Project Management Plan for the Kirtland Airforce Base Bulk Fuel Facility Water Authority Data Gap Well WUABFFMW01

Albuquerque, Bernalillo County, New Mexico

Prepared for:

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EXECUTIVE SUMMARY

Upon receiving the notice to proceed (NTP) on September 27, 2021, INTERA Incorporated (INTERA) is pleased to provide this Project Management Plan (PMP) to the Albuquerque Bernalillo County Water Utility Authority (Water Authority). This PMP is one (1) of four (4) planning documents that are associated with siting, drilling, constructing, developing, and testing a new data gap monitoring well to attain critical information about the continued safety of water supply wells near an ethylene dibromide (EDB) groundwater contaminate plume emanating from the Kirtland Airforce Base (KAFB) Bulk Fuel Facility (BFF).

The four planning documents are:

1. Well Siting Technical Memorandum (Tech Memo) (November 19, 2021)
2. PMP (this document)
3. Work Plan/Sampling and Analysis Plan (Work Plan)
4. Site-Specific Health and Safety Plan (SSHASP)

To help ensure the success of the project, this PMP includes a summary of the deliverables and assumptions associated with the scope of work (SOW), a proposed project schedule, a risk and issue management plan, and a communication management plan.

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ACRONYMS AND ABBREVIATIONS

BFF	Bulk Fuel Facility
bgs	below ground surface
COC	chain-of-custody
EDB	ethylene dibromide
ft	foot *or* feet
gal	gallon *or* gallons
INTERA	INTERA Incorporated
IDW	investigation derived waste
KAFB	Kirtland Airforce Base
NMED	New Mexico Environment Department
NTP	Notice to Proceed
OSE	Office of the State Engineer
PM	project manager
PMP	Project Management Plan
Safety Plan	Data Gap Monitoring Well Safety Plan
SAP	Data Gap Monitoring Well Sampling and Analysis Plan
SOW	scope of work
Tech Memo	Well Siting and Design Technical Memorandum
Water Authority	Albuquerque Bernalillo County Water Utility Authority
Work Plan	Data Gap Monitoring Well Work Plan

1.0 SCOPE OF WORK

This Project Management Plan (PMP) is one (1) of four (4) planning documents that are associated with siting, drilling, constructing, developing, and testing a new data gap monitoring well to attain critical information about the continued safety of water supply wells near an ethylene dibromide (EDB) groundwater contaminate plume emanating from the Kirtland Airforce Base (KAFB) Bulk Fuel Facility (BFF). The four planning documents are: 1) Well Siting Technical Memorandum (Tech Memo) (INTERA, 2021); 2) PMP; 3) Work Plan/Sampling and Analysis Plan (Work Plan); and 4) Site-Specific Health and Safety Plan (SSHASP).

The scope of work (SOW) consists of nine (9) primary tasks:

1. Project Management
2. Project Planning Documents
3. Site and Design Data Gap Monitoring Well
4. Drill, Construct, and Develop Data Gap Monitoring Well
5. Sampling of Data Gap Monitoring Well
6. Investigation-Derived Waste (IDW) Management
7. Slug Testing
8. Site Demobilization
9. Final Report

1.1 Invoicing, Meetings, Reporting, Deliverables, and Assumptions

As defined in the Albuquerque Bernalillo County Water Utility Authority (Water Authority) Scope of Services in Bid P2022000002 (WA, 2021), meetings, reporting, deliverables, and assumptions associated with each task are listed in the following subsections. Invoicing, meetings, reporting, and deliverables are also indicated in the Project Schedule (**Table 1**).

1.1.1 Task 1: Project Management

- Invoicing: INTERA Incorporated (INTERA) will provide monthly invoices to the Water Authority that clearly indicate the assigned Purchase Order number, will be task/project specific, will contain a summary of what work was completed during the billing period, the personnel involved, the hours billed, and a final summary of budget spent to date and an estimate of the percent of project completion.
- Deliverable: INTERA project manager (PM) will provide Water Authority PM and staff weekly update emails that indicate the status of the project, upcoming activities, and identify any issues

that require resolution and/or discussion. INTERA will submit weekly update emails on Thursday of each week.

