

Environmental Determination

MEMORANDUM

TO: File

FROM: Clay Schultz, Director, Regional Water Planning and Development

DATE: July 8, 2016

SUBJECT: Birome Water Supply Corporation, Hill County
Environmental Determination
Arsenic Reduction Project
Rural Water Assistance Fund Project No. 62511 (L120012)

The attached memorandum contains the staff's views regarding the environmental soundness of the Arsenic Reduction project proposed by the Birome Water Supply Corporation (Corporation), Hill County, Texas. This project will utilize planning, design, and construction funds from loan L120012 in the amount of \$665,000 from the Rural Water Assistance Fund (RWAFF). The Texas Water Development Board (TWDB) committed this loan on December 15, 2011. The Corporation closed on the loan on December 14, 2012.

The Corporation is proposing to develop an alternative water supply by purchasing treated surface water from the Post Oak Special Utility District (District). Specifically, the Corporation is proposing to construct a 50,000 gallon ground storage tank, a 300 gallon per minute (gpm) booster pump station, and approximately 27,000 linear feet of six-inch diameter polyvinyl chloride (PVC) pipeline from its existing Water Treatment Plant (WTP) No. 1 to connect to the District's system. Treated surface water would be blended with the current groundwater, thereby reducing the net arsenic concentration below the state and federal drinking water standard for maximum arsenic levels. The Corporation purchased a parcel of land using their own funds for the construction of the ground storage tank and the booster pump station.

These improvements will help the Corporation address a history of substandard water quality resulting in violation notices issued by the Texas Commission on Environmental Quality (TCEQ). Options available to the Corporation also include treatment of its water well for arsenic removal or developing new wells in an aquifer yielding groundwater with low levels of arsenic. The Corporation has determined that purchasing and transmitting treated water from the District is the most cost-effective method.

Based on staff's environmental review, I have determined that no significant adverse

environmental impacts should result from the proposed project discussed in the attached Environmental Determination. As required by 31 Texas Administrative Code §363.14, full consideration has been given to the views and comments of the requisite regulatory agencies and affected persons. Based on this review, the following conditions have been developed in order to ensure that this TWDB funded project is environmentally sound and will not have any adverse impacts on the quality of the human environment:

- As per agreement with the U.S. Army Corps of Engineers (USACE), the Corporation will use directional boring to avoid impacts to waters of the U.S., including wetlands (USACE Project Number SWF-2016-00073);
- In areas where clearing or trimming woody vegetation is necessary to install the new pipelines or create access for machinery or heavy equipment, the vegetation clearing activities or disturbance should be scheduled to occur outside of the March 15 – September 15 migratory bird nesting season. Contractors should be made aware of the potential of encountering nesting birds (either nesting or wintering) in the project area and be instructed to avoid disturbing the birds. If vegetation clearing must be scheduled to occur during the nesting season, vegetation to be impacted should be surveyed for active nests, including those of ground nesting species, by a qualified biologist in order to fully comply with the Migratory Bird Treaty Act. If active nests are observed during surveys, a 150-foot buffer of vegetation should remain around the nests until the young have fledged or the nest is abandoned (Texas Parks and Wildlife Department (TPWD) Project Number 36275);
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

With the addition of these conditions, the specified project elements above are environmentally sound and design funds may be released once all other requirements are satisfied.

Enclosure

TO: Clay Schultz, Director, Regional Water Planning and Development

THROUGH: Caaren Skrobarczyk, Manager, Team 2 - Brazos

FROM: Jean Devlin, Environmental Reviewer, Team 2 - Brazos

DATE: July 8, 2016

SUBJECT: Environmental Summary
Birome Water Supply Corporation, Hill County, Texas
Arsenic Reduction Project
Rural Water Assistance Fund: Project No. 62511 (L120012)

Pursuant to the environmental assessment requirements of Section §363.14 of the Texas Water Development Board (TWDB) rules, I have conducted a review of the Arsenic Reduction project proposed by the Birome Water Supply Corporation (Corporation), Hill County, Texas. This project will utilize planning, design, and construction funds from a \$665,000 loan from the Rural Water Assistance Fund (RWAFF) (loan L120012). The TWDB committed this loan on December 15, 2011 and the Corporation closed the loan on December 14, 2012.

