

A Mobile App to Evaluate & Categorize Maintenance for Residential Sewer Grinder Pumps



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Chelmsford, MA - Grinder Repair Report

Job Information
Address: 141 HIGH ST
Date: 04/01/2015
Time in: 09:30 AM
Time out: 01:01 PM
Hours Grade: 5 hours

Grinder Information
Make: Eone
Model: 3000
Serial Number: A275479
Evaluation of Grinder Problem: Pump continuously running but not pumping. Tank was over flushed. Alarm sounding, Red Light On, Overflow of Pump, Backup of Pump
Complaint Description:

Grinder Repair Information
Grinder Tested: Yes
Normal Use
Cause of Repair: Pumped down over flushed tank. Pulled failed pump. Found pump was flooded out and sending out causing 4 to contribute and burning out the motor. Installed a rebuilt 2000 series pump and EOD gauger.
Description of Repair:

Materials Used
Eone 2000 series pump
EOD Gauger



History

- Town Meeting Vote
- ~525 Residential Grinder Pumps
 - E-Ones
 - Meyers
 - Barnes
- Privately owned – Town maintained
- Needed full inventory & condition assessment
 - What was where...

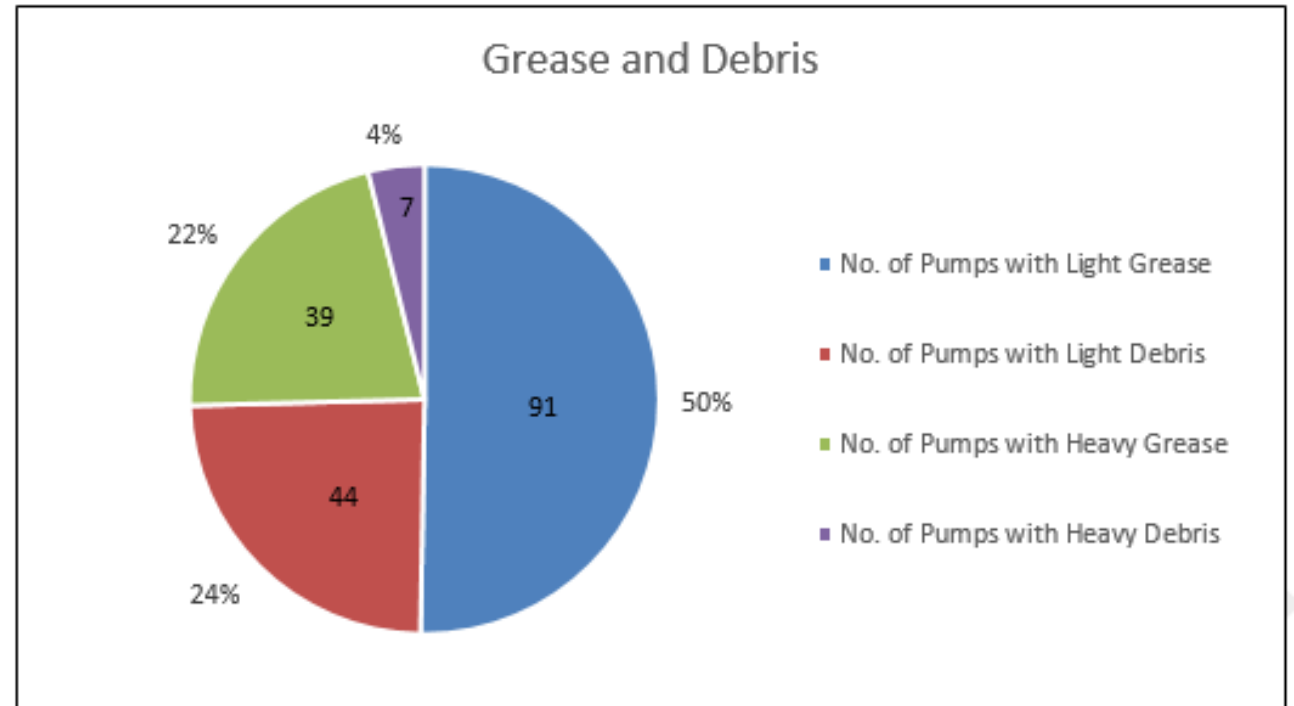
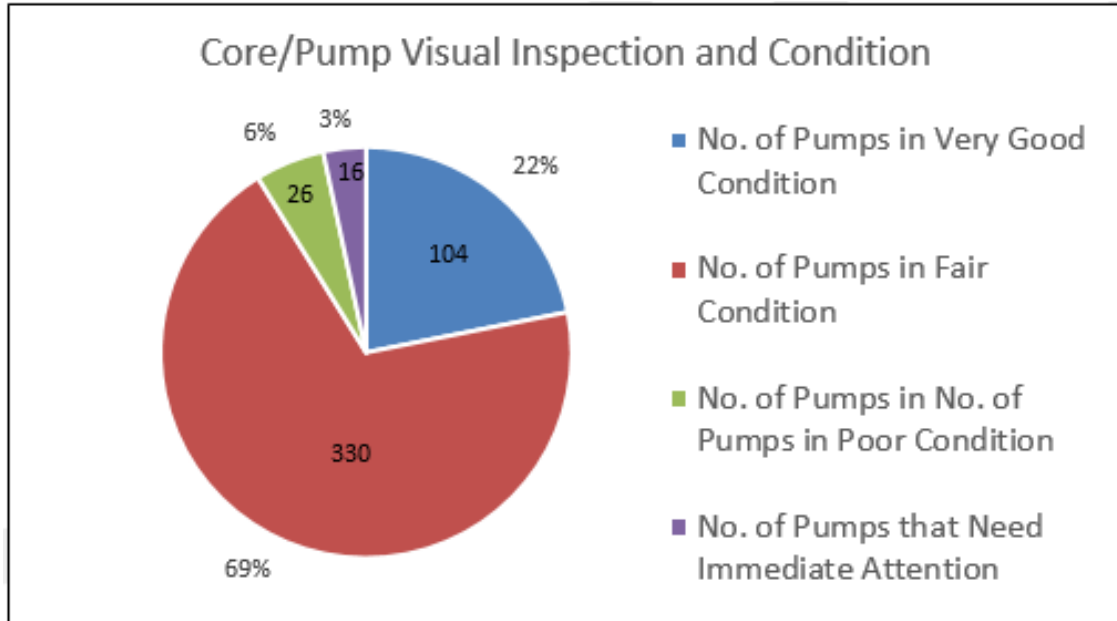


