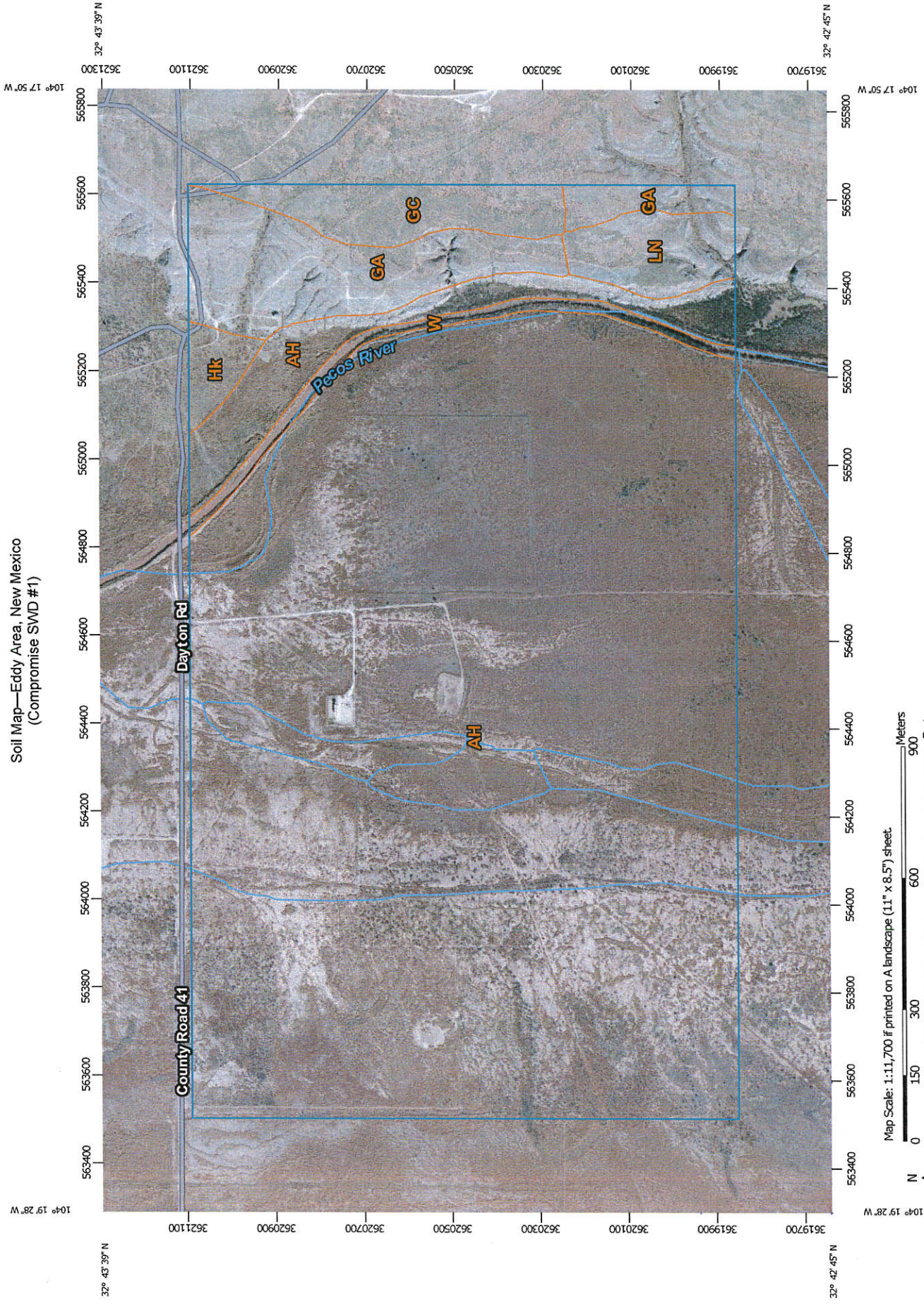


APPENDIX C

Soil Map—Eddy Area, New Mexico
(Compromise SWD #1)



MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Streams and Canals
	Blowout		Transportation
	Borrow Pit		Rails
	Clay Spot		Interstate Highways
	Closed Depression		US Routes
	Gravel Pit		Major Roads
	Gravelly Spot		Local Roads
	Landfill		Aerial Photography
	Lava Flow		
	Marsh or swamp		
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 11, Sep 26, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2011—Mar 20, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Eddy Area, New Mexico (NM614)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AH	Arno-Harkey complex, saline, 0 to 1 percent slopes	556.1	85.3%
GA	Gypsum land	44.7	6.9%
GC	Gypsum land-Cottonwood complex, 0 to 3 percent slopes	20.1	3.1%
Hk	Harkey very fine sandy loam, 0 to 1 percent slopes	6.0	0.9%
LN	Largo-Stony land complex, 0 to 25 percent slopes	15.3	2.3%
W	Water	9.5	1.5%
Totals for Area of Interest		651.7	100.0%

Eddy Area, New Mexico

AH—Arno-Harkey complex, saline, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w3v

Elevation: 3,000 to 4,200 feet

Mean annual precipitation: 10 to 16 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 180 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Arno and similar soils: 50 percent

Harkey and similar soils: 25 percent

Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arno

Setting

Landform: Flood plains, alluvial fans

Landform position (three-dimensional): Talf, rise

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium

Typical profile

H1 - 0 to 9 inches: silty clay loam

H2 - 9 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Gypsum, maximum in profile: 5 percent

Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 32.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 6s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: Salty bottomland (R042XC033NM)

Description of Harkey

Setting

Landform: Alluvial fans, flood plains

Landform position (three-dimensional): Rise, talf

Down-slope shape: Linear, convex

Across-slope shape: Linear

Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 9 inches: very fine sandy loam

H2 - 9 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 48 to 72 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum in profile: 30 percent

Gypsum, maximum in profile: 2 percent

Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: Salt flats (R042XC036NM)

Minor Components

Pima variant

Percent of map unit: 1 percent

Landform: Alluvial flats, flood plains, alluvial fans

Landform position (three-dimensional): Talf, rise

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

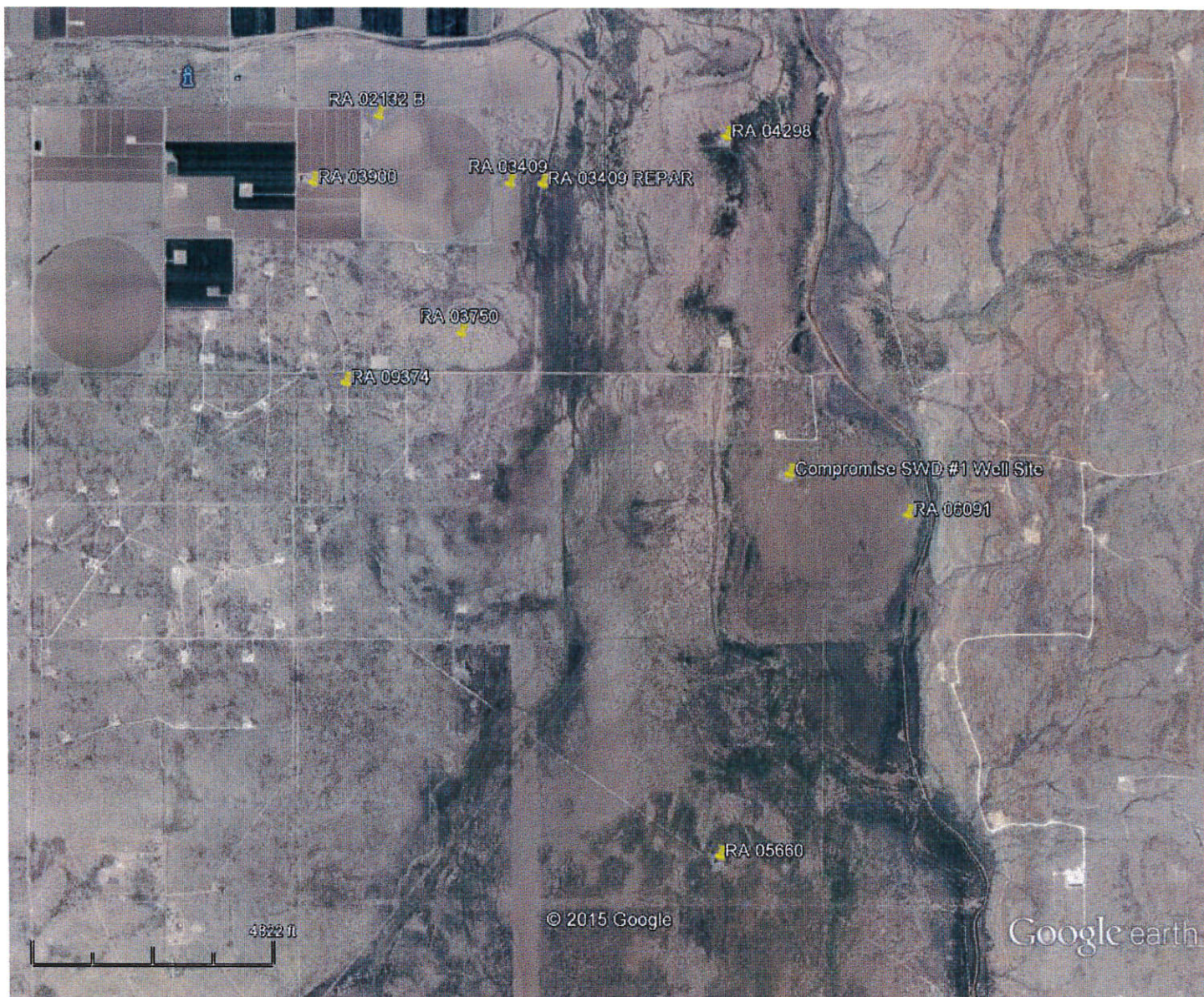
Ecological site: Bottomland (R042XC017NM)