Purpose and Need¹

The Corporation provides potable drinking water to 512 connections, approximately 1523 people, located in Hill, Limestone, and McLennan Counties northeast of Waco, Texas. The source of their water supply has historically been limited to two wells that provide 525 gallon per minute (GPM) of groundwater, which is treated for iron and arsenic at Water Treatment Plant (WTP) No. 1. On average, the two wells produce water containing arsenic levels above the 10 parts per billion (ppb) allowable by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). On occasion, levels have exceeded 15 ppb. Arsenic levels in excess of allowable limits are considered violations by both the EPA and TCEQ. Failure to take action to remove the violation will result in fines and enforcement actions.

Background

The Corporation is proposing to develop an alternative water supply by purchasing treated surface water from the Post Oak Special Utility District (District). Treated surface water would be blended with the current groundwater, thereby reducing the net arsenic concentration below the federal drinking water standard for maximum arsenic levels. These improvements will help the Corporation address a history of substandard water quality resulting in violation notices issued by TCEQ. Options available to the

¹ Birome Water Supply Corporation (June 2016). *Environmental Determination Form: Birome Water Supply Corporation: Proposed 2011 Water Quality Improvements* (Prepared by Kelley Environmental Consulting Services in cooperation with Duff Consulting Engineers, Inc., on behalf of Birome Water Supply Corporation). Received by TWDB June 13, 2016.

Corporation also include treatment of its water well for arsenic removal or developing new wells in an aquifer yielding groundwater with low levels of arsenic. The Corporation has determined that purchasing and transmitting treated water from the District is the most cost-effective method.

Project Description

The Corporation is proposing to connect with the District's water system, which is located near the Corporation's eastern boundary off State Highway 31. At this location, the Corporation would connect with the District to obtain water for dilution purposes. This would bring the Corporation into compliance with state and federal arsenic level standards. The project consists of an interconnect, a 50,000 gallon ground storage tank, a 300 gallon per minute (gpm) booster pump station, and approximately 27,000 linear feet of six-inch diameter polyvinyl chloride (PVC) pipeline to transport water to WTP No. 1 for blending. The Corporation purchased a parcel of land using their own funds for the construction of the ground storage tank and the booster pump station.

Several alternatives were evaluated to correct the arsenic problem in the Corporation's drinking water. Projected growth in the area was determined to be fairly modest, at 0.61% annually and therefore was not a major planning factor. The two primary alternatives considered included: 1) participation in a regional alternative system that is proposed to provide surface water from Lake Waco to a number of smaller water systems that require arsenic blending options; or 2) development of a filtration plant to remove arsenic from the water supply.

The first alternative includes a regional water system that is early in the planning stages and will likely require several years to implement and construct, which may be an unacceptable solution for providing relief to current users of the water system. The second alternative requires a significant capital outlay, pilot testing, and expenditure of resources that may be unnecessary in the event that the regional system does successfully develop as planned. The preferred alternative will minimize capital costs, satisfy the urgent need to comply with EPA and TCEQ arsenic standards, and have no significant environmental impacts.

Reviews by Regulatory Agencies and Resulting Conditions

Kelley Environmental Consulting Services, on behalf of the Corporation, coordinated with the following state and federal regulatory agencies: Texas Parks and Wildlife Department (TPWD), Wildlife Division, Wildlife Habitat Assessment Program; United States Army Corps of Engineers (USACE); the Texas Historical Commission (THC), State Historic Preservation Officer (SHPO); and United States Fish and Wildlife Service (USFWS). No adverse comments were received. A summary of the correspondence is described below.

Texas Parks and Wildlife Department, Wildlife Division, Wildlife Habitat Assessment Program

Kelley Environmental Consulting Services, on behalf of the Corporation, contacted TPWD on February 15, 2016. TPWD reviewed the proposed project on March 9, 2016 and indicated that the Wildlife Habitat Assessment Program does not anticipate significant adverse impacts to rare, threatened or endangered species, or other fish and wildlife resources.

Kelley Environmental Consulting Services conducted a Habitat Evaluation for the proposed project in February 2016. An on-site survey for the proposed water plant site and pipeline route was conducted on October 2, 2015, January 26, 2016, and February 4, 2016. The survey did not reveal the presence of federal or state listed threatened or endangered plant or animal species within the proposed project area. There is, however, a potential within the project area for impacts to migratory bird species.

