

Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA

Geologic Summary

Zaengle Geoscience LLC

Don Zaengle
Geologist

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14 Chase St.
Worcester N.Y. 12197

DISCLAIMER

Information on the subject property set forth herein was originally compiled by Zaengle Geoscience LLC ("Zaengle") for Manzek Land Company ("MLC") c/o of Drake D. Nicholas, Esq., Receiver ("Receiver") to Manzek Land Company. The geologic information contained herein is a compilation of certain available geologic data for the subject property, Gulf Road, Tax ID = 27-51-44, 12.0 ac Orwell Township, Bradford County, PA. owned by MLC. Any party interested in purchasing the subject property must make their own evaluation of the subject property and is responsible for performing their own due diligence on the subject property.

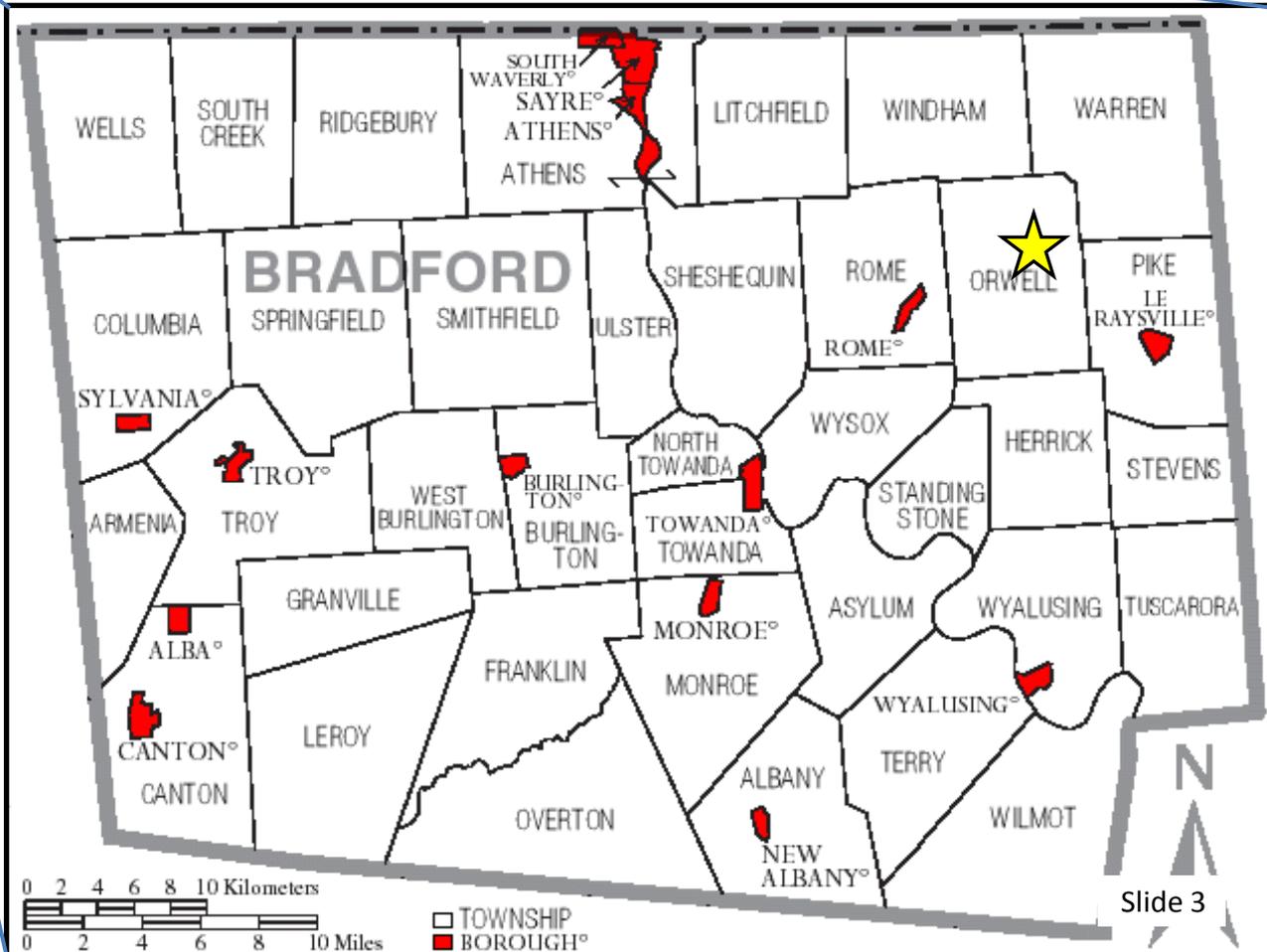
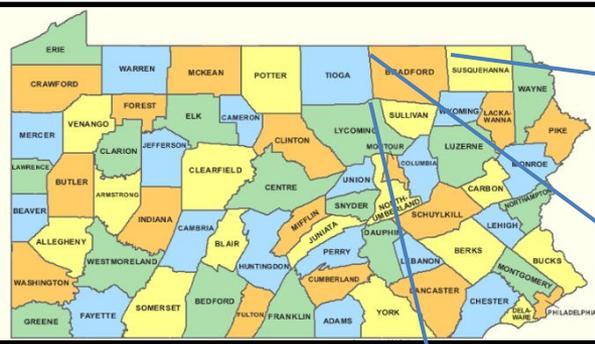
Zaengle, the Receiver and MLC disclaim any and all liability for information and/or statements contained herein and make no representation or warranty as to the completeness or accuracy of the enclosed presentation or the information contained herein, including any representation or warranty of any kind as to the amount of "in place" or recoverable oil and gas reserves (proved, probable or otherwise) attributable to the subject property, as to geological and engineering interpretations related thereto or as to process which will be received for production.

Any party interested in purchasing the subject property should understand that purchases of properties with potential "in place" or recoverable oil and gas reserves is making an investment which is subject to risks and uncertainties and is a highly speculative investment.

Location Map, Bradford County, PA

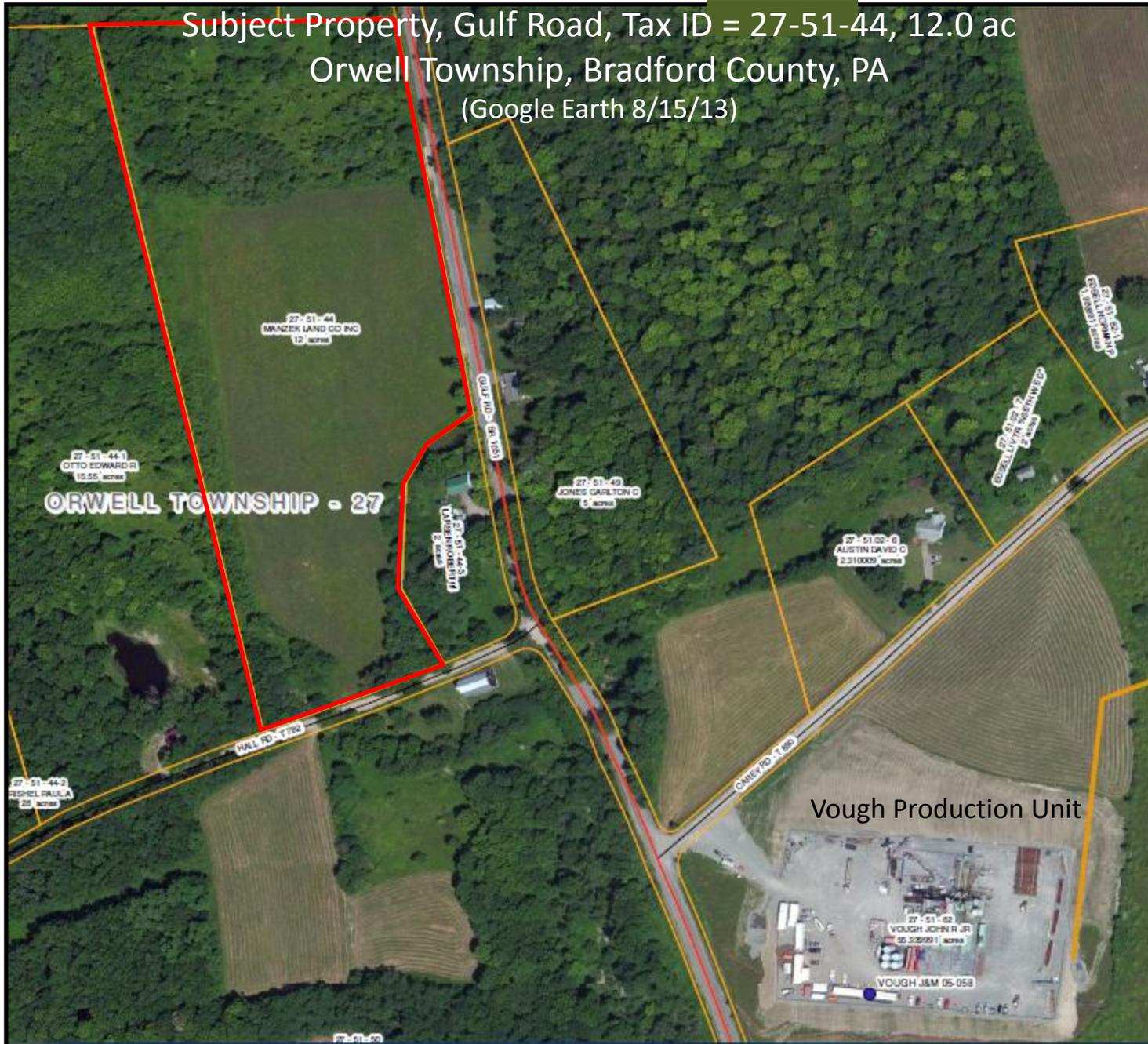


Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA



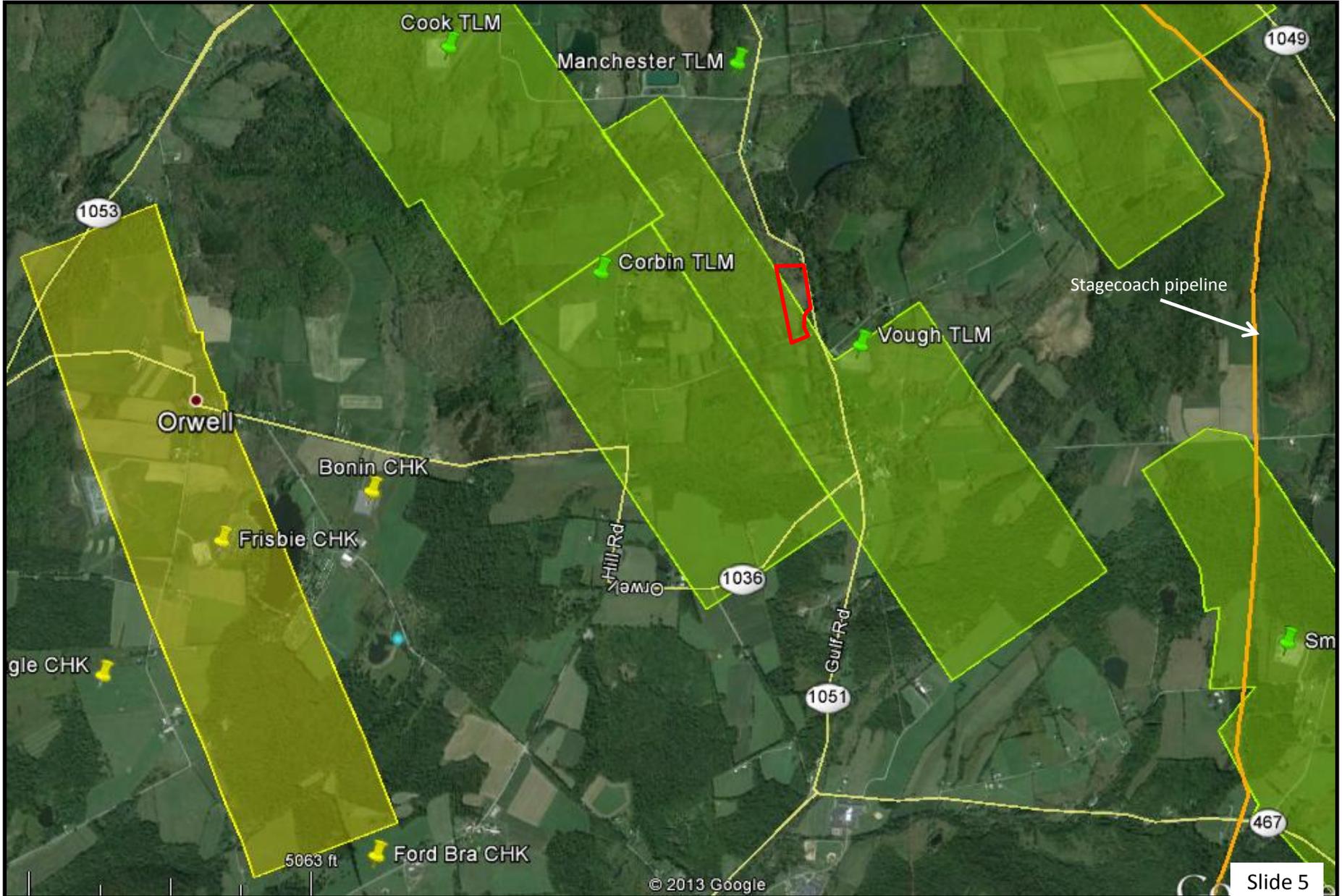
Tax Map, Bradford County, PA

Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA
(Google Earth 8/15/13)

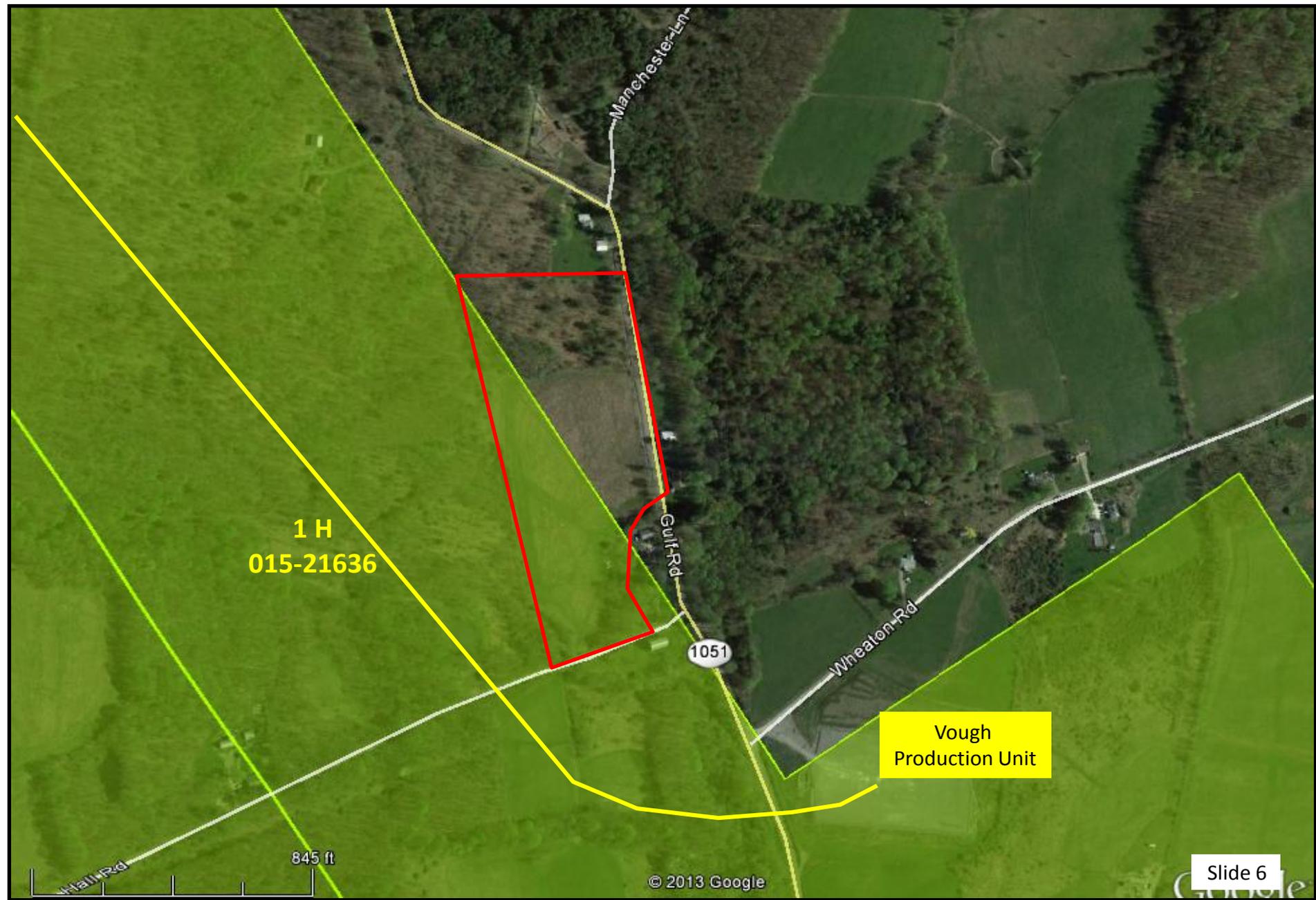


Regional Production Units (green)

