

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL						1. WELL NAME and NUMBER Trans-Western Petroleum USG #1					
2. TYPE OF WORK DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						3. FIELD OR WILDCAT WILDCAT					
4. TYPE OF WELL Oil Well Coalbed Methane Well: NO						5. UNIT or COMMUNITIZATION AGREEMENT NAME					
6. NAME OF OPERATOR TRANS-WESTERN PETROLEUM, LTD., INC.						7. OPERATOR PHONE 303 279-4567					
8. ADDRESS OF OPERATOR P.O. Box 276, Golden, CO, 80402						9. OPERATOR E-MAIL dougisern@gmail.com					
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) FEE			11. MINERAL OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>			12. SURFACE OWNERSHIP FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>					
13. NAME OF SURFACE OWNER (if box 12 = 'fee') United States Gypsum Company						14. SURFACE OWNER PHONE (if box 12 = 'fee') 4358962401					
15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee') 550 W Adams St, Chicago, IL 60661						16. SURFACE OWNER E-MAIL (if box 12 = 'fee') ballen@usg.com					
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')			18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS YES <input type="checkbox"/> (Submit Commingling Application) NO <input checked="" type="checkbox"/>			19. SLANT VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>					
20. LOCATION OF WELL		FOOTAGES		QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN			
LOCATION AT SURFACE		1543 FNL 2010 FWL		NENW	23	22.0 S	1.0 W	S			
Top of Uppermost Producing Zone		1140 FNL 2105 FWL		NENW	23	22.0 S	1.0 W	S			
At Total Depth		1140 FNL 2105 FWL		NENW	23	22.0 S	1.0 W	S			
21. COUNTY SEVIER			22. DISTANCE TO NEAREST LEASE LINE (Feet) 560			23. NUMBER OF ACRES IN DRILLING UNIT 40					
			25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed) 0			26. PROPOSED DEPTH MD: 7439 TVD: 7400					
27. ELEVATION - GROUND LEVEL 5865			28. BOND NUMBER 025934487			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Salina City culinary					
Hole, Casing, and Cement Information											
String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement		Sacks	Yield	Weight
SURF	12.25	9.625	0 - 2000	36.0	K-55 ST&C	9.2	Halliburton Light , Type Unknown		270	3.48	11.0
							Class G		268	1.17	15.8
PROD	8.75	5.5	0 - 7439	17.0	L-80 LT&C	10.5	Halliburton Light , Type Unknown		329	3.48	11.0
							Class G		560	1.17	15.8
ATTACHMENTS											
VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES											
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER						<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input checked="" type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)						<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)						<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
NAME John C. Magill				TITLE Consulting Engineer				PHONE 308 848-3279			
SIGNATURE				DATE 07/17/2014				EMAIL oakbrook@gpcom.net			
API NUMBER ASSIGNED 43041500110000				APPROVAL  Permit Manager							

Trans-Western Petroleum, LTD

Drilling Plan

Trans-Western Petroleum USG #1

Surface Location: Lot 6 NW/4 Section 23, Township 22 South, Range 1 West,
S.L.B. & M.
Sevier County, Utah

Plan Summary:

It is planned to drill this confidential exploratory well as a directional bore hole due to surface topography constraints and in accordance with the attached directional drilling plan. The well will be drilled to a measured depth of 7439 ft MD (7400 ft TVD) to test the Twin Creek and Navajo formations. Well path deviation caused by subsurface geologic irregularities is expected to be the primary drilling concern in this area. No abnormal pressure is anticipated.

The planned coordinates follow:

Surface location 1543' FNL/2010' FWL-Sec. 23-T22S-R1W, S.L.B.&M.

Well location @ Navajo target 1140' FNL/2105' FWL-Sec. 23-T22S-R1W,
S.L.B.&M.

BHL @ TD 1140' FNL/2105' FWL-Sec. 23-T22S-R1W, S.L.B.&M.

Conductor casing will be set at approximately 105 ft GL and cemented to surface. A 12-1/4" hole will be drilled vertically to approximately 2000 ft DF where 9-5/8" surface casing will be set and cemented to surface. An 8-3/4" hole will be drilled below the surface casing. 8-3/4" hole will be drilled vertical to KOP. KOP is located at 3210 ft DF. From KOP, inclination will be increased at 1-1/2 degrees/100 feet to 12 degrees from vertical at 4010 ft MD (4004 ft TVD). The inclination will be held at 12 degrees to a depth of approximately 5239 ft MD (5206 ft TVD) and then allowed to drop to vertical near the top of the Twin Creek formation (6039 ft MD, 6000 ft TVD). The well bore will be near vertical to vertical when penetrating the Twin Creek and Navajo formations. The well is expected to be drilled to a

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 APD Drilling Program
 Trans-Western Petroleum USG #1

total depth of 7439 ft MD (7400 ft TVD) where logs will be run in the open hole. 5-1/2" production casing will be set and cemented if justified by the drilling/evaluation results.

Drilling activities at this well are expected to commence in August 2014.

Well Name: Trans-Western Petroleum USG #1

Surface Location: 1543' FNL, 2010' FWL
 Lot 6 NW/4 Section 23, T22S, R1W, S.L.B.&M.
 Sevier County, Utah

TD Bottom-hole location: 1140' FNL, 2105' FWL
 Lot6 NW/4 Section 23, T22S, R1W, S.L.B.&M.

Elevation: 5865' GL, 5883' DF

1. Geology:

Tops of important geologic markers and anticipated water, oil, gas and mineral content are as follows:

Formation	TVD Interval (DF)	MD Interval (DF)	Contents	Pressure Gradient
Arapien	18'-5778'	18'-5816'		
Twin Creek	5778'-6163'	5816'-6201'	Oil & water	0.433 psi/ft
Navajo 1	6163'-6353'	6201'-6391'		
High Gamma	6353'-6393'	6391'-6431'		
Navajo 2	6393'-7400'	6431'-7439'	Oil & water	0.433 psi/ft
Total Depth	7400'	7439'		

2. Well Control

A rotating head will be installed on the conductor casing to divert any unexpected flow away from the well.

The contracted drilling rig is expected to have a 3000 psi rated BOP system which will satisfy the anticipated pressure requirements. BOPE will be in place and tested prior to drilling out the surface casing shoe. See attached schematic of the BOPE.

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A. **The BOPE** will, as a minimum, include the following:

SRRA Wellhead Equipment (3M rating minimum)

BOPE Item	Flange Size and Minimum Rating
Annular Preventer	11" 3M
Double Rams (4½" or 5" top, blind bottom)	11" 3M
Drilling Spool w/ 2 side outlets (3" min. choke side, 2" min. kill side)	11" 3M
Casing head (11" x 9⅝ SOW w/ 2 ea. 2-1/16" SSO's)	11" 3M

Auxiliary Equipment (3M minimum rating)

BOPE Item
3" diameter choke line with 2 ea. valves (3 inch minimum)
2" kill line with 2 ea. 2" kill line valves (one of which will be a check valve)
2 ea chokes with one remotely controlled at a location readily accessible to the driller
Upper kelly cock valve with handle available
Safety valves and subs to fit all drill string connections in use
Inside BOP or float sub
Pressure gauge on choke manifold
All BOPE connections subjected to well pressure to be flanged, welded or clamped
Fill-up line above the uppermost preventer
Wear bushing in the casing head

- B. **Choke manifold** will be functionally equipped and sized at a minimum as shown on the attached diagram. All choke lines will be straight lines unless turns have tee blocks or are targeted with running tees and all choke lines will be anchored. All valves (except chokes) in the kill line, choke manifold and choke line will be full opening and allow straight through flow.
- C. **System accumulator** will have sufficient capacity to open the hydraulically-controlled gate valve and close all rams plus the annular preventer and retain a minimum pressure of 200 psi above precharge on the closing manifold without use of the closing unit pumps. The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity and the fluid level of the reservoir

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will be maintained at the manufacturer's recommendations. Two independent sources of power will be available for powering the closing unit pumps. Sufficient nitrogen bottles are suitable as a backup power source only, and shall be recharged when the pressure falls below manufacturer's specifications.

- D. **Accumulator pre-charge pressure test** will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months. The accumulator pressure will be corrected if the measured precharge pressure is found to be above or below the maximum or minimum specified limits. Only nitrogen gas will be used to precharge.
- E. **Power for the closing unit pumps** will be available to the unit at all times so that the pumps will automatically start when the closing unit manifold pressure has decreased to the pre-set level.
- F. **Accumulator pump capacity** will be such that, with the accumulator system isolated from service, the pumps will be capable of opening the hydraulically-operated gate valve, plus closing the annular preventer on the smallest size drill pipe to be used within two minutes, and retaining a minimum of 200 psi above the specified accumulator pre-charge pressure.
- G. **Locking devices**, either manual (i.e. hand wheels) or automatic, will be installed on the ram type preventers.
- H. **Remote controls** will be readily accessible to the driller and will be capable of initiating and maintaining both opening and closing of all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve.
- I. **Well control equipment testing** will be performed using clear water when the equipment is initially installed, whenever any seal subject to test pressure is broken, following related repairs and as a minimum, every 30 day interval. The tests will apply to all related well control equipment.
- Ram type preventers and associated equipment will be isolated and tested to 3000 psi. The annular preventer will be tested to 1500 psi. Pressure will be maintained for at least 10 minutes or until requirements of the test are met, whichever is longer, for all tests. A casing head valve will be open below the test plug during testing of the BOP stack. Valves will be tested from the working pressure side with all down-stream valves open. Kill line valves will be tested with the check valve held open (unless it is the check valve that is being tested) and any ball valve

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(outside of the valve being tested) in the open position so that any leak in the valve being tested can be observed.

Pipe and blind rams will be activated each trip, but not more than once a day. The annular preventer will be functionally operated at least weekly. A pit level drill will be conducted, at a minimum, weekly for each crew. All BOPE drills and tests will be recorded in the IADC drillers' log.

3. Casing and Cementing

A. Casing Program (all new or inspected to new standards casing)

Hole Size (in)	Casing Size (in)	Weight (lb/ft)	Grade	Conn.	Coupling Diameter	Setting Depth
26	16	42.09	A52A	Butt weld	None	105' GL
12¼	9⅝	36	J55	STC	10⅝"	2000' TVD DF
8¾	5½	17	L-80	LTC	6.05"	7400' TVD DF

	Surface	Production
Casing OD	9.625	5.5
Casing grade	J55	L80
Weight of pipe (lb/ft)	36.0	17.0
Connection	STC	LTC
Top setting depth – MD (ft)	0	0
Top setting depth – TVD (ft)	0	0
Bottom setting depth MD (ft)	2000	7439
Bottom setting depth TVD (ft)	2000	7400
Maximum mud weight – Inside (ppg)	10.5*	10.5*
Maximum pore pressure – Inside (ppg)	8.34	8.34
Maximum mud weight – Outside (ppg)	9.2	10.5*
Maximum pore pressure – Outside (ppg)	8.34	8.34
Design cement top – MD (ft)	18 (0 GL)	1500
Design cement top – TVD (ft)	18 (0 GL)	1500
Max. hydrostatic pressure inside w/ dry outside (psi)	956 ¹	4036 ⁶
Casing burst rating (psi)	3520	7740
Burst Design Factor (1.10 minimum)	3.68 ²	1.92 ⁷
Max. hydrostatic outside w/ dry inside (psi)	956 ¹	4036 ⁶
Casing collapse rating (psi)	2020	6290
Collapse Design Factor (1.125 minimum)	2.11 ³	1.56 ⁸

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Casing weight in air (kips)	72.0 ⁴	125.8 ⁹
Body yield strength (kips)	564	397
Joint strength (kips)	394	338
Tension Design Factor (1.80 minimum)	5.47 ⁵	2.69 ¹⁰

*Due to salt saturated mud used to prevent washouts in salt (halite) zones

Casing with the same or greater burst, collapse and tension rating may be substituted for any of the planned casings depending on availability and actual conditions.

$$^1 P = \frac{2000}{19.25} \times 9.2 = 956 \text{ psi}$$

$$^2 DF_b = \frac{3520}{956} = 3.68$$

$$^3 DF_c = \frac{2020}{956} = 2.11$$

$$^4 W = 36 \frac{\text{lb}}{\text{ft}} \times 2000 \text{ft} \times \frac{\text{kip}}{1000\text{lb}} = 72 \text{ kips}$$

$$^5 DF_t = \frac{394}{72} = 5.47$$

$$^6 P = \frac{7400}{19.25} \times 10.5 = 4036 \text{ psi}$$

$$^7 DF_b = \frac{7740}{4036} = 1.92$$

$$^8 DF_c = \frac{6290}{4036} = 1.56$$

$$^9 W = 17 \frac{\text{lb}}{\text{ft}} \times 7400 \text{ft} \times \frac{\text{kip}}{1000\text{lb}} = 125.8 \text{ kips}$$

$$^{10} DF_t = \frac{338}{125.8} = 2.69$$

B. Cementing Program

Casing size	Cement slurry	Quantity (sx)	Density (ppg)	Yield (cf/sk)	Excess Factor
9 ⁵ / ₈ "	Lead: extended cement	270 ¹	11.0	3.48	2.0
	Tail: Cl. G or Premium to 1500'	268 ²	15.8	1.17	2.0
5 ¹ / ₂ "	Lead: extended cement	329 ³	11.0	3.48	1.2
	Tail: Cl. G or Prem. to 5278' TVD	560 ⁴	15.8	1.17	1.2

$$^1 v = (1500 - 0) \frac{\pi}{4} (12.25^2 - 9.625^2) \left(\frac{1}{144}\right) (2.0) \left(\frac{1}{3.48}\right) = 270 \text{ sx}$$

$$^2 v = (2000 - 1500) \frac{\pi}{4} (12.25^2 - 9.625^2) \left(\frac{1}{144}\right) (2.0) \left(\frac{1}{1.17}\right) = 268 \text{ sx}$$

$$^3 v = (5278 - 1500) \frac{\pi}{144} (8.75^2 - 5.5^2) \left(\frac{1}{144}\right) (1.2) \left(\frac{1}{3.48}\right) = 329 \text{ sx}$$

$$^4 v = (7439 - 5278) \frac{\pi}{144} (8.75^2 - 5.5^2) \left(\frac{1}{144}\right) (1.2) \left(\frac{1}{1.17}\right) = 560 \text{ sx}$$

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Surface: 9⁵/₈" surface casing will be cemented from setting depth (2000' DF) to GL and topped off with neat cement if necessary. Hardware will include a float shoe, float collar, top cementing plug and a minimum of one centralizer per joint on the bottom three (3) casing joints. Water or other preflush fluid, pumped ahead of the slurry, will separate cement from the drilling fluids.

Production: 5¹/₂" production casing will be cemented in one stage from setting depth (7400' TVD) to 1500' TVD (500' inside the surface casing) using light weight lead cement and neat tail cement (neat tail cement across the producing interval from TD to 500' above the top of the Twin Creek formation). Silica flour will be added to the tail slurry to provide temperature induced cement strength degradation resistance if measured BHT exceeds 230°F. Slurry volume will be based on calipered hole size plus 20% excess. Hardware will include a self fill-up float shoe, self fill-up float collar, and bottom & top cementing plugs. Centralizers will be placed as needed across any pay zones and massive salt zones. Salt water and preflush fluid pumped ahead of the slurry will separate cement from the drilling fluid.

Other:

- UDOGM will be notified at least twenty-four hours prior to running and cementing the surface and production casing strings.
- Actual cement slurries for all casing will be based on final service company recommendations.
- The size, weight, grade, type of thread, number of joints and footage of all casing run will be recorded in the drillers' log. The amount and type of all cement pumped will be recorded in the drillers' log.
- Surface casing string will be tested to 1500 psi before drilling out and if pressure declines by more than 10% in 30 minutes corrective action will be taken.
- For the surface casing string, adequate time will be allowed to achieve a minimum 500 psi compressive strength before drilling out the cement at the surface casing shoe.
- Before drilling more than 20 feet of new hole below the surface casing shoe a pressure integrity test of the casing shoe will be performed to a minimum of the mud weight equivalent anticipated to control the pore pressure at total depth of the well.

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4. Mud Program

Depth Interval	Mud Weight (ppg)	Mud Type	Viscosity	Fluid Loss
0 – 2000'	8.4 – 9.2	Low solids, non-dispersed, fresh water mud	26 – 50	N/C to 12 cc
2000' – TD	9.2 – 10.5	Salt saturated	36 – 50	N/C to 4 cc

- A. After mudding up, slow pump rates will be taken daily and recorded in the drillers' log.
- B. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume.
- C. Abnormal pressure is not anticipated. For the production hole, in the event such pressure is encountered electro-mechanical mud monitoring equipment will be in place and include as a minimum: pit volume totalizer (PVT), stroke counter and flow line flow sensor.
- D. A mud test will be performed, as a minimum, every 24 hours after mudding up to determine: density, viscosity, gel strength, filtration and pH.
- E. Use of the trip tank is not anticipated for this well.
- F. For the production hole, gas detecting equipment will be installed in the mud return system prior to penetrating the Twin Creek formation and hydrocarbon gas shall be monitored for pore pressure changes. The presence of hydrogen sulfide gas is not expected but appropriate precautions will be taken in the event that it is encountered.
- G. The need to vent combustible or noncombustible gas is not expected. For the production hole, a flare system designed to gather and burn all gas will be available. The flare line discharge will be located at approximately 150 feet from the wellhead (Utah regulation minimum of 150'). The flare line is intended to have straight lines. Required turns will be through targeted tees. The line will be anchored along its length from the choke house/gas buster to the flare pit. The flare outlet will have an effective ignition mechanism.

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H. Abnormal pressure is not expected. Nevertheless, a mud gas separator (gas buster) will be installed and operable beginning at a point 500 feet above the Twin Creek formation.

5. Evaluation

- A. Mud Log: A mud logging unit will be in operation from a depth of approximately 4000 feet to TD. Samples will be caught, cleaned, bagged and marked as required.
- B. Drill Stem Tests: There are no DST's planned.
- C. Coring: There are no cores planned.
- D. Wireline logs: Wireline logs will be run as hole conditions allow from TD to surface casing shoe to assist in determining lithology and potential for hydrocarbon recovery. The logging tools will, at a minimum, survey resistivity, gamma radiation and sonic velocity.

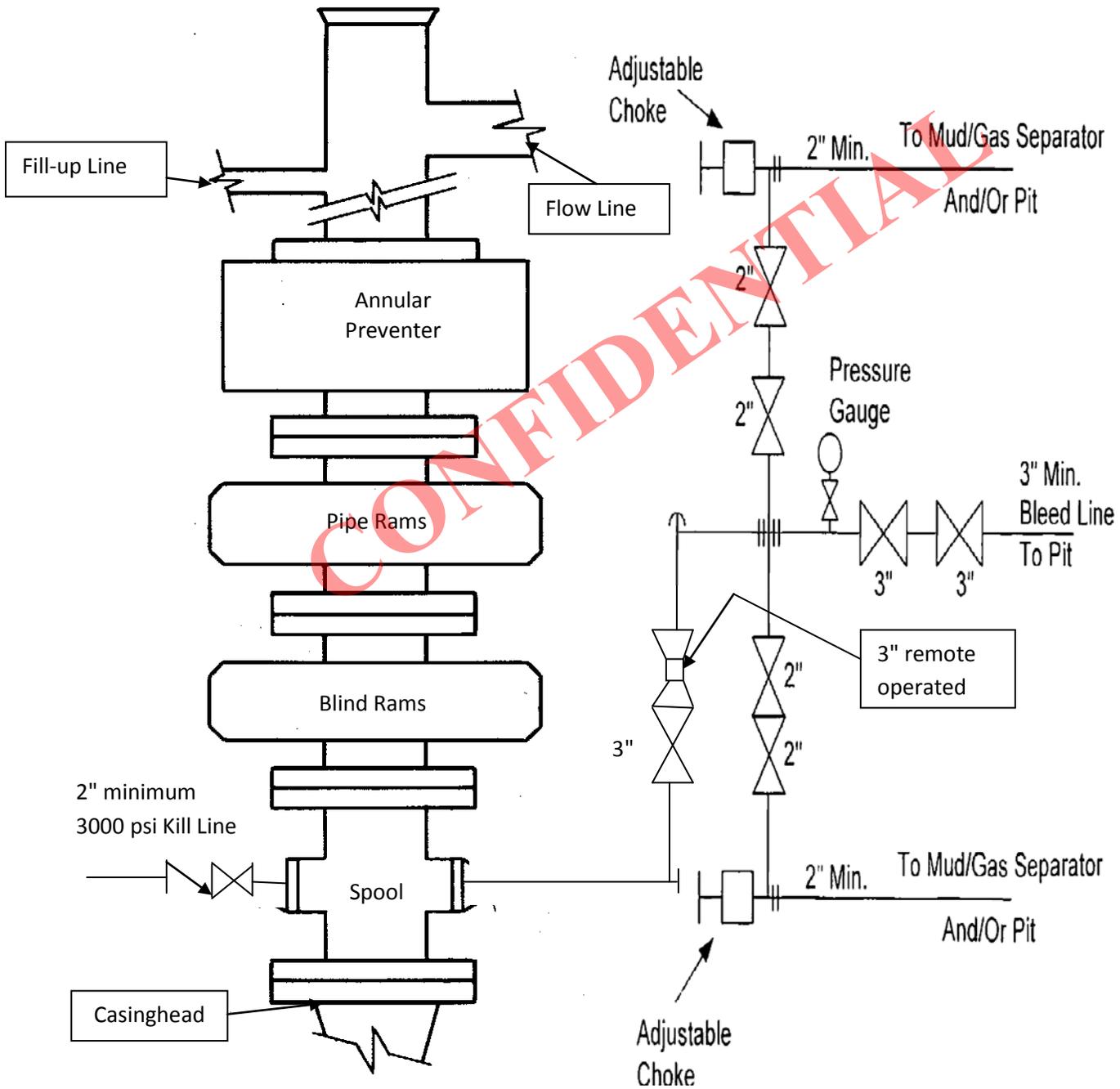
6. Expected Bottom-hole pressure and abnormal conditions

- A. Hydrogen sulfide: The presence of hydrogen sulfide (H₂S) gas is unlikely. However, there is a possibility of encountering H₂S in or below the Twin Creek formation. Appropriate safety procedures are to be in place before penetrating the Twin Creek formation.
- B. Abnormal pressure: No abnormal pressured zones are expected in this well. The pressure gradient for all potentially productive formations is expected to be 0.433 psi/ft or less.
- C. Temperature: Bottom-hole temperature at 2000 ft is expected to be approximately 109°F. Bottom-hole temperature at TD is expected to be approximately 223°F.

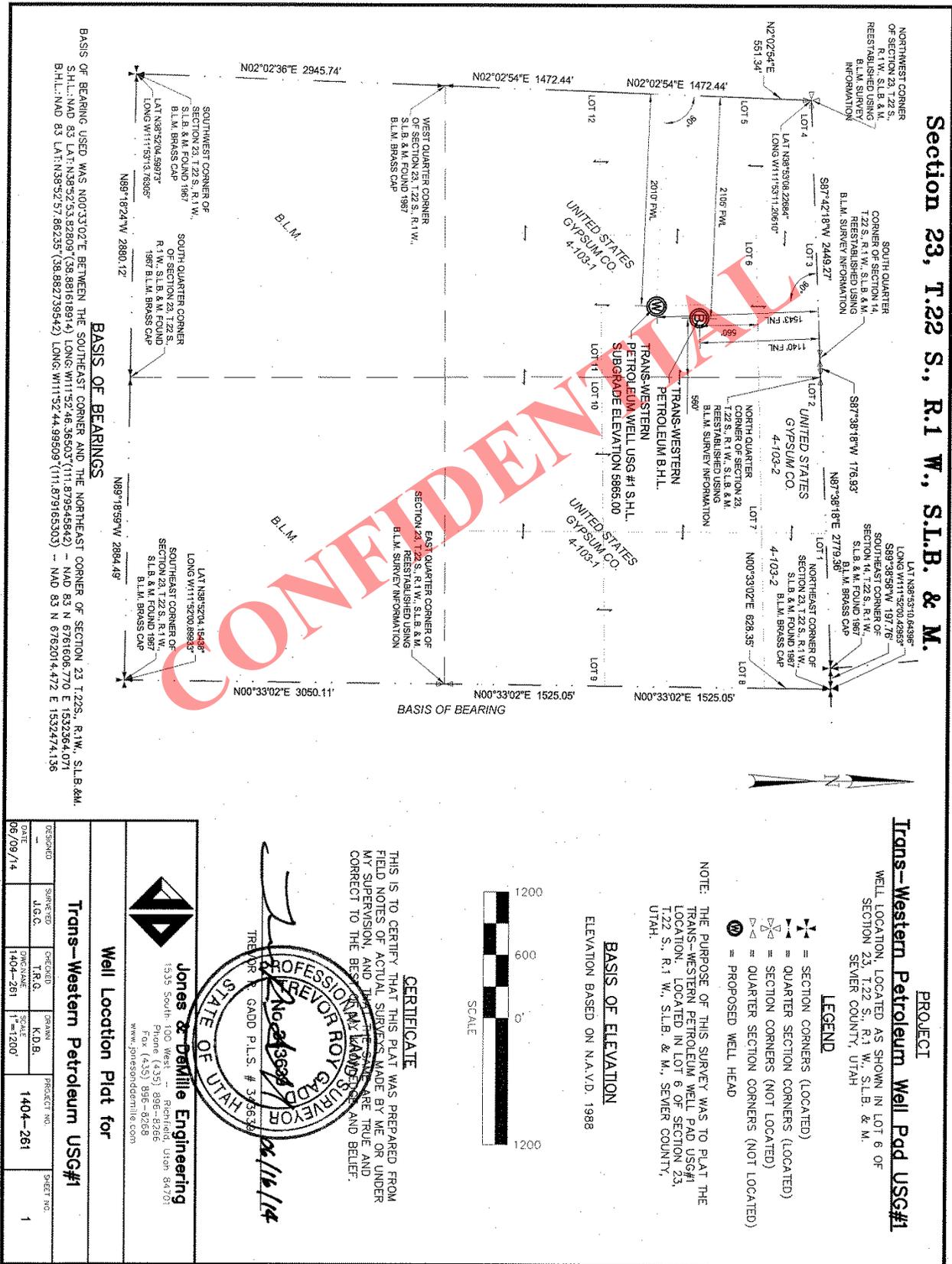
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**Trans-Western Petroleum USG #1
BOPE Schematic**



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Trans-Western Petroleum

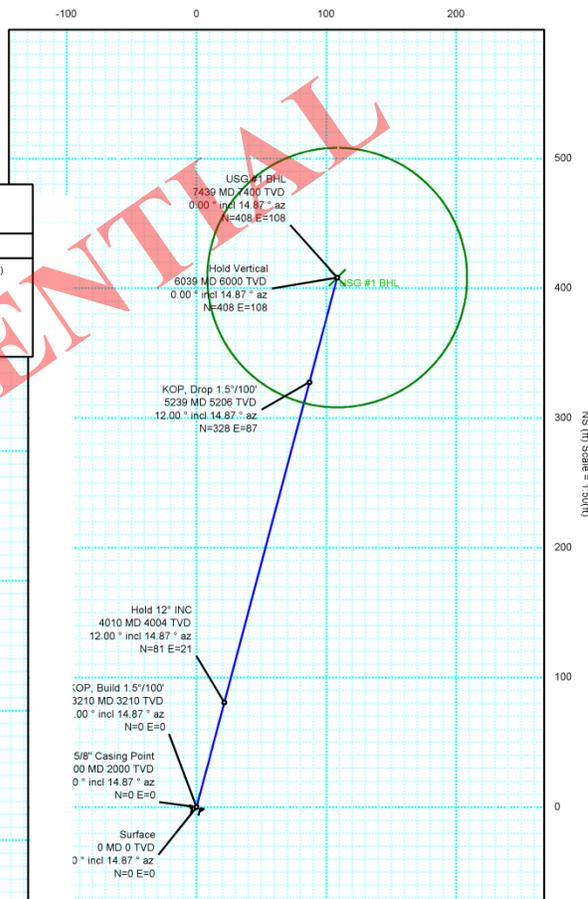
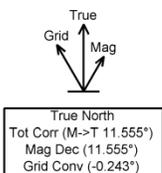
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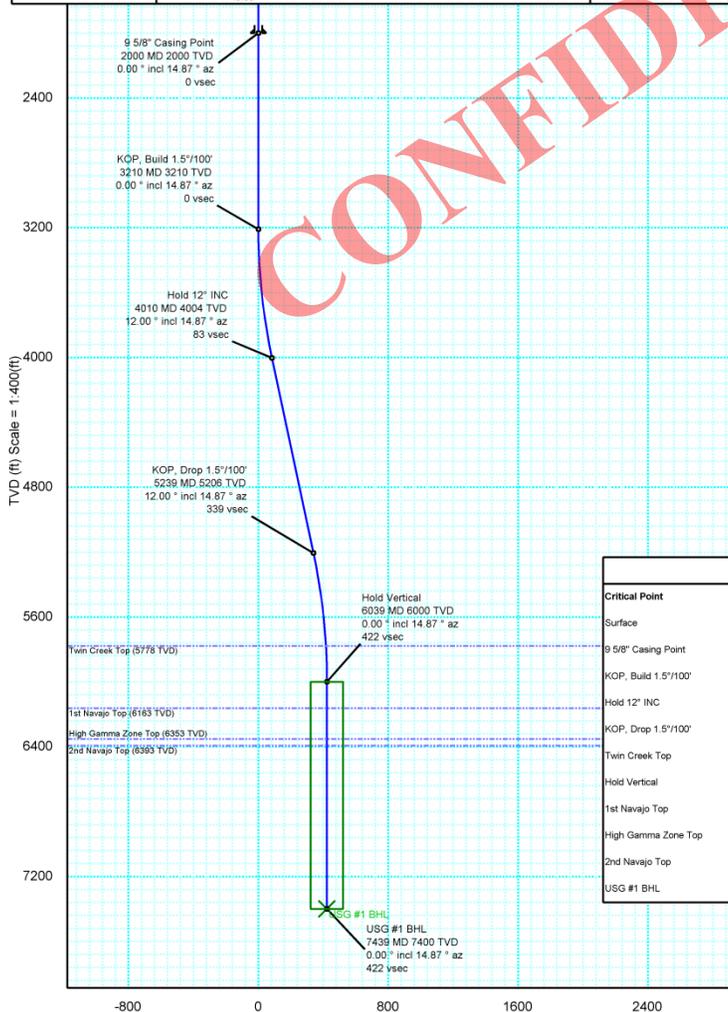
Borehole: Original Hole	Well: USG #1	Field: UT, Sevier County (NAD 83 CZ US Feet)	Structure: Sec 23-22S-1W
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Gravity & Magnetic Parameters Model: BGGM 2014 Dip: 64.413° Date: 12-Jun-2014 MagDec: 11.555° FS: 50954.558nT Gravity FS: 998.79mgn (9.80665 Based)	Surface Location NAD83 Utah State Plane, Central Zone, US Feet Lat: N 38 52 53.83 Northing: 6761606.77ft Lon: W 111 52 46.37 Easting: 1532364.071ft US	Miscellaneous Slot: USG #1 TVD Ref: RKB(5883ft above MSL) Plan: USG #1 R1 mdv 16Jun14
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Proposal



Surface Location						
Northing		Easting		Latitude	Longitude	VSec Azimuth
6761606.77		1532364.071		N 38 52 53.83	W 111 52 46.37	14.865
Target Description	Grid Coord		Local Coord			
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec
USG #1 Section Line	N 38 52 53.83	W 111 52 46.37	6761606.77	1532364.07	5883.00	0.00
USG #1 Target Box	N 38 52 57.86	W 111 52 45.00	6762014.47	1532474.14	6000.00	422.28
USG #1 BHL	N 38 52 57.86	W 111 52 45.00	6762014.47	1532474.14	7400.00	422.28



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	14.86	0.00	0.00	0.00	0.00	
9 5/8\"/>								

Vertical Section (ft) Azim = 14.865° Scale = 1:400(ft) Origin = 0N/-S, 0E/-W

Section 23, T.22 S., R.1 W., S.L.B. & M.

NORTHWEST CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

SOUTH QUARTER CORNER OF SECTION 14, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

LAT N38°53'10.64396"
LONG W111°52'00.42953"
S89°38'58"W 197.76'
SOUTHEAST CORNER OF SECTION 14, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP

NORTHEAST CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP

NORTH QUARTER CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

TRANS-WESTERN PETROLEUM B.H.L.
TRANS-WESTERN PETROLEUM WELL USG #1 S.H.L.
SUBGRADE ELEVATION 5865.00

WEST QUARTER CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP

EAST QUARTER CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

SOUTHWEST CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP
LAT N38°52'04.59973"
LONG W111°53'13.76305"

SOUTH QUARTER CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP

LAT N38°52'04.15438"
LONG W111°52'00.89933"
SOUTHEAST CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP

PROJECT Trans-Western Petroleum Well Pad USG#1

WELL LOCATION, LOCATED AS SHOWN IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

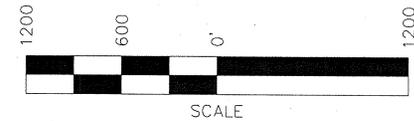
LEGEND

- = SECTION CORNERS (LOCATED)
- = QUARTER SECTION CORNERS (LOCATED)
- = SECTION CORNERS (NOT LOCATED)
- = QUARTER SECTION CORNERS (NOT LOCATED)
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE TRANS-WESTERN PETROLEUM WELL PAD USG#1 LOCATION. LOCATED IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M., SEVIER COUNTY, UTAH.

BASIS OF ELEVATION

ELEVATION BASED ON N.A.V.D. 1988



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Trevor Roy Gadd
TREVOR R. GADD P.L.S. # 343638
06/16/14
PROFESSIONAL SURVEYOR
STATE OF UTAH
No. 243638

Jones & DeMille Engineering
1535 South 100 West - Richfield, Utah 84701
Phone (435) 896-8266
Fax (435) 896-8268
www.jonesanddemille.com

Well Location Plat for

Trans-Western Petroleum USG#1

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
—	J.G.C.	T.R.G.	K.D.B.	1404-261	1
DATE 06/09/14		DWG. NAME 1404-261	SCALE 1"=1200'		

BASIS OF BEARINGS

BASIS OF BEARING USED WAS N00°33'02"E BETWEEN THE SOUTHEAST CORNER AND THE NORTHEAST CORNER OF SECTION 23 T.22S., R.1W., S.L.B.&M.
S.H.L.: NAD 83 LAT: N38°52'53.82809" (38.881618914) LONG: W111°52'46.36503" (111.879545842) - NAD 83 N 6761606.770 E 1532364.071
B.H.L.: NAD 83 LAT: N38°52'57.86235" (38.882739542) LONG: W111°52'44.99509" (111.879165303) - NAD 83 N 6762014.472 E 1532474.136

N89°18'24"W 2880.12'

N89°18'59"W 2884.49'

BASIS OF BEARING

N00°33'02"E 3050.11'

N02°02'36"E 2945.74'

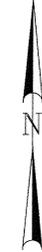
N02°02'54"E 1472.44'

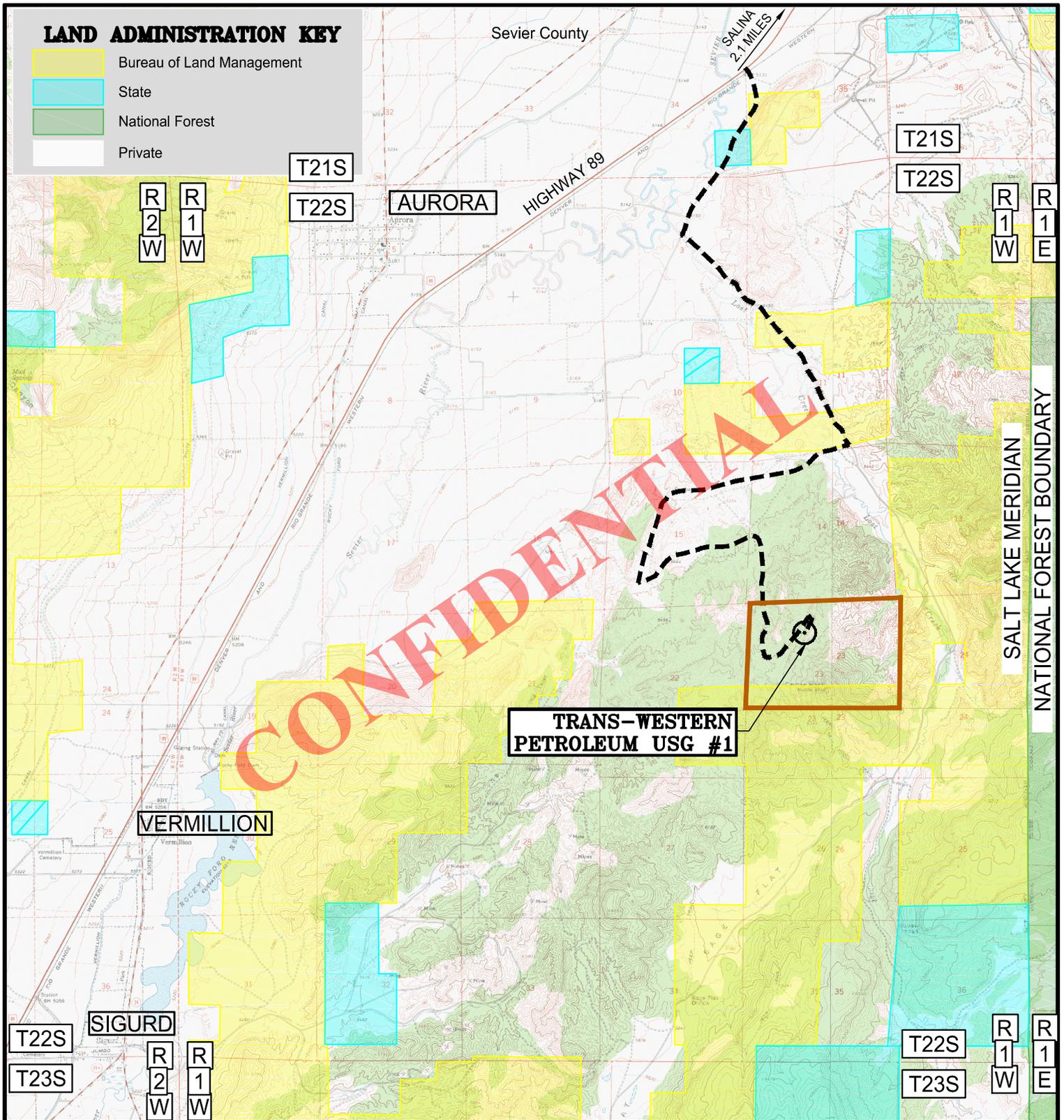
N2°02'54"E 551.34'

N00°33'02"E 1525.05'

N87°38'18"E 2779.36'

LAT N38°53'10.64396"
LONG W111°52'00.42953"
S89°38'58"W 197.76'





LAND ADMINISTRATION KEY

- Bureau of Land Management
- State
- National Forest
- Private

T21S
T22S

R 2
W
R 1
W

AURORA

HIGHWAY 89

T21S
T22S

R 1
W
R 1
E

VERMILLION

**TRANS-WESTERN
PETROLEUM USG #1**

SALT LAKE MERIDIAN
NATIONAL FOREST BOUNDARY

T22S
T23S

SIGURD

R 2
W
R 1
W

T22S
T23S

R 1
W
R 1
E

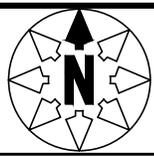
LEGEND

- PROPOSED LOCATION
- EXISTING ROADWAY
- NEW ROADWAY
- UTU - ##### LEASE BOUNDARY

TRANS-WESTERN PETROLEUM USG #1
Section 23, T.22 S., R.1 W., S.L.B. & M.
1543' FNL 2010' FWL



Jones & DeMille Engineering, Inc.
CIVIL ENGINEERING - SURVEYING - TESTING
GIS - ENVIRONMENTAL
- infrastructure professionals -
1.800.748.5275 www.jonesanddemille.com



SCALE: 1" = 5000'

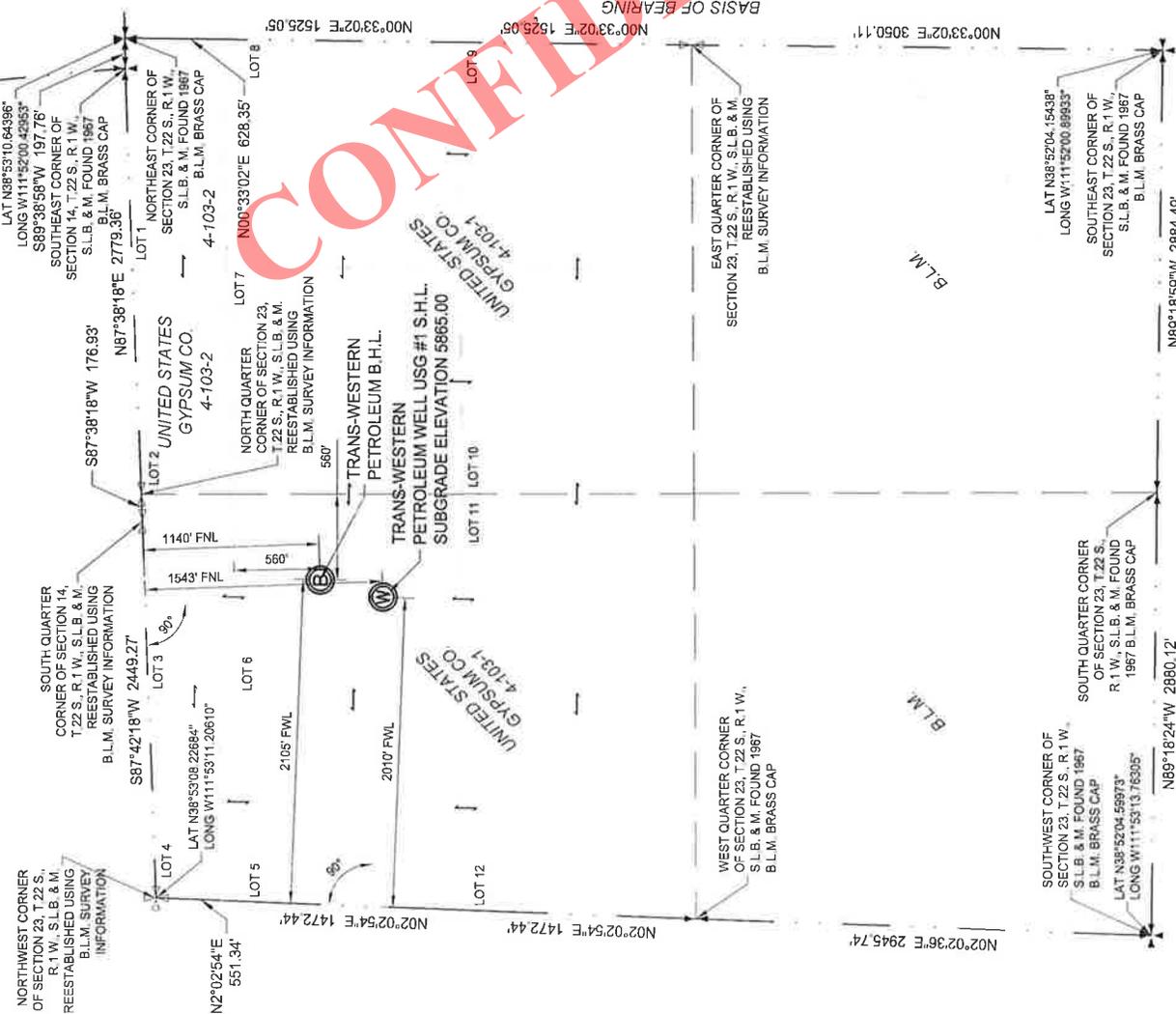
Trans-Western Petroleum LTD, Inc.

Trans-Western Petroleum USG #1 WELL

Vicinity Map

DRAWN: S.J. 14-06	FILE: VICINITY MAP	PROJECT: Projnum	SHEET: 1
CHECK: D.H.R. 14-06	UPDATED: 6/23/2014	PLOTTED: 6/23/2014	

Section 23, T.22 S., R.1 W., S.L.B. & M.



BASIS OF BEARINGS

BASIS OF BEARING USED WAS N00°33'02"E BETWEEN THE SOUTHEAST CORNER AND THE NORTHEAST CORNER OF SECTION 23, T.22S., R.1W., S.L.B.&M. S.H.L.: NAD 83 LAT: N38°52'53.82809\" (38.881618914) LONG: W11°52'46.36503\" (111.879545842) — NAD 83 N 6761606.770 E 1532364.071 B.H.L.: NAD 83 LAT: N38°52'57.86235\" (38.882739542) LONG: W11°52'44.99509\" (111.879165303) — NAD 83 N 6762014.472 E 1532474.136

PROJECT

Trans-Western Petroleum Well Pad USG#1

WELL LOCATION, LOCATED AS SHOWN IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

LEGEND

- ✖ = SECTION CORNERS (LOCATED)
- ⊕ = QUARTER SECTION CORNERS (LOCATED)
- ⊗ = SECTION CORNERS (NOT LOCATED)
- ⊘ = QUARTER SECTION CORNERS (NOT LOCATED)
- ⊙ = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE TRANS-WESTERN PETROLEUM WELL PAD USG#1 LOCATION, LOCATED IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M., SEVIER COUNTY, UTAH.

BASIS OF ELEVATION

ELEVATION BASED ON N.A.V.D. 1988

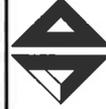


CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



TREVOR R. GADD P.L.S. # 375639

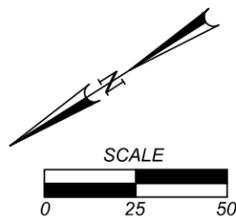


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Well Location Plat for

Trans-Western Petroleum USG#1

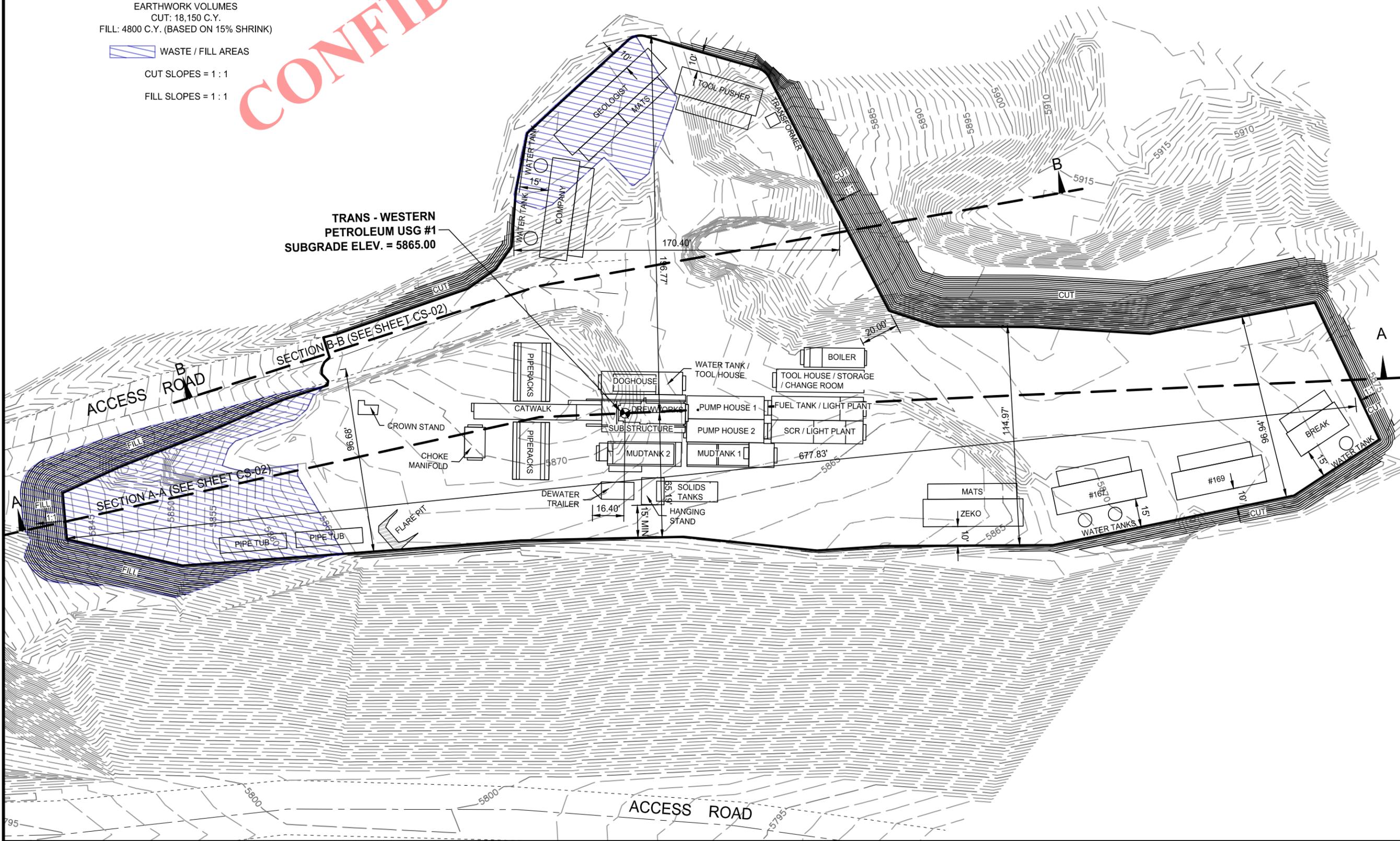
DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO	SHEET NO
—	J.R.G.	T.R.G.	K.D.B.	1404-261	1
DATE	DWC NAME	SCALE			
06/09/14	1404-261	1"=1200'			



EARTHWORK VOLUMES
 CUT: 18,150 C.Y.
 FILL: 4800 C.Y. (BASED ON 15% SHRINK)

WASTE / FILL AREAS
 CUT SLOPES = 1:1
 FILL SLOPES = 1:1

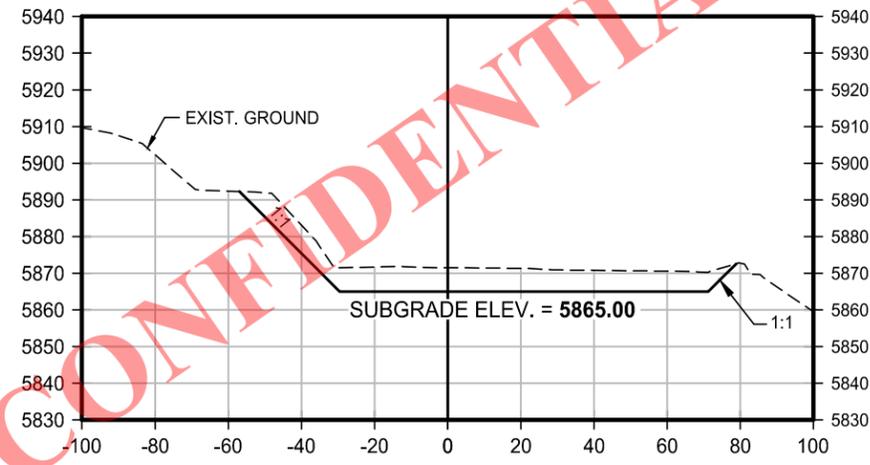
CONFIDENTIAL



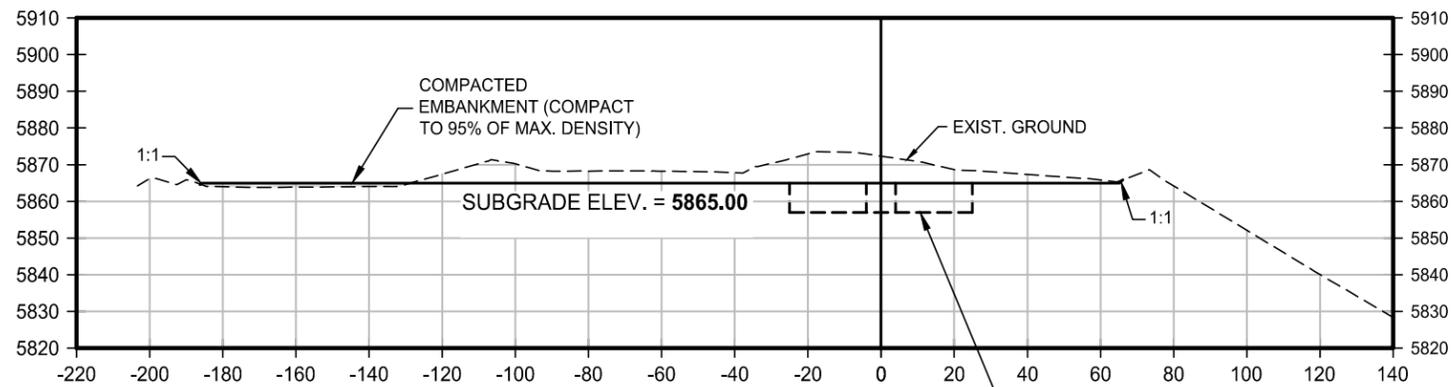
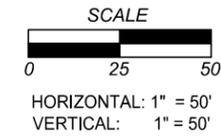
Jones & DeMille Engineering, Inc. CIVIL ENGINEERING - SURVEYING - TESTING GIS - ENVIRONMENTAL 1-800-748-5275 www.jonesandmille.com		REVIEW DATE: _____ BY: _____
APPROVAL RECOMM: _____ DATE: _____	DESIGN DATE: _____ BY: _____	CHECK DATE: _____ BY: _____
APPROVED DATE: _____	DRAWN B.L. 14-05 QUANT: _____	CHECK DATE: _____ BY: _____
Trans-Western Petroleum LTD, Inc. Trans-Western Petroleum USG #1 WELL		REVISIONS DWG NAME: DESIGN2-1404-2P.DWG CREATED: 2014/05/21 SHT SET: ### SCALE: 1" = 50' PEN TBL: _lsrimg2000.dwg UPDATED: 6/12/2014 PLOTTED: 6/23/2014
PROJECT NUMBER: 1404-261		SHEET NO.: SP-02
SEVIER COUNTY		

TRANS - WESTERN PETROLEUM LTD, INC.

LOCATION LAYOUT FOR
TRANS - WESTERN PETROLEUM USG#1 WELL
SECTION 23, T.22 S., R.1 W., S.L.B.& M.

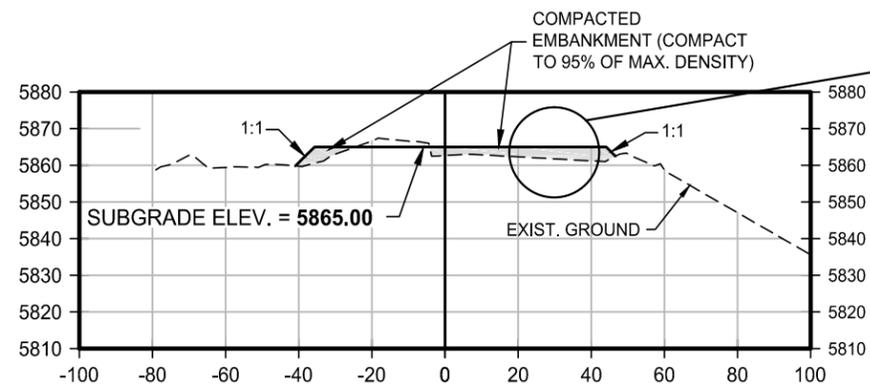
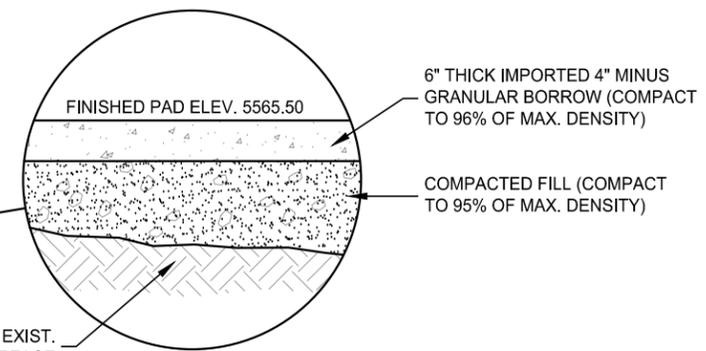


STA. 15+70.00



STA. 13+00.00

50'X90'X8' IMPORTED 10" MINUS GRANULAR BORROW RIG FOUNDATION REQ'D (97% COMPACTION REQ'D) IMPORTED RIG FOUNDATION THICKNESS MAY BE REDUCED BY ON-SITE ENGINEER DEPENDING ON SITE SOIL CONDITIONS.



STA. 11+15.00

<p>Jones & DeMille Engineering, Inc. CIVIL ENGINEERING - SURVEYING - TESTING GIS - ENVIRONMENTAL 1-800-748-5275 www.jonesanddemille.com</p>		<p>DESIGN: DRAWN: B.L. 14-05 DATE:</p>	<p>CHECK: CHECK: CHECK:</p>	<p>REVIEW: DATE: BY:</p>
<p>Trans-Western Petroleum LTD, Inc.</p>		<p>REVISIONS</p>		
<p>Trans-Western Petroleum USG #1 WELL</p>		<p>NO. DATE DESIGN REV. BY MAPS CORR. BY PARCELS REQUEST BY REMARKS</p>		
<p>CROSS-SECTIONS</p>		<p>ORIGINAL SUBMISSION FOR AUTHORIZATION</p>		
<p>PROJECT NUMBER: 1404-261</p>		<p>DWG NAME: DESIGN2-1404-261.DWG CREATED: 2014/05/21</p>		
<p>SEVIER COUNTY</p>		<p>SCALE: 1" = 50'</p>		
<p>SHEET NO. CS-02</p>		<p>UPDATE: 6/23/2014 PLOTTER: 6/23/2014</p>		

Trans-Western Petroleum

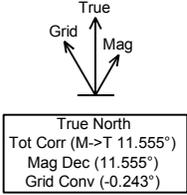
Rev 1



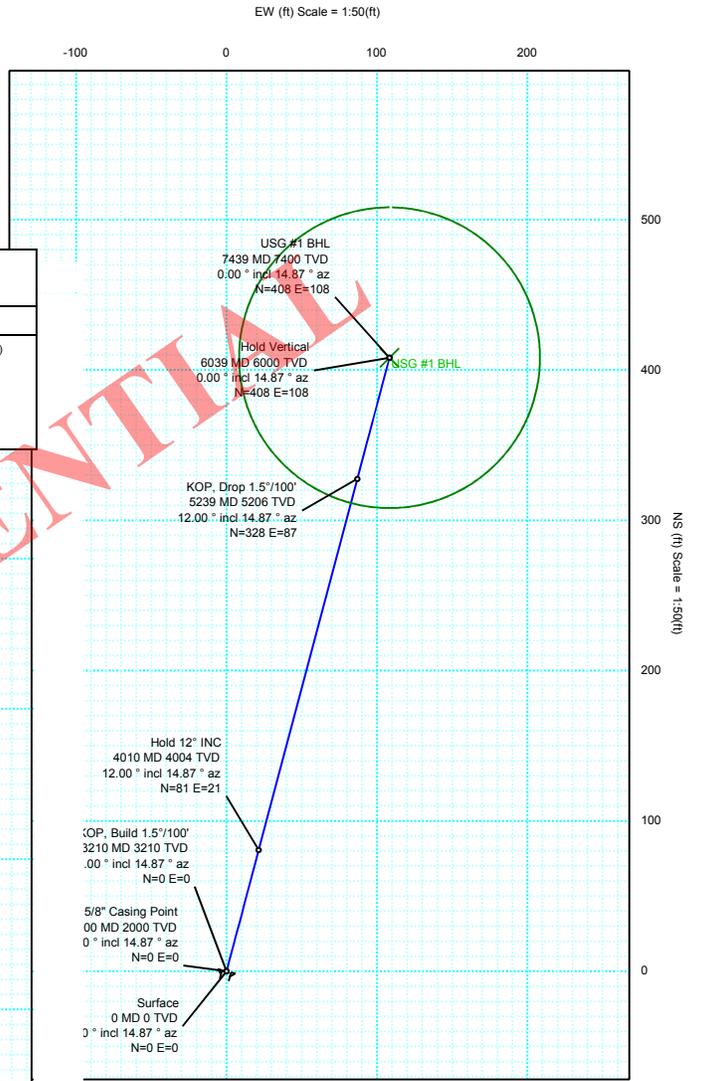
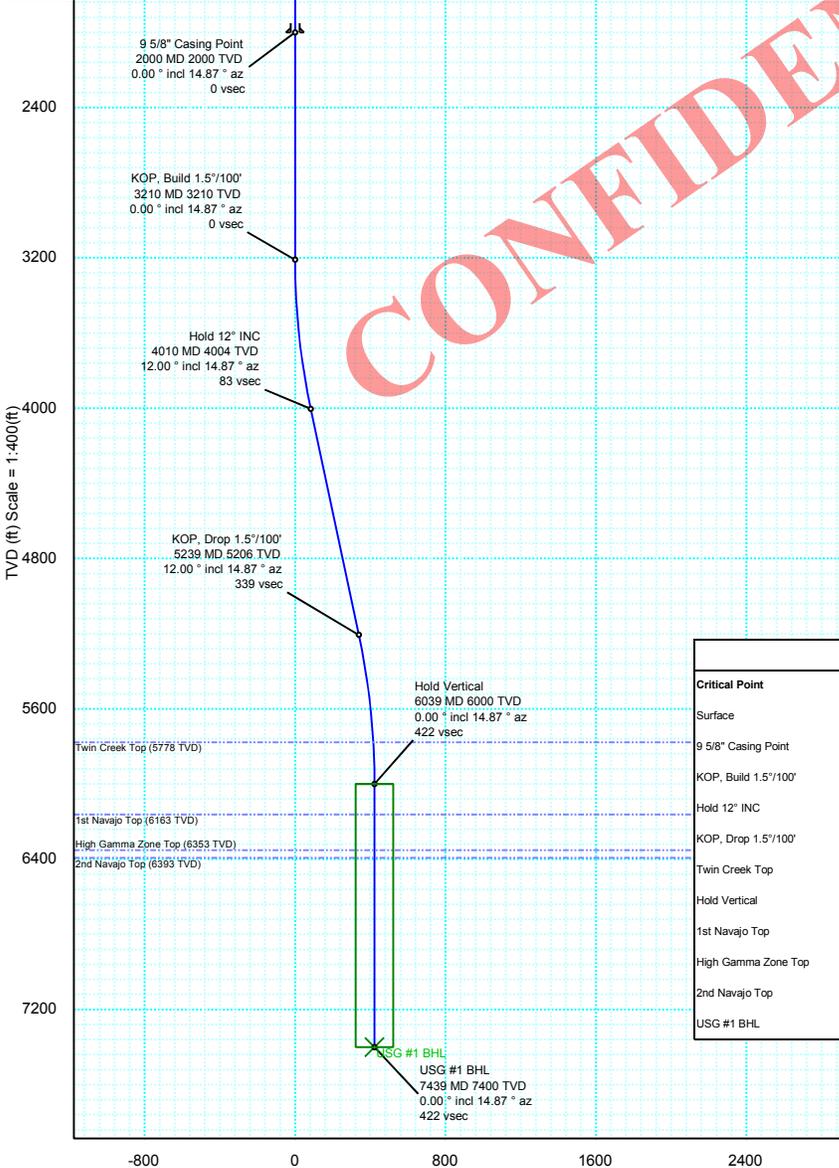
Borehole: Original Hole	Well: USG #1	Field: UT, Sevier County (NAD 83 CZ US Feet)	Structure: Sec 23-22S-1W
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Gravity & Magnetic Parameters Model: BGGM 2014 Dip: 64.413° Date: 12-Jun-2014 MagDec: 11.555° FS: 50954.558nT Gravity FS: 998.79mgn (9.80665 Based)	Surface Location NAD83 Utah State Plane, Central Zone, US Feet 6761606.77ftU 532364.07ftU US Lat: N 38 52 53.83 Northing: 6761606.77ftU Lon: W 111 52 46.37 Easting: 532364.07ftU Grid Conv: -0.2431° Scale Fact: 1.00003607	Miscellaneous Slot: USG #1 TVD Ref: RKB(5883ft above MSL) Plan: USG #1 R1 mdv 16Jun14
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Proposal



Surface Location								
Target Description		Grid Coord			Local Coord			
Northing 6761606.77 Easting: 1532364.071 Latitude: N 38 52 53.83 Longitude: W 111 52 46.37 VSec Azimuth: 14.865								
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec	N(+)/S(-)	E(+)/W(-)
USG #1 Section Line	N 38 52 53.83	W 111 52 46.37	6761606.77	1532364.07	5883.00	0.00	0.00	0.00
USG #1 Target Box	N 38 52 57.86	W 111 52 45.00	6762014.47	1532474.14	6000.00	422.28	408.15	108.33
USG #1 BHL	N 38 52 57.86	W 111 52 45.00	6762014.47	1532474.14	7400.00	422.28	408.15	108.33



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	14.86	0.00	0.00	0.00	0.00	
9 5/8" Casing Point	2000.00	0.00	14.86	2000.00	0.00	0.00	0.00	0.00
KOP, Build 1.5"/100'	3210.00	0.00	14.86	3210.00	0.00	0.00	0.00	0.00
Hold 12" INC	4009.76	12.00	14.86	4003.93	83.42	80.63	21.40	1.50
KOP, Drop 1.5"/100'	5238.74	12.00	14.86	5206.07	338.86	327.52	86.93	0.00
Twin Creek Top	5816.38	3.33	14.86	5778.00	415.83	401.91	106.67	1.50
Hold Vertical	6038.50	0.00	14.86	6000.00	422.28	408.15	108.33	1.50
1st Navajo Top	6201.50	0.00	14.86	6163.00	422.28	408.15	108.33	0.00
High Gamma Zone Top	6391.50	0.00	14.86	6353.00	422.28	408.15	108.33	0.00
2nd Navajo Top	6431.50	0.00	14.86	6393.00	422.28	408.15	108.33	0.00
USG #1 BHL	7438.50	0.00	14.86	7400.00	422.28	408.15	108.33	0.00

Vertical Section (ft) Azim = 14.865° Scale = 1:400(ft) Origin = 0N/-S, 0E/-W

SURFACE USE PLAN OF OPERATIONS

For inclusion with Application for Permit to Drill

Name of Operator: Trans-Western Petroleum LTD., Inc.

