



# HARNESSING CONNECTED AGRICULTURE

Enhancing the Value of Operations

Agronomic Optimization

Scheid Vineyards Inc.



# Precision Ag at Scheid Family Wines

Utilizing Technology to Make Better Decisions

## 2 Rules

**The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency.**

**The second is that automation applied to an inefficient operation will magnify the inefficiency.**

Bill Gates



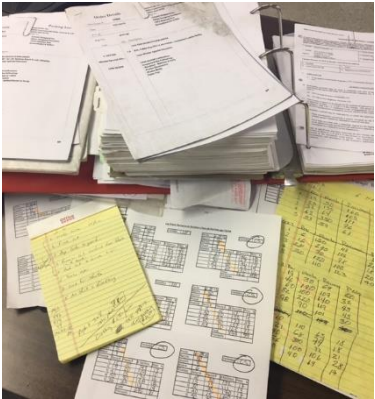
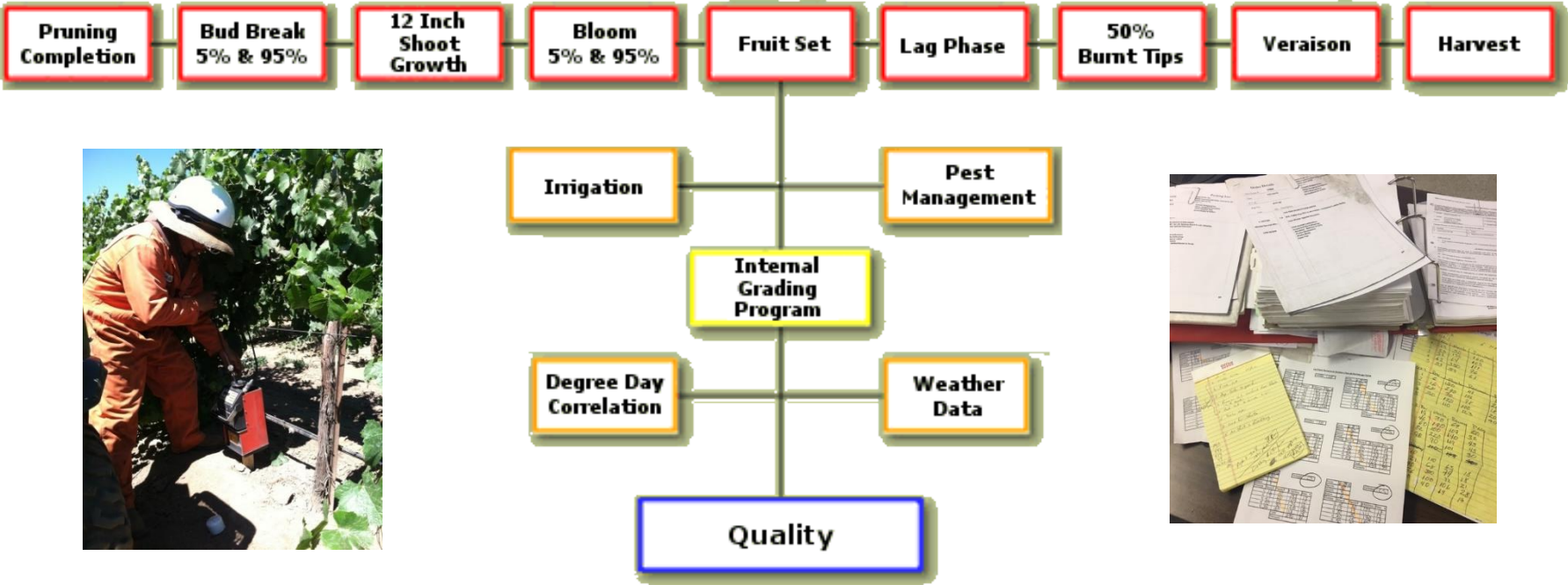


Continuous improvement through the modernization of traditional viticulture fundamentals by the implementation and use of technologies to maximize operational efficiencies while enhancing vine production and quality.