Subject Property (red), Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA
(a portion of this property is located within the Vough production unit) (Google Earth 8/15/13)



Vough Production Unit Talisman Energy (green), Subject property (red), Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA (Google Earth 8/15/13)



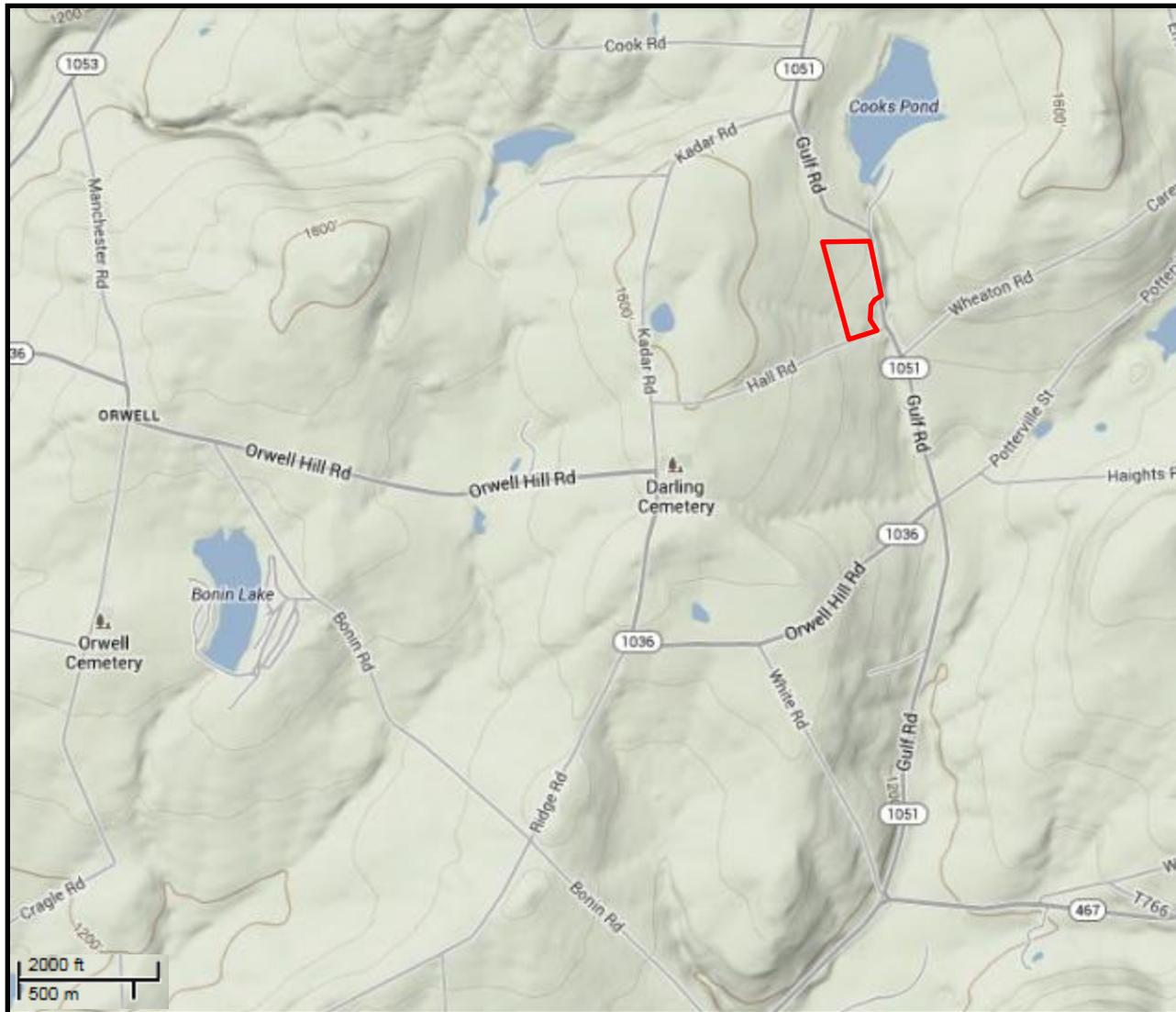
Vough Production Unit, Talisman Energy
 Orwell Township, Bradford County, PA
 (Google Earth 8/15/13)

3701521638	TALISMAN ENERGY USA INC	VOUGH (05-058-03) J	VOUGH 05 058 03 J 3H	3H	11611	Active Producing	41.8857	-76.235603
3701521639	TALISMAN ENERGY USA INC	VOUGH (05-058-04) J	VOUGH 05 058 04 J 4H	4H	12216	Active Producing	41.8857	-76.235703
3701521636	TALISMAN ENERGY USA INC	VOUGH (05-058-01) J	VOUGH 05-058-01 J 1H	1H	12135	Active Producing	41.885899	-76.235397
3701521637	TALISMAN ENERGY USA INC	VOUGH (05-058-02) J	VOUGH 05-058-02 J 2H	2H	11978	Active Producing	41.8857	-76.235497

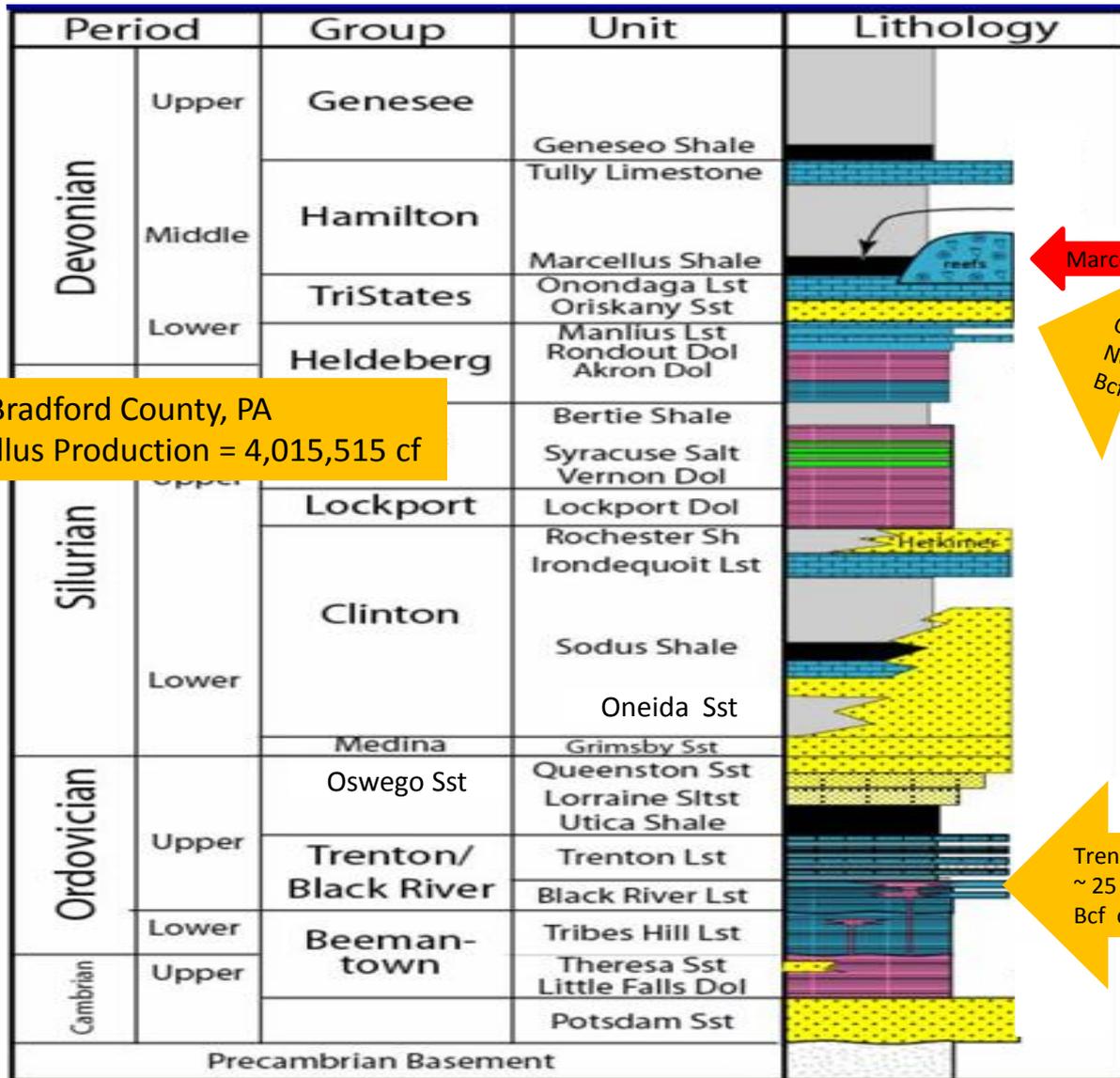
Wells were "flared out".
 No production data to date.



Topographic Map
Subject Property (red), Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA
(Google Earth 8/15/13)



Geologic Section / Historic Production
 Subject property, Gulf Road, Tax ID = 27-51-44, 12.0 ac
 Orwell Township, Bradford County, PA



Orwell township, Bradford County, PA
 Cumulative Marcellus Production = 4,015,515 cf

Marcellus Shale

Oriskany Production ~ 8.5 miles
 Northwest Stagecoach field 1985 ~14
 Bcf, Currently used as gas storage field

Trenton Black River Langdon Field NY
 ~ 25 miles northwest, produced ~ 15.5
 Bcf currently producing.

(R. Nyahay, J. Leone, L. Smith, J. Martin, D. Jarvie, 2007)
 Modified D. Zaengle 10/2008

Marcellus: 4-5%



Marcellus: ~ 2.4
Dry Gas Window



Marcellus: (High TOC) = 200'



Summary
Key Geologic Factors
Subject property, Gulf Road
Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA
* Public data unavailable

Marcellus: *



Marcellus: ~6,200'



Marcellus: ~ 75 Bcf/sq mile



Marcellus: *



Marcellus: *

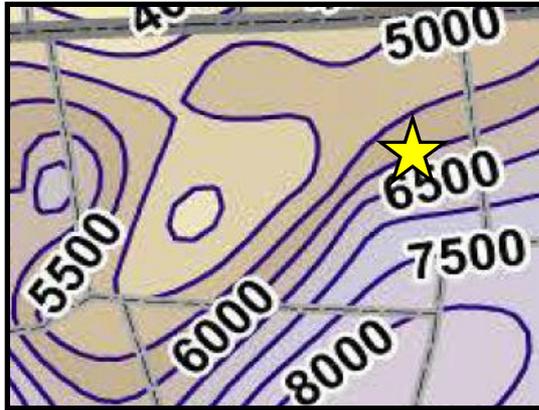




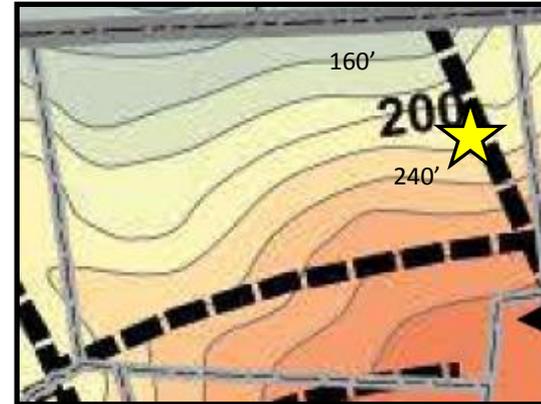
Regional Geologic Maps

Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA

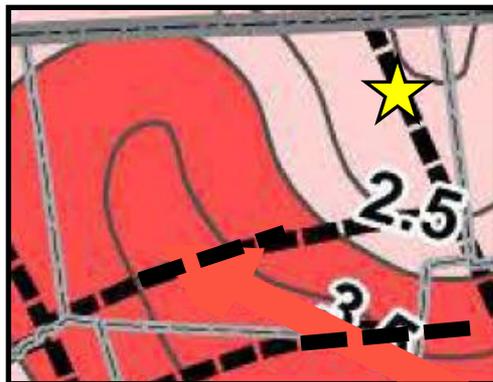
Regional Depth to base Marcellus Shale
~ 6,200'



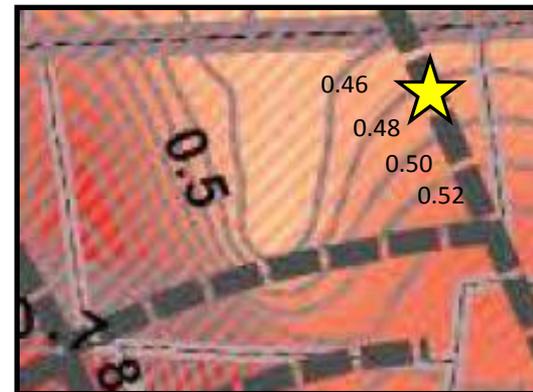
Gross Thickness
~ 200'