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 11, Sep 26, 2014

APPENDIX D

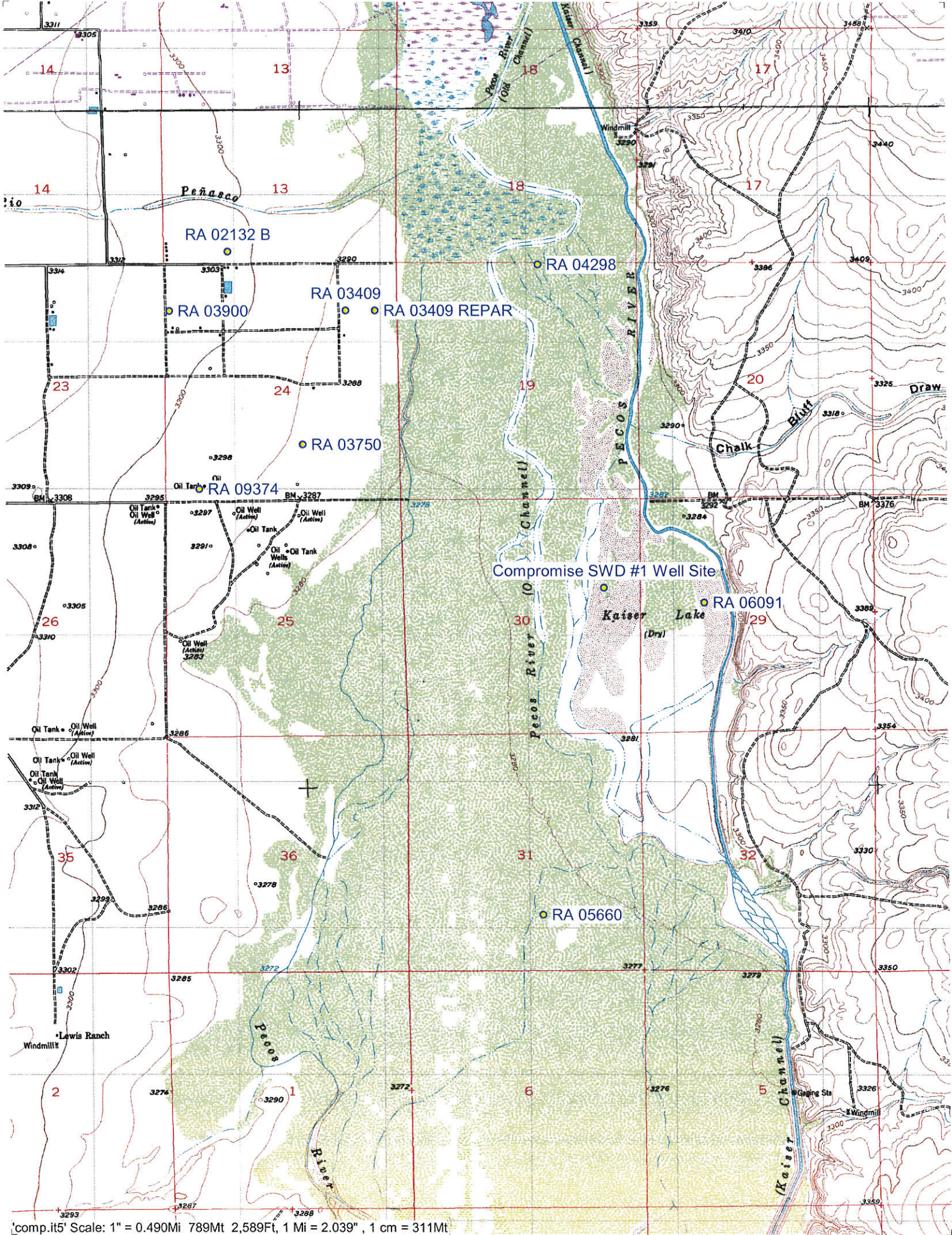


Google earth

miles 2
km 3



Wells listed on New Mexico Office of the State Engineer





New Mexico Office of the State Engineer

Wells with Well Log Information

(A CLW##### in the
POD suffix indicates
the POD has been
replaced & no longer
serves a water right
file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

(in feet)

POD Number	POD	Code	Subbasin	County	Source	q q q q				Sec	Tws	Rng	X	Y	Start Date	Finish Date	Log File	Depth		Driller	License Number
						1	2	1	2									Well	Water		
RA 02132 B	ED		Shallow	ED	Shallow	1	2	1	2	24	18S	26E	561958	3622611*	12/06/1952	12/17/1952	01/06/1953	166		D.N. GRAY	
RA 03409	ED		Shallow	ED	Shallow	1	4	2	2	24	18S	26E	562763	3622210*			02/27/1956	175	18		
RA 03409 REPAR	ED		Shallow	ED	Shallow	2	4	2	2	24	18S	26E	562963	3622210*	02/13/1956	02/21/1956	02/27/1956	175	18		28
RA 03750	ED		Shallow	ED	Shallow	3	4	2	2	24	18S	26E	562465	3621299*	08/21/1957	08/24/1957	09/03/1957	110	35	SMITH, A.F.	28
RA 03900	ED		Artesian	ED	Artesian	1	3	1	2	24	18S	26E	561557	3622206*	07/17/1958	08/08/1958	08/11/1958	845	90		28
RA 09374	ED		Shallow	ED	Shallow	2	1	1	2	25	18S	26E	561759	3620995*			08/10/1954	101			

Record Count: 6

PLSS Search:

Section(s): 24, 25, 36 Township: 18S Range: 26E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer

Wells with Well Log Information

(A CLW##### in the
POD suffix indicates
the POD has been
replaced & no longer
serves a water right
file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

(in feet)

