

**IMPLEMENTATION SCHEDULE
FOR AN ALTERNATE WATER SUPPLY**

MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07



Prepared for:

**FREEPORT MINERALS CORPORATION
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June 22, 2017

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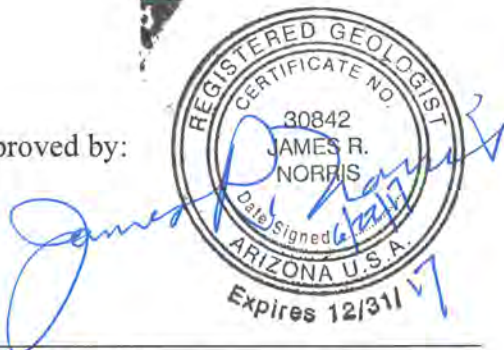
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36 West Highway 92
Bisbee, Arizona 85603



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June 22, 2017

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- A Implementation Schedule Prepared by WestLand Resources, Inc.

1. INTRODUCTION

This report describes an implementation schedule that could be used for development of an alternate potable water supply in the future if groundwater monitoring indicates that the public drinking water supply operated by Arizona Water Company (AWC) near Naco, Arizona would be affected¹ at the point of use by sulfate from the Concentrator Tailing Storage Area (Figure 1). The implementation schedule estimates the time needed to develop an alternate drinking water supply and connect it to the existing AWC facilities, if needed, prior to the AWC supply being affected. In March 2017, CQB entered into a purchase agreement for property suitable for developing an alternate drinking water supply. The implementation schedule identifies activities such as right of way development, permitting, well drilling, engineering design, contractor selection, construction of infrastructure, and post-construction approvals and commissioning that would be needed to develop the alternate supply on the CQB property and connect it to the existing AWC system.

1.1 Background

The Mitigation Plan (Clear Creek Associates, 2015a) describes potential contingency mitigation actions for the AWC water supply near Naco, Arizona (Figure 1). Contingency planning actions pertaining to the AWC water supply include a water supply study and the expanded groundwater monitoring program. The alternate water supply implementation schedule is a component of the expanded groundwater monitoring program.

The objective of the water supply study was to identify and evaluate potential groundwater resources that could constitute an alternate water supply for the AWC water supply if it were to be affected in the future. As part of the study, CQB installed and tested exploration well LADD 635 (Figure 2) to determine the productivity and water quality of the aquifer (Clear Creek Associates, 2016). The water supply study submitted to ADEQ in 2016 concluded that the basin fill aquifer south of the existing AWC wellfield is capable of providing the quantity and quality of groundwater needed for an alternate drinking water supply. The potential site for an alternate supply is property being purchased by CQB approximately one mile south of the AWC wellfield (Figure 2).

¹ The terms “affect” and “affected”, with reference to a drinking water supply, are defined for the purpose of the Mitigation Plan and this report as indicating a water supply with an average sulfate concentration exceeding 250 milligrams per liter at the point of use due to sulfate originating from the Concentrator Tailing Storage Area.

The expanded groundwater monitoring program was implemented in 2014 with the installation of new monitoring wells between the front of the sulfate plume and the AWC wellfield (Clear Creek Associates, 2015b). The purpose of the new wells is to quantify the distribution of sulfate and the rate of movement of the sulfate plume between the current front of the plume and the AWC wellfield. Monitoring at the expanded groundwater monitoring facilities is ongoing under the Long Term Plume Monitoring provisions of the Mitigation Plan. To date, groundwater sampling at the front of the plume has not identified evidence of plume migration between monitoring wells. Groundwater monitoring data and a performance review of the mitigation action are reported to ADEQ annually pursuant to the Mitigation Plan.

A second objective of the expanded groundwater monitoring program is to identify sentinel wells with action levels for sulfate. The sentinel wells would be existing or new wells located between the plume and the AWC wellfield. The action levels, if exceeded, would trigger a contingent mitigation action for the AWC water supply.

The identification of sentinel well locations and action levels is to be based on the results of plume monitoring and the timeline described by the implementation schedule. Section 2.1 of the Mitigation Plan states:

“If an alternate supply is identified, CQB will work with AWC to prepare a preliminary implementation schedule for the engineering design, permitting, procurement, and construction tasks needed to develop the supply. The implementation schedule would be used in the development of sulfate action levels so that the alternate supply, if needed, could be implemented before the average sulfate concentration of the AWC supply exceeds 250 mg/L.”

Based on an analysis conducted in 2015, the rate of sulfate plume migration is relatively slow and the plume is not expected to migrate to the vicinity of the AWC wellfield for several decades (Clear Creek Associates, 2015a). Data collected to date for the expanded groundwater monitoring program support the conclusions of the analysis conducted in 2015. Development of an alternate water supply in the area south of the existing AWC wellfield is currently the assumed mitigation action for the AWC water supply if monitoring indicates it would be affected, although other actions may be appropriate in the future depending on technological and administrative conditions.

The selection of action levels at sentinel wells requires knowing the plume velocity and direction of migration, the rate of change of sulfate concentration at the leading edge of the plume, and the duration of the implementation schedule for the mitigation action. The Mitigation Plan identifies deadlines of July 1, 2017 and April 1, 2018 for submitting the implementation schedule and the sentinel wells/action level recommendations, respectively, to ADEQ.

