ATTACHMENT A-2
Water Well Location and Usage Survey

Water Well Location and Usage Survey

Trane Technologies–Sylvania
Remediation Sylvania Georgia Plant

EPA ID No. GAD 065 344 301

AEM Project No. 1162-1701-1

April 14, 2017

Prepared For:

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SECTION 1.0
INTRODUCTION

Atlanta Environmental Management, Inc. (AEM) completed a water well location and usage survey in support of the RCRA Hazardous Waste Permit Reapplication in September 1997. The water well survey was then updated with the submittal of the RCRA Hazardous Waste Permit Reapplication–Part A and Part B dated April 16, 2008, and revised December 9, 2008, for the Ingersoll Rand–Sylvania Remediation at the Sylvania Georgia Plant (SGP). The survey was conducted to determine the number and location of private and public withdrawal points (water wells) within ¼ mile of the facility boundary as required by 40 CFR 270.13(l).

1.1 OBJECTIVE

This water well location and usage survey is being updated at the request of Ingersoll Rand to confirm that water well use information is current. The information in the original water well location and usage survey was reviewed and the survey redone during March 2017 as part of the revision.

The survey, as detailed below, consisted of a search of regulatory documents, a thorough area reconnaissance within a ¼-mile radius of the facility boundary, interviews with property owners (or tenants) and their neighbors, and telephone inquiries/interviews with several city/county agencies and water well drilling companies.

The City of Sylvania operates three water wells within the Sylvania city limits—all outside a ¼-mile radius of the facility boundary. The Sylvania city well locations are shown on Figure 1, although the wells are outside a ¼-mile radius of the facility boundary. Well No. 1 is in the southeast corner of the intersection of Highway 301 and Highway 21. The well designated Well No. 3 is on the north side of Millen Road, between Westchester and Industrial Roads. The third well, known as Well No. 4, is in the northeast corner of the intersection of Millen Road and Frontage Road East. Two other former wells previously used by the City of Sylvania are now inactive.

According to city and Koyo Bearings USA LLC (Koyo) personnel, residences inside the city limits are required to use city water for drinking purposes. However, it must be noted that *Georgia EPD Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units* indicates that all groundwater is considered a potential source of drinking water. Therefore, groundwater sources such as car washes and garden nurseries were also included in the review of potential sources.

1.2 SITE HYDROGEOLOGY

Three major hydrostratigraphic units underlying the facility were mapped during site assessment activities. In sequence from land surface downward, these units are the perched water-bearing zone, the uppermost aquifer, and the limestone aquifer.

1.2.1 Perched Water-Bearing Zone

The perched water-bearing zone, where present, is a thin, 10 to 15 feet thick, clayey sand that comprises the surficial hydrostratigraphic unit across most the site. The perched water-bearing zone underlies approximately two thirds of the facility. The saturated thickness of the perched water-bearing zone is generally 5 feet or less.

An underlying stiff clay unit supports the perched water in the clayey sand. The supporting clay reaches a maximum thickness of approximately 25 feet but averages approximately 15 feet across the site. The elevation of the top of the clay, where present, determines the general groundwater flow direction in the perched water-bearing zone.

Groundwater in the perched zone flows to the east and northeast, although limited groundwater migration occurs to the north and northeast beneath the plant building.

1.2.2 Uppermost Aquifer

Beneath the perched water-bearing zone and its underlying, confining clay is a sequence of sand, clayey sand, and sandy clay referred to as the uppermost aquifer. The top of this sequence is usually encountered at depths ranging from 0 to 30 feet below land surface (bls) across the site; its base typically occurs at a depth of 80 to 100 feet bls.

The uppermost aquifer is separated into two distinct water-bearing horizons predominantly composed of sands and clayey sands over most of the site. These are termed the upper and lower horizons of the uppermost aquifer and are usually separated by an intervening 7- to 15-foot-thick layer of sandy clay.

The upper sand horizon of the uppermost aquifer is typically semiconfined, but in some areas where the perched water-bearing zone is absent, especially in the northern portion of the facility, groundwater is present under unconfined (water table) conditions. The lower sand horizon of the uppermost aquifer is semiconfined except where, in limited areas, the middle clay horizon is absent. Overall, the lower sand horizon is less distinct and is less permeable than the upper sand horizon.

Groundwater flow in the upper and lower horizons of the uppermost aquifer is to the northeast towards the network on recovery wells operating adjacent to the property boundary.

