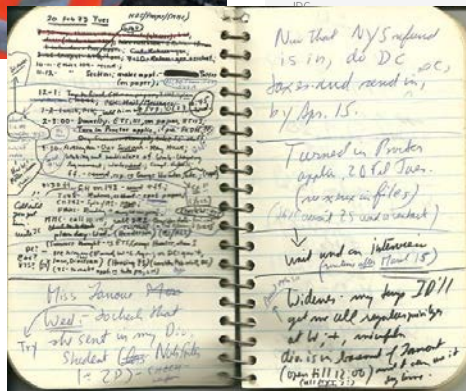




The Connected Jobsite

Cory Mass

Sales Manager, Vermeer Corporation



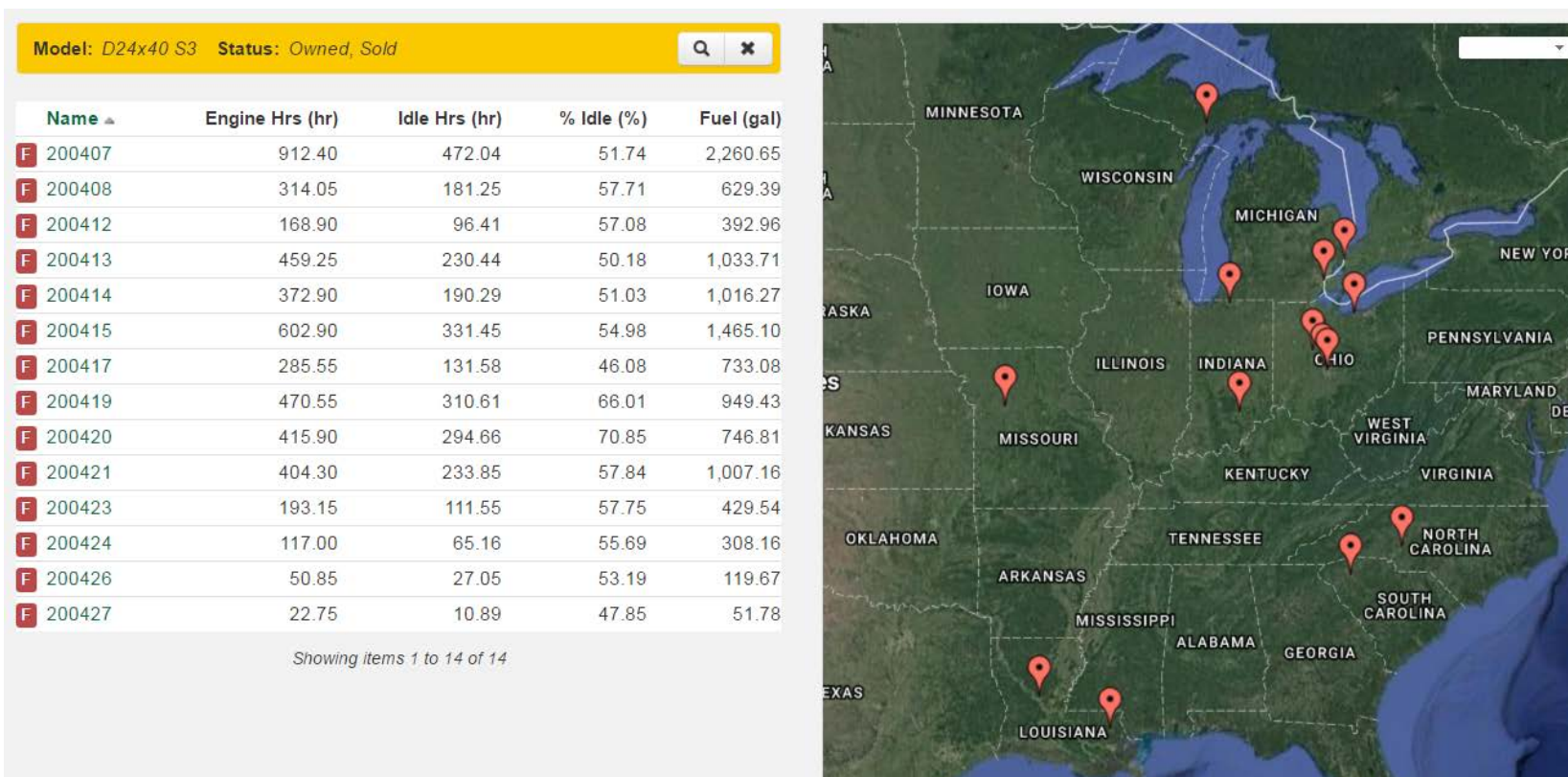


GPS Technology





Telematics





Fault Monitoring

From	To	Lamp Severity	Fmi		
02/01/2016	11/11/2016	All	All	Search	Reset

Last Occurrence ▼	CAN Bus	PGN	SPN	FMI	Occurrence Count	
11/9/2016 10:03:00 AM	0	65271	168: Battery Voltage	18: Data Valid But Below Normal Operating Range - Moderately Severe Level	42	
10/20/2016 1:53:38 PM	0	65263	111: Engine Coolant Level	17: Data Valid But Below Normal Operating Range - Least Severe Level	4	A
7/11/2016 12:04:09 PM	1	65128	1713: Hydraulic Oil Filter Restriction Switch	16: Data Valid But Above Normal Operating Range - Moderately Severe Level	1	R
7/7/2016 12:09:54 PM	1		520239: Mud Inlet Pressure	14: Special Instructions	1	A
6/27/2016 3:23:21 PM	1		2211: Rod Position Sensor	9: Abnormal Update Rate	1	A
6/27/2016 3:07:09 PM	1		2194: Cab Display Unit	9: Abnormal Update Rate	1	R
6/27/2016 2:59:08 PM	1		2211: Rod Position Sensor	13: Out Of Calibration	1	A
6/27/2016 12:02:15 PM	1		2210: Carriage Position Sensor	9: Abnormal Update Rate	1	A
6/27/2016 11:54:29 AM	1		2210: Carriage Position Sensor	13: Out Of Calibration	1	A
6/27/2016 11:53:49 AM	1		2201: Carriage Controller Offline	9: Abnormal Update Rate	1	R
