance of any unit-priced task) when that task is being performed in compliance with all applicable contract requirements in a manner found acceptable by the Government, and the amount due for any such partial performance (for purposes of FAR § 32.906, Making Payments, and the clause at FAR § 52.232-1, Payments) shall be subject to approval by the Contracting Officer Representative, based on the recommendation of the USACE PTL. The Contractor shall submit for approval and payment by the Government no more than once per month. For purposes of determining whether an invoice has been properly submitted, the USACE PTL shall be responsible for determining whether any task has been completed or is being completed in compliance with all applicable contract requirements and what percentage of the task has actually been completed. However, the Contractor shall remain responsible for Quality Control and maintaining an inspection system, as specified in the contract.

Invoices shall include all necessary information, including any necessary supporting documentation, and shall be submitted to:

Department of the Army
US Army Corps of Engineers Finance Center
5722 Integrity Drive
Millington, TN 38054-5005

Alternatively, a scanned copy can be sent to the following email address:

CEFC-L4invoices@usace.army.mil

Copies of all invoices shall be submitted to the USACE COR at the following address:

US Army Corps of Engineers
Albuquerque District
ATTN: Michael T. Goodrich
4101 Jefferson Plaza NE
Albuquerque, NM 87109

APPENDIX B

Response to Comments

(To be submitted with Final)

**ARMY DRAFT, 2015 INTERIM MEASURES FACILITY-WIDE
GROUNDWATER MONITORING PLAN, VERSION 8
FORT WINGATE DEPOT ACTIVITY, MCKINLEY COUNTY, NM
COMMENT RESPONSE TABLE
DATED 13 NOVEMBER 2014**

Comment Number	Page No./Line No.	Comment	Recommendation	Response: Michelle Wilson, Innovar Environmental, Inc. & Rachel Hobbs, CB&I January 30, 2015
<i>CESWF-PEC-TM- Angie Lane</i>				
1	General Comment	All documents shall be written from the perspective of the Army writing to the stakeholders and not the Contractor writing to the Army.	For example, Section 1 has several places where the text needs to be updated to correct for this.	Concur (C)- document revised as requested.
2	SF298 / pdf page 2	The SF298 page in the electronic document is missing a lot of text.		C- change made as requested
3	SF298	The Report Date in box 1 should match the report date on the cover and title page. The SF298 shows 13 October 2014 but the cover and title page are 13 November 2014.		C- change made as requested
4	SF298	Box 3 – Dates covered should be filled in. Box 15 – Subject terms should be filled in such as “groundwater monitoring plan.”		C- change made as requested
5	SF298	Box 18 should be the total number of pages of the pdf – 4048 (may change with updated submittals); Box 19a should be Mark Patterson; Box 19b should be 330/358-7312. (Perspective of the Army writing to the stakeholders and not the Contractor writing to the Army.)		C- change made as requested
6	Document Distribution	I see that the specific people are listed in the PWS for distribution. I’m not sure if the groundwater monitoring plan goes by a different list but the most recent update of the list is 1 October 2014. I see that there are some changes that are necessary such as the two SPA people but may need changes such as taking out Mike Kipp and	The most recent update of the Distribution List came out 1 October 2014. Check to see if the distribution list in the Army Draft report should be	C- distribution list updated.

**ARMY DRAFT, 2015 INTERIM MEASURES FACILITY-WIDE
GROUNDWATER MONITORING PLAN, VERSION 8
FORT WINGATE DEPOT ACTIVITY, MCKINLEY COUNTY, NM
COMMENT RESPONSE TABLE
DATED 13 NOVEMBER 2014**