- Deliverable: With a notice to proceed dated on September 27, 2021, the Proposed Project Schedule was submitted to the Water Authority on October 11, 2021. The Proposed Project Schedule was approved on October 12, 2021. A copy of the revised Project Schedule (revised December 10, 2021) is included as **Table 1.**
- Deliverable: A list of subcontractors will be submitted to the Construction Programs Bureau by December 15, 2021.
- Meetings: INTERA PM and staff will coordinate and host meetings every 2 weeks (possible increased frequency during drilling and well construction) with Water Authority PM and staff.
- Meetings: INTERA will support two (2) meetings with Water Authority and the New Mexico Environment Department (NMED) during the planning phase of work.
- Public Outreach: As needed, the Water Authority (or their selected subcontractor) will notify residents near the drilling location of the dates and hours that drilling, and that construction will occur. INTERA will communicate to all staff and subcontractors Water Authority expectations that inquiries from the public shall be directed to the Water Authority PM and public information office. A kick-off meeting with the Water Authority for the Public Outreach component of this SOW was held on October 20, 2021.
- INTERA will support the Water Authority, as needed, to notify residents near the drilling location of the dates and hours that well drilling and construction will occur. Information that may be required to support public outreach includes updated schedules, contact information for Contractor project staff and sub-contractors, and information for outreach materials.
- Data Management: INTERA and the Water Authority will share and access site-specific data using One Drive or Share Point (or similar).

1.1.2 Task 2: Project Planning Documents

- Deliverable: INTERA will submit a final version of the PMP (this document) to the Water Authority.
- Deliverable: INTERA will submit a final version of the Data Gap Monitoring Well WUABFFMW01 Work Plan to the Water Authority and NMED. The target due date for the draft of this deliverable is December 10, 2021. Target due date for submittal of the Final Draft to the Water Authority and NMED is December 15, 2021.
- Deliverable: INTERA will submit a final version of the Data Gap Monitoring Well SSHASP to the Water Authority and NMED. The target due date for the draft of this deliverable is December 10, 2021. Target due date for submittal of the Final Draft to the Water Authority and NMED is December 15, 2021.

- Deliverable: INTERA submitted the Tech Memo to the Water Authority on November 9, 2021. Comments were received from the Water Authority and a final Well Siting Technical Memorandum was submitted to the Water Authority on November 19 and approved on November 22, 2021.
- Assumption: There will be draft, draft-final, and final versions for the Work Plan and SSHASP documents. Only a draft and final version is required for the Tech Memo and the PMP.
- Assumption: Water Authority will review and respond to deliverables within 2 weeks of receipt.
- Assumption: Water Authority will provide relevant requirements for safety and water quality sampling within 2 weeks of NTP.

1.1.3 Task 3: Site and Design Data Gap Monitoring Well

- INTERA received data that is pertinent to this task from the Water Authority on September 30, 2021.
- A Site visit with INTERA, the Water Authority, and Cascade occurred on November 2, 2021.
- Deliverable: INTERA submitted the Well Siting and Design Technical Memorandum (Tech Memo) to the Water Authority on November 9, 2021. Water Authority comments were addressed and a Final Tech Memo was submitted on November 19, 2021. This document was approved by the Water Authority via email on November 22, 2021.

1.1.4 Task 4: Drill, Construct, and Develop Water Authority Data Gap Monitoring Well

- Pre-Mobilization Permits and Access: The following pre-mobilization task must be complete prior to the start of drilling and the primary party responsible for each task is indicated in parenthesis:
    - Easement access for drilling and laydown locations (INTERA)
    - Maintenance and security of the laydown area (INTERA and Cascade)
    - New Mexico Office of the State Engineer (OSE) well drilling permit (INTERA)
    - New Mexico 811 utility clearance (INTERA and Cascade)
    - Noise Control Plan/Permit (INTERA)
    - Excavation/Barricade (City of Albuquerque Street Cut) Permit (INTERA)
    - Source water for drilling (Cascade)
    - Notify neighborhood residents of the schedule for drilling, construction, and development of the well (Water Authority)
- Deliverable: INTERA will submit the boring log, field notes, and field photos to the Water Authority. The target due date for this is February 28, 2022.