1.2.3 Limestone Aquifer

The deepest hydrostratigraphic unit monitored at the site is the limestone aquifer. The top of the limestone is present at a depth of approximately 90 to 140 feet bls. The limestone is confined from above, and separated from the uppermost aquifer, by a clay and sandy clay unit ranging from 10 to 40 feet thick.

SECTION 2.0
WELL SURVEY RESEARCH

As part of the survey, several government agencies and private contractors were contacted either by telephone or via the internet. The following is a list of the entities contacted and the information obtained.

2.1 CITY OF SYLVANIA DIRECTOR OF PUBLIC UTILITIES/SUPERINTENDENT
Mr. Mike Smith
(912) 564-1233

Mr. Smith indicated that the City of Sylvania receives its drinking water from three wells located within the city limits of Sylvania, Georgia. He stated that there were once five wells but two wells are now inactive. These three-active public drinking water wells are located more than 1 mile west and southwest of the facility.

Mr. Smith confirmed that he knew of six additional private water wells from the previous November 2008 water well survey update. These six well locations are shown on Figure 1. He said he did not know of any other water wells adjacent to the Koyo facility. Mr. Smith indicated that he thought the six private wells provided residential drinking water.

2.2 SCREVEN COUNTY MANAGER
Mr. Rick Jordan
(912) 564-7335

Mr. Rick Jordan, the Screven County Manager, could not be reached by phone and did not respond to voicemails as of March 23, 2017. Mr. Jordan also could not be reached by phone and did not respond to voicemails in 2008 when the water well survey was last updated. If any relevant information and/or records are received from Screven County, the information will be forwarded to Georgia Environmental Protection Division (EPD) and Ingersoll Rand as an addendum to this survey.

2.3 GEORGIA DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION, WATERSHED PROTECTION BRANCH

An electronic search to identify water wells in the county was performed via the internet (https://epd.georgia.gov/watershed-protection-branch-lists). The following documents were reviewed:

- Non-Farm Ground Water Withdrawal Permit List (revised January 2017)
- Farm Water Withdrawal Permit List (revised May 2014)
- Drinking Water/Public Water System Permit List (revised periodically)
- Non-Farm Surface Water Withdrawal Permit List (revised January 2017)
- Licensed Water Well Drillers List (revised December 8, 2016)

No wells within the specified ¼-mile radius of the facility were listed in these documents.

2.4 HILL WELL DRILLING
Mr. Charles D. Hill
(912) 829-4216

Mr. Hill stated that his company has not drilled any new wells within a ¼-mile radius of the facility during the last several years.

2.5 JOHNSON WELL DRILLING
Mr. Donnie Johnson Jr.
(912) 863-4509

Following a review of company records, Mr. Johnson stated that Johnson Well Drilling has installed no water wells within a ¼-mile radius of the facility during the last several years.

2.6 SHEPPARD WELL & PUMP SERVICE
Mr. Johnny Sheppard
(912) 857-3542

Following a review of company records, Mr. Sheppard stated that his company has not installed a water well within 2 miles of the facility in over 15 years.

2.7 SMITH WELL DRILLING
Mr. Bo Smith
(912) 829-9377

Following a review of company records, Mr. Smith stated that, to his knowledge, his company has not installed a water well within a ¼-mile radius of the facility.

SECTION 3.0
WELL SURVEY RESULTS

3.1 PUBLIC WATER SOURCES WITHIN THE ¼-MILE SPECIFIED RADIUS OF THE FACILITY

No public water sources were identified within a ¼-mile radius of the property boundaries.

3.2 PRIVATE WATER SOURCES WITHIN THE ¼-MILE SPECIFIED RADIUS OF THE FACILITY

Five private water sources were identified within an approximate ¼-mile radius of the facility. An additional well may have been installed on the Overstreet property at a new residence built on the property (Well No. 6 below). It has not yet been determined whether a new well was installed on the property or whether the new residence uses the Hunt Club well for water (Well No. 5 below).

Well locations are depicted on Figure 1 and are described below.

Well No. 1

Owner: Mr. Robert (Bob) Mills.

Location: West of Friendship Road.

Use: Drinking water.

Depth of Well: Unknown.

Distance from Property Boundary: Approximately 240 feet west of the facility.

Hydraulic Relation to the Facility: Crossgradient, based on a northerly groundwater flow in the area.