		adding “FWDA Admin Record” and “Admin Record – OH.”	updated accordingly.	
7	ES-4 / 19	Change “...to be removed. (for that specific parameter) from the sampling program...” to “...to be removed (for that specific parameter) from the sampling program...”	Remove punctuation in middle of sentence.	C- change made as requested.
8	TOC / i / after Executive Summary	Recommend including FIGURES; TABLES; APPENDICES; and ACRONYMS AND ABBREVIATIONS in the Table of Contents.		C-change made as requested
9	vii	Change “ACRONYNMS” to “ACRONYMS.”		C-change made throughout document
10	2-1 / 31	Change “semi-annually” to “semi-annual.”		C-change made as requested
11	2-3 / 23	Change “While a majority of the wells is sampled...” to “While a majority of the wells are sampled...”		C-change made as requested
12	4-1 / 31 and 4-2	Add a superscript number or symbol by the “Analytical Method” column header and add a note at the end of the table stating “The most current recently published versions of the methods will be used.” Analytical Method 8015B has an updated version 8015C, 8081A has an updated version 8081B, and 6020B should be changed to 6020A since there is no updated version 6020B.		C-change made as requested
13	4-13 / 9	A water blank of the source rinsate water for the equipment rinsate blanks should also be included. A water blank of the decon water should be added for each water source used for decontamination collected prior to initiating decontamination procedures. Update throughout report as necessary.		C- added to section 4.3.1 and 4.4.
14	5-2 / 25	Text needs to be aligned to the left.		C- change made as requested.
15	Table 5-1	Change “EPA HHMSSL” to “EPA RSLs for Tapwater”		C- Tables have been updated as

**ARMY DRAFT, 2015 INTERIM MEASURES FACILITY-WIDE
GROUNDWATER MONITORING PLAN, VERSION 8
FORT WINGATE DEPOT ACTIVITY, MCKINLEY COUNTY, NM
COMMENT RESPONSE TABLE
DATED 13 NOVEMBER 2014**

		to correspond with the RSL language as used on page 5-4. Update notes at the end of the table accordingly.		requested.
16	5-5 / Develop a Decision Rule section	A description of which screening level is used for data comparison and why should be included in this section as is done at the end of Table 5-1. (If both an NMWQCC standard and an EPA MCL have been established for a contaminant, the more conservative value will be compared against. If no NMWQCC standard or EPA MCL have been established, the EPA RSL for Tapwater will be compared against.) It should also be noted that the most recently published version of the screening levels must be used.	Update throughout the report and tables as necessary.	C- added as new section.
17	General Comment	The most recently published version of the EPA RSLs is currently dated November 2014.	Update throughout the report and tables as necessary.	C- Report and Tables will be updated with the most recent version of the EPA RSLs as requested
18	5-6 / Optimize the Design section	Change “1. NMED and EPA-approved sampling methods will be used...” to “1. The most recently published versions of NMED and EPA-approved sampling methods will be used...”		C- change made as requested.
19	5-6 / 32	The USACE EM 200-1-3 has been rescinded and replaced with the DoD Environmental Field Sampling Handbook, Rev. 1.0, dated April 2013.		C- change made as requested and also in the References section.
20	5-6 / 34 through 5-7 / 4	This language is outdated and needs to be replaced with the following: “All laboratory analysis will be performed by independent analytical laboratories that maintain DoD Environmental Laboratory Accreditation Program (ELAP) accreditation. In addition to DOD ELAP	Since there is no site-specific UFP-QAPP, data validation would be in accordance with the most current version of the DOD QSM and EM 200-1-10,	C-changed as requested.

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		accreditation, the laboratory shall hold current accreditation for all appropriate fields-of-testing in the State of New Mexico. This is usually accomplished by the laboratory holding a current National Environmental Laboratory Accreditation Program (NELAP) accreditation for all appropriate fields-of-testing. Proof of current accreditation / certification for the applicable fields of testing is required prior to the laboratory acceptance of any samples. Analytical results will be validated in accordance with the most current versions of the DOD QSM and EM 200-1-10, June 2005.”	June 2005. The EPA NFGs are applicable to EPA projects under the CLP program. This project is not using a CLP laboratory and the NFGs do not apply to review of the project data.	
21	5-11 / 21	Change “...were suspended due munitions...” to “...were suspended due to munitions...”		C- change made as requested.
22	5-11 / 23	Remove the “..][..” in the middle of the sentence.		C- change made as requested.
23	5-12 / 8	Table 5-9 shows both QA samples and QC samples. Change “QA” to “QA and QC.”		C- change made to “field duplicate and triplicate (if applicable)”
24	5-13 / 1	Table 5-10 shows both QA samples and QC samples. Change “QA” to “QA and QC.”		C- change made to “field duplicate and triplicate (if applicable)”
25	5-13 / 21 through 33	See comment 20 and update this section.		C- revised the Data Validation Section as requested.
26	5-14 / 36 through 38	Change to “Analytical data generated for FWDA shall be subjected to 100 percent Stage 2a validation with 10 percent subjected to Stage 4 validation.”		C-change made as requested.
27	5-15 / 1	Delete “Standard EPA.”		C-change made as requested.
28	5-15 / 3	Change “...MDL and the limit of quantitation” to “...DL and the limit of quantitation (LOQ)”		C-change made as requested.
29	5-15 / 13	Change to “Actual DLs, limits of detection (LODs) and/or the LOQs, as applicable;”		C-change made as requested.
30	Table 5-8	Update the analytical method numbers per comment 12		C- Table 5-8 has been updated