- Deliverable: INTERA will transfer chip trays with boring cuttings to the Water Authority. The target due date for this is February 28, 2022.
- Deliverable: During drilling, a copy of the lithologic log will be submitted daily to the Water Authority PM. Drilling operations is targeted to begin on January 24, 2022.
- Deliverable: Following completion of drilling and geophysical logging, INTERA will submit a well construction design to the Water Authority for approval before beginning construction of the well. The Water Authority will respond within 12 hours of receipt of the well design. The target due date for this is February 9, 2022.
- Assumption: Drilling schedule will be Monday – Friday from 7:00 am to 5:00 pm unless approved otherwise by the Water Authority and in the Noise Control Plan/Permit.
- Assumption: Sound barriers will be provided during drilling activities.
- Assumption: INTERA will track permit expiration dates and notify Water Authority if renewals are required.
- Assumption: The boring will be air or water knifed to 5 feet (ft) below ground surface (bgs) in addition to the New Mexico 811 utility clearance.
- Assumption: INTERA will ensure that Site restoration meets the requirements of the City of Albuquerque.
- Assumption: In addition to standard field equipment and materials (e.g., nitrile gloves), INTERA will provide a port-a-potty rental.
- Assumption: INTERA and Cascade will work with the City of Albuquerque to attempt to secure a location in the parking lot of the Caesar Chavez Community Center. This location will be used as a supply yard for the long term storage of well materials/equipment by Cascade (if needed) in a locked, steel storage container.
- Well Development: Monitoring well development will occur within 2 to 7 days (not sooner than 48 hours) following well and grout installation. INTERA will maintain field documentation (written and photographic) of well development. The onsite field geologist will monitor field parameters such as pH, temperature, turbidity, and specific conductance.
- Survey: Following completion of the well, INTERA will coordinate to have the location of the well surveyed.

1.1.5 Task 5: Sampling of Water Authority Data Gap Monitoring Well

- Schedule – Initial Sample will be collected within two weeks of well installation. The target due dates for these deliverables are March 31, 2022 (Event 1) and either 30 days or 90 days from Event 1 (Event 2). Event 2 will occur 30 days following Event 1 if EDB is identified in the initial ground water sample collected from WUABFFMW01. If EDB is not detected in the initial

groundwater sample, then period of approximately 90 days will occur between the initial (Event 1) and second (Event 2) sampling events. For each event, there will be ground water samples collected by both low-flow and passive sampling techniques.

- Deliverable: Copies of sample chain-of-custody (COC) documentation, laboratory reports, and machine-readable file format of analytical results following data validation.

- Deliverable: All purge information and sample collection data will be documented by INTERA and submitted to the Water Authority.

1.1.6 Task 6: Investigation Derived Waste Management

- IDW – Soil: All IDW soil will be captured and contained during drilling. The soil will be profiled for waste disposal and the IDW soil sampling requirements will need to be verified with the receiving landfill. It is anticipated that sonic drilling will generate approximately 30 cubic yards of solids. Two (2) 15-cubic yard lined roll-off bins will be used to contain solids.
- IDW – Water: All water generated during drilling, well development, and sampling will be captured and containerized. The IDW water will be profiled and pending analytical results, may need to be transported off-site for disposal. It is anticipated that 250 gallons (gal) will be generated during sonic drilling, that 2,000 gal will be generated during development, and that 150 gal will be generated per groundwater sampling event. 250-gallon totes (number to be determined) will be used to contain IDW water produced during drilling, development, and groundwater sampling.
- Deliverable: Analytical results for IDW profile sampling.
- Deliverable: Waste manifest forms and COC documentation for sampling.
- Assumption: One (1) five-point IDW sample per roll-off containing IDW soil contained during Task 4.
- Assumption: One (1) sample per container of IDW water contained during Task 4.

1.1.7 Task 7: Slug Testing

- Deliverable: Will be included in the Final Report (Task 9).
- Assumption: The Water Authority's Level TROLL 700 data logger will be used for data logging.
- Assumption: The Water Authority will negotiate and secure access to the five (5) KAFB BFF nearby groundwater monitoring wells for testing.

1.1.8 Task 8: Demobilization

- Deliverable: INTERA will email the Water Authority documentation of demobilization of the drilling site and laydown area after drilling related field activities are complete.
- Assumption: Asphalt repair will not be required at the drilling location because the reinforced concrete pad surface completion will fill the footprint of the saw-cut asphalt removed prior to drilling.