6/27/2016 11:51:42 AM	1		2233: Strike Alert Controller	9: Abnormal Update Rate	1	R
6/27/2016 11:51:39 AM	1		2200: Rack Controller Offline	9: Abnormal Update Rate	1	R
6/27/2016 11:48:52 AM	1		2000: Engine Control Unit	9: Abnormal Update Rate	1	R
6/27/2016 11:48:39 AM	1		2193: Cab Controller	9: Abnormal Update Rate	1	R
6/21/2016 11:50:33 AM	1		520239: Mud Inlet Pressure	18: Data Valid But Below Normal Operating Range - Moderately Severe Level	1	R



Maintenance Planning

Log Unscheduled Maintenance

Current	History	Defined			
Type	Name	Data Point	Due	Reminder	
Milestone	100 Service Hours	Engine Hours	at 100 Hours (hr)	at 50 Hours (hr)	Details
Milestone	1000 Service Hours	Engine Hours	at 1,000 Hours (hr)	at 950 Hours (hr)	Details
Milestone	1500 Service Hours	Engine Hours	at 1,500 Hours (hr)	at 1,450 Hours (hr)	Details
Milestone	2000 Service Hours	Engine Hours	at 2,000 Hours (hr)	at 1,950 Hours (hr)	Details
Milestone	250 Service Hours	Engine Hours	at 250 Hours (hr)	at 200 Hours (hr)	Details
Milestone	4500 Service Hours	Engine Hours	at 4,500 Hours (hr)	at 4,450 Hours (hr)	Details
Milestone	50 Service Hours or Weekly	Engine Hours	at 50 Hours (hr)	at 20 Hours (hr)	Details
Milestone	500 Service Hours	Engine Hours	at 500 Hours (hr)	at 450 Hours (hr)	Details