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		and note that the most current recently published versions of the methods will be used. Change “Perchlorate (6850)” to “Perchlorate (6860)” based on the table in section 4.2 and the discussion in the executive summary.		as requested
31	Table 5-9 and 5-10	The preservation requirements language should be updated to “Cool to $\leq 6^{\circ}\text{C}$ ” in the table. Update the analytical method numbers per comments 12 and 30 and note that the most current recently published versions of the methods will be used.		C- Tables have been updated as requested
32	References	Add the reference for EM 200-1-10.		C- change made and references were updated.
33	General Comment	In any future PWS’s, the requirement for a Uniform Federal Policy for Quality Assurance Project Plan (UFP-QAPP) prepared as an appendix must be included. The UFP-QAPP shall follow the Uniform Federal Policy for Quality Assurance Project Plans, Final, Version 1, March 2005 using the optimized UFP-QAPP worksheets and the most recent version of the DoD QSM.		Noted.
34	Appendix C data tables	No notes are at the end of the data tables defining qualifiers, DL, MDL, etc. Is MDL in the tables actually the LOQ/RL? Per the DOD QSM, non-detects should be reported to the LOD if available in the laboratory data packages. Recommend including the DL, LOD, and LOQ/RL in all of the previous investigation data tables where possible.		C- the column labeled “MDL” in Appendix C will be updated to clarify which qualifier it represents. We will also investigate to see if additional qualifiers can be added to Appendix C.
35	General Comment	Since there is no QAPP, a table should be included showing all analytes, the screening level they each will be compared to, the reference for the screening criteria, and the DL, LOD, and LOQ for each. This would need to be done for both the primary laboratory and the QA		C- this will be added to the Data Validation section.

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		laboratory.		
36	General Comment	<p>The following items should be included in the plan:</p> <ul style="list-style-type: none"> *The specific laboratories (primary and QA) to be used; *Project organization chart showing lines of authority and lines of communication; *measurement performance criteria needs to be added in terms of precision, bias, and sensitivity for both field and lab measurements (such as precision of field duplicates – $RPD \leq 30\%$ or accuracy/bias of equipment blanks – no target analytes $\geq \frac{1}{2}$ LOQ, etc.); and *project action limits and lab specific detection limits per comment 35. 		C- These elements will be added to the Data Validation section.
		No further comments.		

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<i>Commenter – USACE, SPA, David Henry, PG</i>				
<i>Respondent – Michelle Wilson, Innovar Environmental, Inc. & Rachel Hobbs, CB&I</i>				
1	General Comment	Reference the Permit as December 2005 (Revised April 2014)		Concur (C)- added the dates to both the Executive Summary and Section 1. From that point on the permit was referenced as “the Permit”.
2	Doc Distribution	Remove Mike Kipp from future document Add Admin Record Drafts Add Rich Cruz	Review current document distribution	C- entire Document Distribution table was updated.
3	ES-1/5	hyphenate NMED and HWB (throughout document)		C- updated throughout
4	ES-4/11	Sampling activities may continue through 2015	Please call for clarification	C- changed to “First, sampling activities for the OB/OD area may resume if the munitions removal activities are completed. The munitions removal activities have encountered schedule delays and the date of completion is unknown but conceivably could be complete within the 2015/2016 sampling schedule. Therefore, OB/OD sampling activities will resume at an unknown date once clearance has been granted for the area.”
5	ES-4/16	Use the abandonment letter as a reference for approval to abandon these wells. Also include TMW32 and TMW41.	If while excavating the TNT leaching beds, the excavation encroaches these wells, they will have to be abandoned.	C- Changed to “Secondly, six wells are scheduled for abandonment in 2015 as approved by NMED in a letter dated April 18, 2014. These wells are: Wingate 89, Wingate 90, Wingate 91, FW26, TMW32, and TMW41. They will be removed from the sampling program.”
6	1-1/14	There may still be ongoing MEC clearance in the OB/OD area. If so, the	See comment 3	C- changed to read “Version 8 revises the previous GMP, Version 7 submitted January