Creating the Evaluation Form

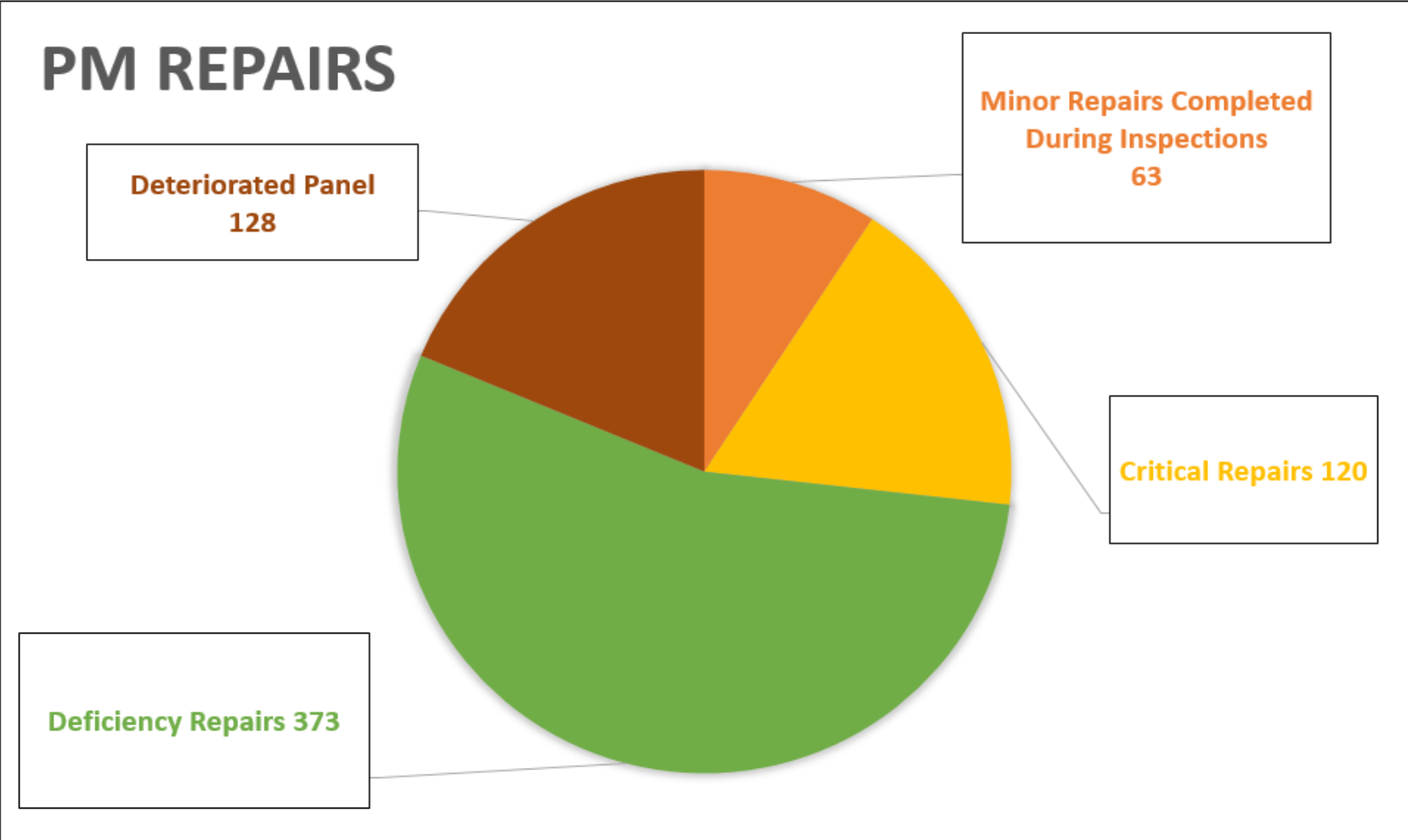
- Identify parameters for evaluation
- Historical issues & resident calls drove questions
- Identify current & potential problems
- Evaluate deficiencies from Town standard
- Track installation and accessibility issues