1.1.9 Task 9: Final Report

- Deliverable: INTERA will submit to the Water Authority a final technical report.
- Assumption: INTERA will submit draft, draft-final, and final versions of the final report to the Water Authority.
- Assumption: The Water Authority will review and respond within 2 weeks of receiving deliverables.

2.0 RISK & ISSUE MANAGEMENT PLAN

To identify and manage potential risks and issues that could cause delays to the project, a workflow for this SOW has been created (**Figure 1**). The workflow is generally linear with several critical decision points and events. The first key decision involves selecting the location and preliminary design of the well (Task 3), which is needed to complete the following:

- Several of the project planning documents (Task 2)
- Execute a subcontract agreement with a drilling a company (Task 4)
- Secure easements for drilling activities (Task 4)
- Obtain New Mexico Office of the State Engineer (OSE) monitoring well permit and City of Albuquerque traffic control and barricade permit/noise control permits (Task 4)
- Acquire utility clearance (Task 4)
- Purchasing and setting up a Bennett low-flow pump with sufficient length tubing to sample the middle of the well screen (Task 5)

Another key decision point for the successful completion of this SOW is the monitoring well design, which will occur following drilling and after critical review of the push-ahead groundwater sampling data and data from lithologic and geophysical logging by INTERA and the Water Authority. Prior to drilling the boring for the well, all permitting, easements, and clearances will need to be completed and acquired for successful completion of this SOW.

Other potential delays to the project include:

- Long lead time on a Bennett Pump purchase, which is required for the low-flow sampling system (Task 5)
- Weather delays

To mitigate potential delays with purchasing a Bennett Pump, INTERA ordered the Bennett pump, reel, and tubing in November 2021. To do so, the approximate depth of the screen interval for the proposed monitoring well was identified (605 feet below ground surface) in Task 3. Weather conditions, especially in the winter months, pose a risk to the project. To mitigate this risk, it may be necessary to stop work during adverse weather conditions, which will lead to project delays. All personnel involved in the project have stop work authority if they feel conditions are not safe.

To continually mitigate risks to the project once work begins, a Safety Plan will be developed and reviewed, and all field personnel will be familiar with the documentation therein. Additionally, daily Tailgate Meetings and Job Risk Analyses will be reviewed daily to ensure field staff are familiar with the SOW, as well as the hazards and controls associated with that SOW.

To ensure data quality, INTERA's standard operating procedures will be followed throughout the duration of the project. Additional standards will also be adhered to bolster data quality. During drilling, the ASTM D2488 standard practice will be followed for lithologic descriptions. During groundwater sampling, primary quality control (QC) and quality assurance (QA) samples will be collected and analyzed, and groundwater samples will be collected in accordance with the NMED-approved procedures used by KAFB contractors. Slug testing activities will be performed in accordance with best available science and industry standards and as specified in the Work Plan. For QC purposes, multiple pneumatic slug tests will be performed at the Water Authority Data Gap Well (WUABFFMW01) with varying pressures, the data will be analyzed iteratively using initial conditions and assumptions observed during the KAFB tests in 2013, and multiple analytical curve-matching methods will be used for interpretation comparison.

3.0 COMMUNICATION MANAGEMENT PLAN

Communications throughout the project will follow a typical chain-of-command structure. Overall, this structure will be consistent with the contractual agreements, in that INTERA is contracted to the Water Authority, and all subcontractors and vendors required for this SOW will be contracted to INTERA. As such, subcontractors and vendors will communicate with INTERA, and INTERA will communicate with the Water Authority. An organization chart for INTERA personnel, which includes the proposed subcontractors and vendors, is included in this PMP as **Figure 2**.

Communications between INTERA and the Water Authority will be between the respective PMs, Joe Tracy (or designee) and Diane Agnew (or designee). Communications from INTERA's primary technical resources or subcontractors/vendors will go to the task managers, who will then communicate to the senior

advisor/reviewer and/or PM (**Figure 2**). All Health and Safety-related communications will involve INTERA's Health and Safety lead, Brian Archuleta.

The schedule for meetings and status update emails are captured in the Proposed Project Schedule (**Table 1**). Additionally, Joe Tracy (or designee) will notify Diane Agnew (or designee) of any potential issues that arise throughout the course of the Project that the Water Authority needs to be aware of.

