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CULTURAL RESOURCES SURVEY OF THE PROPOSED ±15,034-FOOT SHINER NORTH LOOP 12-INCH INLET GONZALES COUNTY, TEXAS

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MANAGEMENT SUMMARY

Goshawk Environmental Consulting, Inc. (Goshawk) conducted a cultural resources survey of the proposed ±15,034-foot (4,582-meter [m]) Shiner North Loop 12-Inch Inlet right-of-way (ROW) in Gonzales County, Texas at the request of EOG Resources, Inc. (EOG). The Area of Potential Effect (APE) consisted of a 75-foot (23-m) wide ROW. The ROW consisted of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement.

This survey was performed in compliance with the National Historic Preservation Act of 1966 (PL 89–665), as amended in 1974, 1976, 1980, and 1992; the National Environmental Policy Act of 1969 (PL 91–190, 83 Stat. 915 USC 4231, 1970); the Procedures for the Protection of Historic and Cultural Properties (36 CFR 800); the Archaeological Resources Protection Act of 1979; as well as the guidelines set forth by the Council of Texas Archeologists (1995).

The field investigation was conducted by Goshawk archeologists Scott Justen with Bear Aspra on 6 November 2014. Scott Justen served as the primary author and Reign Clark served as quality control for the report of investigations. Zach Stark provided Geographic Information Systems (GIS) figures for the report.

Two review areas were identified within the proposed ROW, each containing a single stream (specifically, segments of Gelhorn Creek, proper) potentially subject to federal regulation. Four shovel tests were placed within each area of review near the potentially jurisdictional streams and upon the adjacent terraces. The cultural resources survey, including shovel testing and surface inspection, was conducted within the two areas of review which totaled approximately 1.9 acres (0.8 hectare [ha]) in area. Shovel testing yielded black or brownish black clay soils in a surface context. All of the shovel tests yielded negative results.

No cultural materials were found on the surface or within any of the shovel tests conducted during the cultural resources survey. Based on these results, it is Goshawk's opinion that construction of the proposed project will have no impact to significant cultural resources within the areas surveyed. Goshawk recommends that the project be allowed to proceed, as planned.

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1.0 STUDY AREA

Goshawk Environmental Consulting, Inc. (Goshawk) conducted a cultural resources survey of the proposed ±15,034-foot (4,582-meter [m]) Shiner North Loop 12-Inch Inlet right-of-way (ROW) located in Gonzales County, Texas (Appendix A, Figure 1). The proposed ROW was located approximately 6.1 miles (9.8 kilometer [km]) northeast of Shiner, Texas and 0.5 miles (0.8 km) south of the intersection of County Road (CR) 355 and CR 363. The APE was mapped within the Hamon and Shiner, Texas, United States Geological Survey (USGS) topographic quadrangles (Appendix A, Figure 2). The Area of Potential Effect (APE) consisted of a 75-foot (23-m) wide ROW. The ROW width consisted of a 50-foot (15-m) wide permanent easement and a 25-foot (8-m) wide temporary construction easement.

The Shiner North Loop 12-Inch Inlet APE was located approximately 0.5 mile (0.8 km) to the south of the intersection of CR 355 and CR 363. The APE crossed loamy and clayey fluvial low lands, and sandy or loamy undulating upland terrain. The vegetation consisted of grasses, hackberry, green briar, cedar, and oak. The dominant local land use was for rangeland and oil and gas development. Surface visibility was good within the APE at the time of the survey, ranging between 40 and 60 percent. Representative photographs of the APE are provided in Appendix B.

2.0 RESEARCH DESIGN

As per EOG's established due diligence protocol, any segment of an APE that falls within an area potentially subject to federal regulation or any portion of an APE within a 328-foot (100-m) radius of a known cultural site would be subjected to a cultural resources survey. Within a National Register District (NRD), the protocol dictates that portions of an APE within a 984-foot (300-m) radius of a previously recorded archeological site (regardless of the site's National Register of Historic Places [NRHP] or State Antiquities Landmark [SAL] status) would be reviewed. Any segment of an APE to be surveyed under this protocol would be labeled as a "Review Area."

