



**SUPPLEMENT TO  
DRINKING WATER WELL AND  
RECEPTOR SURVEY**

**FOR**

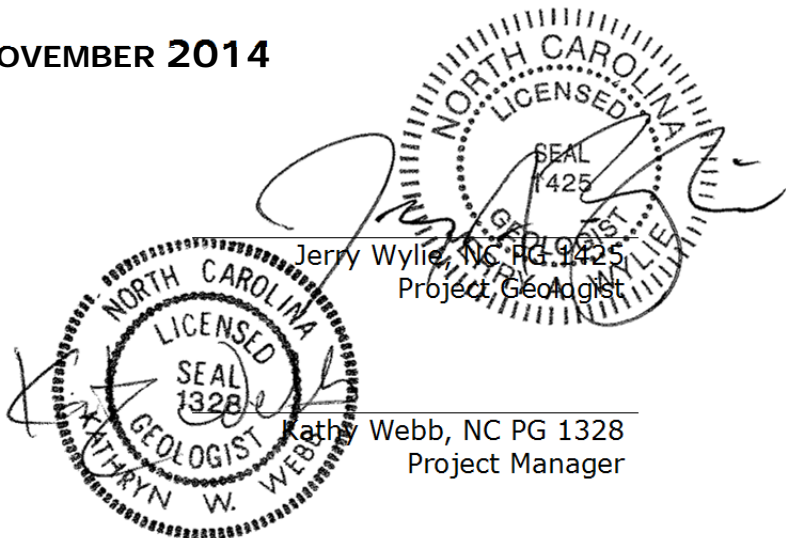
**MAYO STEAM ELECTRIC PLANT  
10600 BOSTON ROAD  
ROXBORO, NORTH CAROLINA 27574  
NPDES Permit #NC0038377**

**PREPARED FOR**

**DUKE ENERGY PROGRESS, INC.  
RALEIGH, NORTH CAROLINA**



**SUBMITTED: NOVEMBER 2014**



## 1.0 INTRODUCTION

The attached figure and table have been prepared to provide an update to the *Drinking Water Well and Receptor Survey Report* (SynTerra, September 2014) for the Mayo Steam Electric Plant (Mayo Plant). The report and this update have been prepared to meet the requirements of the Coal Ash Management Act 2014 – North Carolina Senate Bill 729 (August 2014) and the Notice of Regulatory Requirements (NORR) (August 13, 2014).

Additional water well information has been collected by means of a written survey questionnaire mailed to the owners of properties within 0.5 miles of the Mayo Plant ash basin compliance boundary, which is defined in accordance with 15A NCAC 02L .0107(a) as being established at either 500 feet from the waste boundary or at the property boundary, whichever is closer to the source.

The purpose of the questionnaire was to determine if additional wells are present in the area that were not previously observed or have not been previously reported. The questionnaire was also developed to collect additional information regarding potential well locations, well use, well depth and construction, date of completion, etc. for the water wells in the survey area. Information reported from the questionnaire responses, received as of October 31, 2014, has been compiled and is discussed below. Due to the private and sensitive nature of the of the questionnaire responses, the well information has been summarized herein. The completed survey questionnaires are available for future reference.

A potential area of interest with respect to the ash basin groundwater flow was delineated and presented in the Survey. Based on the available information, this area is considered to be potentially downgradient from the ash basin.

## 2.0 WATER WELL SURVEY QUESTIONNAIRE APPROACH

A current listing of properties located within 0.5 miles of the compliance boundary was obtained from the Person County, North Carolina Geographic Information System (GIS) website ([http://gis.personcounty.net/ConnectGIS\\_v6/Map.aspx?p=person](http://gis.personcounty.net/ConnectGIS_v6/Map.aspx?p=person)) and the Halifax County, Virginia web site (<http://arcgis.webgis.net/va/Halifax/>). The GIS data included parcel number, property address, property owner name, and property owner address. A listing of these properties was included as Table 2 of the *Drinking Water Well and Receptor Survey Report* (SynTerra, September 2014). This information was used to send letters with the questionnaires to each property owner within 0.5 mile of the compliance boundary during the week of October 6, 2014. The questionnaires were sent via Certified Mail with Return Receipt to confirm delivery. The recipients were requested to respond by October 20, 2014.