Therefore, the RWAFF loan is conditioned to include the following: In areas where clearing or trimming woody vegetation is necessary to install the new pipelines or create access for machinery or heavy equipment, the vegetation clearing activities or disturbance should be scheduled to occur outside of the March 15 – September 15 migratory bird nesting season. Contractors should be made aware of the potential of encountering nesting birds (either nesting or wintering) in the project area and be instructed to avoid disturbing the birds. If vegetation clearing must be scheduled to occur during the nesting season, vegetation to be impacted should be surveyed for active nests, including those of ground nesting species, by a qualified biologist in order to fully comply with the Migratory Bird Treaty Act. If active nests are observed during surveys, a 150-foot buffer of vegetation should remain around the nests until the young have fledged or the nest is abandoned.

U.S Army Corps of Engineers, Fort Worth District

Kelley Environmental Consulting Services, on behalf of the Corporation, contacted the USACE, Fort Worth District on February 5, 2016. USACE provided a response letter dated April 22, 2016 (Project Number SWF-2016-00073) stating that the project will not involve activities subject to the requirements of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. USACE based this decision on a preliminary jurisdictional determination that there are waters of the United States within the project site and information submitted detailing project plans to avoid impacts to those waters through the use of boring.

The RWAFF loan is conditioned to read that, per agreement with USACE, the Corporation will use directional boring at all stream crossings to prevent impacts to waters of the United States, including wetlands.

Texas Historical Commission, State Historic Preservation Officer

Kelley Environmental Consulting Services contacted the THC, SHPO on February 6, 2016 requesting consultation for compliance with Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas. The THC provided a response on February 29, 2016 indicating that the project is not likely to have any adverse impacts on any identifiable cultural, historical, or archeological resources and that no survey is required for the project.

The RWAFF loan is conditioned to read that if archeological sites are discovered during construction, work will cease immediately in that area and the Corporation will notify the THC and the TWDB of the discovery. The THC and the TWDB will then proceed in accordance with the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800) prior to taking any action which would affect the cultural resources.

U.S. Fish and Wildlife Service, Austin Ecological Services Field Office

Kelley Environmental Consulting Services, on behalf of the Corporation, contacted USFWS on February 15, 2016. Kelley Environmental Consulting Services produced a report for the proposed project using the USFWS Information for Planning and Conservation (IPaC) tool on January 28, 2016. The IPaC tool produces a list of threatened and endangered species that may occur within a proposed project area or may be affected by a proposed project. According to the report, a total of 8 threatened, endangered, or candidate species are located in Hill County, Texas. As of the date of the report, these species include: Black-Capped Vireo (*Vireo atricapilla*), Golden-cheeked warbler (*Dendroica chrysoparia*), Least tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Whooping crane (*Grus americana*), Smooth Pimpleback (*Quadrula houstonensis*), and Texas Fawnsfoot (*Truncilla macrodon*). No critical habitats were identified within the project area. No official response from USFWS was received; however, TPWD commented they do not anticipate significant adverse impacts to rare, threatened or endangered species, or other fish and wildlife resources.