POD Number	POD	Code	Subbasin	County	Source	q q q				Sec	Tws	Rng	X	Y	Start Date	Finish Date	Log File	Depth		Driller	License Number
						1	2	3	4									Well	Water		
RA 04298		ED	Shallow	ED	Shallow	64	16	1	2	19	18S	27E	564082	3622523*	04/30/1971	05/10/1971	06/08/1971	01/16/1961	92	LEE DRILLING CO.	
RA 05660		ED	Shallow	ED	Shallow	3	4	3	4	31	18S	27E	564094	3618090*	04/30/1971	05/10/1971	06/08/1971	305	65		353
RA 06091		ED	Shallow	ED	Shallow	1	2	3	2	29	18S	27E	565211	3620222*	08/26/1976	08/28/1976	09/13/1976	90	17	CLYDE TIDWELL	406

Record Count: 3

PLSS Search:

Section(s): 19, 20, 29, 30, 31, 32
Township: 18S
Range: 27E

*UTM location was derived from PLSS - see Help

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5/4/15 10:00 AM



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64 Q16 Q4 Sec Tws Rng	X	Y
RA 04298	1 2 19 18S 27E	564082	3622523* 

Driller License:

Driller Name: LEE DRILLING CO.

Drill Start Date:

Log File Date: 01/16/1961

Pump Type:

Casing Size: 8.63

Drill Finish Date:

PCW Rcv Date:

Pipe Discharge Size:

Depth Well: 92 feet

Plug Date:

Source: Shallow

Estimated Yield:

Depth Water:

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

POD Number

RA 05660

Q64 Q16 Q4 Sec Tws Rng

3 4 31 18S 27E

X

Y

564094 3618090*

Driller License: 353

Driller Name:

Drill Start Date: 04/30/1971

Drill Finish Date: 05/10/1971

Plug Date:

Log File Date: 06/08/1971

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well: 305 feet

Depth Water: 65 feet

Water Bearing Stratifications:

Top Bottom Description

288 305 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

285 305

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RA 06091	1	2	3	29	18S	27E	565211	3620222*