Thermal Maturation (Ro)
Marcellus: ~ 2.4
Dry Gas Window



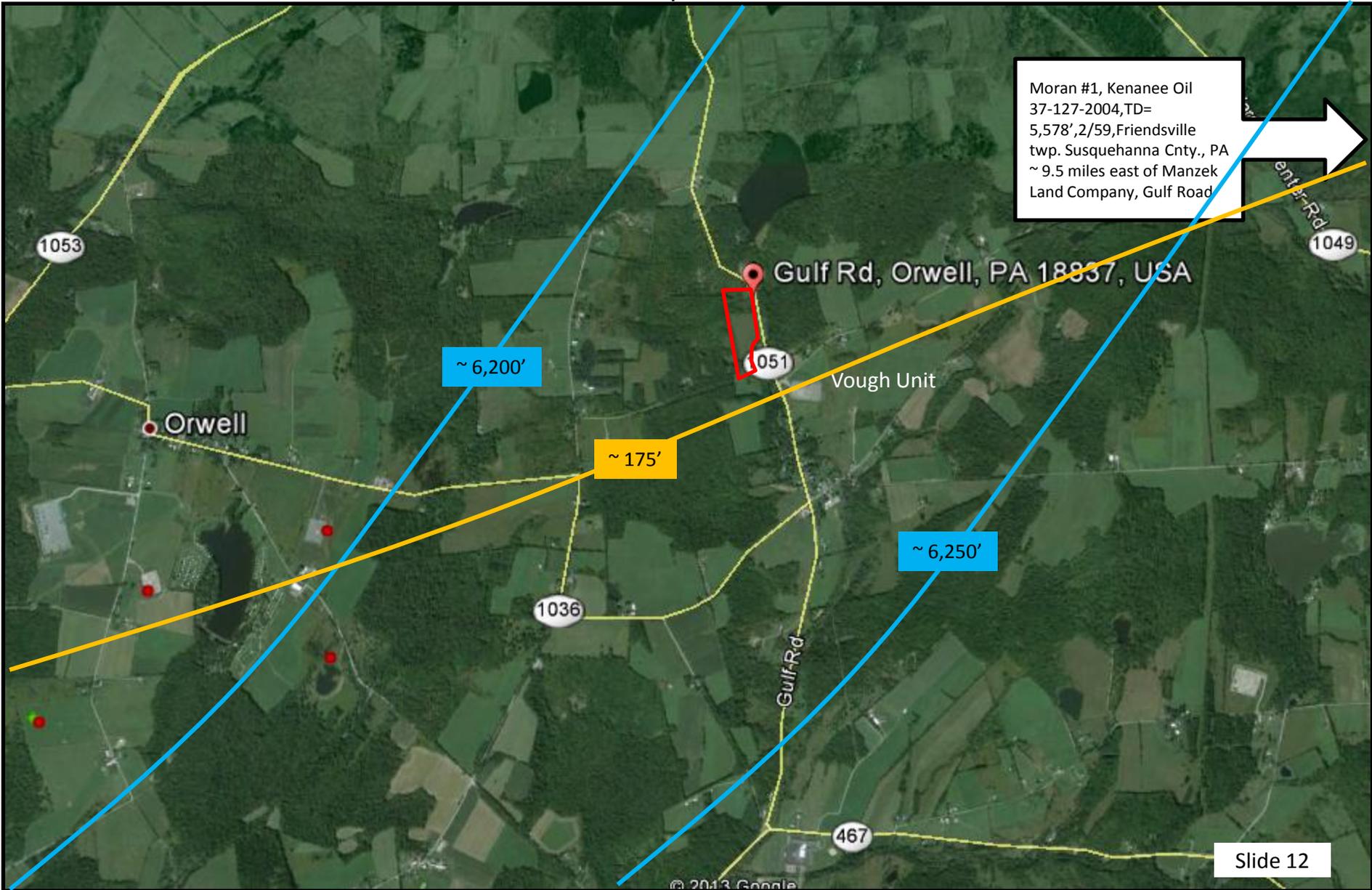
Pressure gradient (PSI/ft)
0.48 PSI/ft



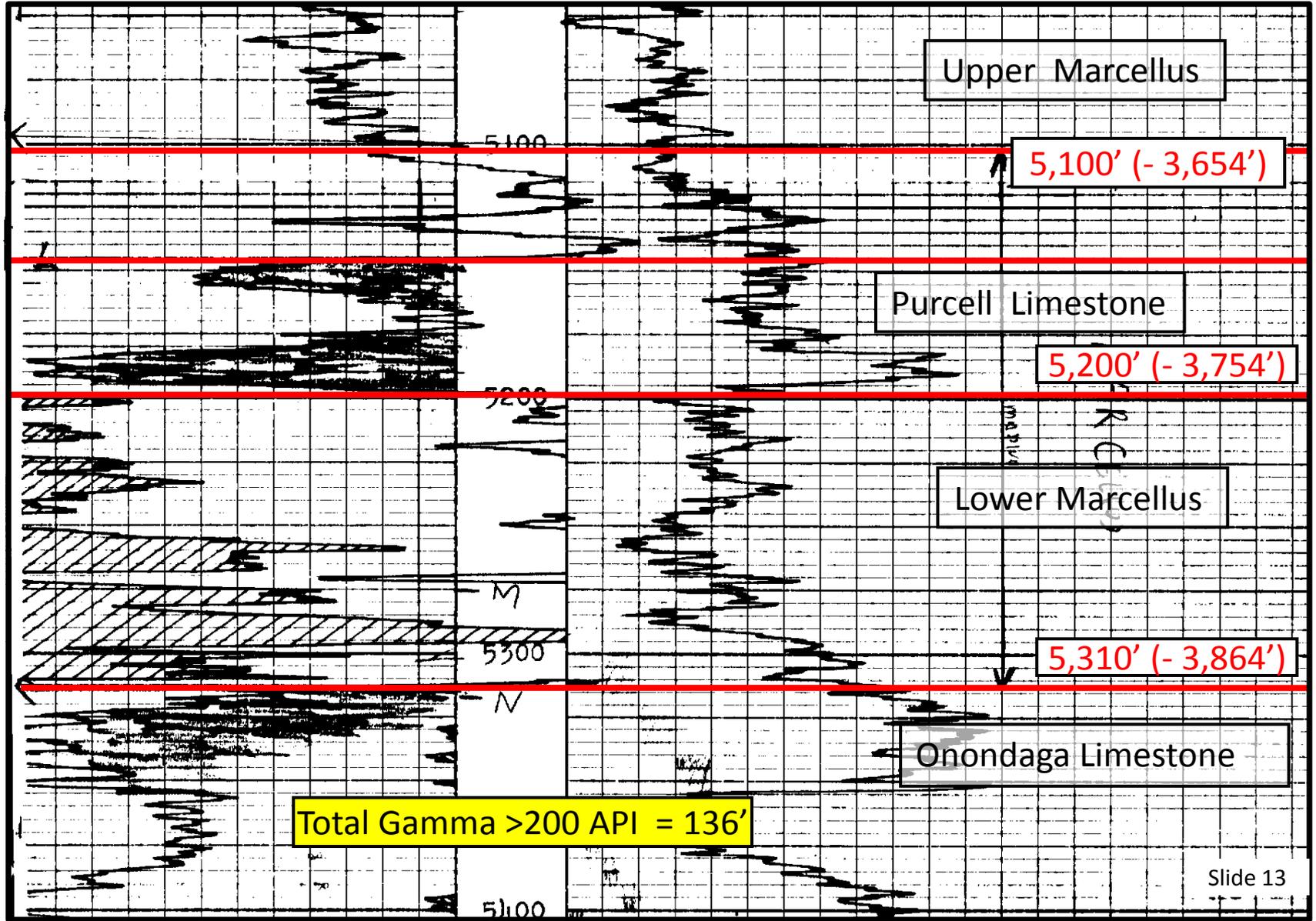
Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac

Orwell Township, Bradford County, PA

Marcellus Shale Depth =  Thickness = 



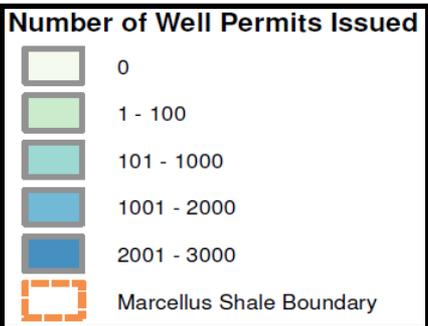
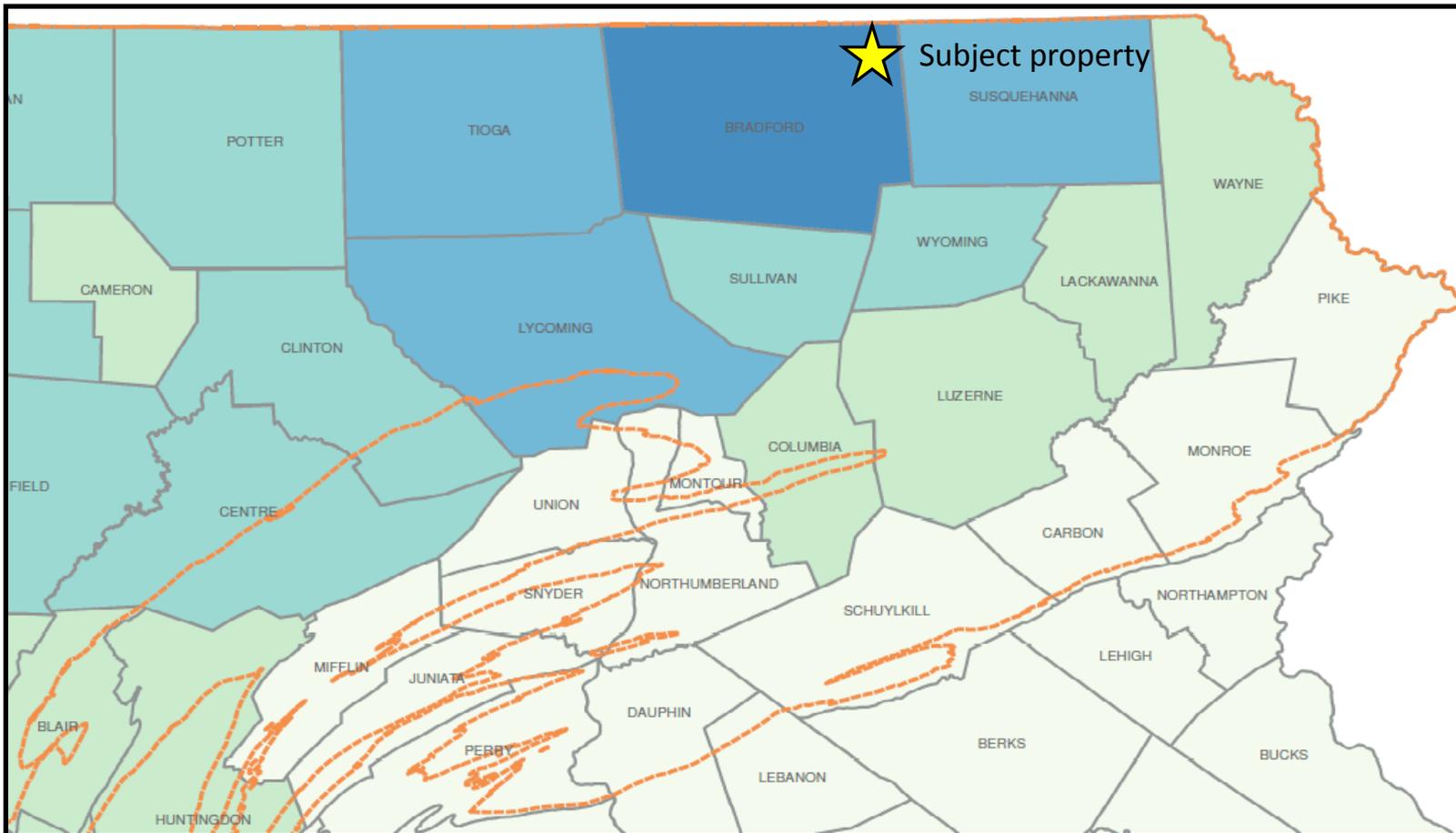
Type Log
Moran #1, Kenanee Oil Company, 37-127-2004, TD= 5,578'
Friendsville Township, Susquehanna County, PA
~ 9.5 miles east of Subject Property



Northeast PA, Number of Marcellus Shale Well Permits by County

(from Bradford County Office of Planning & Grants, "Primer on Natural gas development in Bradford County, PA", 1/21/13)

(Data from DEP Oil and Gas Reports Website 1/21/13, http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas_reports/20297)

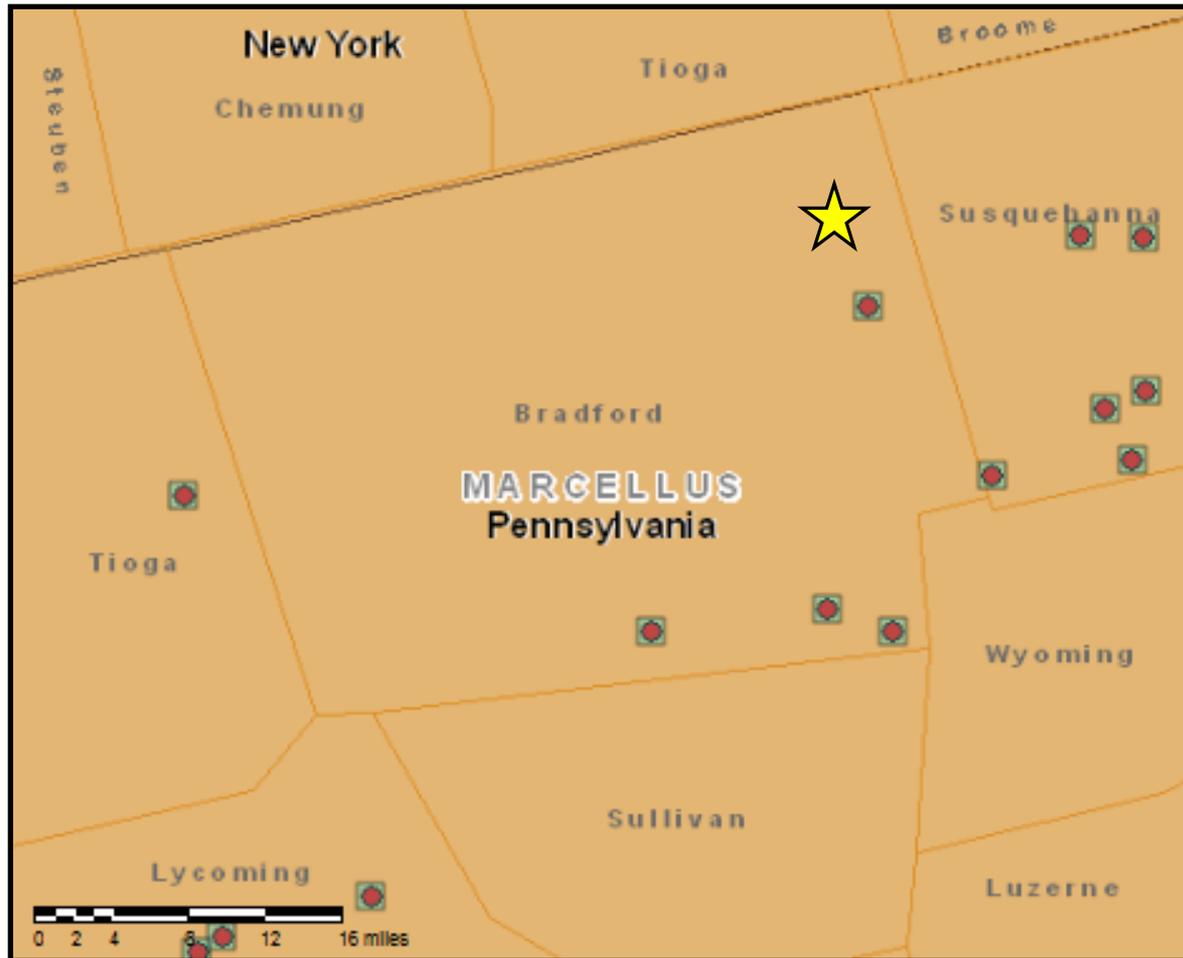


Number of Well Permits by County

2544, BRADFORD	197, SULLIVAN	23, CAMBRIA	0, CARBON	0, MONTGOMERY
1601, TIOGA	189, CENTRE	16, COLUMBIA	0, CHESTER	0, MONTOUR
1248, WASHINGTON	165, CLINTON	15, LUZERNE	0, CUMBERLAND	0, NORTHAMPTON
1171, SUSQUEHANNA	140, MCKEAN	10, VENANGO	0, DELAWARE	0, NORTHUMBERLAND
1160, LYCOMING	105, JEFFERSON	9, BLAIR	0, DAUPHIN	0, PERRY
835, GREENE	85, CLARION	9, MERCER	0, ERIE	0, PHILADELPHIA
435, WESTMORELAND	82, INDIANA	9, WARREN	0, FRANKLIN	0, PIKE
400, BUTLER	80, BEAVER	4, WAYNE	0, FULTON	0, SCHUYLKILL
400, CLEARFIELD	51, SOMERSET	3, CRAWFORD	0, JUNIATA	0, SNYDER
339, FAYETTE	46, ALLEGHENY	2, HUNTINGDON	0, LANCASTER	0, UNION
254, ARMSTRONG	38, CAMERON	2, BEDFORD	0, LEBANON	0, YORK
250, WYOMING	37, LAWRENCE	0, ADAMS	0, LEHIGH	
231, POTTER	33, FOREST	0, BERKS	0, MIFFLIN	
200, ELK	29, LACKAWANNA	0, BUCKS	0, MONROE	