Conditions and Recommendation

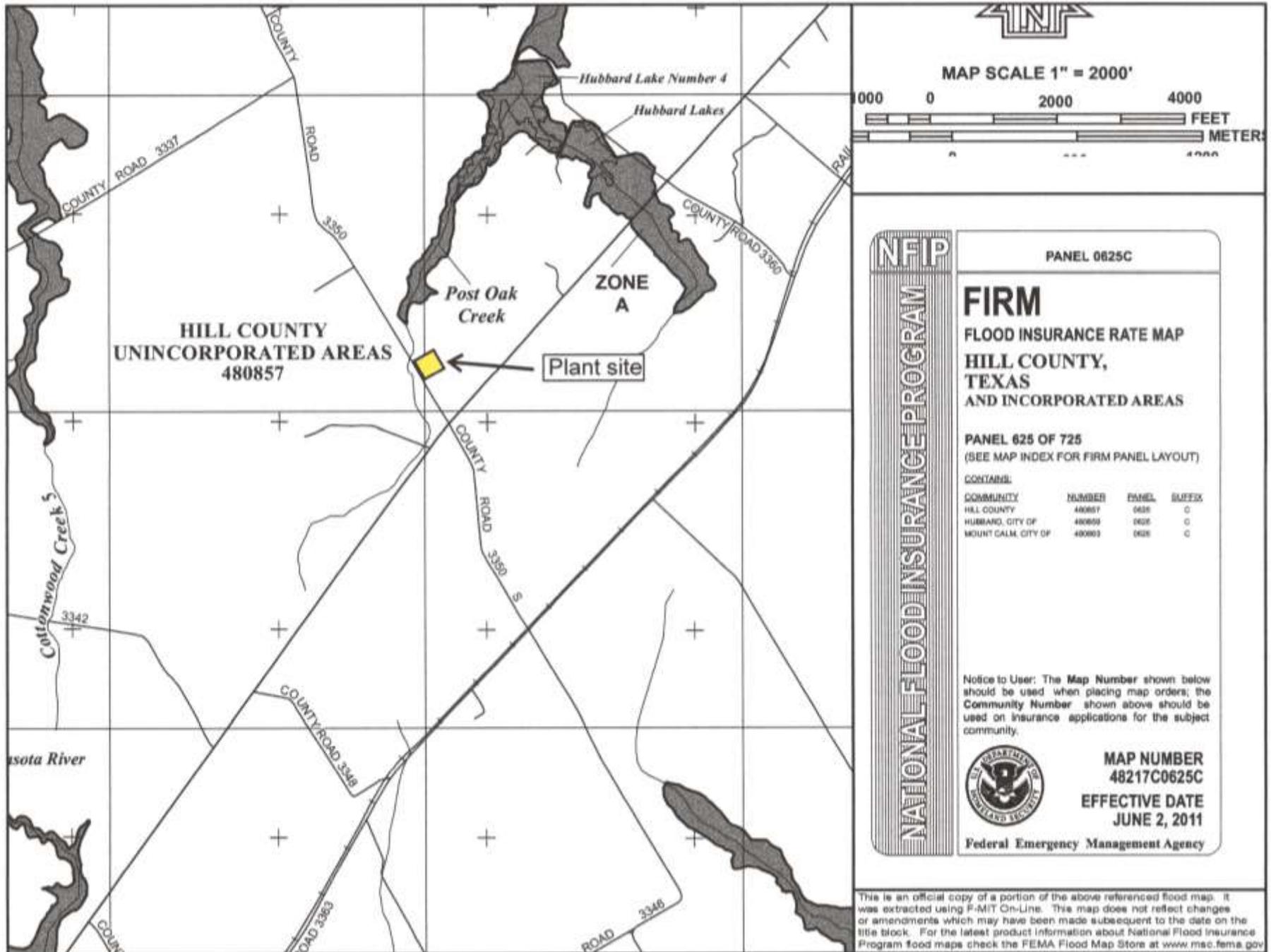
Full consideration has been given to the views and comments of the requisite regulatory agencies. Based on a detailed environmental review consistent with 31 TAC §363.14, the following conditions have been developed in order to ensure that this TWDB funded project is environmentally sound and will not have any adverse impacts on the quality of the human environment:

- As per agreement with the U.S. Army Corps of Engineers, the Corporation will use directional boring to avoid impacts to waters of the U.S., including wetlands (USACE Project Number SWF-2016-00073).

- In areas where clearing or trimming woody vegetation is necessary to install the new pipelines or create access for machinery or heavy equipment, the vegetation clearing activities or disturbance should be scheduled to occur outside of the March 15 – September 15 migratory bird nesting season. Contractors should be made aware of the potential of encountering nesting birds (either nesting or wintering) in the project area and be instructed to avoid disturbing the birds. If vegetation clearing must be scheduled to occur during the nesting season, vegetation to be impacted should be surveyed for active nests, including those of ground nesting species, by a qualified biologist in order to fully comply with the Migratory Bird Treaty Act. If active nests are observed during surveys, a 150-foot buffer of vegetation should remain around the nests until the young have fledged or the nest is abandoned (TPWD Project Number 36275).
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

With the addition of these conditions, I recommend that the Executive Administrator find the specified project elements above to be environmentally sound and that design funds be released once other requirements are satisfied.