Operator Number: N4105

Address: PO Box 276
Golden, CO 80402

Surface Well Location: 1,543' FNL & 2,010' FWL, being in Lot 6/NW4
Section 23, T22S, R1W, SLB&M
Sevier County, Utah

Bottom Hole Location: 1,140' FNL & 2,105' FWL, being in Lot 6/NW4
Section 23, T22S, R1W, SLB&M
Sevier County, Utah

Access Road Location: Access road to be a double driveway off the west
side of Sage Flat Road.

Fee surface use is required for construction and drilling of the referenced well. United States Gypsum Company is the surface owner of the access mining property road, drill pad site and the mineral owner of the well path and bottom hole location.

Existing Roads:

The vicinity map in the APD packet shows the proposed well location and its proximity to Salina, Utah. The proposed location is about 5.3 miles southwest of the Salina City, Utah town center.

Driving directions: From 4 Way Stoplight at the Intersection of State & Main Streets in Salina City, turn West on Main Street. Main Street turns southwest into Utah highway 24. Follow highway 24 for a few miles (2.1 miles from the stoplight)

to the Lost Creek/Sage Flat Roads turnoff on the left. Follow Lost Creek/Sage Flat Road generally south, under Interstate 70 and 1.1 miles beyond the Interstate 70 overpass. Turn right onto a mine road. Follow the mine road roughly 3 miles west to a T intersection with another mine road. Turn left onto this 2nd mine road. Follow this 2nd mine road roughly 3-1/2 miles up the side of the mountain. The road dead-ends onto the well site. The top of Carter Peak is located roughly 1/2 mile south of the drill site.

Access Roads to be Constructed and Reconstructed:

The proposed access driveway will require a permit from Sevier County, Utah. Because the Lost Creek/Sage Flat Road driveway is now maintained by Sevier County, an encroachment permit will also be obtained from the Sevier County Road Department. The west mine property driveway will have a travel surface about 20 to 30 feet in width, being about 6.5 miles in length.

See the Vicinity Map for project location and the Survey Plat for pad layout and dimensions.

The mine road driveway use, improvement, operation and maintenance will be in compliance with the terms and conditions of the UDOGM Conditions of Approval and the Operating Agreement by and between United States Gypsum Company and Trans-Western Petroleum, Inc.

The mine road driveway to be used is a pre-existing mine road designed and constructed by Sevier County and United States Gypsum Company on United States Gypsum Company's fee land in accordance with their mining permits. United States Gypsum Company has exclusive right to the use of the county roads while mining operations are being conducted.

The mine road driveway will be maintained and kept in good repair during all phases of operation. Vehicle operators will obey posted speed restrictions and observe safe speeds commensurate with road and weather conditions.

Location of Existing Wells within a one-mile radius:

There are two plugged and abandoned wells located within a one-mile radius of the proposed well. These wells are the Forest Oil, Sigurd Unit #1 (API # 43-041-30018) and Wolverine, Carter Peak #1 (API # 43-041-50002). The Sigurd Unit #1 is about 4,200' from the proposed Trans-Western Petroleum USG #1 bottom hole location. The Carter Peak #1 is about 5,000' from the proposed Trans-Western Petroleum USG #1 bottom hole location.

Location of Planned Wells:

At present there are no planned wells that have approval to be drilled within a one-mile radius of the proposed well.

Location of Existing and/or Proposed Facilities if Well is Productive:

(a) On well pad - A temporary testing facility may be constructed on this location in the event drilling is successful, consisting of treater/separator, tanks and related components. The facility would be surrounded by a berm of sufficient capacity to contain the storage capacity of the largest tank. All loading lines and valves would be located inside the berm surrounding the tank battery.

(b) Off-well pad - At present no off-well pad facilities are planned.

Location and Type of Water Supply (Rivers, Creeks, Lakes, Ponds and Wells):

The Operator intends to purchase water from the City of Salina (Water System 21014). Source of water is Lost Creek. Water will be trucked to water storage tanks from a fire hydrant on Lost Creek Road/Sage Flat Road, as directed by the city water department. Should additional water sources be pursued they will be properly permitted through the State of Utah - Division of Water Rights. UDOGM will be notified of any changes in water supply.

Construction Materials:

Natural earth materials used for fill on the well pad will be taken from cuts made in construction of the pad. Imported granular borrow from an approved source will be applied to the surface of the well pad and driveways where deemed necessary. No construction materials will be removed from state lands.

Methods for Handling Waste Disposal:

Drilling and completion will utilize a mud storage system called a “closed loop system.” Steel containers will be used for the temporary storage of waste mud and drill cuttings. All borehole fluids, fresh water and make-up brine will be contained in the drilling rig’s active mud tanks system, a steel tank or in a pre-mix steel tank containers. Steel containers will be located on cut portions of the drill pad. Waste fluids and drill cuttings will be disposed off site at the Sevier County landfill facility or another approved disposal site. After drilling of the well and both before and after the rig moves off any remaining fluids will be pumped out of the steel containers and transported off site and disposed of at an approved disposal site.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completion of the well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completion of the well.

Wastewater will not be discharged on the ground surface at this site. The drilling of the well will not require a wastewater management plan.

All trash, rubbish and debris will be kept in containers on the well site and will be hauled to an approved disposal site both during and upon completion of drilling operations. There will be no chemical disposal of any type.

Self-contained, portable toilets will be used for human waste, and the waste will be disposed at an approved human waste disposal facility. Sanitation will comply with local and state regulations.

Ancillary Facilities:

No ancillary facilities are anticipated at this time.

Well Site Layout:

Pad Location and Layout Drawings in the APD packet show the proposed well site layout including location of the closed loop system and access roads onto the pad, turnaround areas, parking areas, living facilities, soil material stockpiles, and the orientation of the rig with respect to the pad and other facilities. Cross section sheets in said packet show cuts and fills required for construction and their relationship to topography. As detailed above under Methods for Handling Waste Disposal a closed loop system will be used. The closed loop system consists of equipment to remove solids from liquid. The removed liquid is returned to the active mud system. Steel containers will be used to contain damp cuttings. The damp cuttings are then transferred to disposal. There are no "liquid storage" tanks associated with the closed loop system as there is no liquid to store. The closed loop system will not be fenced, bermed or lined during drilling operations. The closed loop system, rental equipment designed expressly for removal of drill solids, will be moved off concurrent with the removal of the drill rig.

The pad design will be consistent with the engineering drawings and UDOGM conditions of approval. The roads are Sevier county roads and will be maintained according to directions of the County.

United States Gypsum Company has been actively mining gypsum in this area and has disturbed the surface as permitted by their mining permits. A pre-construction meeting with responsible company representative, a UDOGM representative and contractors will be conducted at the project site prior to commencement of oil and gas surface disturbing activities. The pad will be construction staked prior to this meeting. The drill site is currently being actively mined by the mining company. They expect to conclude those operations prior to construction of the pad for drilling service.

All surface disturbing activities will be supervised by a qualified, responsible company representative who is aware of the terms and conditions of approval from UDOGM under the approved APD.

All cut and fill slopes will be such that stability can be maintained for the life of the activity.

Due to the prior mining activity and no topsoil being available on this exposed Arapien formation outcrop we do not plan to save topsoil in the normal manner.

Water spraying may be implemented if necessary to minimize dust.

Plans for Reclamation of the Surface:

The road and location are in an active mine site operated by United States Gypsum Company. Reclamation of the surface will be consistent with United States Gypsum Company mining permit conditions; comply with all applicable laws; and will be coordinated with United States Gypsum Company.

Interim Reclamation: In the event production is achieved the Operator will perform interim reclamation of the site as needed. Interim reclamation normally would consist of reclamation of that portion of the well pad not needed for ongoing operations. The well pad area used will be graveled as needed to render it a usable part of the well pad. The edges of the well pad will be scarified and seeded as per UDOGM conditions of approval.

Final Reclamation: In the event the well is a dry hole, or at such time that all production ceases and the well has been plugged and abandoned, the Operator will perform final reclamation of the site. Final reclamation will consist of reclamation of the well. However it should be noted that the all the roads and well pad are pre-existing county roads located on the mining property. The landowner, United States Gypsum Company and the operator have entered into an "Operating Agreement." This operating agreement requires reclamation to be done in accordance with terms of the operating agreement.

Any accumulation of hydrocarbons in any production tanks will be removed and recovered for sale unless it is determined to be waste oil. All waste oil will be disposed of properly at approved facilities.

Road base material used in the pad will be removed from the site and disposed in a proper manner and in accordance with the "Operating Agreement."

The mine road which accesses the well pad may be used by United States Gypsum Company concurrently as agreed to in the "Operating Agreement."

Final reclamation will take place within 180 days after plugging date of the last well on the drill site, depending on weather, season and other extenuating circumstances.

During the life of the project and until the site is released from liability for reclamation, the project will be inspected at least annually for noxious weeds. If invasive noxious weeds are found, the weeds will be treated to eliminate further reproduction, and treatment shall continue until the weeds have been eradicated. If noxious weeds are found, SITLA will be notified of their occurrence.

Surface Ownership:

The surface of the proposed well site is owned by United States Gypsum Company. The mine road which accesses the well pad is a county road which is exclusively used by the mining company while the mining operations are being conducted.

Other Information:

Heavy equipment used to construct and rehabilitate the well pad will be cleaned and/or sprayed to remove any noxious or invasive weeds and seeds prior to entering to the project site. Any other equipment and vehicles that have been used in other locations where noxious weeds or seeds could have attached to the equipment will also be sprayed and/or cleaned.

All equipment and vehicles will be confined to the mine road which accesses the well pad.

United States Gypsum Company, during its surface mining permitting process, has a Class III cultural survey and has submitted the same under separate cover to the appropriate agencies.

No stream alteration or drainage crossings are involved that require additional State or Federal approval.

All permanent structures, including pumping units, constructed or installed will be painted a flat, non-reflective color. Permanent structures are defined as being on location for six months or longer. Facilities required to comply with Occupational Safety and Health Act (OSHA) shall be excluded.

Fire suppression equipment will be available to suppress any fires caused by construction or related activities. In the event of a fire the Richfield Interagency Fire Center (435) 896-8404 will be notified,

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein: that I am familiar with the conditions which currently exist; that I, or someone under my direct supervision, have full knowledge of State and Federal laws applicable to this operation, that the statements made in this APD package are, to the best of my knowledge, true and correct and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 16th day of July, 2014.

Signature:  _____

Print name: Douglas J. Isern

Position Title: President

Address: Trans-Western Petroleum LTD., Inc.
PO Box 276
Golden, CO 80402

Telephone: (303) 921-5532

Operating Agreement

This Operating Agreement is made as of this 4th day of November, 2013 by and between United States Gypsum Company ("Lessor" or "USG"), whose headquarters is at 550 W. Adams Street, Chicago, IL, 60661-3676, and Trans-Western Petroleum, Inc. ("Lessee" or "Trans-Western"), whose address is P.O. Box 276, Golden, CO, 80402 (collectively, the "Parties"). USG also operates a gypsum quarry, wallboard plant and joint treatment facility in Sigurd, Utah.

WHEREAS, Lessor executed that certain Oil and Gas lease dated August 17, 2004 (the "Trans-Western Lease") covering certain lands located in Sevier County, Utah, attached hereto as Exhibit "A" (the "Lease Premises").

WHEREAS, the Trans-Western Lease was recorded in the Official Records of Sevier County, Utah on September 23, 2004, as Entry No. 327952, in Book 502, Pages 15-17.

WHEREAS, as a result of a "Ratification and Lease Extension" Agreement executed in December 2009 between the Parties, the Trans-Western Lease was amended to provide that the primary term of the Lease was extended for a primary term of five (5) years ending on December 11, 2014.

WHEREAS, in September 2013, Trans-Western indicated to USG that Trans-Western wished to exercise its lease rights to drill one or more exploratory wells on the Lease Premises.

NOW THEREFORE, the Parties agree to the following terms and conditions governing Trans-Western's activities on the Lease Premises.

1. Location of Drill Holes. Trans-Western has proposed to drill its first and second holes at the locations identified on Exhibit B, attached. The Parties have conferred on these locations. USG offers no objection to the drill hole locations proposed by Trans-Western. The parties will confer and document any different or additional drill hole locations.

2. Access; Road Maintenance; Power Lines.

(a) USG grants Trans-Western, its employees and designated agents, a right-of-way to enter upon and use the designated access roads on USG's property for the purpose of drilling, completing and producing oil and gas wells on the Leased Premises.

(b) In order to minimize traffic on the main road into the USG Sigurd Plant, Trans-Western has agreed to access the northern drill hole location by way of USG's Lost Canyon Road across USG properties known as the Jensen and Jumbo claims. This access route, which is marked on Exhibit B attached, utilizes rights of way owned or controlled by USG.

(c) The access roads marked on Exhibit B likely are not able to support the size and weight of the trucks and drilling equipment Trans-Western might bring on to the Lease Premises. It shall be Trans-Western's sole responsibility, not USG's, to assess the condition of the access roads and to make any needed repairs and improvements. Further, it shall be Trans-Western's sole responsibility, not USG's, to maintain and repair these access roads for as long as Trans-Western uses the Lease Premises for drilling, other exploration or production activities.

(d) Culverts shall be placed in low areas as necessary for proper drainage.

No off-road vehicle travel is permitted.

Trans-Western agrees to keep its roads free of debris and litter, and to conduct periodic trash pickup if requested by USG.

Trans-Western shall negotiate the location of all new roads with the USG prior to construction, and at that time the parties shall determine what low spots or other specific locations have a need for graveling, and whether road repairs might be needed on existing roads, including the installation of culverts.

The use and construction of roads by Trans-Western across the surface lands of USG is a non-exclusive use and USG may allow other parties to use said road. However, Trans-Western shall have the right to assess other users of the road, other than USG's or USG's agents, for their share of maintenance work performed by Trans-Western and the right to enforce said assessment.

Trans-Western shall maintain existing and newly constructed roads used by Trans-Western, which maintenance may include shaling, ditching, graveling, blading. This work shall be done at such reasonable times as deemed necessary to keep roads safe and passable.

All pipelines and gathering systems shall be located by Trans-Western in consultation with USG and in such a manner as to not interfere with existing mining operations. Pipelines shall be buried to the depth of at least three (3) feet below the surface. It is contemplated that pipelines will be co-located with the road access where feasible.

Power Lines. Trans-Western will consult with USG and with the independent power company supplying power to Trans-Western with respect to the location of overhead power lines prior to construction. Overhead power lines will be constructed so

as to cause the least possible interference with USG's existing mining operations. Overhead power lines will be constructed along fence lines, property lines, or roads. Construction shall not begin unless USG has consented to the location of such power lines. Such consent shall not be unreasonably denied.

3. Location of Trans-Western Facilities; Quarry Setbacks.

(a) Trans-Western shall notify USG prior to entry upon the Lands and shall consult with USG as to the location of each well pad, road, pipeline, power line, pod or battery site, gathering system and other facility to be placed on the Lands. If a pipeline or gathering system is to be installed by Trans-Western, Trans-Western will locate the pipeline and gathering system in a manner so as to cause the least interference with USG's existing mining operations on the affected land. Trans-Western shall notify USG when each drilling and production operation for any well drilled on the above-described land has been completed and when Trans-Western is permanently or temporarily absent from the surface in accordance with the procedures outlined herein on Exhibit C.

(b) The laydown area for all of Trans-Western's equipment, tools and supplies needed to drill each well will be agreed to by the parties as to size and location and the agreement will be documented before drilling begins at each hole. The Parties agree that Trans-Western will utilize no other part of the Lease Premises during this exploratory phase of Trans-Western's operations.

(c) Should Trans-Western convert its exploratory well into a production well, the Parties agree to negotiate in good faith with respect to the exact location of pipeline routes, tank farms and other areas that Trans-Western may need for equipment, tools and supplies needed for production. In particular, with respect to each drill location, the

Parties will confer and negotiate in good faith an appropriate setback distance to accommodate USG's gypsum quarry operations which require drilling and blasting.

(d) Improvements. No fences, cattleguards or other improvements on USG's property shall be cut or damaged by Trans-Western without the prior written consent of USG and the payment of additional damages or the institution of other safeguards to protect the rights and property of the USG. Upon final termination of Trans-Western's rights under this Agreement, Trans-Western shall return all roads and other rights-of-way or sites as near as practical to the condition which they were in prior to the execution of this Agreement, unless otherwise agreed by USG.

4. USG Potential use of Produced Water and Natural Gas. Should Trans-Western's production well result in either (a) produced water that might be suitable for dust suppression in USG quarry areas; or (b) natural gas that can be used in USG's wallboard plant at Sigurd, the Parties agree to negotiate reasonable and customary terms under which USG will be allowed to take both water and/or gas for its own operations at Sigurd.

5. Reclamation. Reclamation responsibility for any USG quarry areas which are impacted by Trans-Western's activities will be assumed by Trans-Western and Trans-Western will fully cooperate in making application to the Utah Division of Oil, Gas and Mining to relieve USG of reclamation and bonding requirements for such areas and to transfer such obligations to Trans-Western.

6. Termination of Rights. The rights granted by USG to Trans-Western shall terminate: (1) when the current Oil and Gas Lease(s) terminates, (2) when Trans-Western ceases its operations on the land, or (3) upon Trans-Western's written

notification to USG of Trans-Western's abandonment and cessation of operations. Upon termination of this Agreement, Trans-Western will execute and deliver to USG a good and sufficient recordable release and surrender of all of Trans-Western's rights under this Agreement, and will promptly remove all equipment and property used or placed by Trans-Western on the Lands unless otherwise agreed by USG in writing.

7. Non-Exclusive Rights. The rights granted by USG to Trans-Western are non-exclusive, and USG reserves the right to use all access roads and all surface and subsurface uses of the land affected by this Agreement and the right to grant successive easements thereon or across on such terms and conditions as USG deems necessary or advisable.

8. Permits and Regulations.

(a) Trans-Western shall obtain all necessary permits and licenses, give all notices and comply with all laws, ordinances, rules, regulations or orders affecting its work done under this Agreement and shall pay all fees and charges in connection therewith. If applicable, Trans-Western shall assume all responsibility for assuring that its own and its Contractor personnel received all required MSHA training and that USG shall have no responsibility to deliver MSHA training to Trans-Western's personnel including contractor personnel. Further, Trans-Western will secure from Sevier County an Encroachment Permit to use county roads and a Conditional Use Permit for the drilling operation. Copies of all permits will be forwarded to USG. Trans-Western agrees to bear all costs, expenses, damages and fines arising out of its violation of such laws, ordinances, rules, regulations or orders including all costs and expenses of conforming the work to the requirements thereof.

(b) Trans-Western shall promptly report to USG any and all Notices of Violation from any other local, state or federal agency.

9. Responsibility for the Site. During the time of Trans-Western's active operations on the Lease Premises, Trans-Western and not USG will be solely responsible for all damage to Trans-Western's equipment and for any and all third party claims including claims relating to the condition of the Lease Premises.

10. "As Is" Condition; Safety. Trans-Western, on behalf of itself and its contractors and their respective employees and agents, accepts the Lease Premises in AS IS condition, Trans-Western hereby acknowledging that Trans-Western has had ample opportunity to perform any and all investigation and testing that it desires. Without limiting the generality of the foregoing, the Parties shall agree on safety rules applicable during USG quarry blasting operations. It shall be the duty of Trans-Western, and not USG, to provide for the safety of, and prevention of accident or injury to, Trans-Western and its contractors, and their respective employees, agents and invitees while in, on or about the Lease Premises by carefully inspecting the Lease Premises before starting and from time to time thereafter for any and all dangerous conditions or activities in, on or about said Lease Premises and by giving notice of dangerous conditions and activities, by installing and maintaining at all times such safety devices, guards, barricades and danger signs and by adopting such other measures as shall be necessary to safeguard said persons against all such dangerous conditions and activities however arising; to protect any and all other persons lawfully, or unlawfully, in, or about said Lease Premises by similar measures against all dangerous conditions or activities arising out of work performed by Trans-Western such as openings in the

ground or structures, protruding objects, drilling equipment, obstructions and falling materials; to comply with and enforce all applicable Federal, State and Local safety laws, ordinances, rules, regulations and codes; and upon completion of the work, to leave the Lease Premises in a condition conforming to all safety requirements.

11. Indemnity. Trans-Western agrees to release, indemnify, defend, and save harmless USG from and against any and all suits, actions, claims, damages or costs (including attorney's fees) arising out of loss of or damage to the property of any person or persons whomsoever (including, but without limitation, all materials, supplies, equipment or other property of Trans-Western or its contractors) or arising out of injury to or death of any person or persons whomsoever (including, but not limited to, Trans-Western, any contractor, or the employees or agents of any of them), to the extent that any such loss, damage, injury or death shall result directly or indirectly from any act or omission, presence on the Lease Premises or access roads, or any breach of any statutory duty, on the part of Trans-Western or its contractors, either in the performance of this Agreement or outside said performance but in, on or about the Lease Premises.

12. Insurance. Trans-Western and its contractors shall carry the following insurance with minimum limits as specified below with an insurance carrier or carriers to be first approved by USG and covering all employees, operations and activities of Trans-Western in connection with its operations under the Trans-Western Lease and this Agreement. Insurance provided by the Trans-Western or its contractors shall be deemed primary to any other available insurance.

A	Workers' Compensation Insurance, including Occupational Disease and Employer's Liability Insurance	Workers' Compensation STATUTORY
		Employers Liability \$500,000 each occurrence

B	Commercial General Liability Insurance shall be on an "occurrence" basis and shall include Products and Completed Operations, Broad Form Property Damage and Contractual Liability coverage.	Commercial General Liability (bodily injury and property damage) \$1,000,000 each occurrence/aggregate Products/Completed Operations Aggregate Limit \$1,000,000 General Policy Aggregate \$1,000,000
C	Automobile Liability	\$1,000,000 each person/occurrence Bodily Injury \$1,000,000 each occurrence Property Damage Or \$1,000,000 combined single limit
D	Umbrella Liability Coverage	\$10,000,000 each occurrence/aggregate
E	Not applicable.	
F	USG shall be named as an additional insured under all liability coverage listed above.	
G	Such other insurance, or the insurance described above, with such higher limits as may be provided in this Agreement under the description of work.	
H	Trans-Western' insurance shall be endorsed to indicate that it is primary to any insurance maintained by USG.	
I	Before starting work, Trans-Western shall furnish to USG duly executed certificates of insurance, or copies of policies if requested evidencing that the required insurance and endorsements are in force, with a 30 day cancellation or material coverage change notice provision.	

13. Liens and Encumbrances. Trans-Western shall not suffer or permit any claim, lien, attachment or other encumbrance to be put or remain upon the Lease Premises or other property of USG by Trans-Western or any third person whomsoever or any claim of the third person to be made against USG on account of any matter connected with the performance of this Agreement or any other contract between or among the parties, including, without limitation, the furnishing of material, supplies and equipment and the performance of labor or services. Trans-Western shall not use in its

drilling on the Lease Premises any goods or materials to which it does not have absolute title. Any such claim, lien, attachment or other encumbrance or any such claim of a third person shall be by Trans-Western removed, and in the event the same is not removed, USG may remove the same at the expense (including costs and attorney's fees) of Trans-Western.

14. Confidentiality. Each party acknowledges that its respective performance of its obligations hereunder may require that it have access to confidential business and proprietary information of the others. Each party agrees on behalf of itself and its officers, directors, employees, agents, representatives and subcontractors to use its/their best efforts to prevent either duplication or disclosure of data, plans, specifications, formulae, drawings or any other information, whether business or technical, of a confidential nature, which has been furnished directly or indirectly, in writing or otherwise, to the others.

"Confidential Information" shall include such information as would be apparent to a reasonable person, familiar with the disclosing party's business and the industry in which it operates, that such information is of a confidential or proprietary nature and that maintenance of its confidentiality would likely be of commercial value to the disclosing party.

Confidential Information shall not include information that is in the public domain prior to its disclosure, becomes part of the public domain through no wrongful act of the receiving party, or was in the lawful possession of the receiving party prior to its disclosure to the receiving party or was independently developed by the receiving party.

15. Entire Agreement. This Agreement and the Trans-Western Lease described above constitutes the entire agreement between the parties with respect to the subject matter hereof and supersede and replace all prior agreements, understanding and representations, whether written or oral. This agreement cannot be modified or amended except by written agreement signed by duly authorized officers of USG and Trans-Western.

16. Applicable Law. This Agreement shall be construed in accordance with the laws of the State of Utah, without regard to Utah's laws on conflicts of law.

17. Arbitration. If any dispute shall arise between USG and Trans-Western pertaining in any manner to the construction or interpretation of this Agreement, or to the rights or obligations of the parties to this Agreement, or to any alleged breach of this Agreement, which the parties are unable to settle by mutual consent, the parties agree to have the dispute determined by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association then in effect. The parties agree to have the dispute heard before a single arbitrator in Salt Lake City, Utah, unless otherwise agreed by the parties and the parties shall share equally the cost of the arbitrator. The arbitrator shall not be permitted to award punitive damages.

18. Recording. This Agreement may not be recorded without the written consent of USG.

19. Geological Data. Trans-Western's drilling is expected to go through geological formations known to USG to contain gypsum and anhydrite. Trans-Western agrees to provide to USG all drill log information and access to examine and/or sample

drill core of the first Six Hundred (600) feet below surface which Trans-Western obtains in the course of its drilling program.

LESSEE:

LESSOR:

TRANS-WESTERN PETROLEUM. INC.

UNITED STATES GYPSUM COMPANY

By:



By:

 (Bruce H. Acord)

Its:

President

Its:

General Manager - Signatures

CONFIDENTIAL

Exhibits

- Exhibit A Lease

- Exhibit B Map showing northern drill hole sites and access roads

- Exhibit C Additional responsibilities of Trans-Western

CONFIDENTIAL

Exhibit C

ADDITIONAL RESPONSIBILITIES OF TRANS-WESTERN

1. Trans-Western shall submit to USG an Operations Plan showing generally where and when and what type of activity will occur on the Lease Premises and also periodic progress reports showing the progress of Trans-Western's work with comparisons made to the most current Operations Plan. Because USG is operating a quarry on or near the Lease Premises, for safety reasons, USG needs to know exactly where Trans-Western and Contractor personnel will be at all times. Specifically, USG and Trans-Western shall address safety rules applicable during USG quarry blasting operations.
2. Trans-Western understands and agree that USG or other contractors shall be working in and around the Lease Premises. Trans-Western agrees to coordinate its work with the work of others and to afford such other parties reasonable access to the Lease Premises so as to enable such other parties to perform their work.
3. Trans-Western shall appoint a field representative who shall have full direction and charge of its work. Trans-Western shall have its representative on site during all times while their employees or contractors are on site to ensure the work is managed/directed properly. The representative shall be fully authorized to act on behalf of Trans-Western. Any communications to such representative shall be binding upon Trans-Western.
4. USG may require Trans-Western to remove any of its personnel from the Lease Premises whom USG deems to be objectionable in USG's sole judgment. Any such person shall be immediately removed from the Lease Premises and shall not again be reassigned to the Lease Premises without USG's written consent.
5. Trans-Western shall advise USG of any actual or potential labor dispute.
6. **ASSIGNMENT.** Neither Trans-Western nor USG shall make any assignment of its rights and obligations under this Agreement without first obtaining the express written consent of the other Party which shall not be unreasonably withheld.
7. **SUBCONTRACTORS.** Trans-Western shall not contract all or any portion of the work

hereunder to any other party without first binding such Contractors to all of the terms and provisions of this Operating Agreement.

- 8. MEDICAL EXPENSES.** USG may furnish emergency medical treatment or related services to Trans-Western's or Contractor's employees in the event of accident or work-related illness occurring at the Lease Premises. In the event that any such services are available, such treatment shall be furnished on a "good Samaritan" basis and not as a contractual obligation. In consideration for any treatment or services, Trans-Western assumes all liability for and agrees to defend, indemnify and hold USG harmless for any injuries and damages to any of their employees or contractor personnel arising out of or in any way attributable to such emergency services, regardless of legal theory or negligence (including sole negligence) of the parties. Nothing contained in this provision shall impose a duty upon USG to furnish such services to Trans-Western's employees or contractors.
- 9. TRANS-WESTERN SHALL:**
- Provide port-a-johns for its employees.
 - Provide for telephone or cell phone services as needed.
 - Be responsible for providing electric and water connections, if needed.
 - Be responsible for providing drinking water, ice, trash containers and trash disposal (at an offsite location).
 - Be responsible for any office facilities required by Trans-Western.
 - Require their employees to park their vehicles only in the designated lay down areas for each well marked on Exhibit C/Appendix 1 or as otherwise agreed by the parties.
- 10. (a)** Trans-Western shall prepare and implement a Health and Safety Program (the "Safety Program") and also a Spill Prevention Control and Counter-measures Plan. Such plans shall identify how the Trans-Western intends to protect structures, equipment, and personal property on the project site from environmental harm, preserve worker health and safety, and control the risk of environmental liability arising from the presence of Hazardous Substances, for example, drilling fluids, known to Trans-Western to be present or which might reasonably be anticipated by the Contractor to be encountered in the course of Trans-Western's activities.
- (b)** Contractor and Trans-Western will maintain safety training records for each of its

on site employees and will provide those records to USG upon request.

- (c) Material Safety Data Sheets and technical data sheets for drilling fluids and all other chemicals of any kind brought out to the premises must be furnished to USG at least three (3) days before they are brought on the Lease Premises.
- (d) Contractor and Trans-Western must ensure that all job-related injuries and illnesses, no matter how minor, are reported to USG immediately.
- (e) USG supervisors must be notified immediately when any chemical or oil spill occurs, no matter how small. Spill control and clean-up will only be accomplished by trained personnel. Trans-Western shall be responsible for costs involved with clean up and disposal of spills. Such disposal shall include obtaining all necessary federal or state identification numbers, permits, and licenses required for the proper disposal of such hazardous wastes or toxic substances. Any and all costs incurred with respect to environmental consideration shall be the sole responsibility of Trans-Western.
11. No mobile equipment or machinery of any kind shall be serviced on the Lease Premises. Trans-Western shall provide equipment, supplies and training to deal with all spills of fuel, hydraulic oil, brake fluid and any other liquids. All mobile equipment and equipment drivers shall be properly registered, licensed and insured.
12. Trans-Western shall provide shore and bank protection for all streams and ponds on the Lease Premises, permanent or seasonal, as per federal or state laws and regulations.
13. All drill holes shall be closed per Utah regulations.
14. Firearms, Illegal Drugs and Alcohol. None of Trans-Western's employees or authorized agents or any other person under the direction or control of Trans-Western shall be permitted to carry firearms or any weapon while crossing USG's property, and such persons shall not hunt or fish on USG's property and shall not trespass on USG's property for the purposes of hunting or fishing or recreational uses. Trans-Western will notify all of its contractors, agents and employees that no firearms, weapons, hunting, fishing or recreational activities will be allowed on USG's property. None of Trans-Western's

employees or authorized agents or any other person under the direction or control of Trans-Western shall possess or be under the influence of alcohol or illegal drugs while on USG's land.

15. In no event shall USG be liable for any loss of or damage to tools and equipment belonging to Trans-Western, or any Contractor. Trans-Western agrees to insure or self-insure such property and waive all recovery and subrogation rights against USG for any such loss or damage, regardless of the negligence of USG.
16. This agreement shall extend and apply to future acquisition by TWP of leases or mineral interests in which USG has the Surface Rights or mining operations that are located within the Township containing The Lease Premises or to the contiguous Townships of The Lease Premises.

CONFIDENTIAL

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EXHIBIT A

PRODUCERS 88-PAID UP
Rev. 5-60, No. 2-8pt.

OIL AND GAS LEASE

AGREEMENT, Made and entered into the 17th day of August, 2004, by and between

United States Gypsum Company

Whose post office address is 125 Franklin Street, Chicago, Illinois 60606-4678 hereinafter called Lessor (whether one or more) and

Trans-Western Petroleum, Inc.

Whose post office address is PO Box 276, Golden, CO 80402 hereinafter called Lessee

WITNESSETH, That the Lessor, for and in consideration of Ten and More DOLLARS cash in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements hereinafter contained, has granted, demised, leased and let, and by these presents does grant, demise, lease and let exclusively unto the said Lessee, the land hereinafter described, with the exclusive right for the purpose of mining, exploring by geophysical and other methods, and operating for and producing therefrom oil and gas of whatsoever nature, or kind, with rights of way and easements for laying pipe lines, and erection of structures thereon to produce, save and take care of said products, all that certain tract of land situated in the County of

Sevier State of Utah

described as follows, to-wit:

See Exhibit "A" attached hereto

00327952 6800502 P:00015-00017
JAYRENE B NIELSEN RECORDER SEVIER COUNTY
2004 SEP 23 12:55 PM FEE \$43.00 BY PSP
REQUEST: TRANS-WESTERN PETROLEUM INC

and containing 1.720 acres, more or less.

1. It is agreed that this lease shall remain in force for a term of ten years from this date and as long thereafter as oil or gas of whatsoever nature or kind is produced from said leased premises or on acreage pooled therewith, or drilling operations are continued as hereinafter provided. If, at the expiration of the primary term of this lease, oil or gas is not being produced on the leased premises or on acreage pooled therewith but Lessee is then engaged in drilling or re-working operations thereon, then this lease shall continue in force so long as operations are being continuously prosecuted on the leased premises or on acreage pooled therewith; and operations shall be considered to be continuously prosecuted if not more than ninety (90) days shall elapse between the completion or abandonment of the well and the beginning of operations for the drilling of a subsequent well. If after discovery of oil or gas on said land or on acreage pooled therewith, the production thereof should cease from any cause after the primary term, this lease shall not terminate if Lessee commences additional drilling or re-working operations within ninety (90) days from date of cessation of production or from date of completion of dry hole. If oil or gas shall be discovered and produced as a result of such operations at or after the expiration of the primary term of this lease, this lease shall continue in force so long as oil or gas is produced from the leased premises or on acreage pooled therewith.

2. This is a PAID-UP LEASE. In consideration of the down cash payment, Lessor agrees that Lessee shall not be obligated, except as otherwise provided herein, to commence or continue any operations during the primary term. Lessee may at any time or times during or after the primary term surrender this lease as to all or any portion of said land and as to any strata or stratum by delivering to Lessor or by filing for record a release or releases, and be relieved of all obligation thereafter accruing to the acreage surrendered.

3. In consideration of the premises the said Lessee covenants and agrees:

- 1st. To deliver to the credit of Lessor, free of cost, in the pipe line to which Lessee may connect wells on said land, the equal one-eighth (1/8) part of all oil produced and saved from the leased premises.
- 2nd. To pay Lessor one-eighth (1/8) of the gross proceeds each year, payable quarterly, for the gas from each well where gas only is found, while the same is being used off the premises, and if used in the manufacture of gasoline a royalty of one-eighth (1/8), payable monthly at the prevailing market rate for gas.
- 3rd. To pay Lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of one-eighth (1/8) of the proceeds, at the month of the well, payable monthly at the prevailing market rate.

4. Where gas from a well capable of producing gas is not sold or used, Lessee may pay or tender as royalty to the royalty owners One Dollar per year per net royalty acre retained hereunder, such payment or tender to be made on or before the anniversary date of this lease next ensuing after the expiration of 90 days from the date such well is shut in and thereafter on or before the anniversary date of this lease during the period such well is shut in. If such payment or tender is made, it will be considered that gas is being produced within the meaning of this lease.

5. If said Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties (including any shut-in gas royalty) herein provided for shall be paid to the Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

6. Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for Lessee's operation thereon, except water from the wells of Lessor.

7. When requested by Lessor, Lessee shall bury Lessee's pipe line below plow depth.

8. No well shall be drilled nearer than 200 feet to the house or barn now on said premises without written consent of Lessor.

9. Lessee shall pay for damages caused by Lessee's operations to growing crops on said land.

10. Lessee shall have the right at any time to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

11. The rights of Lessor and Lessee hereunder may be assigned in whole or part. No change in ownership of Lessor's interest (by assignment or otherwise) shall be binding on Lessee until Lessee has been furnished with notice, consisting of certified copies of all recorded instruments or documents and other information necessary to establish a complete chain of record title from Lessor, and then only with respect to payments thereafter made. No other kind of notice, whether actual or constructive, shall be binding on Lessee. No present or future division of Lessor's ownership as to different portions or parcels of said land shall operate to enlarge the obligations or diminish the rights of Lessee, and all Lessee's operations may be conducted without regard to any such division. If all or any part of this lease is assigned, no leasehold owner shall be liable for any act or omission of any other leasehold owner.

12. Lessee, at its option, is hereby given the right and power at any time and from time to time as a recurring right, either before or after production, as to all or any part of the land described herein and as to anyone or more of the formations hereunder, to pool or utilize the leasehold estate and the mineral estate covered by this lease with other land, lease or leases in the immediate vicinity for the production of oil and gas, or separately for the production of either, when in Lessee's judgment it is necessary or advisable to do so, and irrespective of whether authority similar to this exists with respect to such other land, lease or leases. Likewise, units previously formed to include formations not producing oil or gas, may be reformed to exclude such non-producing formations. The forming or reforming of any unit shall be accomplished by Lessee executing and filing of record a declaration of such unitization or reformation, which declaration shall describe the unit. Any unit may include land upon which a well has theretofore been completed or upon which operations for drilling have theretofore been commenced. Production, drilling or reworking operations or a well shut in for want of a market anywhere on a unit which includes all or a part of this lease shall be treated as if it were production, drilling or reworking operations or a well shut in for want of a market under this lease. In lieu of the royalties elsewhere herein specified, including shut-in gas royalties, Lessor shall receive on production from the unit so pooled royalties only on the portion of such production allocated, to this lease; such allocation shall be that proportion of the unit production that the total number of surface acres covered by this lease and included in the unit bears to the total number of surface acres in such unit. In addition to the foregoing, Lessee shall have the right to unitize, pool, or combine all or any part of the above described lands as to one or more of the formations thereunder with other lands in the same general area by entering into a cooperative or unit plan of development or operation approved by any governmental authority and, from time to time, with like approval, to modify, change or terminate any such plan or agreement and, in such event, the terms, conditions and provisions of this lease shall be deemed modified to conform to the terms, conditions, and provisions of such approved cooperative or unit plan of development or operation and, particularly, all drilling and development requirements of this lease, express or implied, shall be satisfied by compliance with the drilling and development requirements of such plan or agreement, and this lease shall not terminate or expire during the life of such plan or agreement. In the event that said above described lands or any part thereof, shall hereafter be operated under any such cooperative or unit plan of development or operation whereby the production therefrom is allocated to different portions of the land covered by said plan, then the production allocated to any particular tract of land shall, for the purpose of computing the royalties to be paid hereunder to Lessor, be regarded as having been produced from the particular tract of land to which it is allocated and not to any other tract of land; and the royalty payments to be made hereunder to Lessor shall be based upon production only as so allocated, Lessor shall formally express Lessor's consent to any cooperative or unit plan of development or operation adopted by Lessee and approved by any governmental agency by executing the same upon request of Lessee.

13. All express or implied covenants of this lease shall be subject to all Federal and State Laws, Executive Orders, Rules or Regulations, and this lease shall not be terminated, in whole or in part, nor Lessee held liable in damages, for failure to comply therewith, if compliance is prevented by, or if such failure is the result of, any such Law, Order, Rule or Regulation.

14. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee shall have the right at any time to redeem for Lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by Lessor and be subrogated to the rights of the holder thereof and the undersigned Lessors, for themselves and their heirs, successors and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made, as recited herein.

15. Should anyone or more of the parties hereinabove named as Lessor fail to execute this lease, it shall nevertheless be binding upon all such parties who do execute it as Lessor. The word "Lessor," as used in this lease, shall mean anyone or more or all of the parties who execute this lease as Lessor. All the provisions of this lease shall be binding on the heirs, successors and assigns of Lessor and Lessee.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written.

UNITED STATES GYPSUM COMPANY

By: [Signature]

EXHIBIT "A"

Attached hereto and made a part of Oil and Gas Lease by and between United States Gypsum Company, LESSOR, and Trans-Western Petroleum, Inc., LESSEE, dated August 17th, 2004.

- PARCEL 1:** Jumbo Gypsum Nos. 22 and 23 Placer Mining Claims, comprising the Southwest Quarter (SW1/4) of Section 28, the West Half of the Northwest Quarter (W/2NW/4) Of Section 33, Township 22 South, Range 1 West, Salt Lake Meridian, as described in United States Patent #1102914 issued on May 26, 1939, and containing 240 acre. of land, more or less.
- PARCEL 2:** Jumbo Gypsum Nos. 24, 25, 26 and 27 Placer Mining Claims, comprising the Northeast Quarter (NE/4) and the Southeast Quarter (SE/4) of section 32; the Southwest Quarter (SW/4) of Section 33, and the Southeast Quarter (SE/4) of Section 29, All in Township 22 South, Range 1 West, Salt Lake Meridian, as described in United States Patent #1120497 issued on January 18, 1946, and containing 640 acres of land, more or less.
- PARCEL 3:** Jumbo Gypsum Nos. 33 and 34 Placer Mining Claims, comprising the East Half of the Northeast Quarter of the Northwest Quarter (E/2NE/2NW/4), and the East Half of the Southeast Quarter of the Northwest Quarter (E/2SE/4NW/4) of Section 32, Township 22 South, Range 1 West, Salt Lake Meridian, as described in United States Patent #1120498 issued on January 19, 1946, and containing 40 acres of land, more or less.
- PARCEL 4:** United Nos. 2, 3, and 4 Placer Mining Claims, comprising the West Half (W/2) of Section 15, and the Northwest Quarter (NW/4) of Section 22, Township 22 South, Range 1 West, Salt Lake Meridian, as described in United States Patent #1158715 issued on April 6, 1956, and containing 480 acres of land, more or less.
- PARCEL 5:** Family No. 1 and Nos. 6 Placer Mining Claims, comprising Lots 5, 6, 7, 8, 9, 10, 11, and 12 of Section 23, Township 22 South, Range 1 West, Salt Lake Meridian, as described in United States Patent #1153012 issued on July 18, 1955, and containing 320 acres of land, more or less.

Containing a total of 1,720 acres, more or less

Signed For Identification

United States Gypsum Company

By: 

Additional Provisions:

16. Lessee shall conduct surface operations so that they do not interfere with existing mining operations of Lessor.
17. All references to a 1/8th Royalty shall be replaced to read 1/6th Royalty.
18. This lease shall have a primary term of five (5) years.

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Exhibit B



H₂S Drilling Operations Plan

Operator:

Trans-Western Petroleum, LTD

Well Name:

Trans-Western Petroleum USG #1

**Lot 6, NW ¼ - Section 23
Township 22 South - Range 01 West - SLB&M
Sevier County, Utah**

GL Elevation: 5865 feet

**P. O. Box 276
Golden, Colorado 80402**

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Introduction

This H₂S contingency plan (R649-3-12-2) has been prepared for the Trans-Western Petroleum USG #1 well, which will be located on a fee lease in Section 23, T22S-R01W-SLB&M, Sevier County, Utah. This Plan is intended as a guide for personnel working at the well site should an accidental release of natural gas containing hydrogen sulfide occur during drilling or completion operations and is consistent with Utah regulations R649-3-12. Operational requirements include installation of gas monitors and safety equipment on the drill site, personnel training, and response procedures. Beginning at a drill depth of 5500 ft MD all personnel, including anyone who may travel to location on an unscheduled basis, must review and be familiar with onsite duties as well as the safety equipment involved. For the plan to be effective, the cooperation and participation of all personnel working at the well site is required.

Hydrocarbon gas with low concentrations of H₂S has been detected in the some wells drilled in the area.

1. At the Wolverine Covenant Field, a producing field located ~6 miles to the west by southwest of the proposed well, no indications of H₂S were encountered during the drilling of the field. Small concentrations of H₂S have been sampled while producing from the field.
2. At the Wolverine Carter Peak Federal 13-1 (Sec. 13-T22S-R1W), located ~1 mile to the west by northwest of the proposed well, no indications of H₂S were encountered during the drilling of the well. The well was plugged and abandoned as a dry hole so no production information exists.
3. At the Wolverine Arapien Valley 24-1, located ~13 miles to the north of the proposed well, H₂S was detected in gas samples from the upper Navajo at concentrations less than approximately 35 ppm (0.000035 mole volume) and in the lower Navajo at approximately 900 ppm (0.0009 mole volume).

Exposure to H₂S by the general public is very unlikely during drilling or completion operations. The prevailing wind direction is expected to be from the west when this well is drilled. The lands adjacent to the well site are owned by USG Corporation and are currently being used as a mining site. Lands to the north (Lots 1 - 4, Sec. 23-T22S-R1W) of the drill site are Federal owned. All these lands are unoccupied mining property and Federal land. Sage Flat Road (labeled Sage Flat Road on Google maps), a generally north/south trending county road in this area, cuts through Sections 13 and 24 about a mile east of the well site. Interstate 70 is north of the drill site and at its closest it is about 1.5 miles to the northwest. The center of Salina City is approximately 5.3 miles to the northeast of the drill site.

Even assuming a release of 2,000,000 cubic feet/day with a concentration of 0.0009 mole volume, the 100 ppm radius of exposure (as calculated in accordance with BLM Onshore Order No. 6) is 146' and the 500 ppm radius of exposure is 67', both of which would fall within or slightly off the edge of this irregular shaped well pad site. Access to the well pad will be restricted to essential personnel during drilling beneath 5500 feet

MD (roughly 500 feet above the first potential sour gas producing zone, the Twin Creek formation).

Directions

Driving directions to location:

From 4 Way Stoplight At the Intersection of State & Main Streets in Salina turn West. From the town center of Salina City, head west on Main Street. Main Street turns southwest into Utah highway 24. Follow highway 24 for a few miles (2.1 miles from the stoplight) to the Sage Flat Road (some maps label the turn-off Lost Creek Road) turnoff on the left. Follow Sage Flat Road generally south, under Interstate 70 and 1.1 miles beyond the Interstate 70 overpass. Turn right onto a mine road. Follow the mine road roughly 3 miles west to a T intersection with another mine road. Turn left onto this 2nd mine road. Follow this 2nd mine road roughly 3-1/2 miles up the side of the mountain. The road dead-ends onto the well site (see the attached maps starting on page 23 – Attachments–Maps, diagrams). The top of Carter Peak is located roughly 1/2 mile south of the drill site.

I. Duties & Responsibilities

In order to assure proper execution of the contingency plan, it is essential that one person be responsible for and is vested with the requisite authority for implementing the procedures outlined in this plan. The order of responsibility will be as follows:

1. Trans-Western Wellsite Supervisor on location - if unable to perform his/her duties;
2. 1st alternate: Trans-Western representative - if unable to perform his/her duties;
3. 2nd alternate: Rig Supervisor/Toolpusher - if unable to perform his/her duties;
4. 3rd alternate: Safety consultant representative.

A. All Personnel

1. Always be alert for possible H₂S alarms - both audible and visual.
2. Be familiar with location of Safe Briefing Areas (SBA) and protective breathing equipment.
3. Develop “wind awareness”. Be aware of prevailing wind direction as well as nearby uphill areas should there be no wind.
4. Familiarize yourself with nearest escape routes for safe evacuation.

5. Should H₂S alarm sound, DON'T PANIC - remain calm and follow instructions of person in charge. Generally speaking, all personnel are to go to the upwind SBA for further instructions. Watch the wind sock to determine the upwind direction.
6. If the H₂S alarms sound:
 - a. Rig crew is to don masks, shut in the well and evacuate to the appropriate SBA for further instructions. Essential personnel shall evacuate to the appropriate SBA and be prepared to don the appropriate respiratory protective equipment and follow safety procedures. They will continue to wear respiratory protective equipment until the area is deemed safe (H₂S concentration less than 10 PPM).
 - b. Non-essential personnel shall remain at the appropriate SBA using escape-breathing systems. They are to wait there for further instructions from the Trans-Western Wellsite Supervisor or the designated person in charge.
 - c. Initiate rescue protocol if necessary and following training procedures.

B. Wellsite Supervisor

1. The Wellsite Supervisor will confirm that all personnel on location at any time are trained in H₂S safety and aware of above list of duties.
2. The Wellsite Supervisor will ensure that all personnel observe all safety and emergency procedures.
3. The Wellsite Supervisor will make an effort to keep the number of personnel on location to a minimum and to ensure that only essential personnel are on location during critical operations.
4. Should an extreme danger condition exist, the Wellsite Supervisor will:
 - a. Assess the situation and advise all personnel by appropriate means of communication.
 - b. Be responsible for determining that the extreme danger condition is warranted and have the red flag posted at location entrance.
 - c. Go to safe briefing area. Give clear instructions relative to hazard on location and actions for personnel to follow.
 - d. Notify company, USG and regulatory groups of current situation as required per company policy and regulatory protocol. Follow appropriate procedures for emergency services notification.
 - e. Proceed to well and supervise operations with rig supervisor. Take action to control and reduce the H₂S hazard.

- f. Ensure that essential personnel are properly protected with supplied air breathing equipment and that non-essential personnel are in a "poison gas free" area.
- g. Authorize evacuation of any persons/residents in area surrounding the well location.
- h. Commence any ignition procedures if ignition criteria are met.

C. Rig Supervisor/Toolpusher

1. If the Wellsite Supervisor is unable to perform his/her duties and an alternate Trans-Western representative is also unable or unavailable to perform his/her duties, the rig supervisor will assume command of wellsite operations and all responsibilities listed above for Wellsite Supervisor.
2. The Rig Supervisor will ensure that all rig personnel are properly trained to work in H₂S environment, fully understand the purpose of H₂S alarms, and know actions to take when alarms activate. He/She will ensure that all crew personnel understand the buddy system, safe briefing areas, and individual duties as well as emergency evacuation procedures.
3. Should any extreme danger operational condition arise, the Rig Supervisor shall assist the Wellsite Supervisor by:
 - a. Proceeding to the rig floor and assist in supervising rig operations.
 - b. Ensuring that only essential working personnel remain in hazardous areas.
 - c. Ensuring that all crewmembers that remain in hazardous area, wear respiratory protective equipment until notified that area is "clear" of any toxic gases.
 - d. Assigning rig crewmember or other service representative to block entrance to location. No unauthorized personnel are to be allowed entry to location.
 - e. Helping to determine hazardous "danger zones" on location using portable detection equipment, and positioning electric fans to move gas in any high concentration areas.

D. Safety Consultant

1. During normal operations (no H₂S present), the safety consultant will be responsible for the following:
 - a. Ensuring that all wellsite safety equipment is in place and operational.
 - b. Ensuring that all wellsite personnel are familiar with location safety layout and operation of all safety equipment.
 - c. Assisting the Wellsite Supervisor in performing weekly H₂S drills for location personnel.

2. When an operational condition is classified as extreme danger, the safety consultant will be responsible for the following:
 - a. Accounting for all wellsite personnel.
 - b. Assessing any injuries and directing first aid measures.
 - c. Ensuring that all safety and monitoring equipment are functioning properly and available.
 - d. Monitoring the safety of wellsite personnel.
 - e. Maintaining close communication with the Wellsite Supervisor.
 - f. Being prepared to assist Wellsite Supervisor with support for rig crew or other personnel using breathing equipment.
 - g. Being prepared to assist the Wellsite Supervisor with emergency procedures including possible well ignition.
 - h. Being prepared to assist with evacuation of any area residents or other personnel in the immediate area.

E. Drilling Manager

1. The Trans-Western Drilling Manager will be responsible for notifying and maintaining contact with the company Production Manager and/or other company supervisory personnel as required.
2. Maintaining communication with the Wellsite Supervisor and providing any other assistance that might be required.
3. Travelling to wellsite if appropriate
4. Assisting Wellsite Supervisor with all other notifications – including both company and regulatory.

II. Well Location Layout

A. Location

1. An attached well site diagram depicts location and rig orientation, prevailing wind direction, terrain of surrounding area, location of briefing areas, access roads, location of flare lines and pits, location of caution/danger signs, and location of wind indicators.
2. If practical, the drilling rig will be situated to allow for the prevailing winds to blow across the rig toward the circulation tanks or at right angles to the lines from the BOP stack to the circulation tanks or as near this configuration as possible.

3. There is no practical way to build a 2nd road off this location. Since an alternate road is not practical, a clearly marked footpath to a safe area will be provided. The auxiliary escape route will be kept available and passable at all times when drilling below 5500' MD so that a shift in wind direction will not prevent escape from the location if an emergency should occur.
4. The entrance(s) to the location will be designed to be barricaded if necessary because of a hydrogen sulfide emergency condition.
5. A minimum of 2 safe briefing areas (SBA) will be designated for assembly of personnel during emergency conditions (R649-3-12-4). These will be located at least 200 feet from the wellbore and in such a location that at least one area will be upwind of the well at all times (R649-3-12-4.1). Upon recognition of an emergency situation, all personnel will be trained to assemble at the designated briefing area for instructions.
6. Smoking areas will be established and smoking will be allowed only at those established smoking areas.
7. Reliable 24-hour telephone communications will be available at the wellsite supervisor's office.
8. The drilling rig will have when drilling below 5500' MD a continuous electronic H₂S detection system that will be located to detect the presence of hydrogen sulfide in areas where it is most likely to appear on site. The sensor head locations will be: 1) rig floor by driller's console, 2) substructure area near the bell nipple, 3) the shale shaker, 4) the mud mixing area (R649-3-12-6). Additional sensors will be positioned at the discretion of the drilling foreman. At least 1 light and 1 siren will be placed on the rig to indicate the presence of hydrogen sulfide. The light and siren will be strategically placed to be visible to all personnel on the drill site.
9. Equipment to indicate wind direction will be installed at prominent locations and will be visible at all times during drilling operations (R649-3-12-7). At least 2 wind direction indicators (i.e. windsocks) will be placed at separate elevations (i.e. near ground level and rig floor height). At least 1 wind direction indicator will be clearly visible from all principal working areas at all times so that wind direction can be easily determined. In addition, a wind direction indicator will be provided at each of the two briefing areas if the other wind direction indicators on location are not visible from the briefing areas.
10. Operational danger or caution sign(s) will be displayed along all controlled accesses to the site (R649-3-12-8). The sign(s) will legible and large enough to be read by all persons entering the wellsite and be placed a minimum of 200 feet but not more than 500 feet from the wellsite and at a location which allows vehicles to turn around at a safe distance prior to reaching the site.
11. Protective safety equipment will be available for all essential personnel (R649-3-12-5 & 5.1). There will be five 30-minute SCBA and five air line breathing units with emergency escape cylinders located at the drilling floor or dog house, one SCBA and air line unit will be located in the derrick (for derrick man), one 30-minute SCBA per person will be located by the quarters of all personnel on location, and 30-minute

SCBA and escape units will be distributed as needed near the shaker, mud tanks, and any other area where escape from an H₂S contaminated area could be difficult. A safety trailer containing the compressed breathing air will be located near the well site and air lines will be run from the safety trailer to where the air line breathing units are located.

III. Safety Procedures

A. Training

When this plan is in effect, all personnel who come onto the location must be properly trained in hydrogen sulfide, nitrogen and oxygen deficient atmospheres safety. The personnel shall carry documentation with them indicating that the training has occurred within the previous 12 months. All training will comply with federal and state regulatory guidelines. Training will include proper fit tests for respirators for all personnel in each work crew on location. There will be a training session that reviews this site specific H₂S plan and the H₂S PPE (if applicable) for all personnel in each work crew on location. While this plan is in effect, all personnel in each work crew must be clean shaven to achieve an air tight seal about the face and respirator. Training will also include weekly H₂S and well control drills. All training sessions and drills are to be recorded in the driller's log, as well as in the safety supervisor's logbook.

Training topics shall include at a minimum:

1. Hazards and characteristics of hydrogen sulfide, nitrogen, and oxygen deficient atmospheres and symptoms of exposure to these gases.
2. Proper use, care and limitations of respiratory protective equipment with hands-on practice.
3. Use of both fixed and portable toxic gas detection equipment.
4. Work practices to reduce chances for toxic gas exposure and procedures for confined space.
5. First aid for toxic gas exposure and resuscitation equipment.
6. The buddy system.
7. Emergency evacuation procedures.
8. A review of the contingency plan for the well.
9. Clean shaven policy

B. Operating Conditions

A three color- flag warning system will be used to notify personnel approaching the drill site as to operating conditions on the wellsite. This system is in compliance with BLM Onshore Order 6, complies with Utah regulation R649-3-12-8.1 & 8.2, and follows industry standards.

Green Flag - Potential Danger

Yellow Flag - Moderate Danger

Red Flag- Extreme Danger - Do not approach if red flag is flying.

A red warning flag will be displayed when H₂S is detected in excess of 10 ppm at any detection point.

The operational danger or caution signs located near the entrance to the location will be painted a high visibility red, black and white, or yellow with black lettering. They will be legible and large enough to be read by all persons entering the wellsite and will read "DANGER – POISON GAS – HYDROGEN SULFIDE" and in small lettering "Do not approach if Red Flag is Flying".

All sign(s) and, when appropriate, flag(s) will be visible to all personnel approaching the location under normal lighting and weather conditions.

Location access will be monitored and controlled during "non-routine" operations such as perforating, pressurized pumping, and well testing of potential H₂S bearing formations. The number of personnel on location will be restricted to "essential" personnel only

C. Warning System Response and Evacuation Plan

When H₂S is detected in excess of 10 ppm at any detection point indicating that an extreme danger condition exists, all non-essential personnel will be moved to a safe area and essential personnel (i.e., those necessary to maintain control of the well) shall don a pressure-demand type protective breathing apparatus. Once accomplished, operations may proceed.

The prevailing wind is expected to be from the west when this well is drilled. The lands adjacent to the well site are owned by USG Corporation (leased by Trans-Western Petroleum, LTD) and are currently being used as a mining site. Lands to the north (Lots 1 - 4, Sec. 23-T22S-R1W) of the drill site are Federal owned. All these lands are unoccupied mining property and Federal land. Sage Flat Road (labeled Sage Flat Road on Google Maps), a generally north/south trending county road in this area, cuts through Sections 13 and 24 about a mile east of the well site. Interstate 70 is north of the drill site and at its closest it is about 1.5 miles to the northwest. The center of Salina City is approximately 5.3 miles to the northeast of the drill site.

If an H₂S emergency situation arises, the Wellsite Supervisor will contact local authorities and USG mine management to authorize and work in coordination with them to evacuate and restrict non-essential personnel from areas near the wellsite where H₂S concentration levels could potentially exceed 10 ppm. All associated regulatory agencies will then be notified as soon as possible.

D. Emergency Rescue Procedures

Well site personnel should not attempt emergency rescues unless they have been properly trained. A trained person who discovers another person overcome by hydrogen sulfide **should not attempt to rescue without donning the proper breathing equipment.** When making an emergency rescue always use the following procedures:

1. Don rescue breathing equipment before attempting to rescue someone.
2. Remove the victim from the contaminated area to an area free of gas by traveling upwind or cross wind. Be certain that you are in a safe area before removing your breathing equipment.
3. If the victim is not breathing, initiate mouth-to-mouth resuscitation immediately. Follow CPR guidelines and replace mouth-to-mouth with a bag mask resuscitator if available.
4. Treat the victim for shock, keeping the victim warm and calm. Never leave the victim alone.
5. Any personnel who experience hydrogen sulfide exposure must be taken to a hospital for examination and their supervisor notified of the incident.

IV. H₂S Safety Equipment on Well Location

<u>Item</u>	<u>Amount</u>	<u>Description</u>
1.	One (1)	Safety trailer with a cascade system of 10-300 cu. ft bottles of compressed breathing air complete with high-pressure regulators w/
2.	Sufficient to service the drilling rig	Low-pressure airline equipped with Hanson locking fittings. This airline will be rigged up with manifolds to supply breathing air to the rig floor, substructure, derrick, shale shaker area, and mud mixing areas.
3.	Twelve (12)	Scott 30-minute self-contained breathing apparatuses (SCBA).
4.	Twelve (12)	12 Scott air line work units with escape cylinder (Ska-Paks).
5.	One (1)	4-channel continuous electronic H ₂ S monitors with audible and visual alarms. The set points for these alarms are 10 ppm for the low alarm and 15 ppm for the high alarm.

- | | | |
|-----|------------------|--|
| 6. | One (1) | Portable hand operated pump type detection units with tubes for hydrogen sulfide and sulfur dioxide. |
| 7. | One (1) | Oxygen resuscitator with spare oxygen cylinder (649-3-12-5.4). |
| 8. | One (1) | Trauma first aid kit (649-3-12-5.3). |
| 9. | One (1) | Stretcher (649-3-12-5.5). |
| 10. | Three (3) | Windssocks. |
| 11. | One (1) | Well condition sign with 3 flag system. |
| 12. | Two (2) | Safe Briefing Area (SBA) signs. |
| 13. | One (1) | Fire blanket. |
| 14. | One (1) | Set air splint. |
| 15. | One (1) | Electric explosion proof fan. |
| 16. | One (1) | Chalk board. |
| 17. | Two (2) | 300 cu. ft. air bottles for the safe briefing area. |
| 18. | Two (2) | 30# fire extinguishers. |
| 19. | Each crew member | Cell phone to communicate from a safe area. |

V. Operating Procedures and Equipment

1. If zones containing in excess of 100 ppm of H₂S gas are encountered while drilling with air, gas, mist, other non-mud circulating mediums for aerated mud, the well will be killed with a water-based mud and mud will be used thereafter as the circulating medium for continued drilling.
2. A flare system will be designed and installed to safely gather and burn H₂S-bearing gas and it will be equipped with a suitable and safe means of ignition (R649-3-12-10). If noncombustible gas is to be flared, the system will have a supplemental fuel to maintain ignition.
3. Flare lines will be located as far from the operating site as feasible and in a manner to compensate for wind changes. The flare line(s) mouth(s) will be located not less than 150 feet from the wellbore (R649-3-12-10.1 & 10.2). Flare lines will be straight unless targeted with running tees.
4. If SO₂ is to be released as a result of flaring of H₂S, portable SO₂ detection equipment will be available for checking the SO₂ level in the flare impact area. There are no occupied or unoccupied buildings or gathering places anywhere near the well site.
5. The choke manifold included as a component of the well control system will have at least one remote controlled choke with controls readily accessible to the drilling or other authorized personnel.
6. A mud-gas separator will be rigged up and manifolded to the choke and flare system (R649-3-12-10).

7. The drilling mud will be a water-based system maintained with a pH of 10 or greater. Corrosion inhibitor additives will be in the mud. Sufficient scavenger chemicals will be available on location and will be used to scavenge or neutralize any H₂S in the drilling fluid (R649-3-12-11). Mud weight will be maintained as needed to control pressure in any formations encountered.
8. All equipment that has potential for exposure to H₂S will be suitable for H₂S service. The casing head and spools, blowout preventer assembly, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separator and other related equipment will have metallurgical standards conforming to NACE MR0175/ISO 15156. Elastomers, packing, and similar inner parts exposed to H₂S will be resistant at the maximum anticipated temperature of exposure. Drill strings, surface casing, intermediate casing, and BOP shear rams are exempt from these requirements.
9. All respiratory protective, H₂S detection, and other needed safety equipment will be in place and ready for use, and all rig crews and other service personnel will be trained in its use when this plan is effective.
10. There will be a continuous electronic H₂S detection system that will automatically activate visible and audible alarms if hydrogen sulfide is detected. The visible light will activate if 10 ppm H₂S is present. The audible siren will activate if 15 ppm H₂S or higher concentration is present. There will be at least four H₂S sensors in place on the drilling rig. Additional alarm lights & sirens may be added to ensure that all personnel on the drill site are able to notice the alarms at any time. All H₂S detection equipment will be calibrated as recommended by the manufacturer and calibration records will be maintained on location.
11. Both 30-minute self-contained breathing apparatuses (SCBA) and workline units with escape cylinders will be available on location. There will be sufficient numbers of this supplied air breathing equipment on location to ensure that all personnel on location have equipment available to them. All respiratory protective equipment will use nose cups to prevent fogging in temperatures below 32°F. Spectacle kits will be available for personnel that require corrective lenses when working under mask.
12. Chalk boards or note pads will be provided to be used for communication when wearing protective breathing apparatus (R649-3-12-5.2) or electronic voice-microphones will be available for essential personnel to use when working under mask to facilitate communication.
13. Additional breathing equipment will be provided for non routine operations that require additional service personnel on the well location to ensure that all personnel on the well location have a dedicated supplied air respirator.
14. If natural ventilation is not adequate electric explosion-proof ventilating fans (bug blowers) will be available to provide air movement in enclosed areas where gas might accumulate (R649-3-12-9).
15. Any drill stem test performed on any formation potentially containing H₂S will be done with a minimal number of personnel at the drilling site as necessary to safely operate the test equipment. Any such drill-stem test will be conducted only during

daylight hours and will be a closed chamber test with no fluids allowed to flow from surface.

16. Any production testing of an H₂S bearing formation will be done with proper wellhead and other equipment in place to allow a controlled test through separation equipment and flare as needed. Any such test would be conducted with monitoring and warning devices in place and proper safety equipment available.

VI. Well Ignition Procedures

If it should become apparent that an uncontrolled release of hydrogen sulfide to the atmosphere might endanger the health and safety of the public or well site personnel, the Wellsite Supervisor will make a decision to ignite the well. The following procedure should be followed before attempting to ignite the well.

A. Ignition equipment - The following equipment will be available for on-site for use by the ignition team.

1. Flare gun with flare shells
2. Two 250 ft. life lines with harnesses for emergency response procedures (R649-3-12-5.6).
3. One portable combustible gas meter
4. Self contained breathing apparatus (SCBA) for each member of the ignition team.

