TRANSMITTAL LETTER



To:					Arcadis U.S., Inc.	
			From:		30 Patewood Drive	
Addie Walker			Inc	omas Darby II, P.G.	Suite 155	
SCDHEC					Greenville	
Bureau of Land and Waste					South Carolina	
Management 2600 Bull Street					Tel 864 987 3900	
	a, South Car	olina 29201			Fax 864 987 16	609
Copies:			Date:			** ***********************************
Jeannie Martin – 3M Humberto Mardirossian			Dec	cember 27, 2016	R	
Subject·				lis Project No.:	050 2 8 2016	
Mardirossian Water Supply			WIC	001459.0002	DEC 2 8 2016	
Completi	ion Report				SITE	, WENT,
					REMEDIATION &	
We are send	ding you:					
Attache	d 🗆	Under Separa	te Cover \	/ia the Following Items:		
Shop Dr	awings 🔲	Plans	□ Sp	pecifications		
Prints		Samples		ppy of Letter Reports		
Other:		•				
Copies	Date	Drawing No.	Rev.	Description		Action*
1	12/27/16			Mardirossian Water Supply Comp	letion Report	FA
Action*				6		
☐ A Approved				CR Correct and Resubmit	☐ Resubmit Copies	
AN Approved As Noted				F File	Return Copies	
AS As Requested			\boxtimes	FA For Approval	☐ Review and Co	mment
Other:						
Mailing Met	hod					
☐ U.S. Postal Service 1st Class ☐ Courier/Hand Delivery ☐ FedEx Priority Overnight ☐ FedEx 2-Day Delivery						
☐ Certified/Registered Mail ☐ United Parcel Service (UPS) ☑ FedEx Standard Overnight ☐ FedEx Economy						
Other: _						
 :Comments						





DEC 2 8 2016

REMEDIATION & REVITALIZATION

Ms. Addie Walker South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management 2600 Bull Street Columbia, South Carolina 29201

Arcadis U.S., Inc. 30 Patewood Drive Suite 155 Greenville South Carolina 29615 Tel 864 987 3900

Fax

www.arcadis.com

Subject

Mardirossian Water Supply Completion Report 1510 SC Highway 14 & Highway 14 Church Street Extension, Laurens. South Carolina **ENVIRONMENT**

Date:

December 27, 2016

Contact:

Thomas Darby II, P.G.

Phone

864-987-3918

Email

Thomas.Darby@arcadis.com

Our ref:

WI001459.0002

Dear Ms. Walker:

On behalf of 3M Company (3M), Arcadis U.S., Inc. (Arcadis) has prepared this Water Supply Completion Report to document the modifications to the Mardirossian's water supply system for the residences located at 1510 South Carolina Highway 14 (Parcel # 352-00-00-004) and along the Highway 14 Church Street Extension (Parcel # 352-00-00-032) in Laurens County, South Carolina. The modifications were completed between November 14 and November 21, 2016 and included the installation of six water taps, connection of three residences to municipal-supplied water, and abandonment of the water supply well. The modification was performed to remove the existing water supply well from service due to the proximity to the Laurens CeramTec Site (site). A plan view of the new water line/meter location as-built is included as **Figure 1**.

Municipal Water Supply

Prior to mobilizing, Arcadis worked with Laurens County Commission of Public Works (LCCPW) and the Mardirossian's to complete an annexation agreement to setup the water service accounts for each of the six water taps. Following the completion of the account setup, LCCPW installed six feed lines from the 10-inch water main located on the southern side of Welcome Church Road to the right-of-way on the two properties. Each feed line was terminated by LCCPW at a ¾-inch water meter.

Residence Water Connection

Arcadis subcontracted Thomas Brothers Nursery & Landscaping Company, Inc. (Thomas Brothers) to connect three of the water meters to the existing

residences. The existing water line from the water supply well was disconnected at the well house and left in place on November 14, 2016. A new ¾-inch polyvinyl chloride (PVC) water supply line was installed approximately 16 to 18 inches below land surface and connected to the existing infrastructure (water spigot, shut off valve, etc..) on the exterior of the three existing residences by Thomas Brothers. As of November 21, 2016, each of the three residences were supplied with water by LCCPW and the billing was the responsibility of the tenants.

Three of the installed water meters are for the vacant lots on the parcels. At two of the water meters, no additional piping was installed and future connection to the water meters will be completed by the property owner or new tenants when occupied. The third meter for a vacant parcel included a section of water line, complete with an under driveway bore, to position the water line in an area where it can easily be accessed in the future. The line was marked with a tracer wire for ease of identification in the future.

Water Well Abandonment

On November 21, 2016, AE Drilling, Inc., a licensed South Carolina Driller (license #1847), removed the water supply pump, piping, pressure tank, and pressure switch from the water supply well. The well casing was cut down to just below land surface and the well was then filled with sand from 135.5 feet to approximately 20 feet below land surface. The remaining 20 feet was filled with neat cement grout to land surface. Abandonment activities were completed in accordance with South Carolina Department of Health and Environmental Control R. 61-71 South Carolina Well Standards. A copy of the water well record form that documents the abandonment is included as **Attachment 1**.