Birome Water Supply Corporation Proposed 2011 Water Quality Improvements



MAP SCALE 1" = 2000'

0 2000 4000
FEET
0 2000
METERS

NFIP
PANEL 0625C

FIRM
FLOOD INSURANCE RATE MAP
HILL COUNTY,
TEXAS
AND INCORPORATED AREAS

PANEL 625 OF 725
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HILL COUNTY	480857	0625	C
HUBBARD, CITY OF	480850	0625	C
MOUNT GALE, CITY OF	480803	0625	C

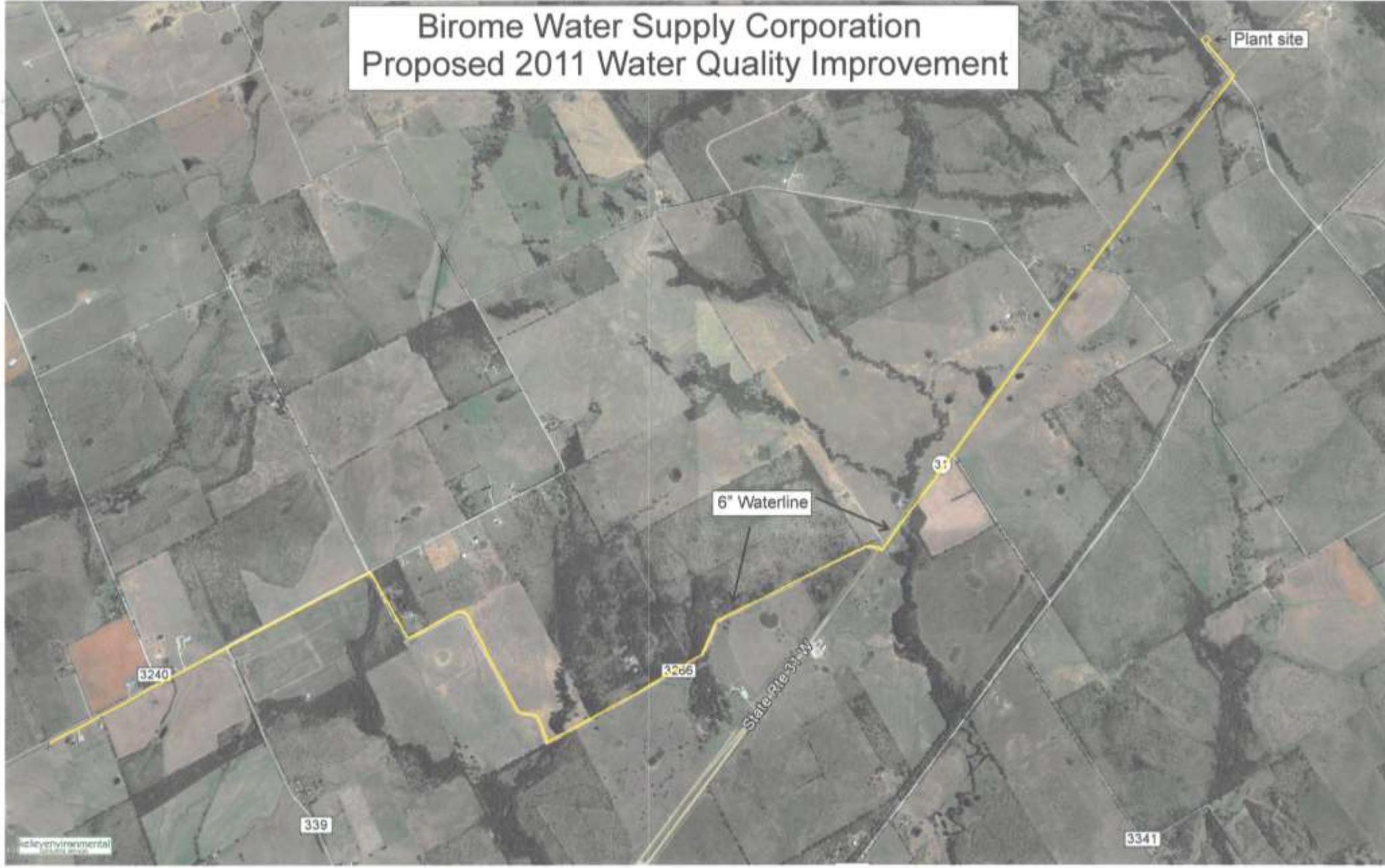
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48217C0625C
EFFECTIVE DATE
JUNE 2, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Birome Water Supply Corporation Proposed 2011 Water Quality Improvement