Once the boundaries of a proposed ROW have been established, Goshawk ecologists evaluate the ROW, via desk top and field reviews, to determine if the project will impact any streams or other "Waters of the US" potentially regulated by the United States Army Corps of Engineers (USACE). Additionally, Goshawk archeologists search the Texas Historical Commission's (THC's) Archeological Sites Atlas (Atlas) website database for Gonzales County and Hamon and Shiner, Texas topographic quadrangle to determine if previously recorded site locations, archeological surveys, and/or place names of interest are located on-site or within the designated search radii. If a potential "Waters of the US" or a recorded cultural resource is identified within the specified parameters, a cultural resource survey is conducted.

The cultural resources survey was performed according to Council of Texas Archeologists (CTA) survey standards, in compliance with the THC's Rules of Practice and Procedure, Chapter 26, Section 27 (THC 2014a, CTA 1995), and under the general guidelines of the Register of Professional Archaeologists (RPA 2014).

The field investigation (pedestrian survey and shovel testing) was performed on 6 November 2014. The ground surface of the proposed ROW was visually inspected on foot within the established Review Area(s). Shovel tests were administered in the vicinity of the potentially jurisdictional stream(s) and immediately adjacent areas that have the greatest potential for temporally stratified soil deposits. Shovel tests, typically 12 inches (30 centimeter [cm]) in diameter, were excavated to sterile substratum. The shovel probe matrix was sifted through ¼-inch (0.6-cm) hardware cloth. If soils of high clay constituency were encountered, the matrix was hand sorted. Shovel test locations were recorded with hand-held Global Positioning System (GPS) units and transferred to topographic maps. If present, newly discovered or revisited sites were documented using standard State of Texas site recording forms and plotted by GPS coordinates for entry into the Atlas database. Shovel testing was conducted to ascertain the horizontal and vertical limits of any cultural manifestation discovered within the review areas. Hand-drawn sketch maps were produced for each cultural site recorded or revisited. The survey was performed on private property and was funded by a private source. No artifacts were collected during the survey. Artifact assemblages were photographed in the field and left where found.

3.0 RESULTS

3.1 ARCHIVAL SEARCH

Archival research conducted using the THC's Atlas online database identified one previously recorded archeological site situated within a 1.2-mile (2.0-km) radius from the APE. Site 41GZ230 was located approximately 1.2 miles (2.0-km) southeast of the APE, and will be discussed in detail below.

3.1.1 Site 41GZ230

Site 41GZ230 was recorded as an undifferentiated prehistoric lithic scatter of flakes and fire-cracked rock (THC 2014b). This site was located in a plowed pasture east of Rocky Creek and north of an unnamed tributary of Rocky Creek. The site measured 262 feet (80 m) east-to-west by 180 feet (55 m) north-to-south. The artifact assemblage observed included six flakes and 12 pieces of fire-cracked rock. The initial evaluation concluded that the site was not eligible for designation as a SAL or for listing on the NRHP.

3.1.2 NRHP and SAL Properties

The APE is located within the Cuero I NRD. Designated in 1974, the Cuero I NRD encompasses 580,000 acres (235,000 hectares) along the Guadalupe River Basin. It was created to define and preserve cultural resources in a region threatened by a proposed reservoir. Work conducted in 1972 to 1973 resulted in the documentation of 352 significant prehistoric and historic sites spanning 9,000 years. The sites ranged in age from Late Paleoindian to Early Anglo-American settlements that date to the 1820s and 1830s. No NRHP-listed properties or SALs have been recorded within 1.2 miles (2.0 km) of the proposed ROW (THC 2014). According to the Atlas, the nearest NRHP-listed property is the Saints Cyril and Methodius Church, located within the town Shiner, Texas approximately 6 miles (11 km) southeast of the APE. The Saints Cyril and Methodius Church was constructed in the Romanesque Revival style of Architecture and was completed in 1921.

3.2 PROJECT AREA SOILS

The Web Soil Survey of the Natural Resources Conservation Service (NRCS 2014) was consulted to determine the major soil types along the proposed Shiner North Loop 12-Inch Inlet ROW. Those soils consisted of Arol fine sandy loam, Carbengle loam, Flatonia sandy clay loam, Greenvine clay, Meguin silty clay loam, and Shiner fine sandy loam.