B. Ignition Procedures

1. The Wellsite Supervisor will ensure that well site personnel are evacuated to a safe area upwind of the well bore prior to any ignition action.
2. The Wellsite Supervisor and a designated partner "buddy" backed up by well site safety personnel will comprise the ignition team. All team members will be wearing 30 minute SCBAs.
3. The partner of the ignition team will carry a combustible gas/ hydrogen sulfide meter to continuously monitor the area in which they are working and define the perimeter of the gas cloud.
4. The Wellsite Supervisor will carry the flare gun and shells.
5. The ignition team will determine the hazardous area and establish safe working perimeters. Once this is identified the team will proceed upwind of the leak and fire into the area with flare gun. If trouble is encountered in trying to light the leak, retry to ignite by firing the flare shells at 45 and 90 angles to the gas source, but DO NOT approach closer to the leak.
6. After ignition, monitor for sulfur dioxide and work with the support group to restrict access to the contaminated area.

VII. Residents – Public in Radius of Exposure

Exposure to H₂S by the general public is very unlikely during drilling or completion operations. The prevailing wind is expected to be from the west when this well is drilled. This is unoccupied, mountain terrain, an industrial mining site.

Even assuming a release of 2,000,000 cubic feet/day with a concentration of 0.009 mole volume, the 100 ppm radius of exposure (as calculated in accordance with BLM Onshore Order No. 6) is 146' and the 500 ppm radius of exposure is 67', both of which would fall within the actual well pad site or just off the edge of this irregular shaped pad; the well pad will have controlled access during drilling below 5500 feet MD.

VIII. Emergency Phone Directory**A. Trans-Western Petroleum, LTD**

Bill Donovan (Drilling Engineer/Wellsite supervisor consultant)	Office 303-794-4838 Cell 720-351-7470
Jack Magill (Drilling Engineer/Wellsite supervisor Consultant)	Office 308-848-3279 Cell 303-868-6408
Doug Isern (Operations Manager – Trans-Western Petroleum)	Office 303-279-4567 Cell 303-921-5532

B. Emergency Services Phone List

1. Sevier Valley Medical Center - Richfield, UT435-893-4100
2. Gunnison Valley Hospital, Sanpete County435-528-7246
3. Ambulance Services – Sevier County, UT911 or 435-896-6471
4. Ambulance Services – Sanpete County, UT911 or 435-835-2191
5. Sheriff Department - Sevier County, UT911 or 435-896-6471
6. Sheriff Department – Sanpete County, UT911 or 435-835-2191
7. Highway Patrol - Utah.....800-222-0038
8. Fire Department - Sevier County911 or 435-896-6471
9. Leslie Peterson, BLM – Price, UT (cell phone)435- 650-9136
10. Utah Division Oil, Gas & Mining - Salt Lake City, UT.....801- 538-5277

The Salt Lake City office number does not always answer. Responsible individual(s) at UDOGM and his/her contact numbers will be listed on approved State permit. A copy of which will be at the rig in the possession of the Drilling Supervisor.

- 11. Medical Helicopter - Air Med- Salt Lake City, UT800 - 453-0120
 - 12. Utah OSHA (Mark LeBlanc)801- 205-2373
- 24 hour numbers 801- 530-6901 or 801- 530-6855

C. Hospital

The regional hospital for Sevier county is Sevier Valley Medical Center (~25 miles) located at 1000 North Main, Richfield, UT. A map and directions to the hospital can be found in Section X-Attachments.

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IX. Reference Material for Hydrogen Sulfide and Sulfur Dioxide

If gas should be produced, it could be a mixture of Carbon Dioxide, Hydrogen Sulfide, and Methane.

TOXICITY OF VARIOUS GASES

<u>Common Name</u>	<u>Chemical Formula</u>	<u>Specific Gravity of Air=1</u>	<u>1 Threshold Limit</u>	<u>2 Hazardous Limit</u>	<u>3 Lethal Concern</u>
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H ₂ S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21	2 ppm	-----	1,000 ppm
Chloride	CL ₁	2.45	1 ppm	4 ppm/hr	1,000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1,000 ppm
Carbon Dioxide	CO ₂	1.52	5,000 ppm	5%	10%
Methane	CH ₄	0.55	90,000 ppm	Combustible Above 5% in Air	-----

1. **Threshold** = Concentration at which it is believed that all workers may repeatedly be exposed, day after day, without adverse side effects.

2. **Hazardous** = Concentration that may cause death.

3. **Lethal** = Concentration that will cause death with short-term exposure.

HYDROGEN SULFIDE

GENERAL PROPERTIES

Hydrogen Sulfide itself is a colorless and transparent gas and is flammable. It is heavier than air and, hence, may accumulate in low places.

Although the slightest presence of H₂S in the air is normally detectable by its characteristic “Rotten Egg” odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of Hydrogen Sulfide, which is more toxic than Carbon Monoxide.

COMMON NAMES: Sour Gas, Rotten Egg Gas, Sulphurated Hydrogen, Hydrogen sulfide, Stink Damp, H₂S, Acid Gas, Sweet Gas*

PHYSICAL-CHEMICAL PROPERTIES

Chemical Formula.....	H ₂ S
1. Specific Gravity (Air = 1.000).....	1.193 (@ 77°F)
2. Color	None
3. Odor	Compared to Rotten Eggs
4. Odor Threshold	0.13 part of 1 ppm
5. Corrosivity	Reacts with metals, plastics, tissues and nerves.
6. Solubility in Water	4.0 to 1 in H ₂ O @ 32°F 2.6 to 1 in H ₂ O @ 68°F
7. Effects on Humans.....	Olfactory nerves, respiratory nerves, irritates sensitive membranes in eyes, nose, and throat.
8. Vapor Pressure	19.6 atmospheres at 25°C
9. Explosive Limits	4.3% to 46% by volume in air.
10. Ignition Temperature.....	18°F (Burns with a pale blue flame)
11. Molecular Weight.....	34.08
12. Conversion Factors.....	1 mg/1 of air = 717 ppm (at 25°C and 760
13. pH.....	3 in water mm HG). 1 ppm = 0.00139 mg/1 of air.

* H₂S is a sweet tasting gas, but often the word “tasting” is left out.

INDUSTRIAL OCCURRENCES

Hydrogen Sulfide exposures occur in certain processes in the petroleum industry, chemical plants, chemical laboratories, sulfur and gypsum mines, viscose rayon and rubber industries, tanneries, and in the manufacture of some chemicals, dyes, and pigments. It may be encountered in excavations in the swampy or filled ground. It is produced when sulfur-containing organic matter decomposes, and it can therefore be found in sewage or organic-waste treatment plants. A common sewer gas, it may find its way into utility manhole, particularly dangerous when encountered in tanks, vessels, and other enclosed spaces.

TOXIC PROPERTIES

Hydrogen Sulfide is an extremely toxic and irritating gas. Free Hydrogen Sulfide in the blood reduces its oxygen carrying capacity, thereby depressing the nervous system. Sufficiently high concentrations can cause blockage of the phrenic nerve, resulting in immediate collapse and death due to respiratory failure and asphyxiation.

Because Hydrogen Sulfide is oxidized quite rapidly to sulfates in the body, no permanent after effects occur in cases of recovery from acute exposures unless oxygen deprivation of the nervous system is prolonged. However, in cases of acute exposures, there is always the possibility that pulmonary edema may develop. It is also reported that symptoms such as nervousness, dry nonproductive coughing, nausea, headache, and insomnia, lasting up to about 3 days have occurred after acute exposures to Hydrogen Sulfide.

At low concentrations the predominant effect of Hydrogen Sulfide is on the eyes and respiratory tract. Eye irritation, conjunctivitis, pain, lacrimation, keratitis, and photophobia may persist for several days. Respiratory tract symptoms include coughing, painful breathing, and pain in the nose and throat.

There is no evidence that repeated exposures to Hydrogen Sulfide results in accumulative or systemic poisoning. Effects such as eye irritation, respiratory tract irritation, slow pulse rate, lassitude, digestive disturbances, and cold sweats may occur, but these symptoms disappear in a relatively short time after removal from the exposure. Repeated exposure to Hydrogen Sulfide does not appear to cause any increase or decrease in susceptibility to this gas.

The paralytic effect of Hydrogen Sulfide on the olfactory nerve is probably the most significant property of the gas. This paralysis may create a false sense of security. A worker can be overcome after the typical rotten-egg odor has disappeared. Rather than the characteristic Hydrogen Sulfide odor, some victims of sudden acute overexposure have reported a brief sickeningly sweet odor just prior to unconsciousness.

Subjective olfactory responses to various concentrations of Hydrogen Sulfide may be summarized as follows:

0.02 ppm	No odor
0.13 ppm	Minimal perceptible odor
0.77 ppm	Faint, but readily perceptible odor
4.60 ppm	Easily detectable, moderate odor
27.0 ppm	Strong, unpleasant odor, but not intolerable

Physiological responses to various concentrations of Hydrogen Sulfide have been reported as follows:

10 ppm	Beginning eye irritation
50-100 ppm	Slight conjunctivitis and respiratory tract irritation after 1 hour exposure
100 ppm	Coughing, eye irritation, loss of sense of smell after 2-15 minutes. Altered respiration, pain in the eyes, and drowsiness after 15-30 minutes, followed by throat irritation after 1 hour. Several hours¹ exposure results in gradual increase in severity of these symptoms and death may occur within the next 48 hours
200-300 ppm	Marked conjunctivitis and respiratory tract irritation after 1 hour exposure
500-700 ppm	Loss of consciousness and possibly death in 30 minutes
700 ppm	Rapid unconsciousness, cessation of respiration, and death
1000-2000 ppm	Unconsciousness at once, with early cessation of respiration and death in a few minutes. Death may occur even if individual is removed to fresh air at once.

ACCEPTABLE CONCENTRATIONS

ACCEPTABLE EIGHT-HOUR TIME-WEIGHTED AVERAGE

To avoid discomfort, the Time-Weighted average concentration of Hydrogen Sulfide shall not exceed 10 ppm.

ACCEPTABLE CEILING CONCENTRATION

The acceptable concentration for protection of health for an eight-hour, five-day week shall be 20 ppm. Fluctuations are to occur below this concentration, not above.

**ACCEPTABLE MAXIMUM FOR PEAKS ABOVE ACCEPTABLE
BASE LINE FOR CONTINUOUS EXPOSURE**

A single-peak concentration not exceeding 50 ppm for a maximum of 10 minutes is allowable provided that the daily time-weighted average is not exceeded.

H₂S EQUIVALENTS

Parts per Million	Percents	Grains per 100 cu. Ft.
1	0.0001	0.055
10	0.001	0.55
18	0.0018	1.0
100	0.01	5.5
1000	0.1	55.5
10000	1.0	555.5

Grains per 100 cu. Ft. = % by volume Mole 636.4
1% by volume = 10,000 ppm

SULFUR DIOXIDE

Sulfur Dioxide (SO₂) is a colorless, transparent gas and is non-flammable.

Sulfur Dioxide is produced during the burning of H₂S. Although SO₂ is heavier than air, it will be picked up by a breeze and carried downwind at elevated temperatures. While Sulfur Dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect.

CONCENTRATIONS

%SO₂	ppm
0.0002	2
0.0005	5
0.0012	12
0.015	150
0.05	500

EFFECTS

Safe for eight (8) hour exposure

Pungent odor - normally a person can detect SO₂ in this range.

Throat irritation, coughing, constriction of the chest, tearing and smarting of the eyes.

So irritating that it can only be endured for a few minutes.

Causes a sense of suffocation, even with the first breath.

PHYSICAL PROPERTIES AND CHARACTERISTICS

Chemical Formula.....	SO ₂
1. Specific Gravity	2.212
2. Color	None
3. Flammable.....	No
4. Odor	Characteristic, pungent, gives ample warning of its presence.
5. Corrosivity	Dry---not corrosive to ordinary metals. Wet--corrosive to most common metals.
6. Allowable Concentrations.....	2 ppm (ACGIH and OSHA)
7. Effects on Humans.....	Irritates eyes, throat and upper respiratory system

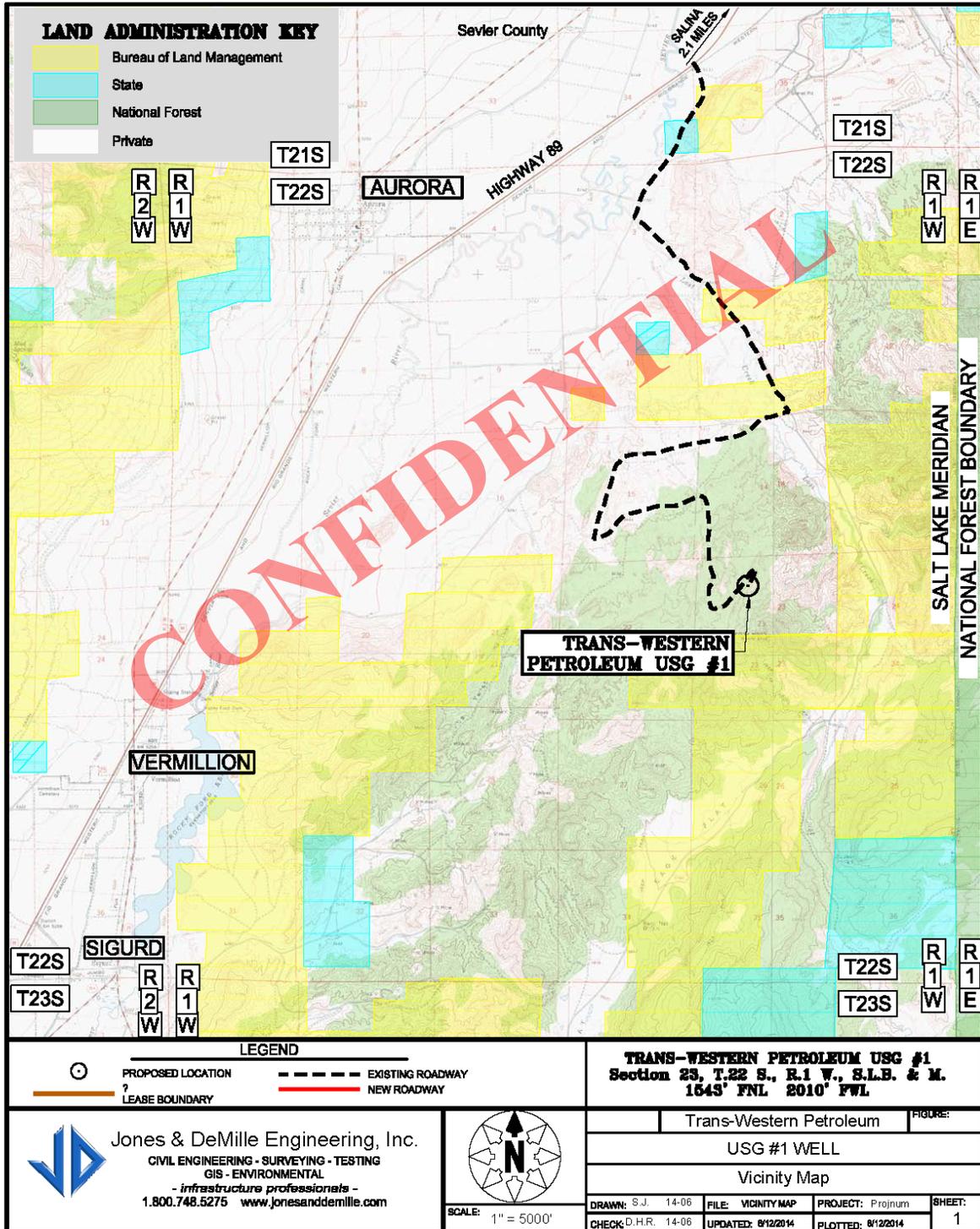
TOXIC PROPERTIES

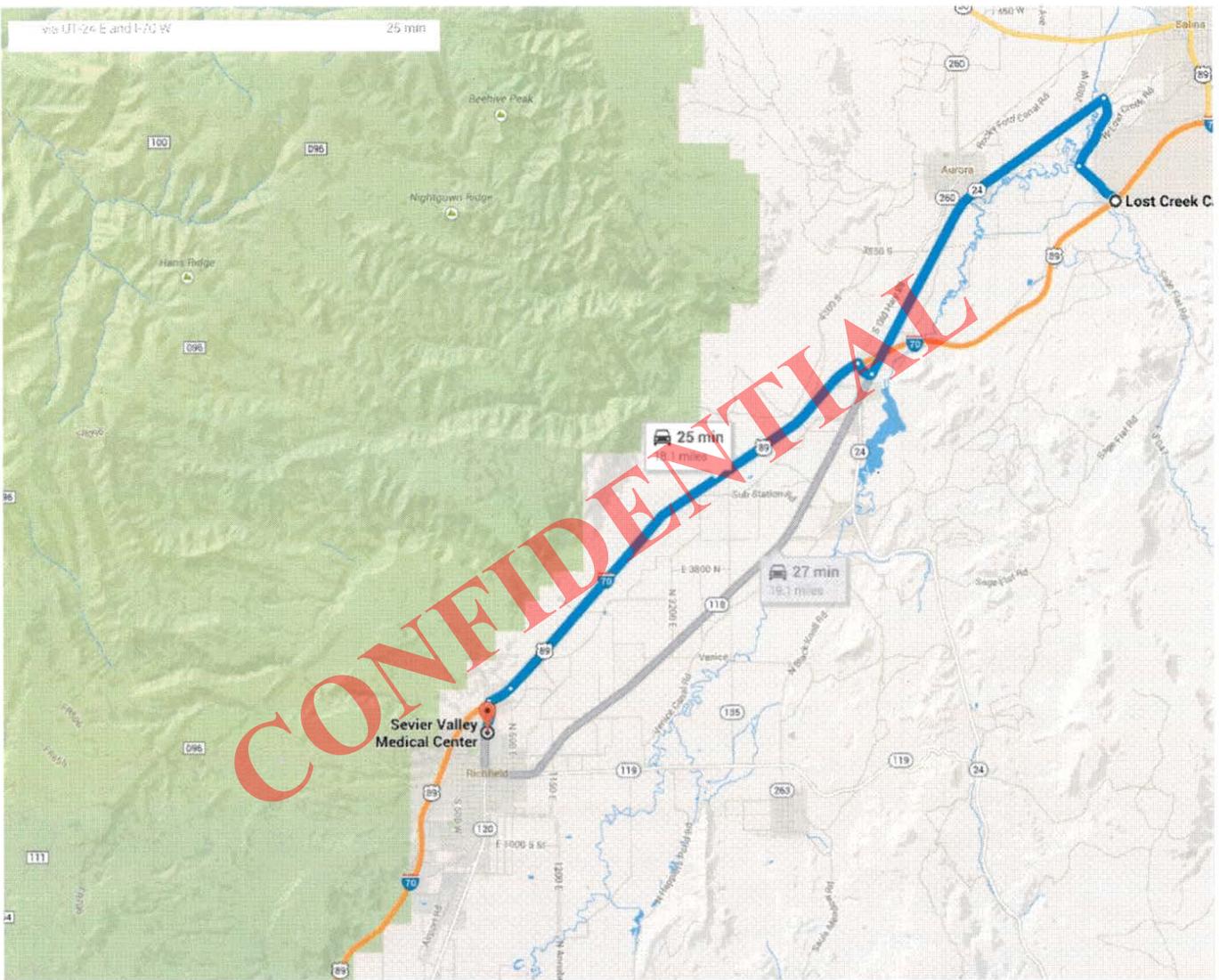
Sulfur Dioxide is an irritating gas in its vapor form and the odor is so intensely irritating that concentrations of 3 to 5 parts per million in the air are readily detectable by the normal person. In higher concentrations, the severely irritating effect of the gas makes it unlikely that any person would be able to remain in a Sulfur Dioxide contaminated atmosphere unless they were unconscious or trapped.

Sulfur Dioxide gas is intensely irritating to the eyes, throat, and upper respiratory system. Inhalation of this gas in concentrations of 8 to 12 parts per million in air causes throat irritation, coughing, constriction of the chest, tearing and smarting of the eyes. 150 parts per million is so extremely irritating that it can be endured only for a few minutes. 500 parts per million is so acutely irritating to the upper respiratory tract that it causes a sense of suffocation, even with the first breath.

Out of numerous reported exposures to Sulfur Dioxide, there are few references that would indicate pneumonia as an after effect.

X. Attachments-Maps, Diagrams

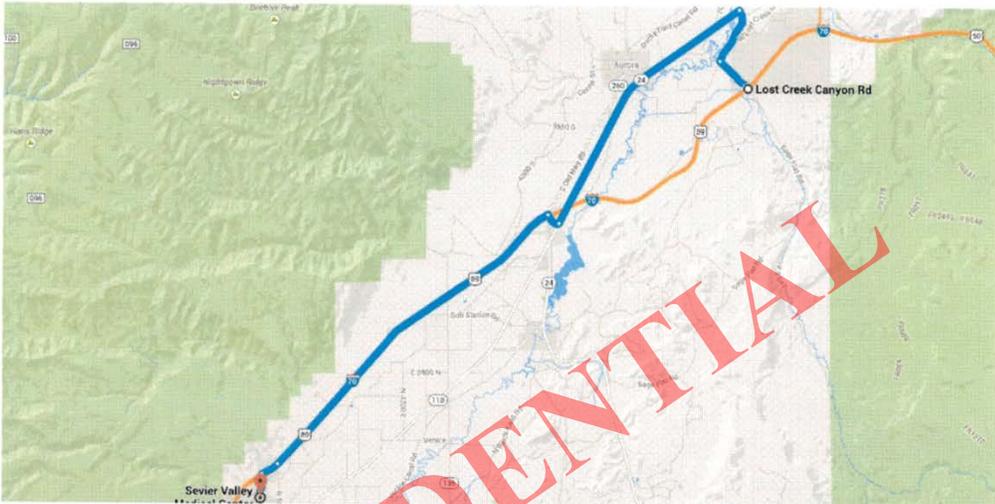






Drive 18.1 miles, 25 min

Directions from Lost Creek Canyon Rd to Sevier Valley Medical Center



○ Lost Creek Canyon Rd
Salina, UT 84654

Follow Sage Flat Rd to UT-24 E in Salina

2.2 mi / 7 min

- ↑ 1. Head northwest on Lost Creek Canyon Rd/Sage Flat Rd toward Lost Creek Rd
0.9 mi
- ↗ 2. Turn right onto Lost Creek Rd/Sage Flat Rd
Continue to follow Sage Flat Rd
1.3 mi



Continue on UT-24 E. Take I-70 W to E 1000 N/E 1100 N in Richfield

15.9 mi / 17 min



<https://www.google.com/maps/dir/38.9146753,-111.884169/Sevier+Valley+Medical+Cent...> 6/23/2014

- 3. Turn left onto UT-24 E

 6.3 mi
- 4. Turn right onto UT-259 N

 0.3 mi
- 5. Turn left to merge onto I-70 W toward Richfield

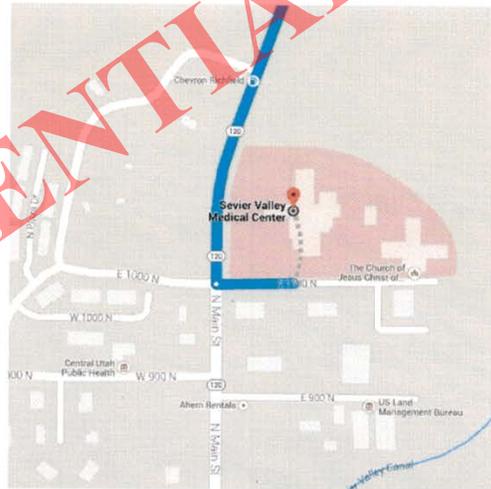
 8.2 mi
- 6. Take exit 40 toward I-70 BUS/Richfield

 0.4 mi
- 7. Turn left onto UT-120 S/N Main St
 Continue to follow UT-120 S

 0.6 mi

- Take the 3rd left onto E 1000 N/E 1100 N
 Destination will be on the left

 289 ft / 55 s

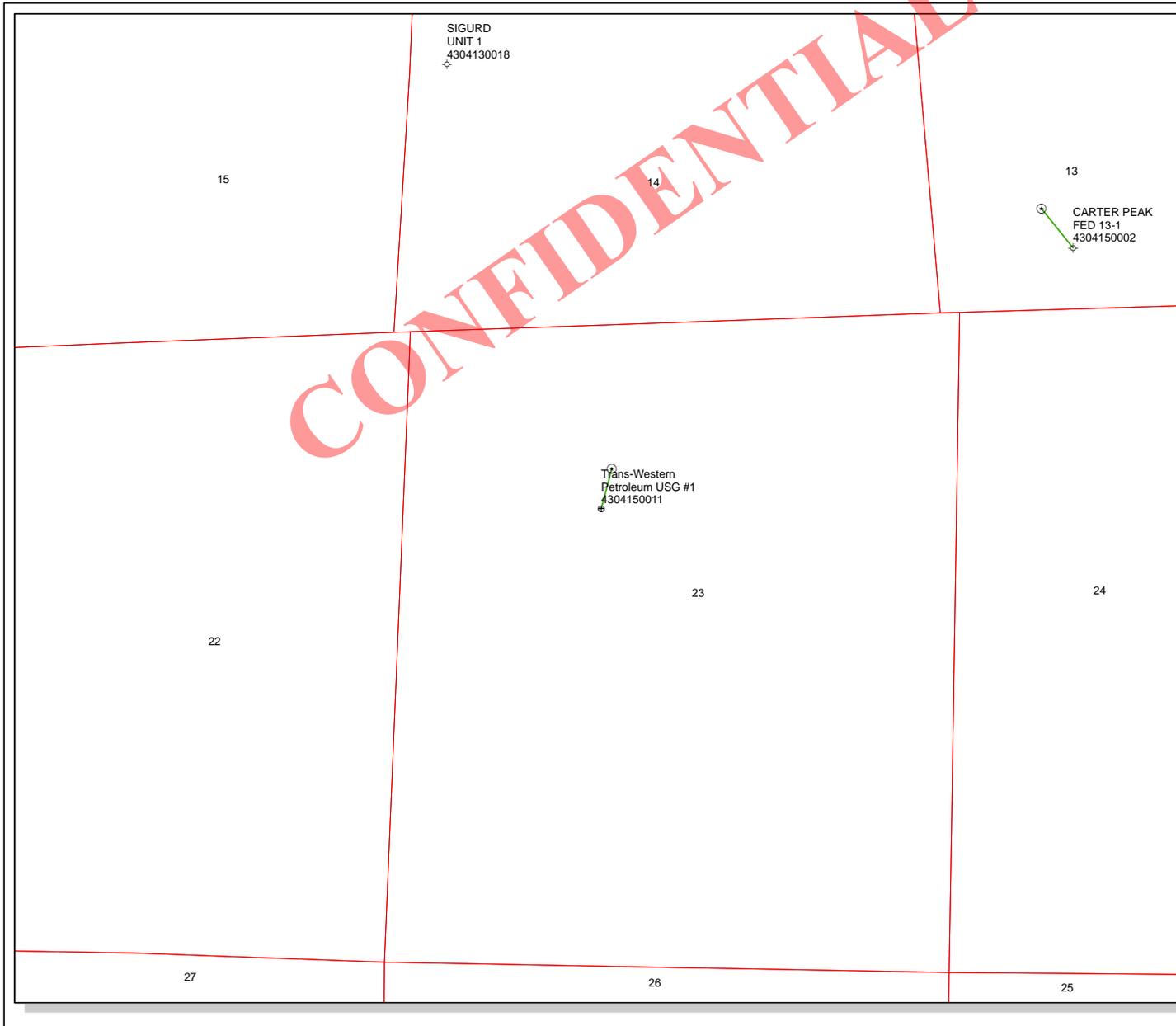


📍
Sevier Valley Medical Center
 1000 North Main, Richfield, UT 84701

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2014 Google

<https://www.google.com/maps/dir/38.9146753,-111.884169/Sevier+Valley+Medical+Cent...> 6/23/2014



API Number: 4304150011

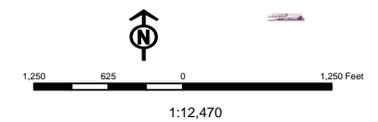
Well Name: Trans-Western Petroleum USG #1

Township: T22.0S Range: R01.0W Section: 23 Meridian: S

Operator: TRANS-WESTERN PETROLEUM, LTD., INC.

Map Prepared: 8/8/2014
Map Produced by Diana Mason

Wells Query		Units	
Status		STATUS	
◆ APD - Approved Permit	◆	ACTIVE	ACTIVE
○ DRL - Spudded (Drilling Commenced)	○	EXPLORATORY	EXPLORATORY
↗ GW - Gas Injection	↗	GAS STORAGE	GAS STORAGE
★ GS - Gas Storage	★	NF PP OIL	NF PP OIL
⊕ LOC - New Location	⊕	NF SECONDARY	NF SECONDARY
⊖ OPS - Operation Suspended	⊖	PI OIL	PI OIL
⊘ PA - Plugged Abandoned	⊘	PP GAS	PP GAS
⊙ PGW - Producing Gas Well	⊙	PP GEOTHERML	PP GEOTHERML
⊚ POW - Producing Oil Well	⊚	PP OIL	PP OIL
⊛ SGW - Shut-in Gas Well	⊛	SECONDARY	SECONDARY
⊜ SOW - Shut-in Oil Well	⊜	TERMINATED	TERMINATED
○ TA - Temp. Abandoned	○		
○ TW - Test Well	○	Fields	
○ WDW - Water Disposal	○	STATUS	
○ WW - Water Injection Well	○	Unknown	Unknown
○ WSW - Water Supply Well	○	ABANDONED	ABANDONED
		ACTIVE	ACTIVE
		COMBINED	COMBINED
		INACTIVE	INACTIVE
		STORAGE	STORAGE
		TERMINATED	TERMINATED



Well Name	TRANS-WESTERN PETROLEUM, LTD., INC. Trans-Western Petroleum			
String	SURF	PROD		
Casing Size(")	9.625	5.500		
Setting Depth (TVD)	2000	7400		
Previous Shoe Setting Depth (TVD)	0	2000		
Max Mud Weight (ppg)	9.2	10.5		
BOPE Proposed (psi)	1000	3000		
Casing Internal Yield (psi)	3520	7740		
Operators Max Anticipated Pressure (psi)	4036	10.5		

Calculations	SURF String	9.625	"	
Max BHP (psi)	.052*Setting Depth*MW=	957		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	717	YES	rotating head
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	517	YES	OK
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	517	NO	OK
Required Casing/BOPE Test Pressure=		2000	psi	
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient	

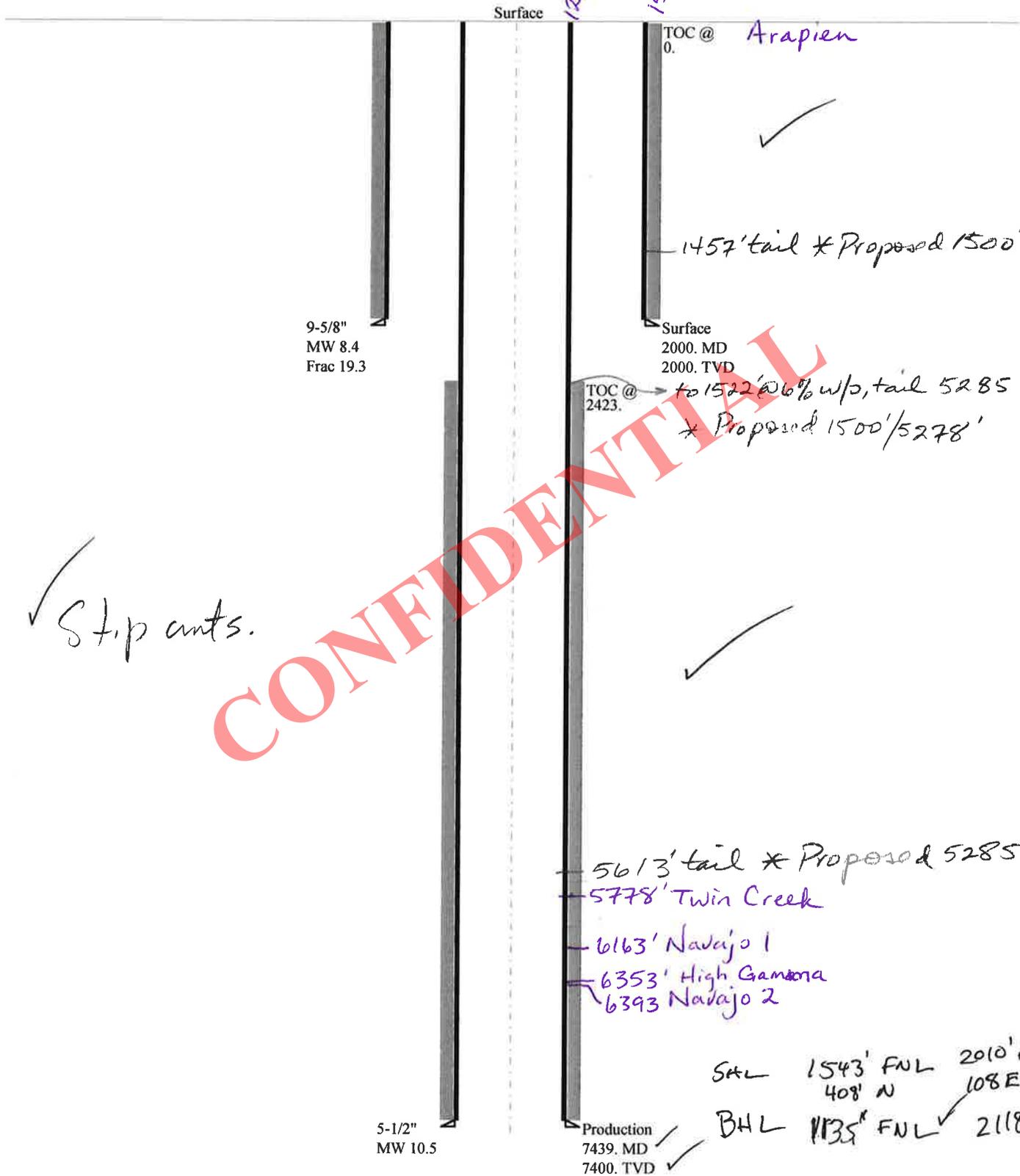
Calculations	PROD String	5.500	"	
Max BHP (psi)	.052*Setting Depth*MW=	4040		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	3152	NO	3M BOP, dbl ram, annular preventer, drilling spool
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	2412	YES	kill & choke lines
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	2852	NO	OK
Required Casing/BOPE Test Pressure=		3000	psi	
*Max Pressure Allowed @ Previous Casing Shoe=		2000	psi *Assumes 1psi/ft frac gradient	

Calculations	String		"	
Max BHP (psi)	.052*Setting Depth*MW=			
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO	
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO	
Required Casing/BOPE Test Pressure=			psi	
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient	

Calculations	String		"	
Max BHP (psi)	.052*Setting Depth*MW=			
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO	
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO	
Required Casing/BOPE Test Pressure=			psi	
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient	

43041500110000 Trans-Western Petroleum USG #1

Casing Schematic



✓ Strip cuts.

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SAL 1543' FWL 408' N 2010' FWL 108E ✓
 BHL 1135' FWL 2118' FWL ✓
 Production 7439. MD 7400. TVD ✓
 OA.

Well name:	43041500110000 Trans-Western Petroleum USG #1	
Operator:	TRANS-WESTERN PETROLEUM, LTD., INC	
String type:	Surface	Project ID: 43-041-50011
Location:	SEVIER COUNTY	

Design parameters:

Collapse

Mud weight: 8.400 ppg
Design is based on evacuated pipe.

Minimum design factors:

Collapse:

Design factor 1.125

Burst:

Design factor 1.00

Environment:

H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 102 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 100 ft

Cement top: Surface

Burst

Max anticipated surface pressure: 1,760 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 2,000 psi

No backup mud specified.

Tension:

8 Round STC: 1.80 (J)
8 Round LTC: 1.70 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.
Neutral point: 1,751 ft

Non-directional string.

Re subsequent strings:

Next setting depth: 7,400 ft
Next mud weight: 10.500 ppg
Next setting BHP: 4,037 psi
Fracture mud wt: 19.250 ppg
Fracture depth: 2,000 ft
Injection pressure: 2,000 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2000	9.625	36.00	J-55	ST&C	2000	2000	8.796	17384
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	873	2020	2.315	2000	3520	1.76	63.1	394	6.25 J

Prepared by: Helen Sadik-Macdonald
Div of Oil, Gas & Mining

Phone: 801 538-5357
FAX: 801-359-3940

Date: August 27, 2014
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2000 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	43041500110000 Trans-Western Petroleum USG #1	
Operator:	TRANS-WESTERN PETROLEUM, LTD., INC	
String type:	Production	Project ID: 43-041-50011
Location:	SEVIER COUNTY	

Design parameters:

Collapse

Mud weight: 10.500 ppg
Design is based on evacuated pipe.

Burst

Max anticipated surface pressure: 2,409 psi
Internal gradient: 0.220 psi/ft
Calculated BHP: 4,037 psi

No backup mud specified.

Minimum design factors:

Collapse:

Design factor: 1.125

Burst:

Design factor: 1.00

Tension:

8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.60 (B)

Tension is based on air weight.
Neutral point: 6,261 ft

Environment:

H2S considered? No
Surface temperature: 74 °F
Bottom hole temperature: 178 °F
Temperature gradient: 1.40 °F/100ft
Minimum section length: 1,000 ft

Cement top: 2,422 ft

Directional well information:

Kick-off point: 3210 ft
Departure at shoe: 422 ft
Maximum dogleg: 1.5 °/100ft
Inclination at shoe: 0 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	7439	5.5	17.00	L-80	LT&C	7400	7439	4.767	47134

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	4037	6290	1.558	4037	7740	1.92	125.8	338	2.69 J

Prepared by: Helen Sadik-Macdonald
Div of Oil, Gas & Mining

Phone: 801 538-5357
FAX: 801-359-3940

Date: September 4, 2014
Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 7400 ft, a mud weight of 10.5 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

ON-SITE PREDRILL EVALUATION

Utah Division of Oil, Gas and Mining

Operator TRANS-WESTERN PETROLEUM, LTD., INC.
Well Name Trans-Western Petroleum USG #1
API Number 43041500110000 **APD No** 10061 **Field/Unit** WILDCAT
Location: 1/4,1/4 NENW **Sec** 23 **Tw** 22.0S **Rng** 1.0W 1543 FNL 2010 FWL
GPS Coord (UTM) 423716 4304017 **Surface Owner** United States Gypsum Company

Participants

Ammon McDonald(DOGM), Brce Allen & Clay Shumway(USG), Doug Isern & Wes Weaver(Trans-Western), and Darin Robinson(surveyor)

Regional/Local Setting & Topography

The proposed location is on the western side of Carter Peak on the eastern edge of the Sevier Valley, within the overthrust belt of central Utah. This valley sits between the Pavant Range to the west and the Wasatch Plateau to the east. The location is currently part of the active USG gypsum mine; the surrounding area is used for cultivated fields, grazing, and raising livestock. Interstate-80 is approximately 1.6 miles to the west and the Sevier River is approximately 3 miles west. The area of the proposed pad is in steep topography but has been graded basically flat due to surface mining activities. Proposed location is approximately four miles southeast of the town of Aurora and 5.5 miles northeast of the town of Sigurd. Altitude of the site is approximately 5,865' above sea-level.

Surface Use Plan

Current Surface Use
Mining

New Road Miles	Well Pad	Src Const Material	Surface Formation
0	Width 100 Length 680	Onsite	ARAS

Ancillary Facilities

None, with the exception of trailers to be on location during drilling operations. Future plans for operational facilities to be built at a later date, dependent upon the success or failure of the well.

Waste Management Plan Adequate? Y

Environmental Parameters

Affected Floodplains and/or Wetlands N

Flora / Fauna

Flora - sagebrush, juniper, and pinions.

Fauna - coyote, rabbit, lizards & snakes.

Soil Type and Characteristics

Semi-arid desert with shallow gypsum soil type derived from the erosion of the Arapien Shale.

Erosion Issues Y

Flashflood storm events possible, use of stormwater diversions to prevent pad erosion.

Sedimentation Issues**Site Stability Issues Y**

Cut and fill required for pad construction due to steep topography. Adequate compaction methods should be used during construction.

Drainage Diversion Required? Y

Divert all drainages around pad to prevent storm event flooding and erosion.

Berm Required? Y

Berm location to prevent fluids from entering and/or leaving location.

Erosion Sedimentation Control Required? Y

Stormwater diversions.

Paleo Survey Run? N **Paleo Potential Observed? Y** **Cultural Survey Run? N** **Cultural Resources? N**

Reserve Pit**Site-Specific Factors****Site Ranking**

Distance to Groundwater (feet)	100 to 200	5
Distance to Surface Water (feet)	>1000	0
Dist. Nearest Municipal Well (ft)	>5280	0
Distance to Other Wells (feet)	>1320	0
Native Soil Type	Low permeability	0
Fluid Type	Fresh Water	5
Drill Cuttings	Salt or Detrimental	10
Annual Precipitation (inches)	10 to 20	5
Affected Populations	>50	>50
Presence Nearby Utility Conduits	Unknown	10
	Final Score	45
		1 Sensitivity Level

Characteristics / Requirements

N/A, closed-loop drilling program to be used.

Closed Loop Mud Required? Y **Liner Required?** **Liner Thickness** **Pit Underlayment Required?**

Other Observations / Comments

Fresh water source will be purchased from the City of Salina. Access to the site will be from State Highway #89 to a mine road driveway designed and constructed by Sevier County and United States Gypsum Company. Road improvements will be done prior to drilling. Sevier County has yet to issue the required conditional use permits for drilling activities. There are no water wells within 1 mile of the proposed well location. The Sevier River is located approximately 3 miles to the west. There are two PA wells, API #4304130018 and API #4304150002, within one mile of the proposed well location. The town of Aurora is four miles

northwest of the site and town of Sigurd is 5.5 miles southwest of the site; the rig lights and noise may be seen and heard from Aurora and/or Sigurd. Photos are located in the well file.

Ammon McDonald
Evaluator

8/12/2014
Date / Time

CONFIDENTIAL

Application for Permit to Drill Statement of Basis

Utah Division of Oil, Gas and Mining

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
10061	43041500110000	LOCKED	OW	P	No
Operator	TRANS-WESTERN PETROLEUM, LTD., INC.		Surface Owner-APD	United States Gypsum Company	
Well Name	Trans-Western Petroleum USG #1		Unit		
Field	WILDCAT		Type of Work	DRILL	
Location	NENW 23 22S 1W S 1543 FNL (UTM) 423698E 4303903N		2010 FWL GPS Coord		

Geologic Statement of Basis

This location is in the High Plateaus section of the Colorado Plateau in west-central Utah. This area is characterized as being within the Basin & Range-Colorado Plateau physiographic transition zone. The proposed location is on fee mineral and fee surface a few miles east of the Sevier River. The well will be spud in the evaporite-rich Jurassic age Arapien Shale. The Trans-Western Petroleum proposes to use LSND fresh water mud while drilling the surface casing from 0'-2,000'. Any water contained within the Arapien Shale is likely to be of poor quality, due to the high TDS from the large quantities of gypsum and halite present in the shale. Within a mile of the proposed well location no underground water rights are on file. Two surface water rights, used for stock watering, on Lost Creek to the north of the location. No documented USDW are present in the area from the Arapien Shale, Twin Creek Limestone, or Navajo Sandstone, and it is unlikely that any high quality groundwater will be encountered in these formations. The proposed mud, drilling, casing, and cementing programs should be sufficient to control and isolate the poor quality groundwater expected to be encountered at this location.

Ammon McDonald
APD Evaluator

8/12/2014
Date / Time

Surface Statement of Basis

A pre-site was conducted at 11:50am August 7, 2014. This area is easily accessed off State Highway 89 and USG mine road driveways. The proposed USG #1 well pad runs in a northeast to southwest direction and is located on the western side of Carter Peak, on the eastern edge of the Sevier Valley. The construction material needed for this location and the access road will be obtained from a local gravel pit and available onsite materials (waste rock from current surface mining activities). The pad is located in steep topography but has been graded basically flat due to mining activities. The location will be bermed and water diversions will be constructed. Trans-Western Petroleum will use a closed-loop drilling program. All drill cuttings and drilling fluids will be hauled to an approved disposal site for waste management once the well is completed. The selected location for this well is suitable for drilling.

Ammon McDonald
Onsite Evaluator

8/12/2014
Date / Time

Conditions of Approval / Application for Permit to Drill

Category	Condition
----------	-----------

Pits	A closed loop mud circulation system is required for this location.
Surface	The well site shall be bermed to prevent fluids from entering or leaving the pad.
Surface	Drainages adjacent to the proposed pad shall be diverted around the location.

CONFIDENTIAL

WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 7/17/2014

API NO. ASSIGNED: 43041500110000

WELL NAME: Trans-Western Petroleum USG #1

OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC. (N4105)

PHONE NUMBER: 308 848-3279

CONTACT: John C. Magill

PROPOSED LOCATION: NENW 23 220S 010W

Permit Tech Review:

SURFACE: 1543 FNL 2010 FWL

Engineering Review:

BOTTOM: 1140 FNL 2105 FWL

Geology Review:

COUNTY: SEVIER

LATITUDE: 38.88068

LONGITUDE: -111.87969

UTM SURF EASTINGS: 423698.00

NORTHINGS: 4303903.00

FIELD NAME: WILDCAT

LEASE TYPE: 4 - Fee

LEASE NUMBER: FEE

PROPOSED PRODUCING FORMATION(S): NAVAJO

SURFACE OWNER: 4 - Fee

COALBED METHANE: NO

RECEIVED AND/OR REVIEWED:

- PLAT
- Bond: STATE - 025934487
- Potash
- Oil Shale 190-5
- Oil Shale 190-3
- Oil Shale 190-13
- Water Permit: Salina City culinary
- RDCC Review: 2014-09-09 00:00:00.0
- Fee Surface Agreement
- Intent to Commingle

Commingling Approved

LOCATION AND SITING:

- R649-2-3.
- Unit:
- R649-3-2. General
- R649-3-3. Exception
- Drilling Unit
- Board Cause No: R649-3-11
- Effective Date:
- Siting:
- R649-3-11. Directional Drill

Comments: Presite Completed

Stipulations:

- 1 - Exception Location - bhill
- 5 - Statement of Basis - bhill
- 12 - Cement Volume (3) - hmacdonald
- 15 - Directional - dmason
- 21 - RDCC - dmason
- 23 - Spacing - dmason
- 25 - Surface Casing - hmacdonald



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

Permit To Drill

Well Name: Trans-Western Petroleum USG #1
API Well Number: 43041500110000
Lease Number: FEE
Surface Owner: FEE (PRIVATE)
Approval Date: 9/15/2014

Issued to:

TRANS-WESTERN PETROLEUM, LTD., INC., P.O. Box 276, Golden, CO 80402

Authority:

Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of R649-3-11. The expected producing formation or pool is the NAVAJO Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

Duration:

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

Exception Location:

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

Conditions of Approval:

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

The Application for Permit to Drill has been forwarded to the Resource Development Coordinating Committee for review of this action. The operator will be required to comply with any applicable recommendations resulting from this review. (See attached)

This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and

Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Cement volume for the 5 1/2 production string shall be determined from actual hole diameter in order to place lead cement from the pipe setting depth back to 1500' MD as indicated in the submitted drilling plan and tail cement to 500' above Twin Creek.

Surface casing shall be cemented to the surface.

Additional Approvals:

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

Notification Requirements:

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels

OR

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website

at <http://oilgas.ogm.utah.gov>

- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program
 - contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

Contact Information:

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
801-231-8956 - after office hours

Reporting Requirements:

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or plugging

Approved By:

A handwritten signature in black ink, appearing to read "John Rogers", written over a horizontal line.

For John Rogers
Associate Director, Oil & Gas

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
1. TYPE OF WELL Oil Well		7. UNIT or CA AGREEMENT NAME:
2. NAME OF OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC.		8. WELL NAME and NUMBER: Trans-Western Petroleum USG #1
3. ADDRESS OF OPERATOR: P.O. Box 276 , Golden, CO, 80402		9. API NUMBER: 43041500110000
PHONE NUMBER: 303 279-4567 Ext		9. FIELD and POOL or WILDCAT: WILDCAT
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1543 FNL 2010 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 23 Township: 22.0S Range: 01.0W Meridian: S		COUNTY: SEVIER
		STATE: UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input checked="" type="checkbox"/> SPUD REPORT Date of Spud: 11/2/2012 <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> WILDCAT WELL DETERMINATION <input type="checkbox"/> OTHER	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
Spudded 12 1/4" surface hole @13:45 11/02/2012		
Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY November 04, 2014		
NAME (PLEASE PRINT) William Sterling Donovan	PHONE NUMBER 720 351-7470	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/2/2014	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
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		STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input checked="" type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 10/27/2014	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Change conductor casing size from 16" to 13-3/8" 68# J55 BTC. The change was made to accommodate the use of "in stock" tubulars that would drift 12-1/4". No change in drill out bit size was required. Change was verbally approved by UDOGM engineer Dustin Doucet on 10/25/2014.

**Accepted by the
Utah Division of
Oil, Gas and Mining
FOR RECORD ONLY
November 13, 2014**

NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/10/2014	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
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	COUNTY: SEVIER
	STATE: UTAH

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TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 11/17/2014	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
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	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The well is a dry hole. We propose to set cement plugs as follows. Plug #1, 500 ft plug w/ bottom of plug at 9000 ft. Plug #2, 200 ft plug w/ bottom of plug at 2130 ft. Plug #2 is half in & half out of 9-5/8 surface casing whose shoe is at 2032 ft. Plug #3, 100 ft plug w/ bottom of plug 100 ft below ground level. Mud log (consistent with electric logs) shows Arapien formation from surface to 8543 ft, Twin Creek from 8543 ft to 8944 ft, Navajo formation from 8944 ft to TD at 9407 ft (all depth figures MD). Verbal permission to set the listed plugs given 11/17/2014 by Dustin Doucet, UDOGM engineer.

**Approved by the
Utah Division of
Oil, Gas and Mining**

Date: November 20, 2014

By: 

Please Review Attached Conditions of Approval

NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/17/2014	



The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Sundry Conditions of Approval Well Number 43041500110000

Balanced plugs should be tagged.

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<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 10/25/2014	<input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
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12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Move surface location stake to accommodate SST #54 rig footprint.
 Change verbally approved by UDOGM engineer Dustin Doucet on 10/25/14.

Approved by the
Utah Division of
Oil, Gas and Mining
 Date: December 03, 2014
 By: Dustin Doucet

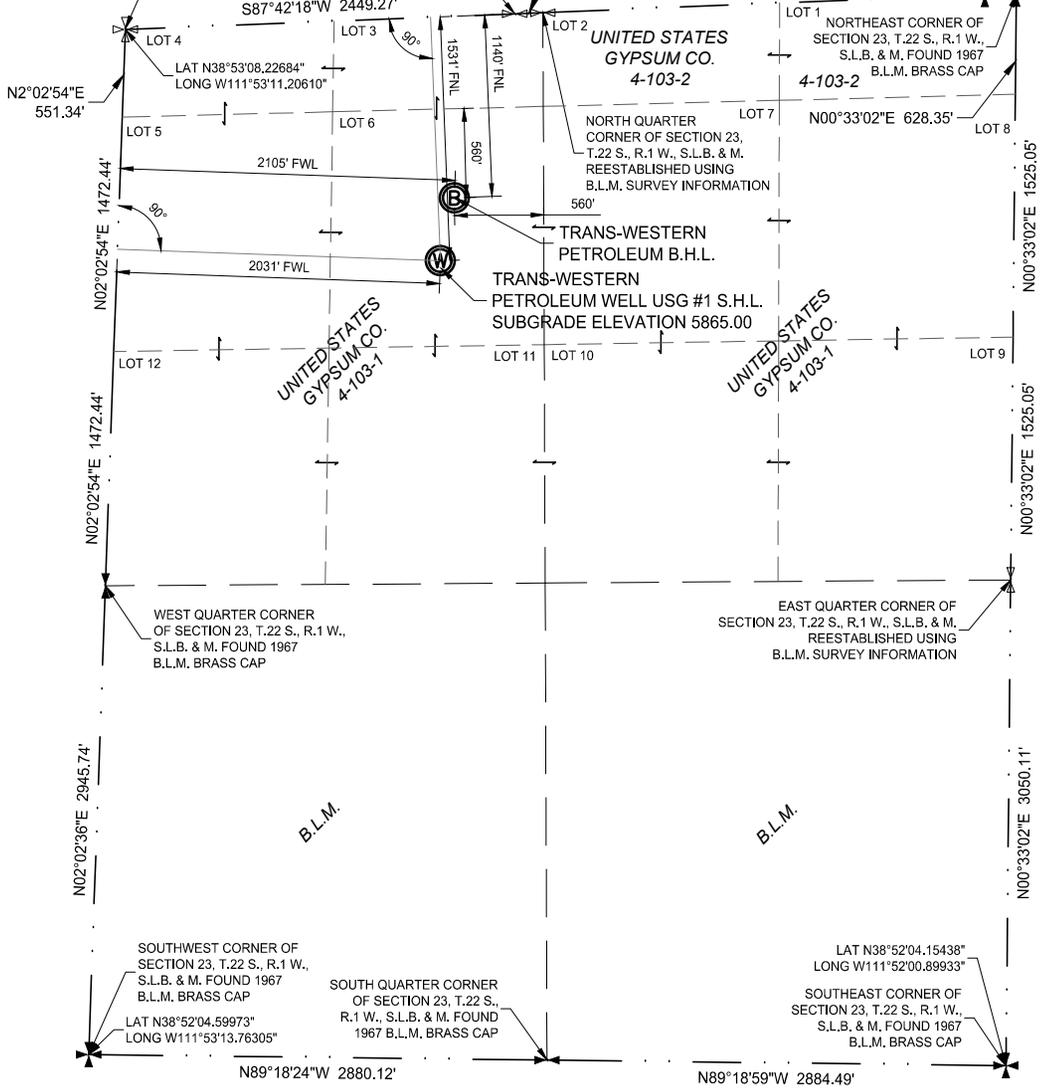
NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/10/2014	

Section 23, T.22 S., R.1 W., S.L.B. & M.

NORTHWEST CORNER OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

SOUTH QUARTER CORNER OF SECTION 14, T.22 S., R.1 W., S.L.B. & M. REESTABLISHED USING B.L.M. SURVEY INFORMATION

LAT N38°53'10.64396"
LONG W111°52'00.42953"
S89°38'58"W 197.76'
SOUTHEAST CORNER OF SECTION 14, T.22 S., R.1 W., S.L.B. & M. FOUND 1967 B.L.M. BRASS CAP



PROJECT Trans-Western Petroleum Well Pad USG#1

WELL LOCATION, LOCATED AS SHOWN IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

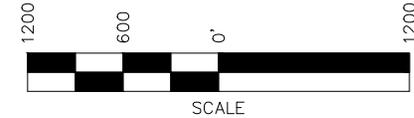
LEGEND

- = SECTION CORNERS (LOCATED)
- = QUARTER SECTION CORNERS (LOCATED)
- = SECTION CORNERS (NOT LOCATED)
- = QUARTER SECTION CORNERS (NOT LOCATED)
- = PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE TRANS-WESTERN PETROLEUM WELL PAD USG#1 LOCATION. LOCATED IN LOT 6 OF SECTION 23, T.22 S., R.1 W., S.L.B. & M., SEVIER COUNTY, UTAH.

BASIS OF ELEVATION

ELEVATION BASED ON N.A.V.D. 1988



CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Travis L. Hansen

 TRAVIS L. HANSEN P.E. S. 4854821

BASIS OF BEARINGS

BASIS OF BEARINGS USED WAS N00°33'02"E BETWEEN THE SOUTHEAST CORNER AND THE NORTHEAST CORNER OF SECTION 23 T.22S., R.1W., S.L.B.&M. S.H.L.:NAD 83 LAT:N38°52'53.95298"(38.881653605) LONG:W111°52'46.09221"(111.879470058) - NAD 83 N 6761619.314 E 1532385.699 B.H.L.:NAD 83 LAT:N38°52'57.86235"(38.882739542) LONG:W111°52'44.99509"(111.879165303) - NAD 83 N 6762014.472 E 1532474.136



Jones & DeMille Engineering

1535 South 100 West - Richfield, Utah 84701
 Phone (435) 896-8266
 Fax (435) 896-8268
 www.jonesanddemille.com

Well Location Plat for

Trans-Western Petroleum USG#1

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
-	J.G.C.	T.L.H.	K.D.B.	1404-261	1
DATE	DWG. NAME	SCALE			
11/04/14	1404-261	1"=1200'			

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: Trans-Western Petroleum USG #1
2. NAME OF OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC.	9. API NUMBER: 43041500110000
3. ADDRESS OF OPERATOR: P.O. Box 276, Golden, CO, 80402	PHONE NUMBER: 303 279-4567 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1543 FNL 2010 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 23 Township: 22.0S Range: 01.0W Meridian: S	9. FIELD and POOL or WILDCAT: WILDCAT
	COUNTY: SEVIER
	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 10/30/2014			
<input type="checkbox"/> SPUD REPORT Date of Spud:			
<input type="checkbox"/> DRILLING REPORT Report Date:			

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Reorient drilling rig SST #54 orientation on well pad. Change was made to allow placement of large rig on limited size location. Change verbally approved by UDOGM engineer Dustin Doucet on 10/25/2014.

Approved by the
Utah Division of
Oil, Gas and Mining

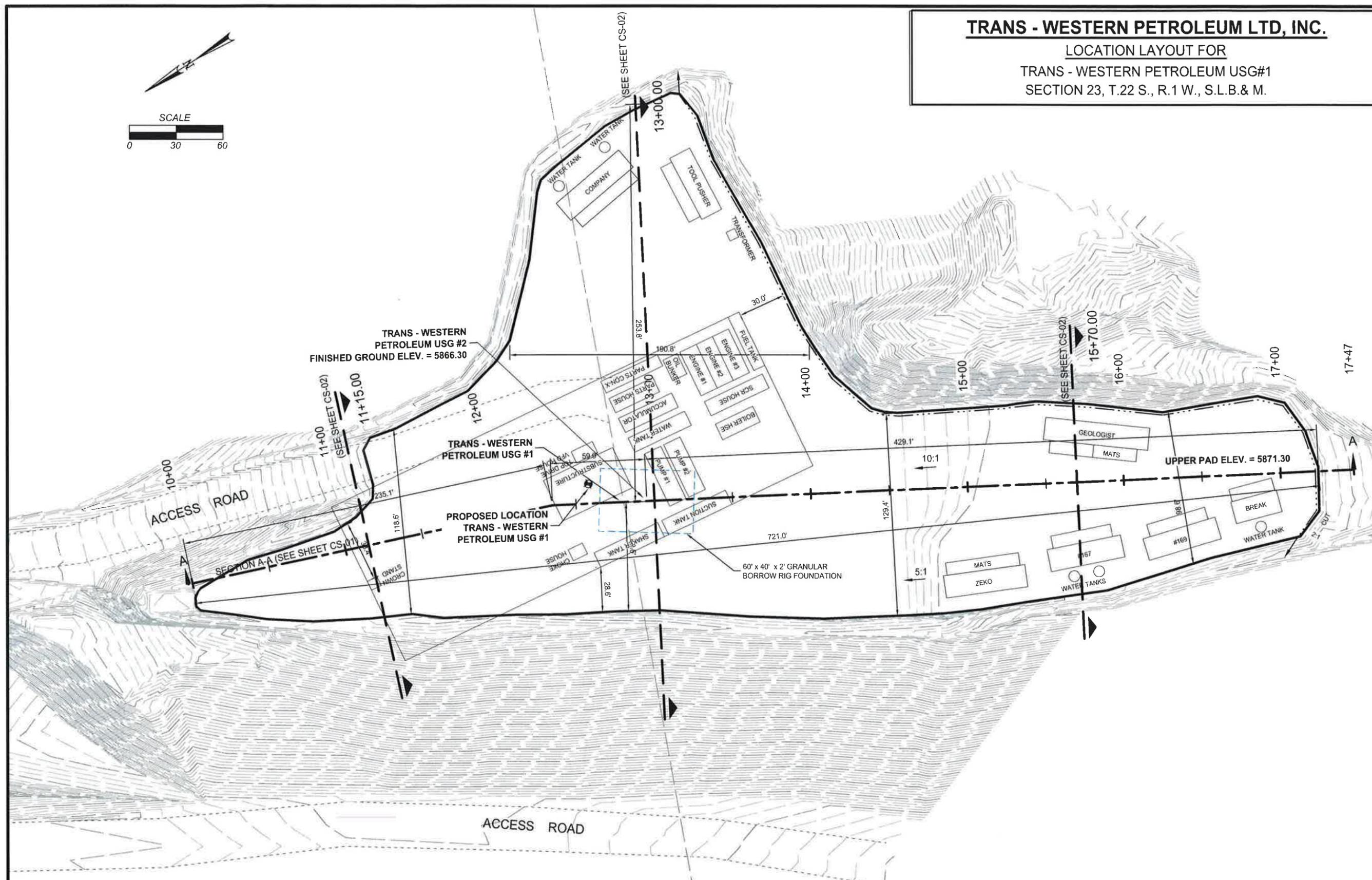
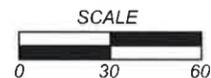
Date: _____

By: Dustin Doucet

NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/10/2014	

TRANS - WESTERN PETROLEUM LTD, INC.

LOCATION LAYOUT FOR
 TRANS - WESTERN PETROLEUM USG#1
 SECTION 23, T.22 S., R.1 W., S.L.B. & M.

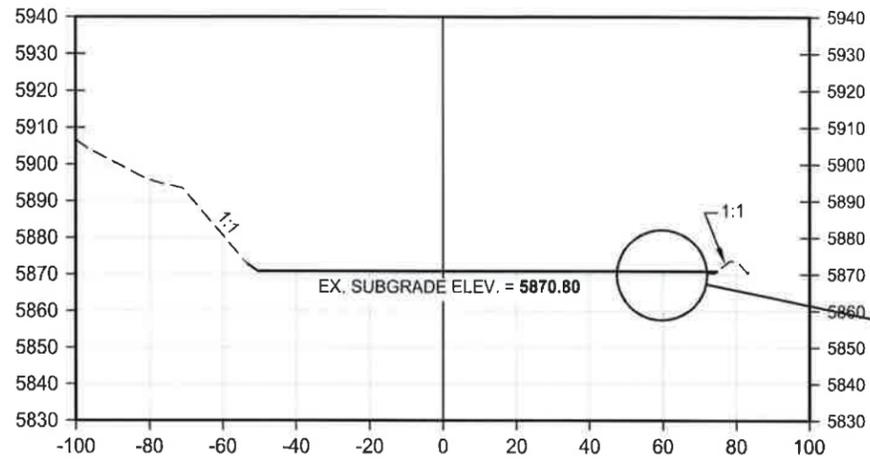


LOCATION NOTES:
 EXISTING PAD SURFACE AREA : 2.48 ACRES
 ELEV. UNGRADED GROUND AT
 TRANS - WESTERN PETROLEUM USG#1 = 5866.30
 ELEV. GRADED FINISHED GROUND AT
 TRANS - WESTERN PETROLEUM USG#1 = 5866.30

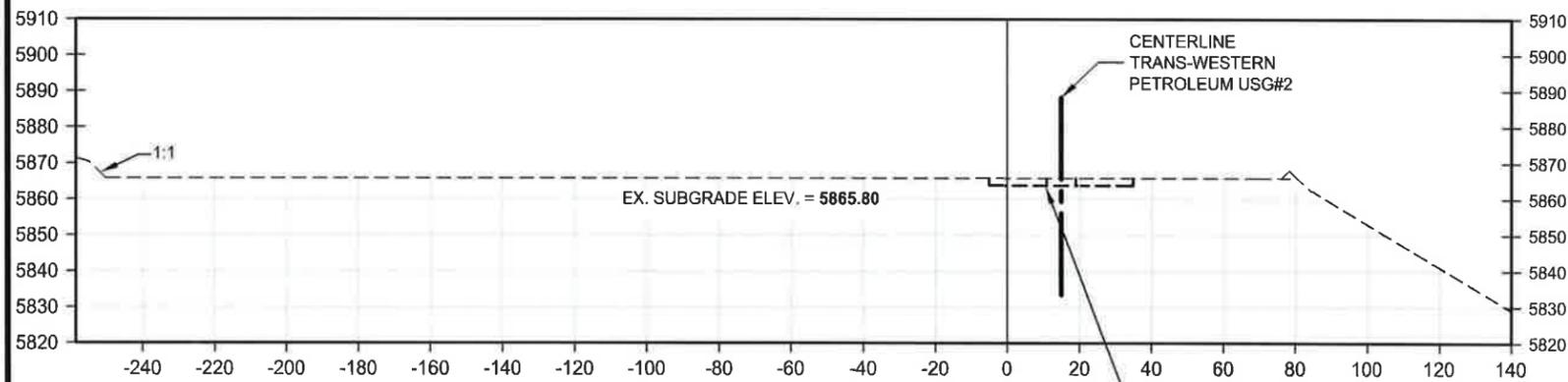
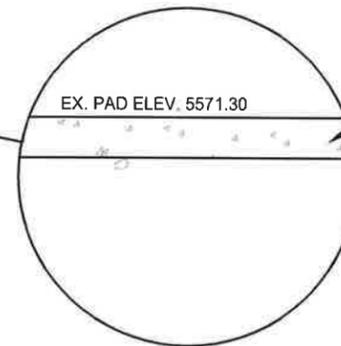
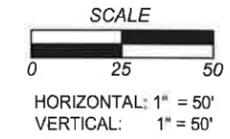
Jones & DeMille Engineering, Inc. CIVIL ENGINEERING - SURVEYING - TESTING GIS - ENVIRONMENTAL 1.800.748.5275 www.jonesandmille.com		APPROVAL RECORD: APPROVED: _____ DATE: _____	DESIGN: _____ DATE: _____	CHECK: _____ DATE: _____	REVIEW: _____ DATE: _____
Trans-Western Petroleum LTD, Inc. Trans-Western Petroleum USG #1 WELL	LOCATION EXHIBIT PROJECT NUMBER: 1404-261	DRAWN: B.L. DATE: 14-09	CHECK: _____ DATE: _____	CHECK: _____ DATE: _____	CHECK: _____ DATE: _____
SEVIER COUNTY		SHEET NO. SP-01			
ORIGINAL SUBMISSION FOR AUTHORIZATION		REVISIONS		DWG NAME: DESIGN_USG1 DWG SET: ### SHT SET: ### SCALE: 1" = 60' DWG CREATED: 2014/09/19 PEN_TBL: ### UPDATED: 11/5/2014 PLOTTED: 11/5/2014	

TRANS - WESTERN PETROLEUM LTD, INC.