The Certified Mail Return Receipts have been logged as received. Letters returned as undeliverable have also been logged.

Questionnaire responses received after October 31, 2014 will be incorporated into the Groundwater Assessment Report required by Senate Bill 729 (Section 130A-309.209(a)(4)).

### 3.0 WATER WELL SURVEY QUESTIONNAIRE RESULTS

Information from the questionnaires that have been received is provided in **Table 1** attached. **Figure 1** attached has been modified to include new and confirmed well locations.

The questionnaires were designed to collect information regarding whether a water well or spring is present on the property, its use, and whether the property is serviced by a municipal water supply. If a well is present, the property owner was also asked to provide information regarding the well location and construction information.

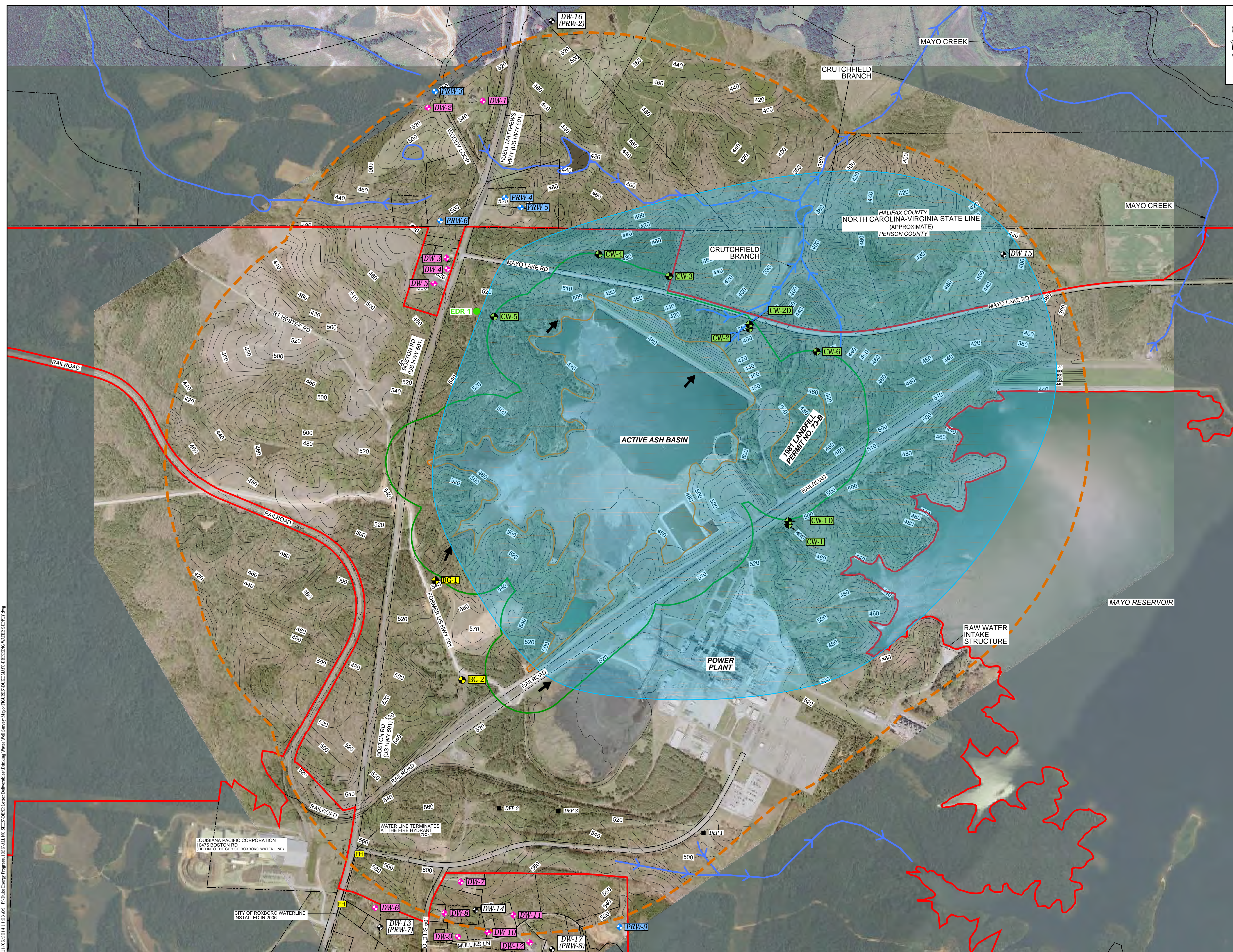
#### Summary of Questionnaire Responses as of October 31, 2014