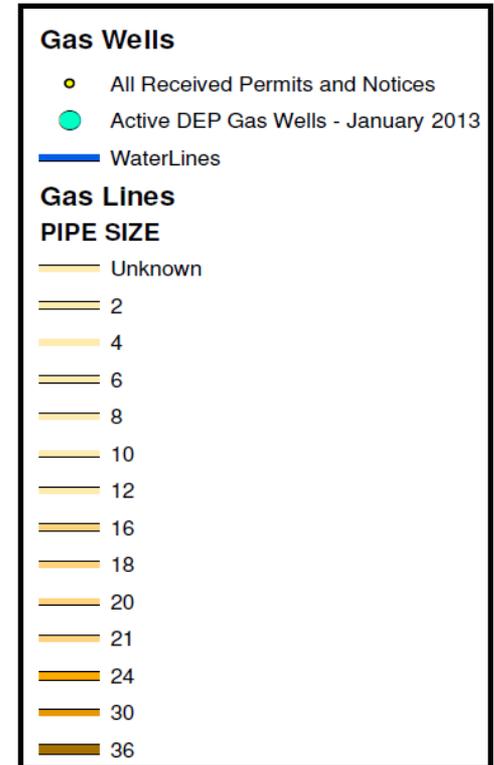
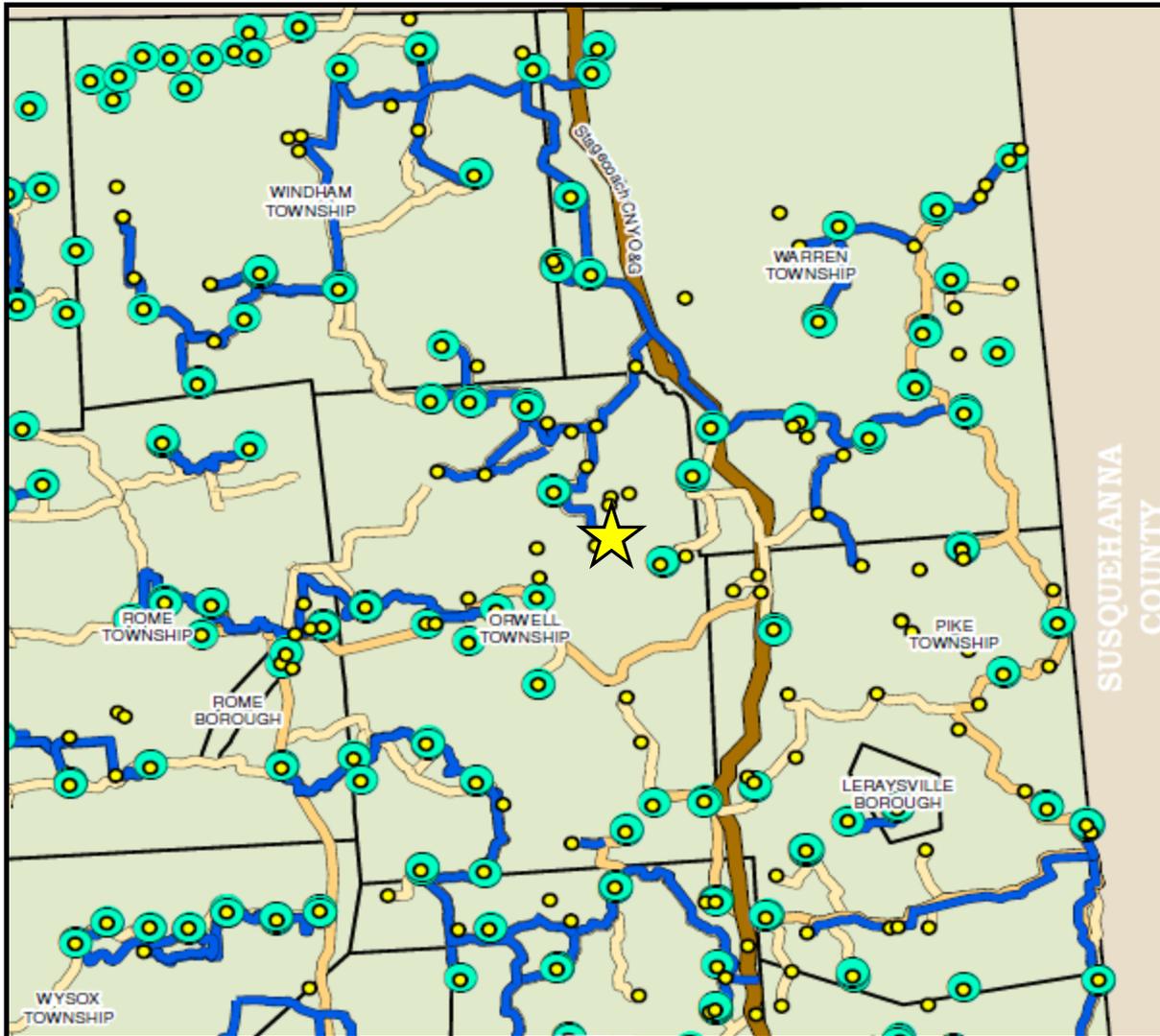
Orwell Township & surrounding townships Active Drilling Rig Count, Bradford County PA

★ Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA
(Barker Hughes <http://gis.bakerhughesdirect.com/RigCounts>, July 12, 2013), 4 Rigs Drilling in Bradford County, PA



Orwell Township & surrounding townships Gas Well Activity Map, Bradford County PA

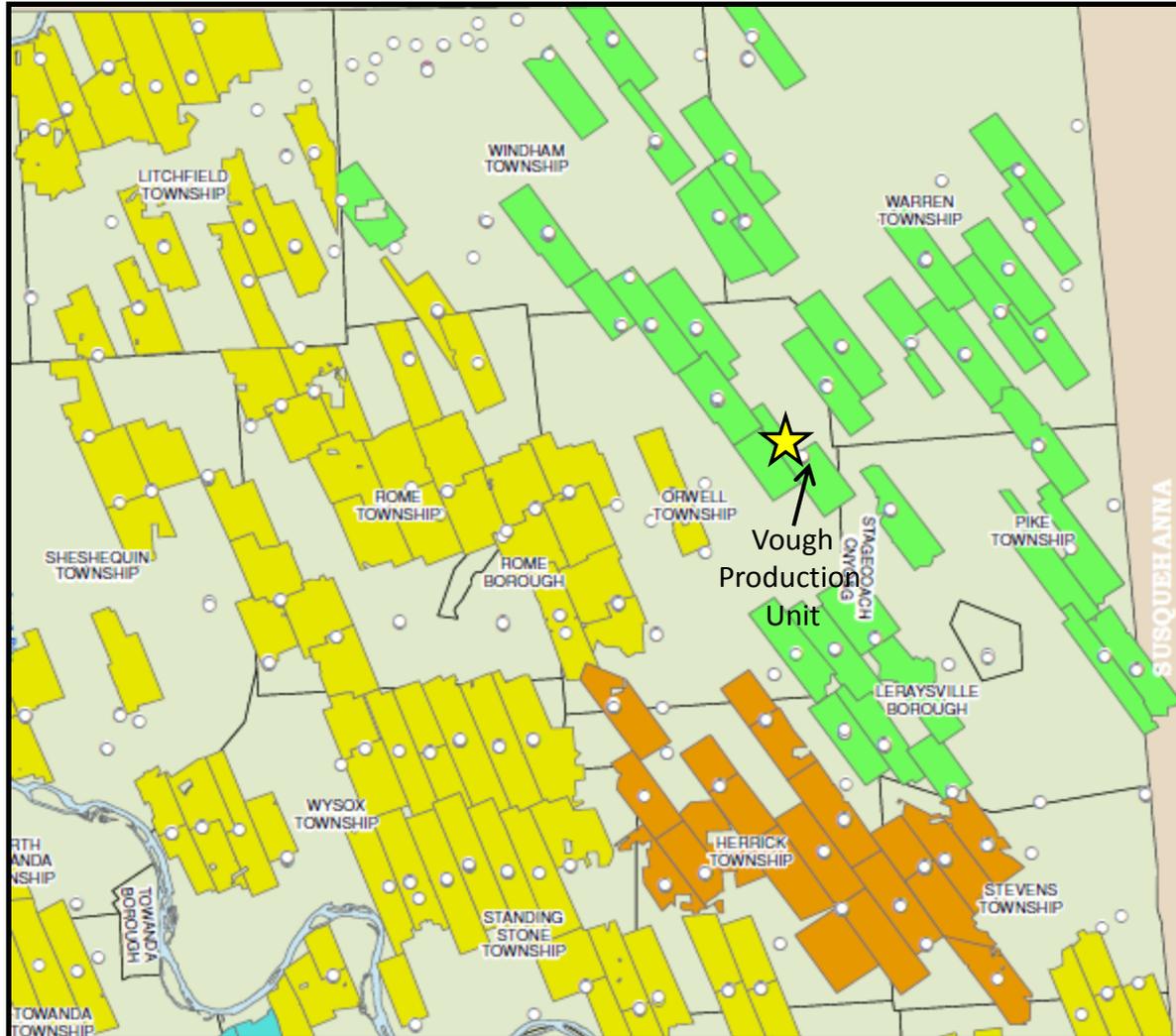
★ Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA
(from Bradford County Office of Planning & Grants, "Primer on Natural gas development in Bradford County, PA", 1/21/13)



Orwell Township & surrounding townships Production Units, Bradford County PA

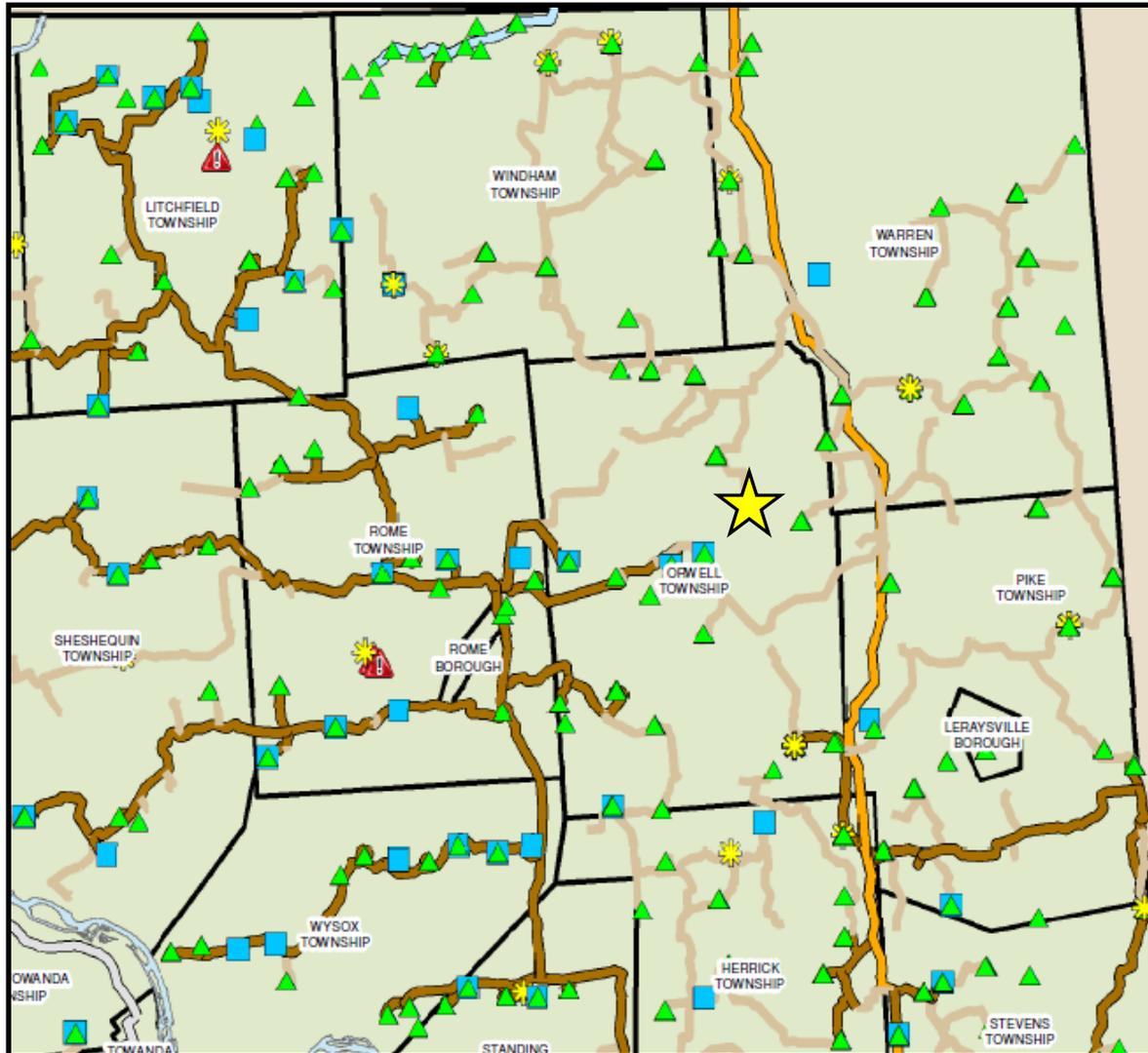
(from Bradford County Office of Planning & Grants, "Primer on Natural gas development in Bradford County, PA", 1/21/13)

★ Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA



Orwell Township & surrounding townships Pipeline map, Bradford County PA

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(from Bradford County Office of Planning & Grants, "Primer on Natural gas development in Bradford County, PA", 1/21/13)