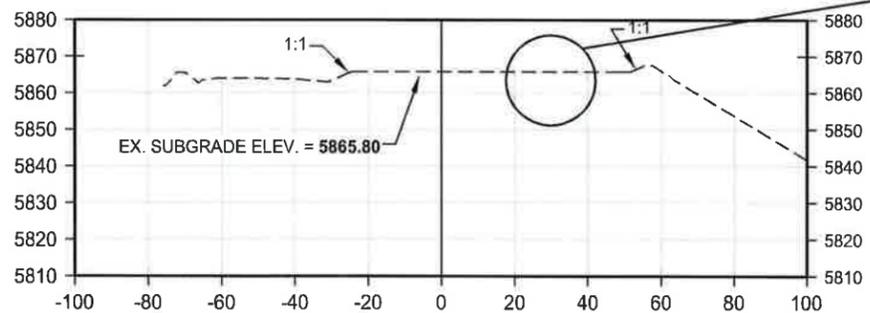
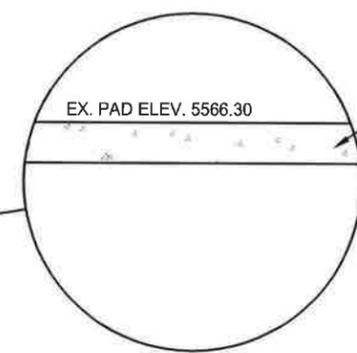
**LOCATION LAYOUT FOR
TRANS - WESTERN PETROLEUM USG#1 WELL
SECTION 23, T.22 S., R.1 W., S.L.B.& M.**



STA. 15+70.00

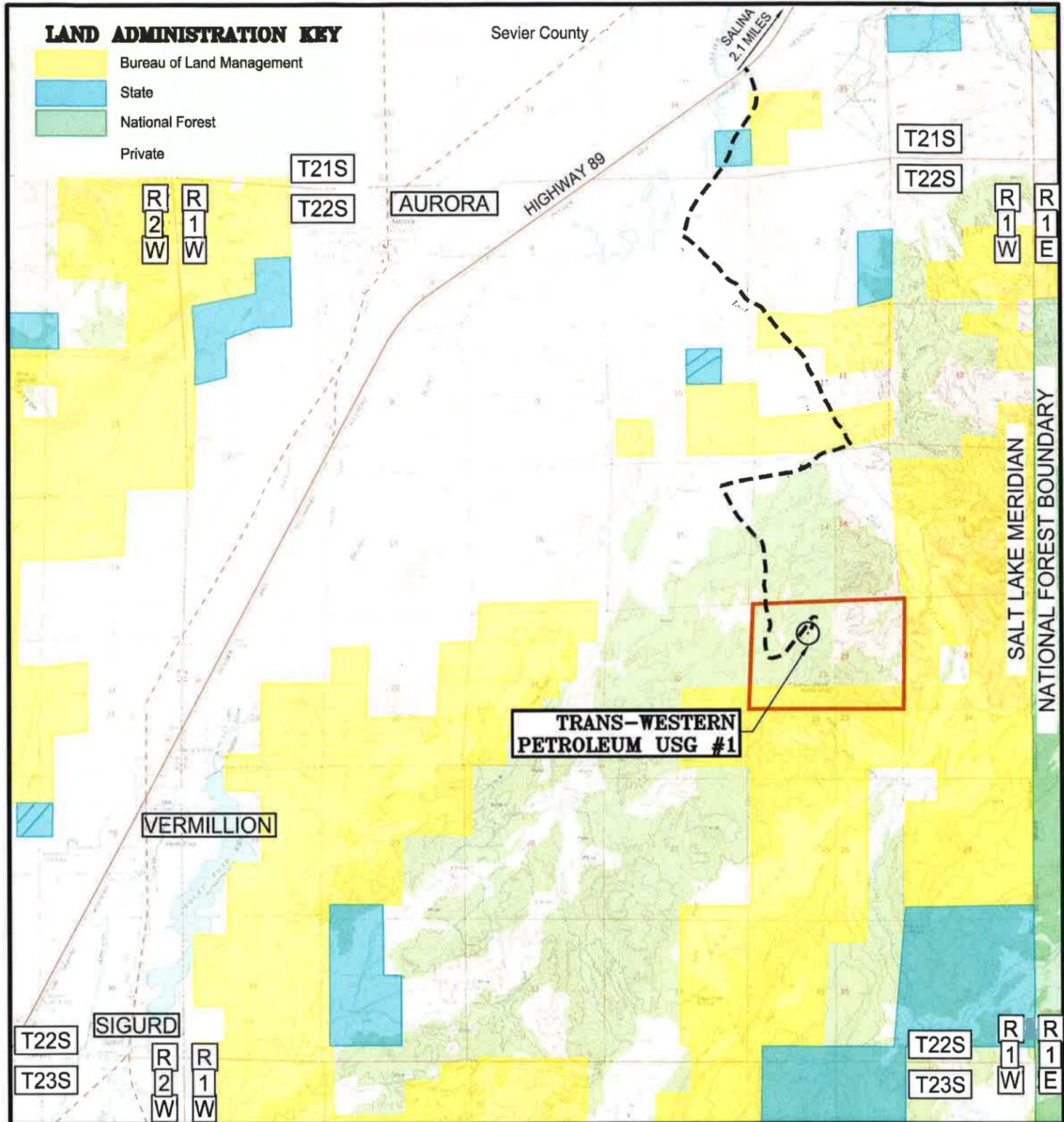


STA. 13+00.00



STA. 11+15.00

Jones & DeMille Engineering, Inc. CIVIL ENGINEERING - SURVEYING - TESTING GIS - ENVIRONMENTAL 1.800.748.5275 www.jonesandmille.com		REVIEW DATE: 14-09 BY:
Trans-Western Petroleum LTD, Inc. Trans-Western Petroleum USG #1 WELL		DESIGN DRAWN: B.L. QUANT:
CROSS-SECTIONS PROJECT NUMBER: 1404-261		CHECK CHECK:
SEVIER COUNTY		SHEET NO. CS-02
ORIGINAL SUBMISSION FOR AUTHORIZATION		REVISIONS
NO. DATE	DESCRIPTION OF REVISION	DWG NAME: DESIGN_USG1 SHIT SET: ### SCALE: 1" = 50' DWG CREATED: 2014/09/19 PLOT DATE: 11/5/2014 PLOT TIME: 11:52:04



<p>LEGEND</p> <p>○ PROPOSED LOCATION</p> <p>--- EXISTING ROADWAY</p> <p>--- NEW ROADWAY</p> <p>UTU - ##### LEASE BOUNDARY</p>		<p>TRANS-WESTERN PETROLEUM USG #1 Section 23, T.22 S., R.1 W., S.L.B. & M. 1531' FNL 2031' FWL</p>	
<p>Jones & DeMille Engineering, Inc. CIVIL ENGINEERING - SURVEYING - TESTING GIS - ENVIRONMENTAL - infrastructure professionals - 1.800.748.5275 www.jonesanddemille.com</p>		<p>Trans-Western Petroleum LTD, Inc. Trans-Western Petroleum USG #1 WELL Vicinity Map</p>	
<p>SCALE: 1" = 5000'</p>		<p>DRAWN: S.J. 14-06</p>	<p>CHECK: D.H.R. 14-06</p>
		<p>FILE: VICINITY MAP</p>	<p>PROJECT: 1404-261</p>
		<p>UPDATED: 11/5/2014</p>	<p>PLOTTED: 11/5/2014</p>
		<p>SHEET: 1</p>	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: Trans-Western Petroleum USG #1
2. NAME OF OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC.	9. API NUMBER: 43041500110000
3. ADDRESS OF OPERATOR: P.O. Box 276, Golden, CO, 80402	PHONE NUMBER: 303 279-4567 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1543 FNL 2010 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 23 Township: 22.0S Range: 01.0W Meridian: S	9. FIELD and POOL or WILDCAT: WILDCAT
	COUNTY: SEVIER
	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 11/11/2014	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Change Total Depth of well to 9600' TVD. Depth was deepened because anticipated tops are coming in much lower than were listed on the plan. Twin Creek top was anticipated at 5778'. Twin Creek is picked by well site geologist at 8543'. The additional depth of the well is required to adequately explore the prospective Navajo formation. Cement volumes will be adjusted accordingly to bring filler cement to 500 feet above the surface casing shoe. Volumes will be based on actual open hole log volumes. Obtained verbal approval for the TD change from UDOGM engineer Dustin Doucet on 11/10/2014.

Approved by the
 UDOGM on 11/10/2014
 Oil, Gas and Mining

Date: _____

By: Dustin Doucet

NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 11/11/2014	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
		7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: Trans-Western Petroleum USG #1	
2. NAME OF OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC.	9. API NUMBER: 43041500110000	
3. ADDRESS OF OPERATOR: P.O. Box 276 , Golden, CO, 80402	PHONE NUMBER: 303 279-4567 Ext	9. FIELD and POOL or WILDCAT: WILDCAT
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1543 FNL 2010 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 23 Township: 22.0S Range: 01.0W Meridian: S	COUNTY: SEVIER	
	STATE: UTAH	
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input checked="" type="checkbox"/> DRILLING REPORT Report Date: 12/2/2014	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.		
<p>This is a monthly status report. The well spudded, was drilled, logged and plugged in the month of November. The status of the well at the end on November is that it is P&A'd. Further details are provided on the Well Completion Report.</p>		
<p>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY December 04, 2014</p>		
NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 12/2/2014	

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	5. LEASE DESIGNATION AND SERIAL NUMBER: FEE
1. TYPE OF WELL	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
2. NAME OF OPERATOR: TRANS-WESTERN PETROLEUM, LTD., INC.	7. UNIT or CA AGREEMENT NAME:
3. ADDRESS OF OPERATOR: P.O. Box 276, Golden, CO, 80402	8. WELL NAME and NUMBER: Trans-Western Petroleum USG #1
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1543 FNL 2010 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NENW Section: 23 Township: 22.0S Range: 01.0W Meridian: S	9. API NUMBER: 43041500110000
PHONE NUMBER: 303 279-4567 Ext	9. FIELD and POOL or WILDCAT: WILDCAT
	COUNTY: SEVIER
	STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 11/24/2014	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input checked="" type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: <input style="width: 100px;" type="text"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

See attached plug and abandon details.

**Accepted by the
 Utah Division of
 Oil, Gas and Mining
 FOR RECORD ONLY
 December 10, 2014**

NAME (PLEASE PRINT) John C. Magjill	PHONE NUMBER 308 848-3279	TITLE Consulting Engineer
SIGNATURE N/A	DATE 12/4/2014	

- 11/20/2014 0:00 to 01:00 Pump plug #1 w/ 280 sx Halliburton cement @ 15.8 ppg, yield 1.51 ft³/sk, 6.17 gal/sk mix water, end of drill pipe at 9000'.
- 11/20/2014 20:00 to 20:30 Wash down, tag plug at 8175' MD. Plug #1 extends from 8175' to 9000'.
- 11/21/2014 06:00 to 07:30 Pump plug #2, w/ 155 sx Halcem™ system @ 15.8 ppg, yield 1.51 cf/sk, 6.17 gal/sk mix water, end of drill pipe at 2132' MD.
- 11/21/2014 14:00 to 14:30 Wash down, tag plug @ 1871' MD, tag of plug #2 witnessed by Mark Jones of UDOGM Price office. Plug extends from 1871 to 2132 ft DF.
- 11/21/2014 17:30 to 18:00 Pump surface plug, plug #3, pump 50 sx Halcem™ system @ 15.8 ppg, yield 1.51 cf/sk, wtr 6.17 gal/sk, end of drill pipe at 155' DF. Circulate cement to surface. Clean cement out of BOP stack. Plug #3 extends from GL (22' DF) to 155' DF.
- 11/24/2014 Set and cement dry hole marker. Install a 4" OD x 12' long dry hole marker post. Insert 4 ft into 9-5/8" surface casing and cement the 4' of post inside the surface casing with neat cement.

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

AMENDED REPORT FORM 8
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG		5. LEASE DESIGNATION AND SERIAL NUMBER:
1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> DRY <input type="checkbox"/> OTHER _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
b. TYPE OF WORK: NEW WELL <input type="checkbox"/> HORIZ. LATS. <input type="checkbox"/> DEEP-EN <input type="checkbox"/> RE-ENTRY <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER _____		7. UNIT or CA AGREEMENT NAME
2. NAME OF OPERATOR:		8. WELL NAME and NUMBER:
3. ADDRESS OF OPERATOR: CITY _____ STATE _____ ZIP _____ PHONE NUMBER: _____		9. API NUMBER:
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: AT TOP PRODUCING INTERVAL REPORTED BELOW: AT TOTAL DEPTH:		10 FIELD AND POOL, OR WILDCAT
		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
		12. COUNTY _____ 13. STATE UTAH

14. DATE SPUDDED:	15. DATE T.D. REACHED:	16. DATE COMPLETED: _____ ABANDONED <input type="checkbox"/> READY TO PRODUCE <input type="checkbox"/>	17. ELEVATIONS (DF, RKB, RT, GL):
18. TOTAL DEPTH: MD _____ TVD _____	19. PLUG BACK T.D.: MD _____ TVD _____	20. IF MULTIPLE COMPLETIONS, HOW MANY? *	21. DEPTH BRIDGE MD _____ PLUG SET: TVD _____
22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)		23. WAS WELL CORED? NO <input type="checkbox"/> YES <input type="checkbox"/> (Submit analysis) WAS DST RUN? NO <input type="checkbox"/> YES <input type="checkbox"/> (Submit report) DIRECTIONAL SURVEY? NO <input type="checkbox"/> YES <input type="checkbox"/> (Submit copy)	

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)

26. PRODUCING INTERVALS					27. PERFORATION RECORD				
FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS	
(A)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>
(B)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/>	Squeezed <input type="checkbox"/>

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

WAS WELL HYDRAULICALLY FRACTURED? YES NO IF YES -- DATE FRACTURED: _____

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL

29. ENCLOSED ATTACHMENTS:	30. WELL STATUS:
<input type="checkbox"/> ELECTRICAL/MECHANICAL LOGS <input type="checkbox"/> GEOLOGIC REPORT <input type="checkbox"/> DST REPORT <input type="checkbox"/> DIRECTIONAL SURVEY <input type="checkbox"/> SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION <input type="checkbox"/> CORE ANALYSIS <input type="checkbox"/> OTHER: _____	

31. INITIAL PRODUCTION

INTERVAL A (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL B (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL C (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

INTERVAL D (As shown in item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

33. SUMMARY OF POROUS ZONES (Include Aquifers):

Show all important zones of porosity and contents thereof. Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)

35. ADDITIONAL REMARKS (Include plugging procedure)

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) _____ TITLE _____
 SIGNATURE *John G. Magill* _____ DATE _____

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining
 1594 West North Temple, Suite 1210
 Box 145801
 Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940



USG #1 MWD 0' to 9407' Final Survey Report

Report Date: December 02, 2014 - 10:28 AM
Client: Trans-Western Petroleum
Field: UT, Sevier County (NAD 83 CZ US Feet)
Structure / Slot: Trans-Western Sec 23-22S-1W (USG #1) / USG #1
Well: USG #1
Borehole: Original Hole
Rig / API#: SST-54 / 43-041-50011
Survey Name: USG #1 MWD 0' to 9407' Final
Survey Date: November 04, 2014
Tort / AHD / DDI / ERD Ratio: 101.867 ° / 566.269 ft / 4.763 / 0.061
Coordinate Reference System: NAD83 Utah State Plane, Central Zone, US Feet
Location Lat / Long: N 38° 52' 53.95298", W 111° 52' 46.09221"
Location Grid N/E/Y/X: N 6761619.314 ftUS, E 1532385.699 ftUS
CRS Grid Convergence Angle: -0.2431 °
Grid Scale Factor: 1.00003606
Version / Patch: 2.8.572.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 23.886 ° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB 18ft
TVD Reference Elevation: 5883.000 ft above MSL
Seabed / Ground Elevation: 5865.000 ft above MSL
Magnetic Declination: 11.514 °
Total Gravity Field Strength: 998.7903mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 50902.923 nT
Magnetic Dip Angle: 64.402 °
Declination Date: November 04, 2014
Magnetic Declination Model: BGGM 2014
North Reference: True North
Grid Convergence Used: 0.0000 °
Total Corr Mag North→True North: 11.5143 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
USG #1 SHL	0.00			0.00		0.00	0.00	N/A	6761619.31	1532385.70	38.8816536	-111.8794701
First SLB MWD	236.00	2.40	65.60	235.93	3.69	2.04	4.50	1.02	6761621.34	1532390.21	38.8816592	-111.8794542
	336.00	2.01	54.61	335.86	6.76	3.92	7.84	0.57	6761623.20	1532393.56	38.8816644	-111.8794425
	424.00	2.02	42.05	423.80	9.56	5.97	10.14	0.50	6761625.24	1532395.86	38.8816700	-111.8794344
	521.00	1.79	25.71	520.75	12.70	8.60	11.94	0.60	6761627.87	1532397.68	38.8816772	-111.8794281
	614.00	1.86	21.65	613.70	15.66	11.32	13.13	0.16	6761630.57	1532398.87	38.8816847	-111.8794239
	708.00	1.46	39.88	707.66	18.34	13.66	14.46	0.70	6761632.91	1532400.22	38.8816911	-111.8794193
	772.00	1.62	29.50	771.64	20.03	15.07	15.43	0.50	6761634.32	1532401.19	38.8816950	-111.8794159
	832.00	2.36	15.91	831.60	22.09	16.99	16.18	1.46	6761636.24	1532401.95	38.8817003	-111.8794132
	930.00	2.68	22.23	929.51	26.38	21.06	17.60	0.44	6761640.30	1532403.39	38.8817114	-111.8794082
	1025.00	2.70	21.79	1024.41	30.84	25.19	19.27	0.03	6761644.42	1532405.08	38.8817228	-111.8794024
	1120.00	2.67	28.73	1119.30	35.27	29.20	21.17	0.34	6761648.43	1532406.99	38.8817338	-111.8793957
	1215.00	1.91	12.28	1214.23	39.03	32.69	22.57	1.05	6761651.91	1532408.41	38.8817434	-111.8793908
	1310.00	2.43	26.40	1309.18	42.60	36.05	23.80	0.78	6761655.26	1532409.66	38.8817526	-111.8793864
	1406.00	2.36	18.04	1405.07	46.60	39.76	25.32	0.37	6761658.96	1532411.19	38.8817628	-111.8793811
	1501.00	3.27	21.65	1499.96	51.26	44.14	26.93	0.98	6761663.34	1532412.82	38.8817748	-111.8793755
	1593.00	1.85	14.94	1591.86	55.35	48.02	28.28	1.58	6761667.21	1532414.18	38.8817854	-111.8793707
	1688.00	2.31	36.73	1686.80	58.74	51.03	29.82	0.95	6761670.22	1532415.74	38.8817937	-111.8793653
	1783.00	4.05	21.37	1781.65	63.96	55.69	32.19	2.02	6761674.87	1532418.13	38.8818065	-111.8793570
	1879.00	4.66	0.37	1877.38	70.93	62.75	33.45	1.77	6761681.93	1532419.42	38.8818259	-111.8793526
9-5/8" Csg	1968.00	4.74	23.38	1966.09	77.92	69.75	34.93	2.11	6761688.91	1532420.93	38.8818451	-111.8793473
	2000.00	4.59	26.52	1997.99	80.52	72.10	36.03	0.93	6761691.27	1532422.04	38.8818516	-111.8793435
	2074.00	4.30	34.55	2071.76	86.20	77.03	38.92	0.93	6761696.18	1532424.95	38.8818651	-111.8793333
	2169.00	3.27	44.29	2166.56	92.23	81.90	42.83	1.27	6761701.04	1532428.88	38.8818785	-111.8793196
	2264.00	2.74	47.00	2261.43	96.85	85.39	46.38	0.57	6761704.51	1532432.44	38.8818880	-111.8793071
	2359.00	1.82	47.78	2356.35	100.32	87.95	49.16	0.97	6761707.05	1532435.23	38.8818951	-111.8792974
	2454.00	0.39	85.82	2451.33	101.85	88.98	50.59	1.61	6761708.08	1532436.67	38.8818979	-111.8792924
	2550.00	0.14	29.45	2547.33	102.12	89.11	50.97	0.34	6761708.21	1532437.05	38.8818983	-111.8792910
	2645.00	0.14	155.61	2642.33	102.15	89.10	51.08	0.27	6761708.20	1532437.15	38.8818983	-111.8792906
	2740.00	0.12	257.34	2737.33	102.01	88.97	51.02	0.22	6761708.07	1532437.10	38.8818979	-111.8792908
	2836.00	0.18	239.64	2833.33	101.83	88.88	50.80	0.07	6761707.98	1532436.87	38.8818976	-111.8792916
	2929.00	0.14	166.24	2926.33	101.63	88.69	50.70	0.21	6761707.80	1532436.78	38.8818971	-111.8792920
	3024.00	0.18	338.99	3021.33	101.64	88.72	50.68	0.33	6761707.82	1532436.75	38.8818972	-111.8792920
	3119.00	0.18	127.62	3116.33	101.71	88.76	50.74	0.36	6761707.86	1532436.82	38.8818973	-111.8792918
	3215.00	0.14	305.30	3212.33	101.69	88.74	50.76	0.33	6761707.84	1532436.84	38.8818973	-111.8792918
	3308.00	0.73	113.32	3305.33	101.72	88.57	51.21	0.93	6761707.67	1532437.28	38.8818968	-111.8792902
	3403.00	2.30	60.89	3400.29	103.25	89.26	53.43	2.05	6761708.35	1532439.51	38.8818987	-111.8792824
	3498.00	4.36	49.64	3495.13	108.03	92.53	57.85	2.27	6761711.60	1532443.94	38.8819077	-111.8792668
	3592.00	6.29	44.80	3588.72	116.96	98.50	64.20	2.10	6761717.54	1532450.32	38.8819241	-111.8792445
	3688.00	8.24	32.65	3683.95	127.77	108.02	71.62	2.57	6761727.04	1532457.78	38.8819502	-111.8792185
	3783.00	10.96	26.39	3777.61	143.52	121.84	79.31	3.07	6761740.82	1532465.52	38.8819881	-111.8791915
	3878.00	13.46	24.28	3870.46	163.60	140.01	87.87	2.67	6761758.96	1532474.16	38.8820380	-111.8791614
	3973.00	15.34	22.93	3962.47	187.22	161.66	97.31	2.01	6761780.57	1532483.70	38.8820975	-111.8791282
	4068.00	16.81	21.43	4053.75	213.51	186.03	107.23	1.61	6761804.89	1532493.72	38.8821644	-111.8790934
	4163.00	16.83	16.48	4144.69	240.88	212.01	116.15	1.51	6761830.83	1532502.75	38.8822357	-111.8790621
	4258.00	16.29	10.25	4235.76	267.46	238.30	122.42	1.95	6761857.10	1532509.13	38.8823079	-111.8790400
	4353.00	15.29	4.88	4327.18	292.25	263.90	125.86	1.86	6761882.68	1532512.68	38.8823782	-111.8790280
	4447.00	14.73	1.18	4417.97	315.00	288.20	127.15	1.18	6761906.98	1532514.08	38.8824449	-111.8790234
	4543.00	13.67	356.46	4511.04	336.33	311.72	126.70	1.64	6761930.50	1532513.73	38.8825095	-111.8790250
	4638.00	13.18	348.97	4603.45	355.17	333.55	123.94	1.90	6761952.35	1532511.06	38.8825694	-111.8790347
	4734.00	12.46	342.04	4697.07	371.86	354.14	118.65	1.77	6761972.96	1532505.86	38.8826259	-111.8790533
	4829.00	11.78	329.25	4789.97	385.11	372.23	110.53	2.91	6761991.08	1532497.81	38.8826756	-111.8790818
	4924.00	11.21	317.75	4883.07	394.46	387.40	99.36	2.48	6762006.31	1532486.71	38.8827173	-111.8791210
	5020.00	9.98	315.78	4977.43	401.33	400.27	87.29	1.34	6762019.23	1532474.69	38.8827526	-111.8791634
	5114.00	7.68	321.54	5070.32	407.29	411.03	77.70	2.62	6762030.02	1532465.14	38.8827821	-111.8791971
	5209.00	5.64	327.40	5164.67	412.81	419.93	71.23	2.26	6762038.95	1532458.72	38.8828066	-111.8792198
	5305.00	5.20	331.81	5260.24	418.09	427.74	66.64	0.63	6762046.78	1532454.16	38.8828280	-111.8792360
	5400.00	3.79	319.50	5354.95	422.09	433.92	62.57	1.79	6762052.97	1532450.11	38.8828450	-111.8792503
	5496.00	2.97	299.23	5450.79	423.69	437.54	58.34	1.50	6762056.62	1532445.90	38.8828549	-111.8792651
	5590.00	1.71	292.44	5544.71	423.88	439.26	54.92	1.36	6762058.36	1532442.48	38.8828597	-111.8792771
	5685.00	0.12	299.39	5639.69	423.86	439.86	53.52	1.67	6762058.96	1532441.08	38.8828613	-111.8792821
	5780.00	1.11	96.22	5734.69	424.14	439.81	54.34	1.28	6762058.90	1532441.90	38.8828612	-111.8792792
	5875.00	3.68	107.25	5829.59	424.77	438.80	58.16	2.74	6762057.88	1532445.72	38.8828584	-111.8792658
	5970.00	6.30	125.52	5924.23	424.08	434.87	65.32	3.19	6762053.92	1532452.86	38.8828476	-111.8792466
	6065.00	6.09	137.59	6018.68	421.00	428.13	72.95	1.39	6762047.14	1532460.47	38.8828291	-111.8792138
	6160.00	3.79	158.24	6113.33	416.78	421.49	77.51	3.02	6762040.49	1532465.00	38.8828109	-111.8791979
	6256.00	2.78	187.74	6209.18	412.32	416.						

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
	7207.00	0.22	141.06	7159.85	398.95	405.35	69.93	0.14	6762024.37	1532457.35	38.8827665	-111.8792244
	7270.00	0.05	209.14	7222.85	398.86	405.23	69.99	0.33	6762024.26	1532457.41	38.8827662	-111.8792242
	7333.00	0.11	260.93	7285.85	398.80	405.19	69.92	0.14	6762024.22	1532457.34	38.8827661	-111.8792244
	7397.00	0.08	148.49	7349.85	398.75	405.15	69.88	0.25	6762024.17	1532457.30	38.8827660	-111.8792246
	7460.00	0.36	82.58	7412.85	398.82	405.13	70.10	0.53	6762024.16	1532457.52	38.8827660	-111.8792238
	7524.00	0.11	45.40	7476.85	398.98	405.20	70.35	0.44	6762024.23	1532457.77	38.8827661	-111.8792229
	7587.00	0.12	306.73	7539.85	399.06	405.29	70.34	0.28	6762024.31	1532457.76	38.8827664	-111.8792230
	7651.00	0.12	59.64	7603.85	399.13	405.36	70.34	0.31	6762024.39	1532457.76	38.8827666	-111.8792230
	7714.00	0.35	53.40	7666.85	399.35	405.51	70.55	0.37	6762024.53	1532459.97	38.8827670	-111.8792222
	7776.00	0.28	61.23	7728.85	399.63	405.69	70.84	0.13	6762024.72	1532458.26	38.8827675	-111.8792212
	7839.00	0.14	110.52	7791.85	399.76	405.74	71.04	0.34	6762024.76	1532458.47	38.8827676	-111.8792205
	7903.00	0.14	99.72	7855.85	399.78	405.70	71.19	0.04	6762024.72	1532458.62	38.8827675	-111.8792200
	7967.00	0.61	80.86	7919.85	399.99	405.74	71.61	0.75	6762024.76	1532459.03	38.8827676	-111.8792185
	8031.00	0.59	48.99	7983.84	400.47	406.01	72.19	0.52	6762025.03	1532459.62	38.8827684	-111.8792165
	8094.00	0.10	137.57	8046.84	400.74	406.18	72.47	0.95	6762025.20	1532459.90	38.8827688	-111.8792155
	8158.00	0.38	78.96	8110.84	400.84	406.18	72.72	0.53	6762025.20	1532460.14	38.8827688	-111.8792146
	8222.00	0.32	146.51	8174.84	400.87	406.07	73.03	0.61	6762025.09	1532460.45	38.8827685	-111.8792135
	8285.00	0.59	85.26	8237.84	400.93	405.95	73.45	0.82	6762024.97	1532460.87	38.8827682	-111.8792121
	8349.00	1.06	99.69	8301.83	401.23	405.88	74.36	0.80	6762024.89	1532461.78	38.8827680	-111.8792088
	8412.00	1.27	104.87	8364.82	401.48	405.61	75.61	0.37	6762024.61	1532463.03	38.8827672	-111.8792045
	8476.00	0.08	48.62	8428.82	401.63	405.45	76.33	1.92	6762024.45	1532463.75	38.8827668	-111.8792019
	8539.00	0.26	158.86	8491.81	401.57	405.35	76.41	0.47	6762024.35	1532463.83	38.8827665	-111.8792016
	8603.00	0.59	108.74	8555.81	401.50	405.11	76.78	0.73	6762024.11	1532464.20	38.8827659	-111.8792004
	8666.00	0.75	102.05	8618.81	401.61	404.92	77.49	0.28	6762023.91	1532464.91	38.8827654	-111.8791979
	8729.00	0.35	63.17	8681.81	401.85	404.92	78.06	0.83	6762023.91	1532465.48	38.8827654	-111.8791958
	8793.00	0.28	28.29	8745.81	402.15	405.14	78.31	0.31	6762024.14	1532465.73	38.8827660	-111.8791950
	8920.00	0.23	289.42	8872.80	402.44	405.50	78.22	0.31	6762024.49	1532465.64	38.8827670	-111.8791953
Last SLB MWD Survey Proj to Bit/TD	9016.00	0.10	210.96	8968.80	402.35	405.49	77.99	0.24	6762024.49	1532465.41	38.8827669	-111.8791961
	9407.00	0.10	210.96	9359.80	401.67	404.91	77.64	0.00	6762023.90	1532465.06	38.8827653	-111.8791973

Survey Type: Definitive Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	18.000	Act Stns	12.250	9.625	SLB_MWD-STD-Depth Only	Original Hole / USG #1 MWD 0' to 9407' Final
	1	18.000	9016.000	Act Stns	12.250	9.625	SLB_MWD-STD	Original Hole / USG #1 MWD 0' to 9407' Final
	1	9016.000	9407.000	1/98.425	12.250	9.625	SLB_BLIND+TREND	Original Hole / USG #1 MWD 0' to 9407' Final
	1	9407.000	9407.000	Act Stns	12.250	9.625	SLB_BLIND+TREND	Original Hole / USG #1 MWD 0' to 9407' Final

BHL: 1531-404.91=1126.09 FNL
2031+77.64=2108.64 FWL

T. M. MCCOY & CO., INC.

CONSULTING GEOLOGISTS
P.O. BOX 608 · WILSON, WYOMING 83014 · 307-733-4332

Scale 1:240 (5"=100') Imperial Measured Depth Log

Well Name: Trans-Western Petroleum Ltd Inc USG 1
Location: NE NW Sec. 23, T2S, R1W, Sevier County, Utah
License Number: API 43-041-50011
Spud Date: 2 November 2014
Surface Coordinates: 1543' FNL & 2010' FWL of Sec. 23
Lat/Long: 38.88162, -111.87955 (NAD 83)
Bottom Hole Coordinates: Directional surveys ended at 9016' MD, 8968.8' TVD:
405.45' N & 77.98' E of Surface Location
Ground Elevation (ft): 5865
Logged Interval (ft): 6000
Formation: Arapien - Navajo
Type of Drilling Fluid: Fresh Water-Based Mud & Salt-Saturated Mud

Region: Utah Thrust Belt
Drilling Completed: 16 November 2014
K.B. Elevation (ft): 5887
Total Depth (ft): 9407

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Trans-Western Petroleum Ltd., Inc.
Address: P.O. Box 276
Golden, CO 80402
303-279-4567

GEOLOGIST

Name: Tim McCoy
Company: T. M. McCoy & Co., Inc.
Address: P.O. Box 608
Wilson, WY
307-733-4332

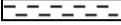
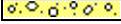
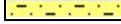
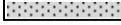
Comments

Mud Logger: Charlene McCoy

Gas Detection: Agilent 7890A Dual FID Total Gas/Gas Chromatograph w/ TCD for CO2

Pason EDR: Drilling Time & Lag by Strokes (Pason LagD)

ROCK TYPES

	Cht		Lmst		Sltst-yelbrn		Bit-metamorphics
	Fracfill		Mrlst-dol		Sltst		Rock flour lt-gy
	Sh--green		Mrlst		Muddy ss red-brn		Sltst col
	Sltst gyred		Salt		Ss		Grayed-out
	Sh gy-red		Shale		Shale limy		Sh gy-blk
	Anhy		Sh gybrn		Mrlst red-brn		Sh brn-blk
	Brec ls		Sh yel-brn		Bent		Coal
	Brec		Sh red-brn		Sltst-grn		Sh brn gy
	Clyst		Sh col		Sltst brn		Sh gray
	Congl		Sltst--gray		Sltst gyredbrn		Ss arg
	Dol		Sltst- red brn		Cmt		

ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclfrag
- Calc
- Carb
- Chtdk
- Chtl
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Lsnod
- Nodule
- Phos
- Pyr
- Salt

- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chalcedony
- Fracfill

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec

- Pellet
- Pisolite
- Plant
- Strom

STRINGER

- Sltstgrg yel-brn
- Sltstgrg yel-brn
- Sltstgrg brn
- Fracfill
- Sltststgrg gyredbrn
- Sltst gyredbrn
- Sltststgrg rd-brn
- Shstgrg brnblk
- Shstgrg brnblk
- Shstgrg gybrn
- Shstgrg red-brn
- Shstgrg gy red
- Shstgrg wh bkg
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst

- Sltststgrg grn
- Sltststgrg gray
- Sltstgrg
- Ssstgrg
- Anhystgrg
- Shstgrg gy-grn
- Shstgrg green
- Shstgrg gy calc
- Saltstr
- Sltststgrg col

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy
- Cht

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

OIL SHOW

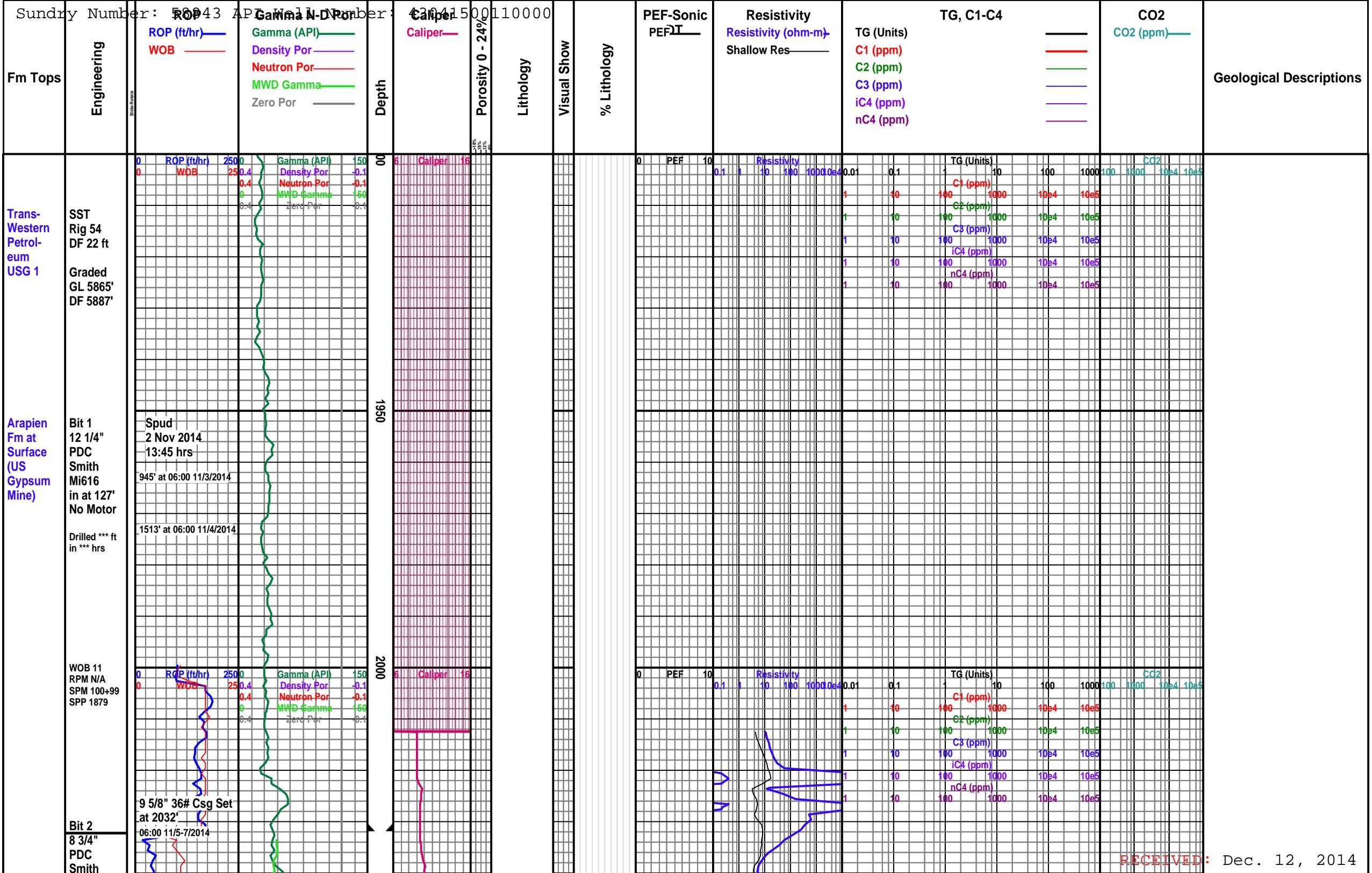
- Even
- Spotted
- Ques
- Dead

INTERVAL

- Slide
- Core lost
- Core
- Dst

EVENT

- Csg shoe right
- Csg shoe left
- Rft
- Off btm
- Connection
- Fm-bit line
- Sidewall
- Head-space jar
- Iso-tube
- Csg shoe



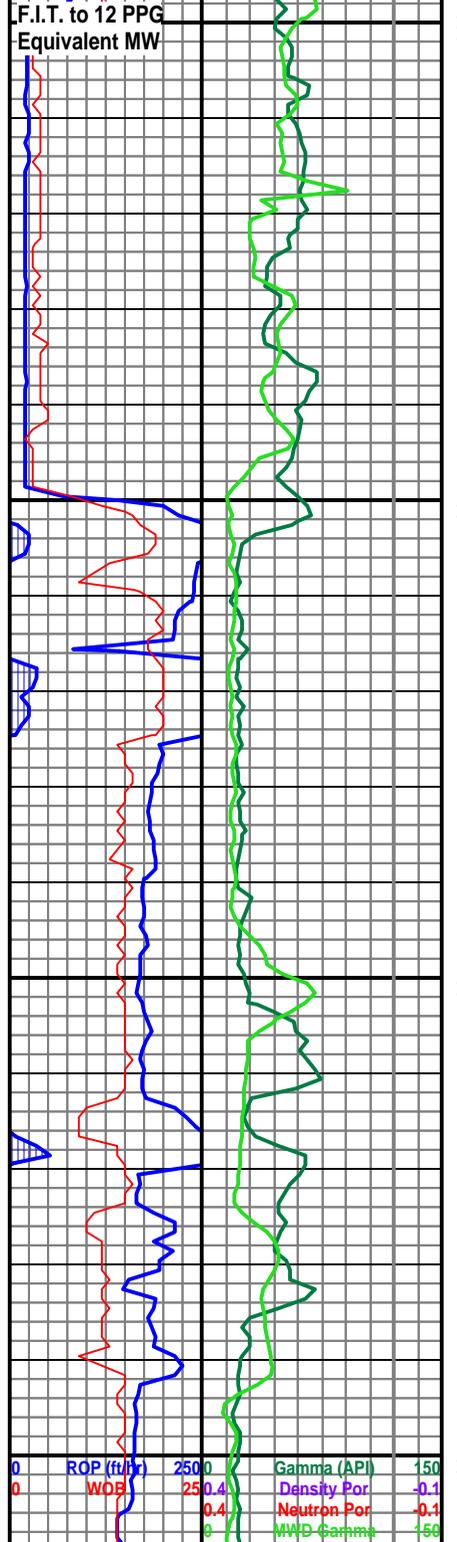
MDS16
with
Path-
finder
Rotary
Steerable
System
0.288
Rev/Gal
Power-
Drive

MD 2074
INC 4.30
AZ 34.55
TVD 2072

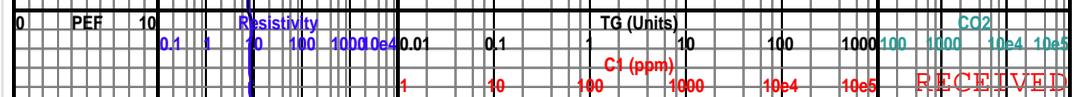
WOB 2
RPM 30 152
SPM 74+76
PP 1662

MD 2169
INC 3.27
AZ 44.29
TVD 2167

WOB 15
RPM 32 160
SPM 79+79
SPP 2196



2050
2100
2150
2200



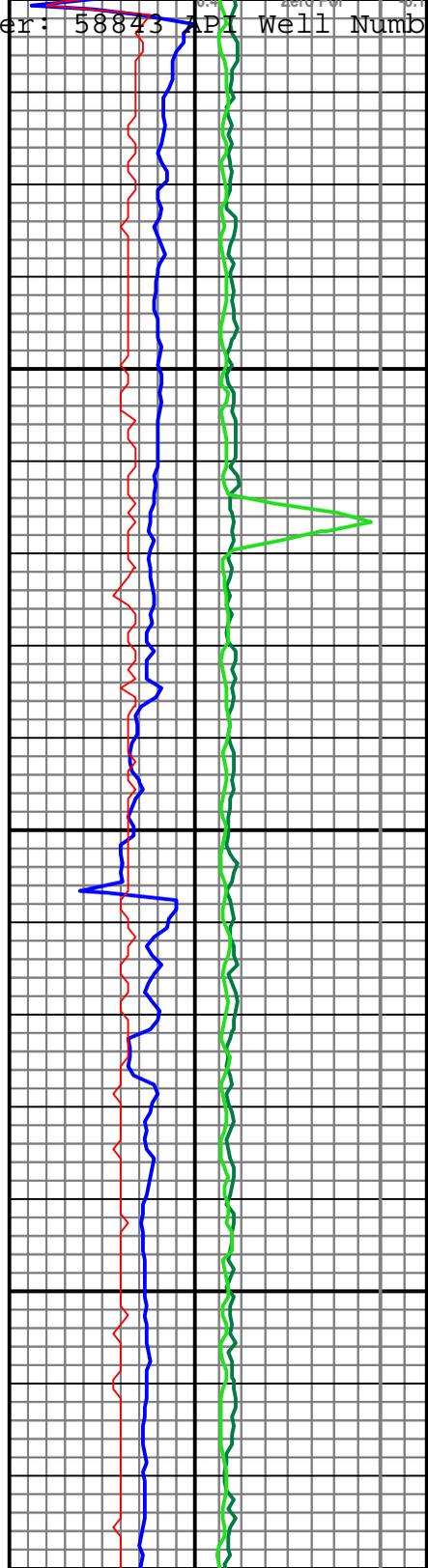
ROP (ft/hr) 2500
WOB 250.4
Gamma (API) 150
Density Por -0.1
Neutron Por -0.1
MWD Gamma -50

Sundry Number: 58843 API Well Number: 4304150011000

MD 2264
INC 2.74
AZ 47.00
TVD 2261

WOB 16
RPM 34 160
SPM 79+79
SPP 2262

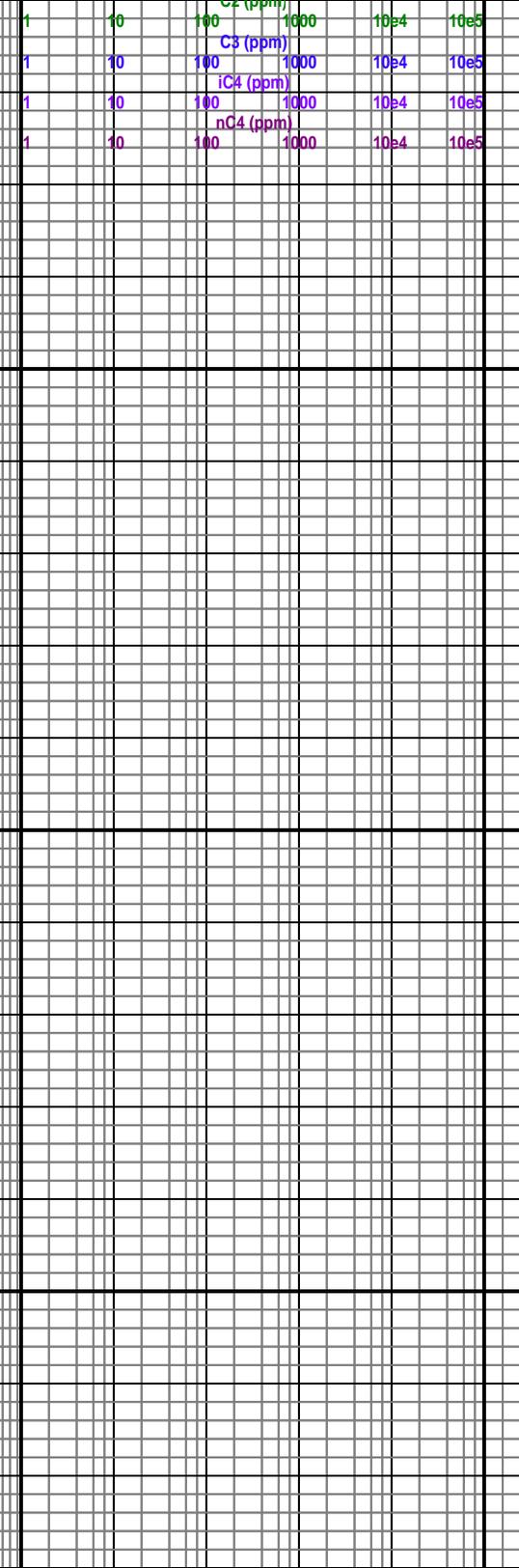
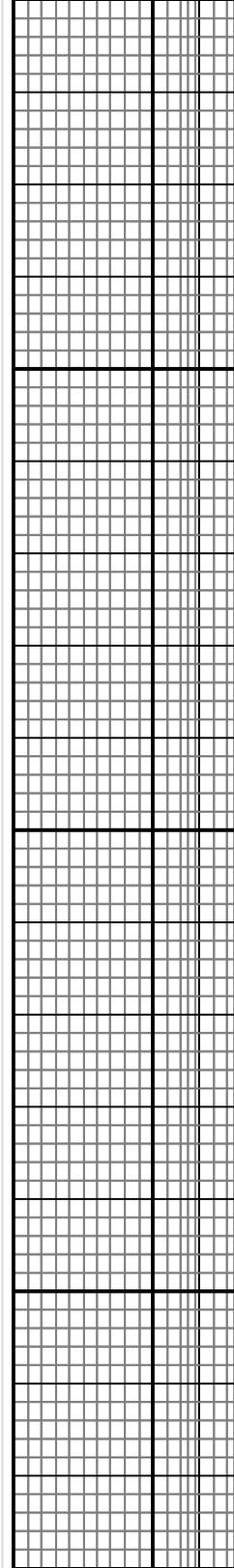
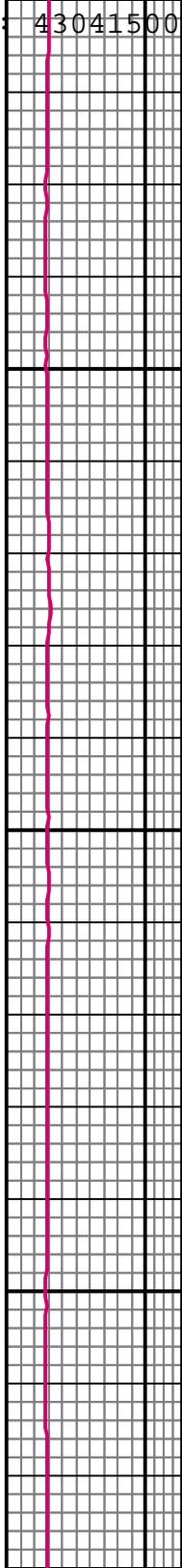
MD 2359
INC 1.82
AZ 47.78
TVD 2356



2250

2300

2350



C2 (ppm) 1 10 100 1000 10e4 10e5
C3 (ppm) 1 10 100 1000 10e4 10e5
IC4 (ppm) 1 10 100 1000 10e4 10e5
nC4 (ppm) 1 10 100 1000 10e4 10e5

WOB 15
RPM 36 160
SPM 79+79
SPP 2270

ROP (Whr) 2500
WOB 250.4
Gamma (API) 150
Density Por -0.1
Neutron Por -0.1
MWD Gamma -50
Zero Por -0.1

2400

MD 2454
INC 0.38
AZ 85.82
TVD 2451

Mud 2454
Wt 9.85
Vis 33
PV 6
YP 5
Gels 1/3/4
WL 14.0
Cake 1/0
pH 8.0
Ca 1890
Cl 120000
C Sol 3.6

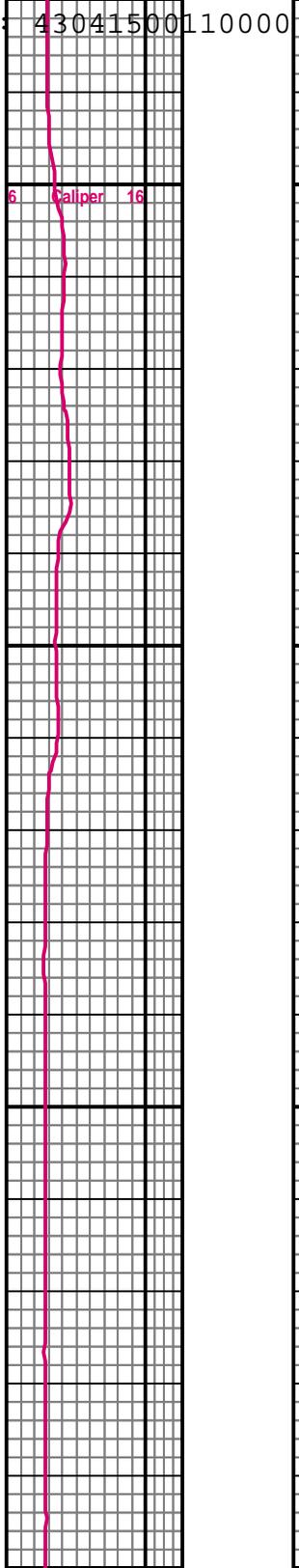
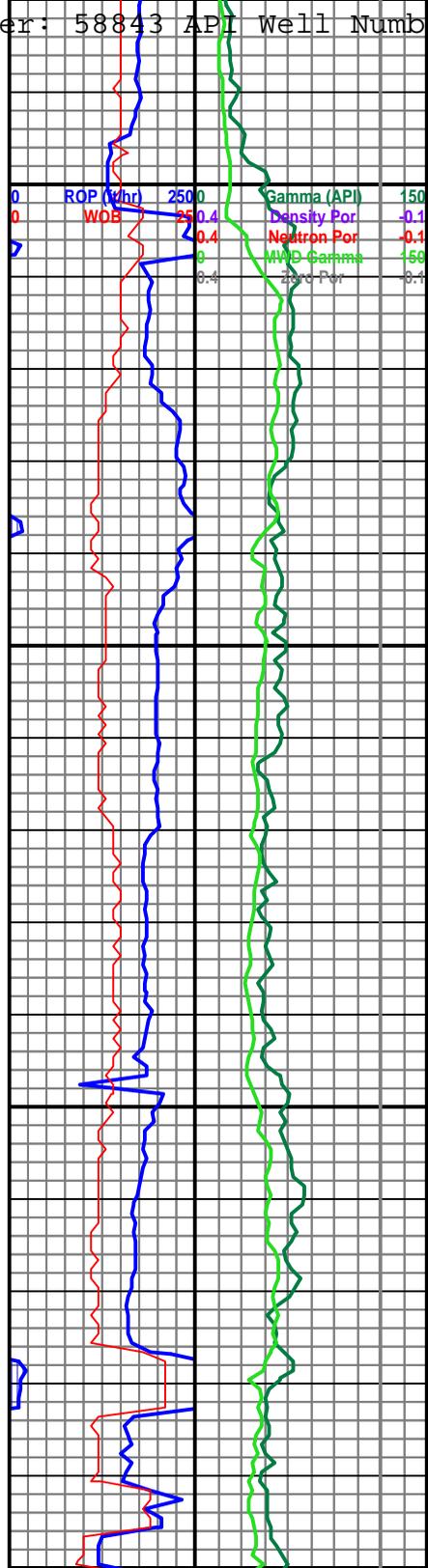
2450

WOB 13
RPM 36 162
SPM 79+81
SPP 2259

2500

MD 2550

25



PEF 10

Resistivity

0.01 0.1

TG (Units)

10 100 1000

100 1000 10e4 10e5

CO2

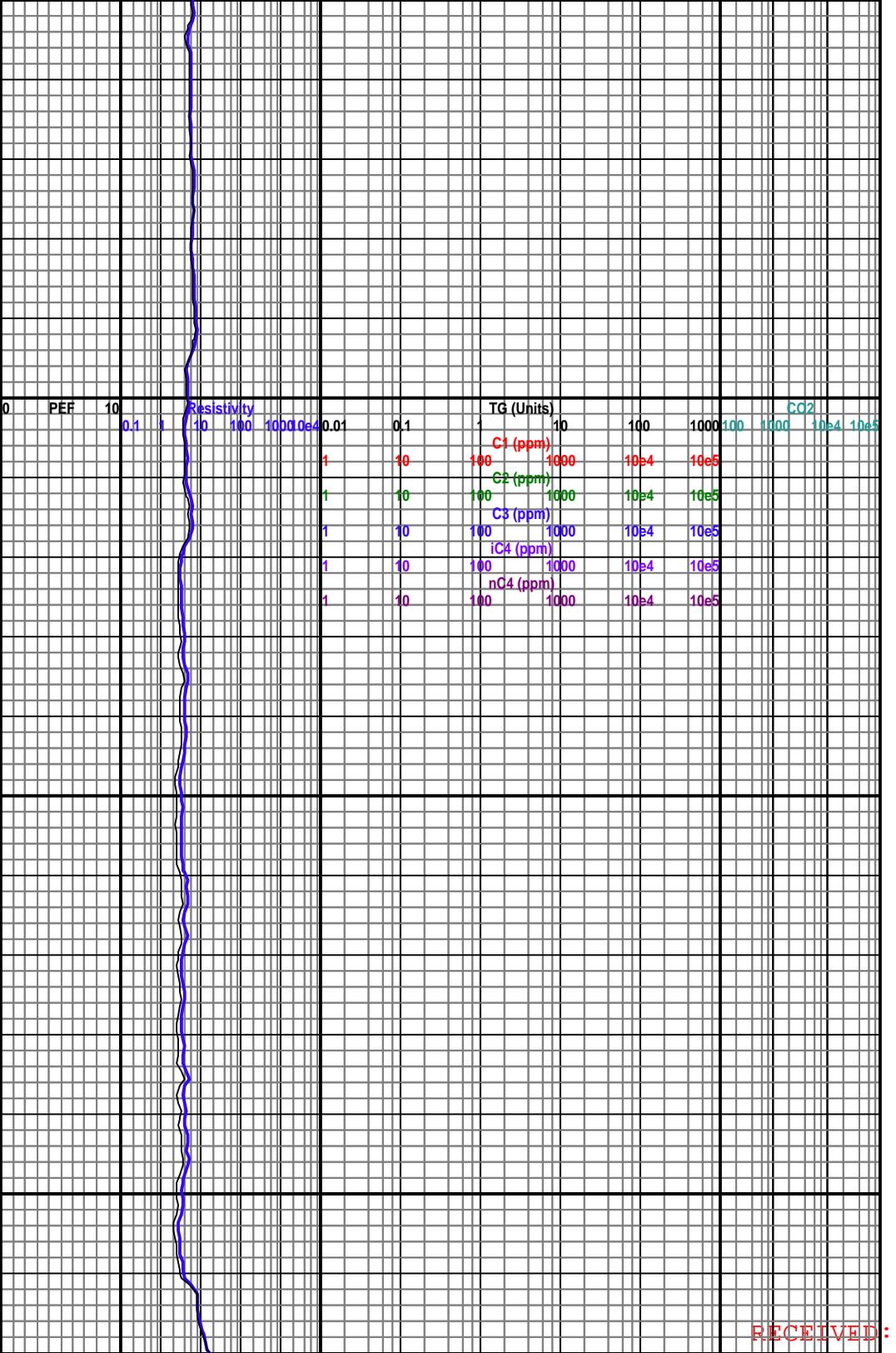
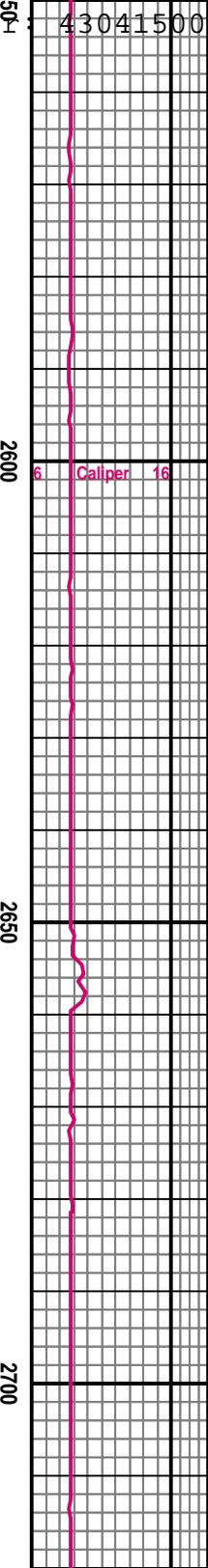
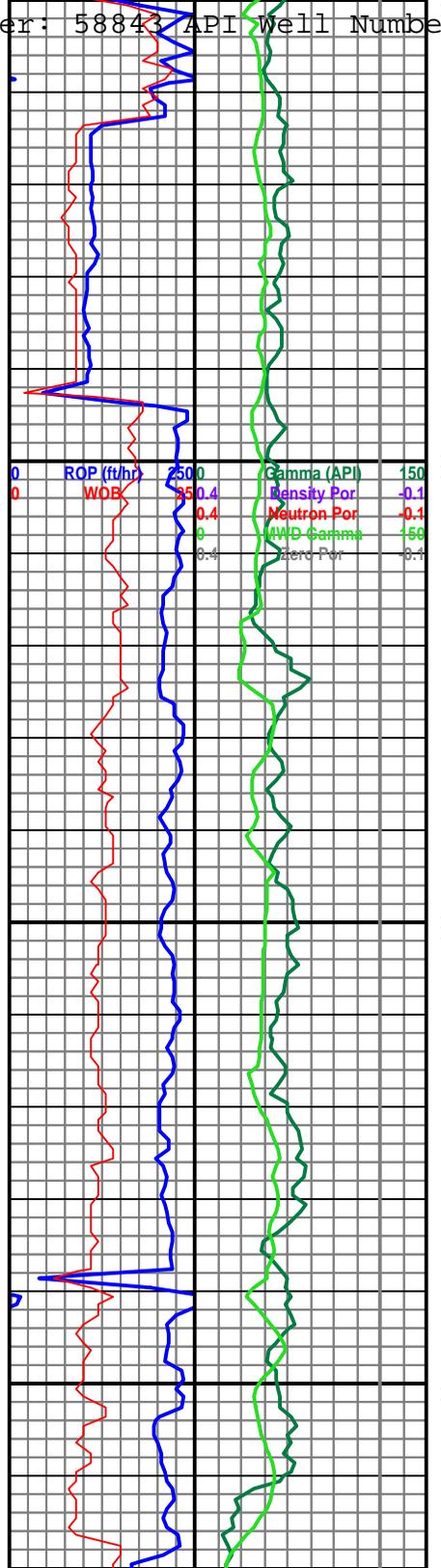
CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				
1	10	100	1000	10e4	10e5				

MD 2350
 INC 0.14
 AZ 29.45
 TVD 2547

WOB 17
 RPM 35 161
 SPM 79+81
 SPP 2434

MD 2645
 INC 0.14
 AZ 155.61
 TVD 2642

WOB 9
 RPM 34 163
 SPM 80+83
 SPP 2429

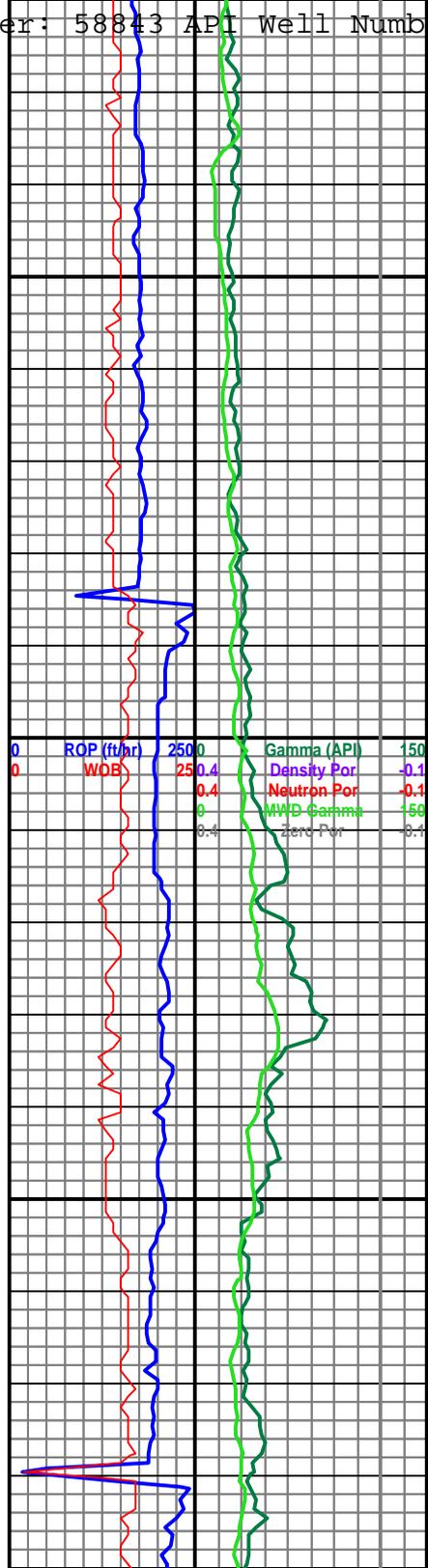


PEF	10	0.1	1	10	100	1000	10e4	0.01	0.1	1	10	100	1000	10e4	10e5	100	1000	10e4	10e5	