Arol fine sandy loam, 1 to 3 percent slopes. Arol soils are moderately well-drained. A typical soil column consists of fine sandy loam at 0 to 6 inches (0 to 15 cm), overlying clay at 6 to 38 inches (15 to 97 cm), and overlying bedrock at 38 to 80 inches (97 to 203 cm). These soils are derived from residuum weathered from tuffaceous sandstone and siltstone of the Catahoula Formation of Miocene age. Typically, these soils are located on ridges and summits.

Carbengle loam, 3 to 5 percent slopes. Carbengle soils are well-drained. A typical soil column consists of loam at 0 to 13 inches (0 to 33 cm), overlying clay loam at 13 to 38 inches (33 to 97 cm), and overlying bedrock at 38 to 80 inches (97 to 203 cm). This soil type is derived from residuum weathered from calcareous sandstone in the Fleming and Oakville Formations of Miocene age. Typically, these soils are located on back slopes, side slopes, and ridges.

Flatonia sandy clay loam, 1 to 3 percent slopes. Flatonia soils are well-drained. A typical soil column consists of sandy clay loam at 0 to 12 inches (0 to 30 cm), overlying clay at 12 to 54 inches (30 to 137 cm), and overlying bedrock at 54 to 80 inches (137 to 203 cm). These soils are derived from residuum weathered from siltstone of the Catahoula (and associated) Formations of Tertiary age. Typically, these soils occur on summits and ridges.

Greenvine clay, 1 to 3 percent slopes. Greenvine soils are well-drained. A typical soil column consists of clay from 0 to 38 inches (0 to 97 cm) overlying bedrock from 38 to 80 inches (97 to 203 cm). These soils are derived from residuum from tuffaceous clays and sandstone. Typically, these soils are found on back slopes and foot slopes.

Meguin silty clay, 0 to 1 percent slopes, frequently flooded. Meguin soils are well-drained interfluvial soils. A typical soil column consists of silty clay loam at 0 to 13 inches (0 to 33 cm), overlying deep silty loam deposits to a depth of 80 inches (203 cm). These soils are derived from calcareous loamy alluvium. Typically, these soils are located within floodplains.

Shiner fine sandy loam, 3 to 5 percent slopes. Shiner soils are well-drained upland soils. A typical soil column consists of fine sandy loam at 0 to 8 inches (0 to 20 cm), overlying sandy clay loam at 8 to 16 inches (20 to 41 cm), overlying stratified weathered bedrock to fine sandy loam at 16 to 25 inches (41 to 64 cm), and overlying fine sandy loam at 25 to 80 inches (64 to 203 cm). The parent material of Shiner soils was not provided on the NRCS database. Typically, these soils are located on summits, shoulders, and back slopes.

Shiner fine sandy loam, 5 to 12 percent slopes. Shiner soils are well-drained upland soils. A typical soil column consists of fine sandy loam at 0 to 8 inches (0 to 20 cm), overlying sandy clay loam at 8 to 16 inches (20 to 41 cm), overlying stratified weathered bedrock to fine sandy loam at

16 to 35 inches (41 to 89 cm), and overlying fine sandy loam at 35 to 80 inches (89 to 203 cm). The parent material of Shiner soils was not provided on the NRCS database. Typically, these soils are located on summits, shoulders, and back slopes.

3.3 PEDESTRIAN SURVEY AND SHOVEL TESTING

Two review areas were identified within the proposed ROW, each containing a single stream potentially under federal jurisdiction. Shovel tests were placed adjacent to the streams in areas that exhibited the least apparent erosion or disturbances where intact, stratified soils were most likely to be found (Appendix A, Figure 2). The results of the shovel testing regimen are presented in Appendix C. A discussion of findings is presented below.

3.3.1 Review Area 1

Review Area 1 encompassed a well-channelized segment of Gelhorn Creek, proper. The stream had incised into the landscape between 4.9 and 6.6 feet (1.5 and 2.0 m) in depth and measured between 3.3 and 6.6 feet (1.0 and 2 m) in width (Appendix B, Photo 1). Both banks of the stream ascended steep inclines to nearly level terraces. Ground surface visibility within Review Area 1 was variable within the APE ranging between 40 and 60 percent. Vegetation within the area of review included grasses, mesquite, green briar, oak, cedar elm, and hackberry.