SITE STATUS

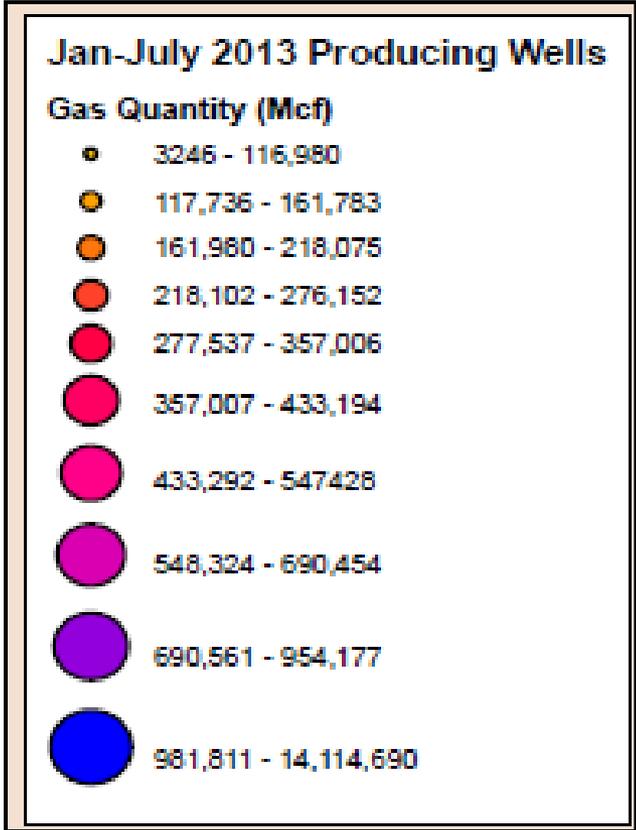
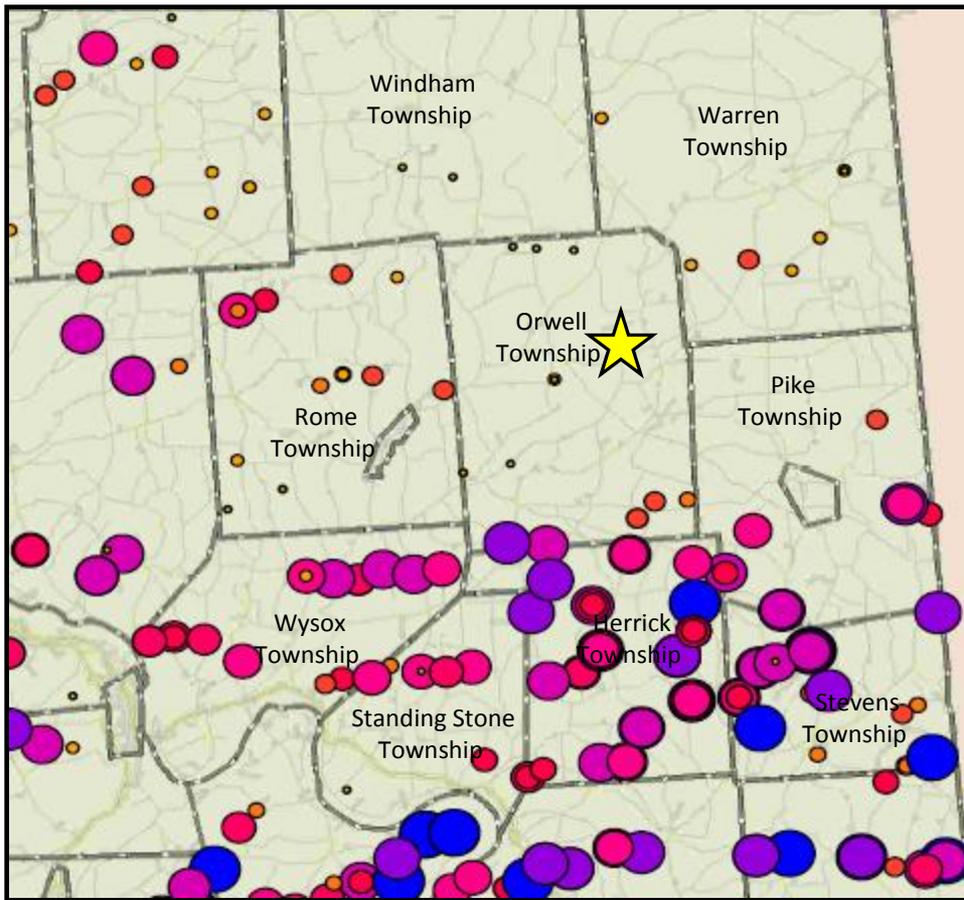
- ▲ ACTIVE
- ☀ INACTIVE
- ▲ ABANDONED
- PROPOSED, NEVER MATERIALIZED

Gas Lines

LINE TYPE

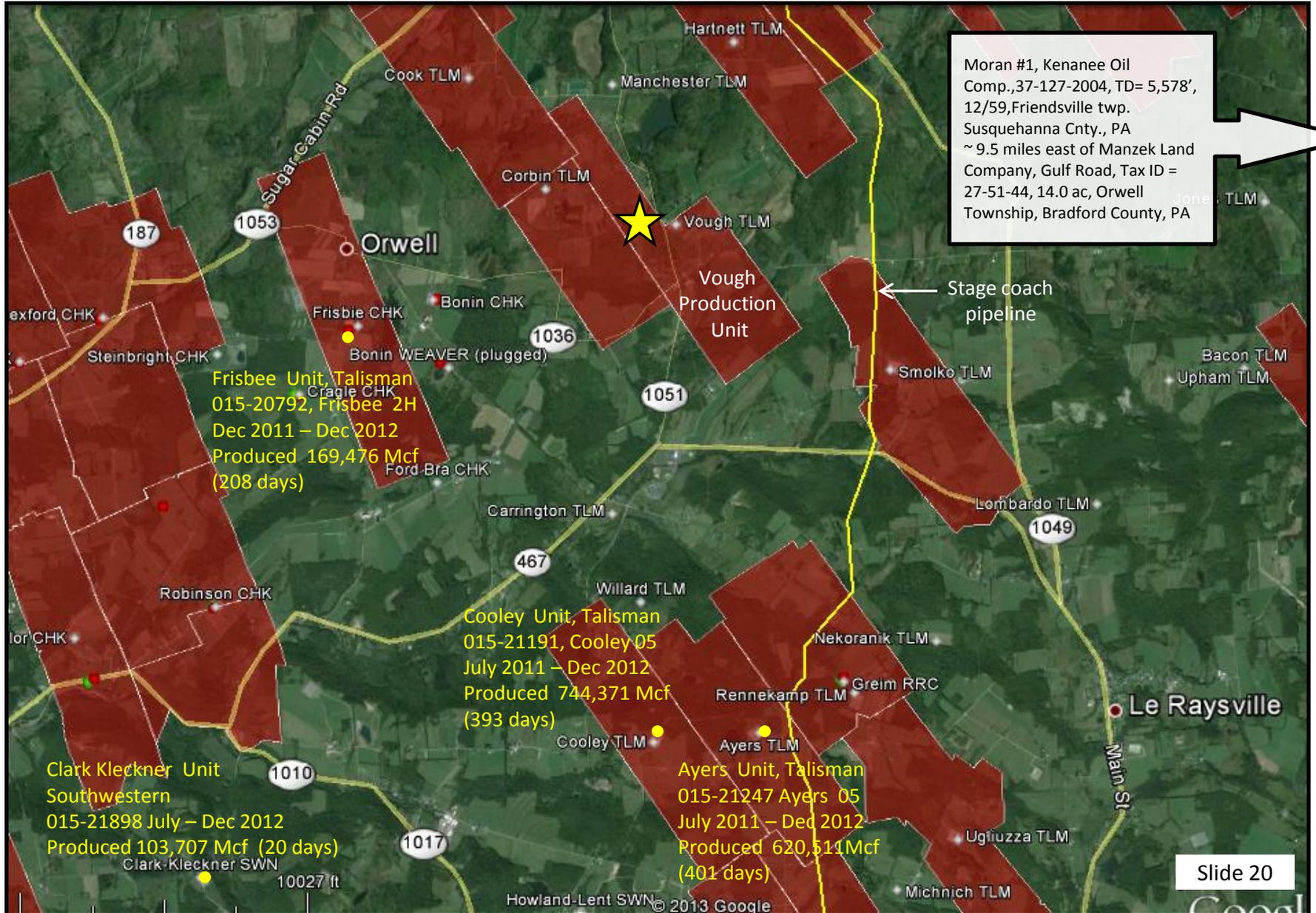
- GATHERING - BUILT
- GATHERING - PROPOSED
- SERVICE - BUILT
- STORAGE - BUILT
- TRANSPORT - BUILT
- TRANSPORT - PROPOSED

★ **Orwell Township & surrounding townships Production map, Bradford County PA**
 ★ Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA
 (from Bradford County office of Planning & Grants, "Primer on Natural gas development in Bradford County, PA", 7/1/13)



Regional Marcellus Shale Production Map

★ Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac, Orwell Township, Bradford County, PA
(Google Earth 8/15/13)



Summary

Subject Property, Gulf Road, Tax ID = 27-51-44, 12.0 ac
Orwell Township, Bradford County, PA

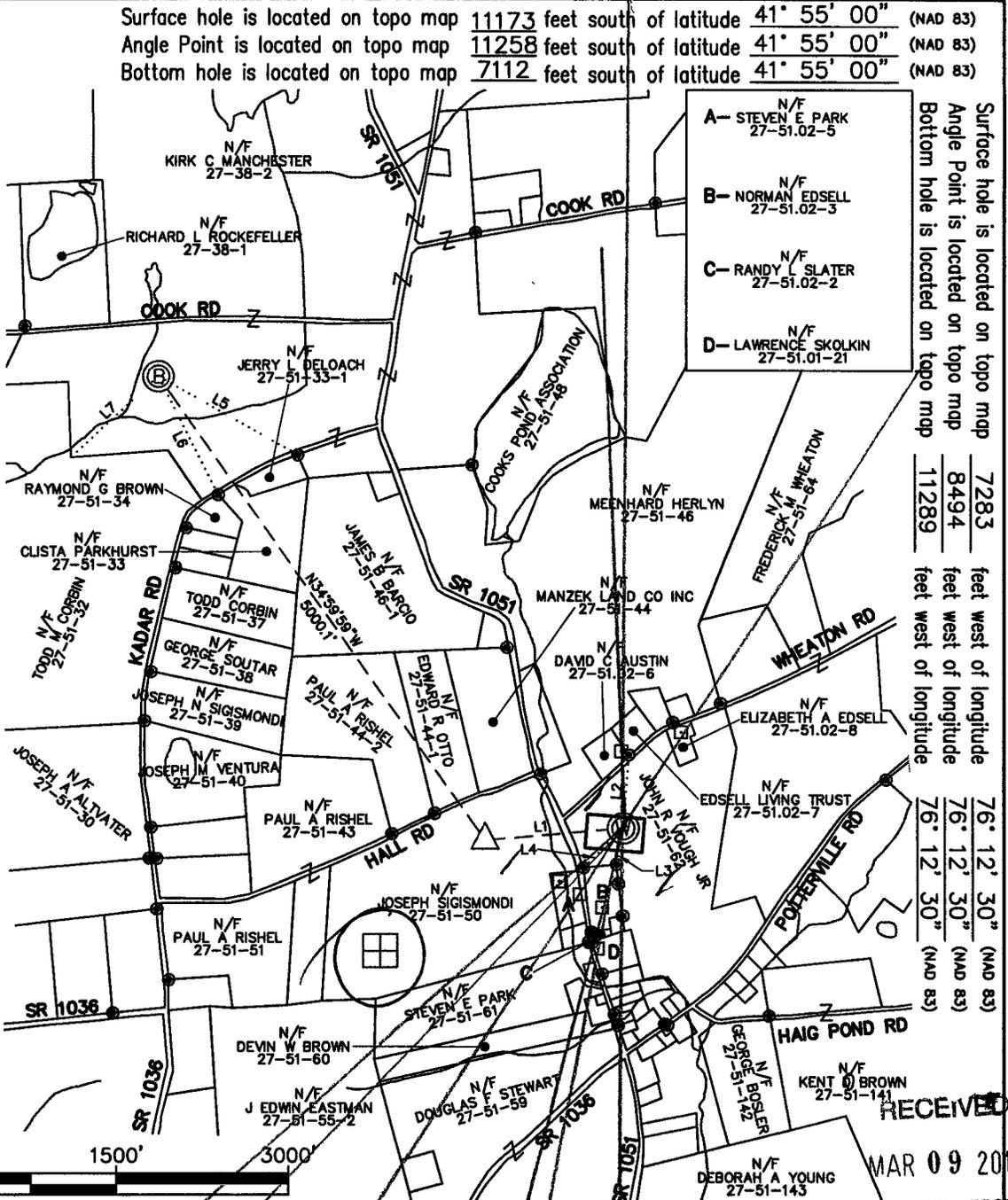
- Within Marcellus Shale production fairway.
- Marcellus > 200 API gamma ~ 200' thick, depth ~ 6,200'.
- High Marcellus Shale Total Organic Carbon (TOC) content 4.0 – 5.0 %.
- Within dry gas window $R_o = 2.4$, little if any processing required, high BTU value.
- Gas- in -place estimate for area (~75 Bcf/square mile).
- Approximately half of the acreage is located within the Talisman Energy USA, Vough Production Unit where 4 horizontal wells have been drilled and pipeline is in place. Wells are designated as active. No reported production as of 1/2013.
- 14 Marcellus Shale wells are producing in Orwell township. 9 wells with less than 40 days of production. Cumulative Production 4,015,515 cf.
- Bradford County, PA highest Marcellus Shale gas producing county in PA.
- Chesapeake & Talisman are aggressively drilling in the region.
- Excellent Economics relative to other dry gas shale plays. Near high-demand northeastern natural gas markets.
- Excellent Infrastructure (Railways, Roads) and access.
- Rural area, sparsely populated, with pro-drilling landowners.
- Abundant Water Resources near property. Within Susquehanna River Basin.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

DEP Application Tracking # 414/11
Permit # 05-2163e
Project #

- Denotes location of well on topo map.
- Denotes surface location of well on plat
- NAD 83
True Latitude: NORTH 41° 53' 09.62"
True Longitude: WEST 76° 14' 08.26"
- NAD 27
True Latitude: NORTH 41.885930°
True Longitude: WEST 76.235425°
- Denotes directional drill angle point on plat
- NAD 83
True Latitude: NORTH 41° 53' 08.78"
True Longitude: WEST 76° 14' 22.29"
- NAD 27
True Latitude: NORTH 41.885697°
True Longitude: WEST 76.239871°
- Denotes location of bottom hole on plat
- NAD 83
True Latitude: NORTH 41° 53' 49.73"
True Longitude: WEST 76° 14' 59.27"
- NAD 27
True Latitude: NORTH 41.897072°
True Longitude: WEST 76.250141°



Surface hole is located on topo map 11173 feet south of latitude 41° 55' 00" (NAD 83)
 Angle Point is located on topo map 11258 feet south of latitude 41° 55' 00" (NAD 83)
 Bottom hole is located on topo map 7112 feet south of latitude 41° 55' 00" (NAD 83)

Surface hole is located on topo map 7283 feet west of longitude 76° 12' 30" (NAD 83)
 Angle Point is located on topo map 8494 feet west of longitude 76° 12' 30" (NAD 83)
 Bottom hole is located on topo map 11289 feet west of longitude 76° 12' 30" (NAD 83)

- LEGEND**
- PROPERTY CORNER FOUND
 - WATER WELL

LINE	BEARING	LENGTH
L1	S84°59'19"W	1213.9'
L2	N04°03'26"E	649.7'
L3	S10°18'17"W	327.0'
L4	S44°48'19"W	495.3'
L5	S60°24'00"E	1401.7'
L6	S26°45'37"E	1168.0'
L7	S46°44'46"W	1044.2'

NOTES
THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY ON ALL PARCELS SHOWN. PROPERTY LINES AND OWNER INFORMATION WERE OBTAINED FROM VARIOUS FIELD EVIDENCE, TAX RECORDS, DEED PLOTS AND AERIAL MAPPING.