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		moratorium will continue until we are cleared to sample.		2014, to reflect the current site conditions: potentially resuming sampling activities at the OB/OD area and removing Wingate 89, Wingate 90, Wingate 91, and FW26 from the sampling program due to well abandonment (approved by NMED in a letter dated April 18, 2014).”
7	1-1/14 & 15	See comment 4		C- Changed to “Version 8 revises the previous GMP, Version 7 submitted January 2014, to reflect the current site conditions: potentially resuming sampling activities at the OB/OD area and removing Wingate 89, Wingate 90, Wingate 91, FW26, TMW32, and TMW41 from the sampling program due to well abandonment (approved by NMED in a letter dated April 18, 2014).”
8	1-2/4	The 2008 interim plan was not the only plan approved. I believe through 2010, plans were reviewed and approved.		C- Changed to “The original 2008 GMP was approved by NMED and subsequent plans have been submitted annually.”
9	2-1/21	Are the 500 bunkers the igloos? If so, they are not bunkers. They are referred to as earth covered igloos. And there are more than 500.		C- Changed to “Facilities at FWDA include 732 earth-covered igloos located throughout the post, two former open burn/open detonation (OB/OD) areas, a workshop area, and various mission-support service structures located in the administration area.”
10	2-2/10	This bullet discusses earth covered igloos. See comment above. This is probably more accurate than what is written on the previous page.		
11	2-7/ 6 &9	Space needed between ¶		C-
12	2-9/23	I don’t recall a reference document TtNUS. Please check to make sure this		Reference confirmed.

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		is accurate.		
13	2-9/27&28	As for the detects in EMW02 & 03, indicate that these were below or above any regulatory levels. The landfill is closed out because there were no issues and want to make sure that we are consistent.		C- distinction will be added.
14	3-6/24&25	Does this also include the Zuni Pueblo?		According to the NM Office of the State Engineer, the Gallup Underground Water Basin includes a large area along the NM-AZ border from T21N through T03S. This includes the Zuni Pueblo. Zuni Pueblo will be added to list.
15	4-17/27	QA split by USASE may be collected, but it's not a requirement in the permit. These splits are only done when the government decides to check the contractor's laboratory quality. In other words, either remove it, or state that these may be collected for the reasons noted above. However, the contractor is required to collect duplicate samples at a 10% frequency.		C- Revised to "Field duplicate samples will be collected at a frequency of one per 10 environmental samples. QA split samples may be completed at the government's discretion to check the contractor's laboratory quality performance."
16	5-10/23	If VOCs are in Cat 1, how can they also be in Cat 2?		Some analytes are defined as different categories in different areas of FWDA. See comment 22 for more detailed explanation. Added "Note: Some analytes are defined as different categories in different areas of FWDA. See Tables 5-4, 5-5, and 5-6 for the specific areas/constituent category
17	5-11/3	If explosives and VOCS are in Cat 1, how can they also be in Cat 3? For this comment and for the above comment, these must be other constituents that appear less frequently, but it is confusing.		

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				assignments.” After the 1 st paragraph of 5.3.1.2.
18	5-11/23	Refer to the comment related to sampling in the OB.OD area. Sampling may not resume in 2015.	Call me for clarification	C- Changed to “Once sampling clearance is granted groundwater sampling, collection of parameters, and measuring of groundwater elevations will resume. “
17	5-11/23	Remove the brackets]]		C
18	6-1	Refer to comments related to sampling in the OB/OD area in 2015.		C- Changed to “Groundwater samples from the Northern Area of FWDA will be collected semi-annually in April and October. If clearance is granted for the OB/OD area, sampling activities will resume.”
19	Figure 2-5	Well 26 is not abandoned yet.		C- This figure has been revised to show that FW26 is still in-place
20	Figure 2-3 and 2-5, and 3-1	There are no piezometers shown on any of the maps.	We need to talk about this because they are measured every quarter.	C-Concur, piezometers have been added to these figures.
21	Tables	Regarding 1-4 Dioxane, these were not real. I would like to flag them as suspect.		C-These analytes will be marked with an asterisk and a note will be included explaining the uncertainties with the data
22	Table 5-5	Regarding RDX. How can this be in this table if it is also a Cat 1. Same thing for VOCs.		RDX is classified as a Category 1 analyte for the OB/OD Area (detected >15% frequency and exceeds minimum screening levels), but it is classified as a Category 2 Analyte for the Northern Alluvial and Northern bedrock Areas (detected <15% frequency but exceeds minimum screening levels). Likewise, there are VOCs that are detected as category one analytes in one area, but are category two analytes in another area. For example Toluene is a Category one analyte in the Northern Bedrock area (detected 24% frequency