1.2 Use of the Implementation Schedule

The implementation schedule estimates the time needed to permit, design, and construct an alternate water supply, if needed. The implementation schedule will be used along with groundwater monitoring data to identify sentinel well locations and action levels for contingency planning. The implementation schedule also provides a preliminary plan that would be used for subsequent design steps, if needed.

Sentinel well locations and action levels need to be set such that a contingent mitigation can be put in place prior to the average concentration of the AWC water supply exceeding 250 mg/L sulfate. This would require placing sentinel wells a sufficient distance from the AWC wellfield that the time needed to implement the alternate water supply is less than the plume travel time between the sentinel well and the AWC wellfield. It may be appropriate to use one or more action levels at sentinel wells such that triggering concentrations allow staged development of the alternate water supply given the expected rate of change of sulfate.

CQB is in the process of acquiring property for development of an alternate drinking water supply, if needed. A purchase agreement for the property has been executed and an environmental audit is underway. CQB expects to close on the property and take title to it in the third quarter of 2017.

The permitting, design, and construction steps identified for the implementation schedule constitute a preliminary plan for how the alternate supply would be developed. Included in the implementation schedule are steps for conceptual and detailed design that would result in construction plans and other documents. The design would account for the development of the source of the alternate water supply, conveyance of the alternate supply to the existing AWC system, and connection of the supply to the existing AWC infrastructure. Flow specifications for the potential alternate supply would need to be based on conditions prevailing at the time as determined by groundwater monitoring data.

2. IMPLEMENTATION SCHEDULE

The implementation schedule is in Appendix A. WestLand Resources, Inc. prepared the implementation schedule based on the assumptions described below and their professional experience with similar projects. WestLand Resources, Inc. has extensive experience in the permitting, design, and construction of potable water systems in Arizona.

The implementation schedule is summarized on a Gantt chart that identifies a 48-month path for development of an alternate water supply. That is, the permitting, design, and construction steps for the alternate supply could be developed and completed 48 months after a triggering event. Special attention was focused on critical path factors that would most impact the project duration. These critical path items have been marked in red on the Gantt chart for ease of identification.

2.1 Assumptions for the Implementation Schedule

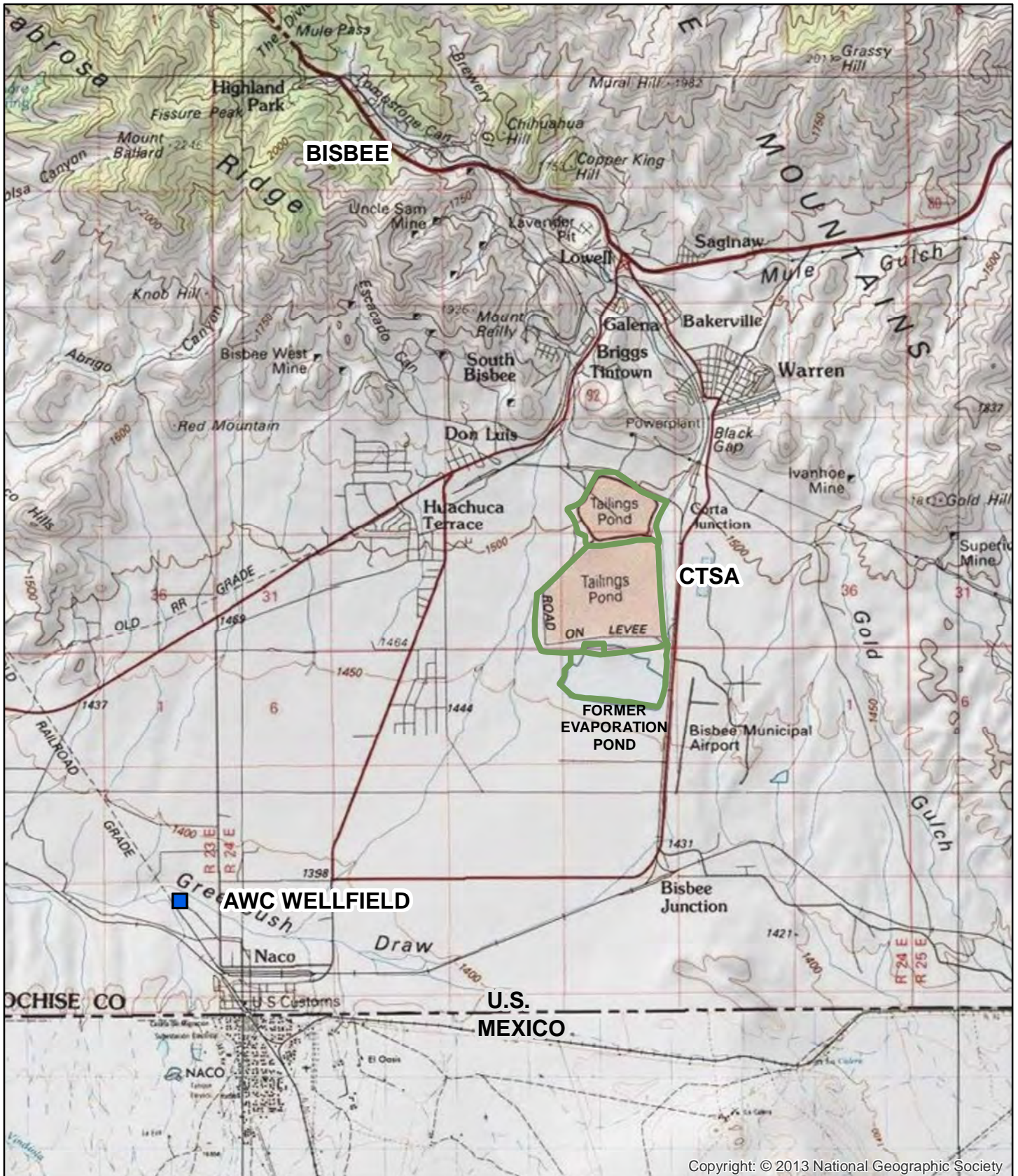
The development of the implementation schedule incorporated several assumptions regarding the anticipated tasks. A key assumption is that the alternate water supply would be located between 2,500 and 4,000 feet south of the existing AWC wellfield on land being purchased by CQB in the area identified by the water supply study (Clear Creek Associates, 2016) (Figure 2).