All four shovel tests conducted within Review Area 1 yielded homogenous black clay soils in a surface context. Tests were terminated at approximately 12 inches (30 cm) below surface. None of the four shovel tests conducted within the review area yielded positive results.

3.3.2 Review Area 2

Review Area 2 encompassed another well-channelized segment of Gelhorn Creek, proper. The stream had incised into the landscape between 4.9 and 6.6 feet (1.5 and 2.0 m) in depth and measured between 4.9 and 6.6 feet (1.5 and 2 m) in width (Appendix B, Photo 2). Both banks of the stream ascended steep inclines to nearly level terraces. Ground surface visibility within Review Area 2 was highly viable within the APE ranging between 10 and 60 percent. Vegetation within the area of review included grasses, mesquite, green briar, oak, cedar elm, and hackberry.

All four shovel tests conducted within Review Area 2 yielded homogenous black/brown clay soils in a surface context. Tests were terminated between 8 and 12 inches (20 and 30 cm) below surface. None of the four shovel tests conducted within the review area yielded positive results.

4.0 RECOMMENDATIONS

Goshawk conducted a cultural resources survey including an intensive surface inspection, augmented by eight shovel tests, within the proposed ±15,034-foot (4,582- m) Shiner North Loop 12-Inch Inlet ROW. None of the shovel tests yielded positive results and no cultural material was observed upon the ground surface. It is Goshawk's opinion that construction of the proposed project will have no impact to significant cultural resources within the areas surveyed. Therefore, Goshawk recommends that construction be allowed to proceed, as planned. In the unlikely event that cultural resources (including human remains) are discovered, all construction or maintenance activities should be immediately halted and the USACE and an archeologist should be notified.

5.0 REFERENCES CITED

Council for Texas Archeologists (CTA)

1995 Council of Texas Archeologist Guidelines: Guidelines for Cultural Resources.

Natural Resources Conservation Service (NRCS)

2014 http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, (accessed November 2014).

Register of Professional Archaeologists (RPA)

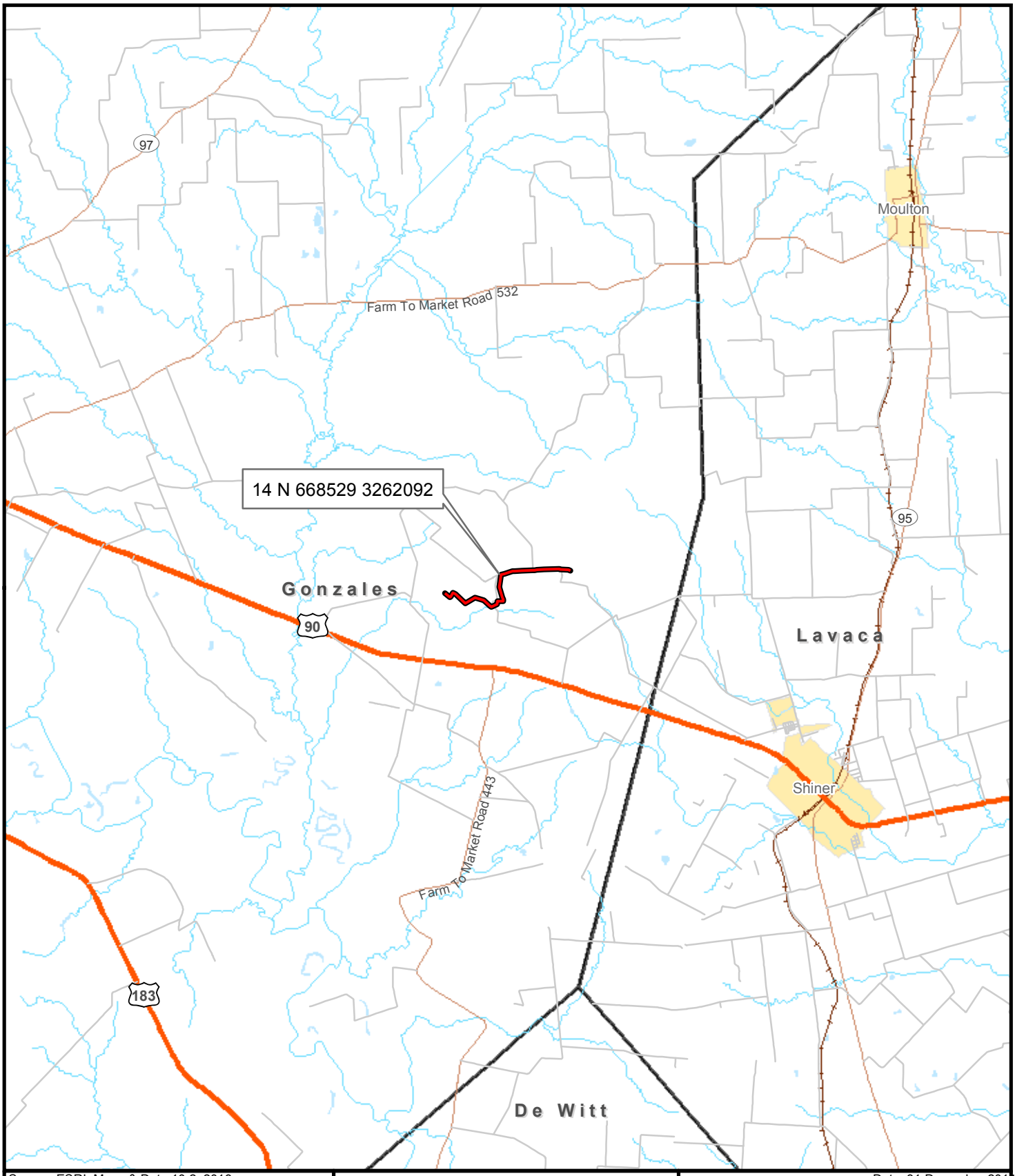
2014 Code of Conduct and Standards of Research Performance. Register of Professional Archaeologists website. www.rpanet.org/displaycommon.cfm?an=2, (accessed November and December 2014).