Surveyor or Engineer ANDREW J. DOMASHINSKI Phone # 570-323-6603 Dwg. # 6436-015-047 Date NOV. 30, 2010 Revised JAN. 12, 2011 Scale 1" = 1500'

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MAR 09 2011
ENVIRONMENTAL PROTECTION DEPARTMENT NORTHWEST REGIONAL OFFICE
Acreage 54±

Lat. & Long Metadata Method TRIMBLE MAPPING GPS Accuracy 3±(PPS) ft. Datum NAD 83		Elevation Metadata Method TRIMBLE MAPPING GPS Accuracy 6±(PPS) ft. Datum NAVD 88		Survey Date NOV. 24, 2010	
Applicant / Well Operator Name TALISMAN ENERGY USA INC.		Well(Farm) Name VOUGH (05-058-01) J		Well # 1H	Serial #
Address 50 PENNWOOD PLACE, WARRENDALE, PA. 15086		County - Code BRADFORD 08	Municipality ORWELL TWP		
Surface Landowner / Lessor JOHN R., JR. & MICHELE F. VOUGH		USCS 71/2 Quadrangle Map Name LITTLE MEADOWS			
Target Formation(s) MARCELLUS SHALE		Angle & Course of Deviation (Drilling) S84°59'19"W 1213.9' N34°59'59"W 5000.1'			
Approximate Course and Distance to Nearest Well		Anticipated Total Depth TVD 6358' / IMD 12135'			
ELIZABETH A. EDELL	N30°28'53"E 986'	Surface Elevation 1358ft.		Well Type GAS	
DAVD C. & BONNIE M. AUSTIN	N01°36'20"W 680'	Map Section 7			
STEVEN E. & DEBORAH E. PARK	S50°09'19"W 732'				
STEVEN E. & DEBORAH E. PARK	S33°25'32"W 698'				



TALISMAN

E N E R G Y

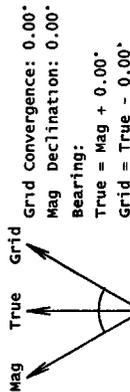


Weatherford

Vough (05-058-01) J 1H

Plan data for Vough (05-058-01) J 1H

Slot: Vough (05-058-01) J 1H
 Position: Offset is from site centre
 +/-S: 0.00USft Northing: 630061.14USft Latitude: 41°53'9.6"
 +/-W: 0.00USft Easting: 2380994.20USft Longitude: -76°14'6.3"
 Elevation Above VRD: 1357.50USft

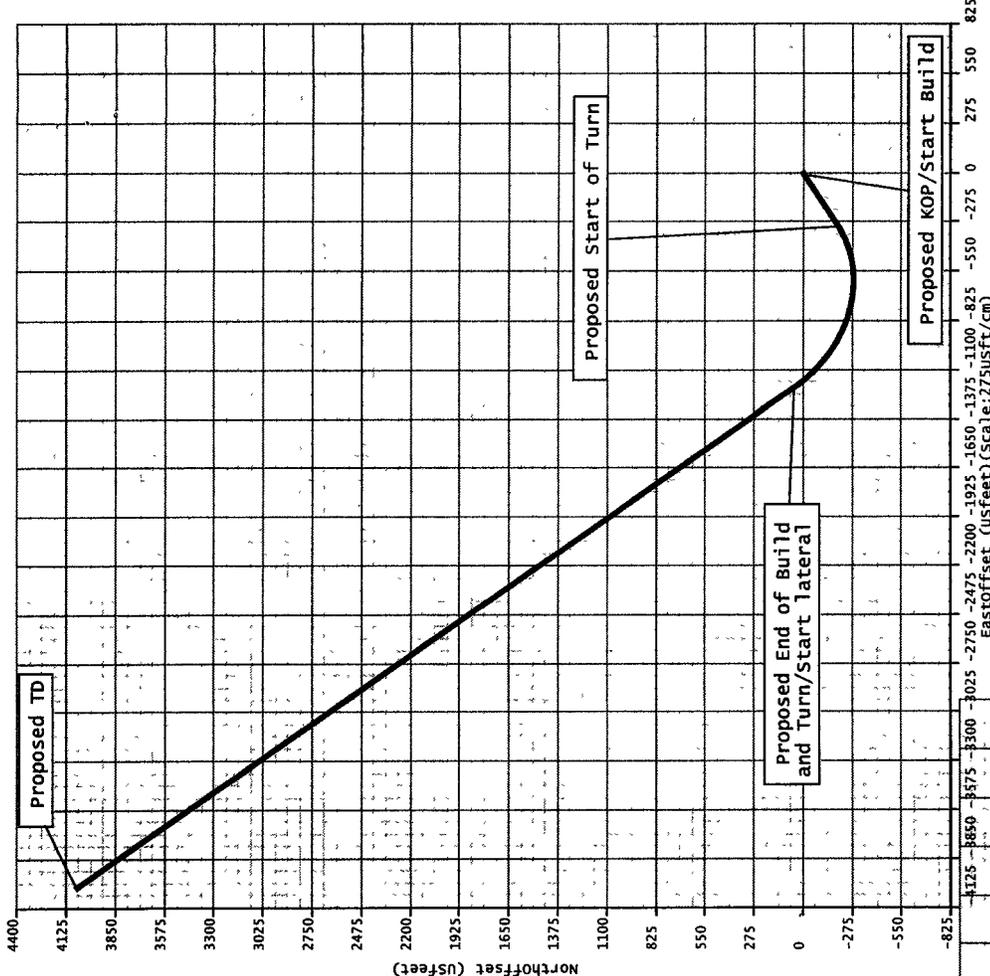


Plan Data for Vough (05-058-01) J 1H

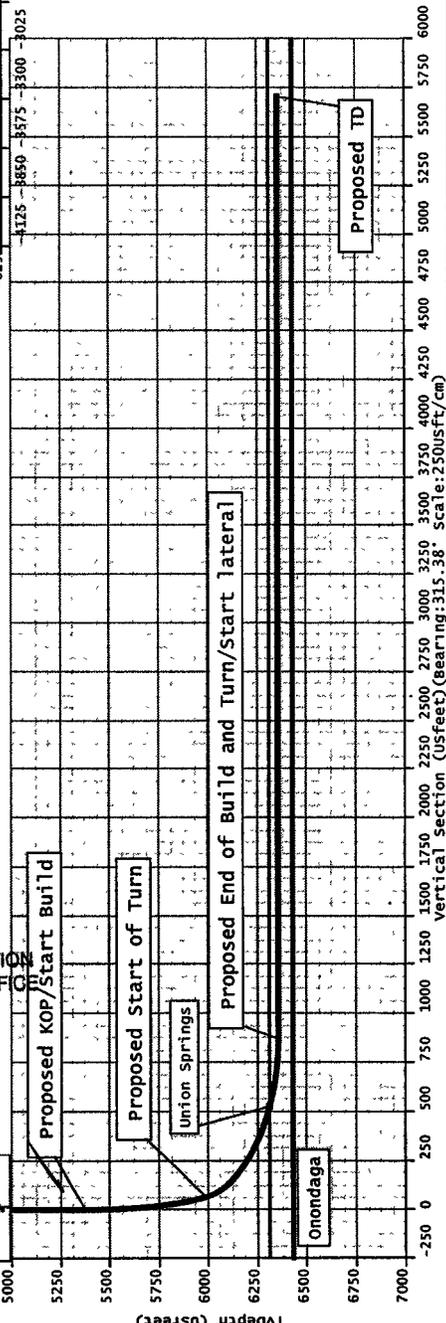
MD (USft)	Inc (°)	AZ (°)	TVD (USft)	Sub Sea (USft)	DLS (DLSU)	Build (DLSU)	Turn (DLSU)
0.00	0.00	0.00	0.00	1374.50	0.00	0.00	0.00
5382.29	0.00	0.00	5383.29	-4008.79	0.00	0.00	0.00
6224.76	59.27	236.36	5498.38	-4624.42	8.00	8.00	0.00
7234.54	90.00	325.00	6357.50	-4982.00	0.00	2.77	7.98
12134.54	90.00	325.00	6357.50	-4982.00	0.00	0.00	0.00

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ENVIRONMENTAL PROTECTION
WEST REGIONAL OFFICE



Eastoffset (USfeet) (Scale: 275USft/cm)



Vertical Section (USfeet) (Bearing: 315.38° scale: 250USft/cm)

Plan Data for Vough (05-058-01) J 1H
 Site: Vough (05-058) J Pad
 Unit: USfeet TVD Reference:
 Company Name: Talisman Energy USA Inc.
 Position: Northing: 630061.14USft Latitude: 41°53'9.6"
 Easting: 2380994.20USft Longitude: -76°14'6.3"
 North Reference: True Grid Convergence: 1.00°
 Elevation Above VRD: 0.00USft
 Well: Vough (05-058-01) J 1H
 Type: Main-Well
 File Number: 4021223
 Plan Folder: P4
 Magnetic Parameters:
 Model: Field Strength: -6.01° Declination: -29.25° Date: 2010-09-29
 BGMG 31706(NT) Plan P1:V1



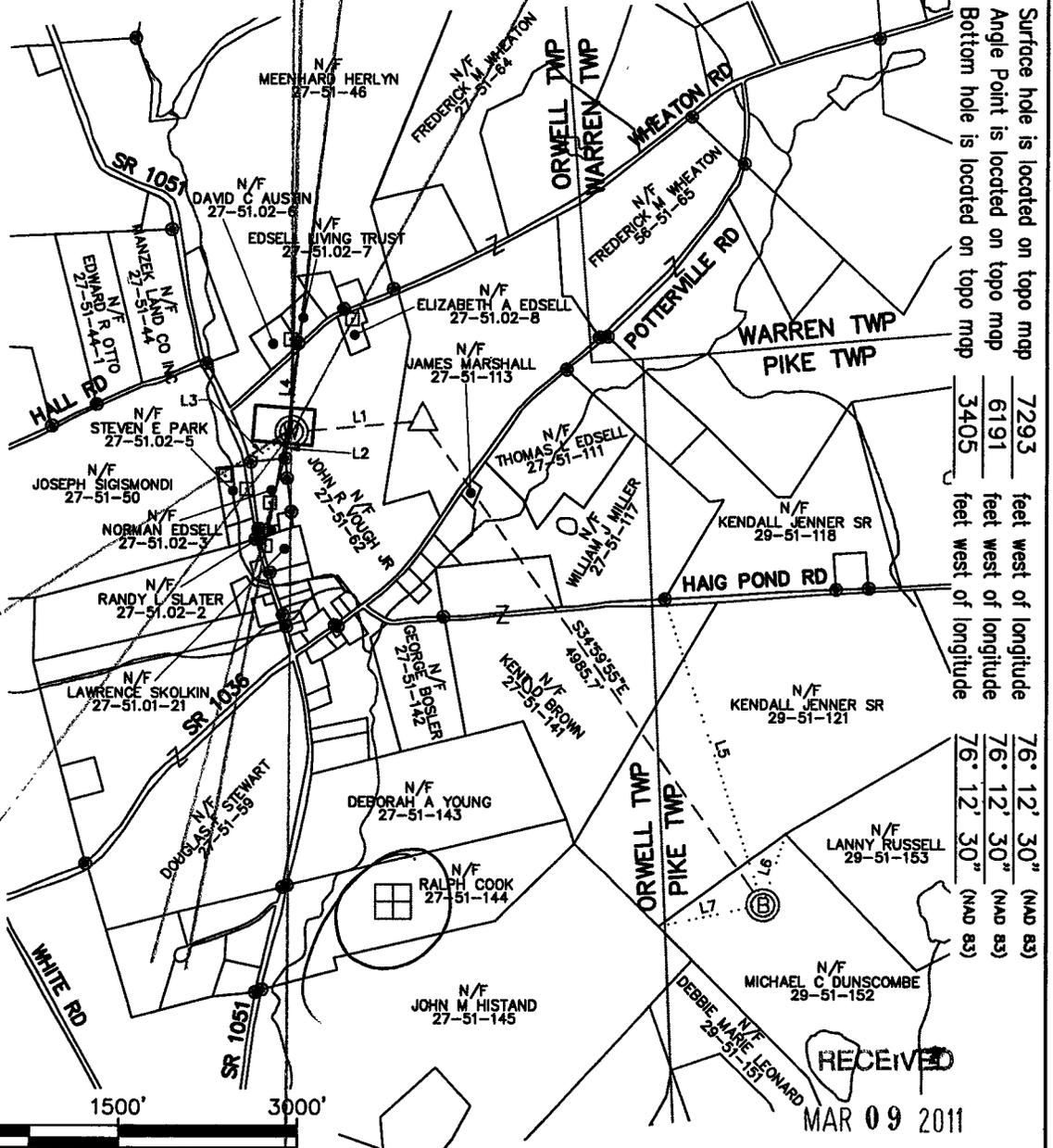
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

DEP USE ONLY	DEP Application Tracking #	41411
	Permit #	05-21637
	Project #	

	Denotes location of well on topo map.
	Denotes surface location of well on plat
NAD 83	True Latitude: NORTH 41° 53' 08.64"
	True Longitude: WEST 76° 14' 06.41"
NAD 27	True Latitude: NORTH 41.885857°
	True Longitude: WEST 76.235461°
	Denotes directional drill angle point on plat
NAD 83	True Latitude: NORTH 41° 53' 09.39"
	True Longitude: WEST 76° 13' 51.85"
NAD 27	True Latitude: NORTH 41.885868°
	True Longitude: WEST 76.231416°
	Denotes location of bottom hole on plat
NAD 83	True Latitude: NORTH 41° 52' 28.56"
	True Longitude: WEST 76° 13' 15.01"
NAD 27	True Latitude: NORTH 41.874524°
	True Longitude: WEST 76.221181°



Surface hole is located on topo map 11272 feet south of latitude 41° 55' 00" (NAD 83)
 Angle Point is located on topo map 11195 feet south of latitude 41° 55' 00" (NAD 83)
 Bottom hole is located on topo map 146 feet south of latitude 41° 52' 30" (NAD 83)



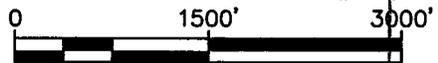
Surface hole is located on topo map 7293 feet west of longitude
 Angle Point is located on topo map 6191 feet west of longitude
 Bottom hole is located on topo map 3405 feet west of longitude

76° 12' 30" (NAD 83)
 76° 12' 30" (NAD 83)
 76° 12' 30" (NAD 83)

LEGEND
 - PROPERTY CORNER FOUND
 - WATER WELL

LINE	BEARING	LENGTH
L1	N85°00'12"E	1104.1'
L2	S12°47'40"W	227.7'
L3	S53°33'28"W	423.9'
L4	N04°07'58"E	749.6'
L5	N17°41'44"W	2711.9'
L6	N17°35'20"E	627.6'
L7	S77°57'47"W	890.9'

NOTES
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Surveyor or Engineer: ANDREW J. DOMASHINSKI / LARSON DESIGN GROUP
 Phone # 570-323-6603 Dwg. # 6436-015-047 Date NOV. 26, 2010 Revised JAN. 12, 2011
 Scale 1" = 1500' NORTHWEST REGIONAL OFFICE Acreage 54±