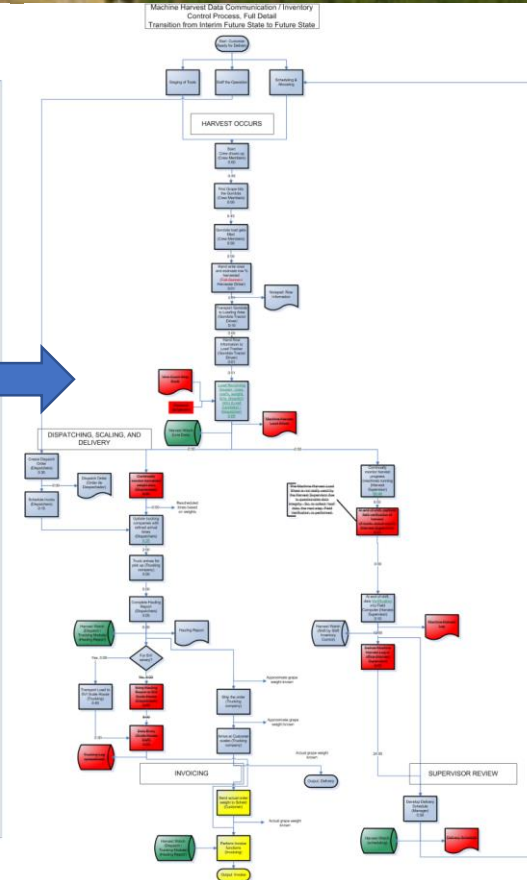
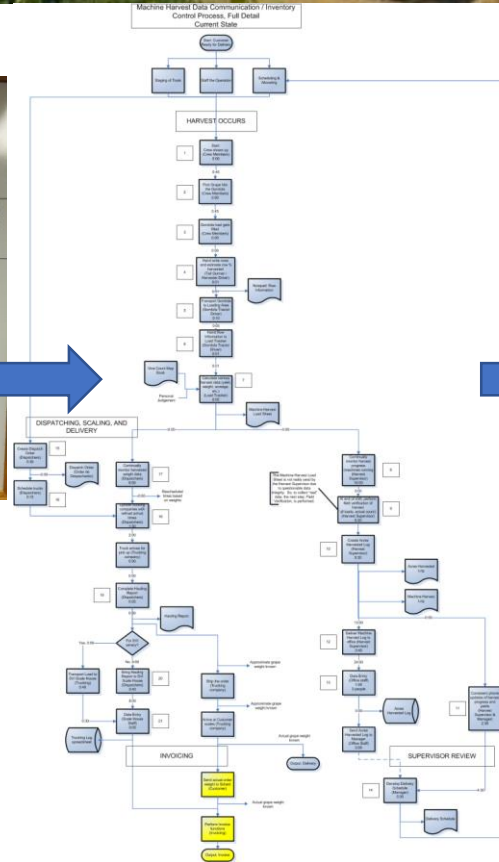
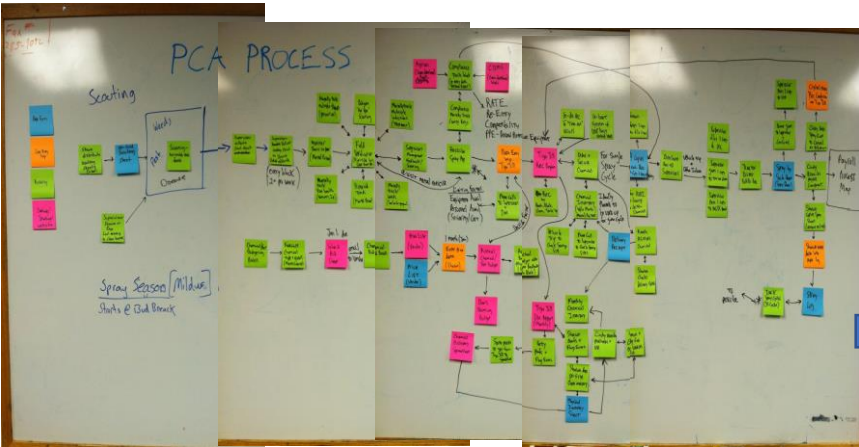
# Identify Core