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				and exceeds screening level), but it is a Category 2 Analyte in the Northern Alluvial Area
23	Table 5-6	Cat 3, how can explosive be CAT 1 and 3. Same for VOCs.		Please see response to comment 22. Some analytes are defined as different categories in different areas of FWDA.
24	Table 5-8	Question. Does this table change what we currently sample. In other words, are we changing the sampling program?	It okay to propose a change, I just need to know what the difference is between last year and this year. And if there is a change, we need to explicitly request it in the plan. We need to talk about this comment.	C- Table 5-8 has been updated to show where changes have been made since the previous groundwater monitoring work plan.
From email	ES	I notice the ES says that OB/OD wells will be sampled. This is not true. OB/OD area clearance activities are still ongoing.	State something like, "when sampling activities can be resumed, this sampling program will commence in the OB/OD at the earliest opportunity".	C-changes made as shown in comments 6 and 18.
From email		I noticed in a couple of places that you have abandonment of wingate 89, 90, and 91, and FW26 pending NMED approval. Please reference this letter as approval from NMED rather than pending.		C
From email	Document Distribution	Outdated list.	Use list attached in Email	C- updated to match list provided.
From teleconference	Title	There will not be a Tribal Draft version of the document. Proceed to producing a Final.		C
From phone call 1/23/2015		Change sampling schedule for Northern Area Wells to annual		C- will add a recommendations section to include annual sampling for Northern Area Wells and include new changes in sampling parameters

APPENDIX C

Previous Investigation Data

- Appendix C-1: Historic Sampling Data Forms
- Appendix C-2: Analytical Data and Data Results Matrix

APPENDIX D

Site Safety and Health Plan

APPENDIX E

Field Forms

- Groundwater Sampling Field Data Sheet
- Purge volume and annular space worksheet
- FWDA Water Level Measurements
- FWDA Water Level Measurements- USGS Piezometers
- Tailgate Safety Meeting & Job Safety Analysis

FWDA Water Level Measurements- USGS Piezometers

ID	Ground Elevation (msl)	Stick-Up (ft)	TOC Elevation ID (msl)	JUL 2013 DTW (ft- btoc)	JUL 2013 Water Level (msl)	OCT 2013 DTW (ft- btoc)	OCT 2013 Water Level (msl)	Comments/Observations
USGS PIEZOMETERS								
PZ01	6674.71	2.581	6677.29					
PZ02	6672.50	2.454	6674.95					
PZ03	6676.86	2.581	6679.44					
PZ04	6674.17	2.506	6676.68					
PZ05	6671.53	2.623	6674.15					
PZ06	6673.29	2.751	6676.04					
PZ07	6682.38	2.150	6684.53					
PZ08	6684.11	2.697	6686.81					
PZ09	6651.12	2.495	6653.61					
PZ10	6654.83	2.436	6657.27					

ft-btoc: Feet Below Top of Casing
 msl: Mean Sea Level
 DTW: Depth to Water
 TOC: Top of Casing
 ft: Feet