4.0 REFERENCES

Albuquerque Bernalillo County Water Utility Authority (Water Authority). 2021. Kirtland Airforce Base Bulk Fuel Facility Water Authority Data Gap Well. Bid Number P2022000002. July.

INTERA. 2021. Technical Memorandum: Proposed Monitoring Well Location and Screened Interval for the Water Authority Data Gap Well. November 19.

FIGURES

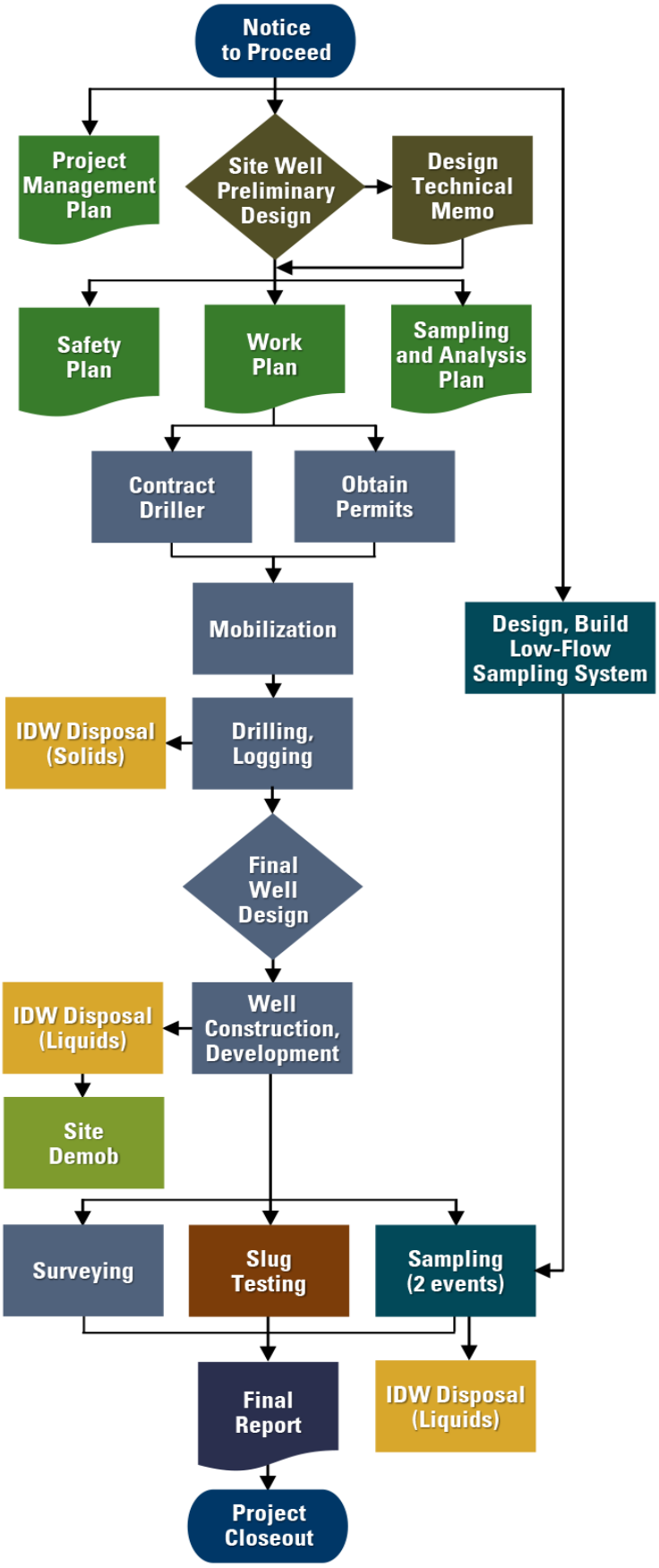

Figure 1

Workflow of Projected Tasks

Kirtland Airforce Base Bulk Fuel Facility
Water Authority Data Gap Well
Bernalillo County, New Mexico, USA