MD 2740
INC 0.12
AZ 257.34
TVD 2737

WOB 16
RPM 36 161
SPM 80+79
SPP 2468

MD 2836
INC 0.18
AZ 239.64
TVD 2833

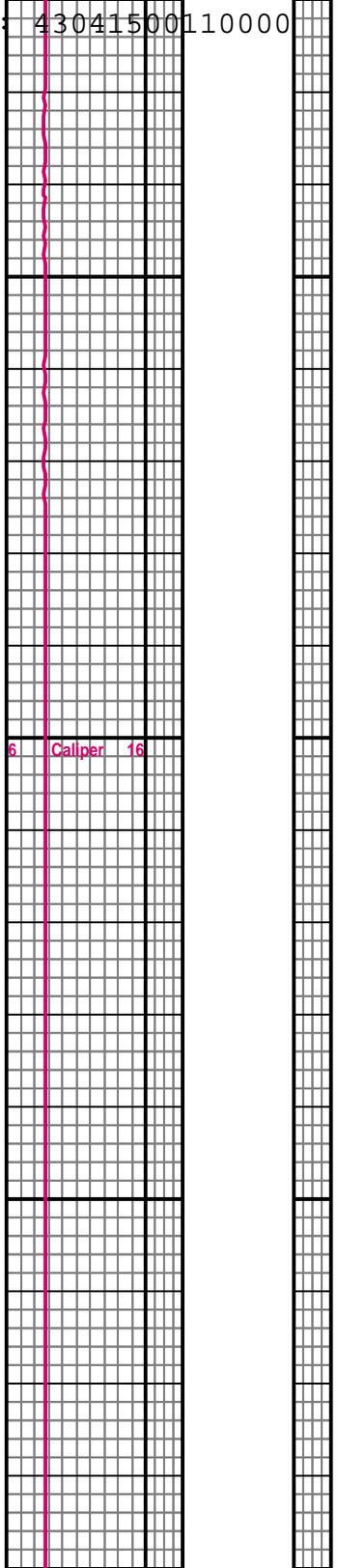


2750

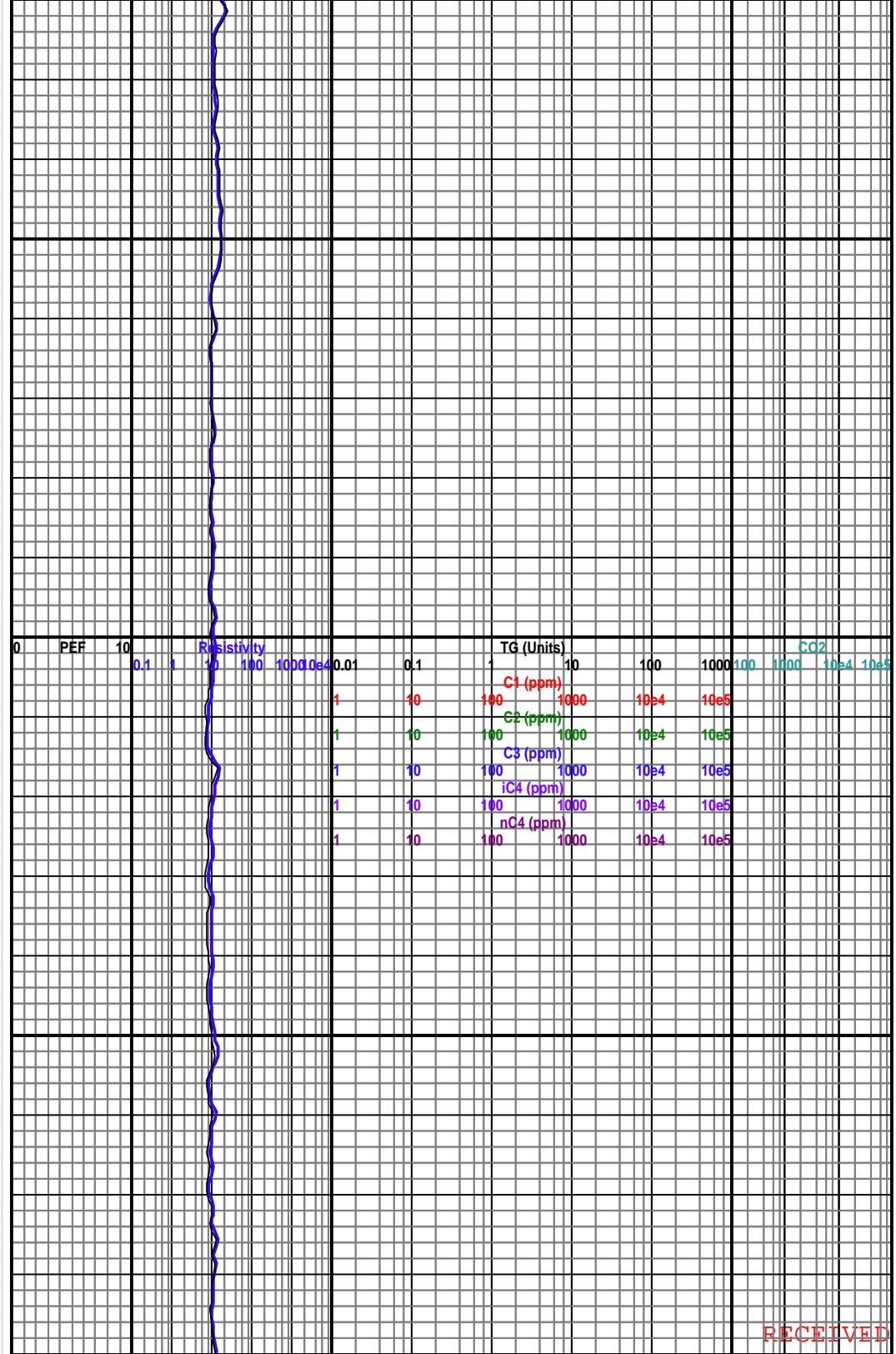
2800

2850

0	ROP (ft/hr)	250	Gamma (API)	150
0	WOB	25	Density Por	0.4
0		0.4	Neutron Por	0.1
0		0	MWD Gamma	150
0		0.4	Zero Por	0.1



6



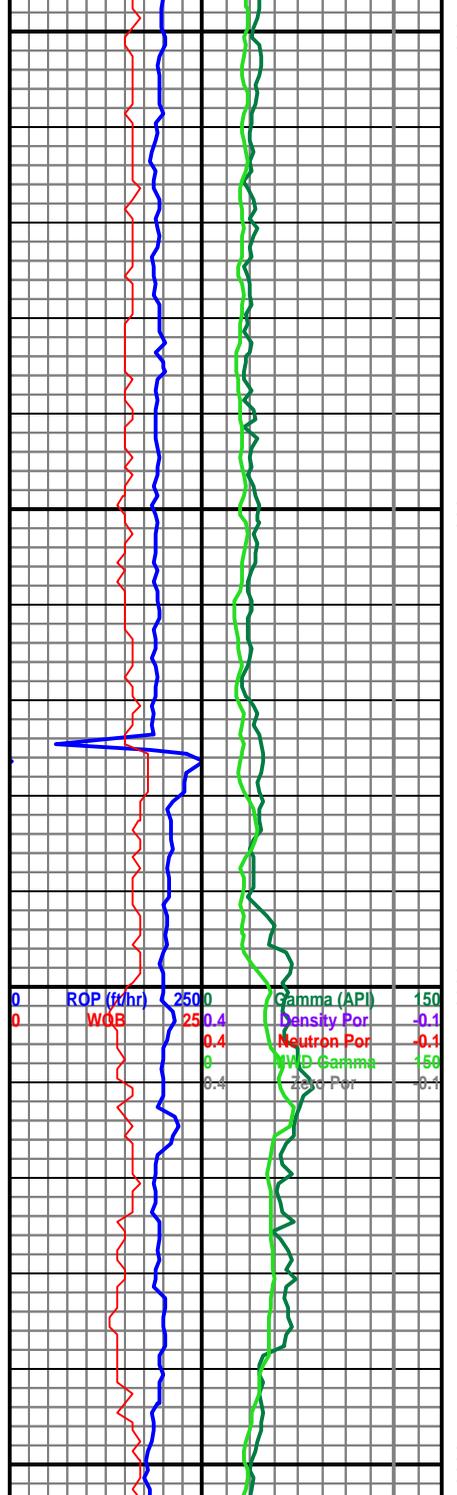
0	PEF	10	Resistivity	1000	0.01	0.1	TG (Units)	10	100	1000	100	1000	10e4	10e5
		0.1		10			C1 (ppm)	10	100	10e4	10e5			
					1	10	C2 (ppm)	10	100	10e4	10e5			
					1	10	C3 (ppm)	10	100	10e4	10e5			
					1	10	IC4 (ppm)	10	100	10e4	10e5			
					1	10	nC4 (ppm)	10	100	10e4	10e5			

WOB 16
RPM 35 159
SPM 77+80
SPP 2476

MD 2929
INC 0.14
AZ 166.24
TVD 2926

WOB 15
RPM 35 162
SPM 80+80
SPP 2533

MD 3024
INC 0.18
AZ 338.99
TVD 302



2900
2950
3000
3050

6 Callper 16

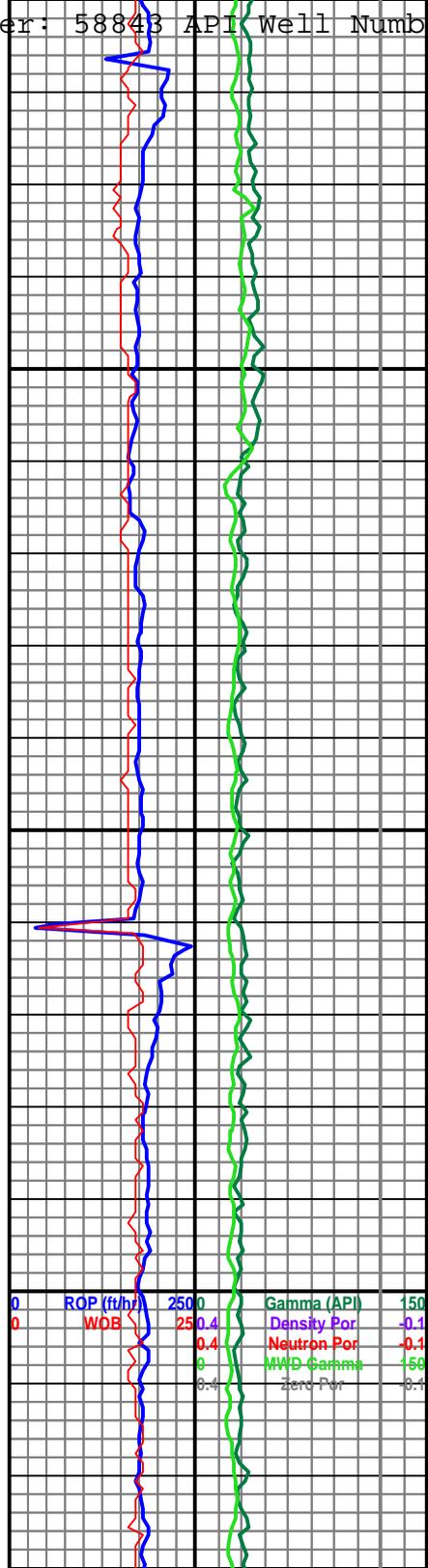
PEF	10	0.1	1	100	1000	0.01	0.1	1	10	100	1000	10000	100000	1000000	10000000
Resistivity															
TG (Units)															
C1 (ppm)															
C2 (ppm)															
C3 (ppm)															
IC4 (ppm)															
nC4 (ppm)															

WOB 16
RPM 35 162
SPM 79+81
SPP 2550

MD 3119
INC 0.18
AZ 127.62
TVD 3116

WOB 17
RPM 35 162
SPM 80+80
SPP 2602

MD 3215
INC 0.14
AZ 305.30
TVD 3212

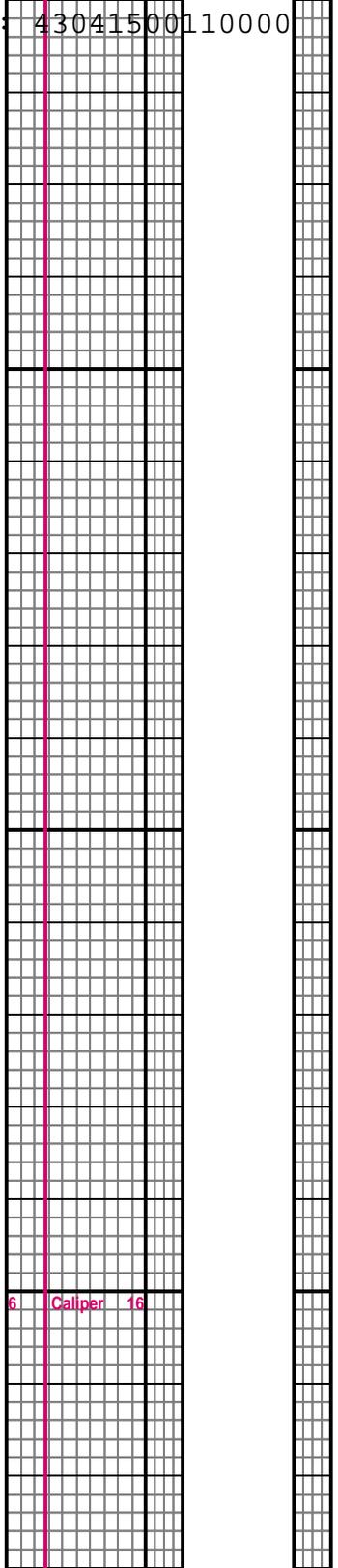


ROP (ft/hr)	2500	Gamma (API)	150
WOB	250.4	Density Por	-0.1
	0.4	Neutron Por	-0.1
	0	MWD Gamma	-150
	0.4	Zero Por	-0.1

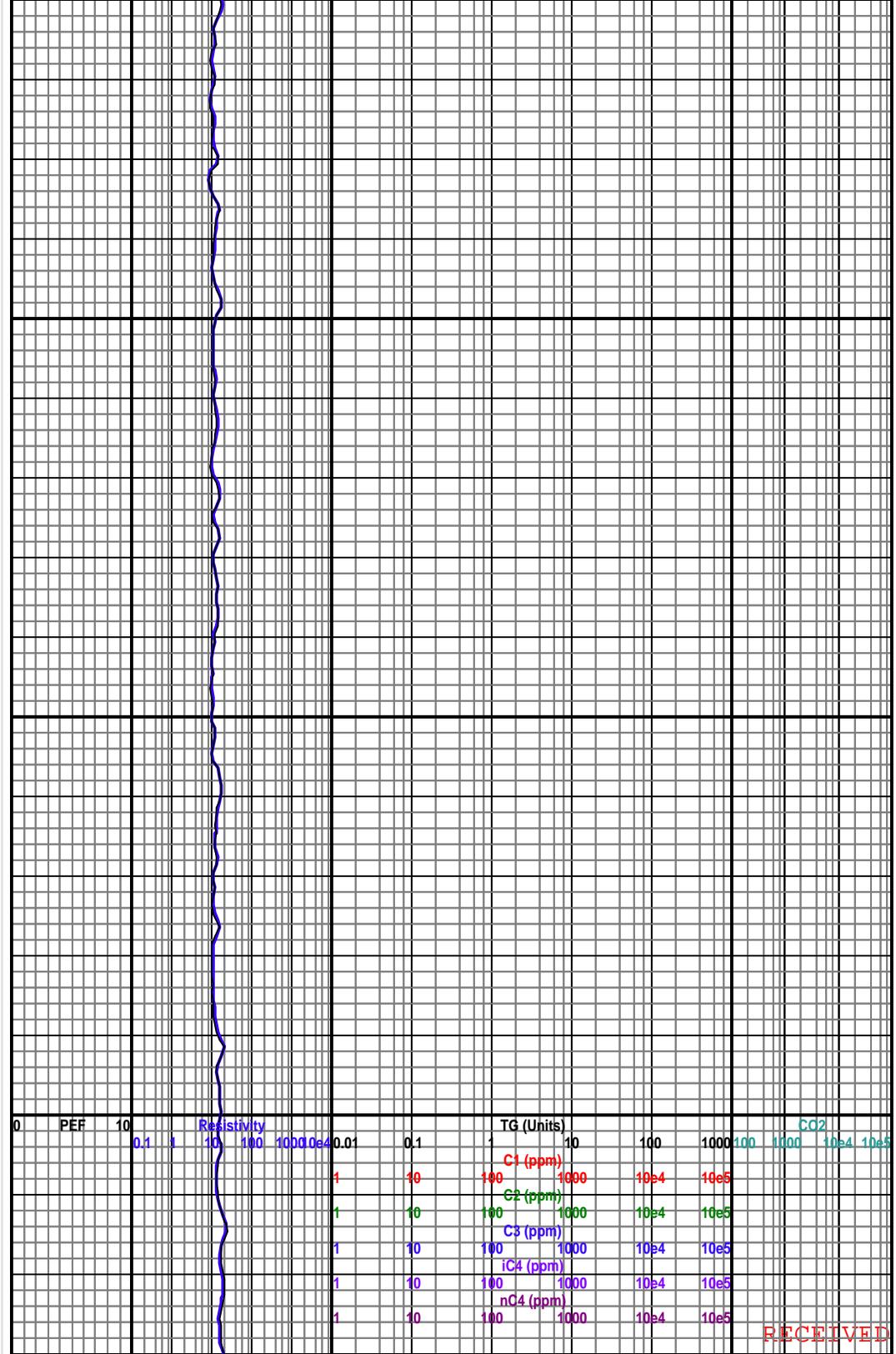
3100

3150

3200



6 Callper 16

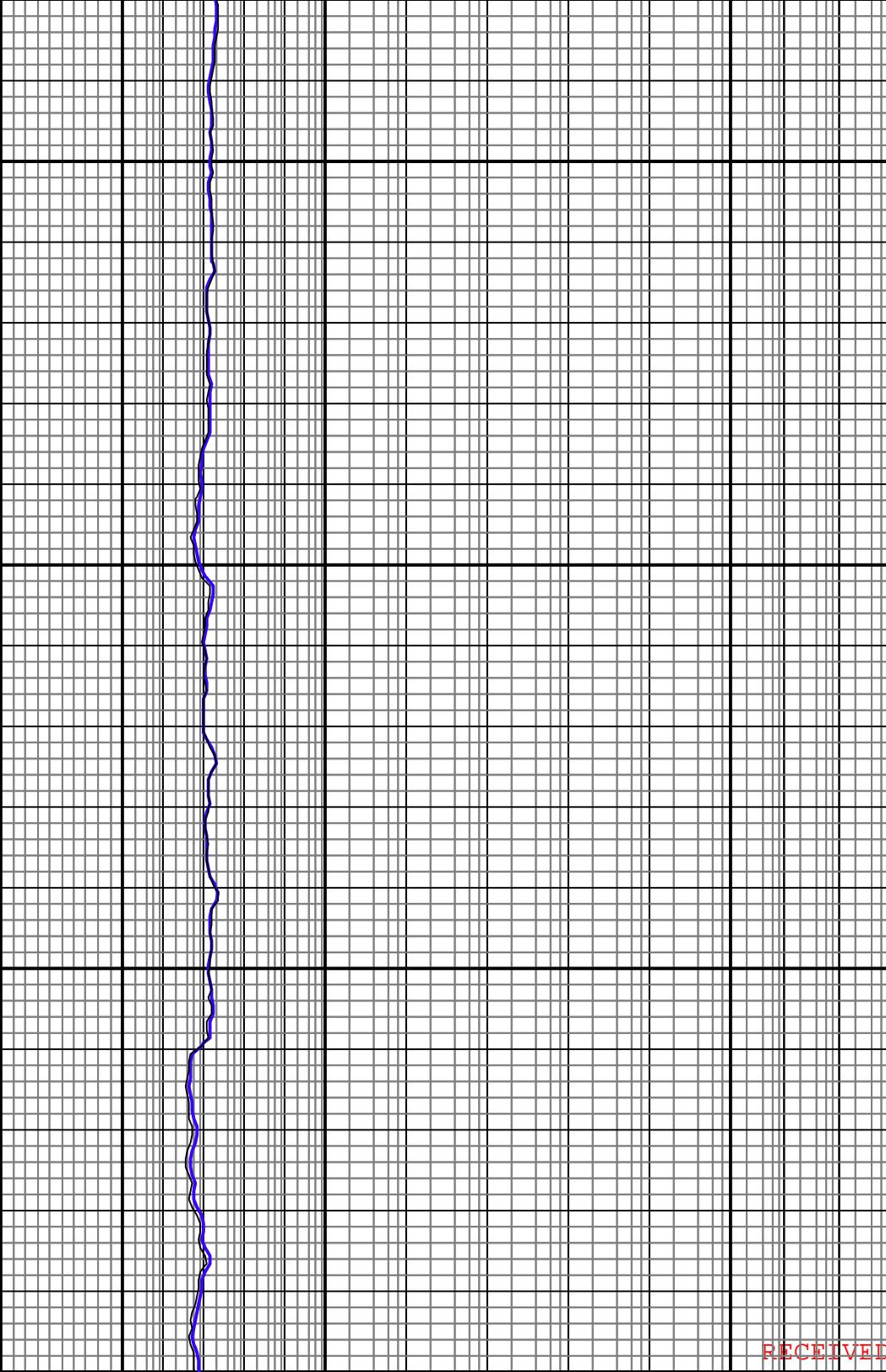
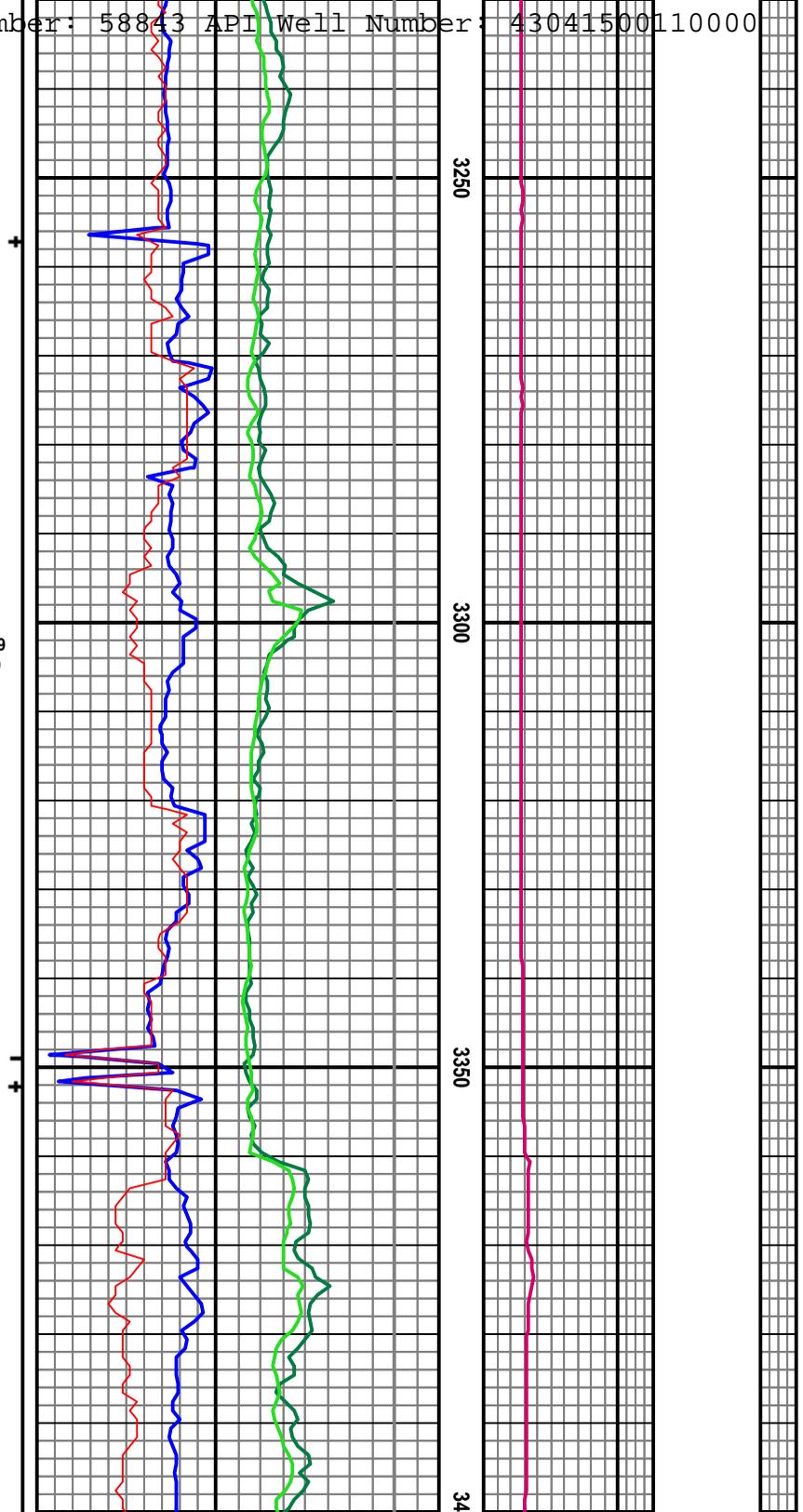


PEF	10	Resistivity	0.01	0.1	TG (Units)	10	100	1000	10000	100000	1000000	10000000	100000000
	0.1		1	10	C1 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
			1	10	C2 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
			1	10	C3 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
			1	10	IC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
			1	10	nC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
			1	10	CO2	100	1000	10000	100000	1000000	10000000	100000000	1000000000

WOB 14
RPM 32 159
SPM 78+79
SPP 2578

MD 3308
INC 0.73
AZ 113.32
TVD 3305

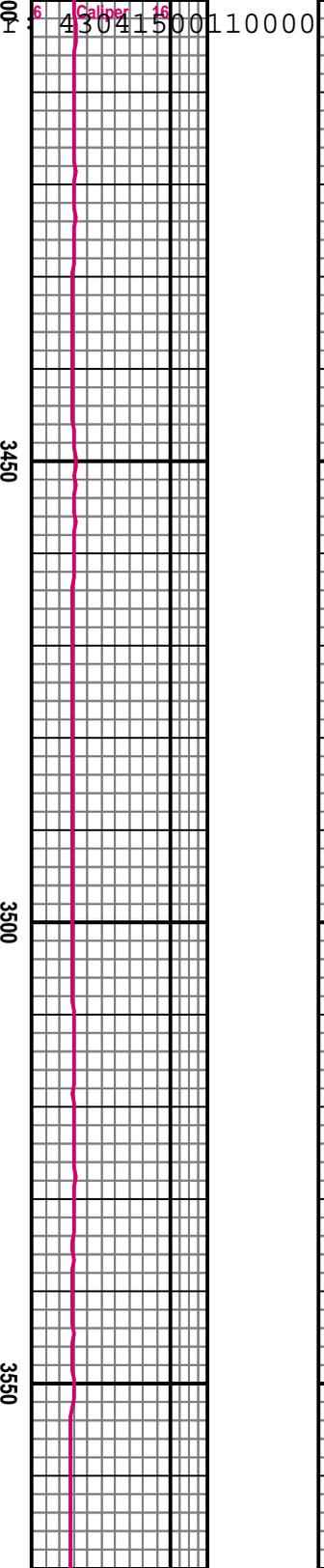
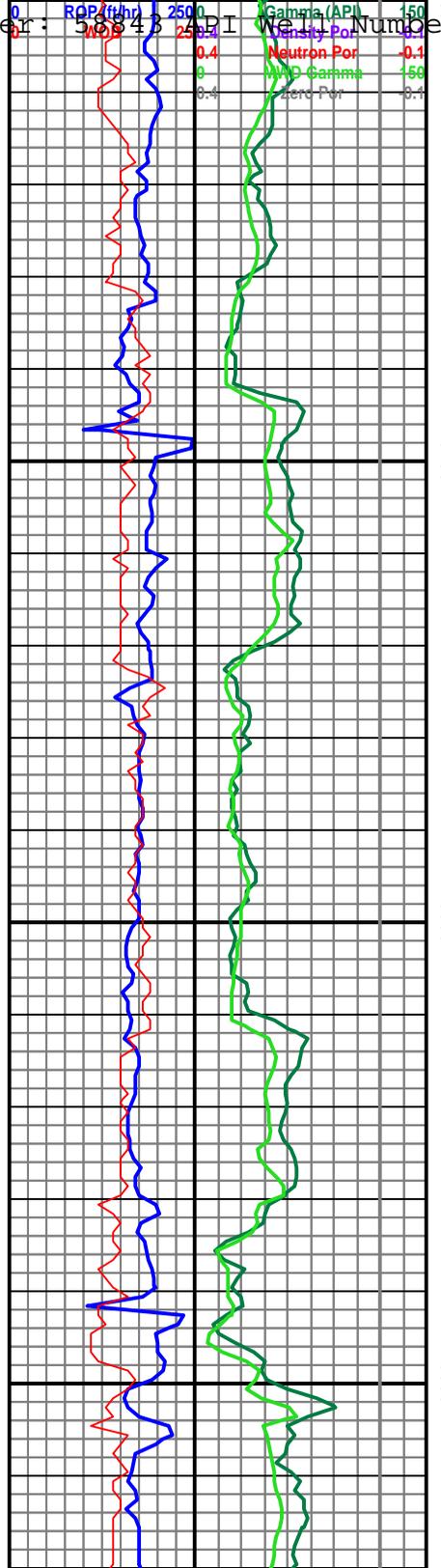
Mud 3323
Wt 10.3
Vis 36
PV 10
YP 8
Gels 3/6/7
WL 19.8
Cake 1/0
pH 8.5
Ca 1900
Cl 151000
C Sol 5.2



Sundriya Well Number: 58843 Well Number: 4304150011000

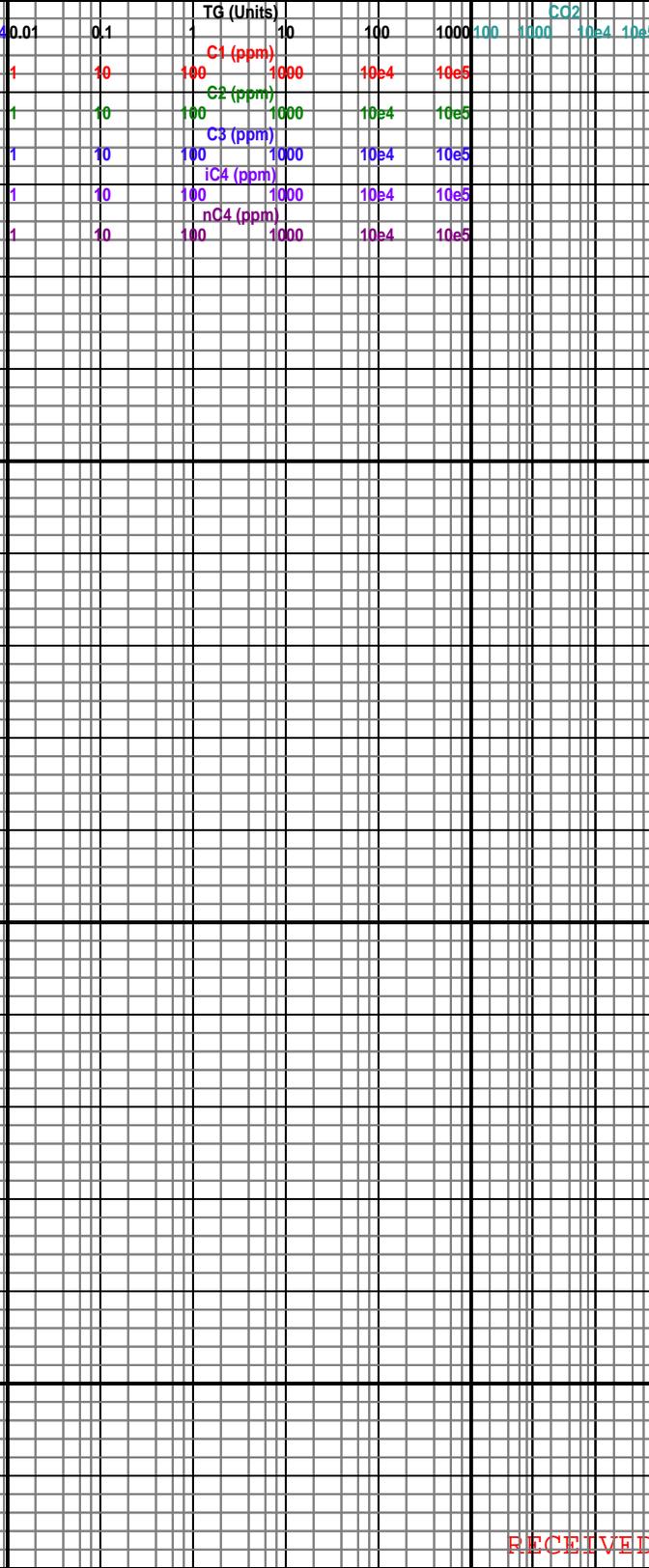
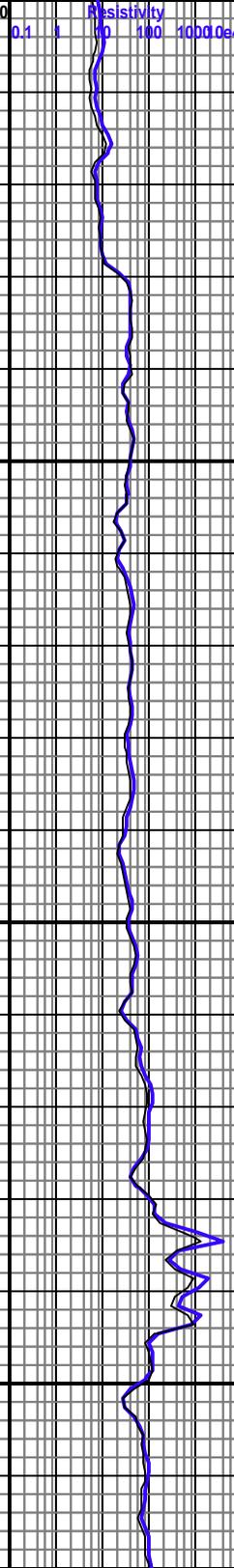
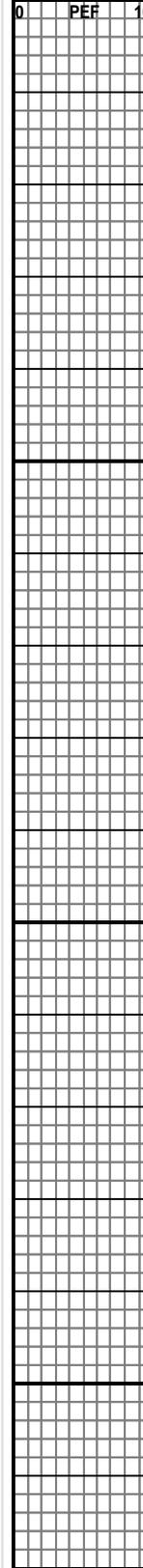
WOB 12
RPM 100
SPM 80+79
SPP 2591

MD 3403
INC 2.30
AZ 60.89
TVD 3400



MD 3498
INC 4.36
AZ 49.64
TVD 3495

WOB 16
RPM 33 161
SPM 80+79
SPP 2652



	10	100	1000	10000	100000
C1 (ppm)	100	1000	10000	100000	1000000
C2 (ppm)	100	1000	10000	100000	1000000
C3 (ppm)	100	1000	10000	100000	1000000
iC4 (ppm)	100	1000	10000	100000	1000000
nC4 (ppm)	100	1000	10000	100000	1000000

MD 3592
 INC 6.29
 AZ 44.80
 TVD 3589

WOB 13
 RPM 33
 SPM 79+79
 SPM 2652

ROP (ft/hr) 2500
 WOB 250.4
 06:00 11/8/2014
 Gamma (API) 150
 Density Por -0.1
 Neutron Por -0.1
 MWD Gamma -50
 Zero Por -0.1

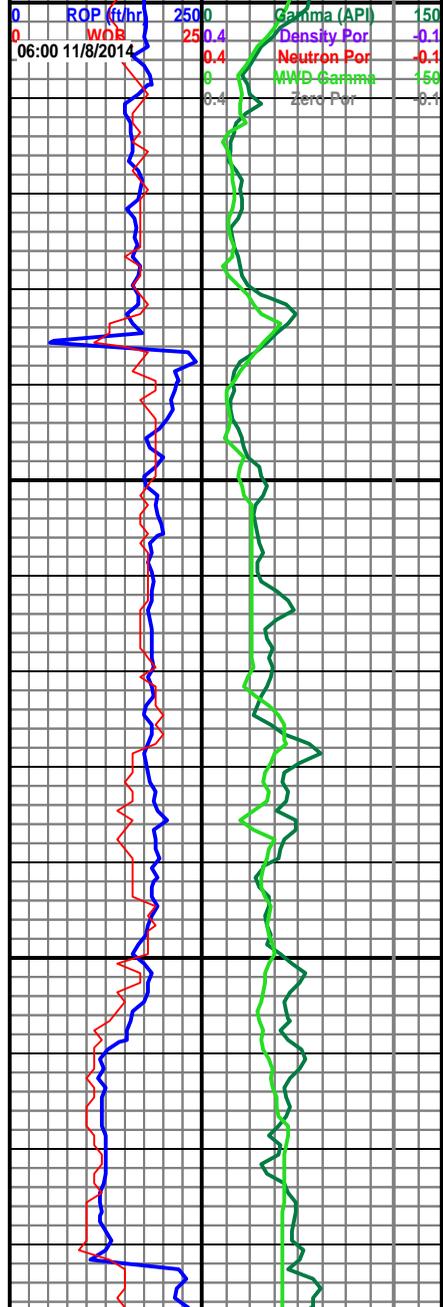
3600

3650

3700

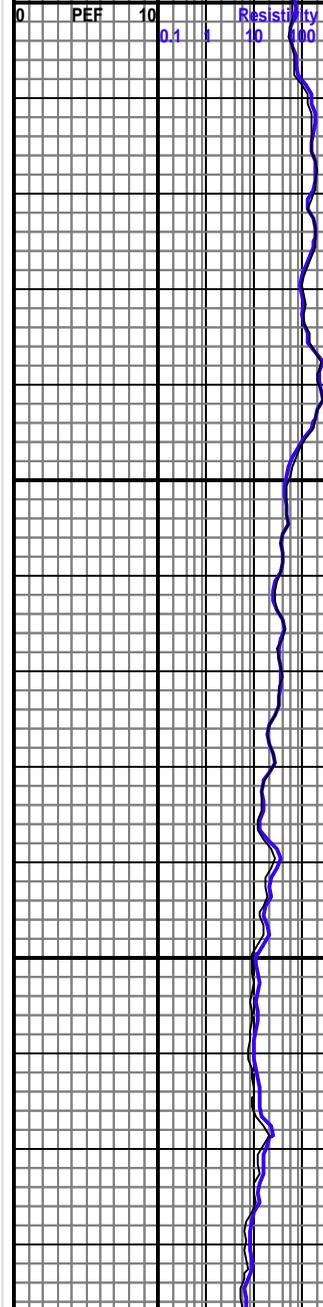
MD 3688
 INC 8.24
 AZ 32.65
 TVD 3684

WOB 16
 RPM 38 159
 SPM 78+79
 SPP 2667



6 Callper 16

PEF	10	0.1	1	10	100	1000	10e4	0.01	0.1	1	10	100	1000	10e4	10e5	100	1000	10e4	10e5	
Resistivity																				
TG (Units)																				
C1 (ppm)																				
C2 (ppm)																				
C3 (ppm)																				
IC4 (ppm)																				
nC4 (ppm)																				

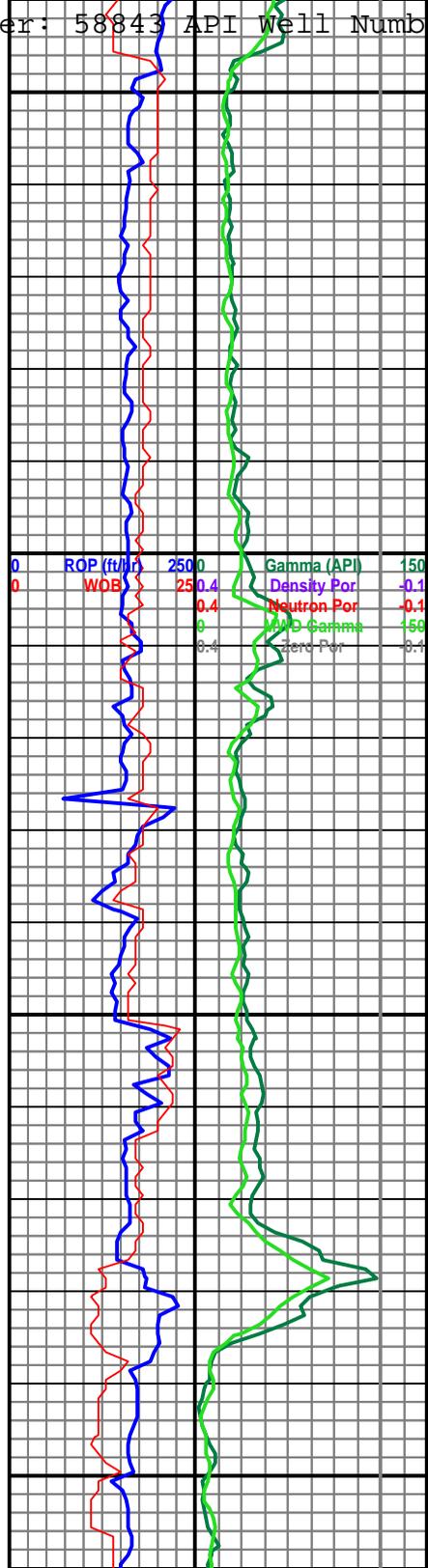


MD 3783
INC 10.96
AZ 26.39
TVD 3778

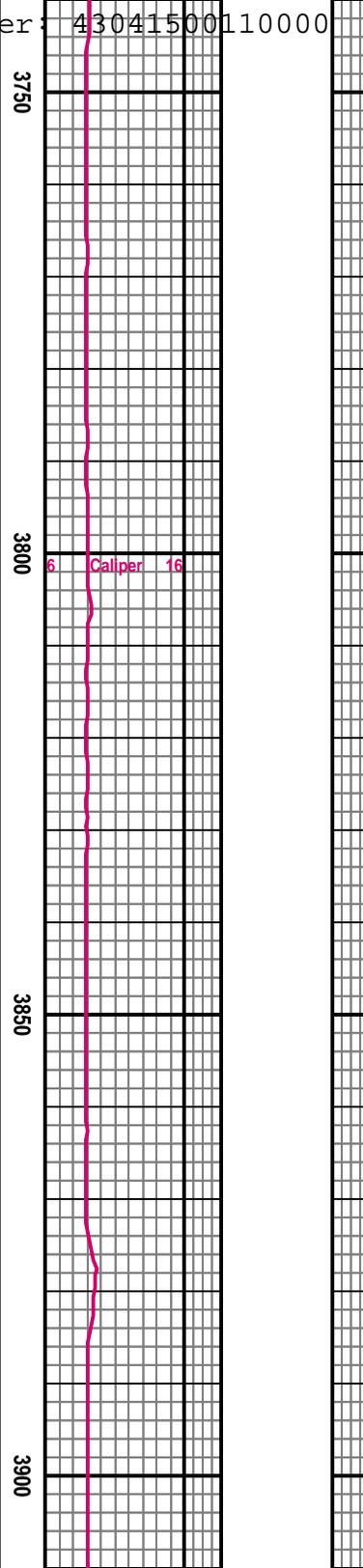
WOB 18
RPM 31 159
SPM 79+78
SPP2734

MD 3878
INC 13.46
AZ 24.28
TVD 3870

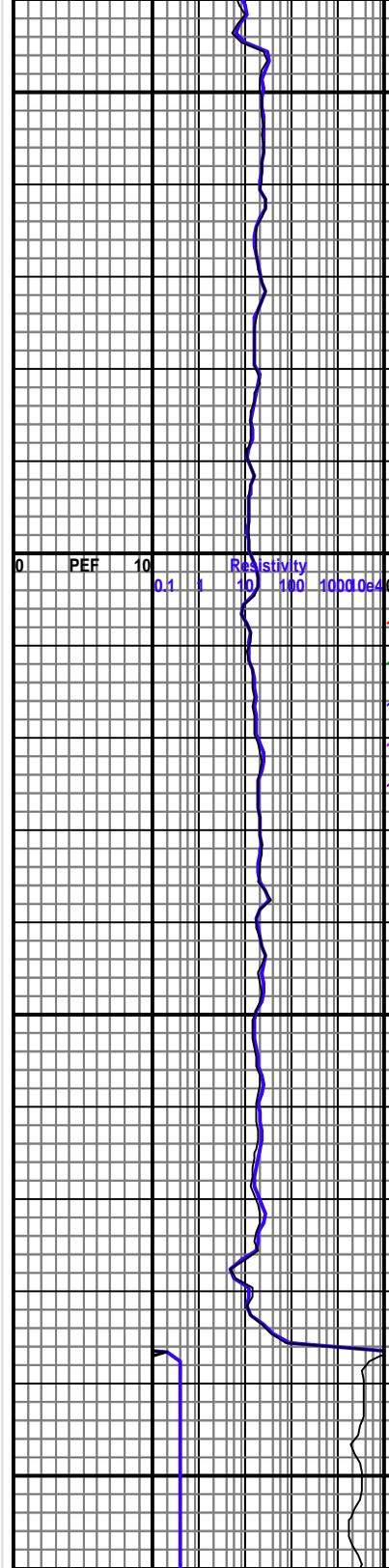
WOB 13
RPM 31 157
SPM 78+77
SPP 2787



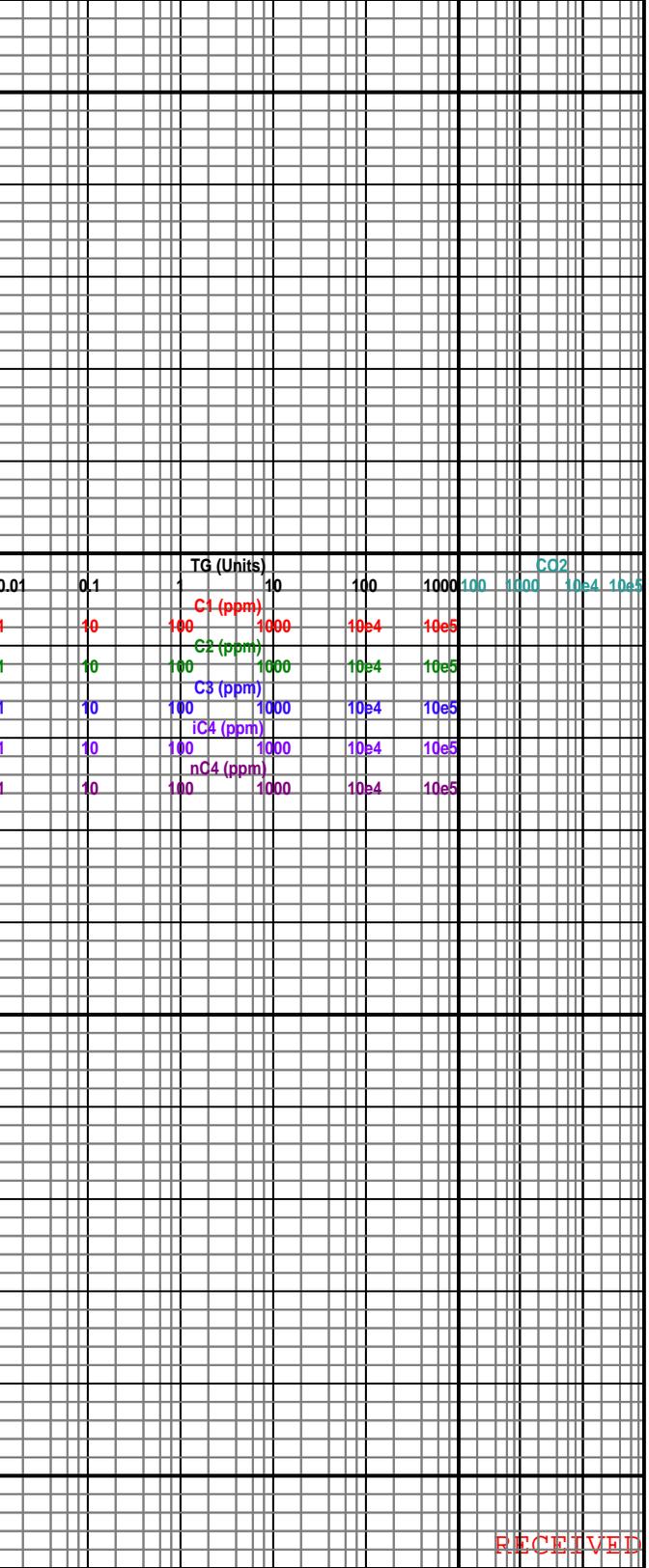
0	ROP (ft/hr)	2500	Gamma (API)	150
0	WOB	250.4	Density Por	-0.1
		0.4	Neutron Por	-0.1
		0	Zero Gamma	-50
		0.4	Zero Por	-0.1



6	Callper	16
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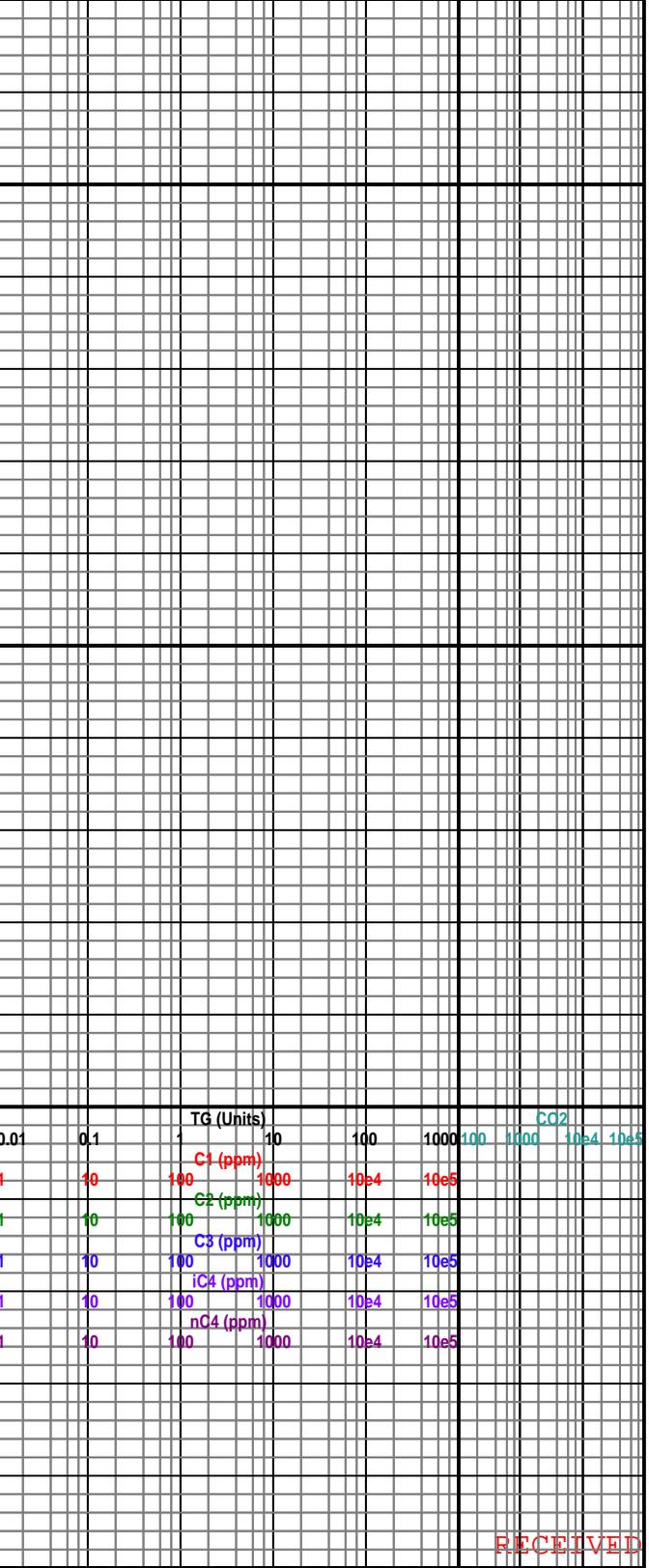
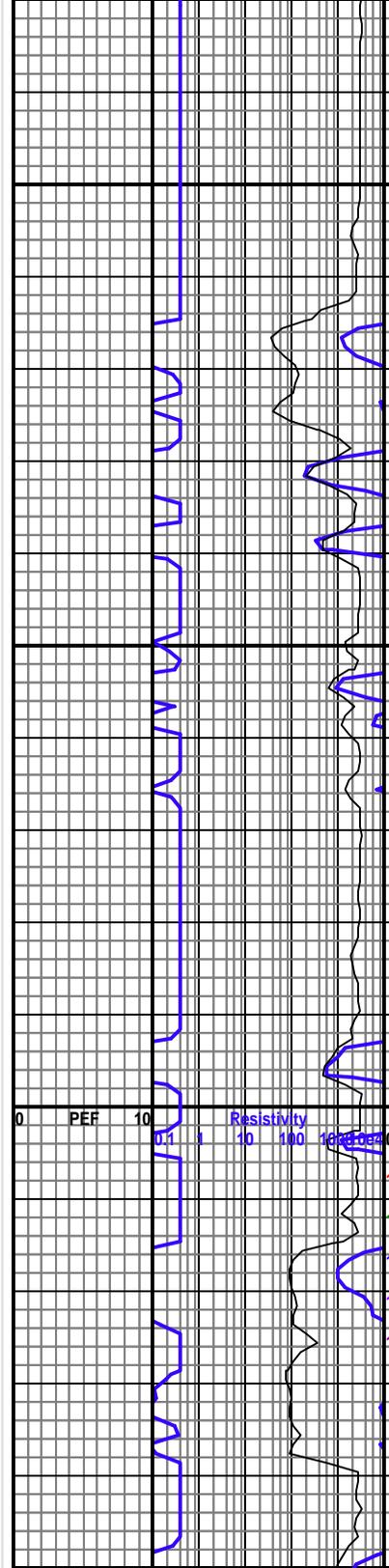
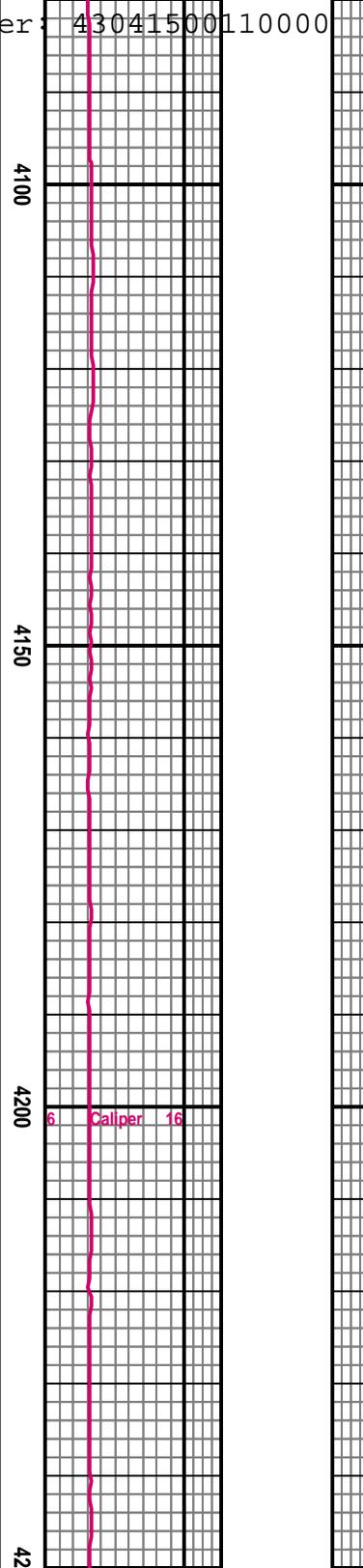
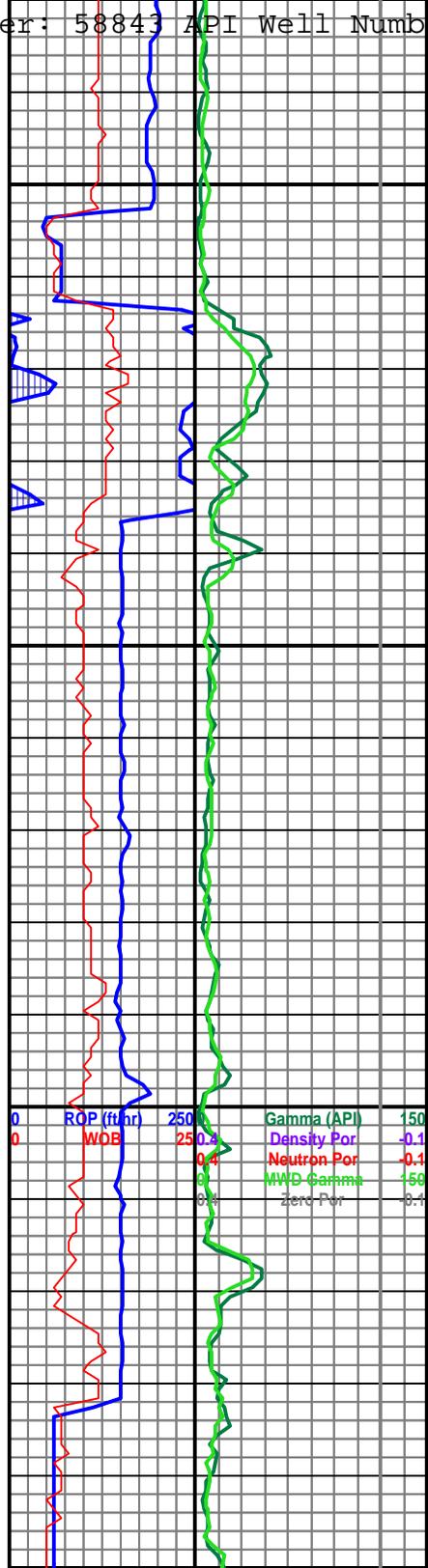
0	PEF	10	Resistivity	10000e4	0.01	0.1	TG (Units)	10	100	1000	100	1000	10e4	10e5
		0.1					C1 (ppm)	100	1000	10e4	10e5			
							C2 (ppm)	100	1000	10e4	10e5			
							C3 (ppm)	100	1000	10e4	10e5			
							IC4 (ppm)	100	1000	10e4	10e5			
							nC4 (ppm)	100	1000	10e4	10e5			



WOB 11
RPM 30 165
SP 82+81
SPP 2780

MD 4163
INC 16.83
AZ 16.48
TVD 4145

WOB 9
RPM 35 163
SPM 80+81
SPP 2690



0 ROP (ft/hr) 250
0 WOB 250
0.4
0.1
0.1
0.1
0.1

Gamma (API) 150
Density Por -0.1
Neutron Por -0.1
MWD Gamma -150
Zero Por -0.1

0 PEF 10
0.1
10 100
0.01 0.1
1 10
1 10
1 10
1 10
1 10

Resistivity 10 100
TG (Units) 10 100 1000
C1 (ppm) 100 1000 10e4 10e5
C2 (ppm) 10 100 10e4 10e5
C3 (ppm) 10 100 10e4 10e5
IC4 (ppm) 10 100 10e4 10e5
nC4 (ppm) 10 100 10e4 10e5
CO2 100 1000 10e4 10e5

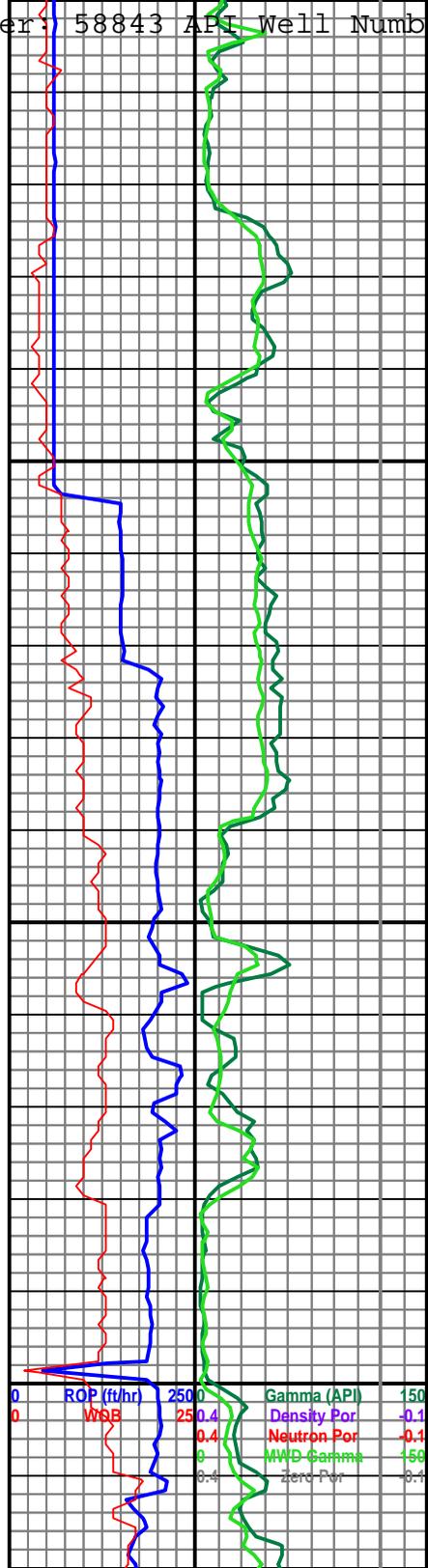
Sundry Number: 58843 API Well Number: 4304150011000

MD 4258
INC 16.29
AZ 10.25
TVD 4236

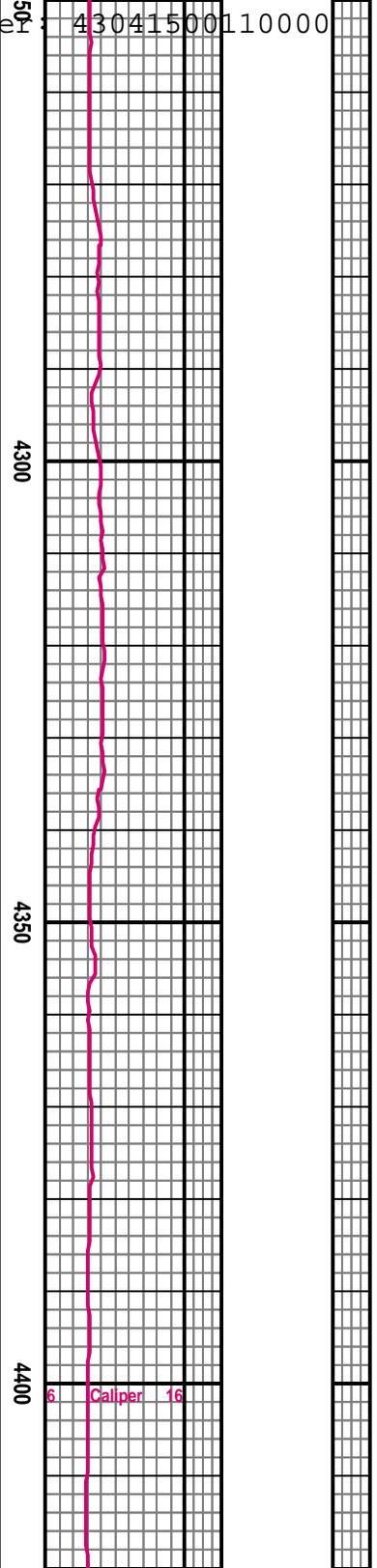
WOB 5
RPM 41 163
SPM 80+81
SPP 2701

MD 4353
INC 15.29
AZ 4.88
TVD 4327

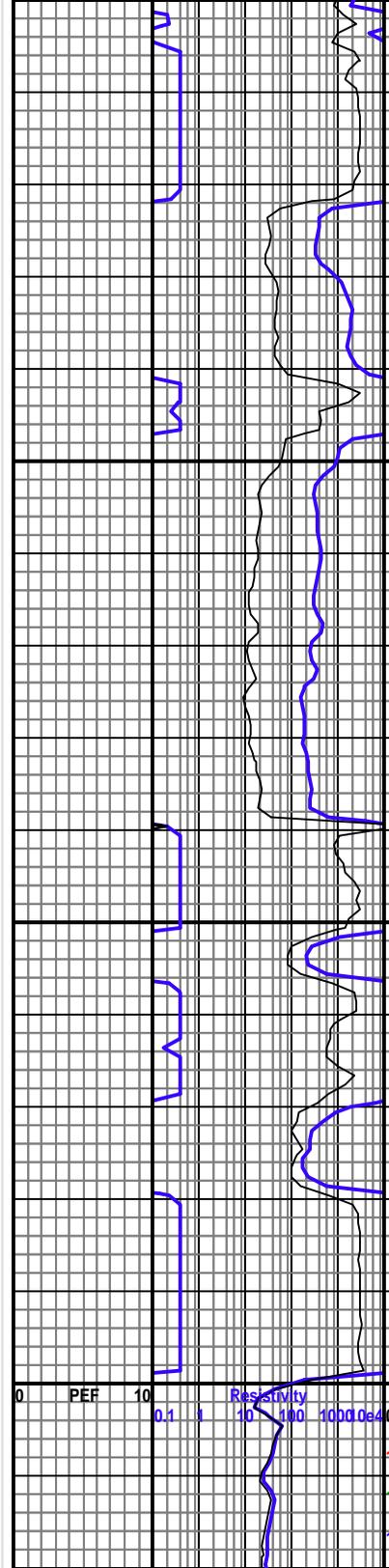
WOB 11
RPM 33 161
SPM 79+80
SPP 2745



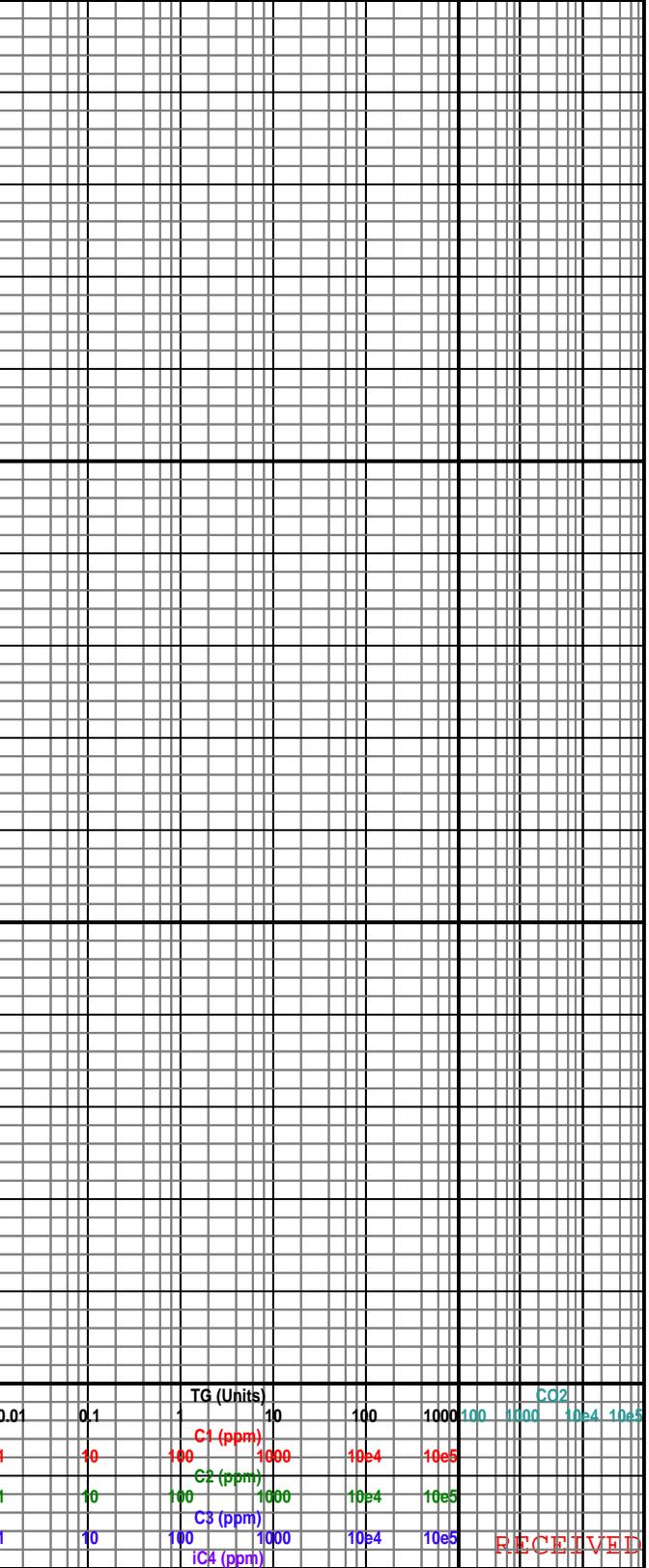
ROP (ft/hr)	2500	Gamma (API)	150
WOB	250.4	Density Por	-0.1
	0.4	Neutron Por	-0.1
	0	MWD Gamma	-50
	0.4	Zero Por	-0.1