FWDA Water Level Measurements

Well ID	Casing Diameter (in)	Well TD (ft-btoc)	Screened Interval (ft bgs)	Screen Length (in)	TOC (ft- msl)	Purge Method	Dedicated Pump?	DTW April 2013 (ft-btoc)	DTW July 2013 (ft-btoc)	DTW October 2013 (ft-btoc)	Comments/Observations
OB/OD Area Monitoring Wells											
CMW02	2.0	37.90	25.0-35.0	10.0	7258.00	ZIST Low Flow	YES	18.91			
CMW04	2.0	137.91	115.0-135.0	20.0	7251.15	ZIST Low Flow	YES	47.32			
CMW06	2.0	18.60	8.3-18.3	10.0				BURIED	BURIED	BURIED	
CMW07	2.0	66.60	44.0-64.0	20.0	7235.16	Trad. Low Flow	YES	44.89			
CMW10	2.0	73.10	50.5-70.5	20.0	7179.31	Hand Bail	NO	66.05			
CMW14	2.0	96.75	84.2-94.2	10.0	7153.06	ZIST Low Flow	YES	34.32			
CMW16	2.0	31.80	20.0-30.0	10.0				BURIED	BURIED	BURIED	
CMW17	2.0	54.24	32.0-52.0	20.0	7145.18	12-Volt pump	NO	23.82			
CMW18	2.0	54.10	32.0-52.0	20.0	7158.24	Trad. Low Flow	YES	43.17			
CMW19	2.0	51.30	33.5-48.5	15.0	7129.85	ZIST Low Flow	YES	28.30			
CMW20	2.0		2.5-5.5	3.0	7194.68			DAMAGED	DAMAGED	DAMAGED	
CMW21	2.0		57.0-67.0	10.0	7088.19			BURIED	BURIED	BURIED	
CMW22	2.0	120.23	96.5-116.5	20.0	7081.94	Hand Bail	NO	114.59			
CMW23	2.0	106.60	84.0-104.0	20.0	7035.58	Hand Bail	NO	97.58			
CMW24	2.0	262.34	230.0-260.0	30.0	7099.68	ZIST Low Flow	YES	45.32			
CMW25	2.0	98.78	71.0-96.0	25.0	7007.52	Trad. Low Flow	YES	37.32			
FW24	4.0		33.5-48.5	15.0	6999.19			DRY			
FW38	2.0		ND	ND	7172.02			DRY			
KMW09	2.0	72.90	60.0-70.0	10.0	7187.93	ZIST Low Flow	YES	41.19			
KMW10	2.0	171.02	158.0-168.0	10.0	7131.38	Hand Bail	NO	DRY166.74			
KMW11	2.0	57.44	35.0-55.0	20.0	7108.78	Trad. Low Flow	YES	33.45			
KMW12	2.0	75.49	53.0-73.0	20.0	7193.08	Bennett Pump	YES	49.57			
KMW13	2.0		32.0-52.0	20.0				53.55			
Northern Area Monitoring Wells - Alluvial											
BGMW01 ₁	2.5	34.00	12.5-32.5	20.0	6692.68	Trad. Low Flow	YES	18.76			
BGMW02 ₁	2.5	34.20	13.5-33.5	20.0	6691.99	Trad. Low Flow	YES	20.87			
BGMW03 ₁	2.5	30.90	8.5-28.5	20.0	6680.57	Trad. Low Flow	YES	15.82			
FW26	4.0		11.0-31.0	20.0				DRY	DRY	DRY	
FW31	4.0	52.00	10.0-50.0	40.0	6832.49	12-Volt pump	NO	42.13			
FW35	4.0	32.15	10.0-30.0	20.0	6711.11	12-Volt pump	NO	24.78			
MW01	2.0*	54.80	33.6-53.6	20.0	6685.94	Hand Bail	NO	42.09			
MW02	2.0	49.45	37.0-47.0	10.0	6685.22	Hand Bail	NO	39.46			
MW03	2.0	56.20	43.0-53.0	10.0	6689.53	Trad. Low Flow	YES	45.95			
MW18D	2.0	59.90	47.0-57.0	10.0	6686.32	Trad. Low Flow	YES	43.00			
MW18S	2.0		27.0-37.0	10.0				38.60			