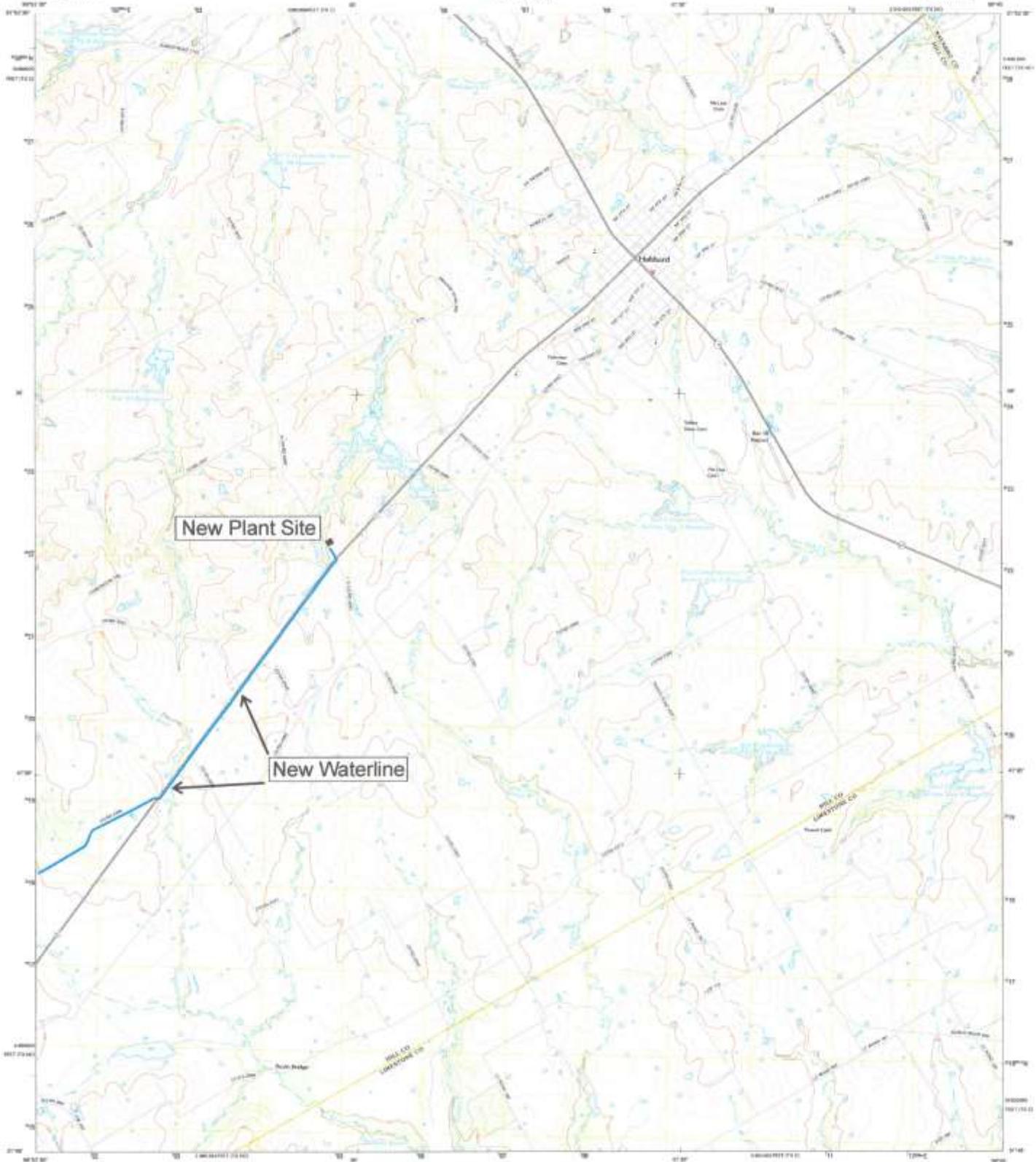
Birome Water Supply Corporation Proposed 2011 Water Quality Improvements



U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY



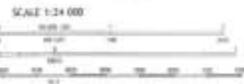
HUBBARD QUADRANGLE
TEXAS
7.5-MINUTE SERIES



New Plant Site

New Waterline

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
North Geographic Coordinate System of 1983 (NAD83)
UTM Zone 16Q UTM Projection
UTM Units: Meter
UTM Datum: North American Datum of 1983
UTM Spheroid: GRS 1980
UTM Datum: North American Datum of 1983
UTM Units: Meter



ROAD CLASSIFICATION

Interstate Road	State Road	County Road	Local Road
Interstate Road	State Road	County Road	Local Road
Interstate Road	State Road	County Road	Local Road
Interstate Road	State Road	County Road	Local Road



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Scale	1:24,000

HUBBARD, TX
2011