Callper	16
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PEF	10	Resistivity	10000e4	TG (Units)	10	100	1000	10000	100000	1000000
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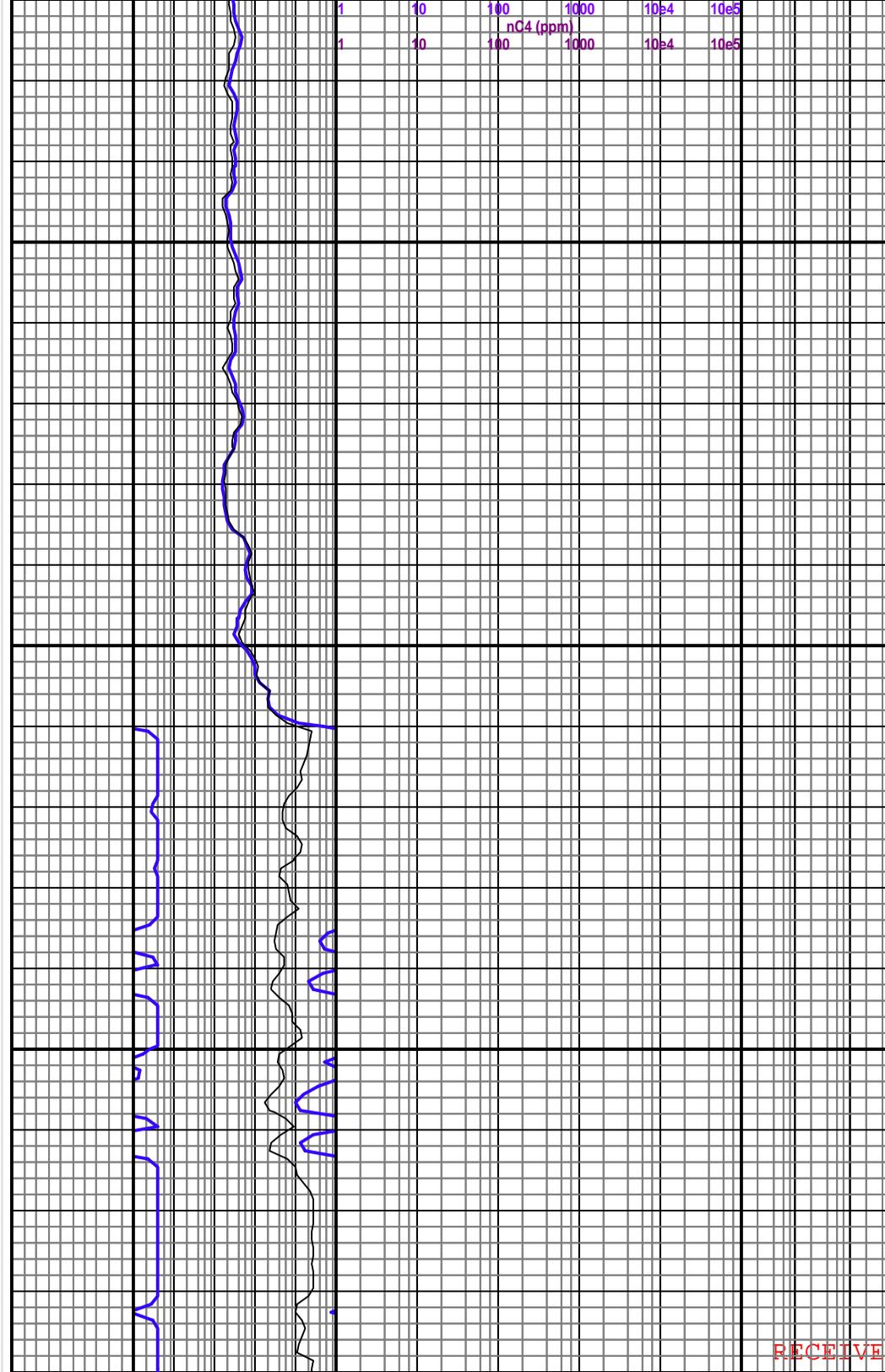
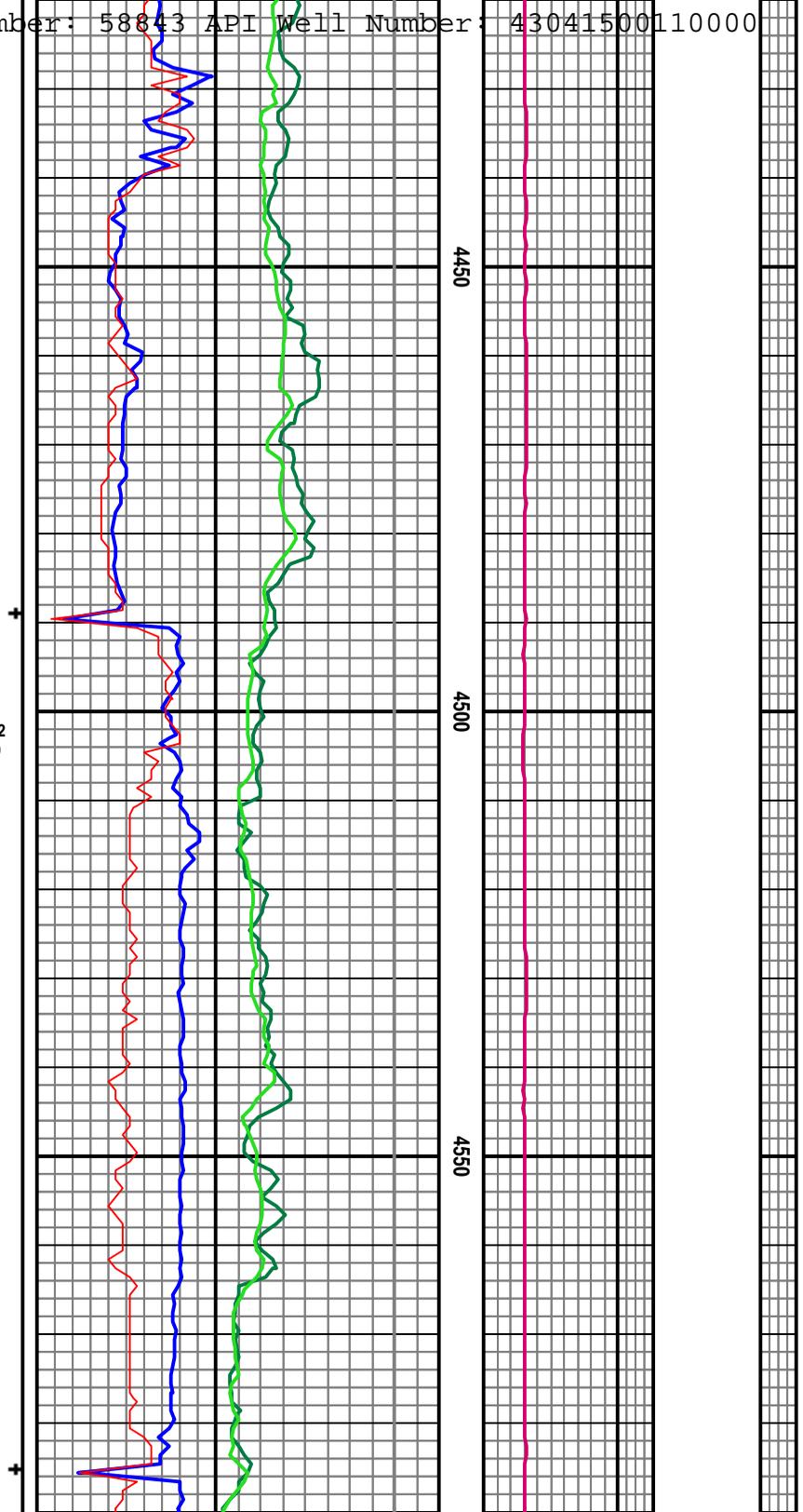


C1 (ppm)	1000	10e4	10e5
C2 (ppm)	100	10e4	10e5
C3 (ppm)	100	10e4	10e5
IC4 (ppm)	100	10e4	10e5

MD 4447
INC 14.73
AZ 1.18
TVD 4418

WOB 18
RPM 26 162
SPM 81+79
SPP 2971

MD 4543
INC 13.67
AZ 356.46
TVD 4511



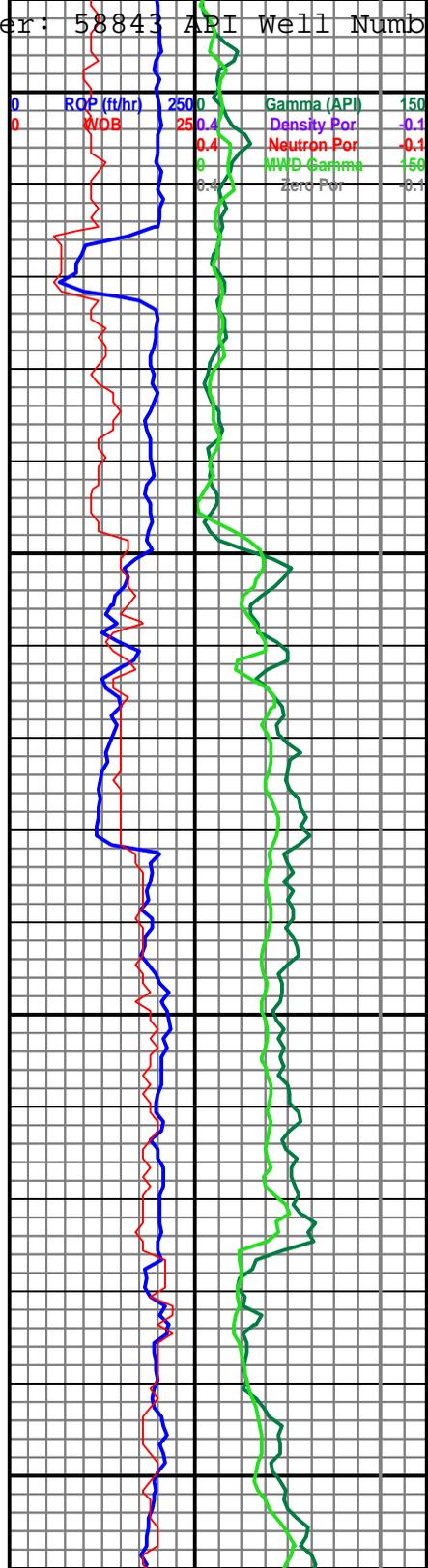
nC4 (ppm)
1 10 100 1000 10e4 10e5

WOB 11
RPM 34 157
SPM 78+77
SPP 2760

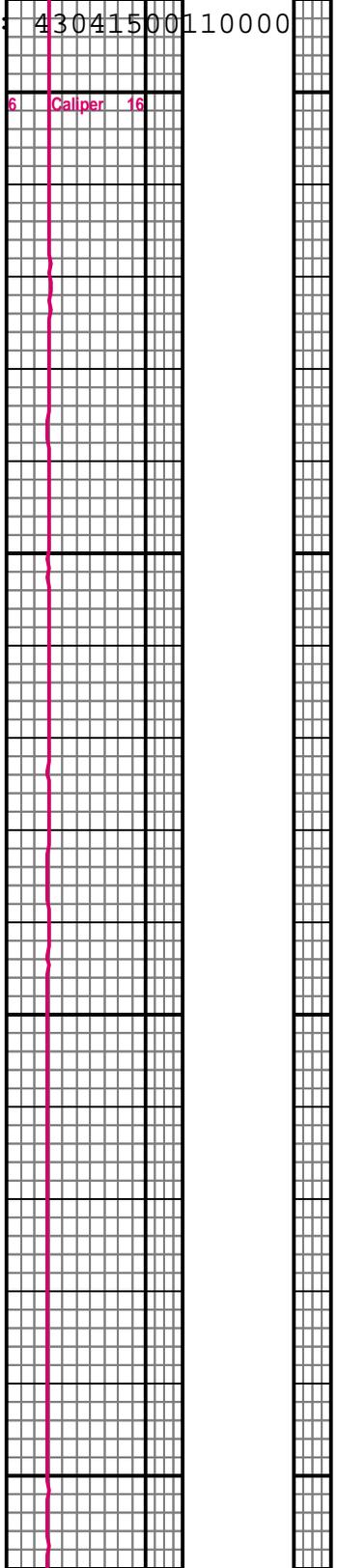
MD 4638
INC 13.18
AZ 348.97
TVD 4603

WOB 19
RPM 31 161
SP 78+81
SPP 2957

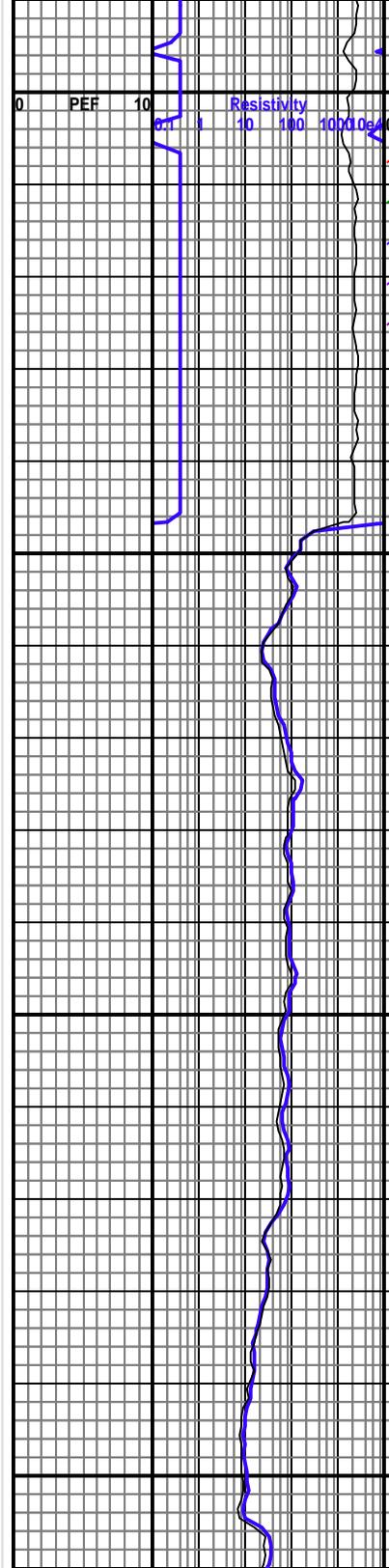
MD 4734
INC 12.46
AZ 342.04
TVD 4697



4600
4650
4700
4750



PEF 10



TG (Units)	10	100	1000	10000	100000	1000000	10000000
C1 (ppm)	100	1000	10000	100000	1000000	10000000	100000000
C2 (ppm)	100	1000	10000	100000	1000000	10000000	100000000
C3 (ppm)	100	1000	10000	100000	1000000	10000000	100000000
IC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000
nC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000

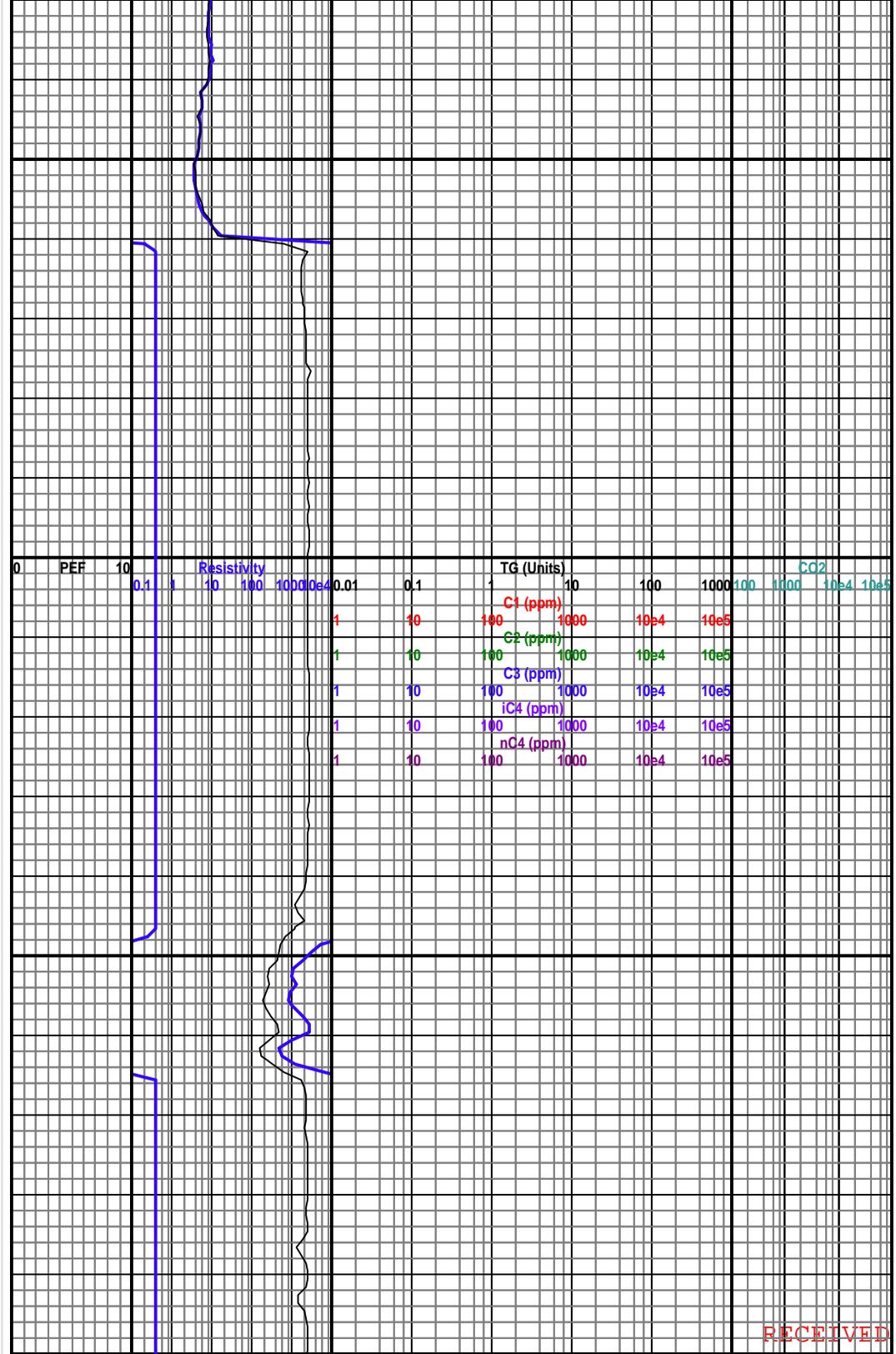
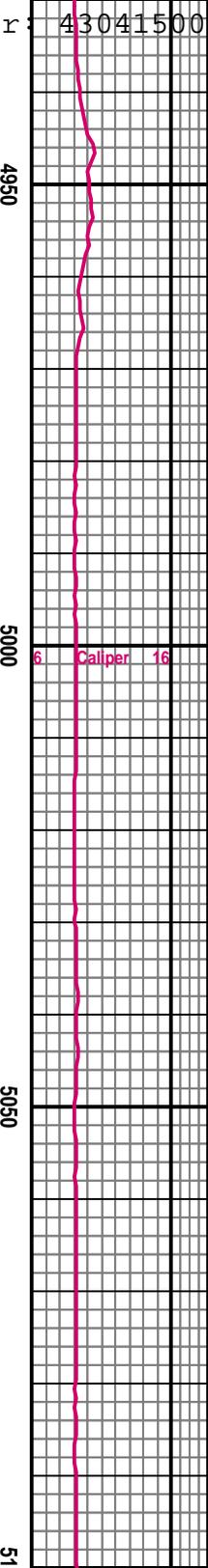
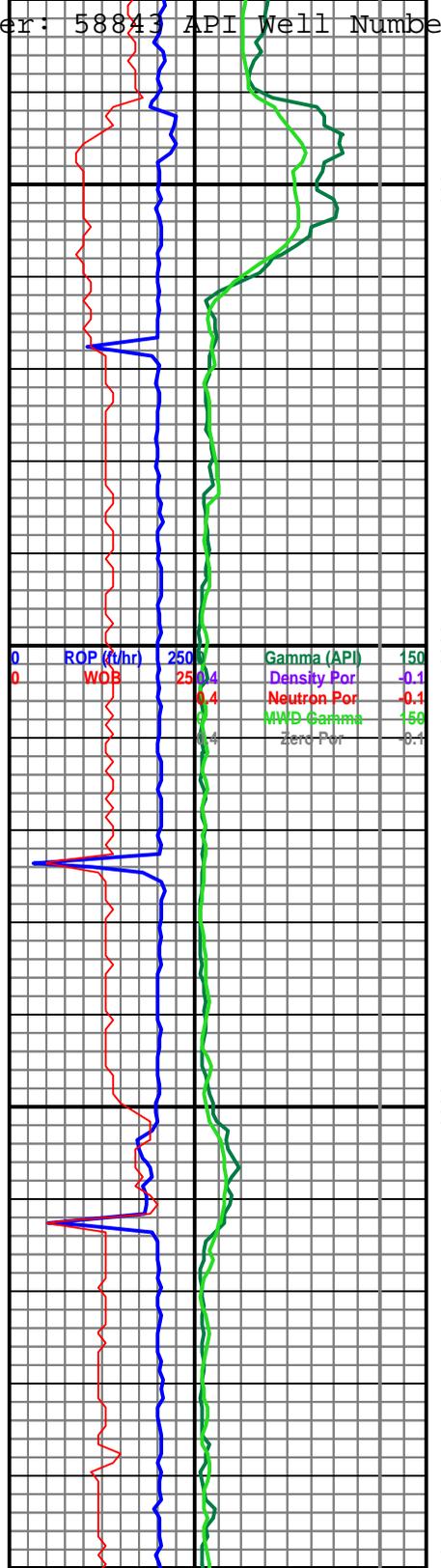
Mud 4967
 Wt 10.45
 Vis 34
 PV 9
 YP 7
 Gels 2/3/5
 WL 6.6
 Cake 1/0
 pH 10.5
 Ca 1776
 Cl 151000
 C Sol 6.5

WOB 13
 RPM 32 159
 SPM 78+79
 SPP 2849

MD 5020
 INC 9.98
 AZ 315.78
 TVD 4977

Work on pump

WOB 12

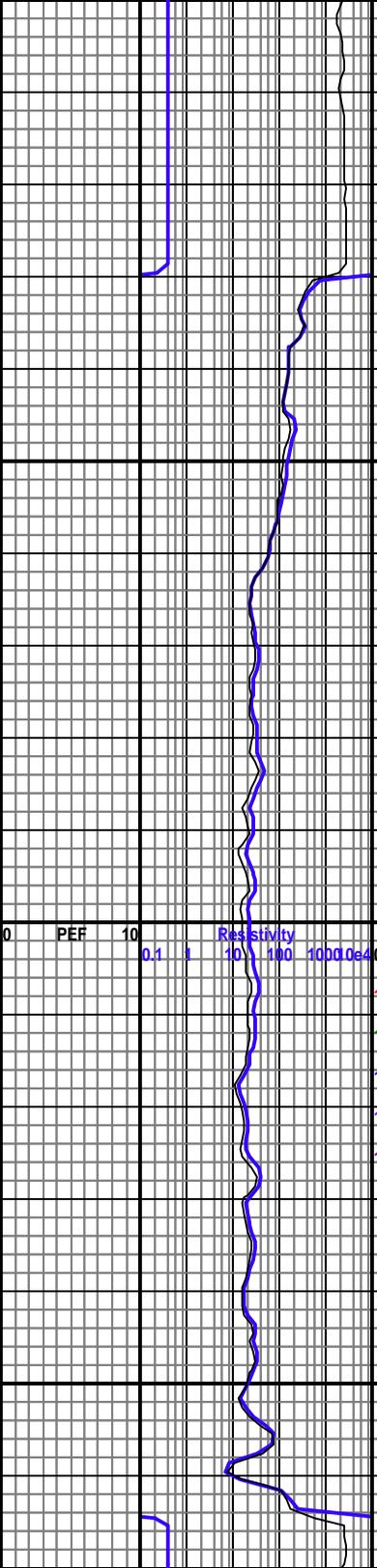
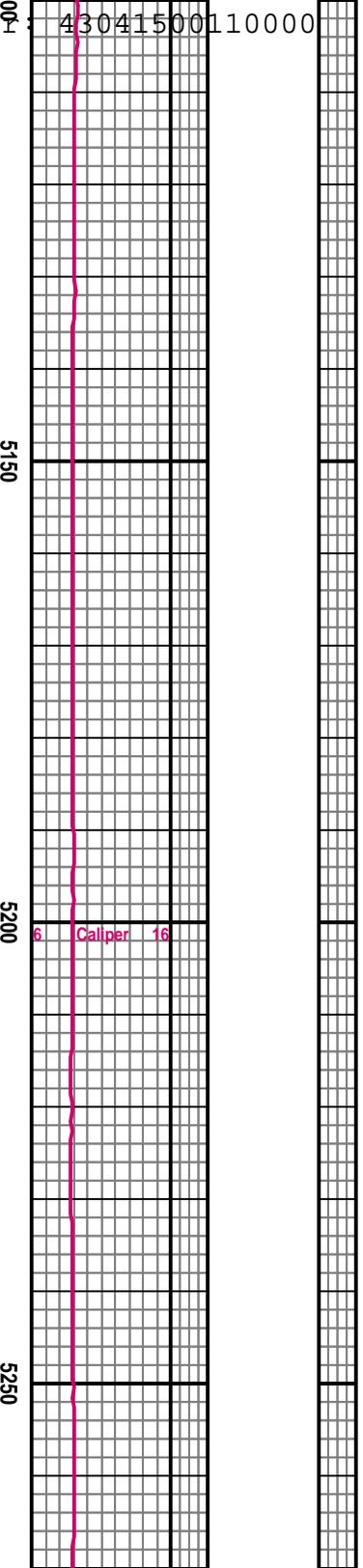
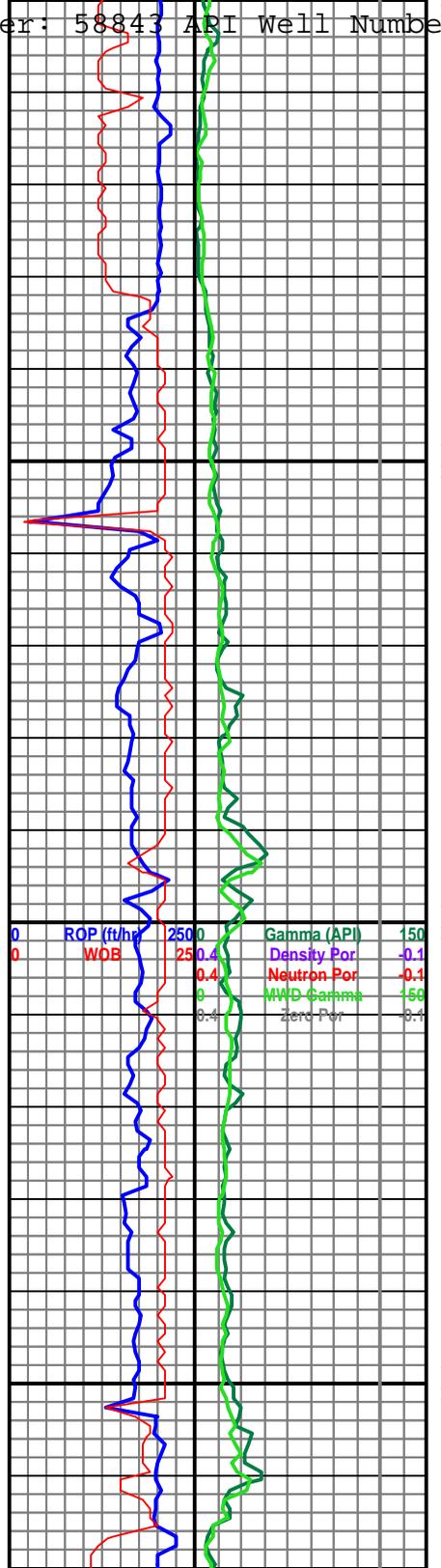


Sundri Well Number: 58843 ARI Well Number: 4304150011000

MD 5114
INC 7.68
AZ 321.54
TVD 5070

WOB 21
RPM 34 158
SPM 158
SPP 2963

MD 5209
INC 5.64
AZ 327.40
TVD 5165



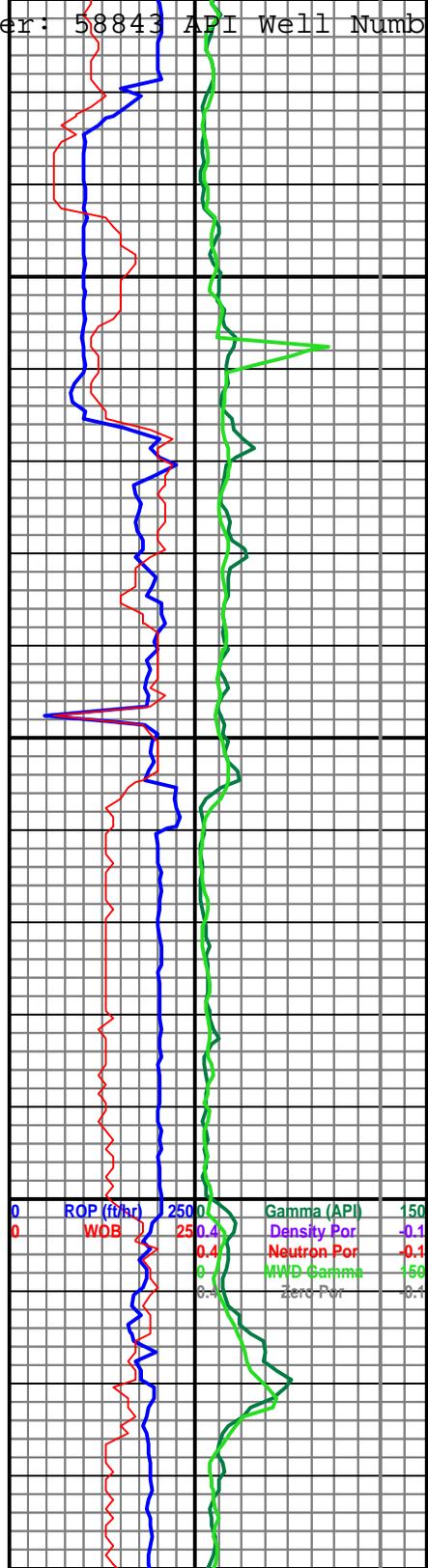
PEF	Resistivity	TG (Units)	C1 (ppm)	C2 (ppm)	C3 (ppm)	IC4 (ppm)	nC4 (ppm)	CO2
0	10	0.01	0.1	10	100	1000	1000	10e5
1	10	0.1	10	100	1000	1000	1000	10e5
1	10	1	100	1000	1000	1000	1000	10e5
1	10	10	1000	1000	1000	1000	1000	10e5
1	10	100	1000	1000	1000	1000	1000	10e5
1	10	1000	1000	1000	1000	1000	1000	10e5

WOB 15
RPM 34 159
SPM 78+79
SPP 2792

MD 5305
INC 5.20
AZ 331.81
TVD 5260

MD 5400
INC 3.79
AZ 319.50
TVD 5355

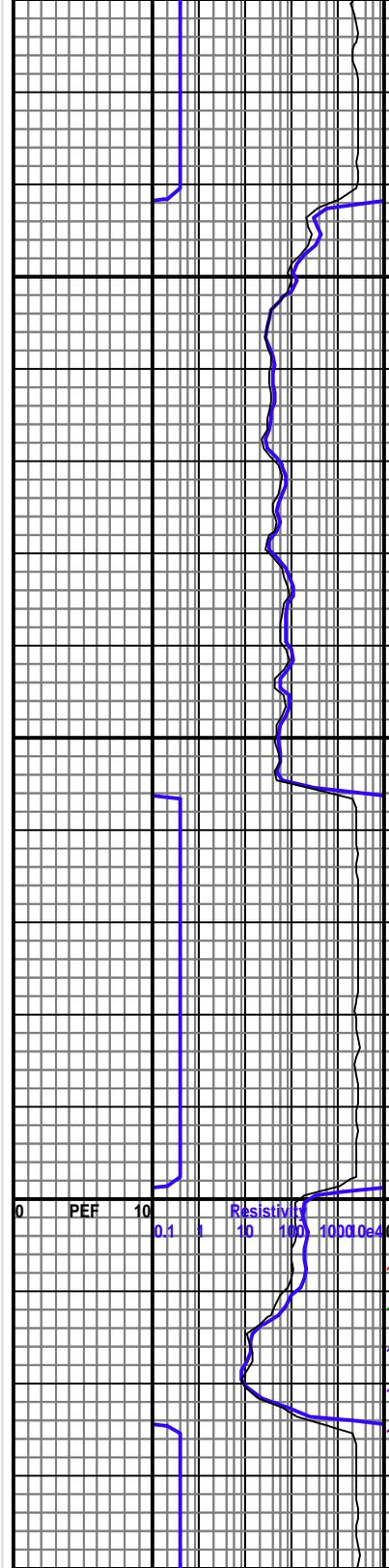
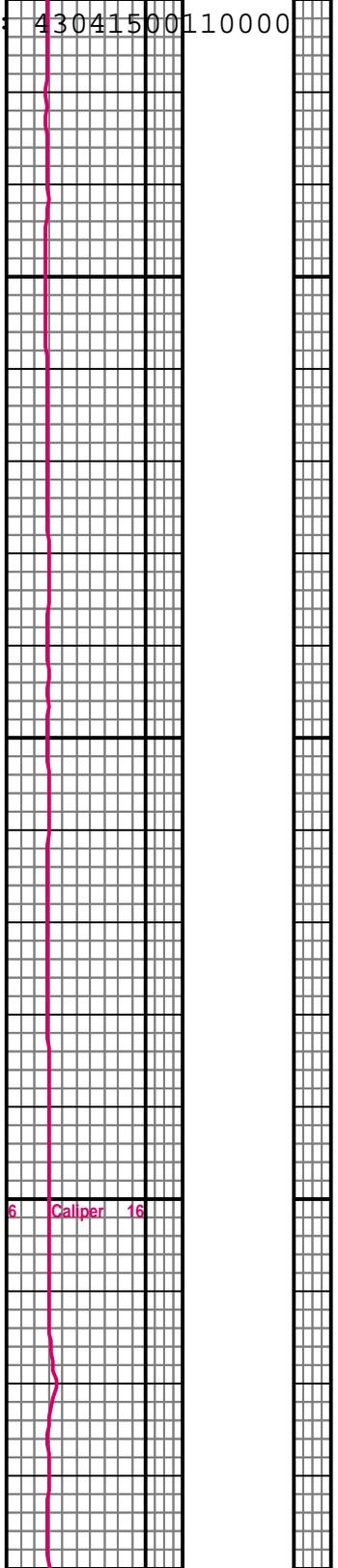
WOB 14
RPM 35 159
SPM 78+79
SPP 2857



5300

5350

5400



TG (Units)	C1 (ppm)	C2 (ppm)	C3 (ppm)	IC4 (ppm)	nC4 (ppm)
10	100	100	100	100	100
100	1000	1000	1000	1000	1000
1000	10e4	10e4	10e4	10e4	10e4
10000	10e5	10e5	10e5	10e5	10e5

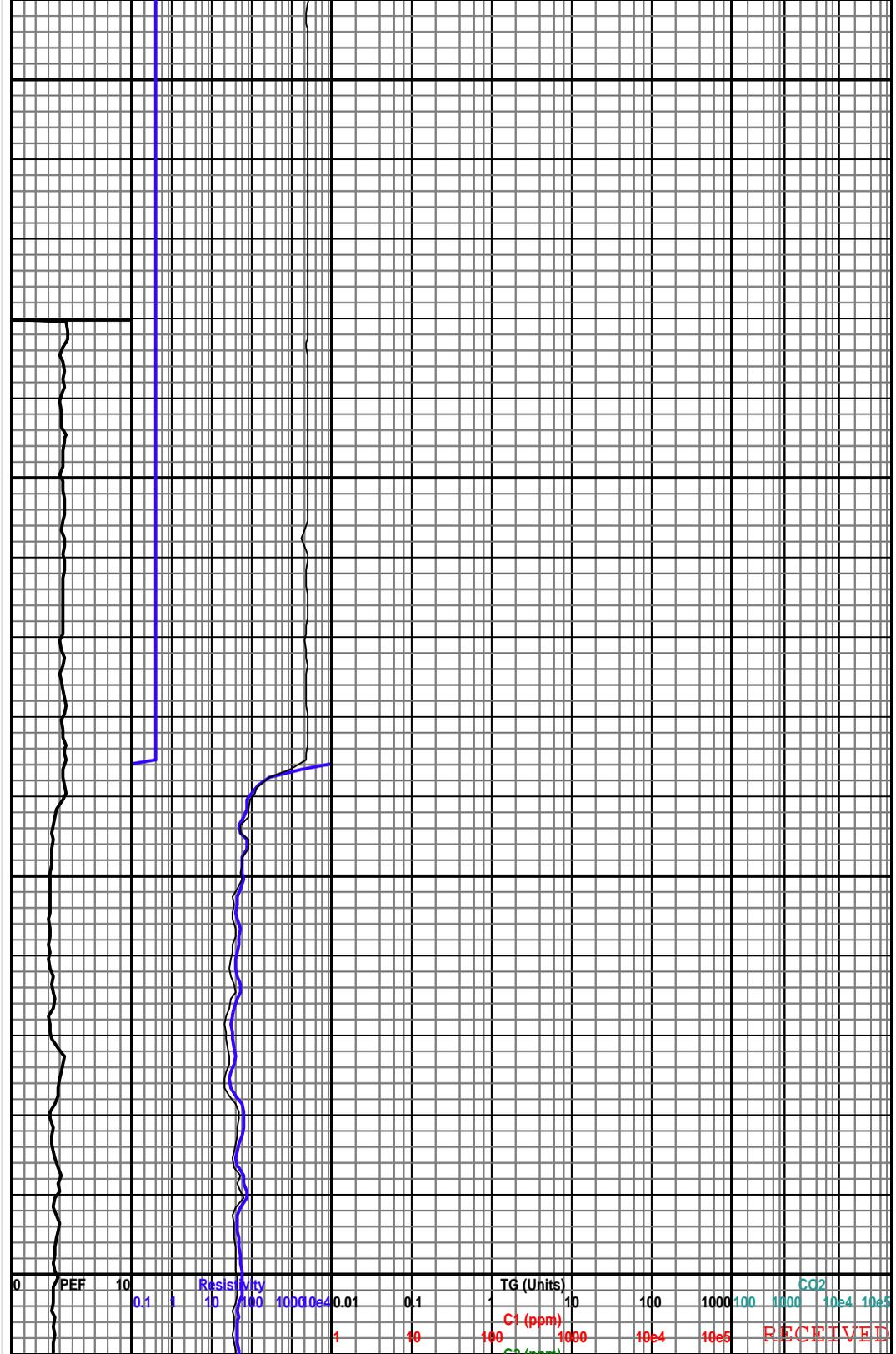
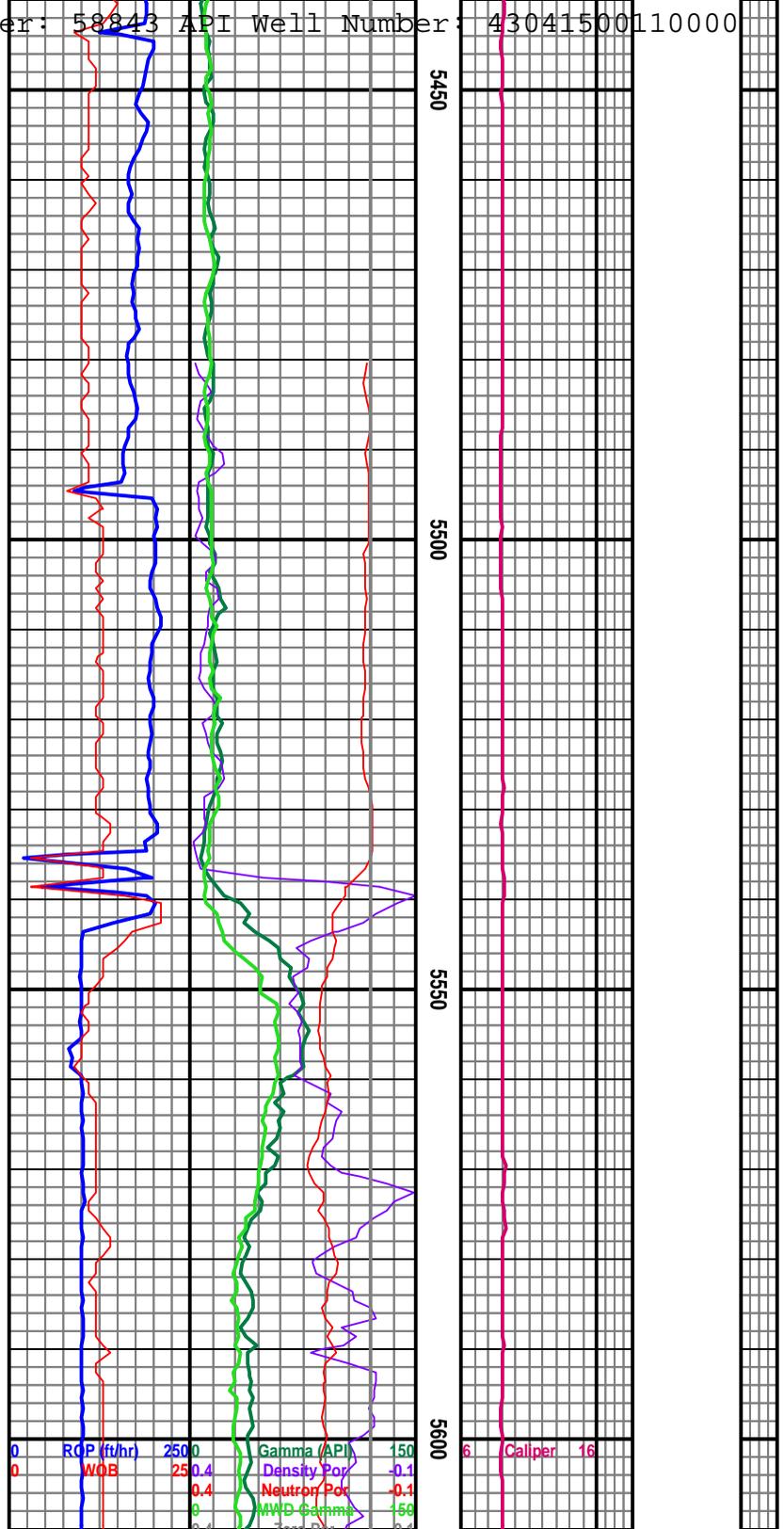
MD 5496
 INC 2.97
 AZ 299.23
 TVD 5451

Work on pump

WOB 13
 RPM 33160
 SPM 78+80
 SPP2906

MD 5590
 INC 1.71
 AZ 292.44
 TVD 5545

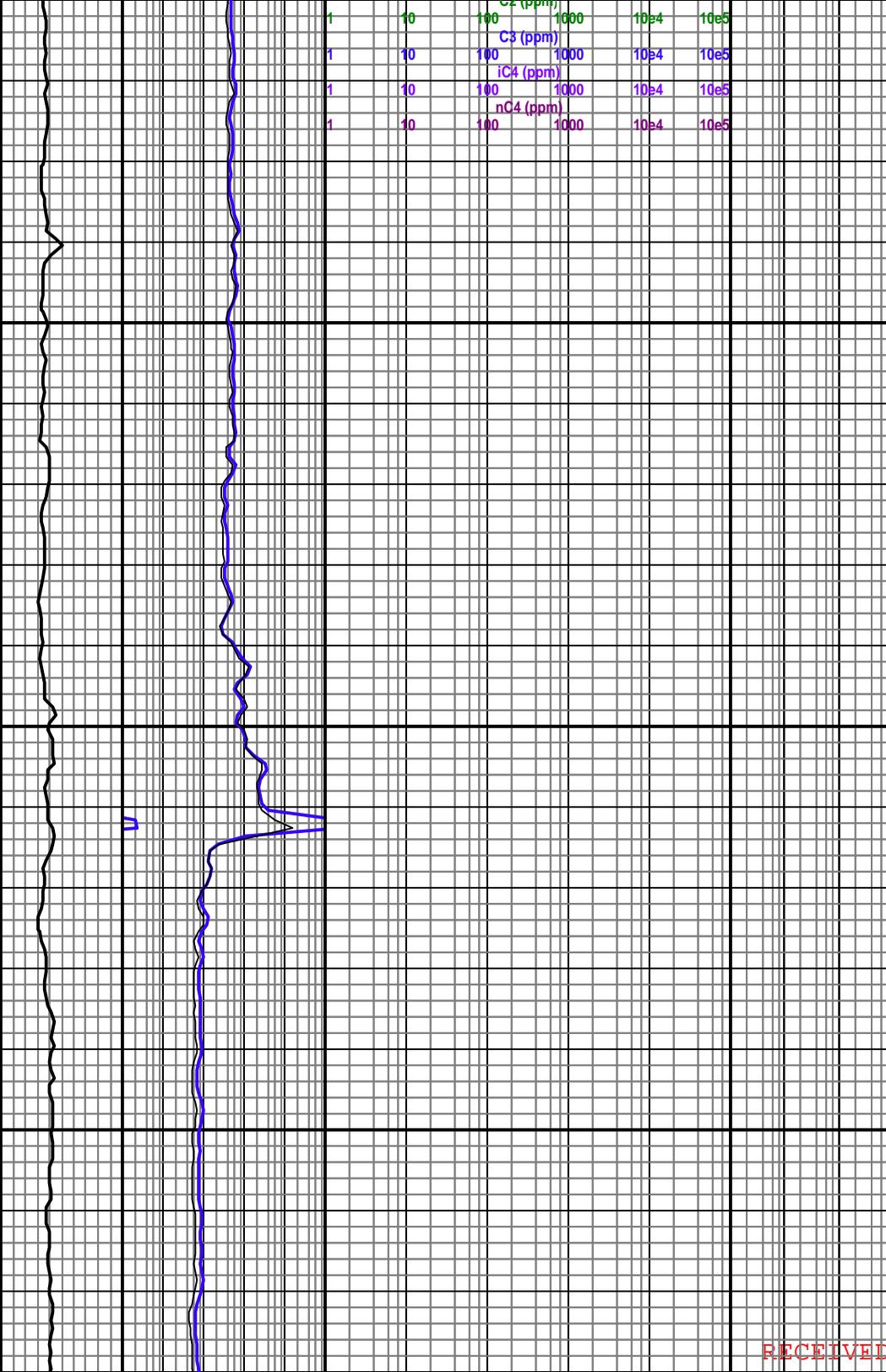
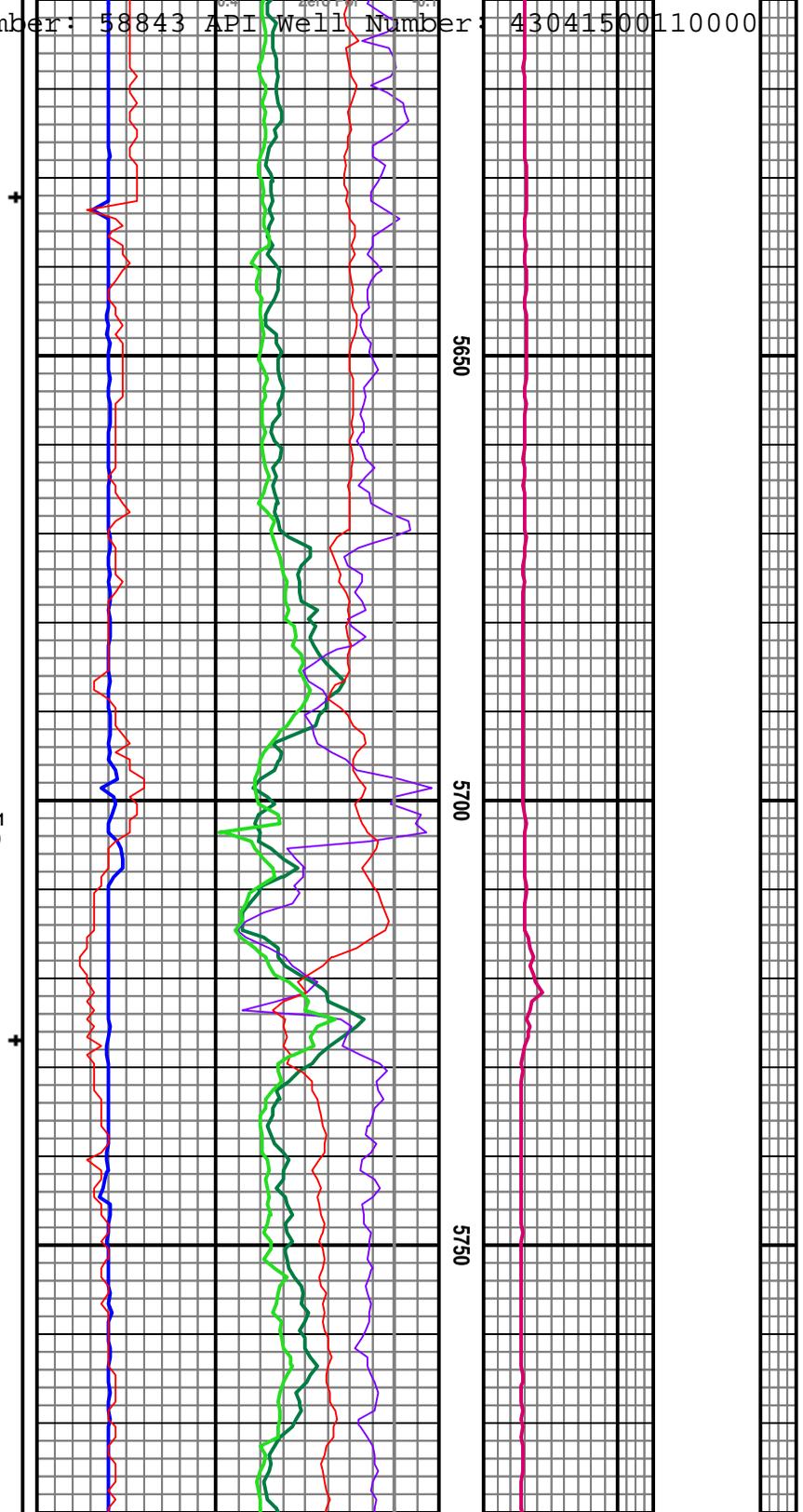
WOB 13
 RPM 33158
 SPM 77+79
 SPP 2823



MD 5685
INC 0.12
AZ 299.39
TVD 5640

WOB 14
RPM 33 161
SPM 79+80
SPP 2966

MD 5700



1	10	100	1000	10e4	10e5
1	10	100	1000	10e4	10e5
1	10	100	1000	10e4	10e5
1	10	100	1000	10e4	10e5

Sundry Number: 58843 API Well Number: 4304150011000

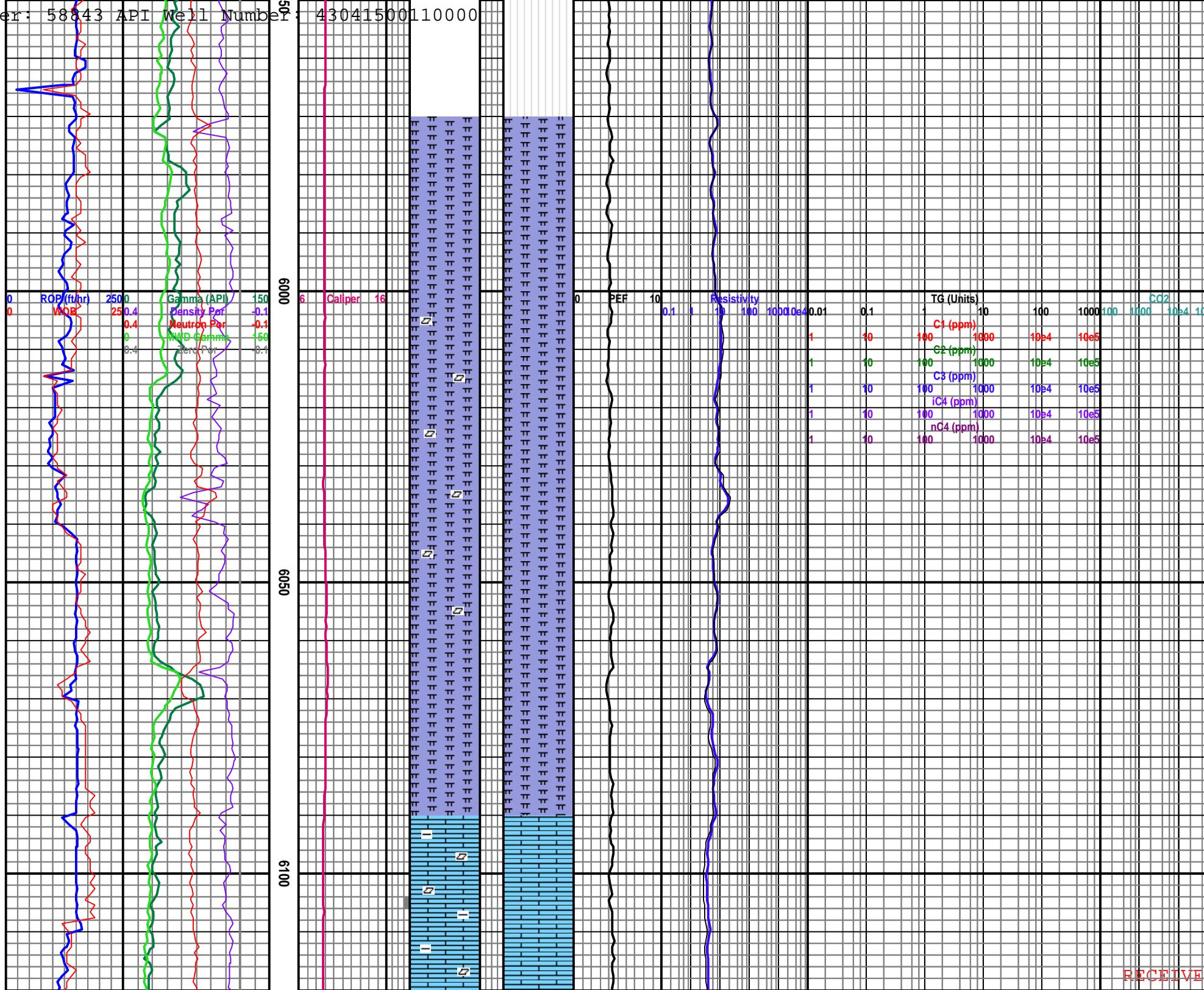
WL 36
 Cake 7/6
 pH 10.0
 Ca 1776
 Cl 169600
 C Sol 5.7

MD 5970
 INC 6.30
 AZ 125.52
 TVD 5924

WOB 15
 RPM 31 155
 SPM 77+76
 SPP 2915

MD 6065
 INC 6.09
 AZ 137.59
 TVD 6019

WOB 18
 RPM 31 156
 SPM 76+78
 SPP 3053



Start 30-ft samples caught by rig crew-members. Samples & mud log gas are lagged by strokes.

5970' - 6090' MARLSTONE; light brownish gray (5YR 6/1); firm, some medium hard; no chips remain intact in HCl, gradually disintegrates to insoluble brownish gray clay residue, forming no to few large filmy bubbles that float on acid; subblocky. 2 - 1% CALCITE FRAC FILL; white, partly pulverized; no crystals evident that would indicate open fractures; in interval 6000' - 6060'.

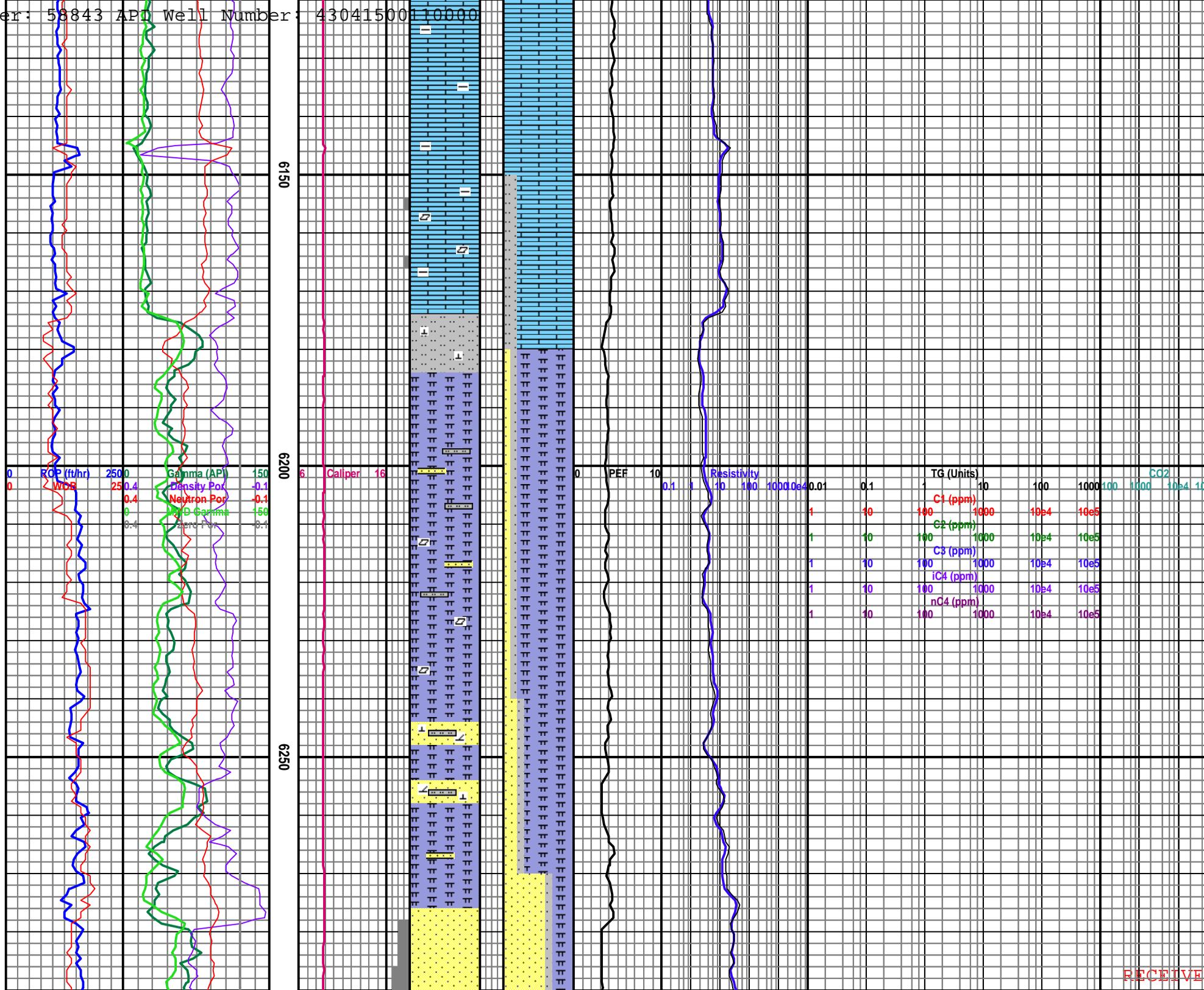
6090' - 6180' ARGILLACEOUS LIMESTONE; light brownish gray (5YR 6/1); firm to medium hard; no chips remain intact in HCl, dissolves leaving less insoluble brownish gray clay residue than marlstone above, forms few filmy bubbles that float on acid; subblocky. Trace - 2% CALCITE & QUARTZ FRAC FILL; white, orange pink (5YR 8/4); partly pulverized; loose and cutting across chips; several small crystals on frac fill suggest some Δ minor fractures. no fluorescence or cu

RECEIVED

MD 6160
INC 3.79
AZ 158.24
TVD 6113

WOB 8
RPM 33 163
SPM 80+81
SPP 3113

MD 6256
INC 2.78
AZ 187.74
TVD 6209



At base minor SILTSTONE; medium light gray (N6); firm, some medium hard; calcareous; chips disintegrate in HCl; argillaceous and slightly very fine grained sandy; insoluble residue feels gritty w/ glass stirring rod; rounded subblocky.

6180' - 6240' MARLSTONE; medium light gray (N6) to light brownish gray (5YR 6/1); firm to medium hard; chips disintegrate in HCl to powdery brownish gray clay insoluble residue; subblocky. Minor SANDSTONE; medium light gray (N6) & SILTSTONE; medium light gray; calcareous; argillaceous; rounded subblocky. Trace mixed CALCITE & QUARTZ FRAC FILL; white (N9) & moderate orange pink (5YR 8/4); loose chips and cutting across marlstone.

6240' - 6300' MARLSTONE; medium light gray (N6) to light brownish gray (5YR 6/1); firm to medium hard; chips disintegrate in HCl to powdery brownish gray clay insoluble residue; subblocky. Trace CALCITE & ANHYDRITE FRAC FILL; white, clear.