FWDA Water Level Measurements

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Well ID	Casing Diameter (in)	Well TD (ft-btoc)	Screened Interval (ft bgs)	Screen Length (in)	TOC (ft- msl)	Purge Method	Dedicated Pump?	DTW April 2013 (ft-btoc)	DTW July 2013 (ft-btoc)	DTW October 2013 (ft-btoc)	Comments/Observations
MW20	2.0	59.40	47.0-57.0	10.0	6687.67	Trad. Low Flow	YES	44.98			
MW22D	2.0	58.70	47.0-57.0	10.0	6684.55	Hand Bail	YES	41.81			
MW22S	2.0	43.54	31.0-41.0	10.0	6684.69	Trad. Low Flow	NO	41.78			
MW23	2.5	134.00	63.5-133.5	70.0	6654.50	Bennett Pump	YES	15.01			
MW24	2.5	68.50	16.0-66.0	50.0	6657.08	Bennett Pump	YES	19.03			
SMW01	2.0	52.15	29.9-49.9	20.0	6669.94	Trad. Low Flow	YES	29.89			
TMW01	2.0	61.23	44.0-59.0	15.0	6711.84	Trad. Low Flow	YES	37.62			
TMW03	2.0	72.06	49.8-69.8	20.0	6702.43	Trad. Low Flow	YES	56.94			
TMW04	2.0	72.36	50.0-70.0	20.0	6700.86	Trad. Low Flow	YES	56.31			
TMW06	2.0	57.24	45.0-55.0	10.0	6690.63	Trad. Low Flow	YES	46.91			
TMW07	2.0	67.37	65.0-75.0	10.0	6690.47	Hand Bail	NO	46.95			
TMW08	2.0	62.41	30.0-60.0	30.0	6680.31	Trad. Low Flow	YES	36.72			
TMW10	2.0	61.8	28.0-58.0	30.0	6680.04	Trad. Low Flow	YES	36.31			
TMW11	2.0	82.68	55.0-80.0	25.0	6718.28	Trad. Low Flow	YES	66.91			
TMW13	2.0	73.78	60.7-70.7	10.0	6707.49	Trad. Low Flow	YES	60.05			
TMW15	2.0	76.65	56.0-71.0	15.0	6713.89	Trad. Low Flow	YES	64.47			
TMW21	2.0	61.43	48.0-58.0	10.0	6695.14	Trad. Low Flow	YES	50.56			
TMW22	2.0	65.23	52.0-62.0	10.0	6691.74	Hand Bail	NO	48.63			
TMW23	2.0	59.57	46.0-56.0	10.0	6687.66	Hand Bail	NO	45.42			
TMW24	2.0	55.41	44.0-54.0	10.0	6680.42	Trad. Low Flow	YES	38.48			
TMW25	2.0	55	42.5-52.5	10.0	6672.88	Trad. Low Flow	YES	38.88			
TMW26	2.0	58.24	45.0-55.0	10.0	6677.71	Trad. Low Flow	YES	27.11			
TMW27	2.0	73.26	60.0-70.0	10.0	6668.13	Trad. Low Flow	YES	27.99			
TMW28	2.0	50.3	37.0-47.0	10.0	6689.17	Trad. Low Flow	YES	18.81			
TMW29	2.0	61.65	49.0-59.0	10.0	6702.88	Hand Bail	NO	57.28			
TMW31S	2.0	62.85	50.0-60.0	10.0	6710.20	12-Volt Pump	NO	36.81			
TMW33	2.0	60.65	37.0-57.0	20.0	6686.60	12-Volt Pump	NO	43.51			
TMW34	2.0	60.01	37.0-57.0	20.0	6687.29	Trad. Low Flow	YES	45.63			
TMW35	2.0	57.31	35.0-55.0	20.0	6686.52	Trad. Low Flow	YES	43.60			
TMW39S	2.0*	55.5	32.5-52.5	20.0	6708.61	Hand Bail	NO	35.14			
TMW40S	2.0*	62	50.0-60.0	10.0	6706.40	Hand Bail	NO	60.21			
TMW41	2.0*	67.8	55.5-65.5	10.0	6705.21	Hand Bail	NO	40.44			
TMW43 ₁	2.5	79.6	58.0-78.0	20.0	6698.63	Trad. Low Flow	YES	53.27			
TMW44 ₁	2.5	66.2	43.5-63.5	20.0	6697.31	Hand Bail	NO	52.53			
TMW45 ₁	2.5	61.8	38.5-58.5	20.0	6689.00	Hand Bail	NO	47.65			