INTERA

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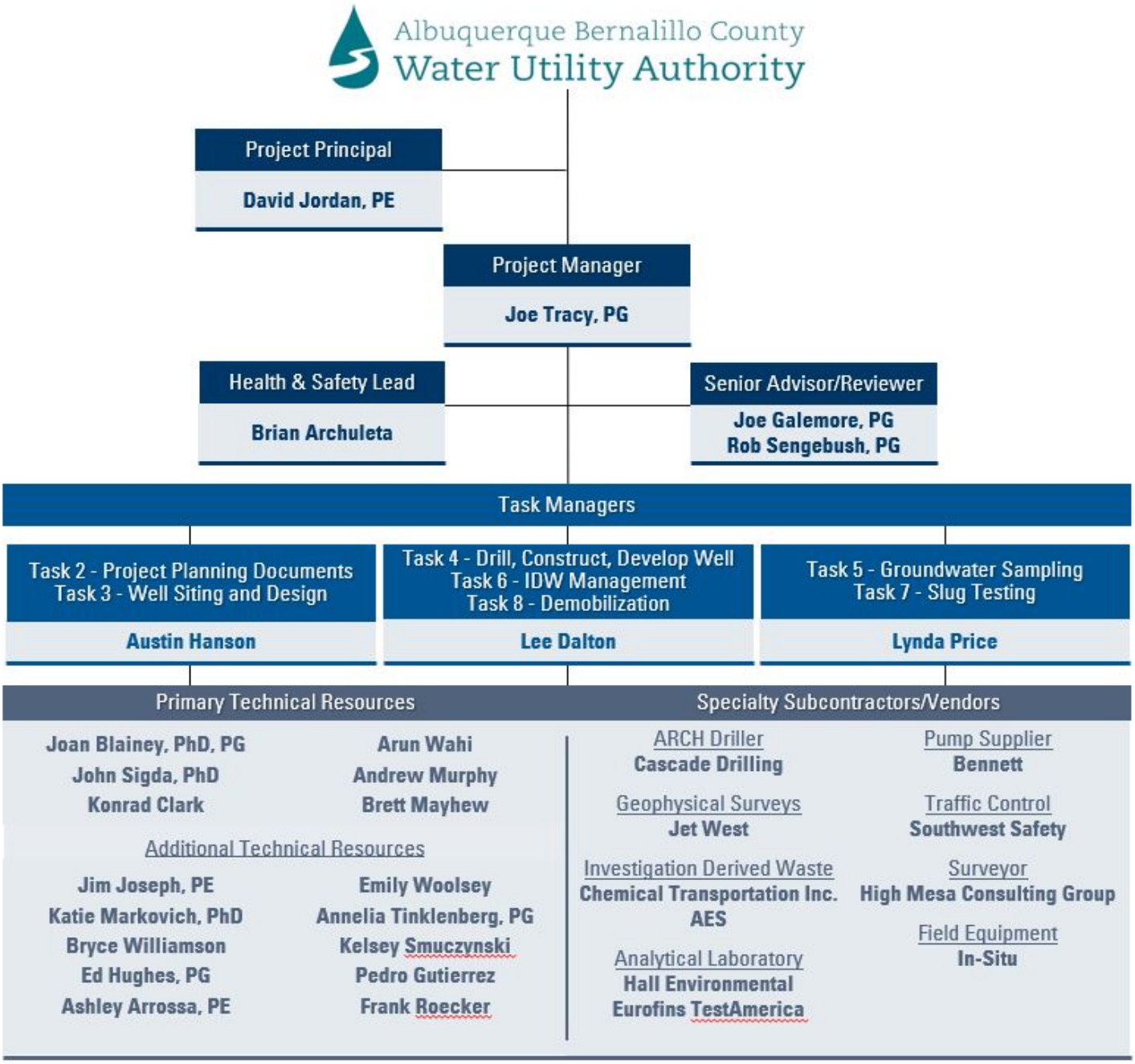

Figure 2
INTERA Organization Chart
Kirtland Airforce Base Bulk Fuel Facility
Water Authority Data Gap Well
Bernalillo County, New Mexico, USA