Texas Historical Commission (THC)

2014a s.v. “Rules and Regulations” http://www.thc.state.tx.us/rulesregs/rrdefault.shtml, (accessed November 2014).

2014b Texas Archeological Sites Atlas, "Gonzales County and Hamon and Shiner Quadrangles", http://nueces.thc.state.tx.us/, (accessed November and December 2014).

APPENDIX A
FIGURES



Source: ESRI, Maps & Data 10.2, 2013
Projection: NAD 1983 UTM 14N

0 2.5 5 Kilometers

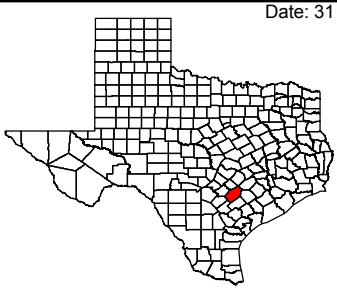
0 1.75 3.5 Miles

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 1
Vicinity Map
Gonzales County, Texas

Shiner North Loop 12" Inlet

Date: 31 December 2014



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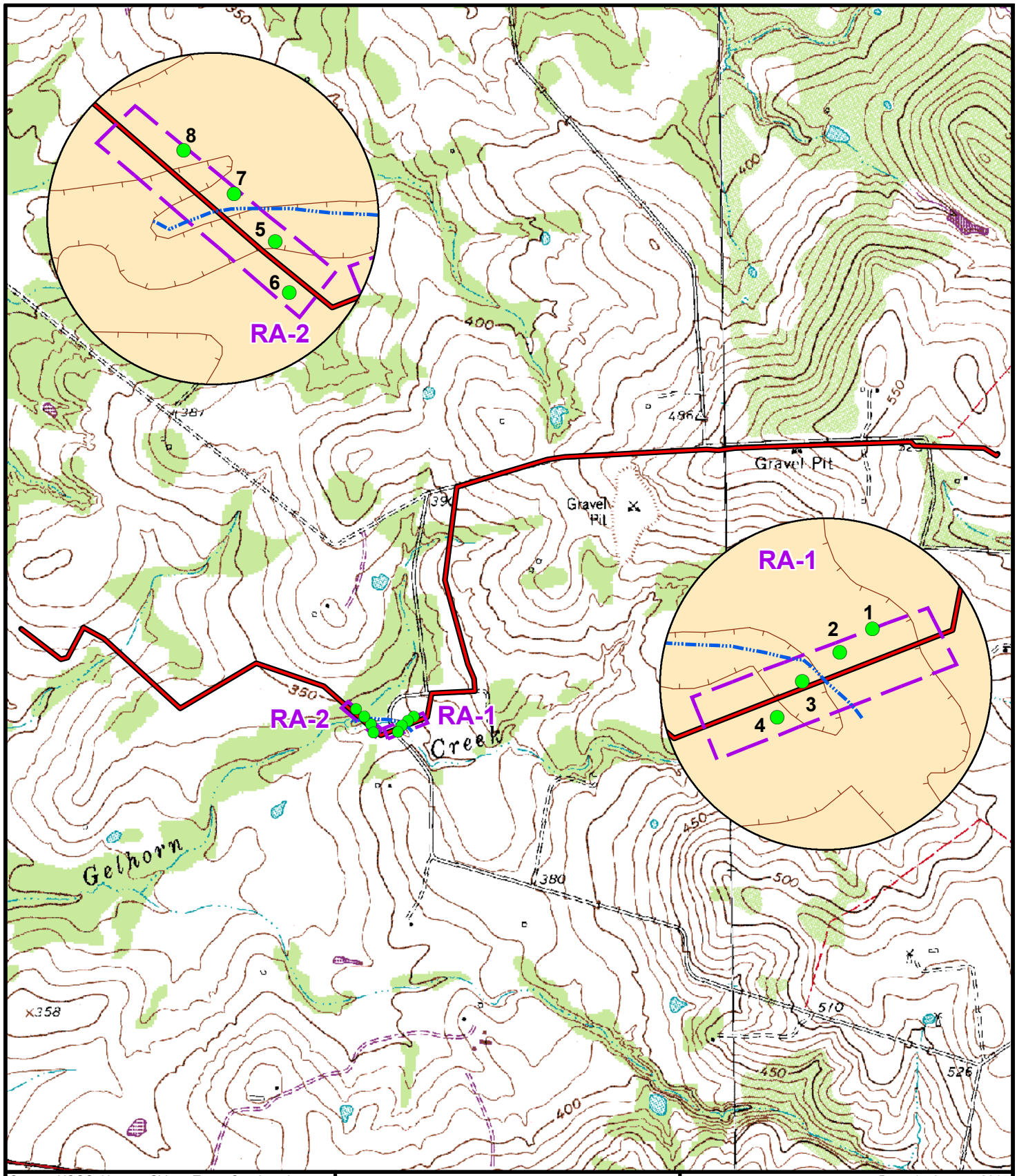

Source: USGS, Hamon, Shiner, Texas Quadrangles.

Date: 14 January 2015

0 375 750 1,500 Feet

0 115 230 460 Meters

GOSHAWK ENVIRONMENTAL CONSULTING, INC.

Figure 2
Shovel Test Locations