## G.R.A.P.E. - Grower's Resource for Agricultural and Phenological Events





# Map it out: Process



- White boards and sticky notes





# Map it Out: Infrastructure

42595 Espinosa Road, Greenfield, CA 93927



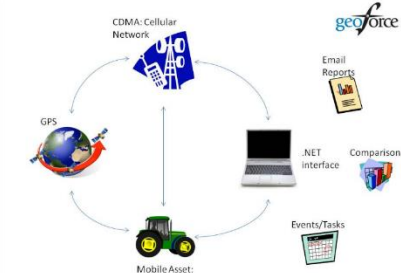
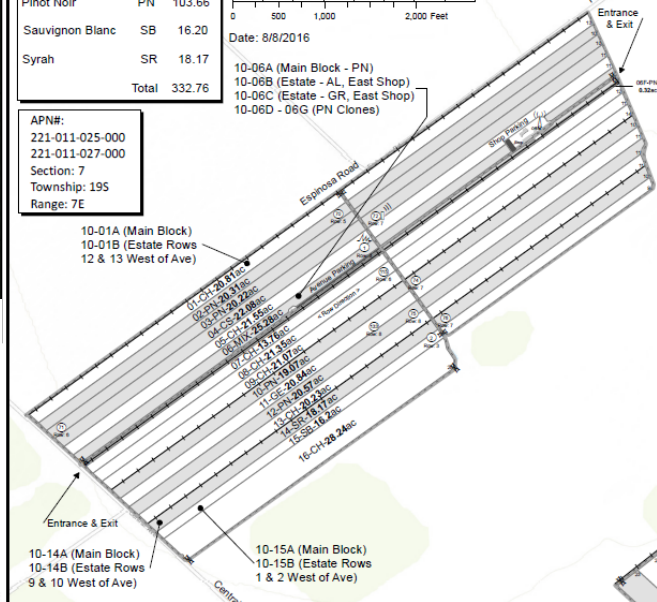
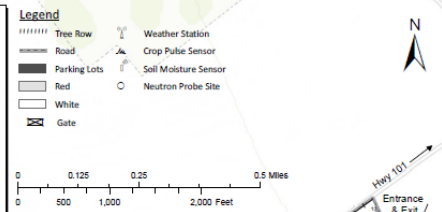
42595 Espinosa Road Greenfield, CA 93927

Supervisor: Hugo Barroso 831-970-8728

APN#:  
221-011-025-000  
221-011-027-000  
Section: 7  
Township: 19S  
Range: 7E

10-14A (Main Block)  
10-14B (Estate Rows 9 & 10 West of Ave)

10-15A (Main Block)  
10-15B (Estate Rows 1 & 2 West of Ave)

Scheid Vineyards Inc.  
Map Book - Variety Summary

## 10 SCHEID

8/08/16

Ranch	Sect	Blk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
10	--	06B	AL	.	5BB	1.01	4	457	454	8x12	Estate

Cherrydon	Rank	Set	Bk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
	10	--	01A	CH	4	SC	19.03	13	14,699	772	6x14	Standard
	11	--	01B	CH	4	SC	1.78	2	1,373	772	6x14	Estate
	12	--	05	CH	4	5BB	21.55	11	19,560	908	4x12	Standard
	13	--	07	CH	4	5C	18.91	11	12,984	772	6x14	Standard
	14	--	08	CH	4	5BB	20.79	13	19,379	908	4x12	Standard
	15	--	09	CH	4	TINAI	21.07	14	16,271	772	6x14	Standard
	16	--	13	CH	4	5BB	20.23	11	18,362	908	4x12	Standard
	17	--	16	CH	4	5BB	28.24	28	25,632	908	4x12	Premium
Cherrydon totals:							150.06	101	128,260			

Cabernet Sauvignon											
Ranch	Sect	Blk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
10	--	04	CS	7	58B	22.08	11	10,020	454	8x12	Standard
Cabernet Sauvignon totals:						22.08	11	10,020			

Gewurztraminer												
Ranch	Sect	Bik	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog	
10	--	11	GE		N/A	58B	20.84	11	9,456	454	8x12	Standard
Gewurztraminer totals:						20.84	11	9,456				

Grenache											
Ranch	Sect	Blk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
10	--	06C	GR		58B	0.74	3	334	454	8x12	Estate
Grenache totals:						0.74	3	334			

Pinot Noir											
Pinch	Seed	Blk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
10	--	02	PN	667	FREEDOM	20.31	10	18,434	908	4x12	Standard
10	--	03	PN	667	5BR	29.22	10	19,550	908	4x12	Standard
10	--	05A	PN	777	5BR	15.39	15	15,390	908	4x12	Standard
10	--	05D	PN	667	1103SP	1.25	2	1,844	1556	4x7	Dev
10	--	06E	PN	667	1103SP	0.66	2	1,020	1556	4x7	Dev
10	--	06F	PN	459	1103SP	0.32	2	504	1556	4x7	Dev
10	--	06G3	PN	777	1103SP	3.43	3	5,334	1556	4x7	Dev
10	--	10	PN	PCM	5BR	10.07	10	19,844	726	4x12	Standard
10	--	12	PN	PCM	5BR	20.57	11	19,654	908	4x12	Standard
Pinot Noir Totals:						100.66	61	94.74			