A conservative assumption made for the implementation schedule is that the time required to develop pumping capacity (i.e., install and equip wells) for the alternate supply would be sufficient to accommodate any foreseeable need. The exact flow requirements for the alternate supply would depend on future conditions and could range from a single well to multiple wells depending on water quality at the AWC wellfield. The conceptual design step of the implementation schedule would use the water quality at the AWC wellfield to evaluate options for cost effectively meeting the mitigation action objective with or without blending.

3. REFERENCES

- Clear Creek Associates. 2015a. Mitigation Plan for Sulfate with Respect to Drinking Water Supplies, Revision 1, Mitigation Order on Consent Docket No. P-121-07. March 6, 2015.
- Clear Creek Associates. 2015b. Results of Well Installation and Groundwater Monitoring Through the Second Quarter of 2015 for the Expanded Groundwater Monitoring Program, Monitoring, Mitigation Order on Consent Docket No. P-121-07. August 19, 2015.
- Clear Creek Associates. 2016. Exploration Drilling and Hydraulic Testing for Water Supply Study, Mitigation Order on Consent Docket No. P-121-07. February 5, 2016.

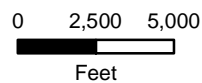
FIGURES



Copyright: © 2013 National Geographic Society

Legend

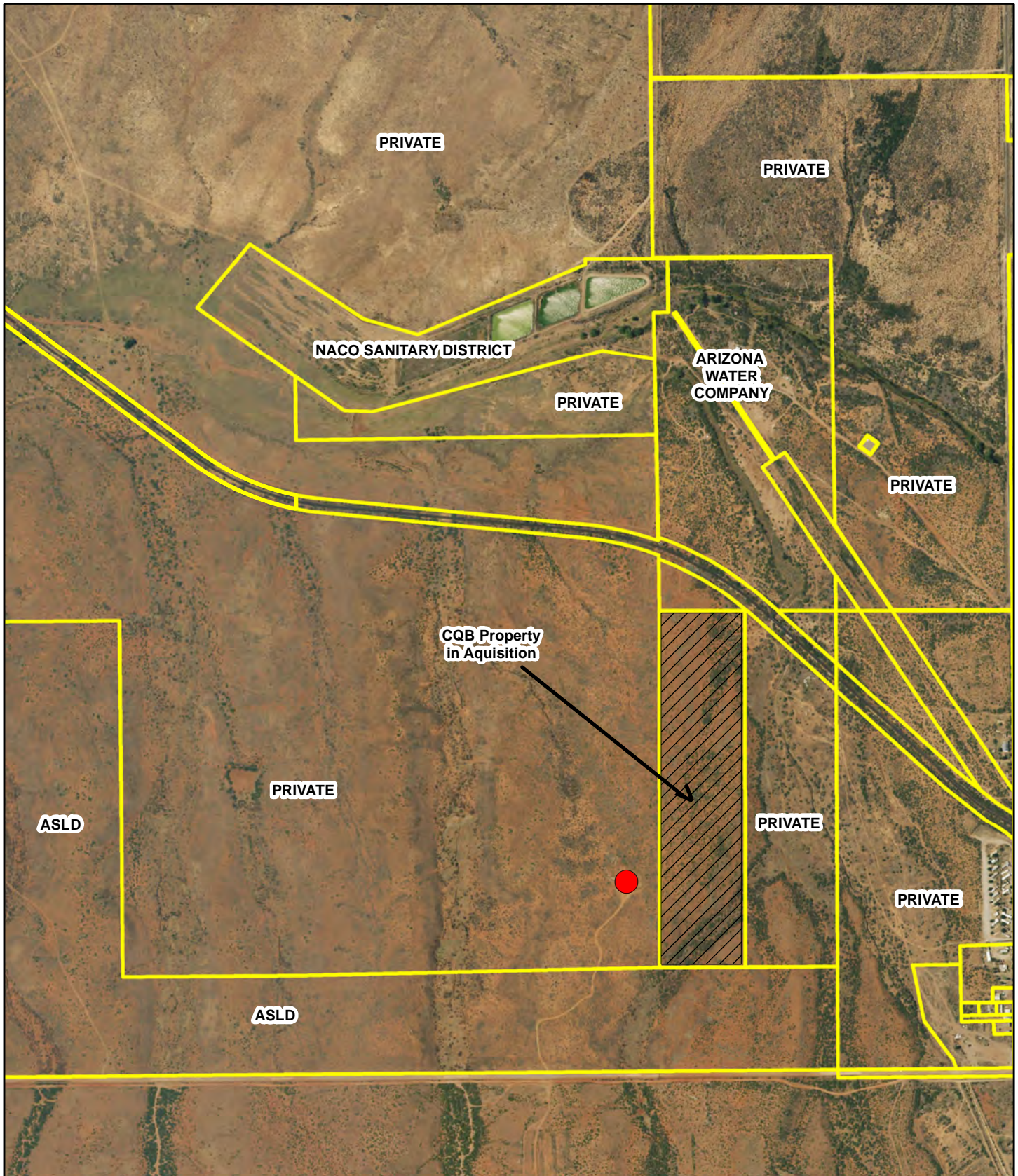
— Concentrator Tailing Storage Area Facility (CTSA)