FWDA Water Level Measurements
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Well ID	Casing Diameter (in)	Well TD (ft-btoc)	Screened Interval (ft bgs)	Screen Length (in)	TOC (ft- msl)	Purge Method	Dedicated Pump?	DTW April 2013 (ft-btoc)	DTW July 2013 (ft-btoc)	DTW October 2013 (ft-btoc)	Comments/Observations
TMW46 ₁	2.5	60.7	38.5-58.5	20.0	6680.98	Hand Bail	NO	43.95			
TMW47 ₁	2.5	105.6	82.5-102.5	20.0	6701.88	Trad. Low Flow	YES	46.10			
Northern Area Monitoring Wells - Bedrock											
EMW01	2.0	120.7	105.0-120.0	15.0	6718.38	Trad. Low Flow	YES	79.93			
EMW02	2.0	108.4	93.0-108.0	15.0	6702.49	Trad. Low Flow	YES	32.09			
EMW03	2.0	92.9	78.0-93.0	15.0	6701.09	Trad. Low Flow	YES	29.50			
EMW04	2.0	115	100.0-115.0	15.0	6708.30	Bennett Pump	YES	101.10			
TMW02	2.0	84.09	67.9-81.9	14.0	6705.35	Trad. Low Flow	YES	55.50			
TMW14A	2.0	112.1	94.25-109.25	15.0	6723.54	ZIST Low Flow	YES	64.07			
TMW16	2.0	142.2	123.0-138.0	15.0	6714.15	Bennett Pump	YES	55.98			
TMW17	2.0	130.45	112.0-127.0	15.0	6719.89	ZIST Low Flow	YES	62.56			
TMW18	2.0	160.7	150.0-160.0	10.0	6713.49	Bennett Pump	YES	54.92			
TMW19	2.0	187.97	169.0-184.0	15.0	6700.52	Bennett Pump	YES	42.64			
TMW30	2.0	46.65	35.0-45.0	10.0	6714.59	12-Volt pump	NO	40.12			
TMW31D	2.0	107.03	77.0-107.0	30.0	6710.44	12-Volt pump	NO	37.05			
TMW32	2.0	139.1	117.0-137.0	20.0	6709.31	Trad. Low Flow	YES	39.32			
TMW36	2.0	154.35	132.0-152.0	20.0	6699.04	Bennett Pump	YES	26.95			
TMW37	2.0	110.7	88.0-108.0	20.0	6713.09	Bennett Pump	YES	45.51			
TMW38	2.0*	115.02	118.9-158.9	40.0	6706.79	Trad. Low Flow	YES	46.61			
TMW39D	2.0*	102.77	70.0-100.0	30.0	6708.61	Trad. Low Flow	YES	34.32			
TMW40D	2.0*	158.13	135.0-155.0	20.0	6706.15	Trad. Low Flow	YES	32.00			
TMW48	2.0*	93.55	71.0-91.0	20.0	6709.84	Trad. Low Flow	YES	35.55			
TMW49	2.0*	62.17	40.0-60.0	20.0	6714.71	Trad. Low Flow	YES	43.60			
Wingate 89	8.0			No Data	6663.69	Low Flow	YES	15.14			
Wingate 90	8.0			No Data	6656.49	Low Flow	YES	13.40			
Wingate 91	8.0			No Data	6659.74	Low Flow	YES	14.14			

TD- Total Depth
bgs- below ground surface
TOC- top of casing
btoc- below top of casing
ft- feet
msl- mean sea level

1. New monitoring well installed during the late winter/early spring of 2012

*Indicates a discrepancy in reported casing diameter from data sources. Casing diameter as listed reflects most recent field sampling forms.



Tailgate Safety Meeting
&
Job Safety Analysis

Project Name _____ PM: _____

Location: _____ SSHO: _____

Project Number _____ SUXOS: _____
(OPTIONAL)

Weather: _____ Date: _____ Time: _____

Activities to be performed: _____

Hazards Related to Task(s): _____

Equipment Used _____

Additional Safety Topics or Discussions: _____

SIGNATURES

Print Organization Sign

GALLONS PER FOOT OF ANNULAR SPACE

(assuming 30% porosity)

Well Casing Diameter (in)	Bore-hole Diameter (in)				
	4	6	8	10	12
2	0.15	0.39	0.73	1.17	1.71
4		0.24	0.59	1.03	1.57
6			0.34	0.78	1.32

GALLONS PER LINEAR FOOT OF CASING

Well Casing Diameter (in)	Gallons per foot
2	0.1632
3	0.3672
4	0.6528
5	1.0200
6	1.4688
8	2.6110
10	4.0797
12	5.8748

STABILIZATION RANGES

- Dissolved Oxygen (+/- 10%)
- Turbidity (+/- 10%)
- Specific Conductance (+/- 3%)
- Temperature (+/- 10%)
- pH (+/- 0.5 unit)
- Redox Potential (+/- 10 mV)

APPENDIX F

Department of Defense Quality Systems Manual for Environmental Laboratories

APPENDIX G

NMED Guidance Documents

- *“Use of Low-Flow and Other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring”*
- *“General Reporting Requirements for Routine Groundwater Monitoring at RCRA Sites”*
- *“Fort Wingate Depot Activity RCRA Permit”*