Sauvignon Blanc											
Ranch	Secl	Blk	Variety	Clone	Rootstock	ACRES	Rows	Vines	VPA	Spacing	Vit Prog
10	--	15A	SB	1	5BB	14.12	9	6,406	454	8x12	Premium
10	--	15B	SB	1	5BB	2.08	2	942	454	8x12	Estate
Sauvignon Blanc totals:						16.20	11	7,348			

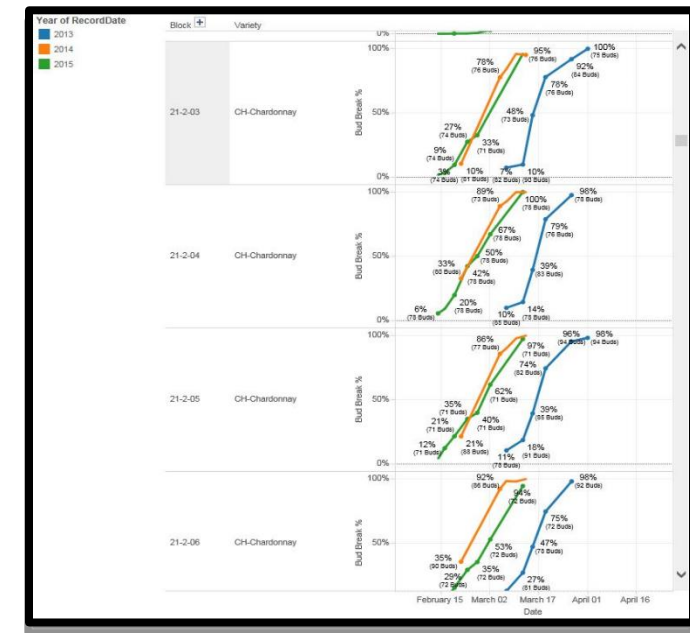




# Streamline Data Acquisition



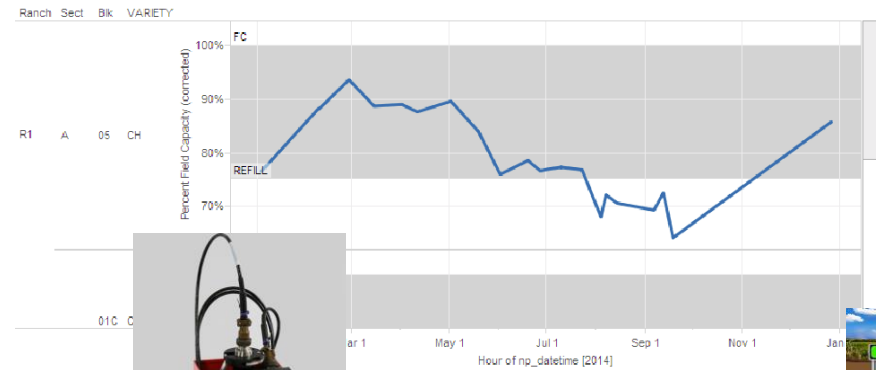
## Where: Location





# Evolution of Decision Making

NP Readings (% FC)