| No. of Questionnaires Sent | No. of Return Receipts Received | No. of Questionnaires Received | No. of Questionnaires Returned as Undeliverable | No. of Previously Identified Wells Confirmed by Property Owner | No. of Previously Identified Wells Confirmed NOT present by Property Owner | No. of New Wells or Springs Identified by Property Owner |
|----------------------------|---------------------------------|--------------------------------|---|--|--|--|
| 36                         | 32<br>(89%)                     | 19<br>(53%)                    | 0<br>(0%)                                       | 5  | 0  | 5  |

Based upon the previous survey and the questionnaire information, approximately 22 wells may be located within the survey area (reported wells, observed wells and possible wells). The designation for the wells previously **assumed** to be present (referred to as possible wells, not previously observed or reported) that have been confirmed based upon the survey questionnaire results have been changed from 'PRW-\_' to 'DW-\_' on the table and the figure. The newly reported wells, not previously observed or suspected, are also sequentially identified as 'DW-\_' . The survey information indicates 17 reported or observed wells, 'DW-\_' and five remain as possible 'PRW-' in the survey area.

## **FIGURE**

### **FIGURE 1 - DRINKING WATER WELL AND RECEPTOR SURVEY – UPDATED NOVEMBER 6, 2014**

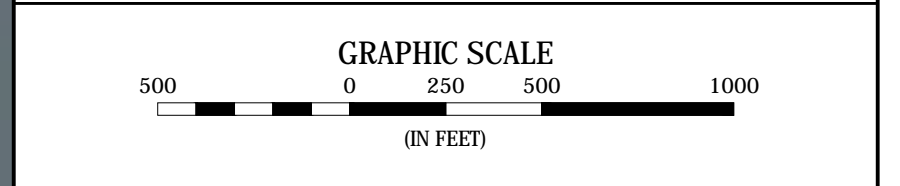


**LEGEND**

- BACKGROUND MONITORING WELL (SURVEYED)
- COMPLIANCE MONITORING WELL (SURVEYED)
- POSSIBLE WATER SUPPLY WELL
- OBSERVED WATER SUPPLY WELL
- WATER SUPPLY WELL OR SPRING REPORTED BY PROPERTY OWNER
- DUKE ENERGY PROGRESS PRODUCTION WELL - NOT IN SERVICE (APPROXIMATE)
- EDR REPORTED WELL (APPROXIMATE)
- HALF MILE SURVEY BOUNDARY
- DUKE ENERGY PROGRESS MAYO PLANT
- 500 FT COMPLIANCE BOUNDARY
- WASTE BOUNDARY
- 2007 LIDAR CONTOUR MAJOR AND VIRGINIA USGS CONTOUR MAJOR
- PARCEL LINE (PERSON CO NC GIS, HALIFAX CO VA APPROXIMATE)
- FLOW DIRECTION
- CITY OF ROXBORO WATERLINE (APPROXIMATE)
- FIRE HYDRANT LOCATION (APPROXIMATE)
- POTENTIAL AREA OF INTEREST (APPROXIMATE)
- GENERALIZED GROUNDWATER FLOW DIRECTION SUPPORTED BY GROUNDWATER ELEVATION DATA OR TOPOGRAPHIC DATA