Showing items 1 to 8 of 8



Advanced Telematics





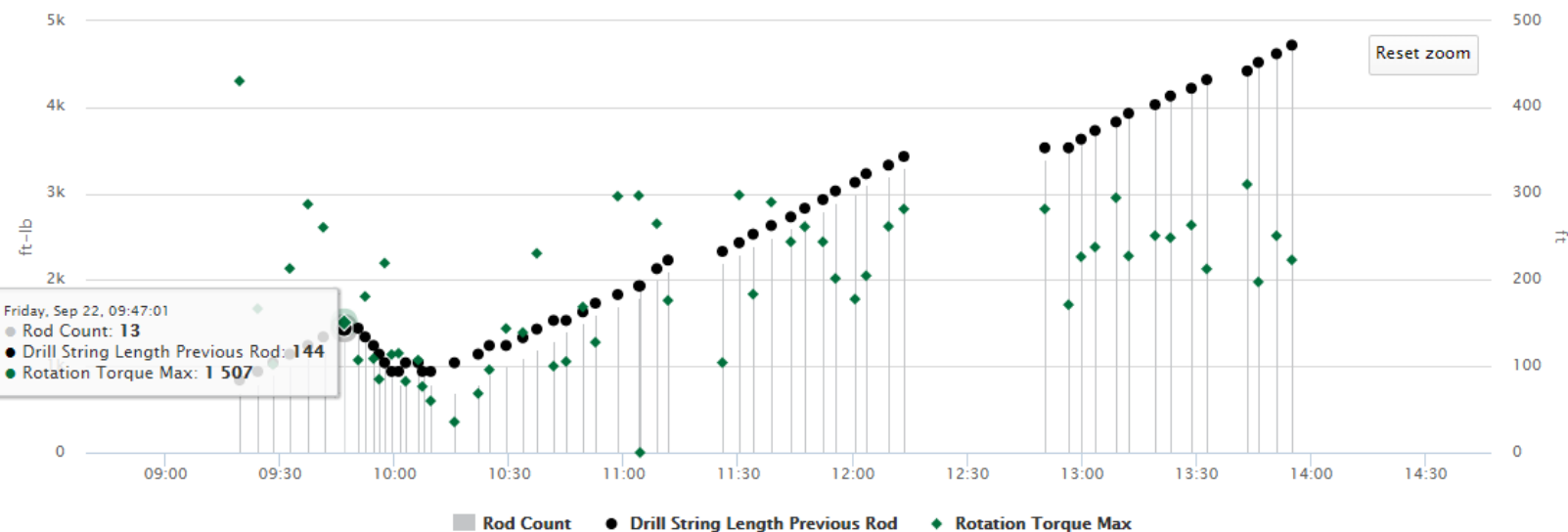
Advanced Telematics

Edge Productivity Advisor

Rotation Torque Max ▾

Drill String Length ▾

Reset zoom





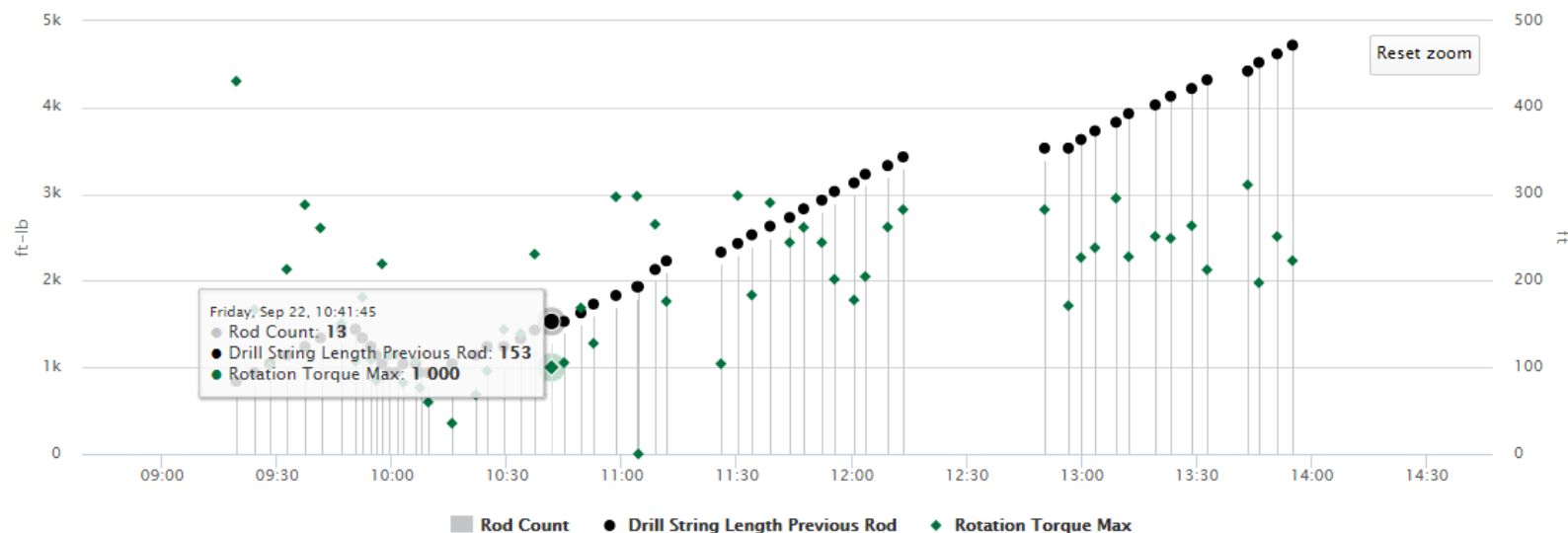
Advanced Telematics

Edge Productivity Advisor

Rotation Torque Max ▾

Drill String Length ▾

Reset zoom





Jobsite Planning

The collage displays several key documents used in jobsite planning:

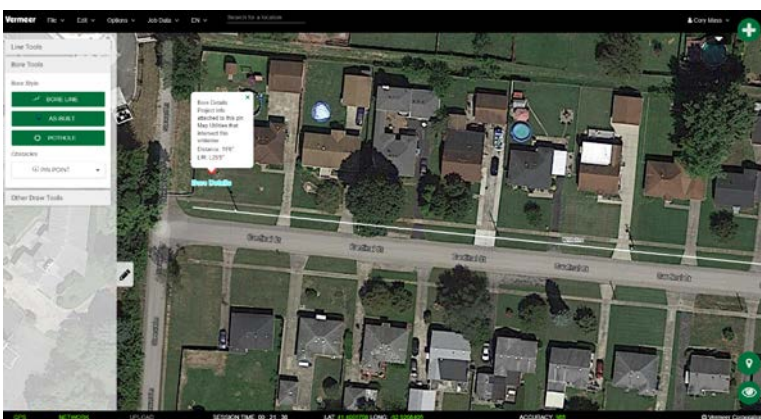
- Top Left:** A technical map showing a network of underground pipes and structures with color-coded lines.
- Top Center:** A 'DAILY Huddle and Goals' form with sections for 'Daily Safety Message' and a list of goals.
- Top Right:** A 'GAS SERVICE RECORD' form with fields for address, date installed, and various service details.
- Center:** A software interface for adding additives, featuring dropdown menus for 'Bore Machine #', 'Fuel (gal)', 'Pipe Size', and 'Footage', along with buttons for 'Add Additive', 'Remove Additive', 'Discard Changes', and 'Save'.
- Bottom Left:** A spreadsheet titled 'Job Name: 55 Lockwood the Highbridge' with columns for 'Distance', 'Elevation', 'Height', and 'Landmark'. It lists data points from 0 to 326 feet.
- Bottom Center:** A handwritten site sketch on graph paper showing the layout of the project area with various annotations.
- Bottom Right:** A 'Calculations/Work Sheet' with handwritten notes and diagrams, including a north arrow and street names like 'Lombard St' and 'Brown St'.