Year of np

2014

Ranch

Year of np

2014

Ranch

Year of np

2014

Ranch

Year of np

2014

Ranch

Year of np

2014

Ranch

Year of np

2014

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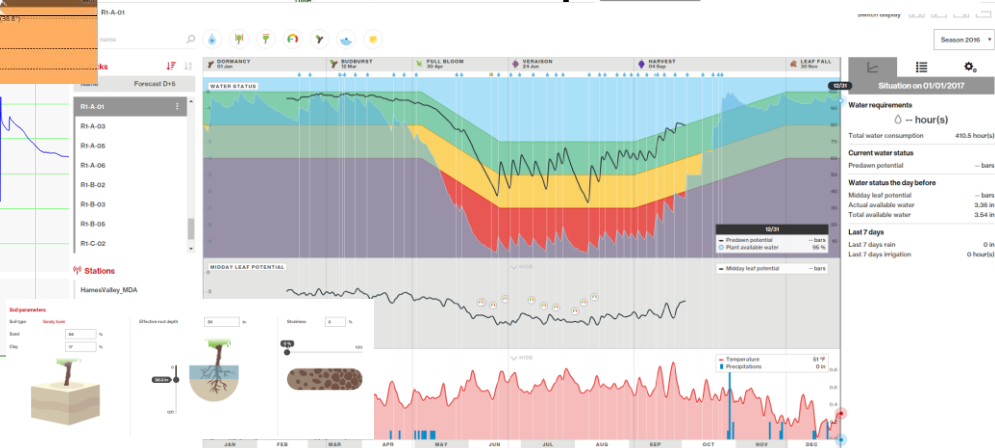
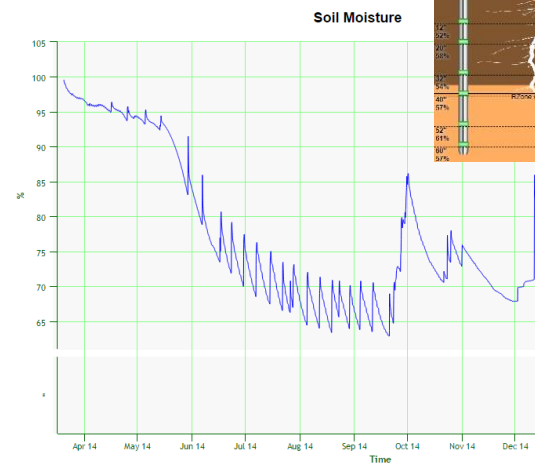
2014