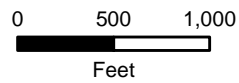
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Date	11/9/16





FIGURE 1
Project Location Map



-  Cochise County Assessor Parcel
-  Exploration Well LADD 635



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		FIGURE 2 Arizona Water Company Area	

APPENDIX A

**IMPLEMENTATION SCHEDULE
PREPARED BY WESTLAND RESOURCES, INC.**

MEMORANDUM

Prepared by: Erik D. Christenson, P.E., WestLand Resources, Inc.

cc: Jim Norris, R.G., Clear Creek Associates
Mark F. Taylor, P.E., WestLand Resources, Inc.

Date: June 22, 2017

Project No.: **ALTERNATE WATER SUPPLY IMPLEMENTATION SCHEDULE
MITIGATION ORDER ON CONSENT DOCKET NO. P-121-07
WESTLAND PROJECT NO. 260.19**

I. INTRODUCTION

The intention of this memorandum is to discuss the process used to develop the draft implementation schedule (**Attachment 1**) for development and implementation of an alternative potable water supply pursuant to the Mitigation Plan¹ for Mitigation Order on Consent Docket No. P-121-07 between Freeport-McMoRan Corporation Copper Queen Branch (CQB) and the Arizona Department of Environmental Quality (ADEQ). WestLand conducted a preliminary field examination of the Arizona Water Company (AWC) wellfield and potential project area to guide development of the assumptions used in the schedule. The field examination, which was conducted with AWC personnel, found that AWC uses standard equipment and no special design or needs were identified. The land in the vicinity of the AWC well field and prospective alternate supply is gently sloping desert with sparse vegetation and presents no special construction challenges.

This schedule reflects the tasks associated with the design, permitting, and construction of one or more potable wells with associated site piping and electrical equipment, a new transmission pipeline between the alternate supply wellfield and the existing AWC storage tank, a new three-phase medium voltage electrical transmission line, and an access road for the pipeline. The alternate supply wellfield would be developed south of the existing AWC wellfield on property being acquired by CQB. **Figure 1** shows a feasibility-level layout including the area where the wellfield would be developed in the future. A potential alignment for the transmission pipeline is also illustrated. A Gantt chart depicting the project schedule has been provided as **Attachment 1** to this memorandum. The sections in this report directly match the tasks shown on that schedule.

¹ Clear Creek Associates. 2015. Mitigation Plan for Sulfate with Respect to Drinking Water Supplies, Revision 1, Mitigation Order on Consent Docket No. P-121-07. March 6, 2015.

2. PROJECT INITIATION – NOTICE TO PROCEED

The proposed schedule assumes that the project would begin after sentinel well action levels are exceeded, initiating contingent mitigation actions as described in the Mitigation Plan. Sentinel well locations and action levels are still in development.

3. PRELIMINARY ENVIRONMENTAL PERMITTING

A Clean Water Act Section 404 permit would be required from the U.S. Army Corps of Engineers (Corps) if the project involves the placement of dredged or fill material into “waters of the United States” (“Waters”). Such Waters may be wetlands or tributaries to traditionally navigable waters. Assuming jurisdictional Waters were present, WestLand anticipates that disturbances caused by the construction activities along the pipeline alignment would be authorized by the Corps under Nationwide Permit (NWP) No. 12, Utility Line Activities. The items below describe the requirements of obtaining Corps authorization under NWP 12.

The following sections provide more detail on the specific activities required for to acquire the subject property.