- SOURCES:**
- 2010 AERIAL PHOTOGRAPH OF PERSON COUNTY, NORTH CAROLINA OBTAINED FROM THE NRCS GEOSPATIAL DATA GATEWAY AT <http://datagateway.nrcs.usda.gov/>
  - 2012 AERIAL PHOTOGRAPH OF HALIFAX COUNTY, VIRGINIA WAS OBTAINED FROM NRCS GEOSPATIAL DATA GATEWAY AT <http://datagateway.nrcs.usda.gov/>
  - 2014 AERIAL PHOTOGRAPH WAS OBTAINED FROM WSP FLOWN ON APRIL 17, 2014.
  - WELL SURVEY INFORMATION, PROPERTY LINE, LANDFILL LIMITS AND BOUNDARIES ARE FROM ARCGIS FILES PROVIDED BY S&E AND PROGRESS ENERGY.
  - PARCEL BOUNDARIES WERE OBTAINED FROM PERSON COUNTY (NC) GIS DATA AT <http://gis.personcounty.net>
  - DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3200 (NAD 83).
  - 10ft CONTOUR INTERVALS FROM NCDOT LIDAR DATED 2007 [https://connect.ncdot.gov/resources/gis/pages/cont-elev\\_v2.aspx](https://connect.ncdot.gov/resources/gis/pages/cont-elev_v2.aspx)
  - VIRGINIA 10ft CONTOUR INTERVALS FROM USGS TOPOGRAPHIC MAP OBTAINED FROM THE NRCS GEOSPATIAL DATA GATEWAY AT <http://datagateway.nrcs.usda.gov/>

- NOTE:**
- CONTOUR LINES ARE USED FOR REPRESENTATIVE PURPOSES ONLY AND ARE NOT TO BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.
  - DISPLAYED WATER SUPPLY WELL OR SPRING LOCATIONS ARE APPROXIMATE.



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|                  |   |       |            |
|------------------|---|-------|------------|
| DRAWN BY:        | J. CHASTAIN                                   | DATE: | 2014-11-06 |
| CHECKED BY:      | J. WYLIE                                      | DATE: | 2014-11-06 |
| PROJECT MANAGER: | KATHY WEBB                                    |       |            |
| LAYOUT NAME:     | FIG 1 (D) WATER SUPPLY WELL & RECEPTOR SURVEY |       |            |

MAYO STEAM ELECTRIC PLANT  
10600 BOSTON RD  
ROXBORO, NORTH CAROLINA

**FIGURE 1**  
**DRINKING WATER WELL AND RECEPTOR SURVEY**  
UPDATED NOVEMBER 6, 2014

11/06/2014 11:03 AM P:\Duke Energy Progress\1000\_011\_NC\_STATES\ENR\Enter\_Deliverables\Drinking\_Water\_Well\_Survey\Mayo\FIGURES\STATE\_MAYO\_DRINKING\_WATER\_SUPPLY.dwg

## **TABLE**

### **TABLE 1 – PUBLIC AND PRIVATE WATER SUPPLY WELLS – UPDATED NOVEMBER 6, 2014**

**TABLE 1  
PUBLIC AND PRIVATE WATER SUPPLY WELLS - UPDATED NOVEMBER 6, 2014  
WITHIN 0.5 MILE RADIUS OF ASH BASIN COMPLIANCE BOUNDARY  
MAYO STEAM ELECTRIC PLANT  
DUKE ENERGY PROGRESS, INC., ROXBORO, NORTH CAROLINA**