Categorize and Prioritize



Repairs



Repair Plan

- Define parameters for repairs
- Determine criticality
- Prioritize
- Grouping
 - Multiple repairs on same pump
 - Geographic location

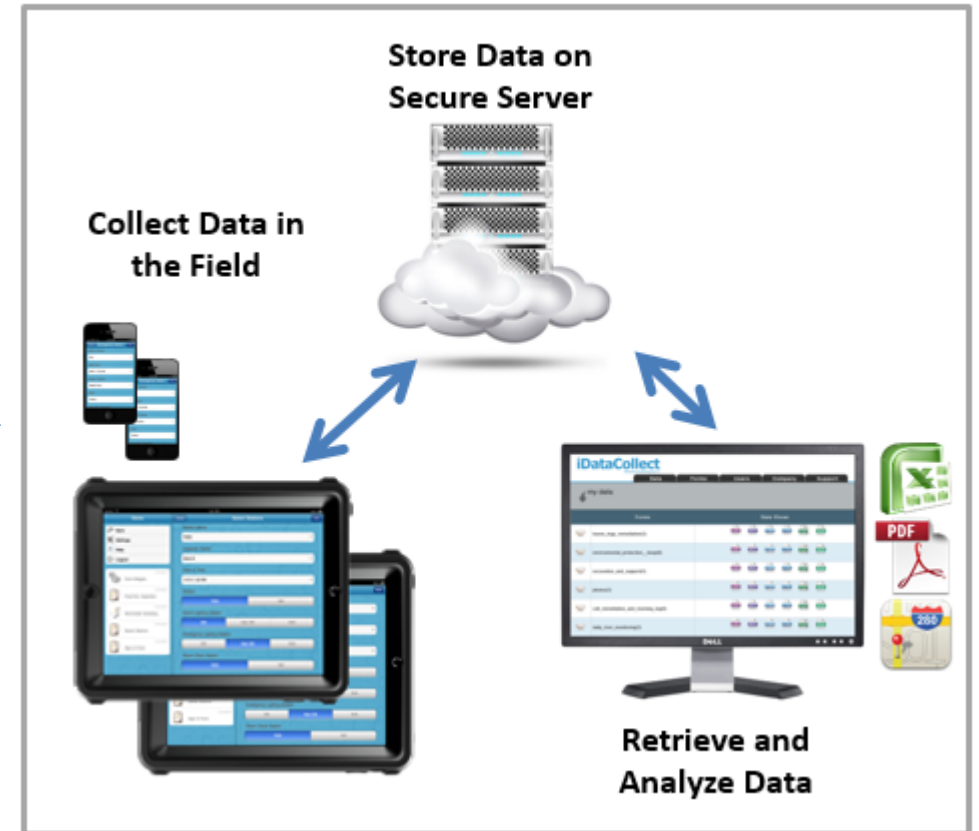


iDataCollect

The Old Way



The New Way

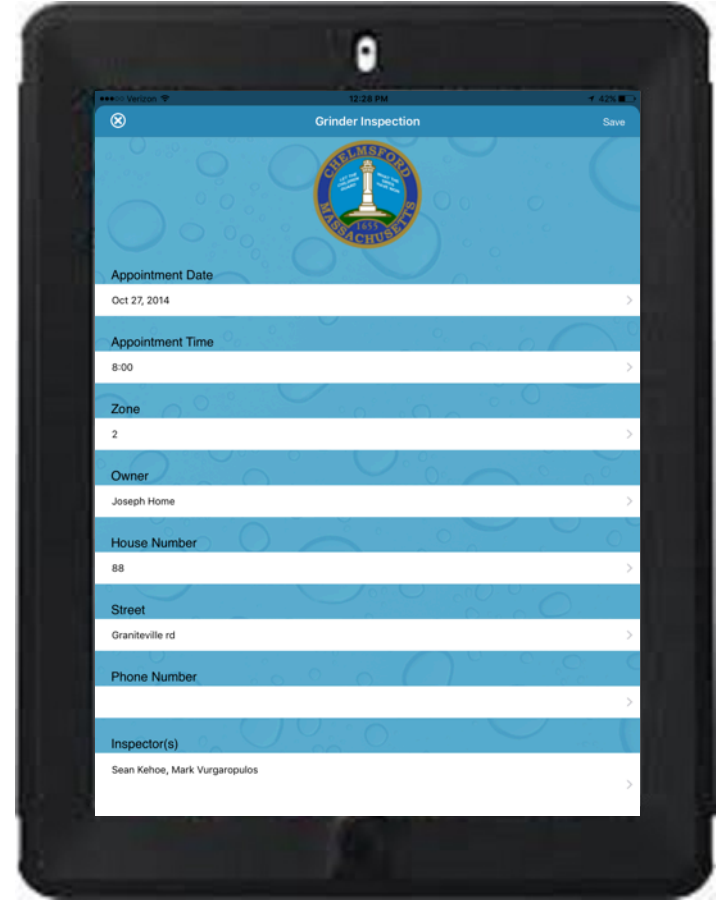
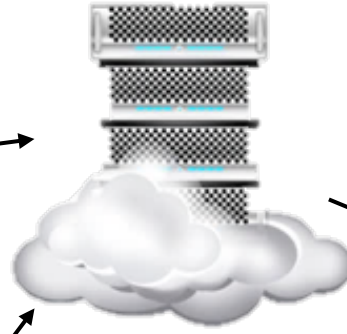