20 - 60% SANDSTONE; medium light gray (N6), pale orange (10YR 7/2); very fine to some fine grained downhole; firm to; calcareous, dolomitic; silty, slightly argillaceous to fairly clean; in HCl chips mostly remain intact but shed sand grains as cement is dissolved; trace green grains; mostly no porosity to some good porosity downhole. Grades to minor SILTSTONE; medium light gray (N6); argillaceous, very fine grained sandy i

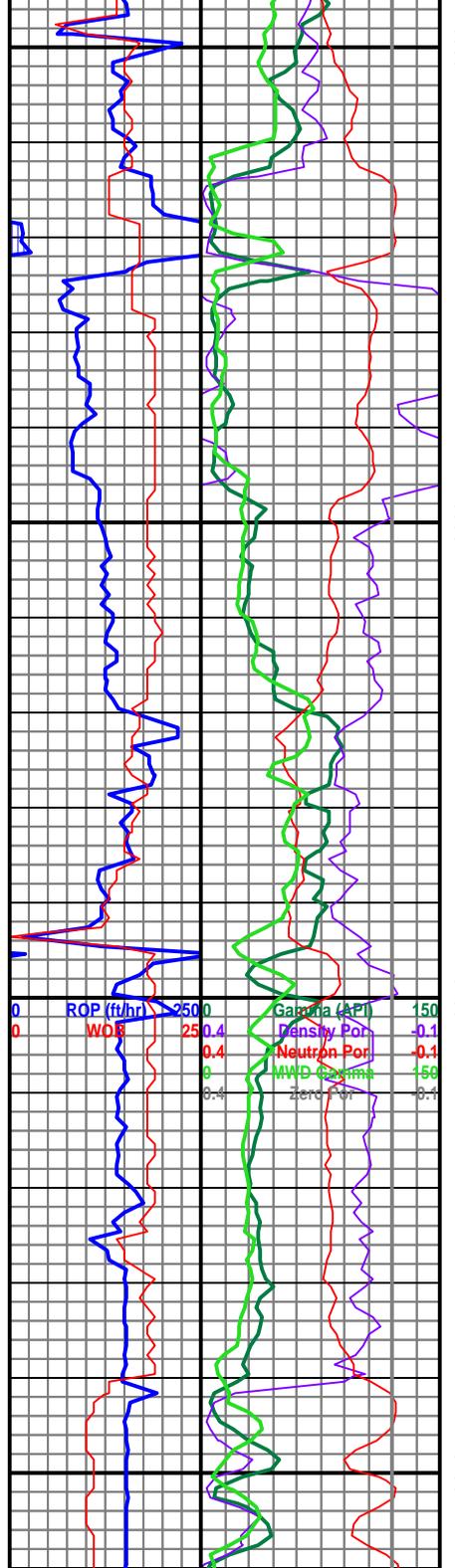
RECEIVED

WOB 15
RPM 30 156
SPM 78+78
SPP 3119

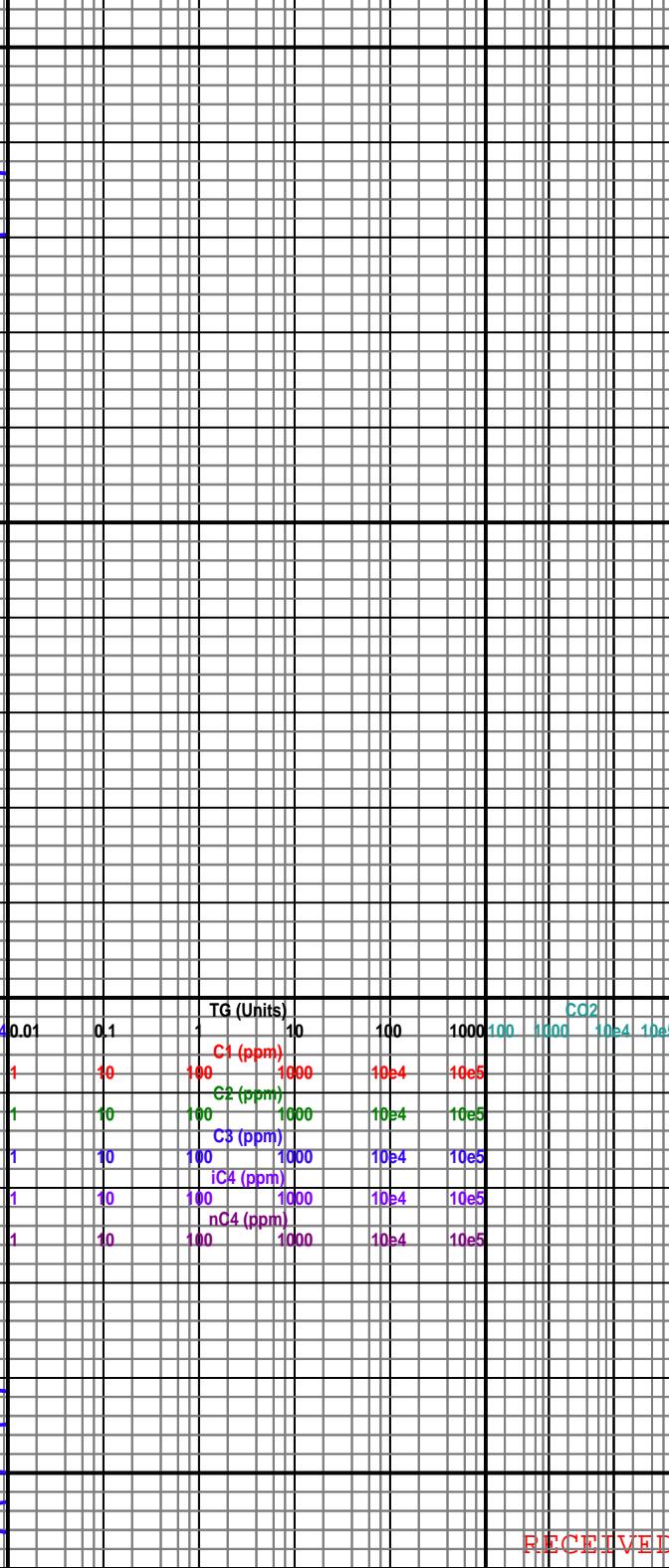
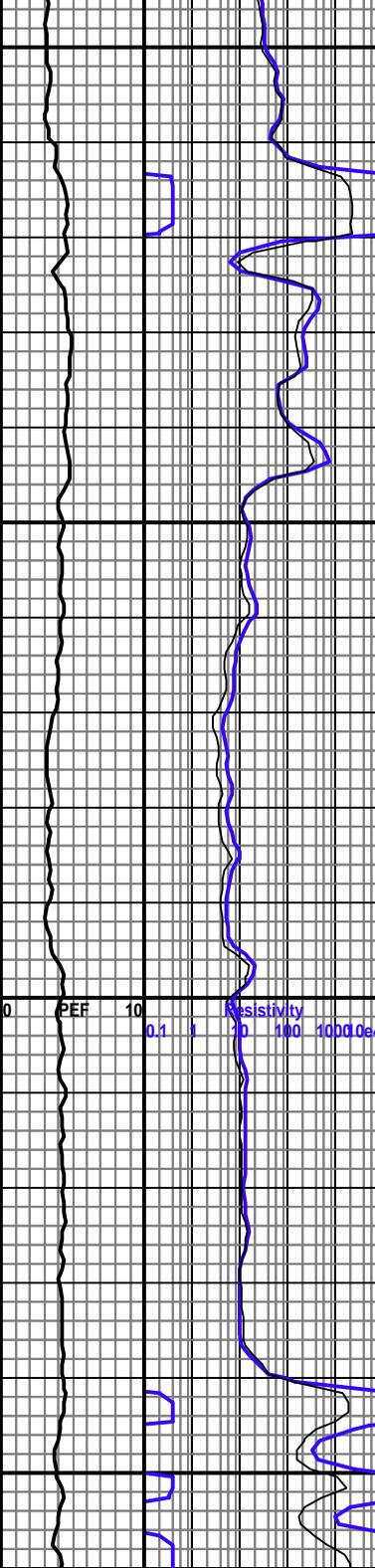
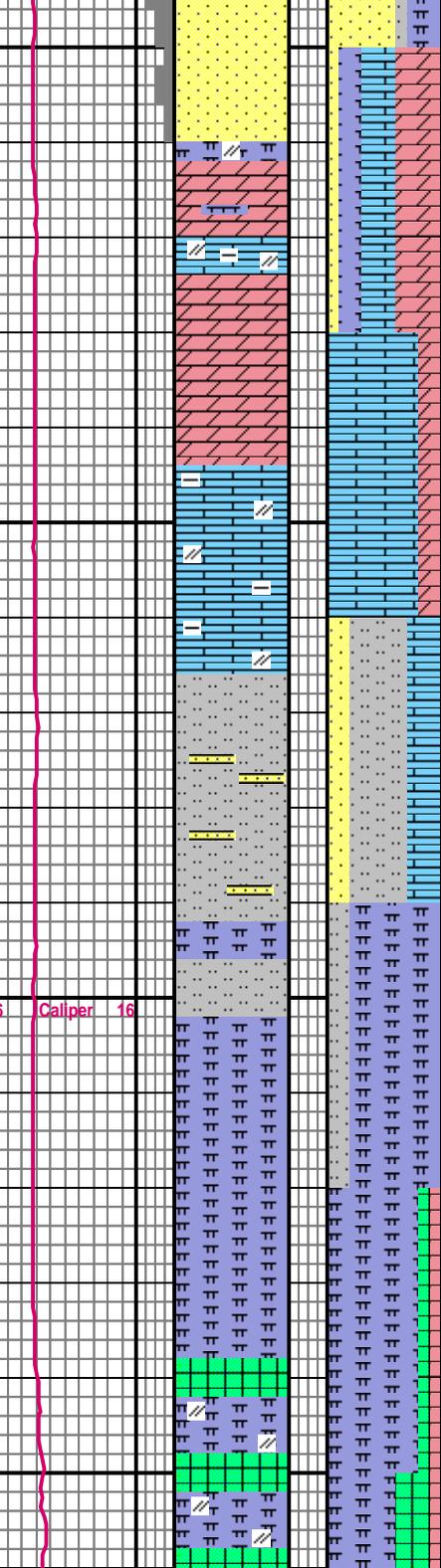
MD 6351
INC 2.79
AZ 217.25
TVD 6304

WOB 13
RPM 32 158
SPM 77+79
SPP 3234

MD 6446
INC 3.34
AZ 237.54
TVD 6399



6300
6350
6400
6450



6300' - 6360' SANDSTONE; as above. ANHYDRITE; white; micro-crystalline, sparkly; firm; free and as patches within marlstone and limestone. MARLSTONE & ARGILLACEOUS LIMESTONE; medium gray (N5) to light brownish gray (5YR 5/1); firm, medium hard; chips disintegrate in HCl; patch of white microcrystalline ANHYDRITE. No show

6360' - 6390' ARGILLACEOUS LIMESTONE; light brownish gray (5YR 5/1); firm to medium hard; chips dissolve in HCl leaving fine powdery insoluble clay residue. SILTSTONE & lesser SANDSTONE; light gray (N7); si and lower very fine grained quartz sand; firm; calcareous; slightly argillaceous; mostly no porosity visible. No show.

6390' - 6450' Minor SILTSTONE; as above. MARLSTONE; light brownish gray (5YR 6/1); firm, medium hard; chips disintegrate in HCl to fine argillaceous powdery insoluble residue; subblocky. Downhole, minor ANHYDRITE; white; micro-crystalline, sparkly; several chips show patches of anhydrite in marlstone. Few chips SALT; clear; sample dries crusted over w/ salt.

6450' - 6466' Spot Sample: MARLSTONE; brownish gray w/ 20% SALT; white, clear. Trace ANHYDRITE; white; micro-crystalline; patches ±

ROP (ft/hr)	2500	Gamma (API)	150
WOB	250.4	Neutron Por	-0.1
	0.4	MWD Gamma	-50
	0	Zero Por	-0.1
	0.4		

PEF	10	Resistivity	0.01	0.1	TG (Units)	10	100	1000	10000	100000	1000000	10000000	100000000
	0.1		1	10	C1 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
	1		10	100	C2 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
	10		100	1000	C3 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
	100		1000	10000	IC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000
	1000		10000	100000	nC4 (ppm)	100	1000	10000	100000	1000000	10000000	100000000	1000000000

RECEIVED

WOB 12
RPM 28 157
SPM 78+79
SPP 3015

MD 6541
INC 1.17
AZ 208.19
TVD 6494

WOB 15
RPM 30 161
SPM 78+81
SPP 3144



within marlstone

6466' - 6480' SALT; white, clear, part tinted/streaked reddish brown (10R 5/4) w/ silty clay impurity.

6480' - 6510' SANDSTONE; minor clusters reddish orange (10R 5/5), mostly loose sand stained orange, some clear; clusters friable, some firm; very fine to medium grained clusters, loose sand fine to coarse; subangular to much subround to rounded; clusters calcareous, mostly disintegrates in HCl; clusters silty, slightly argillaceous; trace black grains in clusters; slight to some good porosity in clusters, better porosity suggested by loose sand. No show.

6510' - 6540' SANDSTONE; as above, interpreted mostly from MWD gamma. MUDSTONE; pale red (10R 6/2); firm; calcareous; chips both disintegrate in HCl and remain intact. SHALE; grayish red to reddish brown (10R 4/2 - 10R 4/3); firm; calcareous, partly remains intact in HCl; subblocky.

6540' - 6600' SANDSTONE; pale reddish brown to reddish orange (10 R 5/5); recovered as 40 - 30 % clusters, 60 - 70% loose sand; clusters very fine to medium grained, loose sand mostly fine to medium grained; subangular to rounded; friable to firm clusters; slight calcareous; slight to fair porosity visible in clusters. No show.

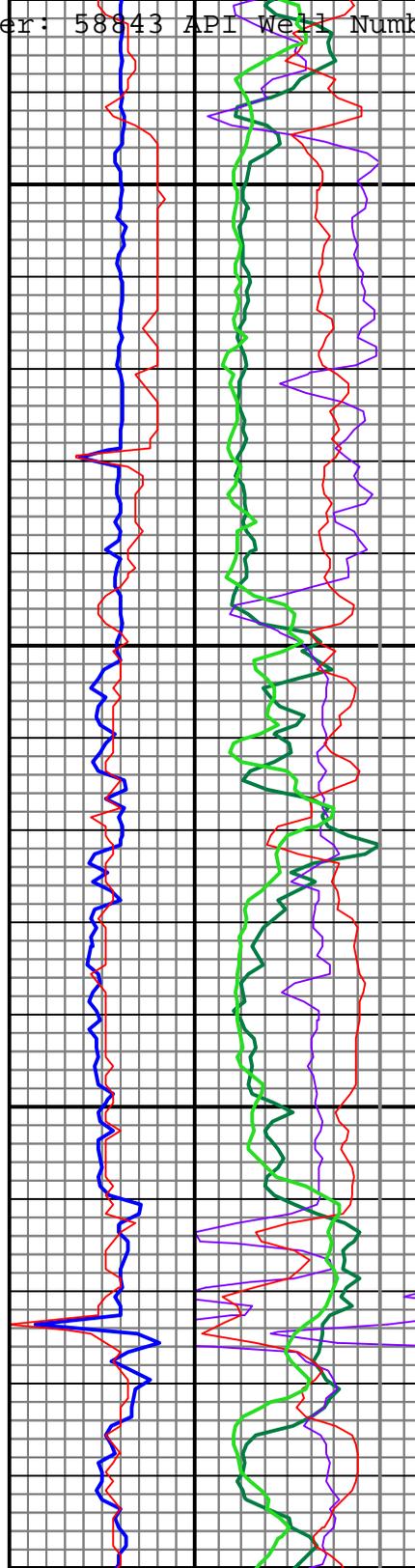
6600' - 6630' SANDSTONE; pale red (10R 6/2); recovered mostly as clusters; very fine to fine grained; commonly silty, slightly argillaceous; firm; calcareous; no to slight porosity visible. SHALE; grayish red to dark reddish brown, trace faintly light greenish gray; smooth; firm; calcareous, chips partly deprecitate in HCl; subblocky. Possible SALT; inferred from clean MWD gamma & decreased WOB.12, 2014

RECEIVED

MD 6637
INC 0.17
AZ 62.23
TVD 6590

WOB 12
RPM 29 161
SPM 80+79
SPP 3155

MD 6731
INC 0.17
AZ 255.16
TVD 6684

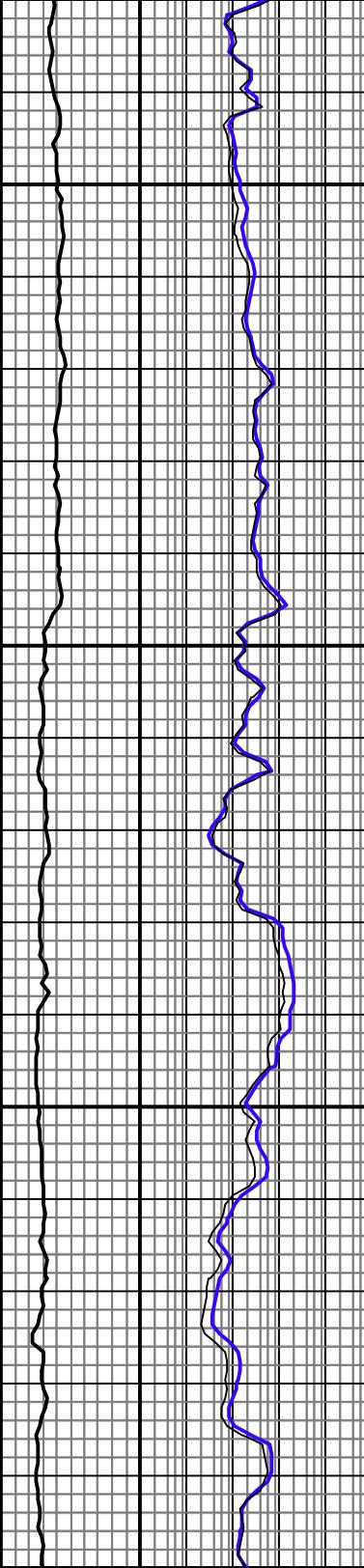
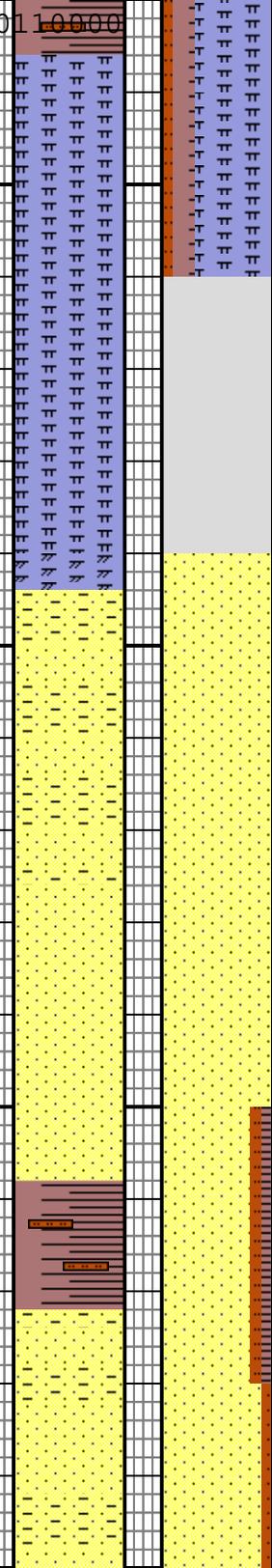


6650

6700

6750

6800



Gas Detector: Agilent 7890A Dual FID
Total Gas/Gas Chromatograph with TCD
for CO2.

Sampling Gas From Rig
6766' Unlagged MD / 6705' Lagged
At 11/09/2014 16:35 HRS

Sampling Ambient Air
- 400 PPM CO2

Sampling Mud
Gas,
Gas Trap in Muc

TG 38 U -->
C1 864 PPM
C2 21 PPM
C3 4 PPM
IC4 2 PPM
NC4 3 PPM

CO2 122 PPM

6630' - 6660' MARLSTONE; brownish gray (5YR 4/1); firm to medium hard; chips disintegrate in HCl to fine argillaceous powder; subblocky. Lesser SHALE; grayish red to dark reddish brown (10R 3/3); smooth to silty; firm; slightly calcareous; chips partly disintegrate in HCl; subblocky. Grades to minor MUDSTONE; pale reddish brown.

6660' - 6690' No Sample. MARLSTONE interpreted from MWD gamma and increased WOB.

6690' - 6720' SANDSTONE; pale reddish brown to reddish orange (10R 5/5); 70% very fine to dominantly fine grained clusters, 30% loose fine to upper medium grained sand; subangular to rounded; firm; slightly calcareous; trace black grains; slight to fair visible porosity. Argillaceous sandstone interpreted where MWD gamma is higher.

6720' - 6810' SANDSTONE; pale reddish brown to orange pink (10R 5/5 - 10 R 6/5); 20 - 10% very fine to fine grained clusters, 80 - 90% loose fine to coarse sand that is mostly stained red orange some clear to frosted. Argillaceous sandstone interpreted where MWD gamma is higher. Trace MUDSTONE; reddish brown and SHALE; grayish red to reddish brown; questionable placement in interpreted lithology column.

Sund...

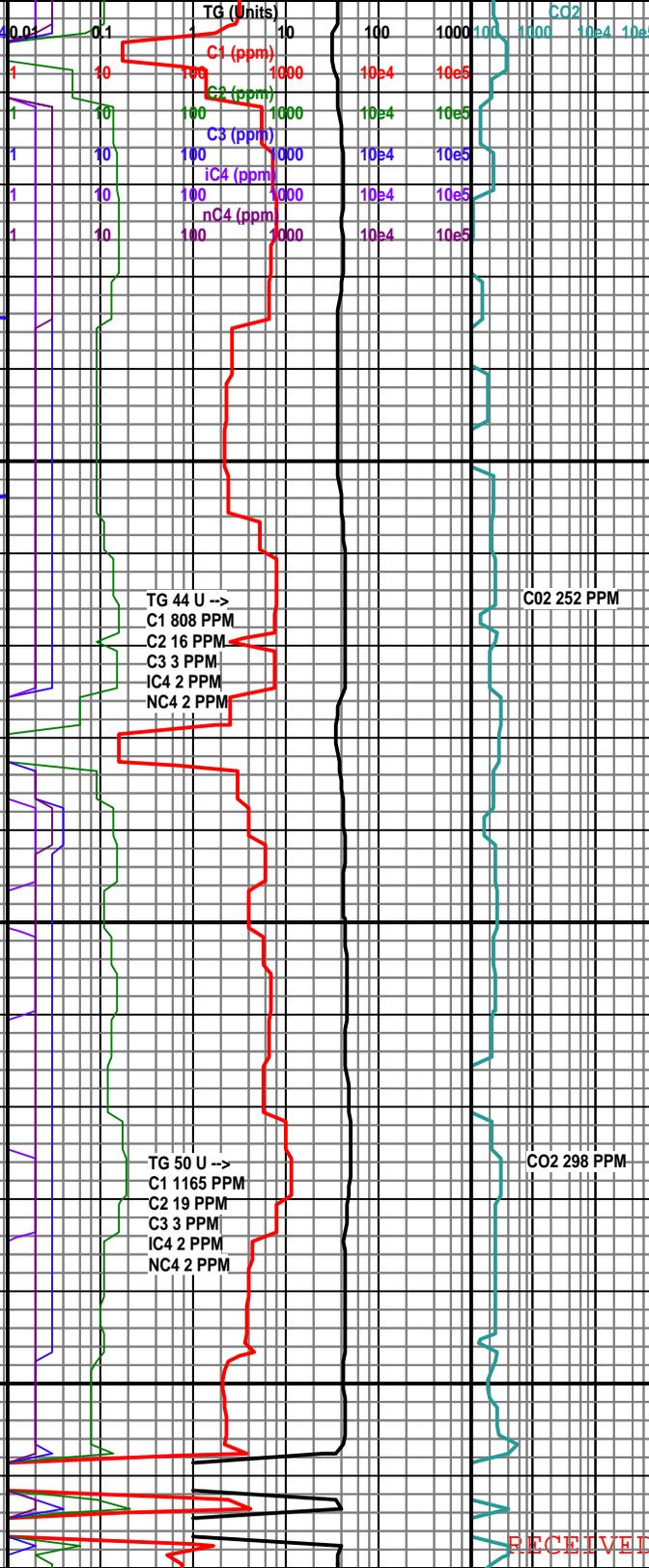
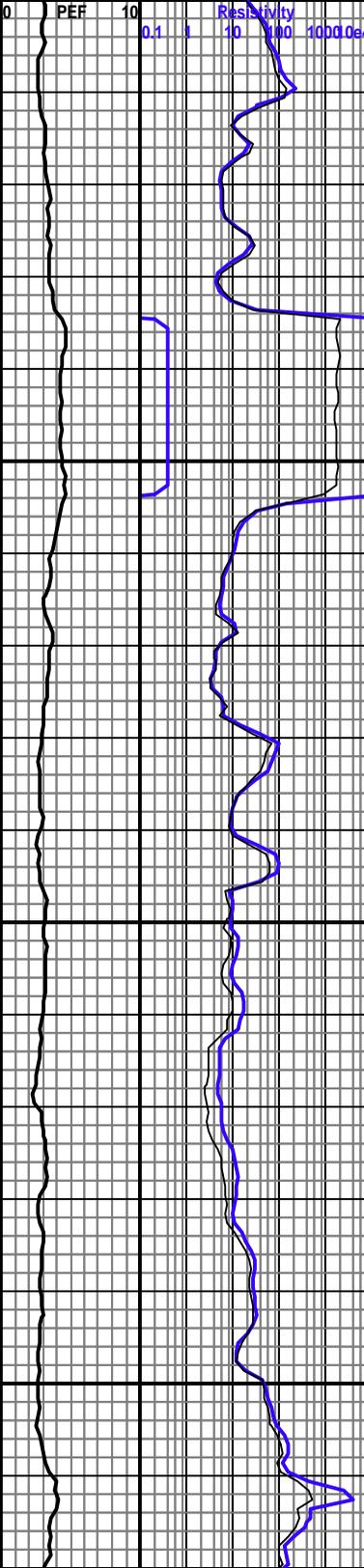
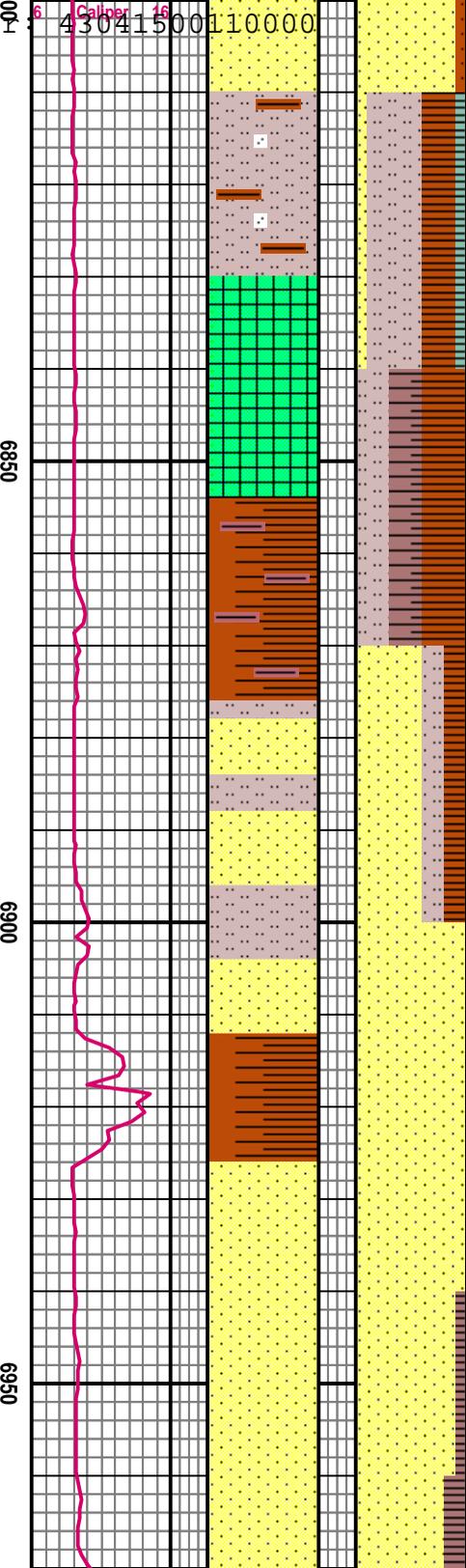
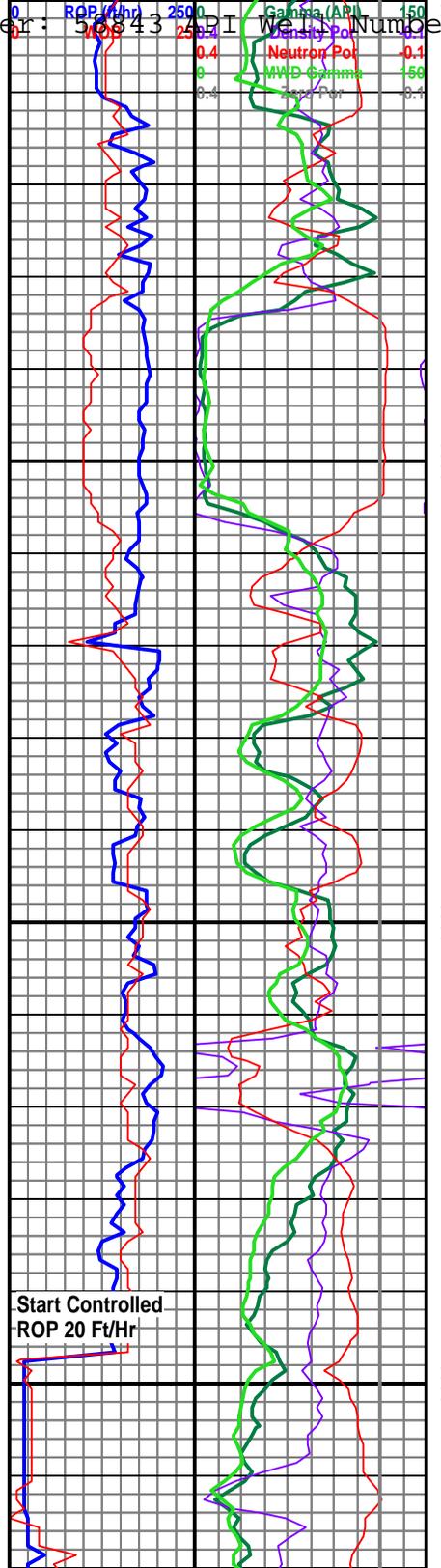
WOB 12
RPM 100
SPM 78+80
SPP 3295

MD 6827
INC 0.14
AZ 75.05
TVD 6780

WOB 18
RPM 25 158
SPM 79+77
SPP 3230

MD 6922
INC 0.14
AZ 182.55
TVD 6875

Mud 6964
Wt 10.6
Vis 36
PV 15
YP 12
Gels 2/4/5
WL 3.0
Cake 1/0
pH 10.0



6810' - 6870' MUDSTONE; grayish orange pink (5YR 7/2); very fine grained sandy in part; firm; calcareous, chips partly disintegrate in HCl; subblocky. Lesser SHALE; dark reddish brown (10R 3/5), lesser dark grayish red (10R 3/3), minor light greenish gray (5G 8/0.5); smooth; firm; calcareous, chips mostly disintegrate in HCl to small flakes; subblocky, coarse platy. Probable SALT; interpreted from clean MWD gamma & decreased WOB; likely washed away w/ fresh water cleaning sample.

6870' - 6960' Uphole, lesser MUDSTONE; grayish orange pink; very fine grained sandy, Mostly SANDSTONE; pale reddish brown to orange pink (10R 5/5 - 10 R 6/5); 20% - Trace very fine to fine grained clusters, 80 - 100% loose fine to medium sand that is moderately to slightly stained red orange to clear to frosted; become partly coarse toward base. No show.

20-Ft Samples 6900' - 7140' Caught by Rig Crew Member, Geologist, and Logger.

Questionable interpreted SHALE; dark reddish brown; poorly represented in samples. Trace minor probable CAVING SHALE at 6960'; grayish red; smooth; firm; slightly calcareous; platy.

6960' - 6980' SANDSTONE; pale reddish brown to orange pink (10R 5/4); almost all loose fine to medium to some coarse sand; subangular to round

Start Controlled ROP 20 Ft/Hr

RECEIVED

Ca 900
 Cl 155400
 C Sol 7.4

Sundry Number: 58843 API Well Number: 43041500110000

Work on pumps

WOB 6
 RPM 32 163
 SPM 81+80
 SPP 2891

MD 7018
 INC 0.15
 AZ 344.40
 TVD 6971

Mud 7078
 Wt 10.6
 Vis 42
 PV 18
 YP 12
 Gels 2/4/5
 WL 3.0
 Cake 1/0
 pH 10.5
 Ca 800
 Cl 155400
 C Sol 7.4

WOB 5
 RPM 34 162
 SPM 80+80
 SPP 2816

MD 7113
 INC 0.14
 AZ 176.86
 TVD 7066

End Controlled
 ROP 20 Ft/Hr
 06:00 11/10/2014

ROP (ft/hr)	2500	Gamma (API)	150
WOB	250.4	Density Por	-0.1
	0.4	Neutron Por	-0.1
	0	MWD Gamma	-50
	0.4	Zero Por	-0.1

7000

7050

7100

6 Callper 16

0 PEF 10

Resistivity

0.01 0.1

TG (Units)

10 100 1000 10000

CO2

TG 43 U -->
 C1 193 PPM
 C2 6 PPM
 C3 0 PPM
 IC4 0 PPM
 NC4 0 PPM

CO2 100 PPM

TG 41 U -->
 C1 375 PPM
 C2 10 PPM
 C3 1 PPM
 IC4 0 PPM
 NC4 0 PPM

CO2 185 PPM

slightly to moderately stained red orange to clear; part frosted.

6980' - 7020' No Samples; alarm clock issue. Interbedded clean and argillaceous sandstone interpreted from MWD gamma.

7020' - 7060' SHALE; grayish red (5R 4/2), trace - 40% faintly light greenish gray (5GY 8/0.5); smooth, some silty; firm; slightly calcareous; platy, subblocky. Lesser MUDSTONE; grayish orange pink (5YR 7/2); firm, moderately soft; calcareous, mostly disintegrates in HCL; rounded subblocky. Few chips ANHYDRITE; white; micro-crystalline; soft.

7060' - 7080' SHALE; dark reddish brown (10R 3/4); smooth, little silty; firm when chips are dry but turns to clay when re-wet; calcareous; rounded subblocky. Lesser MUDSTONE; grayish orange pink (5YR 7/2); moderately soft; calcareous, mostly disintegrates in HCL; placement in interpreted lithology questionable.

7080' - 7100' SANDSTONE; pale reddish brown to orange pink (10R 6/4); almost all loose, fine to coarse sand; subangular to round; slightly to moderately stained red orange to clear; part frosted. Lesser MUDSTONE; reddish brown (10R 4/4) and SHALE; grayish red (5R 4/2).

7100' - 7120' SHALE; light gray, faintly tinted yellowish gray to light greenish gray (5Y 8/0.5 - 5GY 8/0.5); smooth, chips appear partly pulverized by bit; swells in fresh H2O; slightly calcareous, reaction in HCL turns chips to powder.

7120' - 7140' Mostly SANDSTONE; pale reddish brown to orange pink (10R 5/4 - 10R 6/4); mostly loose fine to medium to some coarse sand; subangular to round; minor clusters are silty and argillaceous. No show!

RECEIVED

WOB 13
RPM 30 160
SPM 79+79
SPP 3196

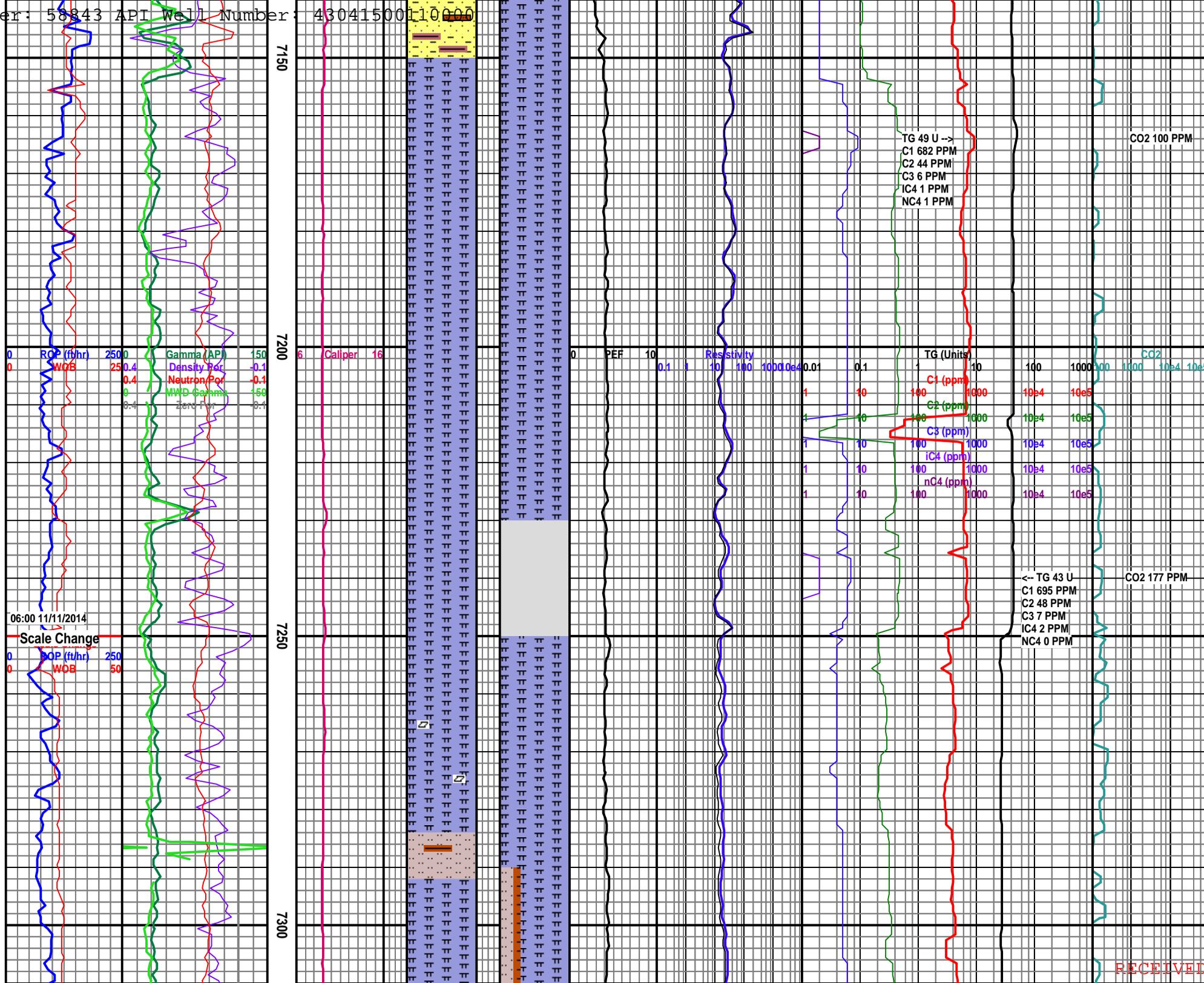
MD 7207
INC 0.22
AZ 141.06
TVD 7160

Mud 7251
Wt 10.5
Vis 37
PV 15
YP 12
Gels 2/4/5
WL 3.6
Cake 1/0
pH 10.0
Ca 860
Cl 155400
C Sol 6.6

Bit 3
8 3/4"
PDC
Smith
MDZi516

MD 7270
IN 0.05
AZ 209.14
TVD 7223

WOB 24
RPM 33 156
SPM 78+78
SPP 3292



7140' - 7230' MARLSTONE; medium gray (N5); part tinted brownish gray (5YR 5/1); firm, medium hard; powder; clay insoluble residue in HCl; subblocky. No show.

7230' - 7251' Bottoms-up sample before trip not caught. Inter- preted as MARLSTONE based on ROP, WOB and chromatography.

7251' - 7290' MARLSTONE; medium gray to brownish gray (N5 - 5YR 5/1); firm to medium hard; disintegrates in HCl leaving fine powdery clay as insoluble residue; subblocky. 2% CALCITE FRAC FILL; white; loose, attached to chips, and cutting across chips. No show.

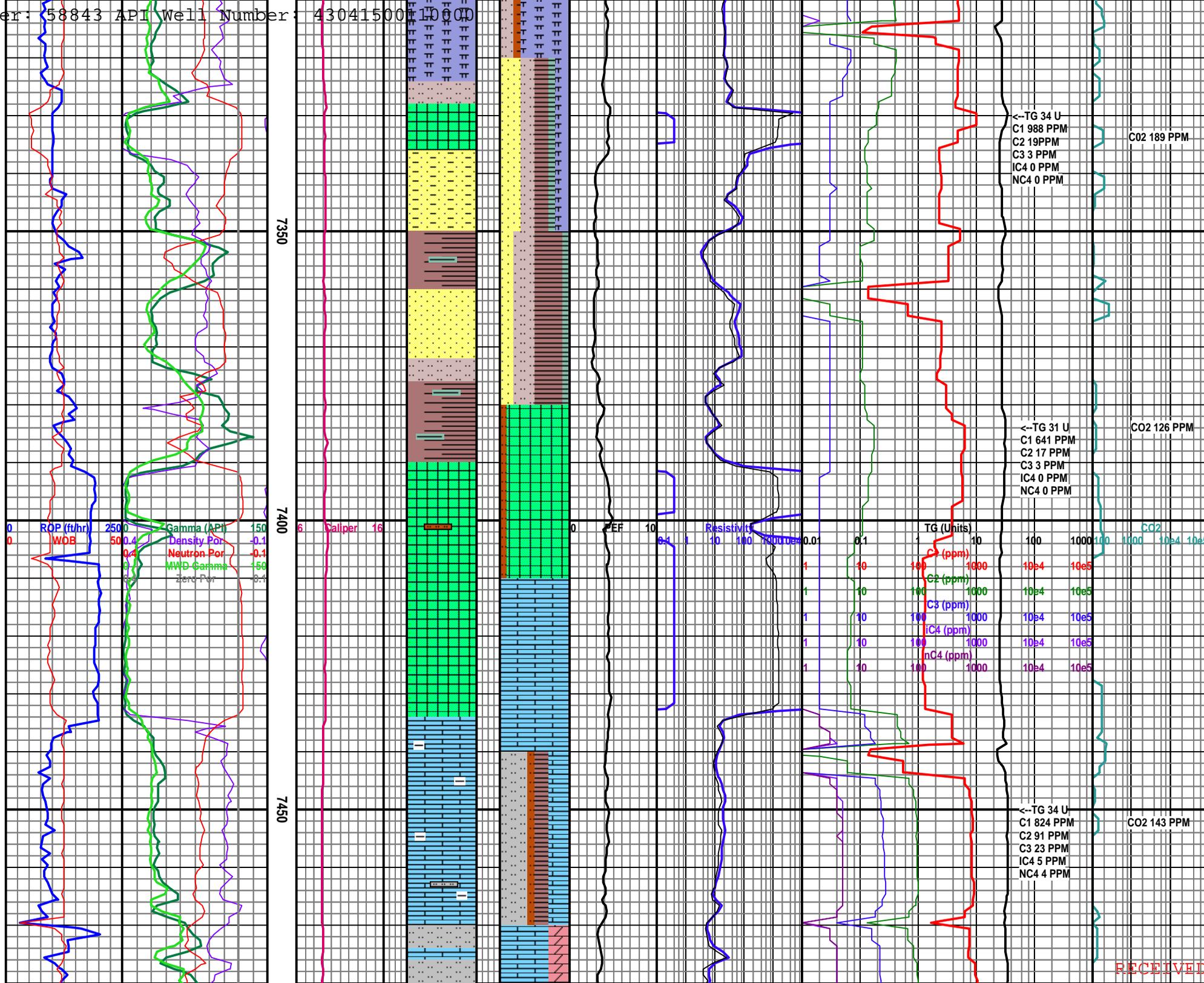
7290' - 7320' MARLSTONE; medium gray to brownish gray (N5 - 5YR 5/1); firm to medium hard; disintegrates in HCl leaving fine powdery clay as insoluble residue; subblocky. Lesser MUDSTONE; grayish orange pink (5YR 7/2); moderately soft; calcareous, disintegrates in HCl to silt and minor clay. Minor SHALE; reddish brown (10 4/4).

MD 7333
INC 0.11
AZ 260.93
TVD 728

MD 7397
INC 0.08
AZ 148.49
TVD 7350

WOB 19
RPM 34 159
SPM 79+78
SPP 3341

MD 7460
INC 0.36
AZ 82.58
TVD 7413



7320' - 7350' Interbedded. MUDSTONE; grayish orange pink (5YR 7/2); moderately soft; calcareous; rounded subblocky. SANDSTONE; pale reddish brown to moderate orange pink (10R 5/4 - 10R 6/4); loose fine to medium sand and lesser very fine to some medium grained clusters that are partly silty and argillaceous.

7350' - 7380' SHALE; grayish red to reddish brown (10R 4/4), minor light greenish gray (5GY 8/0.5); firm; smooth; slightly calcareous, chips disintegrate in HCl to small flakes and powder; rounded subblocky. SANDSTONE; orange pink (5YR 7/4); very fine to lower fine grained; firm; fairly clean to some silty, slightly argillaceous; tight. Grades to MUDSTONE; grayish orange pink (5YR 8/4); part very fine grained sandy; moderately soft, firm; calcareous. No show.

7380' - 7410' 95% SALT; overall sample is grayish orange pink (5YR 7/2), becomes clear in H2O after minor reddish impurities are released from salt; chips to 9mm.

7410' - 7440' ARGILLACEOUS LIMESTONE; medium gray to light brownish gray (N5 - 5YR 6/1); firm, medium hard; dissolves more rapidly than marlstone above, leaves

7440' - 7470' 30% ARGILLACEOUS LIMESTONE; as above. 30% SHALE and lesser MUDSTONE; grayish red to reddish brown; possible cavings, part splintery, chips to 1" in top sieve. MUDSTONE; light gray; soft; very calcareous/ dolomitic, disintegrates in HCl to silt and clay insoluble residue.

7470' - 7530' 70 - 60% ARGILLACEOUS LIMESTONE; medium gray, part tinted brownish gray (N5 - 5YR 4/1 - 5YR 6/1); firm to medium hard; anhydritic. 30 -

RECEIVED

WOB 25
RPM 33 159
SPM 79+78
SPP 3277

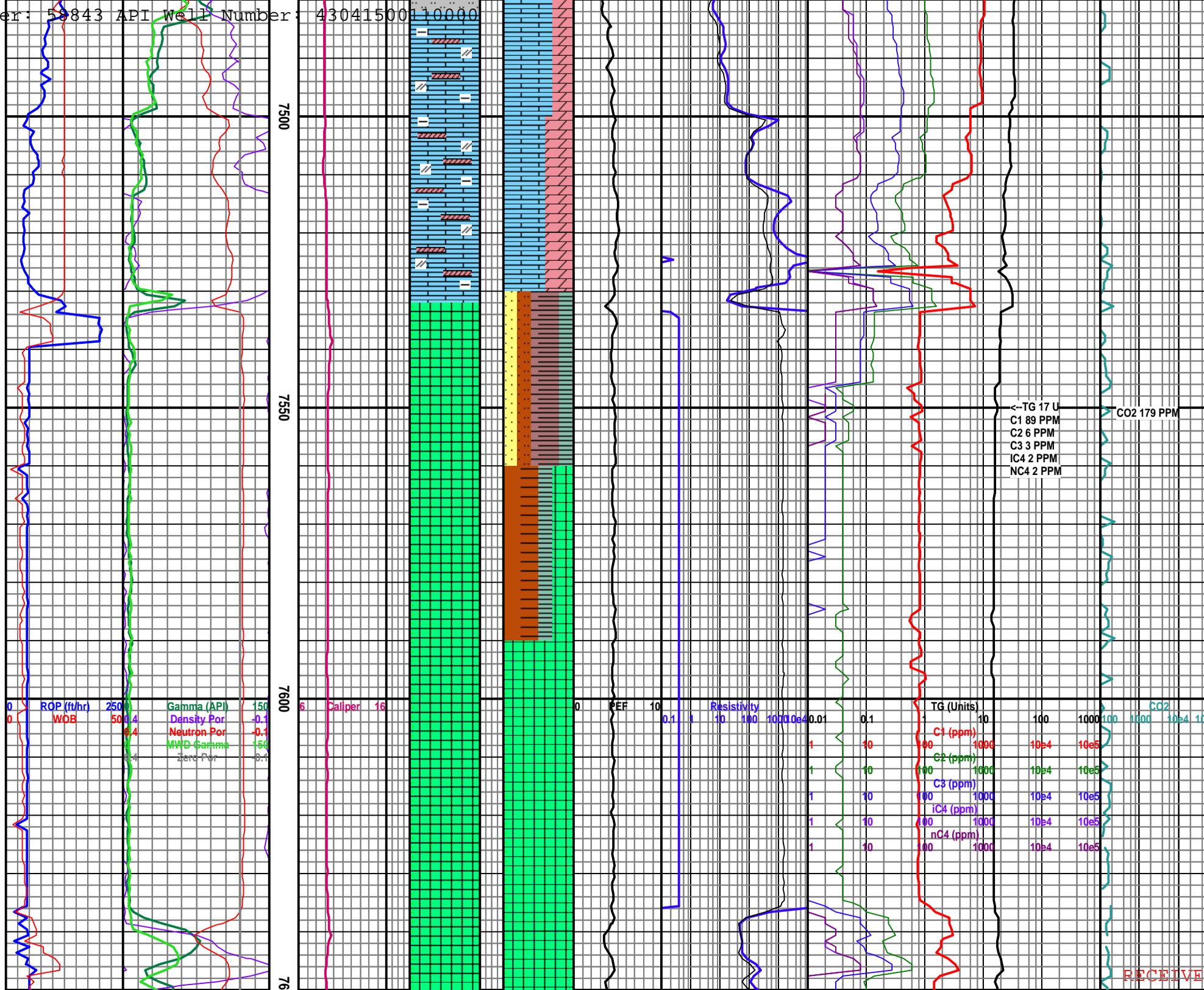
MD 7524
INC 0.11
AZ 45.40
TVD 7477

Picking up every 5-ft to ream salt.

Mud 7546
Wt 10.5
Vis 37
PV 12
YP 10
Gels 2/5/5
WL 4.6
Cake 1/0
pH 10.5
Ca 1000
Cl 139000
C Sol 7.6

MD 7587
INC 0.12
AZ 306.73
TVD 7540

WOB 7
RPM 33 165
SPM 82+83
SPP 2582



ROP (ft/hr) 250
WOB 500
Gamma (API) 150
Density Por -0.1
Neutron Por -0.1
MWD Gamma -50
Zero Por 0.1

Calfper 6 16

PEF 10

Resistivity 10 100 1000 10000 100000 1000000 10000000 100000000 1000000000

TG (Units) 10 100 1000 10000 100000 1000000 10000000 100000000 1000000000

C1 (ppm) 100 1000 10000 100000 1000000 10000000 100000000 1000000000
C2 (ppm) 100 1000 10000 100000 1000000 10000000 100000000 1000000000
C3 (ppm) 100 1000 10000 100000 1000000 10000000 100000000 1000000000
IC4 (ppm) 100 1000 10000 100000 1000000 10000000 100000000 1000000000
nC4 (ppm) 100 1000 10000 100000 1000000 10000000 100000000 1000000000

CO2 179 PPM

40% ANHYDRITE; white; mushy, trace microcrystalline and soft to firm; probable stringers as well as patches within argillaceous limestone; slightly dolomitic; trace dark brown to black laminae within stringers.

7530' - 7560' Poor recovery of drilled lithology: Few chips SALT; clear, white associated w/ reddish brown clay and silt. SANDSTONE orange pink to reddish brown; MUDSTONE reddish brown; SHALE grayish red to reddish brown and light greenish gray are likely caving or late circulated cuttings.

7560' - 7588' Spot Sample minimally washed through sieve: 30% SALT; clear, white; few chips CHALCEDONY; red orange and Trace QUARTZ; clear to red orange; secondary quartz. SHALE; grayish red to reddish brown w/ minor light greenish gray to light gray is likely caving or late circulated.

7560' - 7590' Abundant LCM mica (biotite) in sample 7560' - 7590' caught by rig crew-member & washed in bucket with fresh water. Poor recovery of salt.

7590' - 7620' 95% SALT; clear to white w/ 5% CLAY; reddish brown. Sample washed by rig crew-member in brine water; excellent recovery of salt.

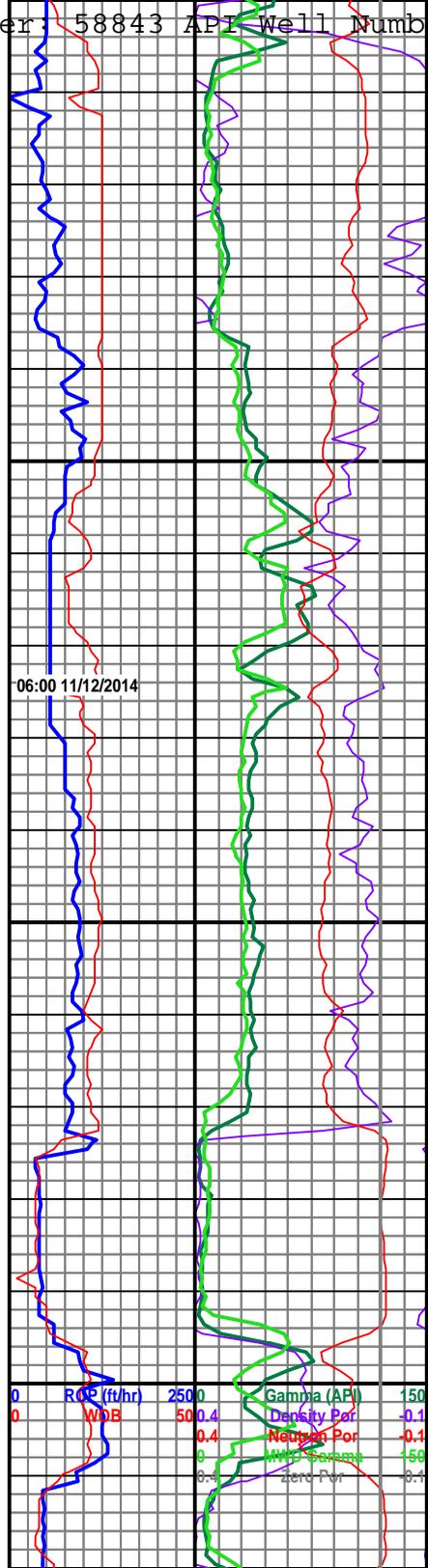
7620' - 7650' 100% SALT; clear to white chips to 5 mm. Abundant LCM mica in sample. Sample washed in brine water; excellent recovery of salt.

Sundri Well Number: 58843 API Well Number: 43041500

MD 7651
WOB 22
RPM 41 163
SPM 81+80
SPP 3312

Mud 7657
Wt 10.55
Vis 38
PV 14
YP 14
Gels 2/3/4
WL 3.0
Cake 1/0
pH 10.5
Ca 976
Cl 152000
C Sol 7.2

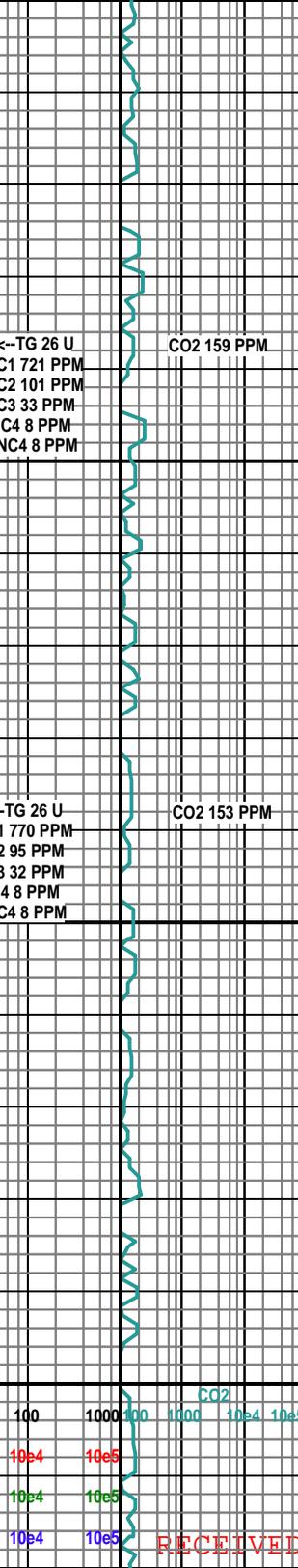
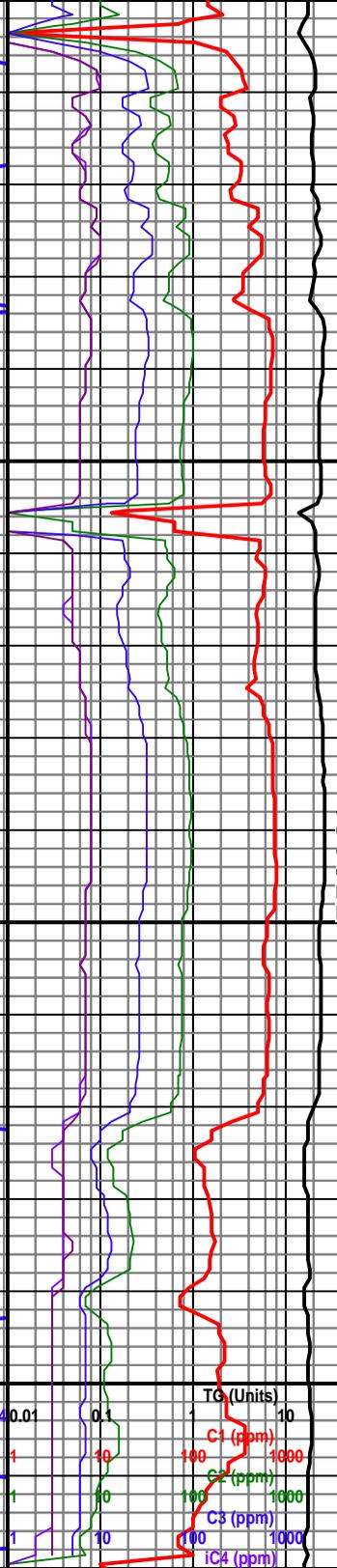
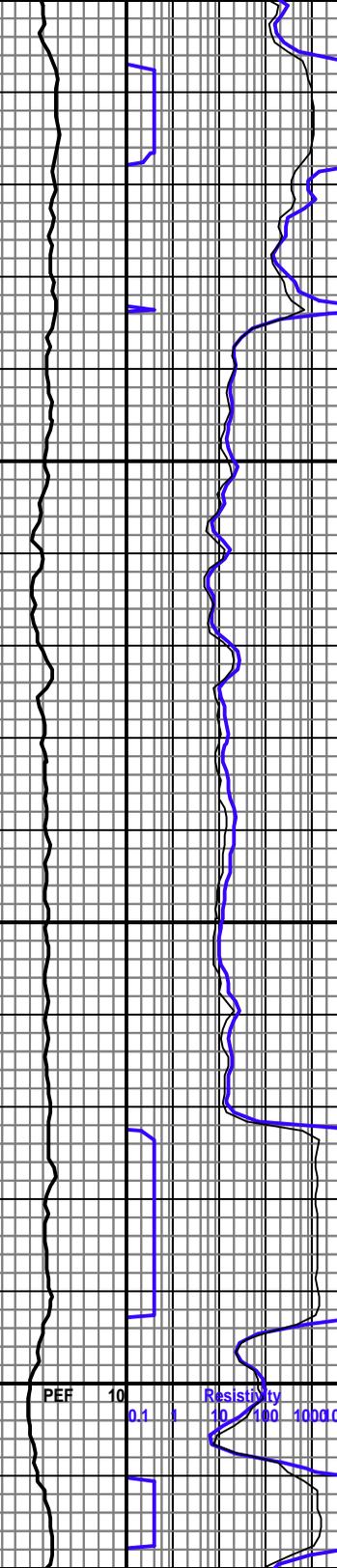
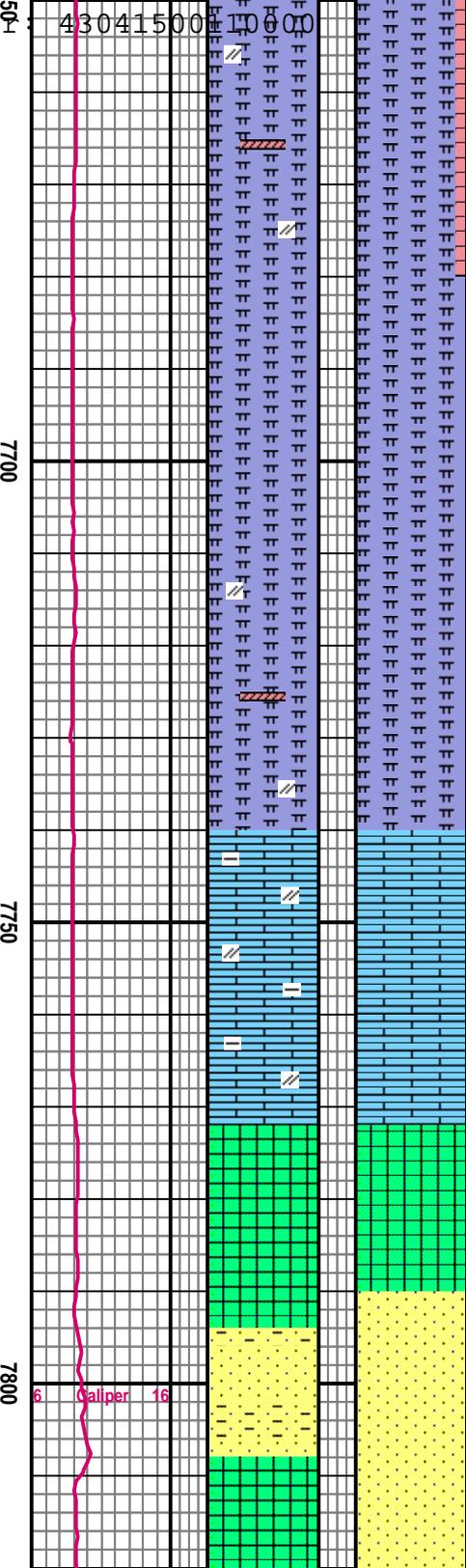
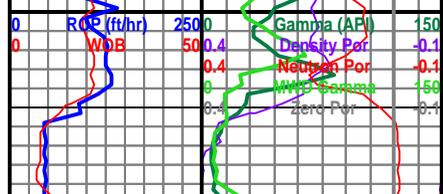
MD 7714
INC 0.35
AZ 53.40
TVD 7667



MD 7776
INC 0.28
AZ 61.23
TVD 7729

Picking up every 5-ft to ream salt.

WOB 17
RPM 42 163
SPM 80+81
SPP 3406



7650' - 7680' 95% MARLSTONE; medium gray to brownish gray (N5 - 5YR 5/1); firm to medium hard; chips disintegrate in HCl leaving fine powdery argillaceous residue; subblocky.
5% ANHYDRITE; white; mushy, trace microcrystalline and soft to firm; patches within marlstone chips & probable stringers; slightly dolomitic.

7680' - 7710' 100% MARLSTONE; as above. No Show.

7710' - 7740' 100% MARLSTONE; medium gray to brownish gray (N5 - 5YR 5/1); firm to medium hard; chips disintegrate in HCl leaving fine powdery argillaceous residue; forms few medium-sized filmy bubbles that float on acid; subblocky.
Trace ANHYDRITE; white; mushy, trace microcrystalline and soft to firm; patches within marlstone chips; loose; slightly dolomitic.

7740' - 7770' 100% ARGILLACEOUS LIMESTONE; light brownish gray (5YR 6/1); firm, medium hard; chips dissolve leaving somewhat less insoluble clay residue than marlstone above. Trace ANHYDRITE; white; micro-crystalline; patches within argillaceous limestone.

7770' - 7790' Spot Sample: SALT; white; minor light brownish gray clay clay appears mixed with salt. Abundant LCM sawdust.

7790' - 7830' SANDSTONE; moderate orange pink (10R 6/4) - 5YR 8/4); loose fine to medium sand; subangular to rounded; few silty, argillaceous clusters uphole. Trace SALT; white; placement at 7808' - 7822' in interpretive lithology column is questionable. No show.

<-TG 26 U
C1 721 PPM
C2 101 PPM
C3 33 PPM
IC4 8 PPM
NC4 8 PPM

CO2 159 PPM

<-TG 26 U
C1 770 PPM
C2 95 PPM
C3 32 PPM
IC4 8 PPM
NC4 8 PPM

CO2 153 PPM

RECEIVED: Dec. 12, 2014



Camp generator off for scheduled oil change.
Power to gas detector off.

<-TG 32 U
C1 760 PPM
C2 89 PPM
C3 24 PPM
IC4 5 PPM
NC4 5 PPM
CO2 100 PPM

MD 7839
INC 0.14
AZ 110.52
TVD 7792

Picking up
every 5-ft to
ream salt.

WOB 7
RPM 43 161
SPM 80+79
SPP 3062

MD 7903
INC 0.14
AZ 99.72
TVD 7856

MD 7967
INC 0.61
AZ 80.86
TVD 7920

7850

7900

7950

7830' - 7860' SANDSTONE; moderate orange pink (10R 6/4); loose fine to medium to some lower coarse grained, subangular to round quartz sand; minor clusters are pale reddish brown (10R 5/4), partly silty, very fine to fine grained clusters, slightly calcareous; tight. No show.

7860' - 7890' SANDSTONE; moderate orange pink (10R 6/4); loose fine to medium with some coarse sand. Lesser SHALE; grayish red to reddish brown (10R 3/2 - 10R 4/4); mostly smooth; firm; slightly calcareous, chip mostly disintegrate to small flakes and powder. Minor MUDSTONE; grayish orange pink, little light gray (5YR 7/2 - N7); firm; calcareous. No show.

7890' - 7950' MARLSTONE; medium gray to brownish gray (N5 - 5YR 5/1); firm, medium hard; chips disintegrate to fine argillaceous powdery insoluble residue in HCl; subblocky. Few chips CALCITE FRAC FILL; white; loose and attached to marlstone.

7950' - 8010' MARLSTONE; medium gray to brownish gray (N5 - 5YR 4/1); firm, medium hard; chips disintegrate in HCl to fine powdery argillaceous insoluble residue; subblocky, some coarse platy. Minor MUDSTONE; light gray; firm; very calcareous, chips quickly disintegrate in acid to silty, clayey insoluble residue; subblocky.

WOB 24
RPM 39 159
SPM 78+79
SPP 3290

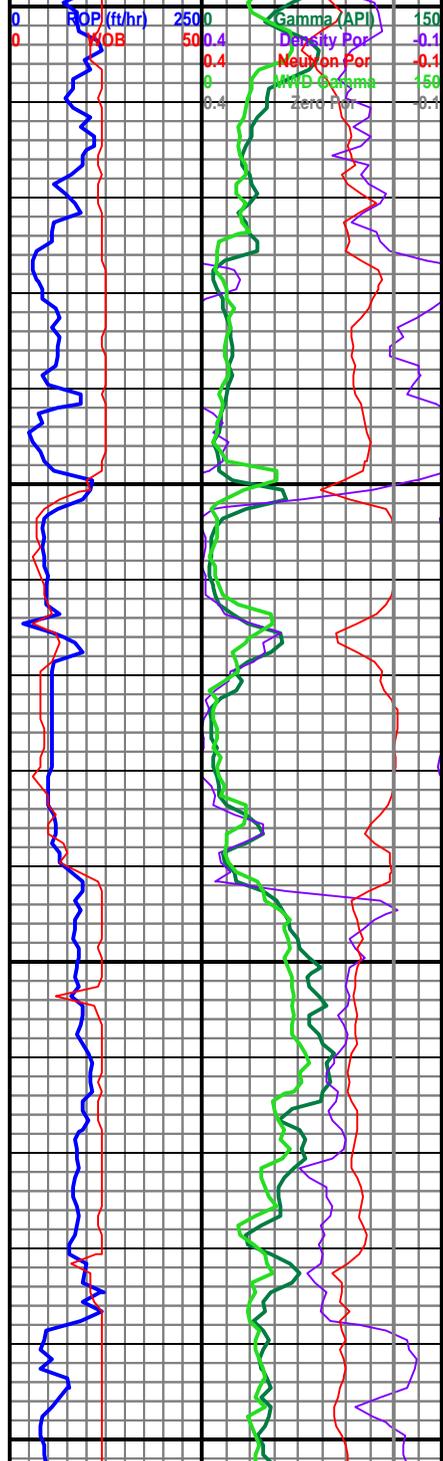
MD 8031
INC 0.59
AZ 48.99
TVD 7984

Picking up
every 5-ft to
ream salt.