Additional Information: The well is adjacent to a double-wide trailer. The residence is not connected to city water. The well is sampled semiannually by Ingersoll Rand when the property is occupied and the well is being used. No volatile organic compounds (VOCs) have ever been detected in this well when it was sampled.

Well No. 2

Owner: Mr. Raymond Colson.

Location: 560 Friendship Road (eastern side).

Use: Drinking water.

Depth of Well: Unknown.

Distance from Property Boundary: Approximately 180 feet north-northeast of the facility boundary.

Hydraulic Relation to the Facility: Downgradient, based on a northerly groundwater flow in the area.

Additional Information: The residence is not connected to city water. The well is sampled semiannually by Ingersoll Rand and no VOCs have ever been detected in this well.

Well No. 3

Owner: Mr. Raymond Colson.

Location: 560 Friendship Road (eastern side).

Use: Drinking water.

Depth of Well: Unknown.

Distance from Property Boundary: Approximately 180 feet north-northeast of the facility boundary.

Hydraulic Relation to the Facility: Downgradient, based on a northerly groundwater flow in the area.

Additional Information: The residence is not connected to city water. This well was installed to provide drinking water to a new residence on the property. Ingersoll Rand sampled the well after it was installed in 2008 and no VOCs were detected. It has not been sampled since because it was decided that the existing well at the Colson property would be sufficient to characterize the groundwater at this property.

Well No. 4

Owner: Mr. Willie Dean Waters.

Location: 590 Friendship Road (eastern side).

Use: Drinking water.

Depth of Well: Unknown.

Distance from Property Boundary: Approximately 510 feet north-northeast of the facility boundary.

Hydraulic Relation to the Facility: Downgradient, based on a northerly groundwater flow in the area.

Additional Information: The residence is not connected to city water. The well is sampled semiannually by Ingersoll Rand and no VOCs have ever been detected in this well.

Well No. 5

Owner: Mr. Bob Overstreet.

Location: The Hunt Club is on the western side of a fire-break road. Mr. Overstreet's home address is 1063 W. Ogeechee Road (shown on Figure 1 as Brannens Bridge Road).

Use: Drinking water.

Depth of Well: Unknown.

Distance from Property Boundary: Approximately 1,260 feet northeast of the facility boundary.

Hydraulic Relation to the Facility: Downgradient, based on a northerly flow direction.

Additional Information: This water well is sampled semiannually by Ingersoll Rand. No VOCs have ever been detected in this well.

Well No. 6 (Potential)

Owner: Mr. Bob Overstreet or Beth Overstreet (presumed).

Location: There is a new home that's been constructed during the past few years at the Overstreet property, owned by Bob Overstreet or his sister Beth Overstreet. It is unclear if there is a new well associated with this property or if the residence is using the well water from the Hunt Club well (well #5). Attempts made to contact Mr. Overstreet were unsuccessful.

Use: Drinking water.

Distance from Property Boundary: Approximately 1,250 feet east/northeast of the facility boundary.

Hydraulic Relation to the Facility: Side gradient, based on a northerly flow direction.