Data Integration

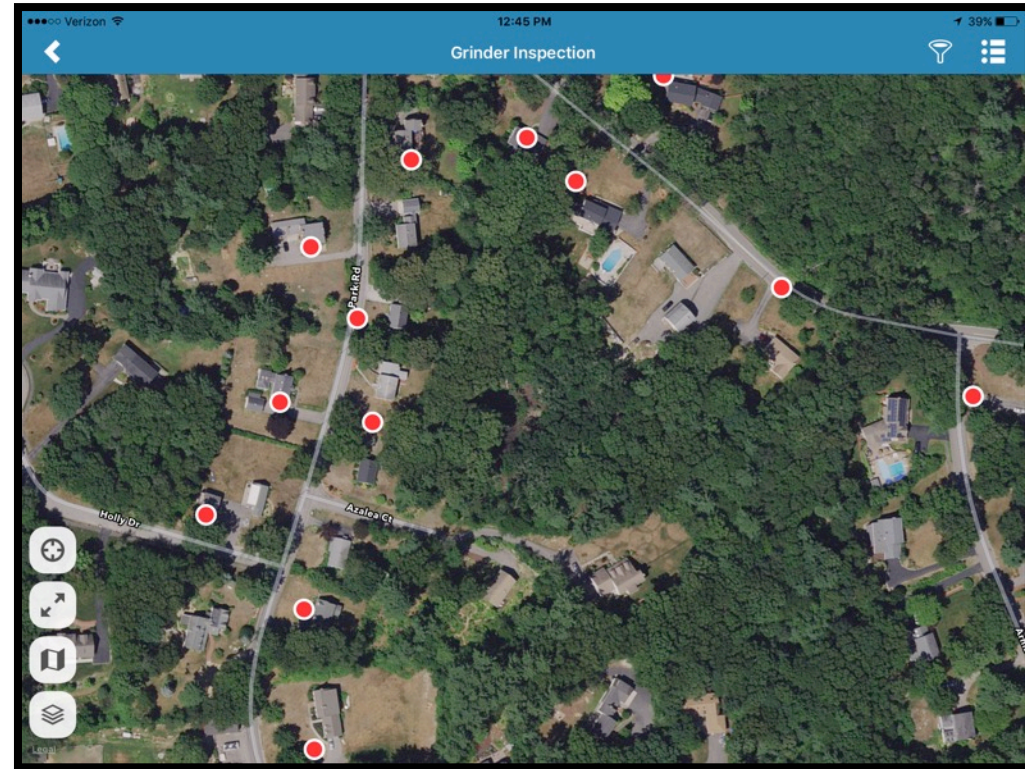
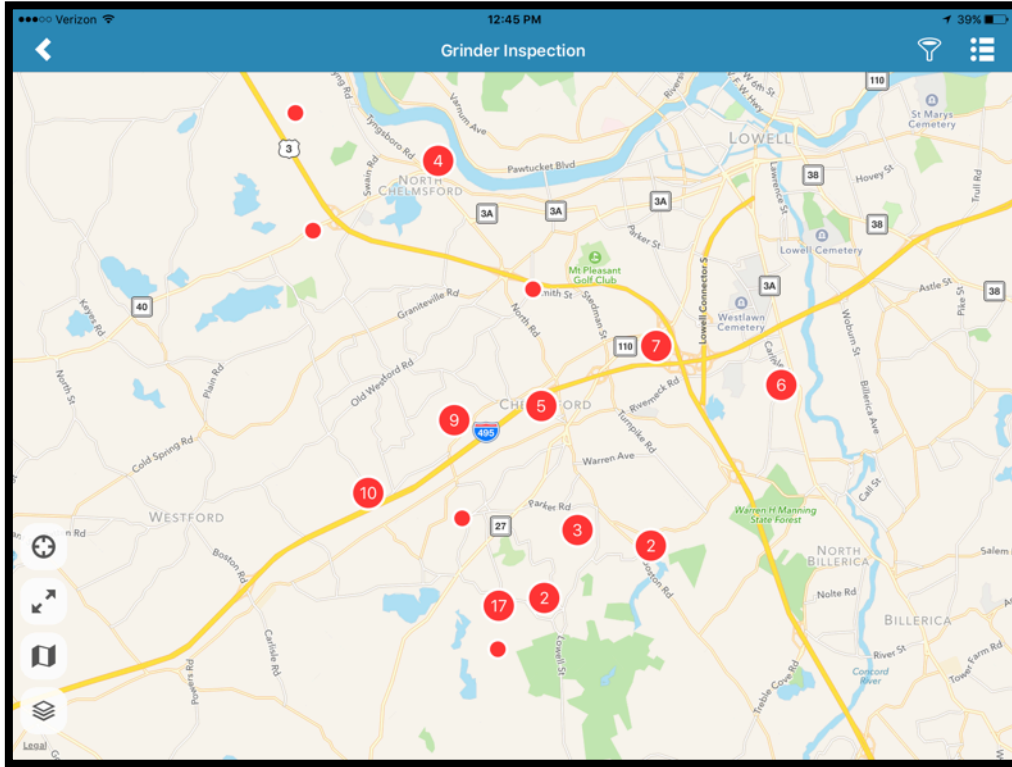