Jobsite Planning

- Google Earth
- Esri
- QGIS

Jobsite Planning



- Whitelines placed on the map to guide crews

- Utilities mapped in relation to the whiteline by potholing crews

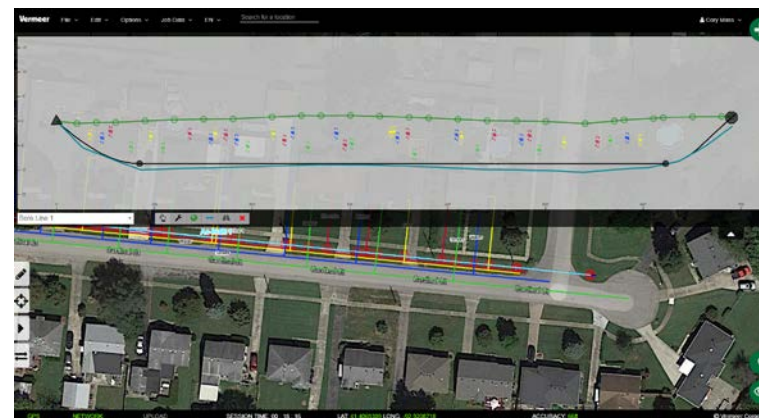


Jobsite Planning



- Create a bore designed to avoid utilities and be more productive

- Add your as-drilled data after the bore is complete right from the locator





Jobsite Reporting

Rod by Rod Report

For bore: Bore Line 1

Machine/Rod Information: D24x40 S3/D2.375" X L10' X U2.625"

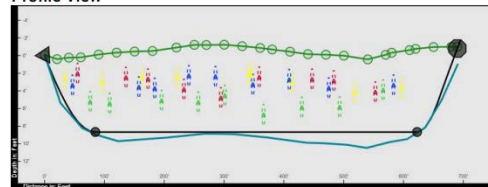
Diameter: 2.375" Length: 10'0" Bend Limit: 1082"

Rod #	Distance	L/R	Elevation	Depth	Pitch	Azimuth	Radius
1	6'10"	R0'0"	454'9"	1'0"	-16.91%	0.00%	6'70'4"
2	16'9"	R0'0"	453'2"	2'5"	-15.48%	0.00%	6'70'4"
3	26'7"	R0'0"	451'9"	3'10"	-13.88%	0.00%	6'70'4"
4	36'6"	R0'0"	450'5"	5'2"	-12.28%	0.00%	6'70'4"
5	46'6"	R0'0"	449'3"	6'4"	-10.33%	0.00%	3'73'8"
6	56'5"	R0'0"	448'5"	7'3"	-7.69%	0.00%	3'73'8"
7	66'5"	R0'0"	447'9"	8'0"	-4.89%	0.00%	3'73'8"
8	76'5"	R0'0"	447'5"	8'5"	-2.27%	0.00%	3'73'8"
9	86'5"	R0'0"	447'4"	8'8"	0.00%	0.00%	3'73'8"
10	96'5"	R0'0"	447'4"	8'9"	0.00%	0.00%	∞
11	106'5"	R0'0"	447'4"	8'10"	0.00%	0.00%	∞
12	116'5"	R0'0"	447'4"	8'11"	0.00%	0.00%	∞
13	126'5"	R0'0"	447'4"	8'11"	0.00%	0.00%	∞
14	136'5"	R0'0"	447'4"	9'0"	0.00%	0.00%	∞
15	146'5"	R0'0"	447'4"	9'0"	0.00%	0.00%	∞
16	156'5"	R0'0"	447'4"	9'1"	0.00%	0.00%	∞
17	166'5"	R0'0"	447'4"	9'1"	0.00%	0.00%	∞
18	176'5"	R0'0"	447'4"	9'1"	0.00%	0.00%	∞
19	186'5"	R0'0"	447'4"	9'2"	0.00%	0.00%	∞
20	196'5"	R0'0"	447'4"	9'3"	0.00%	0.00%	∞
21	206'5"	R0'0"	447'4"	9'4"	0.00%	0.00%	∞
22	216'5"	R0'0"	447'4"	9'5"	0.00%	0.00%	∞
23	226'5"	R0'0"	447'4"	9'6"	0.00%	0.00%	∞
24	236'5"	R0'0"	447'4"	9'8"	0.00%	0.00%	∞
25	246'5"	R0'0"	447'4"	9'9"	0.00%	0.00%	∞
26	256'5"	R0'0"	447'4"	9'9"	0.00%	0.00%	∞
27	266'5"	R0'0"	447'4"	9'9"	0.00%	0.00%	∞
28	276'5"	R0'0"	447'4"	9'9"	0.00%	0.00%	∞
29	286'5"	R0'0"	447'4"	9'9"	0.00%	0.00%	∞