INTERA

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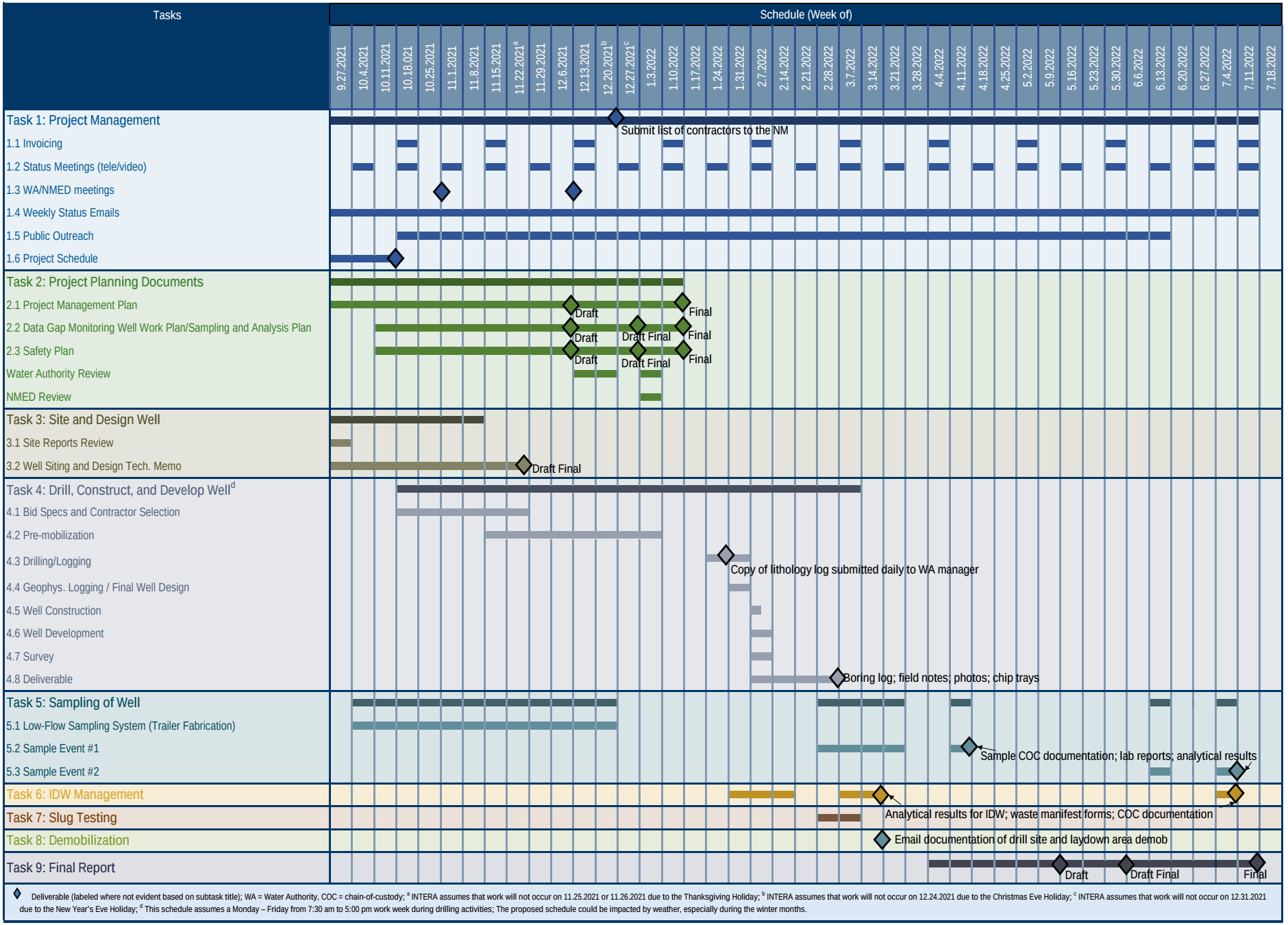
TABLES

Table 1 - Revised Schedule



◊ Deliverable (labeled where not evident based on subtask title); WA = Water Authority, COC = chain-of-custody; [a] INTERA assumes that work will not occur on 11.25.2021 or 11.26.2021 due to the Thanksgiving Holiday; [b] INTERA assumes that work will not occur on 12.24.2021 due to the Christmas Eve Holiday; [c] INTERA assumes that work will not occur on 12.31.2021 due to the New Year's Eve Holiday; [d] This schedule assumes a Monday – Friday from 7:30 am to 5:00 pm work week during drilling activities; The proposed schedule could be impacted by weather, especially during the winter months.