owner	house #	street	zone	original grinder install date
David and Lynn Hansen	29	Aberdeen Road	2	2000
Denise LeBlanc	130	Action Road	6	2000
Donald and Theresa Cormier	230	Action Road	6	2000
James and Cynthia Favaris	79	Amble Road	5	2011
Edward and Sarah Servant	1	Ann's Way	5	2011
Ang and Alice Chan	3	Ann's Way	5	2011
John McLaughlin	6	Ann's Way	5	2011
Anthony and Tina Duggan	1	Armand Drive	6	2011
David and Kathleen Meier	3	Armand Drive	6	2011
Joseph and Ling Li Luan	4	Armand Drive	6	2011
Richard and Kathleen Hogan	5	Armand Drive	6	2011
Robert and Mary Frances Delron	7	Armand Drive	6	2011
David and Maureen Foley	8	Armand Drive	6	2011
David and Maureen Foley	9	Armand Drive	6	2011
Luane and Lauren Kinous	10	Armand Drive	6	2011
David and Jill Markham	12	Armand Drive	6	2011
Colly Swan and Christopher Pine	3	Arrowhead Circle	6	2011
Rafiq and Susan Bailey	5	Arrowhead Circle	6	2011
Roberta Wells	6	Arrowhead Circle	6	2011
Wayne and Elaine Smokler	7	Arrowhead Circle	6	2011
Inda and David Cahill	8	Arrowhead Circle	6	2011
Kathleen Novaco	9	Arrowhead Circle	6	2011
Radley and Kathryn Orchard	1	Arrowhead Circle	6	2011
Ryan O'Connell				
David and Dristi Walsh				

Part Number	Service Code	Description
	1202	TRANSCIVER ASSEMBLY, 240 VOLT / 60 HZ
NB0035G01	1203	CUTTER WHEEL, MACHINED/HARDENED
NC0008P02	1201	CUTTER WHEEL ASSEMBLY, 1 - SERIES
NC0030G01	1269	TOP HOUSING ASSEMBLY, DRYWELL
NC0031G01	1264	TOP HOUSING CHECK VALVE ASM, FOR DRYWELL
NC0032G01	1276	ANTI-SYPHON CHECK VALVE ASM, FOR WETWELL & UPGRADE
NC0032G02	1207	CHECK VLV ASM W/ RCV, 1-1/2NPT, DW
NC0032G03	1212	CHECK VLV ASM W/ RCV, 1-1/2NPT, DW
NC0033G01	1211	LEVEL SENSING ASSEMBLY, WIRELESS
NC0033G02	1215	LEVEL SENSING ASSEMBLY, WIRELESS
NC0033G03	1221	LEVEL SENSING ASM, 1 SERIES, HARDWIRED
NC0033G05	1290	LEVEL SENSOR ASM, HARDWIRED, 12FT CABLE
NC0034G01	1212	EQUALIZER ASSEMBLY
NC0035G01	1212	EQUALIZER TRIDE ASSEMBLY, 6' EOB 2" CABLE



Dispatch & Scheduling



Form Attributes



Signature



Data Mining



- Track Inspection Progress
- Prioritize Repairs
- Individual Inspection Reports to PDF
- Historical Data on Alarm Calls
- Identify Access Issues

Access Issues



Sewer Grinder Pumps 101



- Installer Training
 - Reduce Call-Backs
 - Share best practices
- Installation Inspections
 - Proper Grading
 - Sealed Control Panels
 - Alarms Operating



Sewer Grinder Pumps 101



- Installer Training
 - Began as a policy in Chelmsford in 2005
 - Sharing best practices
 - Drainlayers must have Grinder Pump Endorsement to install pumps.
 - Greatly reduced installation issues
 - Reduce Call-Backs and Warranty Claims

Sewer Grinder Pumps 101



- Installation Inspections
 - Proper Grading
 - Sealed Control Panels
 - Proper wiring and Alarms Operating
- Certified programs lead to longer warranty offerings and improved customer experience

Residential Education



- Flush & Forget
- Alarms
- Vacation or Extended Absence
- Power Failure
- Neighbors Alarm Sounding
- Who to Call & When

Start Up Inspections



- What a start up inspection covers
- Why they are critical
- Sealed colored wire ties
- Proactive vs. Reactive

Environment One Start-up Form

Is Cable Breather Hanging at Top of Station? *	Yes	No
Is Power Cord Sleeved in Conduit Tank? *	Yes	No
Are All Valves Open? *	Yes	No
Is Discharge Valve Inside the Unit Open? *	Yes	No
Photo of Discharge Piping *		
Any Visible Problems with Panel? *	Yes	No
#10/3 with Ground? *	Yes	No
Is Feeder to Panel 30 Amps? *	Yes	No
Photo of Panel *		



Lessons Learned

- Residential Education is KEY
- Preventative Maintenance
 - Plan and Budget
 - Reduced Alarm Repair Calls
- Preferred Model
 - Resident calls & submits for reimbursement
- Pictures are worth a thousand words



Thank You



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