Bore Aerial and Profile View

For Bore: Bore Line 1

Profile View



Aerial View



As-Built

For As-Built: 23

undefined0"

#	Distance	Rod Length	Depth	Pitch	Type	Lat	Long
0	0'0"	0'0"	0'0"	-24%	PO	38.1771163 *	-85.8185568 *
1	7'0"	7'0"	2'2"	-25.5%	DAP	38.1771144 *	-85.8185326 *
2	17'0"	10'0"	4'3"	-18%	DAP	38.1771117 *	-85.818498 *
3	27'0"	10'0"	5'3"	-9.5%	DAP	38.1771091 *	-85.8184634 *
4	37'0"	10'0"	5'4"	-1.1%	DAP	38.1771064 *	-85.8184288 *
5	47'0"	10'0"	5'3"	0.6%	DAP	38.1771037 *	-85.8183941 *
6	57'0"	10'0"	5'3"	-0.9%	DAP	38.177101 *	-85.8183595 *
7	67'0"	10'0"	5'3"	-0.2%	DAP	38.1770983 *	-85.8183249 *
8	77'0"	10'0"	5'3"	-0.8%	DAP	38.1770956 *	-85.8182903 *
9	87'0"	10'0"	5'2"	-2.1%	DAP	38.1770929 *	-85.8182557 *
10	97'0"	10'0"	5'2"	-1.2%	DAP	38.1770902 *	-85.818221 *
11	107'0"	10'0"	4'9"	0.3%	DAP	38.1770876 *	-85.8181864 *
12	117'0"	10'0"	4'10"	0.7%	DAP	38.1770849 *	-85.8181518 *
13	127'0"	10'0"	4'9"	-0.5%	DAP	38.1770822 *	-85.8181172 *
14	137'0"	10'0"	4'11"	-0.7%	DAP	38.1770795 *	-85.8180826 *
15	147'0"	10'0"	5'1"	-0.2%	DAP	38.1770768 *	-85.818048 *
16	157'0"	10'0"	5'0"	-1.7%	DAP	38.1770741 *	-85.8180133 *
17	167'0"	10'0"	5'4"	-1.2%	DAP	38.1770714 *	-85.8179787 *
18	177'0"	10'0"	5'7"	-2.5%	DAP	38.1770687 *	-85.8179441 *
19	187'0"	10'0"	5'10"	-2%	DAP	38.1770661 *	-85.8179095 *
20	197'0"	10'0"	5'11"	-1.8%	DAP	38.1770634 *	-85.8178749 *
21	207'0"	10'0"	6'0"	-0.7%	DAP	38.1770607 *	-85.8178402 *
22	217'0"	10'0"	6'1"	0.2%	DAP	38.177058 *	-85.8178056 *
23	227'0"	10'0"	5'11"	3.2%	DAP	38.1770553 *	-85.817771 *
24	237'0"	10'0"	5'3"	5.4%	DAP	38.1770526 *	-85.8177364 *
25	247'0"	10'0"	5'2"	2.4%	DAP	38.1770499 *	-85.8177018 *
26	257'0"	10'0"	4'10"	0.7%	DAP	38.1770472 *	-85.8176671 *
27	267'0"	10'0"	5'2"	-0.6%	DAP	38.1770445 *	-85.8176325 *
28	277'0"	10'0"	5'1"	-0.4%	DAP	38.1770419 *	-85.8175979 *



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