3.1. LOCATION SELECTION

CQB is in the process of acquiring property in the area south of the AWC wellfield, which has been identified as possessing a groundwater resource suitable for development as a potable supply (refer to **Figure 1** for property location and preliminary pipeline alignment). The location selection activities would be the first project task and would include more closely determining the alternate source wellfield location and development of a conceptual pipeline alignment from the proposed wellfield to the existing tank. The combined infrastructure alignment would also include a parallel easement for the proposed electrical transmission upgrades required and an access road to the wellfield. The width of this easement would be determined for the conceptual design (**Section 4**). Other factors that may influence location selection are constructability, and distance from the existing AWC wellfield.

3.2. EASEMENT COORDINATION AND PERMITTING

The Arizona Water company property is crossed by two railroad alignments. One is the abandoned Naco Branch railroad, which is currently owned by the Union Pacific Railroad Company, and the other is out-of-service. Although these railroad alignments are not currently active, this document conservatively assumes a permitting timeline suitable for crossing active lines.

The railroad alignments, which bisect the AWC property, would need to be crossed by the pipeline, electrical, and access road alignment. WestLand assumes the use of the jack and bore technique as the most conservative method for the pipeline crossing. This timeline assumes that permitting to bore underneath the railroad alignments and to cross the railroad with an overhead powerline over 750 volts will take approximately 6 months, including permit preparation and review time.

The possibility of at-grade intersections for the access road would be explored. WestLand assumes that coordination and permitting the at-grade crossings with the governing party of the railroad alignments could take up to 22 months.

3.3. PRELIMINARY JURISDICTIONAL DETERMINATION

This schedule assumes that a Preliminary Jurisdictional Determination (PJD) would be prepared, which assumes that all potential streams within the project area are jurisdictional. Under current rules, WestLand recommends consideration of a PJD because it could be an easier and shorter path than preparing an Approved JD. Preparation of a PJD involves field identification of potential water-related features and preparation of a report with figures, which would be submitted to the Corps. This schedule assumes that wells would be located outside of any waterways, streams, or wetlands, and that the disturbance due to pipeline would be minimized through design.

3.4. FEDERAL NEXUS CLEARANCES

Projects requiring Corps approval under the CWA Section 404 permitting program also require compliance with the Endangered Species Act (ESA) and National Historic Preservation Act (NHPA). The schedule assumes that the results of these evaluations would be used during the conceptual design phase (**Section 4**) to prepare a final alignment and guide facilities locations, as well as to inform any additional environmental permitting effort that may be required as described in **Section 5**.

3.4.1. Biological Evaluation

A biological evaluation of the project area would consist of a site visit and screening evaluation to determine the potential for any special status species to occur on the site, and evaluate the potential for project activities to affect any such species that could be present. The biological evaluation would be submitted to the Corps for their review and effects determination. If the Corps determines that the project could affect special status species, consultation with the U. S. Fish and Wildlife Service (USFWS) would be required for further direction to avoid or minimize effects.

3.4.2. Class III Cultural Resources Survey

A Class III cultural resources survey would be conducted early in the implementation schedule to provide sufficient response time in the event there are archaeological items of significance in the area. A Class III cultural resources investigation of the site would consist of a site survey and literature review of any previous cultural resources surveys to determine if any sites potentially eligible for listing on the National Register of Historic Places (NRHP) are present and could be affected by the project. The cultural resources report would also be submitted to the Corps for their review. Typically, the Corps engages the State Historical Preservation Office (SHPO) for review and approval of the NRHP eligibility recommendations. If the project would affect any NRHP eligible sites, a Historic Properties Treatment Plan (HTPT) must be prepared to describe how the sites would be treated, for Corps and

SHPO review and approval. Where at all possible, the alignment of the new infrastructure will be routed to avoid impact to identified sites, if any. Nine months have been allotted for mitigation activities in the event that all sites cannot be avoided.

4. CONCEPT DESIGN

The intention of the conceptual design phase is to produce a design that AWC and CQB can review and alter prior to designing a final set of construction-ready design documents. In this phase, the location and extent of the project boundaries would be detailed further, preliminary site layouts would be prepared to assist in environmental permitting, and the pumps and pipeline specifications would be produced. WestLand assumes that the property being acquired by CQB is sufficient for locating a wellfield, a pipeline, electrical service, and an access road. The right-of-way could include portions of the CQB property and AWC property (**Figure 1**).

4.1. REFINE ALIGNMENT

WestLand assumes that the alignment would be refined after completion of the preliminary environmental requirements. At this stage, the potential route can be surveyed and the pipeline alignment can be positioned within the procured area to avoid cultural sites and other potential obstacles.

4.2. LAND SURVEY AND MAPPING

A professional land surveyor registered in the state of Arizona would be engaged to conduct a land survey and gather topographic data, property boundaries, and existing infrastructure that may affect design. This task can start immediately after identification of the final alignment.

4.3. HYDROGEOLOGICAL DESIGN AND MAPPING

Preliminary analysis would determine the optimal location for one or more proposed wells. This analysis would provide preliminary data on expected well yields that would be used to guide engineering designs and pump selections for the proposed wellfield. Specifically, information obtained in this phase of the project will be used for well casing sizing and selection, screen sizing and intervals, and gravel pack specifications. To the degree practicable, the wellfield design would consider well spacing as a design variable with respect to minimizing drawdown in the wellfield. WestLand assumes that this task would begin after completion of preliminary environmental permitting activities.