Ranch

Year of np

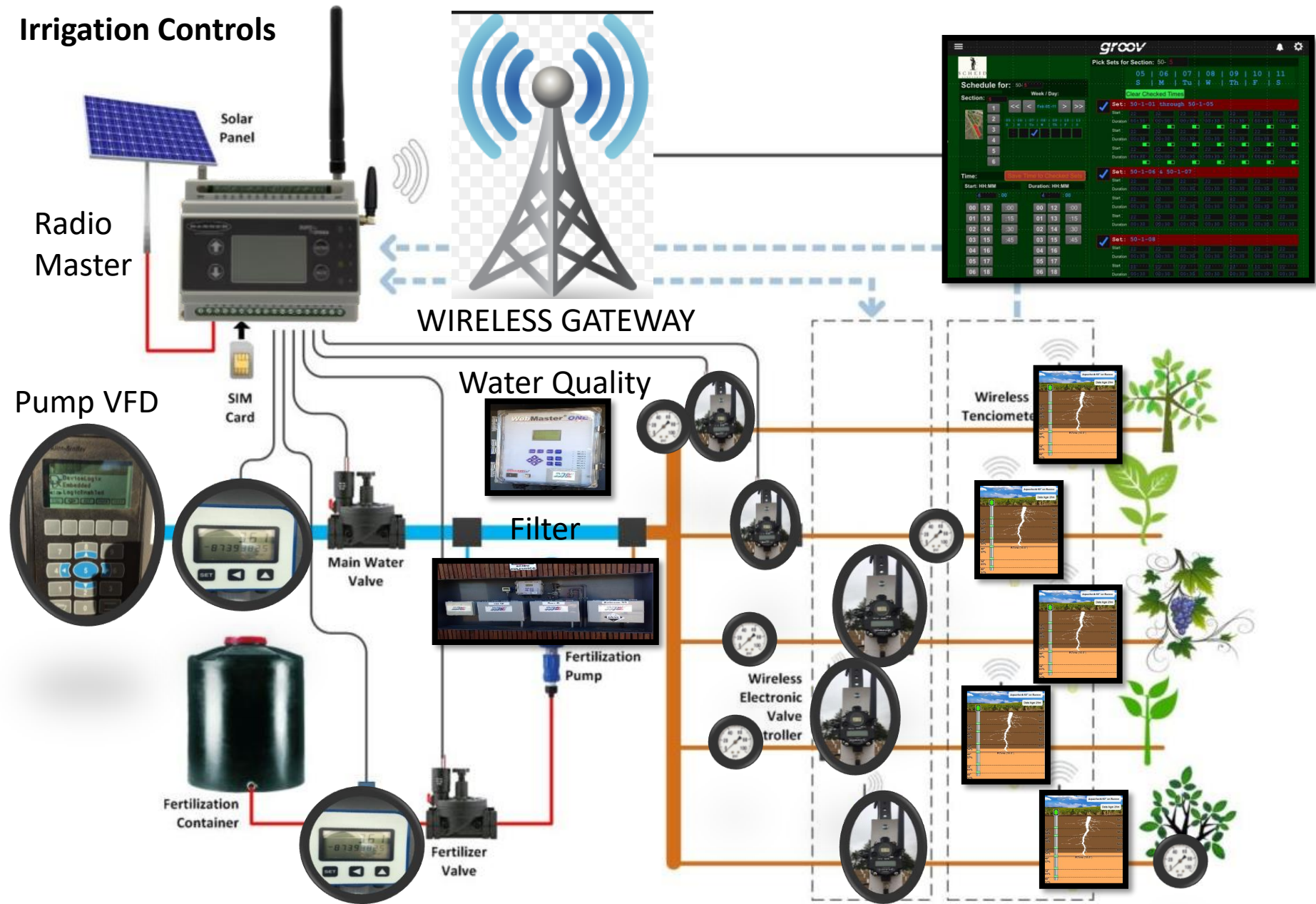
2014

Ranch



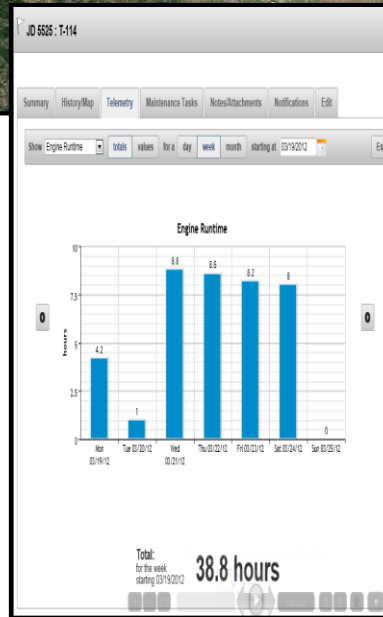
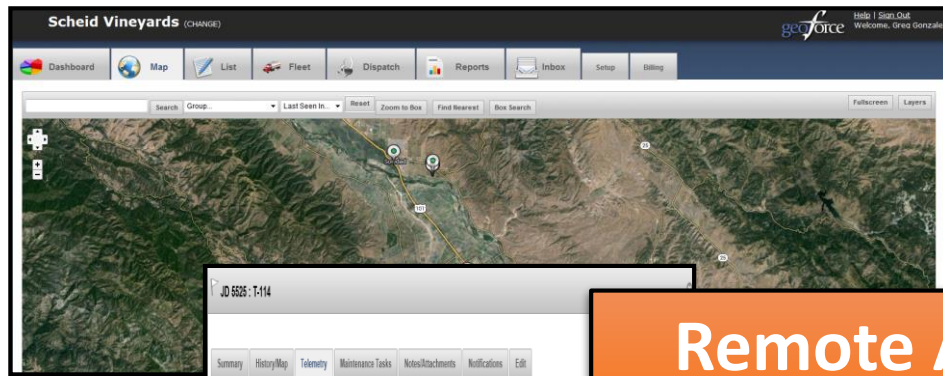