| MAP WELL ID      | PROPERTY OWNER                   | PROPERTY ADDRESS<br>(WELL LOCATION) | PARCEL ID NUMBER    | DRINKING WATER SOURCE |      |       | WELL USE |            |           |               |            |       | WELL DEPTH<br>(FEET) | WELL CASING<br>OR OPEN HOLE<br>DEPTH (FEET) | WELL<br>SCREEN<br>INTERVAL<br>(FEET) |     |
|------------------|----------------------------------|-------------------------------------|---------------------|-----------------------|------|-------|----------|------------|-----------|---------------|------------|-------|----------------------|---|--------------------------------------|-----|
|                  |                                  |                                     |                     | MUNICIPAL             | WELL | OTHER | DRINKING | IRRIGATION | LIVESTOCK | SWIMMING POOL | NOT IN USE | OTHER |                      |   |                                      |     |
| DW-1             | WOODY, MARY B                    | TRACT A ROXBORO ROAD                | 27032               |                       | Y    |       | X        |            |           |               |            |       |                      | 175   | UNK                                  | UNK |
| DW-2             | JOHNSON, ADDISON JR. & DIANNE G. | 1044 WOODY LOOP                     | 7855                |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-3             | EASTWOOD HOWARD L & DONNA W      | 12015 BOSTON RD                     | 0021-00-85-5992.000 |                       | Y    |       | X        | X          | X         |               |            |       |                      | 60  | 15                                   |     |
| DW-4             | M & M DEVELOPMENT LLC            | 11939 BOSTON RD                     | 0021-00-85-3594.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-5             | M & M DEVELOPMENT LLC            | 11939 BOSTON RD                     | 0021-00-85-3594.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-6             | EASTWOOD, HOWARD L & DONNA W     | 10524 BOSTON RD                     | 0020-00-78-6143.000 |                       | Y    |       | X        | X          | X         |               |            |       |                      | 262   | 80                                   |     |
| DW-7             | FLORES, LENOR & ALFREDO ANAYA    | OLD US 501 HWY 682                  | 0020-00-88-8319.000 |                       | Y    |       | X        |            | X         |               |            |       |                      | 77  | UNK                                  |     |
| DW-8             | FLORES, FELIPE & MARTHA          | OLD US 501 HWY 582                  | 0020-00-88-5002.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-9             | JONES, MICHAEL D                 | 77 MULLINS LN                       | 0020-00-87-7738.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-10            | SERRANT, WALTER G                | 153 MULLINS LN                      | 0020-00-97-1921.000 |                       | Y    |       | X        | X          |           |               |            |       |                      | 240   | UNK                                  |     |
| DW-11            | LESTER, SHARRIS D                | 209 MULLINS LN                      | 0020-00-97-2996.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-12            | CLAYTON, KEITH W                 | 206 MULLINS LN                      | 0020-00-97-3698.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| DW-13<br>(PRW-7) | EASTWOOD, HOWARD L & DONNA W     | 10522 BOSTON RD                     | 0020-00-77-6895.000 |                       | Y    |       | X        | X          | X         |               |            |       |                      | UNK   | UNK                                  |     |
| DW-14            | FLORES, FELIPE & MARTHA          | OLD US 501 HWY                      | 0020-00-87-9909.000 |                       | Y    |       | X        | X          | X         |               |            |       |                      | 142   | 72                                   |     |
| DW-15            | MERRITT, JOHN H III              | MAYO LAKE RD                        | 0031-00-55-5705.000 |                       |      | Y     |          |            |           |               |            | X     |                      |   |                                      |     |
| DW-16<br>(PRW-2) | WILBORN, WILLIAM J. SR.          | 11243 HUELL MATTHEWS HWY            | 26196               |                       | Y    |       | X        |            |           |               |            |       | X                    | 132   | UNK                                  |     |
| DW-17<br>(PRW-8) | WOMACK, MICHAEL DEAN             | 236 MULLINS LN                      | 0020-00-97-8457.000 |                       | Y    |       | X        |            |           |               |            |       |                      | 280   | UNK                                  |     |
| PRW-3            | JOHNSON, ADDISON JR. & DIANNE G. | 1044 WOODY LOOP                     | 7855                |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| PRW-4            | REAVES, LAURIE S                 | 12089 HUELL MATTHEWS HWY            | 27009               |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| PRW-5            | SLAUGHTER, LAURIE A              | PT. TR. B ROXBORO ROAD              | 22883               |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| PRW-6            | TINGEN, KEVIN MORTON             | ROXBORO RD DB446/309                | 24410               |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |
| PRW-9            | SHEETS, CHARLES DAVIS            | MULLINS LN 369                      | 0030-01-07-5825.000 |                       |      |       |          |            |           |               |            |       |                      |   |                                      |     |

**NOTES**

Municipal includes County, City, or other municipal water source(s).

UNK - Unknown

Parcel ID, owner and well location address information were obtained from the Person County, North Carolina website (<http://www.personcounty.net/index.aspx?page=138>) and Halifax County Virginia website (<http://arcgis.webgis.net/va/Halifax/>).

- Possible water supply well.

- Reported/Observed water supply well.

- Water supply well or spring reported by property owner.

Prepared By: HJF Checked By: JAW

Last Revised: November 6, 2014