4.4. CONCEPTUAL ENGINEERING DELIVERABLES

WestLand assumes that the design engineer would prepare a set of documents providing a design overview suitable for AWC and CQB review. The overview would provide geometric layout, pipe crossing details, major equipment selections, and conceptual cost estimates. This set of documents

would also be suitable to guide environmental permitting. WestLand assumes that AWC and CQB would fundamentally agree on the general design concept, and that there would be no significant delays required to bridge the gap between expectations.

4.5. CLIENT CONCEPTUAL DESIGN REVIEW

WestLand assumes that AWC and CQB would be able to review the conceptual design within one month of receiving the submittal.

5. U.S. ARMY CORPS OF ENGINEERS REVIEW PROCESS

If jurisdictional waters are present, WestLand anticipates that the disturbances caused by the construction activities along the pipeline alignment would be authorized by the Corps under Nationwide Permit (NWP) No. 12, Utility Line Activities. The items below describe the requirements of obtaining Corps authorization under NWP 12.

5.1. PRE-CONSTRUCTION NOTIFICATION

WestLand assumes that the construction could impact more than one-tenth and less than one-half of an acre per waterway crossing; therefore, a pre-construction notification (PCN) would be required. The Corps would review this document.

5.1.1. Corps of Engineers Review

The Corps would review the PCN, which would consist of the conceptual design, the PJD, the biological evaluation, and the Class III cultural resources report. WestLand estimates an eight-month review time based on our prior experience with the Corps. This schedule assumes that the Corps would provide a letter of verification authorizing the project under NWP 12, and that the construction would be able to cross jurisdictional waters, if any, within the alignment. This schedule is reasonable based on WestLand's preliminary inspection of potential project areas.

6. WELL DRILLING

Well drilling has been included as a separate task to be completed before pipeline layout and detailed design to facilitate the timely completion of the project. Well drilling is often done by a different contractor than the well equipping, and therefore can be moved earlier in the project schedule. In addition, aquifer testing should be completed in order to finalize the pumping equipment selection, and therefore should be conducted before the design is completed. Finally, different permitting processes govern well equipping and well drilling. Well drilling is dependent on Arizona Department of Water Resources (ADWR) drilling authorization (discussed in **Section 6.1** below), while well equipping for potable water supply wells is dependent on ADEQ pre- and post- construction approval.

6.1. ADWR SUBMITTAL FOR DRILLING AUTHORIZATION

ADWR permits would be required to install a well or wells for the project. Well installation permits (Notice of Intention to Drill) can typically be obtained in less than a week.

6.2. WELL DRILLING AND DEVELOPMENT

WestLand assumes that installation and development of a well or wells could take up to seven months based on the time required to install water exploration well LADD 635 in the potential project area². The exploration well was an 8-inch well capable of pumping approximately 400 gallons per minute. This timeline assumes installation of an 18-inch diameter well casing to comply with AWC's internal design specifications.

6.3. AQUIFER TESTING

Aquifer testing would be conducted after the well is drilled and developed to determine the well's yield rate, dynamic drawdown, and static water levels. Aquifer testing is anticipated to take up to four weeks.

7. DETAILED DESIGN PHASE

A design firm would be identified to prepare the detailed design. The goal of the detailed design phase would be to produce a set of approved plans suitable for bidding, starting construction, and ADEQ permitting of the project. The detailed design phase will include an initial selection of the well pump and motor, however; the final selection will occur after well drilling and aquifer testing as described in **Section 10.2**. Water treatment infrastructure is not expected based on existing water quality data for exploration well LADD 635 adjacent to the proposed wellfield location. The chlorination and fluoridation methods currently employed by AWC immediately prior to storage would be incorporated into the design. This implementation schedule assumes that AWC and CQB would be in general agreement with the final design (**Section 4**), and that the fundamental basis of design would be mutually satisfactory.

Easement requirements for the pipeline, access routes, and the electrical infrastructure would be recorded during the detailed design phase.

7.1. DEVELOP PLAN SET

WestLand assumes that there would be enough preliminary wellfield information to develop preliminary well pump selections. Electrical equipment would be conservatively sized to allow for the horsepower required for the lowest estimates of groundwater pumping levels. WestLand assumes minor revisions could take place to the plan set after well testing to reflect the observed results;

² Clear Creek Associates. 2016. Exploration Drilling and Hydraulic Testing for Water Supply Study. Mitigation Order on Consent Docket No. P-121-07. February 5, 2016.

however, those changes would not significantly affect the schedule. WestLand's estimate of six months to complete the plan set is based on experience designing similar projects.

7.2. CLIENT REVIEW

WestLand assumes that AWC and CQB would require two months to complete their review of the preliminary plan set.

7.3. FINAL EDITS

WestLand assumes that any final edits to the design after AWC and CQB review would take approximately one month. This task would culminate in a set of construction plans signed and sealed by an engineer registered in the state of Arizona.

8. ADEQ PERMITTING

This project concerns a potable water system, and therefore requires approval by ADEQ before conveyance system construction can begin. The following items are associated with obtaining this Approval to Construct (ATC).