# Irrigation Controls

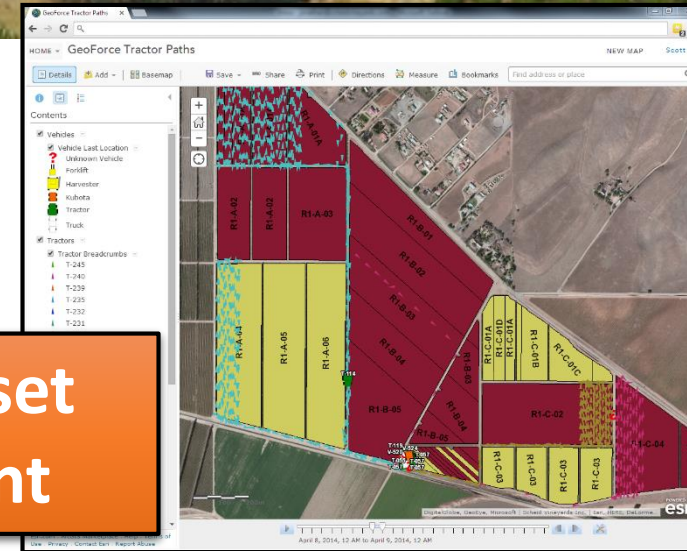




# Operations



## Remote Asset Managment



Scheid Vineyards Maintenance Tasks Report									
Status:	Scheduled								
ACCOUNT	ASSET NAME	ASSET ID	LAST SEEN LOCATION	TAG	TASK	CURRENT	FREQUENCY	ACCUMULATOR	DUPLICATE
Scheid Vineyards	Harvester	MH-102	43455 Hobson Ave, Greenfield, US-CA, 95441023056		Season start up inspection change motor oil and hydraulic oil all filters				2013-08-14
Scheid Vineyards	Harvester	MH-108	1972 Hobson Ave, Greenfield, US-CA, 95441016159		Season start up inspection change motor oil and hydraulic oil replace all filters				2013-08-14
Scheid Vineyards	Harvester	MH-112	1972 Hobson Ave, Greenfield, US-CA, 95441023104		Change motor oil and filters, Air filters, Fuel	5709.8 engine runtime	365 days	200.0 engine runtime hours	2013-11-02
Scheid Vineyards	Harvester	MH-113	1972 Hobson Ave, Greenfield, US-CA, 95441016161		Change motor oil and hydraulic oil replace all filters				2013-08-14
Scheid Vineyards	JD4600	T-052	San Lucas R50 Shop, 58211 Paris Valley 4441023062		200 hour service: Change motor oil, oil filter	1729.3 engine runtime	182 days	200.0 engine runtime hours	2013-12-24
Scheid Vineyards	JD4600	T-053	Hames Shop, Heimer Rd, Bradley, US-CA, 95441023108		Change motor oil and filter, Air filter, fuel filter, check and refill all fluid		365 days		2014-06-01
Scheid Vineyards	JD4600	T-054	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441023045		200 hour service: Change motor oil, oil filter	2978.4 engine runtime	182 days	200.0 engine runtime hours	2013-09-07
Scheid Vineyards	JD4600	T-055	Riverview Shop, Soledad, US-CA, 95900, 4441010168		200 hour service: Change motor oil, oil filter	3251.2 engine runtime	182 days	200.0 engine runtime hours	2013-12-24
Scheid Vineyards	JD4600	T-056	797-919 Old Alline Hwy, Paicines, US-CA, 95441023049		200 hour service: Change motor oil, oil filter	5137.7 engine runtime	182 days	200.0 engine runtime hours	2013-09-25
Scheid Vineyards	JD4600	T-057	Riverview Shop, Unnamed Rd, Soledad, US4441023057		200 hour service: Change motor oil, oil filter	22.1 engine runtime	182 days	200.0 engine runtime hours	2013-10-09
Scheid Vineyards	JD1070	T-058	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441023047		200 hour service: Change motor oil, oil filter	2871.5 engine runtime	182 days	200.0 engine runtime hours	2013-11-27
Scheid Vineyards	JD4600	T-059	San Lucas R50 Shop, 58211 Paris Valley 4441023068		200 hour service: Change motor oil, oil filter	1444.7 engine runtime	182 days	200.0 engine runtime hours	2013-02-06
Scheid Vineyards	John Deere 4600	T-060	4441023095		200 hour service: Change motor oil, oil filter	278.6 engine runtime	182 days	200.0 engine runtime hours	2013-09-24
Scheid Vineyards	4600 JD Tractor	T-062	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441023072		200 hour service: Change motor oil, oil filter	634.5 engine runtime	182 days	200.0 engine runtime hours	2013-10-02
Scheid Vineyards	JD 4600	T-063	Riverview Shop, Unnamed Rd, Soledad, US4441016151		200 hour service: Change motor oil, oil filter	4593.2 engine runtime	182 days	200.0 engine runtime hours	2013-12-24
Scheid Vineyards	JD4600	T-064	797-919 Old Alline Hwy, Paicines, US-CA, 95441023100		200 hour service: Change motor oil, oil filter	6897.6 engine runtime	182 days	200.0 engine runtime hours	2013-10-10
Scheid Vineyards	JD4600	T-065	Scheid R10 Shop, 42595 Espinosa Rd, G4441023067		200 hour service: Change motor oil, oil filter	6758.9 engine runtime	182 days	200.0 engine runtime hours	2013-10-17
Scheid Vineyards	JD4810	T-066	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441023064		200 hour service: Change motor oil, oil filter	1456.2 engine runtime	182 days	200.0 engine runtime hours	2013-10-06
Scheid Vineyards	JD4520	T-067	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441010175		200 hour service: Change motor oil, oil filter	2871.5 engine runtime	182 days	200.0 engine runtime hours	2013-02-06
Scheid Vineyards	JD4520	T-068	Scheid R10 Shop, 42595 Espinosa Rd, G4441023069		200 hour service: Change motor oil, oil filter	3200.2 engine runtime	182 days	200.0 engine runtime hours	2013-11-08
Scheid Vineyards	JD6205	T-080	San Lucas R50 Shop, 58211 Paris Valley 4441023064		200 hour service: Change motor oil, oil filter	1181.2 engine runtime	182 days	200.0 engine runtime hours	2013-07-11
Scheid Vineyards	JD5205	T-081	San Lucas R50 Shop, 58211 Paris Valley 4441023064		200 hour service: Change motor oil, oil filter	473.8 engine runtime	182 days	200.0 engine runtime hours	2013-07-11
Scheid Vineyards	JD5510	T-108	Hames Shop, Heimer Rd, Bradley, US-CA, 95441023115		200 hour service: Change motor oil, oil filter	2235.3 engine runtime	182 days	200.0 engine runtime hours	2013-12-20
Scheid Vineyards	5510 John Deere Tractor	T-109	San Lucas R50 Shop, 58211 Paris Valley 4441023050		200 hour service: Change motor oil, oil filter	2518.6 engine runtime	182 days	200.0 engine runtime hours	2013-12-15
Scheid Vineyards	JD5510	T-110	Mesa Del Rio R41 Shop, Thorpe Ave, Gre4441023061		200 hour service: Change motor oil, oil filter	5473.0 engine runtime	182 days	200.0 engine runtime hours	2013-12-23
Scheid Vineyards	JD5510	T-111	Unnamed Rd, Bradley, US-CA, 95426, US4441023119		200 hour service: Change motor oil, oil filter	7592.7 engine runtime	182 days	200.0 engine runtime hours	2013-12-20