Lat. & Long Metadata Method TRIMBLE MAPPING GPS Accuracy 3±(PPS) ft. Datum NAD 83		Elevation Metadata Method TRIMBLE MAPPING GPS Accuracy 6±(PPS) ft. Datum NAVD 88		Survey Date NOV. 24, 2010	
Applicant / Well Operator Name TALISMAN ENERGY USA INC.		Well(Farm) Name VOUGH (05-058-02) J		Well # 2H	Serial #
Address 50 PENNWOOD PLACE, WARRENDALE, PA. 15086		County - Code BRADFORD 08	Municipality ORWELL & PIKE TWP		
Surface Landowner / Lessor JOHN R., JR. & MICHELE F. VOUGH		USGS 7 1/2 Quadrangle Map Name LITTLE MEADOWS			
Target Formation(s) MARCELLUS SHALE		Angle & Course of Deviation (Drilling) N85°00'12"E 1104.1' S34°59'55"E 4985.7'			
ELIZABETH A. EDSSELL		Anticipated Total Depth TMD 6358' TMD 11978'			
DAVID C. & BONNIE M. AUSTIN		Surface Elevation 1358ft.			
STEVEN E. & DEBORAH E. PARK		Well Type GAS			
STEVEN E. & DEBORAH E. PARK		Map Section 7 (SURF & AP), 1 (BHL)			

TALISMAN



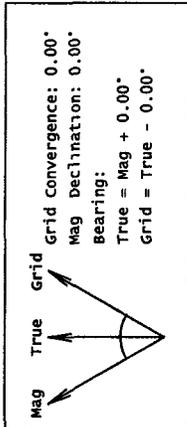
Weatherford

E N E R G Y

Vough (05-058-02) J 2H

Plan data for Vough (05-058-02) J 2H

Slot: Vough (05-058-02) J 2H
 Position: Offset is from site centre
 +N/-S: -99.48USft Northing: 629061.51USft Latitude: 41°53'9.6"
 +E/-W: -9.80USft Easting: 2380986.14USft Longitude: -76°14'6.4"
 Elevation Above VRD: 1337.50USft

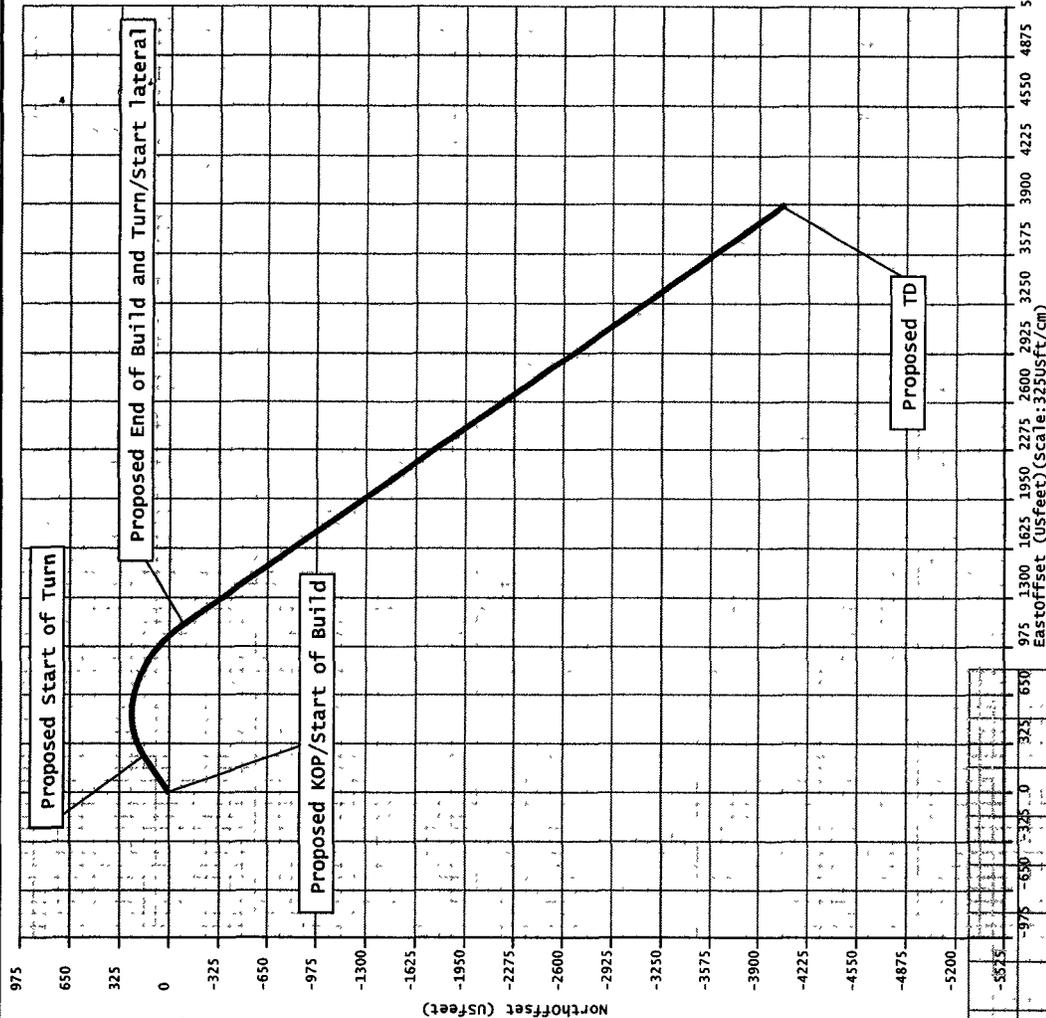


Plan data for Vough (05-058-02) J 2H

Plan Point Information:
 DogLeg Severity Unit: /100.00ft

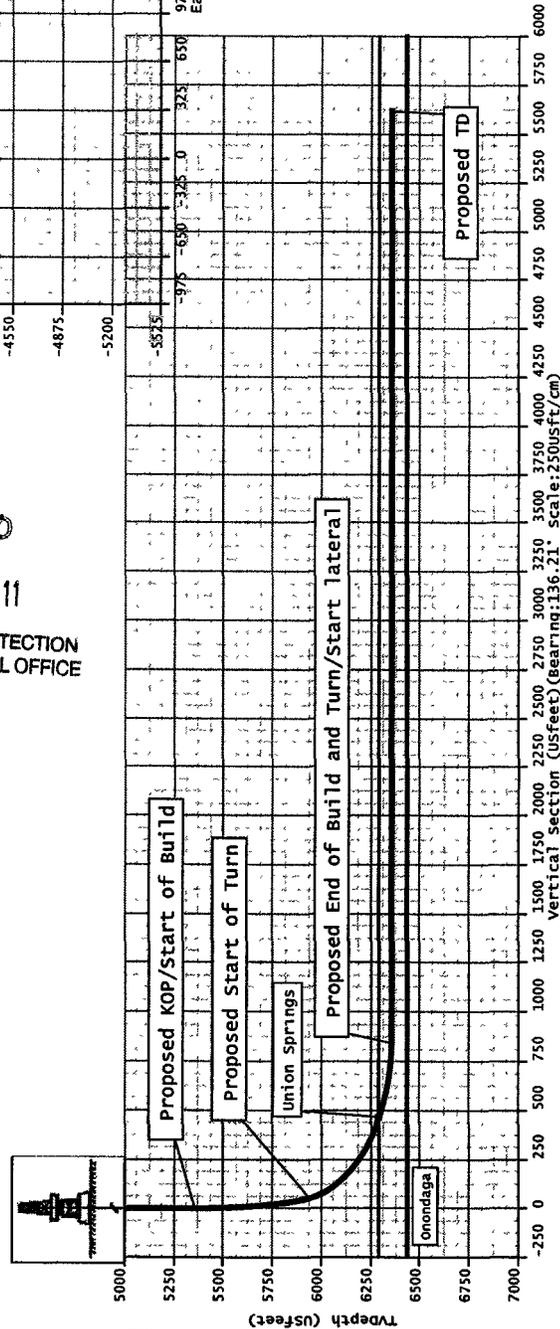
MD	Inc	AZ	TVD	Sub Sea	DLS	Build	Turn
(USft)	(°)	(°)	(USft)	(USft)	(DLSU)	(DLSU)	(DLSU)
0.00	0.00	0.00	0.00	1374.50	0.00	0.00	0.00
5365.38	0.00	0.00	5365.38	-3990.88	0.00	0.00	0.00
6038.03	53.81	56.49	5943.41	-4568.91	8.00	8.00	0.00
7147.99	90.00	145.00	6357.50	-4983.00	8.00	3.26	7.97
11977.99	90.00	145.00	6357.50	-4983.00	0.00	0.00	0.00

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Plan Data for Vough (05-058-02) J 2H
 Site: Vough (05-058) J Pad
 Unit: USFeet
 Company Name: Talisman Energy USA Inc
 Position: Northing: 630061.14USft Latitude: 41°53'9.6"
 Easting: 2380994.20USft Longitude: -76°14'6.3"
 North Reference: True
 Elevation Above VRD: 0.00USft
 Grid Convergence: 1.00

Well: Vough (05-058-02) J 2H
 Type: Main-Well
 File Number: 4021224
 Plan Folder: PA
 Magnetic Parameters: Plan. P1:V2
 Model: Field Strength: Declination: Dip: Date:
 BGM 31706(N) -6.01 -29.25 2010-09-29



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E N E R G Y

Vough (05-058-03) J 3H

Plan Data for Vough (05-058-03) J 3H

Slot: Vough (05-058-03) J 3H
 Position: Offset is from site centre
 +N/-S: -96.57USft Northing: 629963.90USft Latitude: 41°53'8.7"
 +E/-W: -39.76USft Easting: 2380956.14USft Longitude: -76°14'6.8"
 Elevation Above VRD: 1357.50USft

Plan Data for Vough (05-058-03) J 3H

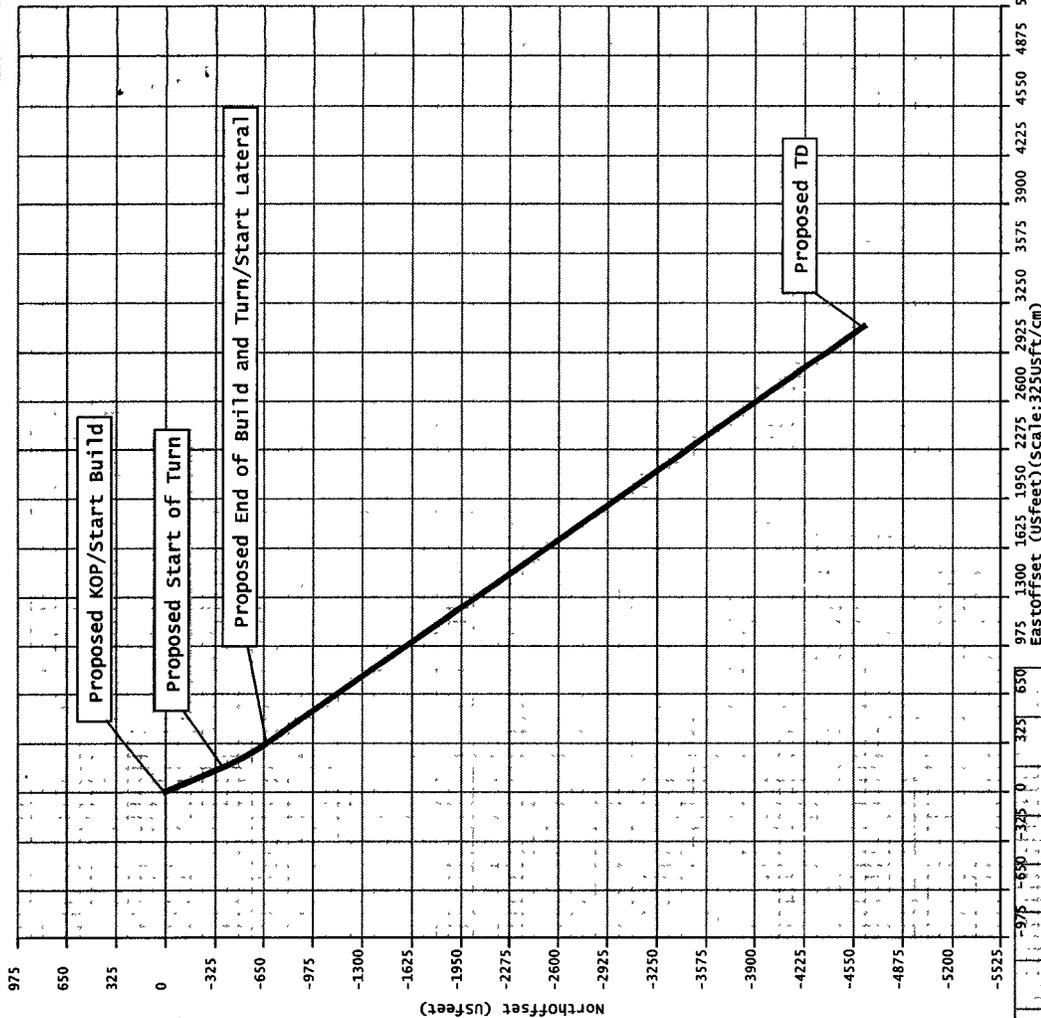
Plan Point Information:									
DogLeg (USft)	MD (°)	Inc (°)	Az (°)	TVD (USft)	Sub Sea (USft)	DLS (DLSU)	Build (DLSU)	Turn (DLSU)	Turn (DLSU)
0.00	0.00	0.00	0.00	0.00	1374.50	0.00	0.00	0.00	0.00
5634.36	0.00	0.00	0.00	5634.36	-4259.86	0.00	0.00	0.00	0.00
6451.05	65.34	156.83	6285.21	-4910.71	8.00	8.00	8.00	0.00	0.00
6790.97	90.00	145.00	6357.50	-4983.00	8.00	7.26	-3.48	0.00	0.00
11610.97	90.00	145.00	6357.50	-4983.00	0.00	0.00	0.00	0.00	0.00

Plan Data for Vough (05-058-03) J 3H

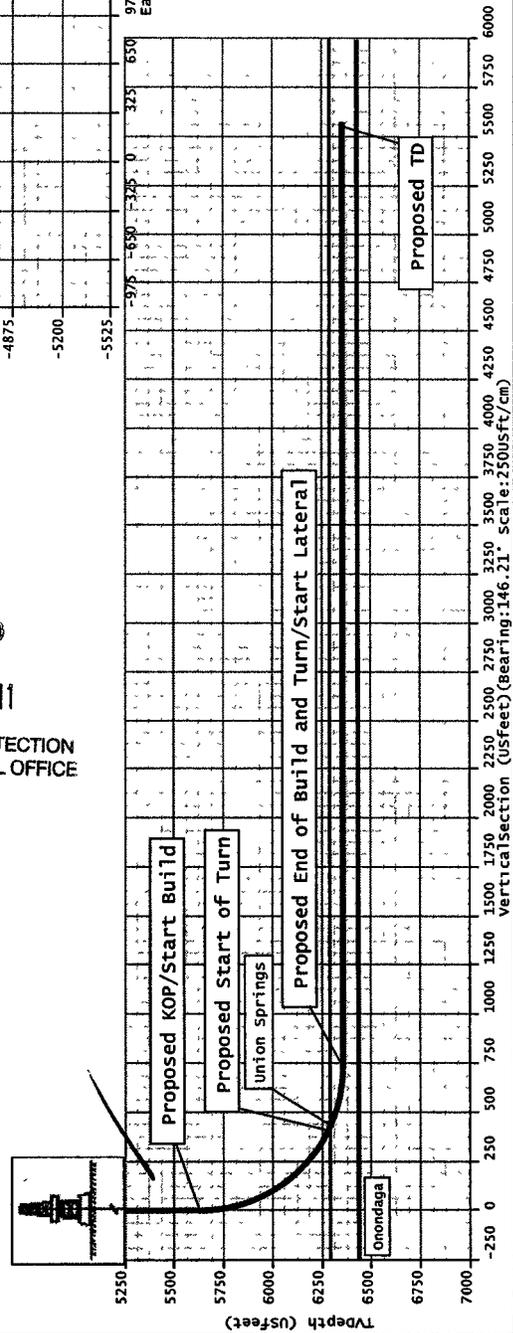
Formation Point Information:
 Name: MD
 TVD (USft): 6297.50
 Sub Sea (USft): -4923.00
 Unionsprings: 6297.50 -4923.00 6481.79