8.1. DESIGN REPORT

The final AWC and CQB approved design would need to be summarized in a design report sealed by an engineer registered in the state of Arizona. This design report would detail the transmission main design, describe the wellfield and pumping system, and discuss the overall AWC system.

8.2. SUBMITTAL PREPARATION

This schedule includes compilation of the design documents and forms for submittal to ADEQ.

8.3. AGENCY REVIEW

The ADEQ website assumes that review time for an ATC for a standard water project would be 53 business days. WestLand assumes that ADEQ would consider this a standard water project, and that the project would be approved without requiring a substantive resubmittal.

9. CONTRACTOR SELECTION PROCESS

The contractor selection process includes the preparation of bid documents, opening the project for bid, selecting one or more contractors, and signing a contract. WestLand anticipates that this process would occur concurrently with the ADEQ review, and that any changes as a result of the ADEQ review would be described in addenda to the bid documents.

9.1. BID DOCUMENT PREPARATION

WestLand assumes that preparation of bid documents will take two weeks.

9.2. BID SOLICITATION AND SELECTION

WestLand assumes that the time for contractors to develop a price for the construction services and for CQB to review the bids and select a contractor will take two months. This includes a pre-bid meeting, question and answers, and responses by the engineer to requests for information.

9.3. CONTRACT AND NEGOTIATIONS

Once CQB has selected a contractor, this schedule assumes that contractual negotiations between CQB and the selected contractor will take one week.

10. CONSTRUCTION

A qualified contractor familiar with the construction of similar projects provided WestLand's estimated construction schedule. Additional details regarding the scope of construction are provided below.

10.1. PIPELINE CONSTRUCTION

WestLand assumes that the pipeline would be buried along its entire length, and that the pipeline would be sized to operate adequately for the potential range of flows from the alternate supply. WestLand assumes an unpaved access road, with special care in crossings of jurisdictional waters, if any, to meet 404 requirements. This schedule assumes that construction would not encounter hard rock, or high-water table conditions requiring pumping. These site conditions are not expected given the project location and the site conditions identified during the site visit.

10.2. PUMP AND MOTOR FINAL SELECTION

The final well pump and motor selection would be delayed until the completion of aquifer testing. This schedule includes a review of the testing data to allow for this selection. Additionally, WestLand assumes that the plans would be updated with the final selections.

10.3. CONTRACTOR PUMP AND MOTOR BIDDING

This item includes contractor discussion with vendors and design engineer of vendor documents to determine general conformance to the design documents. This estimate assumes that the vendor submittal would have only minor edits, and that the contractor and vendor agree on contract terms.

I 0.4. PUMP AND MOTOR ONSITE

Conversations with pump vendors indicate that a pump and motor could be onsite approximately 12 weeks from a signed contract.

I 0.5. WELL SITE CONSTRUCTION

A conservatively appropriate amount of time has been allotted for well site construction. This includes the time required for the contractor to build sufficient capacity, although the exact requirement would be based on conditions prevailing at the time of design and construction. The construction would start immediately after the contract is signed, assuming that an ADEQ ATC has been issued. It is assumed that the well site construction would last at least one month after pumping equipment has arrived on site. This construction includes on-site electrical items and controls.

I 0.6. ELECTRICAL CONSTRUCTION

Conversations with the local electrical utility, Arizona Public Service, have indicated that serving the proposed well infrastructure would not require additional looping. Therefore, this item assumes the construction of a single three-phase overhead primary electrical line from the power supply at the existing AWC storage tank site along the pipeline alignment to the new wellfield. This schedule item also includes the installation of transformers at well sites.

II. POST-CONSTRUCTION

There are several items remaining after construction before this project can be considered complete. The following items discuss this in more detail:

II.1. ENGINEER'S CERTIFICATE OF COMPLETION

This project would provide potable supply; therefore, requiring completion of an Engineer's Certificate of Completion (ECC). WestLand assumes that a professional engineer independent from the contractor, or someone directly in his or her employ, inspects the construction of the project to determine conformance with the design documents. This includes witnessing pressure tests and chlorination, and the completion of the ECC. The filing of the ECC must also contain the results of new source testing.

II.2. AS-BUILT DRAWINGS

The engineer completing the ECC would also seal a set of as-built drawings that document any alterations from the originally permitted design. The as-builts are assumed to include the alterations for the installed well pump(s). WestLand assumes that the contractor would have assisted in maintaining accurate as-builts during the course of the project.

11.3. ADEQ APPROVAL OF CONSTRUCTION

ADEQ Approval of Construction (AOC) would be needed after the project has been constructed and before it can be tied into the water system and utilized. The review time required to obtain an AOC from ADEQ is 53 business days from the submission of the ECC and supplemental documents. WestLand assumes that this request for AOC would be approved.

11.4. COMMISSIONING AND PERFORMANCE TESTING

WestLand assumes that there would be a period of performance testing within the system to verify that the installed items function properly. Previous WestLand experience indicates that this often requires additional contractor work to fix small issues. WestLand assumes that there would not be any unusual issues discovered that would prevent the use of the infrastructure during this testing.