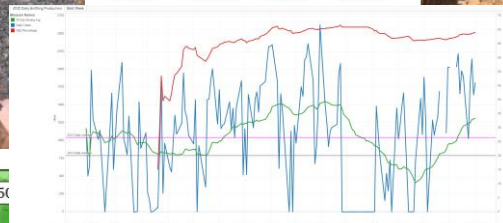
# Gain Perspective



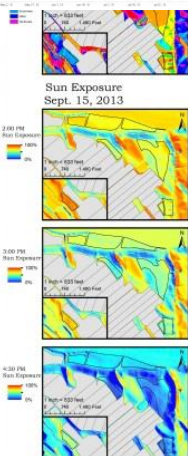
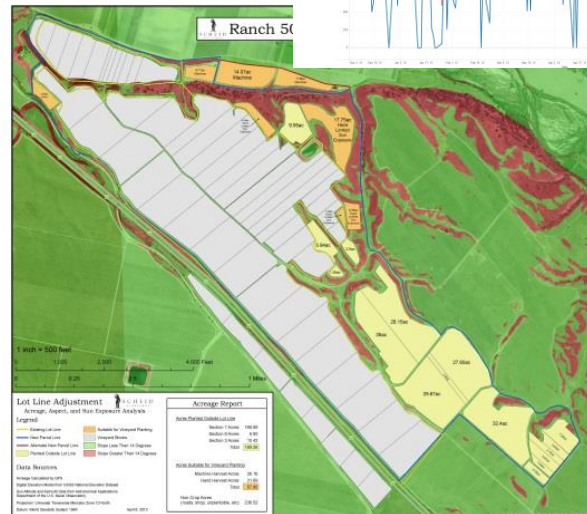
Shoot Tip Indicators of Water Status



Growing Slowing Stopped Dead Tip



Grapes	Juice and Ship	Contract Wine	Bulk	Branded Aromatic Whites	Branded Whites	Branded Reds	Branded Premium White and Red
Harvest Ship	Days/Weeks	4-6 months	4-12 months	4-6 months	6-12 months	12-18 months	24-36 months



21-1-04-Pinot Noir	
Ranch Name	Viento
Ranch ID	21
Section	1
Block	04
Varietal Name	Pinot Noir
Variety	PN
Acres	9.32
Vine Count	6,764
Row Count	19
Spacing	5x12
Vines Per Acre	726
Clone	667
Rootstock	5BB
Year Planted	