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 NORTHWEST REGIONAL OFFICE



Plan Data for Vough (05-058-03) J 3H
 Site: Vough (05-058) J Pad
 Unit: USfeet
 Company Name: Talisman Energy USA Inc.
 Position: Northing: 630061.14USft Latitude: 41°53'9.6"
 Easting: 2380994.20USft Longitude: -76°14'6.3"
 North Reference: True
 Grid Convergence: 1.00
 Elevation Above VRD: 0.00USft
 Well: Vough (05-058-03) J 3H
 Type: Main-Well
 File Number: 4021225
 Plan Folder: P4
 Magnetic Parameters:
 Model: Field Strength: Declination: DIP: Date:
 BCGM: 31706(mT) -6.01' -29.25' 2010-09-29
 Plan: P1.VZ

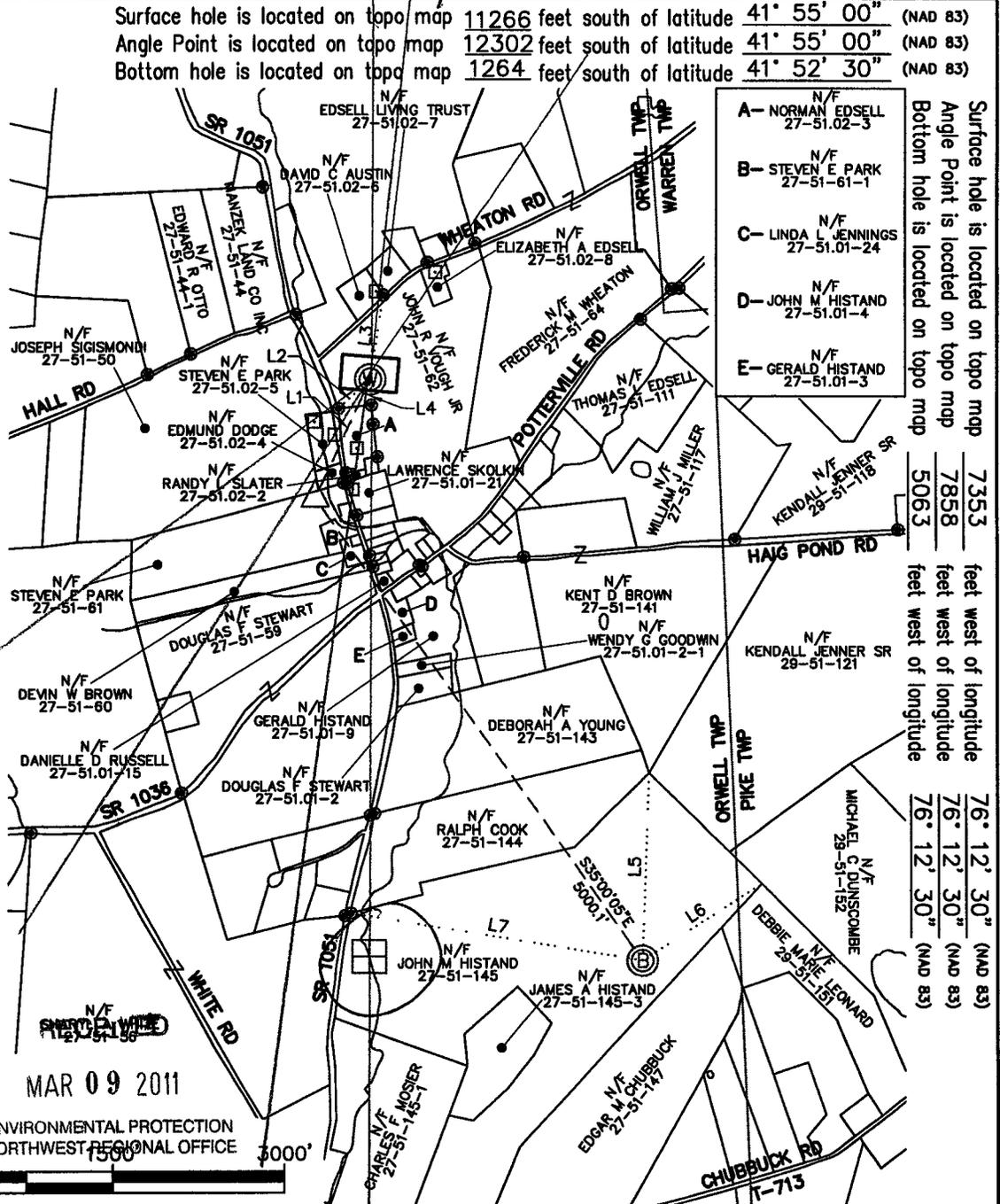




COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

DEP Application Tracking # 6/4/11
Permit # 015-21639
Project #

- Denotes location of well on topo map.
- Denotes surface location of well on plat
- NAD 83
True Latitude: NORTH 41° 53' 08.69"
True Longitude: WEST 76° 14' 07.21"
- NAD 27
True Latitude: NORTH 41.885673°
True Longitude: WEST 76.235681°
- Denotes directional drill angle point on plat
- NAD 83
True Latitude: NORTH 41° 52' 58.47"
True Longitude: WEST 76° 14' 13.88"
- NAD 27
True Latitude: NORTH 41.882832°
True Longitude: WEST 76.237535°
- Denotes location of bottom hole on plat
- NAD 83
True Latitude: NORTH 41° 52' 17.51"
True Longitude: WEST 76° 13' 36.92"
- NAD 27
True Latitude: NORTH 41.871456°
True Longitude: WEST 76.227269°



Surface hole is located on topo map 11266 feet south of latitude 41° 55' 00" (NAD 83)
 Angle Point is located on topo map 12302 feet south of latitude 41° 55' 00" (NAD 83)
 Bottom hole is located on topo map 1264 feet south of latitude 41° 52' 30" (NAD 83)

Surface hole is located on topo map 7353 feet west of longitude 76° 12' 30" (NAD 83)
 Angle Point is located on topo map 7858 feet west of longitude 76° 12' 30" (NAD 83)
 Bottom hole is located on topo map 5063 feet west of longitude 76° 12' 30" (NAD 83)

- LEGEND**
- PROPERTY CORNER FOUND
 - WATER WELL

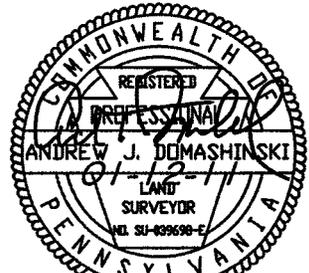
LINE	BEARING	LENGTH
L1	S24°59'43"W	1151.8'
L2	S47°38'03"W	380.5'
L3	N08°43'34"E	751.6'
L4	S02°24'57"E	227.1'
L5	N02°00'59"E	1660.2'
L6	N57°05'13"E	1249.6'
L7	N80°36'31"W	2589.4'

NOTES
 THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY ON ALL PARCELS SHOWN. PROPERTY LINES AND OWNER INFORMATION WERE OBTAINED FROM VARIOUS FIELD EVIDENCE, TAX RECORDS, DEED PLOTS AND AERIAL MAPPING.

MAR 09 2011
 ENVIRONMENTAL PROTECTION NORTHWEST REGIONAL OFFICE
 Scale 1" = 1500'

Surveyor or Engineer ANDREW J. DOMASHINSKI / LARSON DESIGN GROUP Phone # 570-323-6603 Dwg. # 6436-015-047 Date NOV. 30, 2010 Revised JAN. 12, 2011 Scale 1" = 1500' Tract Acreage 54±

Lat. & Long Metadata Method TRIMBLE MAPPING GPS Accuracy 3'±(PPS) ft. Datum NAD 83		Elevation Metadata Method TRIMBLE MAPPING GPS Accuracy 6'±(PPS) ft. Datum NAVD 88		Survey Date NOV. 24, 2010	
Applicant / Well Operator Name TALISMAN ENERGY USA INC.		Well(Farm) Name VOUGH (05-058-04) J		Well # 4H	Serial #
Address 50 PENNWOOD PLACE, WARRENDALE, PA. 15086		County - Code BRADFORD 08		Municipality ORWELL TWP	
Surface Landowner / Lessor JOHN R., JR. & MICHELE F. VOUGH		USGS 7 1/2 Quadrangle Map Name LITTLE MEADOWS		Angle & Course of Deviation (Drilling) S24°59'43"W 1151.8' S35°00'05"E 5000.1'	
Target Formation(s) MARCELLUS SHALE		Anticipated Total Depth TVD 6358' TMO 12216'		Surface Elevation 1358ft.	
ELIZABETH A. EDSSELL N31°01'45"E 1102'		DAVID C. & BONNIE M. AUSTIN N03°37'18"E 776'		STEVEN E. & DEBORAH E. PARK S52°51'28"W 620'	
STEVEN E. & DEBORAH E. PARK S32°58'37"W 581'		Map Section 7 (SURF & AP), 1 (BHL)		Well Type GAS	



TALISMAN



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E N E R G Y

Vough (05-058-04) J 4H

Plan Data for Vough (05-058-04) J 4H

Slot: Vough (05-058-04) J 4H
 Position: Offset 15 from site centre
 +N/-S: -93.65USft Northing: 629966.29USft Latitude: 41°53'8.7"
 +E/-W: -69.71USft Easting: 2380926.14USft Longitude: -76°14'7.2"
 Elevation Above VRD: 1357.50USft

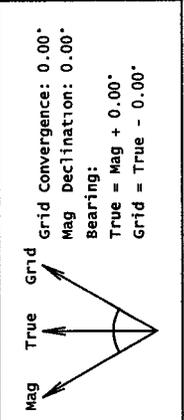
Plan Data for Vough (05-058-04) J 4H

Plan Point Information:
 DogLeg Severity Unit: /100.00ft

MD	Inc	AZ	TVD	Sub Sea	DLS	Build	Turn
(USft)	(°)	(°)	(USft)	(USft)	(DLSU)	(DLSU)	(DLSU)
0.00	0.00	0.00	0.00	1374.50	0.00	0.00	0.00
5442.66	0.00	0.00	5442.66	-4068.16	0.00	0.00	0.00
6303.32	68.85	232.20	6110.63	-4736.13	8.00	8.00	0.00
7395.69	90.00	145.00	6357.50	-4983.00	8.00	1.94	-7.98
22215.69	90.00	145.00	6357.50	-4983.00	0.00	0.00	0.00

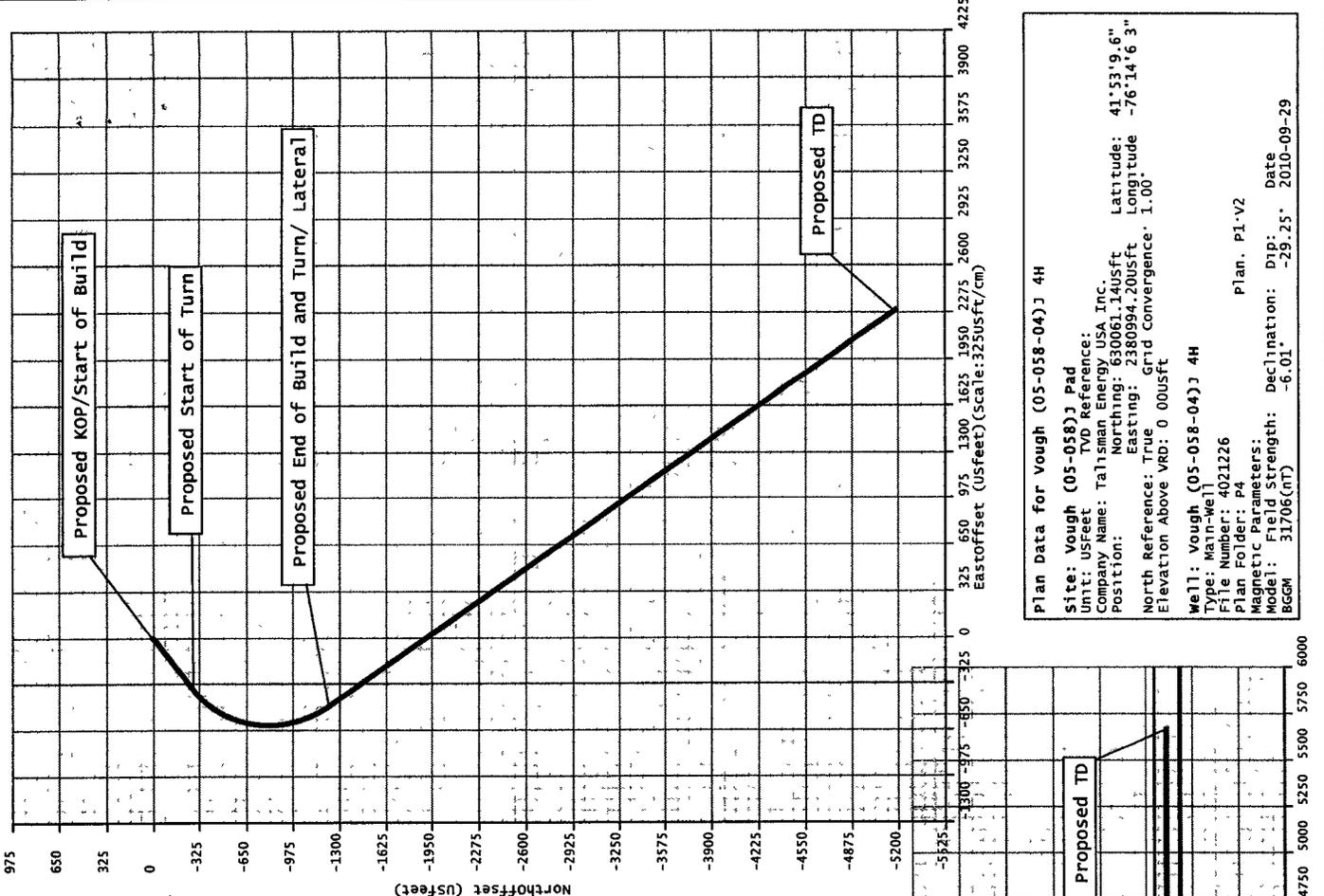
Plan Data for Vough (05-058-04) J 4H

Formation Point Information:
 Name: MD
 UnionsSprings 6292.50 -4923.00 6897.90



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 NORTHWEST REGIONAL OFFICE



Plan Data for Vough (05-058-04) J 4H
 Site: Vough (05-058) J Pad
 Unit: USFeet
 Company Name: Talisman Energy USA Inc.
 Position: Northing: 630061.14USft Latitude: 41°53'9.6"
 Easting: 2380994.20USft Longitude: -76°14'6.3"
 North Reference: True
 Grid Convergence: 1.00
 Elevation Above VRD: 0 00USft
 Well: Vough (05-058-04) J 4H
 Type: Main-Well
 File Number: 4021226
 Plan Folder: P4
 Magnetic Parameters: Plan. PI-V2
 Model: Field Strength: Declination: Dip: Date
 BGGM 31706(NT) -6.01° -29.25° 2010-09-29