12. PROJECT COMPLETION

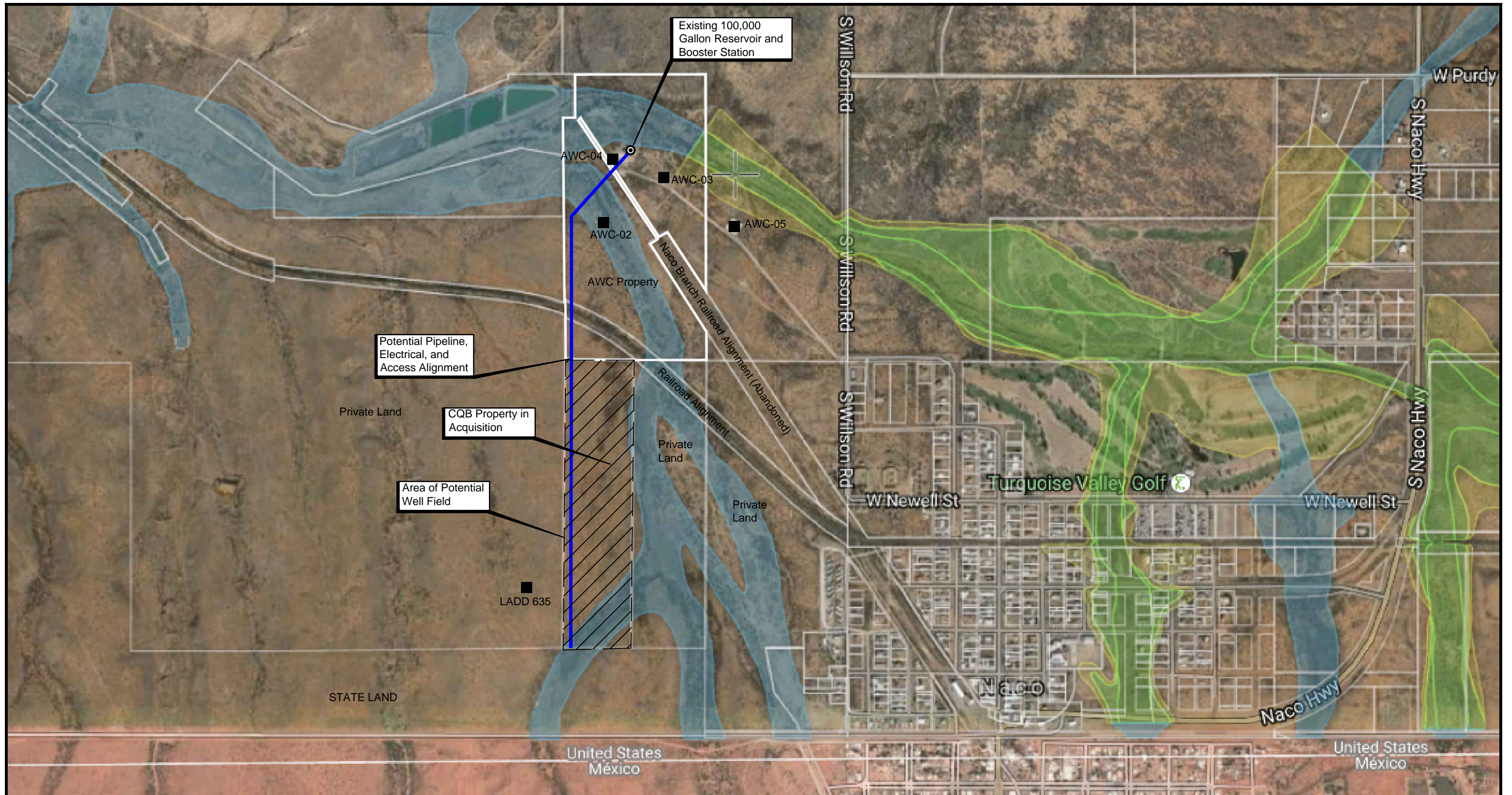
WestLand assumes that once the commissioning has been completed to the satisfaction of the AWC and CQB, the project would be considered complete.

13. IMPLEMENTATION SCHEDULE SUMMARY

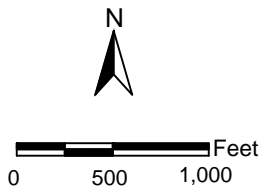
Based on the assumptions described above it is estimated that the wellfield implementation schedule would take a total of forty-eight months. This includes a variety of activities including conceptual design, environmental permitting, detailed design, pre-construction permitting, bidding, and construction completions.

The Gantt chart provided as **Attachment 1** to this memorandum depicts the project schedule. The critical path is highlighted in red showing that preliminary environmental survey, Corps review, design, construction, and post-construction dictate the allotted duration.

FIGURE



- Legend**
- Potential Alignment
 - Existing AWC Well Location
 - / / / / / Potential Well Field



NOTE: ALL LINEWORK IS ILLUSTRATIVE AND INTENDED ONLY TO SHOW APPROXIMATE LOCATION

WestLand Resources, Inc.
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FIGURE 1
 FMI COPPER QUEEN BRANCH
 Conceptual Infrastructure Improvements
 June 2017

ATTACHMENT I

Alternate Water Supply Implementation Schedule