Driller License: 406

Driller Name: CLYDE TIDWELL

Drill Start Date: 08/26/1976

Drill Finish Date: 08/28/1976

Plug Date:

Log File Date: 09/13/1976

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 7.00

Depth Well: 90 feet

Depth Water: 17 feet

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

POD Number

RA 02132 B

Q64 Q16 Q4 Sec Tws Rng

1 2 1 24 18S 26E

X

Y

561958 3622611*

Driller License:

Driller Name: D.N. GRAY

Drill Start Date: 12/06/1952

Drill Finish Date: 12/17/1952

Plug Date:

Log File Date: 01/06/1953

PCW Rcv Date: 02/08/1955

Source: Shallow

Pump Type: TURBIN

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

166 feet

Depth Water:

Meter Number: 4519

Meter Make: MCC

Meter Serial Number: 96810616

Meter Multiplier: 1.0000

Number of Dials: 3

Meter Type: Diversion

Unit of Measure: Acre-Feet

Return Flow Percent:

Usage Multiplier:

Reading Frequency: Monthly

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount
10/23/1996	1997	770	A	RLT		0
06/18/1997	1997	920	A	PVA		150.201
06/18/1997	1997	0	A	PVA		0
06/18/1997	1997	0	A	PF		0
10/29/1997	1997	141	A	PF	9.8 acft adj dtd 7/3/97	141.478
10/29/1997	1997	132	A	PF		0
10/28/1998	1998	437	A	PF		304.865
10/26/1999	1999	618	A	PF		181.745
10/24/2000	2000	899	A	PF		280.851
04/03/2001	2001	921	A	PF		21.821
05/23/2001	2001	997	A	PF		75.644
07/11/2001	2001	74	R	PF	Meter Rollover	77.724
08/27/2001	2001	177	A	pf		102.553
10/26/2001	2001	222	A	pf		44.903
03/28/2002	2002	246	A	pf		24.648
09/23/2002	2002	559	A	BT		312.299

**YTD Meter Amounts: Year Amount

1997 291.679

1998 304.865

*UTM location was derived from PLSS - see Help

**YTD Meter Amounts:	Year	Amount
	1999	181.745
	2000	280.851
	2001	322.645
	2002	336.947

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
RA 03409	1 4 2 24	18S	26E	562763	3622210*	

Driller License:

Driller Name:

Drill Start Date:

Log File Date: 02/27/1956

Pump Type:

Casing Size:

Drill Finish Date:

PCW Rcv Date:

Pipe Discharge Size:

Depth Well: 175 feet

Plug Date:

Source: Shallow

Estimated Yield:

Depth Water: 18 feet

Water Bearing Stratifications:	Top	Bottom	Description
	105	175	Shallow Alluvium/Basin Fill

Casing Perforations:	Top	Bottom
	85	162

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

POD Number

Q64 Q16 Q4 Sec Tws Rng

X

Y

RA 03409 REPAR

2 4 2 24 18S 26E

562963 3622210* 

Driller License: 28

Driller Name:

Drill Start Date: 02/13/1956

Drill Finish Date: 02/21/1956

Plug Date:

Log File Date: 02/27/1956

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well: 175 feet

Depth Water: 18 feet

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

POD Number

Q64 Q16 Q4 Sec Tws Rng

X

Y

RA 03750

3 4 24 18S 26E

562465 3621299* 

Driller License: 28

Driller Name: SMITH, A.F.

Drill Start Date: 08/21/1957

Drill Finish Date: 08/24/1957

Plug Date:

Log File Date: 09/03/1957

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 7.00

Depth Well: 110 feet

Depth Water: 35 feet

Water Bearing Stratifications:

Top Bottom Description

50 85 Sandstone/Gravel/Conglomerate

Casing Perforations:

Top Bottom

73 94

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
RA 03900	1 3 1	24	18S	26E	561557	3622206* 

Driller License: 28

Driller Name:

Drill Start Date: 07/17/1958

Drill Finish Date: 08/08/1958

Plug Date:

Log File Date: 08/11/1958

PCW Rcv Date:

Source: Artesian

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well: 845 feet

Depth Water: 90 feet

Water Bearing Stratifications:	Top	Bottom	Description
	115	145	Sandstone/Gravel/Conglomerate
	815	835	Other/Unknown

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
RA 09374	2 1 1	25	18S	26E	561759	3620995*

Driller License:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date: 08/10/1954