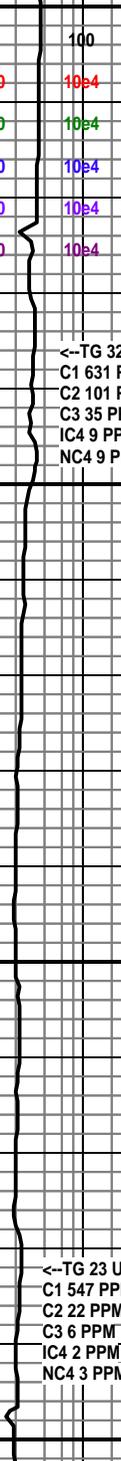
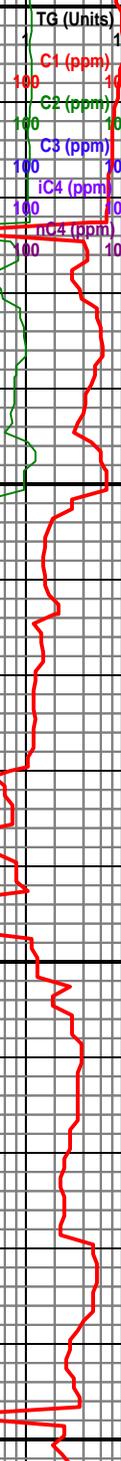
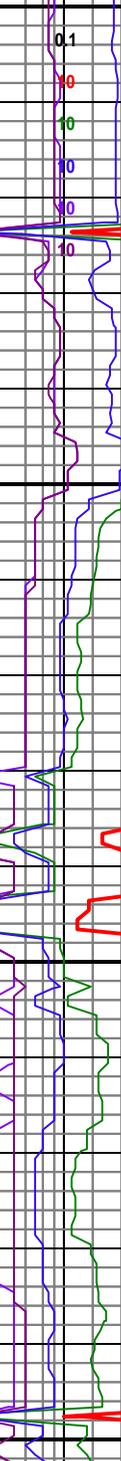
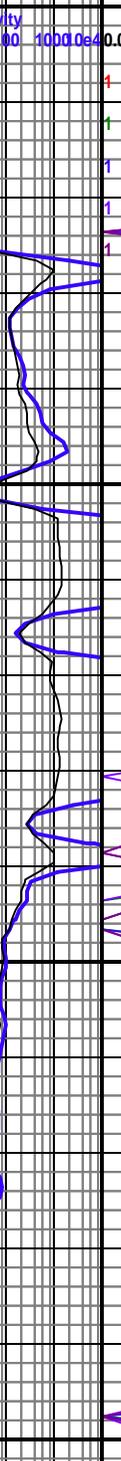
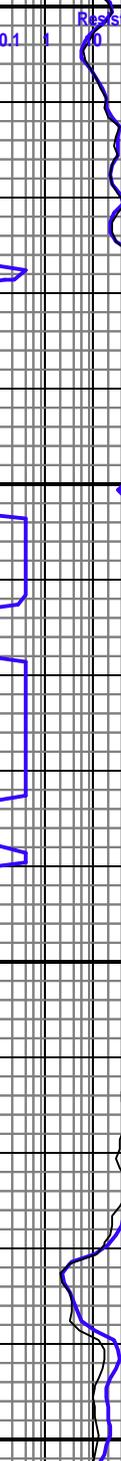
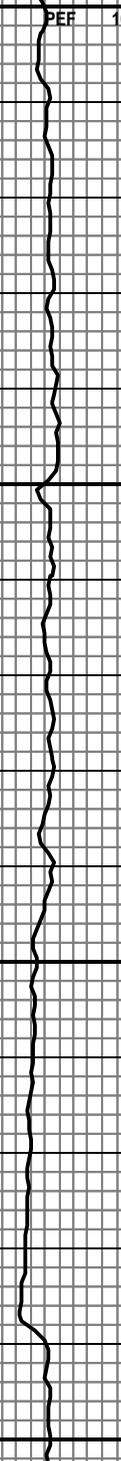
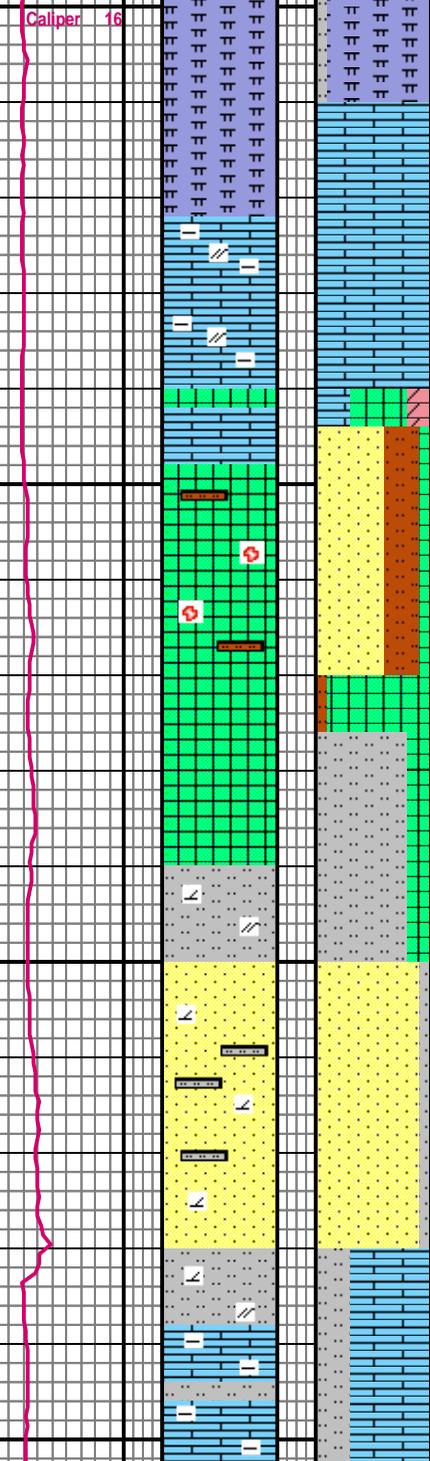
MD 8094
INC 0.10
AZ 137.57
TVD 8047

WOB 23
RPM 37 159
SPM 78+79
SPP 3303

MD 8158
INC 0.29



8000
8050
8100
8150



8010' - 8040' ARGILLACEOUS Limestone; medium gray to brownish gray (N5 - 5YR 5/1); firm to medium hard, slower drilling; in HCL forms somewhat less fine powdery clayey insoluble residue than marlstone above; subblocky. Trace ANHYDRITE; white; mostly mushy, amorphous; possible frac fill and/or patches within limestone.

8043' Spot Sample; SALT; ANHYDRITE, and ARGILLACEOUS LIMESTONE.

8043' - 8070' Questionable sample quality; SANDSTONE; moderate orange pink (10R 6/4); loose fine to medium grained sand. MUDSTONE; pale reddish brown (10R 5/4); soft; slightly calcareous. SALT; white. Trace CHALCEDONY; bright red orange, gray, white; agate-like banding, some vugs w/ drusy quartz crystals; associated w/ red mudstone and salt.

Spot Sample 8075' 90% SALT; white, orange pink (10R 7/4). 10% MUDSTONE; pale reddish brown (10R 5/4); soft.

8075' - 8100' MUDSTONE; light gray (N7); moderately soft, some firm; dolomitic, anhydritic; in HCL chips gradually disintegrate to small sand-size fragments; subblocky. 20% SALT; white, clear. Trace CHALCEDONY; bright red orange; agate-like.

8100' - 8130' SANDSTONE; light gray; very fine grained, silty, slightly argillaceous and/or anhydritic; moderately soft, firm; dolomitic; chips gradually disintegrate in HCL; tight. Minor MUDSTONE; light gray as above. No show.

8130' - 8160' ARGILLACEOUS Limestone; medium gray to brownish gray (N5 - 5YR 5/1); firm, medium hard; chips dissolve in HCL leaving fine powdery clayey insoluble residue; subblocky. Interbedded MUDSTONE; light gray; part very fine grained sandy; moderately soft, firm; dolomitic may be anhydritic; subblocky.

<-TG 32 U
C1 631 PPM
C2 101 PPM
C3 35 PPM
IC4 9 PPM
NC4 9 PPM

<-TG 23 U
C1 547 PPM
C2 22 PPM
C3 6 PPM
IC4 2 PPM
NC4 3 PPM

CO2 220 PPM

Sundri Well Number: 58843 API Well Number: 43041500110000

INC 0.36
AZ 78.96
TVD 8111

Mud 8167
Wt 10.55
Vis 42
PV 19
YP 19
Gels 4/6/7
WL 2.8
Cake 1/0
pH 10.0
Ca 800
Cl 189000
C Sol 4.8

WOB 14
RPM 41 166
SPM 82+82
SPP 3218

MD 8222
INC 0.32
AZ 146.51
TVD 8175

MD 8285
INC 0.59
AZ 85.26
TVD 8238

WOB 25
RPM 44 163
SPM 81+80
SPP 3358

SCALE CHANGE

Scale Change	0	Gamma (API)	150
RDP (ft/hr)	100.4	Density Por	-0.1
WOB	580.4	Neutron Por	-0.1
	0	MWD Gamma	-50
	0.4	Zero Por	0.1

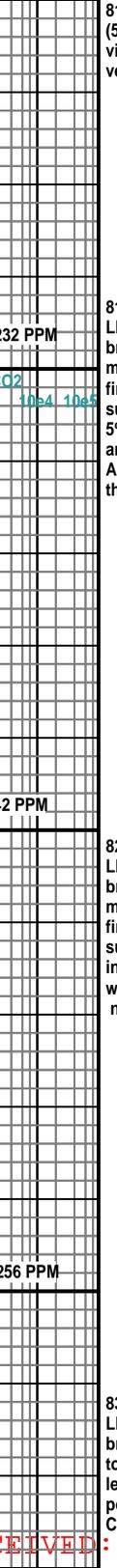
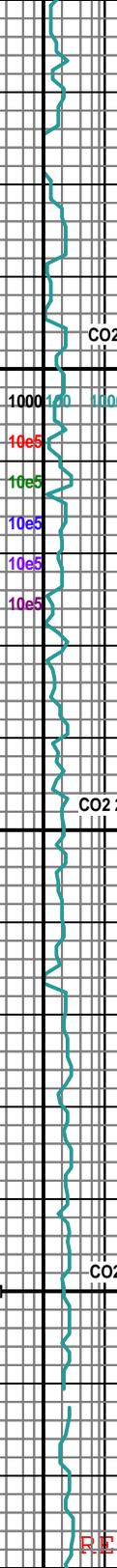
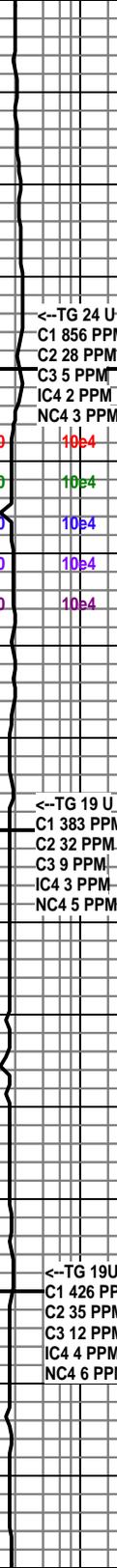
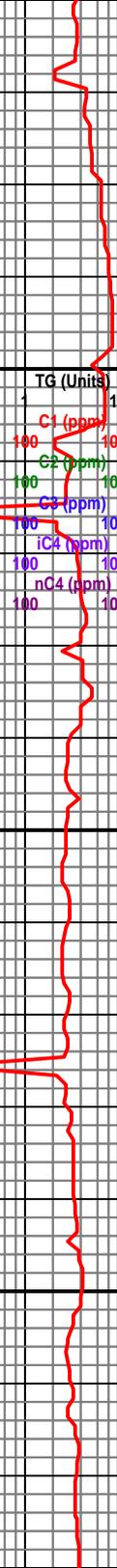
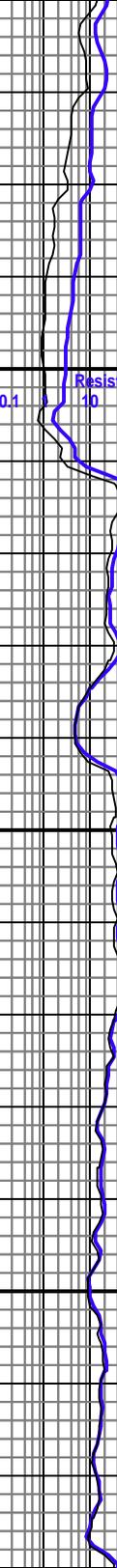
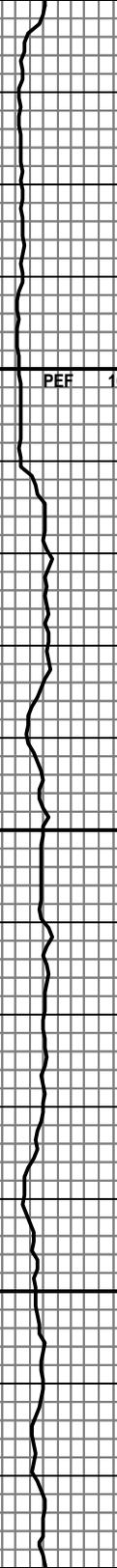
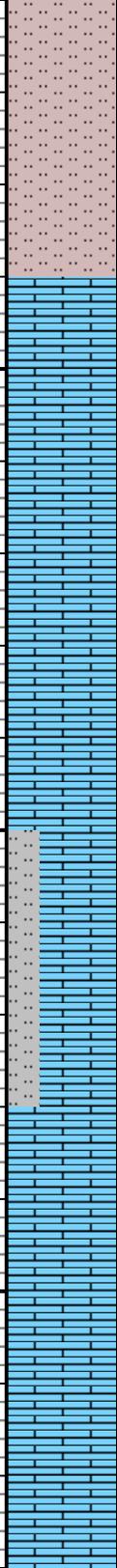
Gamma (API) 150
Density Por -0.1
Neutron Por -0.1
MWD Gamma -50
Zero Por 0.1

8200

8250

8300

6 Callper 16



<-TG 24 U
C1 856 PPM
C2 28 PPM
C3 5 PPM
IC4 2 PPM
nC4 3 PPM

<-TG 19 U
C1 383 PPM
C2 32 PPM
C3 9 PPM
IC4 3 PPM
nC4 5 PPM

<-TG 19U
C1 426 PPM
C2 35 PPM
C3 12 PPM
IC4 4 PPM
nC4 6 PPM

8160' - 8190' MUDSTONE; pinkish gray (5YR 8/1); extremely pasty sample, virtually no chips intact; apparently very fine grained sandy.

8190' - 8250' ARGILLACEOUS LIMESTONE; light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); firm, medium hard; dissolves in HCl leaving fine powdery yellowish brown clay; subblocky, coarse platy. Few chips to 5% CALCITE FRAC FILL; white; loose and attached to limestone; stains in Alizarin Red; no calcite crystals evident that would suggest open fractures.

8250' - 8310' ARGILLACEOUS LIMESTONE; light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); firm, medium hard; dissolves in HCl leaving fine powdery brownish gray clay; subblocky, coarse platy. Trace increasing to 5% CALCITE FRAC FILL; white; loose and attached to limestone; no evidence of open fractures.

8310' - 8370' ARGILLACEOUS LIMESTONE; light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); firm to medium hard; dissolves in HCl leaving relatively minor brownish gray powdery clay. Only a few chips CALCITE FRAC FILL; white.

RECEIVED: Dec. 12, 2014

MD 8349
INC 1.06
AZ 99.69
TVD 8302

WOB 24
RPM 41 166
SPM 82+82
SPP 3399

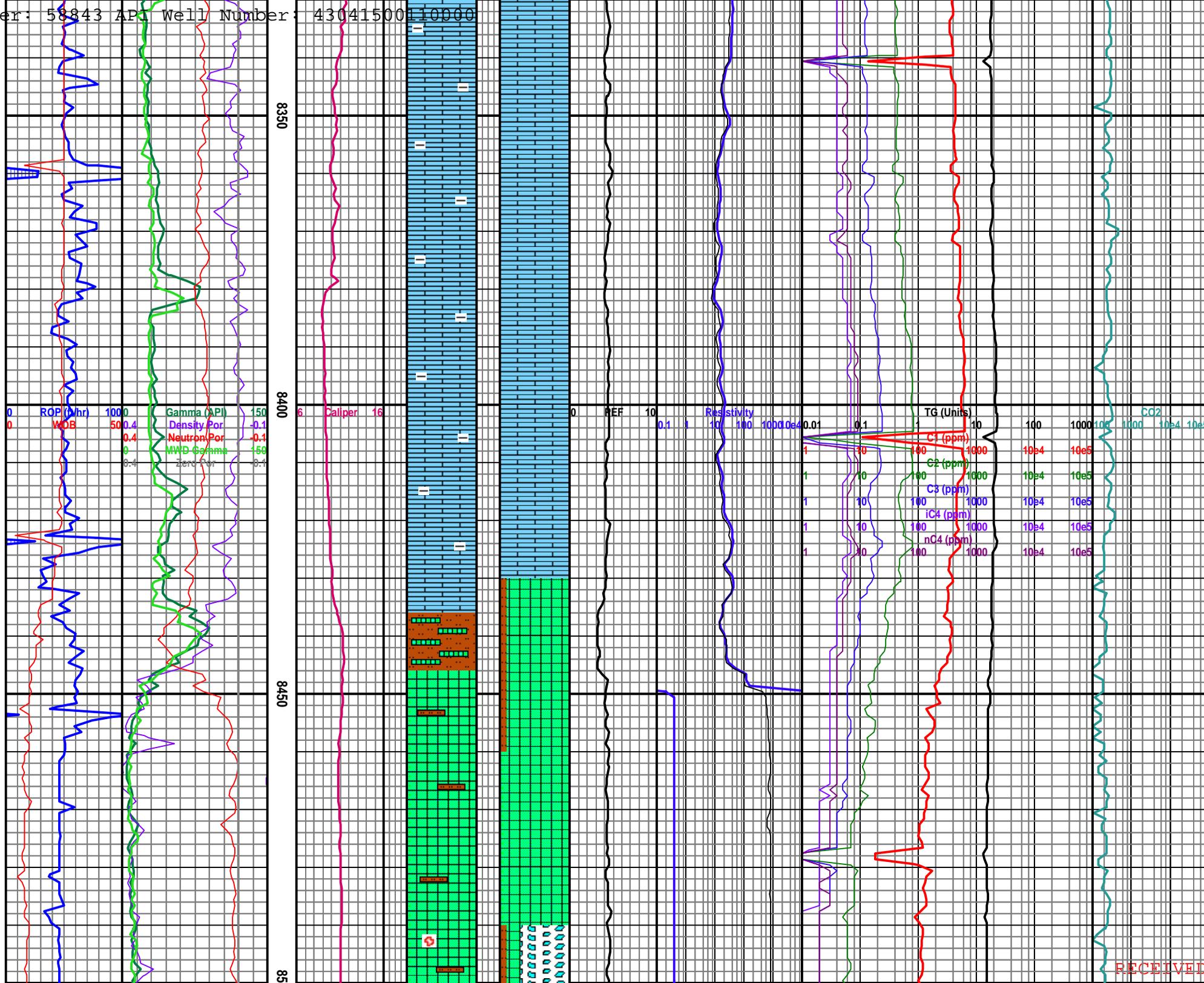
MD 8412
INC 1.27
AZ 104.87
TVD 8365

Mud 8468
Wt 10.55
Vis 41
PV 17
YP 20
Gels 3/5/7
WL 2.6
Cake 1/0
pH 11.0
Ca 712
Cl 180000
C Sol 5.4

Picking up
every 5-ft to
ream salt.

MD 8476
INC 0.08
AZ 48.62
TVD 8429

WOB 9



8370' - 8400' ARGILLACEOUS Limestone; light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); firm to medium hard; dissolves in HCl leaving relatively minor brownish gray powdery clay; dark brown strolites common. Trace CALCITE FRAC FILL; white.

8400' - 8430' ARGILLACEOUS Limestone; light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); firm, medium hard; dissolves in HCl leaving minor fine powdery brownish gray clay; subblocky, coarse platy.

8430'-8460' 90% SALT; clear, white, orange-pink; chips to 5 mm. 10% MUDSTONE; pale reddish brown (10R 5/4); soft.

8460' - 8490' 100% SALT; clear, white, minor orange-pink; reddish tint is imparted by pal reddish brown mud impurities.

8490' - 8520' BRECCIATED Limestone; light to dark brownish gray (5YR 6/1 - 5YR 3/1), mottled due to 30% white CALCITE FRAC FILL and dark brown to black strolitic

RECEIVED

8543 MD
8496 TVD
-2609 SS
Twin
Creek Ls
Watton
Canyon
Mbr

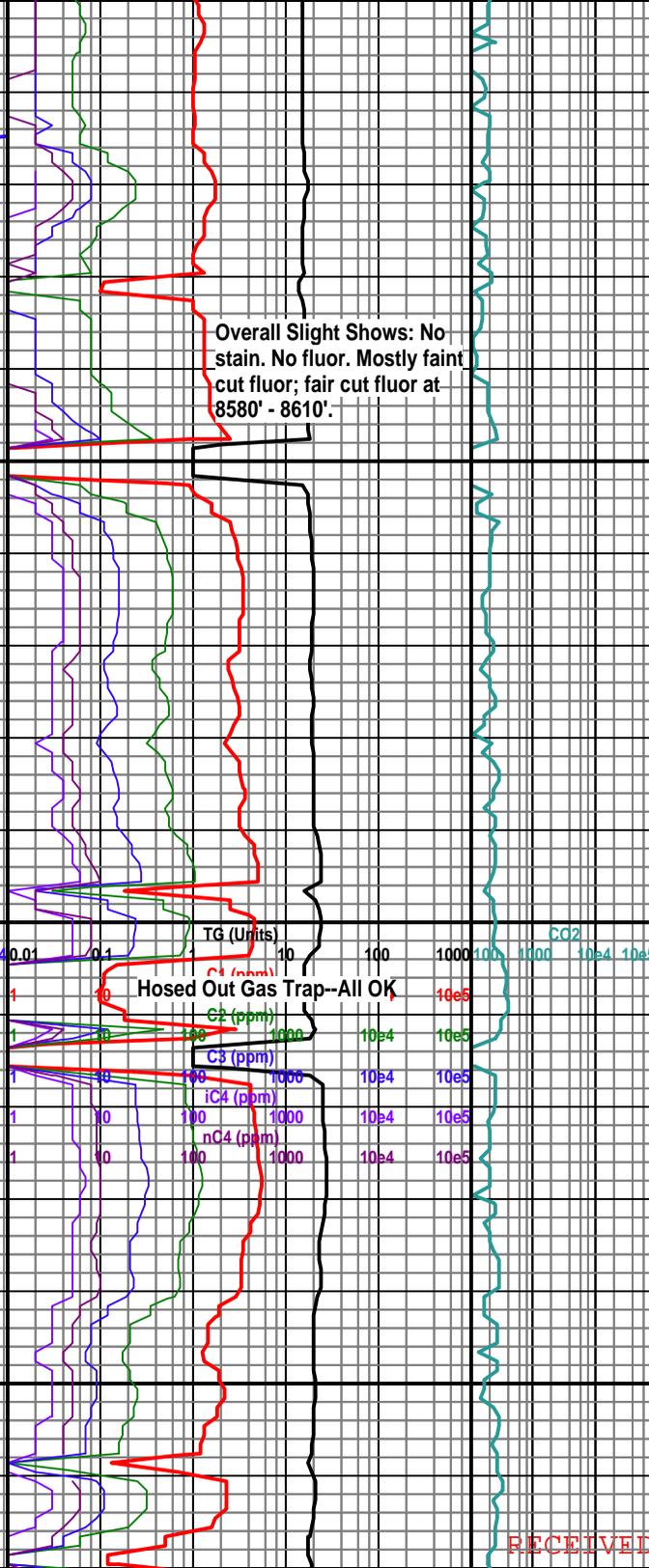
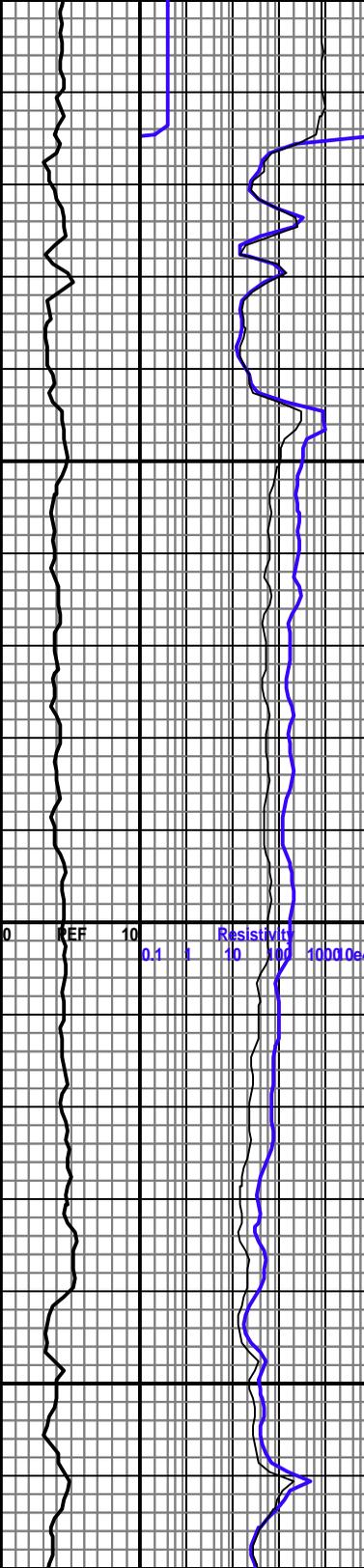
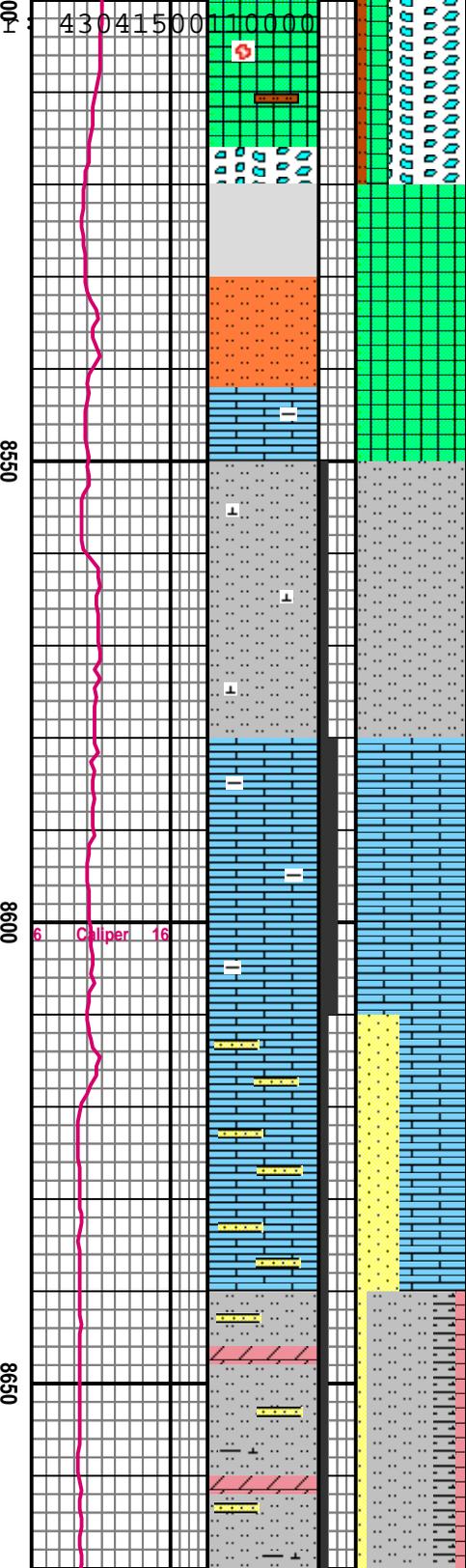
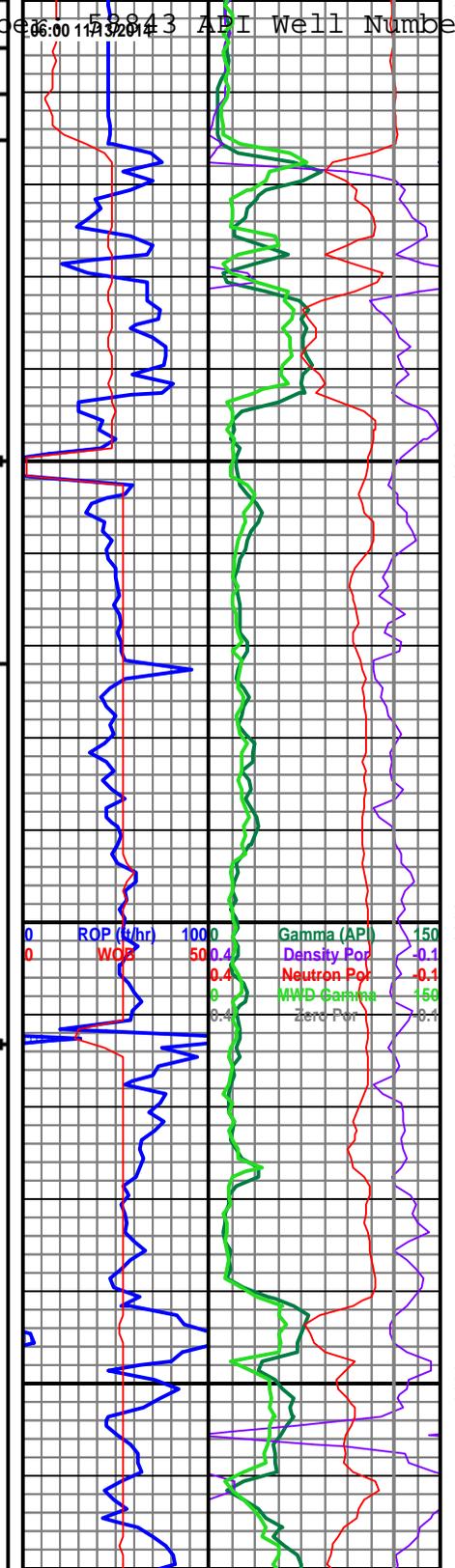
8641 MD
8594 TVD
-2707 SS
Bound-
ary Ridge
Mbr

MD 8539
INC 0.26
AZ 158.86
TVD 8492

MD 8603
INC 0.59
AZ 108.74
TVD 8556

WOB 27
RPM 44 159
SPM 79+78
SPP 3215

MD 8666
INC 0.75



Overall Slight Shows: No stain. No fluor. Mostly faint cut fluor; fair cut fluor at 8580' - 8610'.

Hosed Out Gas Trap--All OK

material-BRECCIATED; insoluble residue is powdery brownish gray clay, white partly silicified frac fill, and dark stylonitic material; overall slightly argillaceous; no porosity visible. No hydrocarbon stain or fluorescence.

8520' - 8550' 100% probable RIG SALT; blowing in salt from bulk upright to make certain mud is salt-saturated.

8550' - 8580' SILTSTONE; light to dark brownish gray (5YR 6/1 - 5YR 4/1); firm to medium hard; very calcareous, limestone appearance prior to Rx in HCl, chips remain largely intact in acid, only minor clay in insoluble residue; subblocky. Only few chips CALCITE FRAC FILL. No stain or fluorescence; faint cut fluorescence.

8580' - 8610' LIMESTONE; light to dark brownish gray (5YR 6/1 - 5YR 4/1); microcrystalline; firm to medium hard; slightly argillaceous; subblocky. 5% CALCITE FRAC FILL; white. No stain or fluorescence; fair cut fluorescence.

8610' - 8640' 60% LIMESTONE; light to very light gray, some tinted pinkish gray to light brownish gray (N7 - N 8, 5YR 8/0.5- 5YR 6/1); microcrystalline, very fine grained quartz-sandy; firm, medium hard; no distinct oolitic texture; no porosity visible; Grades to 40% LIMY SANDSTONE; light to very light gray; very fine grained, quite clean; no porosity visible. No stain or fluorescence; faint cut fluorescence.

8640' - 8670' MUDSTONE; light to medium dark gray (N7 - N4), commonly tinted light brownish gray to brownish gray (5YR 6/1 - 5YR 4/1); much is very fine grained sandy; firm, some medium hard; calcareous, chips mostly remain intact in acid. Grades to minor SANDSTONE; light gray; very fine grained; silty; calcareous, argillaceous tight. Minor LIMY SHALE; medium dark to medium light gray (N4 - N6); chips remain intact in acid; coarse platy, subblocky. Trace ANHYDRITE; white.

RECEIVED

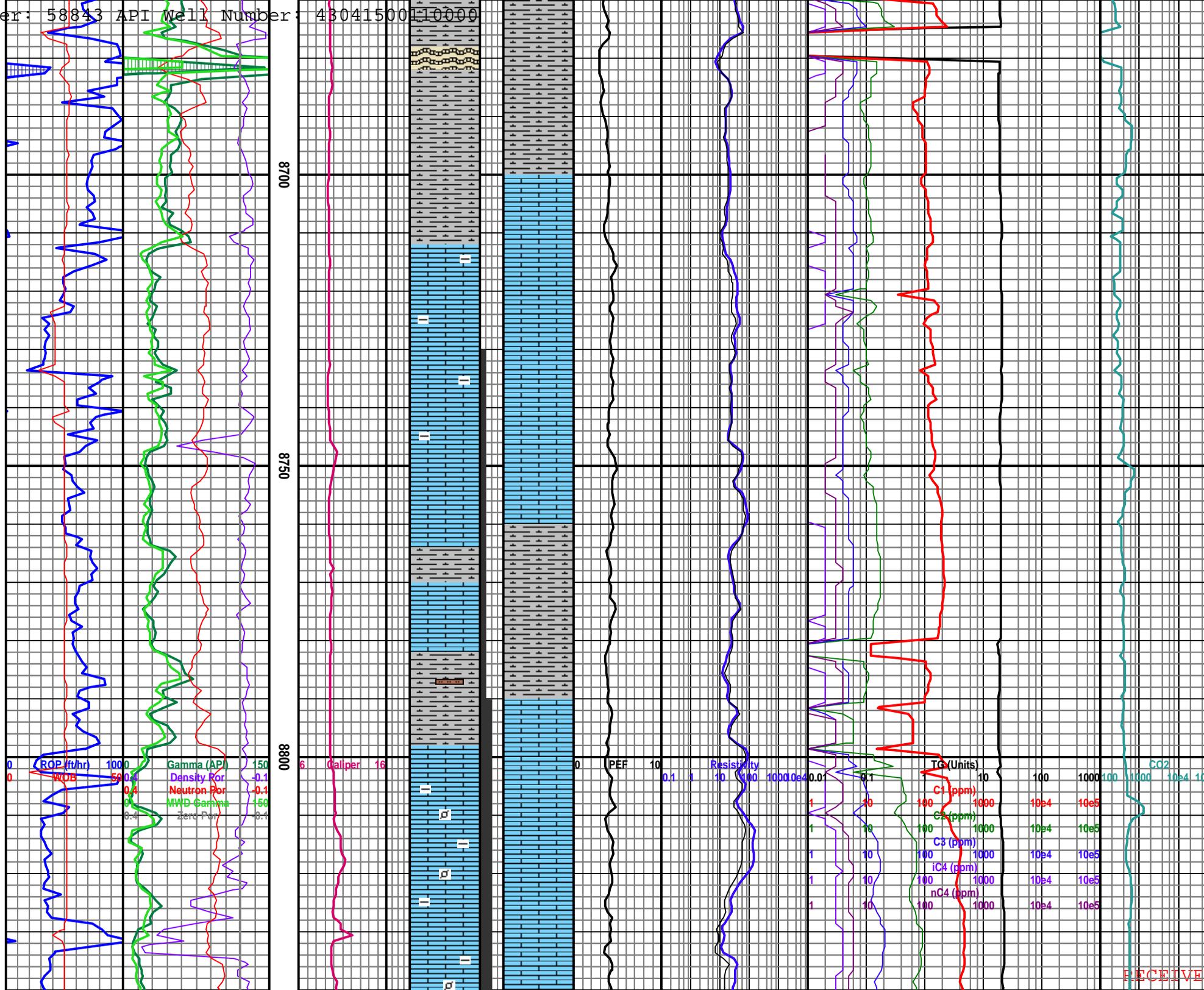
WOB 26
 RPM 41 157
 SPM 77 78
 SPP 3225

MD 8729
 INC 0.35
 AZ 63.17
 TVD 8682

MD 8793
 INC 0.28
 AZ 28.29
 TVD 8746

8798 MD
 8751TVD
 -2864 SS
 Rich Mbr

WOB 26
 RPM 40 159
 SPM 78+79
 SPP 3013



No stain or fluorescence; faint cut fluorescence.

8670' - 8700' LIMY SHALE; medium to dark gray (N5 - N3); firm, some medium hard; chips mostly remain intact in HC coarse platy, subblocky. Few chips BENTONITE/ BENTONITIC SHALE; light olive gray (5Y 6/1); numerous minute gold brown biotite flecks; noncalcareous; nonfluorescent; correlates to hot gamma streak at 8678' - 8682'.

8700' - 8760' ARGILLACEOUS LIMESTONE; dark gray (N3), brownish gray to light brownish gray (5YR 4/1 - 5YR 6/1); firm, medium hard; chips dissolve leaving moderate to minor amount of brownish gray clayey insoluble residue. Grades downhole to moderately clean LIMESTONE.

8760' - 8790' LIMY SHALE; dark gray (N3), brownish gray to light brownish gray (5YR 4/1 - 5YR 6/1); firm to medium hard; chips mostly remain intact in HCl; coarse platy, subblocky.

8790' - 8850' LIMESTONE; mottled medium dark gray to brownish and light brownish gray (N4 - 5Y R 4/1 - 5YR 6/1); faint fine to medium grained texture suggestive of peloids; dissolves leaving minor yellowish brown clayey insoluble residue; no porosity visible. 10% CALCITE FRAC FILL; white. Trace BENTONITE; light gray; sparse minute gold brown biotite flecks; correlates to hot gamma streak.

Sundr... Well Number: 58843 API Well Number: 43041500

8848 MD
8801 TVD
-2914 SS
Slide Rock
Mbr

Mud 8866
Wt 10.55
Vis 46
PV 21
YP 27
Gels 6/9/10
WL 2.6
Cake 1/0
pH 9.5
Ca 800
Cl 181500
C Sol 5.3

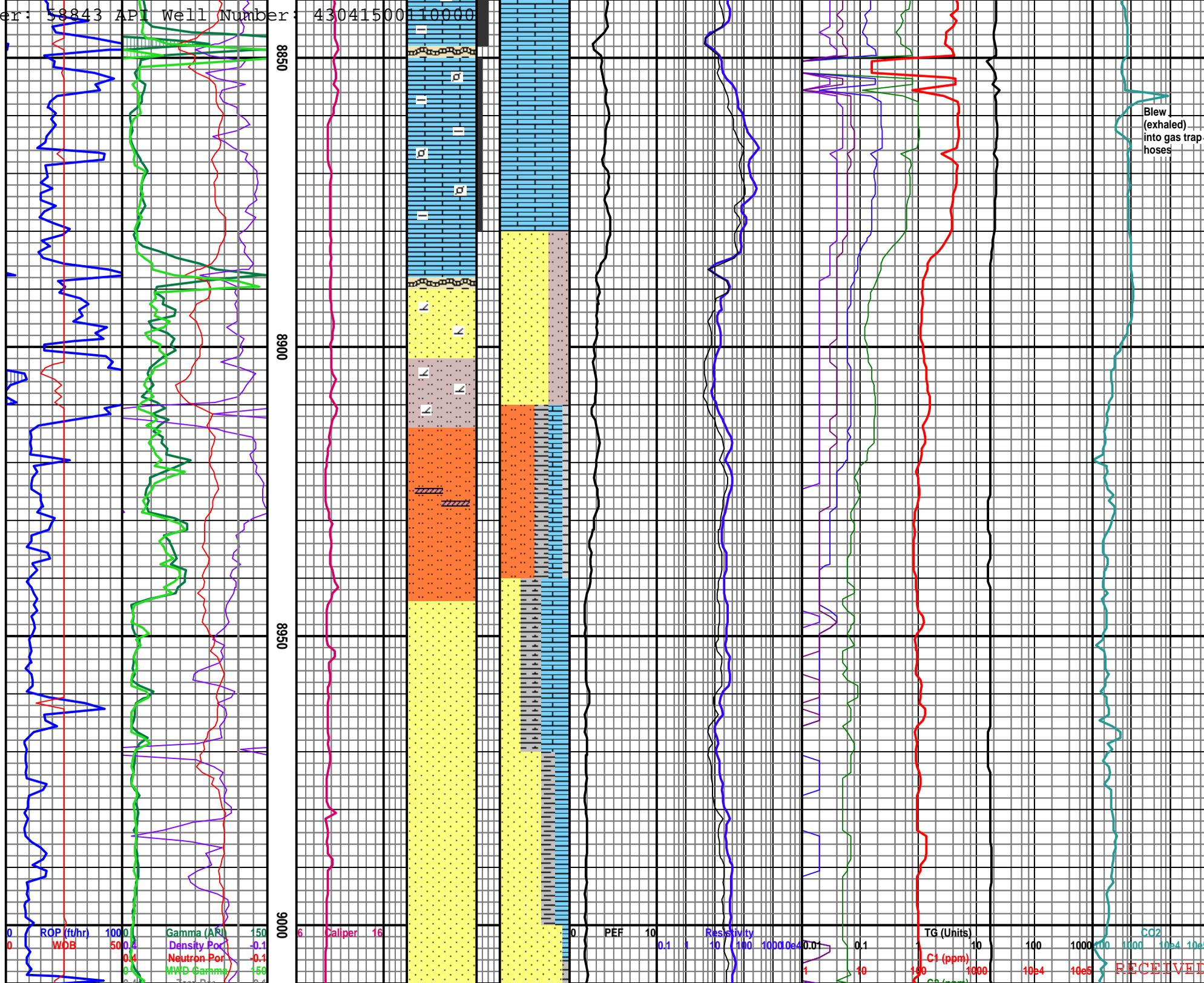
WOB 25
RPM 42 166
SPM 82+82
SPP 3003

MD 8920
INC 0.23
AZ 289.42
TVD 8873

8944 MD
8897 TVD
-3010 SS
White
Throne
(Upper
Navajo)

Mud 9009
Wt 10.55
Vis 47
PV 17
YP 30
Gels 7/10/12
WL 3.0
Cake 1/0
pH 11.0
Ca 352
Cl 175000
C Sol 5.7

WOB 25
RPM 43 166
SPM 82+82
SPP 3040



8850' - 8880' LIMESTONE; brownish gray to light brownish gray (5YR 4/1 - 5YR 6/1); faint fine to medium grained pelloidal packstone; minor yellowish brown argillaceous insoluble residue. 5% CALCITE FRAC FILL; white.

Blew (exhaled) into gas trap-hoses

8880' - 8910' Dominantly REDBEDS. SANDSTONE; grayish red (5R 4/2), lesser light brownish gray to pale yellowish brown (5YR 6/1 - 10YR 6/2); very fine grained; quite clean to silty, argillaceous; medium hard; dolomitic; tight. Grades to lesser MUDSTONE; grayish red and some pale yellowish brown; firm to medium hard; dolomitic; subblocky, blocky. No show.

8910' - 8940' 50% MUDSTONE; moderate reddish orange (10R 6/6), mottled white; soft chips to mushy balls; dolomitic. 10% ROCK FLOUR; white; soft amorphous balls; tests negative for anhydrite. Trace ANHYDRITE; white, mottled grayish orange pink (10R 8/2); microcrystalline; firm thin plates. 40% Caving or late-circulated Twin Creek LIMY SHALE and LIMESTONE.

8940' - 9000' 30 - 60% SANDSTONE (Upper Navajo or White Throne); moderate orange pink (5YR 8/4), some white (N9); fine to lower medium grained; medium hard, hard; siliceous; tight. No stain or fluorescence; virtual no cut fluorescence. 70 - 40% Caving or late-circulated Twin Creek LIMY SHALE and LIMESTONE.

9000' - 9060' 90 - 80% SANDSTONE (Upper Navajo or White Throne); moderate orange pink (5YR 8/4), to grayish orange pink (10R 8/4) some white (N9); fine to upper medium

RECEIVED

MD 9016
INC 0.10
AZ 210.96
TVD 8969

END PATH-FINDER
MWD
SURVEYS

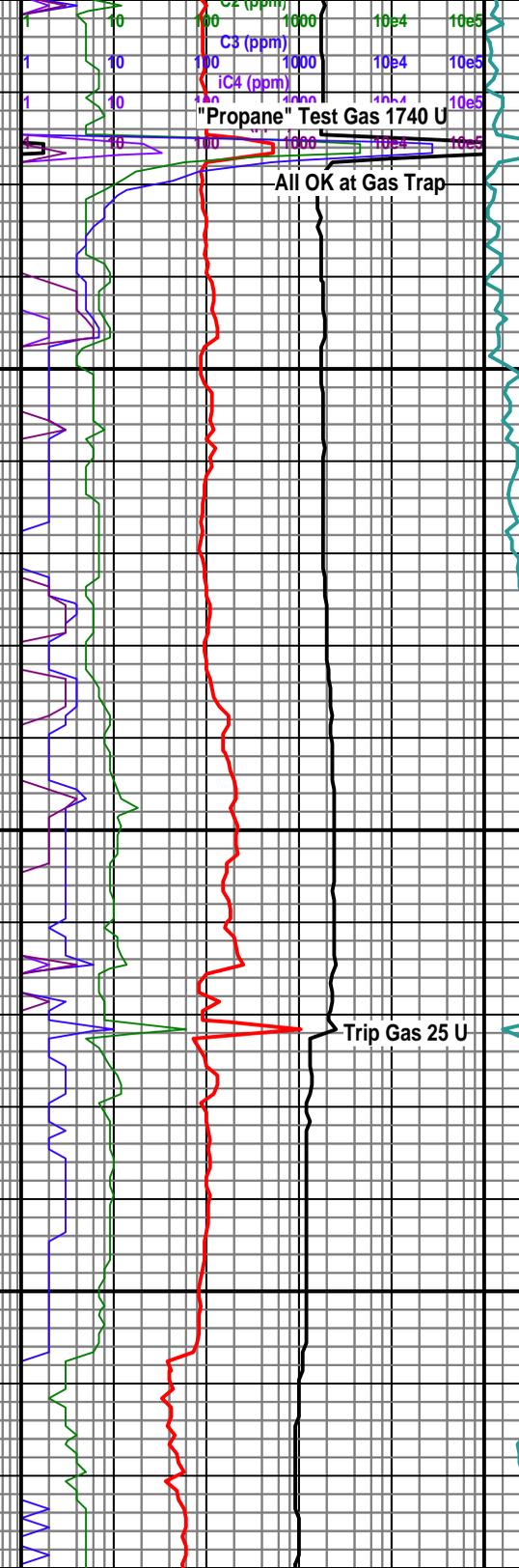
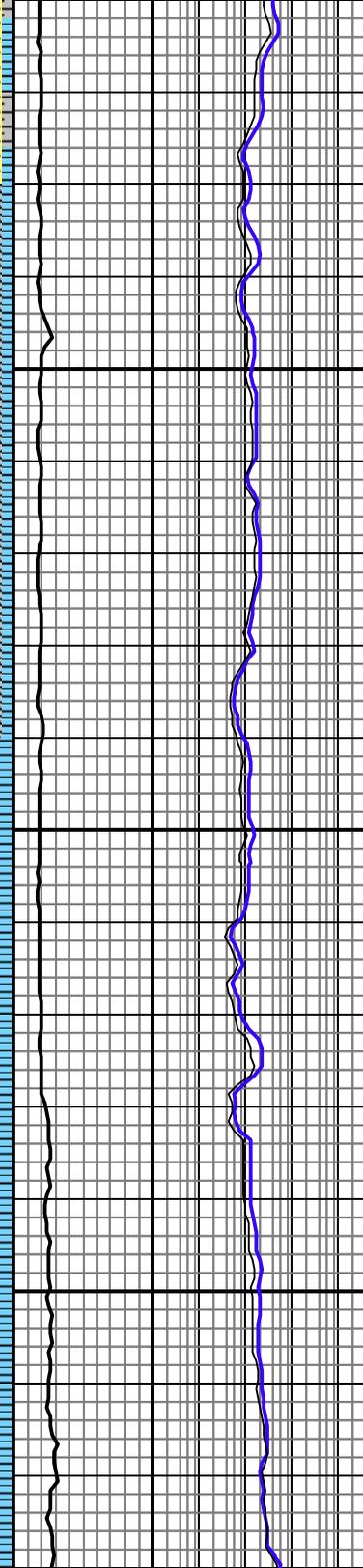
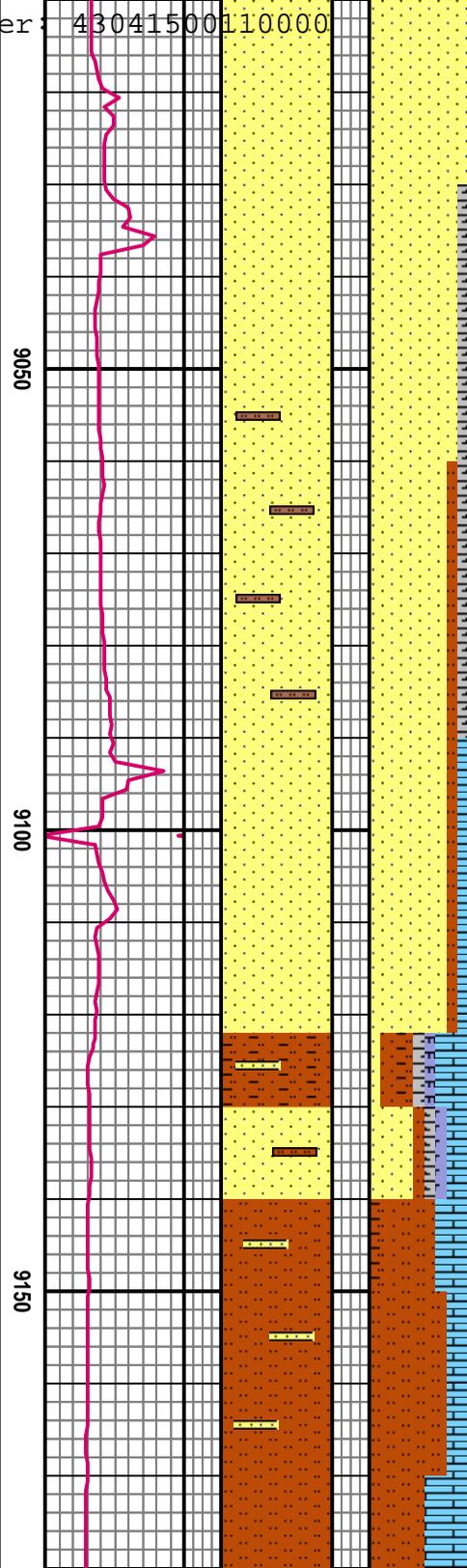
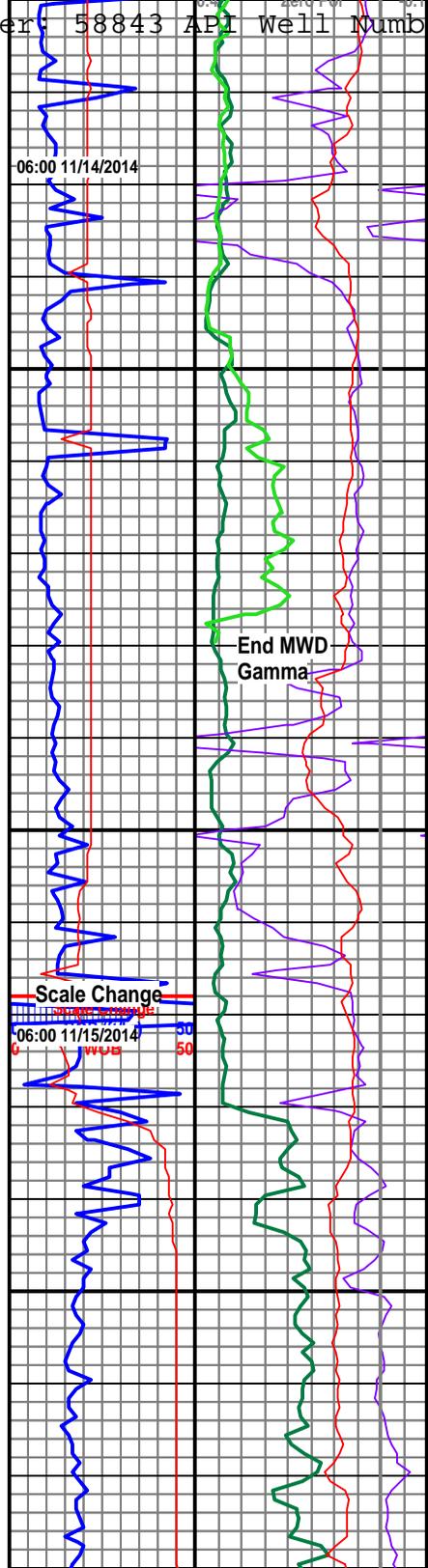
Mud 9122
Wt 10.4
Vis 37
PV 12
YP 15
Gels 3/4/6
WL 5.0
Cake 1/0
pH 9.0
Ca 760
Cl 189000
C Sol 3.1

WOB 22
RPM 31 164
SPM 80+82
SPP 3116

Trip lay down
all directional
tools

Bit 4
8 3/4"
Tricone
Smith
F59Y
No Motor

Mud 9170
Wt 10.35
Vis 37
PV 15
YP 20
Gels 6/14/15



white (NS), fine to upper medium grained; medium hard, hard; siliceous; tight. Trace brown intergranular "stain" and black bitumen. 10 - 20% Caving or late-circulated Twin Creek LIMY SHALE and LIMESTONE.

9060' - 9122' 60% SANDSTONE; orange pink as above. 10% SANDSTONE; grayish red (10R 4/2); upper very fine grained; slightly argillaceous; medium hard, hard; siliceous, dolomitic; no visible porosity; dull yellow gold mineral fluorescence--no cut fluorescence. Grades to 10% MUDSTONE; grayish red to reddish brown (10R 3/2 - 10R 3/3); medium hard; dolomitic; subblocky. 20% Caving or late-circulated Twin Creek LIMY SHALE and LIMESTONE.

9122' - 9130' 1st smpl after trip. 10% SS; f-mg; clean; sil; tt. 30% MUDDY SS; red brn (10R 4/4); vf - w/ fg disp grs; m hd; dol; tt.

9130' - 9140' 40% Ss; pale red - orng pl (10R 6/2 - 10R 6/4); vfU-fg w/ mg disp grs; mod cln; sil, dol; tr minute blk grs. 10% MUDST; red brn (10R 4/4); pt vf sdy. 50% Cvgs/late circ ctgs.

9140' - 9150' 20% MUDDY SS; pale red brn (10R 5/4); vf-fL; sil, sl dol; tt. Grd MUDST;

9150' - 9160' MUDST; red brn (10R 4/4); pt vfg sy; sl dol; subblkly.

9160' - 9170' MUDST; red brn (10R 4/4); pt vfg sy; sl dol; sbbkly.

9170' - 9180' MUDST; red brn (10R 4/4); little is vfg sdy; m soft - m hd; non-to sl dol; sbbkly, rounded. Grds minor SHALE; dark red brn

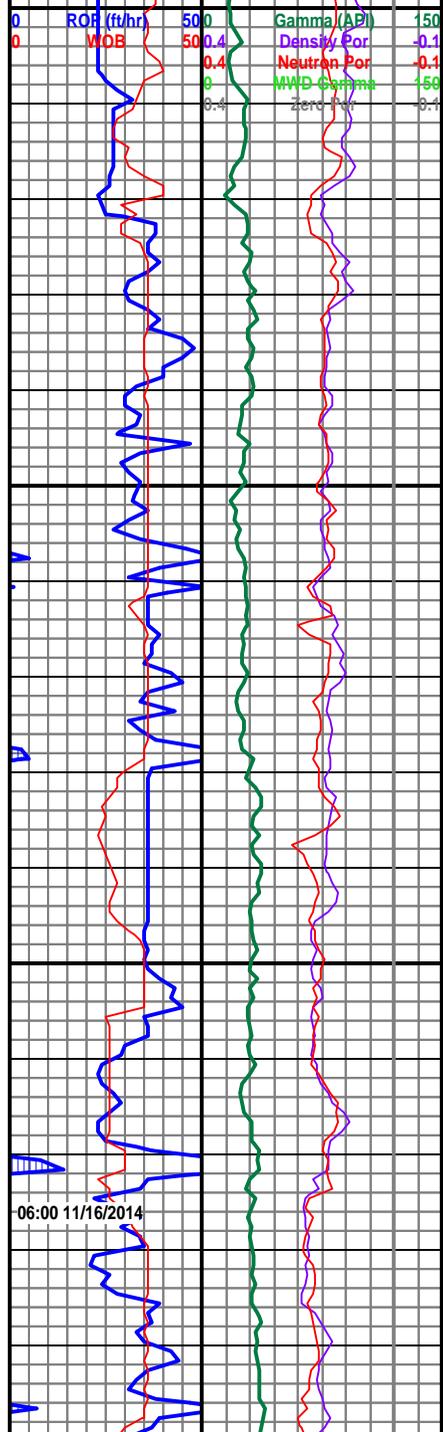
9190 MD
Navajo Ss
(Lower Navajo)

WOB 36
RPM 83.0
SPM 82+83
SPP 2584

WOB 35
RPM 84.0
SPM 68+69
SPP 1676

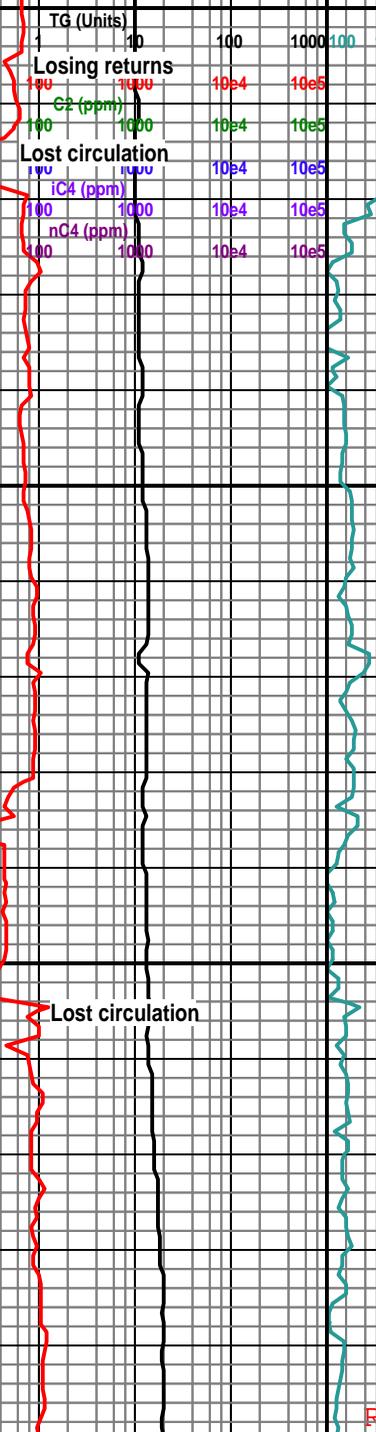
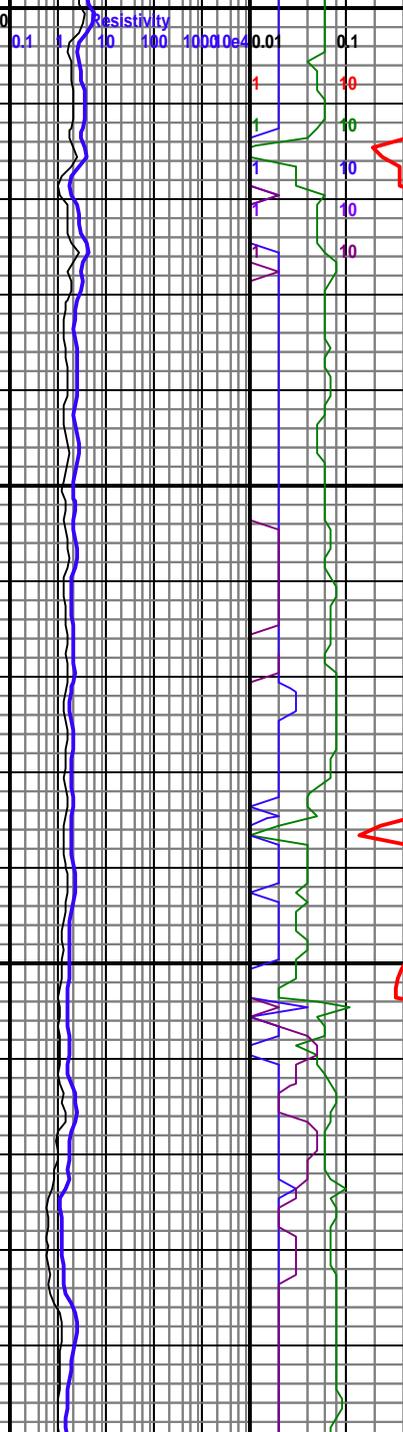
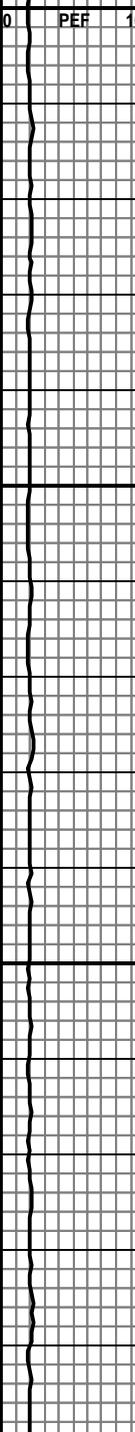
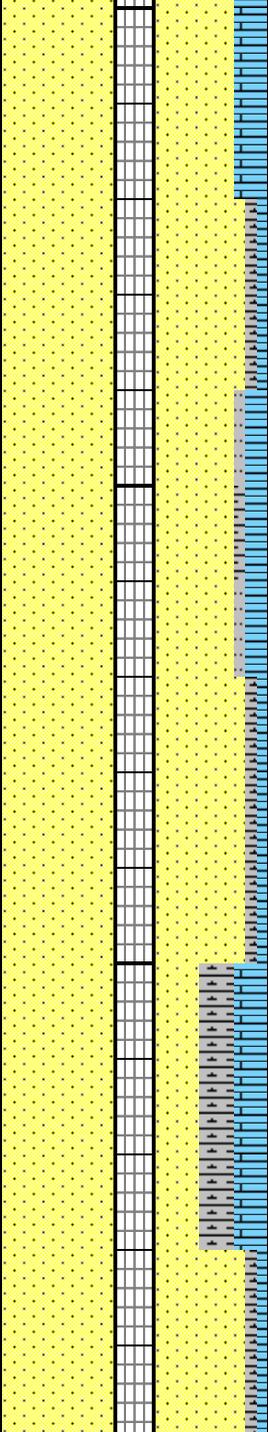
Mud 9305
Wt 10.4
Vis 36
PV 10
YP 12
Gels 3/4/5
WL 6.2
Cake 1/0
pH 10.0
Ca 176
Cl 176500
C Sol 4.4

0	ROF (ft/hr)	500	Gamma (API)	150
0	WOB	50.4	Density Por	-0.1
		0.4	Neutron Por	-0.1
		0	MWD Gamma	-50
		0.4	Zero Por	0.1

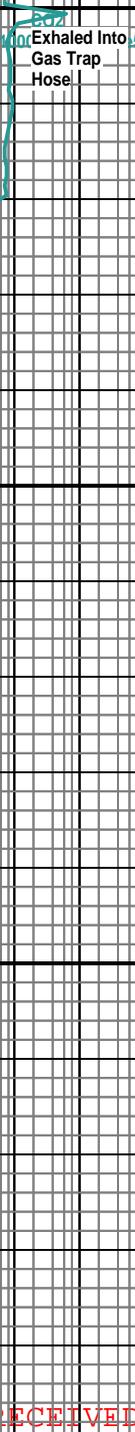


9200
9250
9300
93

6 Callper 16



Losing returns
C2 (ppm)
Lost circulation
IC4 (ppm)
nC4 (ppm)



9180' - 9190' SS; pale red - mod orng pk; vfU-FL, fltg mU rd grs; firm, m hd; sil; dol, sil; minute blk grs;

9190' - 9220' SS; orng pk; fg, fltg m rd grs; m hd; sil; tt - occ fair vis por. No show.

Remark: 2 samples caught at 9220', after 9220' btms up & after losing returns, contained up to 90% SALT.

9220' - 9240' SS; orng pk; fg, some lse m rnd grs; firm - m hd; sil; sl - fair vis por. No show.

9240' - 9270' SS; orng pk, some white; pred fg clusters w/ minor lse sd; firm - some m hd; sil; wh intgran fill com, pos micxn qtz fill; pos wh micro-deformation bands com; sl - fair vis por. 2% ROCK FLOUR; wh. No show.

9270' - 9300' SS; orng pk; fg, some lse m rnd grs; firm - m hd; sil; sl - fair vis por in clusters.. 60% loose sd. No show.

9300' - 9400' SANDSTONE; orange pink (5YR 7/3), little white (N9); mostly fine grained clusters with some floating upper medium grained to occasionally lower coarse round sand grains; no to minor loose sand; firm to medium hard silica cemented; slight to fair visible porosity. No stain, fluorescence, or cut fluorescence.

WOB 25
RPM 83
SPM 67+68
SPP 1808

9407 MD
Rig TD

ROP (ft/hr)	500	Gamma (API)	150
WOB	500 lb	Density Por	-0.1
06:00 11/17/2014	0.4	Neutron Por	-0.1
	0	WWD Gamma	150
	0.4	Zero Por	0.0

TD 9407'
16 Nov 2014
09:05 hrs