Gonzales County, Texas

Shiner North Loop 12" Inlet

LEGEND

- Proposed Pipeline
- Waters of the US
- Review Areas
- Negative Shovel Test

N

APPENDIX B
REPRESENTATIVE PHOTOGRAPHS

Photo 1: Overview of Stream within Review Area 1, Facing Northeast

Photo 2: Overview of Stream within Review Area 2, Facing Southwest

APPENDIX C
SHOVEL TEST DATA
(Zone14 NAD 1983)

Shiner North 12 Inch Inlet Pipeline (14 R NAD83)									
Report ST#	ST#	WP#	Easting	Northing	Depth (cm)	Soil Color	Soil Composition	Artifacts	Review Area
1	BA1	41	668545	3262115	0-30	Black	Clay	None	1
2	BA2	42	668545	3262106	0-20	Black	Clay	None	1
3	BA3	43	668529	3262092	0-20	Black	Clay	None	1
4	BS4	44	668533	3262085	0-30	Black	Clay	None	1
5	BS5	45	668418	3262094	0-30	Black brown	Clay	None	2
6	BS6	46	668415	3262081	0-30	Black brown	Clay	None	2
7	BS7	47	668441	3262125	0-30	Black brown	Clay	None	2
8	BS8	48	668439	3262145	0-30	Black brown	Clay	None	2