With the water supply-well abandoned, the modifications to the water supply system are complete.

Please let us know if you have any questions regarding this Completion Report.

Sincerely.

Arcadis U.S., Inc.

Thomas A. Darby II, P.G. Senior Hydrogeologist

Copies:

Jeannie Martin-3M Humberto Mardirossian

Enclosures

Figures

1 As-Built-New Water Line/Meter Locations

Attachments

1 Water Well Record Form

FIGURES



AS-BUILT NEW WATER LINE/METER LOCATIONS

LAURENS CERAMTEC SITE LAURENS, SOUTH CAROLINA

GRAPHIC SCALE -20

LEGEND

EXISTING 6" WATER LINE

NEW 1" DIA. SCH. 40 PVC WATER LINE AND METER EXISTING 10" WATER LINE

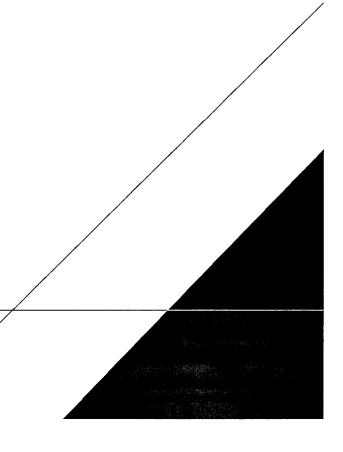
NEW TIE-IN TO EXISTING 10" WATER MAIN COMPLETED BY LAURENS COUNTY COMMISSION OF PUBLIC WORKS





ATTACHMENT 1

Water Well Record Form





Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION: Name:		7. PERMIT NUMBER:		
(last)	(first)			
Address:	(mst)	8. USE:		
Address.		☑ Residential ☐ Public Supply ☐ Process		
City: State:	Zip:	☐ Irrigation ☐ Air Conditioning ☐ Emergency		
ony.	- .p.	☐ Test Well ☐ Monitor Well ☐ Replacement		
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started:		
2. LOCATION OF WELL: Co	OUNTY: Laurens	ft. Date Completed:		
Name:Private Well		10. CASING: Threaded Welded		
Street Address: 146 Welcome Ch	urch Road	Diam.: Height: Above Below		
City:Laurens	Zip: 29360-0000	Type: PVC Galvanized Surface		
	2000 0000	Steel Other Weight ————————————————————————————————————		
Latitude: Longitude) :	in. to — ft. depth Drive Shoe? Yes No		
-		in. toft. depth		
3. PUBLIC SYSTEM NAME: PU	IBLIC SYSTEM NUMBER:	11. SCREEN:		
		Type: Diam.:		
4. ABANDONMENT: ☑ Yes ☐	No	Slot/Gauge: Length:		
	110	Set Between: ft. NOTE: MULTIPLE SCREENS		
Grouted Depth: from0	ft. to <u>20</u> ft.	ft. USE SECOND SHEET		
Orottod Dopun. Hom	*Thickness Depth to	Sieve Analysis		
Formation Description	of Bottom of	12. STATIC WATER LEVEL ft. below land surface after 24 hours		
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.		
		ft. after hrs. PumpingG.P.M.		
		Pumping Test: ☐ Yes (please enclose) ☐ No		
		Yield:		
		14. WATER QUALITY		
		Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No		
		Please enclose lab results.		
		15. ARTIFICIAL FILTER (filter pack)		
		Installed from ft. to ft.		
		Effective size Uniformity Coefficient		
		16. WELL GROUTED? ☐ Yes ☐ No		
		☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other		
		Depth: From ft. to ft.		
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction		
		Type		
		Well Disinfected ☐ Yes ☐ No Type: Amount:		
		18. PUMP: Date installed: Not installed		
		Mfr. Name: Model No.:		
		H.P Volts Length of drop pipe ft. Capacity gpm		
		TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine		
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal		
		19. WELL DRILLER: Mark Brown CERT. NO.: 1847		
		Address: (Print) 30 Grant Park Place		
		Piedmont, SC 29673		
*Indicate Water Bearing Zones		Telephone No.: 864-288-1986 Fax No.: 864-288-2272		
indicate water bearing zones		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under		
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.		
5. REMARKS:		,		
Well Abandoned 11-21-16		nd 16/1 a		
Sand 20-135.5' bgs		Signed:		
Grout 0-20'bgs		Welf Driller		
6. TYPE: ☐ Mud Rotary ☐ Jetted	■ Bored	If D Level Driller, provide supervising driller's name:		
☐ Dug ☐ Air Ro	tary 🗖 Driven	1		
☐ Cable tool ☐ Other				