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 16.00

Depth Well: 101 feet

Depth Water:

Water Bearing Stratifications:

Top	Bottom	Description
44	68	Sandstone/Gravel/Conglomerate
68	76	Sandstone/Gravel/Conglomerate
76	100	Sandstone/Gravel/Conglomerate

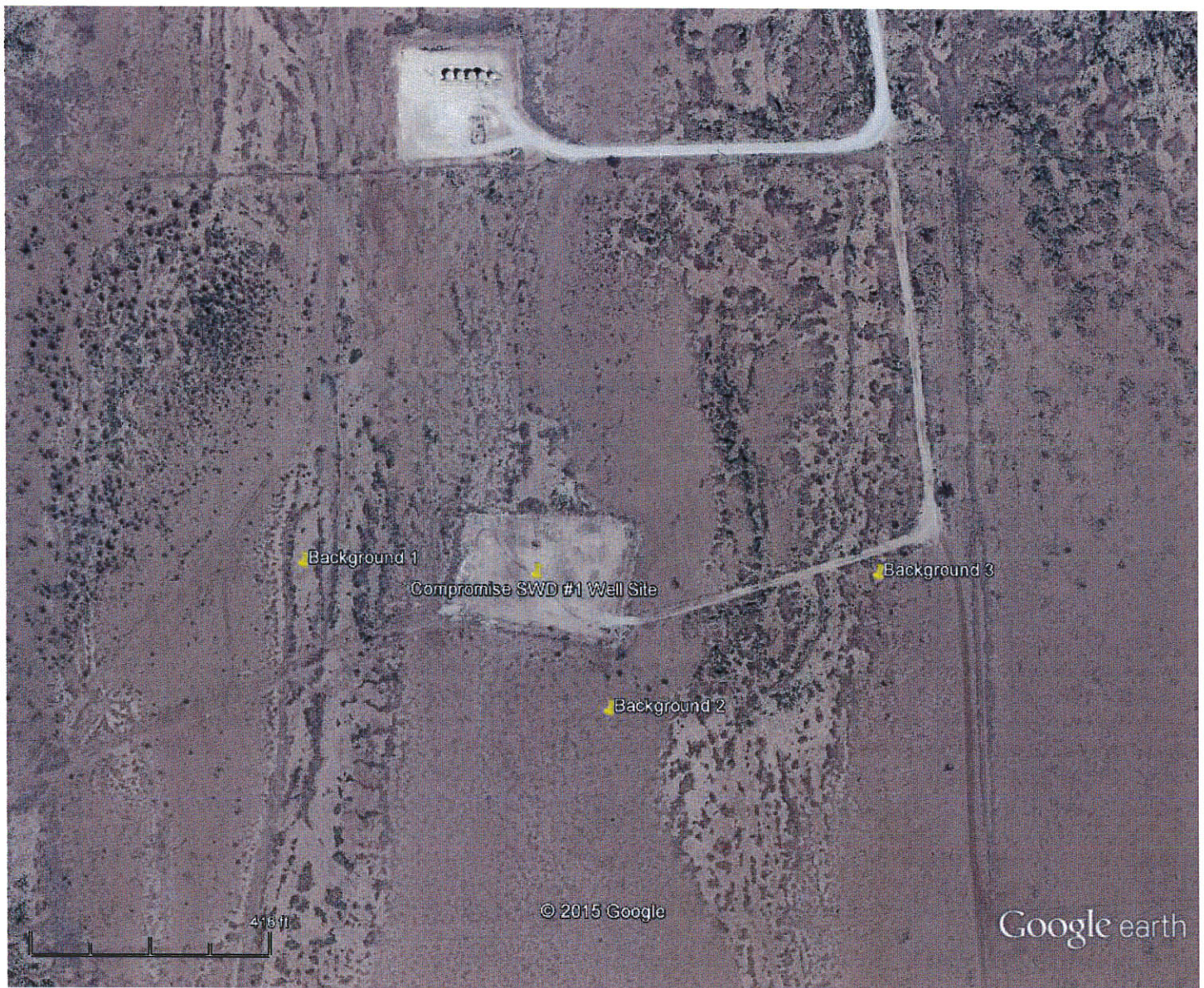
Casing Perforations:

Top	Bottom
43	101

*UTM location was derived from PLSS - see Help

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APPENDIX E



Google earth

feet 1000
meters 300



Background #1 32.720512, -104.313403

Background #2 32.719750, -104.311704

Background #3 32.720346, -104.310141