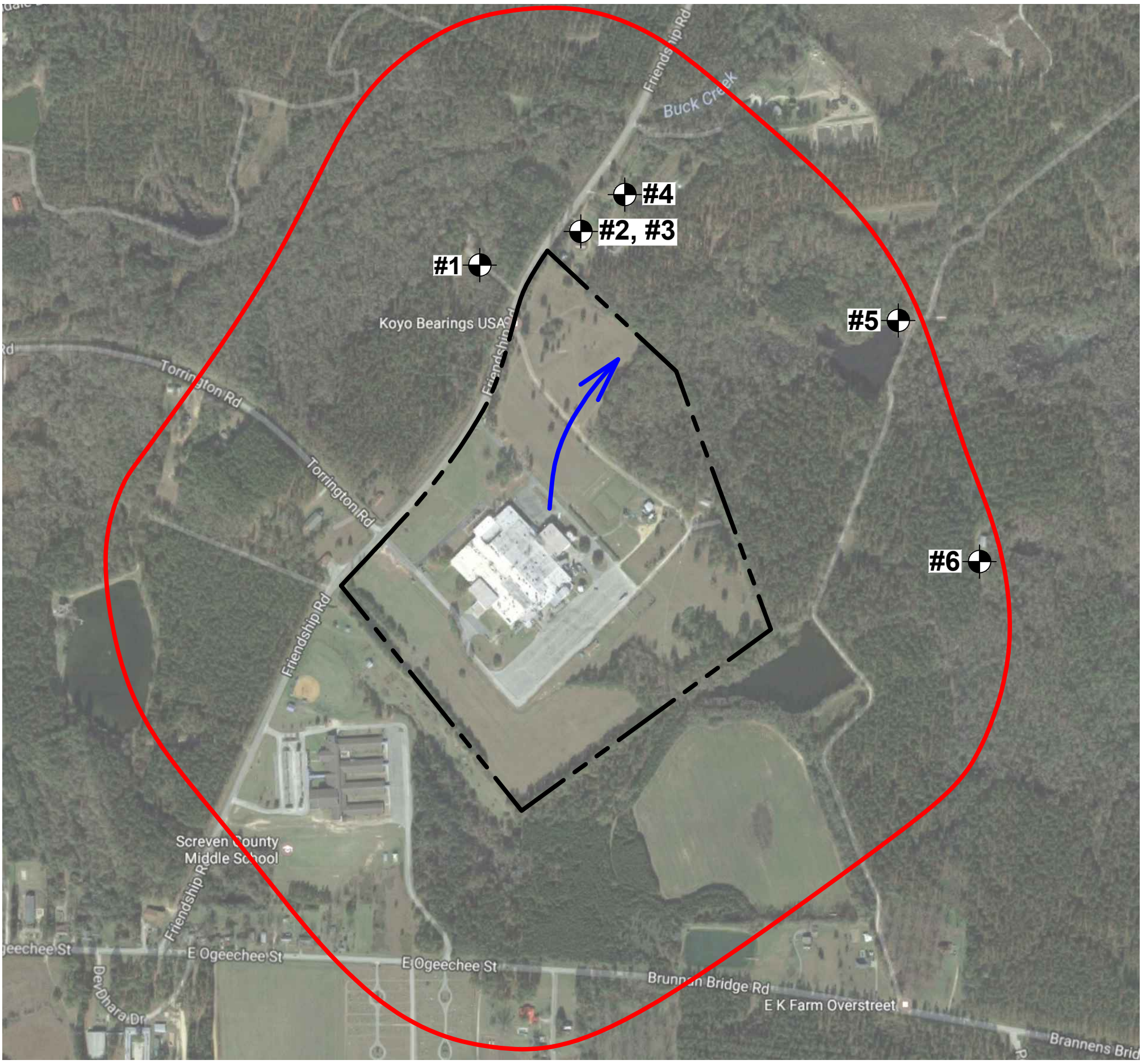
Additional Information: Additional attempts to contact Mr. Overstreet will be made to obtain well information.

SECTION 4.0
SUMMARY

A review of the survey data collected for the area surrounding the Ingersoll Rand facility indicated that, although there were no public water sources within the specified ¼-mile radius of the facility boundary, there were five private water wells inside the ¼-mile radius of the facility; the depth of these five wells is unknow. As noted previously, Ingersoll Rand samples four of the water wells within the ¼-mile radius on a semiannual basis. Well No. 3, was sampled by Ingersoll Rand in the past with no detections of VOCs. Well No. 3 is not sampled semiannually because Well No. 2 is located on the same property as Well No. 3, and Well No. 2 is sampled semiannually. Well No. 2 is considered representative of the groundwater quality in both Well No. 2 and Well No. 3.

Ingersoll Rand will attempt to determine if an additional well exists at the Overstreet property or whether the new residence there uses the Hunt Club well water (Well No. 5).

FIGURE



Legend

- Water Well
- Property Boundary
- 0.25 Mile from Facility Boundary
- Approximate Groundwater Flow Direction

Water Well Number	Location
1	Friendship Road
2	560 Friendship Road
3	560 Friendship Road
4	590 Friendship Road
5	Fire Break east of the pond at Hunt Club
6	New House at Overstreet Property (Potential Well)

Graphic Scale

600 0 300 600 1200

1 inch = 600 ft.

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PROJECT #:	1162-1701-05	DATE:	April 14, 2017
DRAWN BY:	TL	REVISED:	----
CHECKED BY:	GI	SCALE:	1" = 600'
PROJECT MGR:	MB	PRINTED:	4/14/2017 10:14 AM

Sylvania Georgia Plant

Water Well Locations

Figure 1

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