Nottingham, Justin E

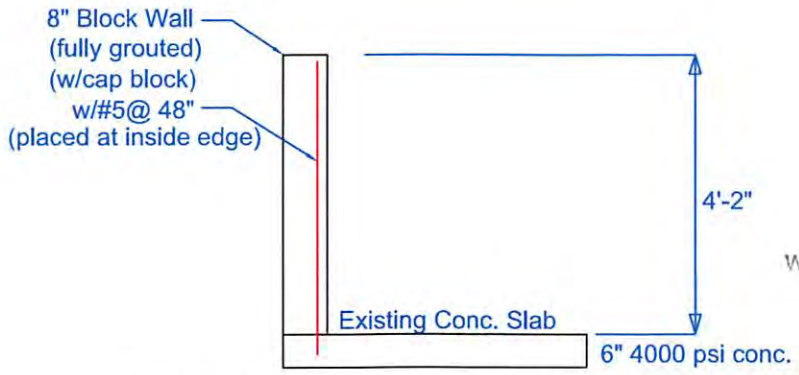
From: Bob Dills <BobDills@drpeandls.com>
Sent: Wednesday, January 18, 2017 12:49 PM
To: Nottingham, Justin E
Subject: Camp Creek UIC Tank Revison-2D0550319
Attachments: UIC APPLICATION PACKAGE 06-25-2014.pdf; Tanks & Containment Rev site plan.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Justin,
Attached is the permit application and updated site plan/containment calculations. I hope that I have filled out the appropriate sections for this revision.
Please let me know if you have any questions or comments.
I will send the fee and signed copies upon your approval.

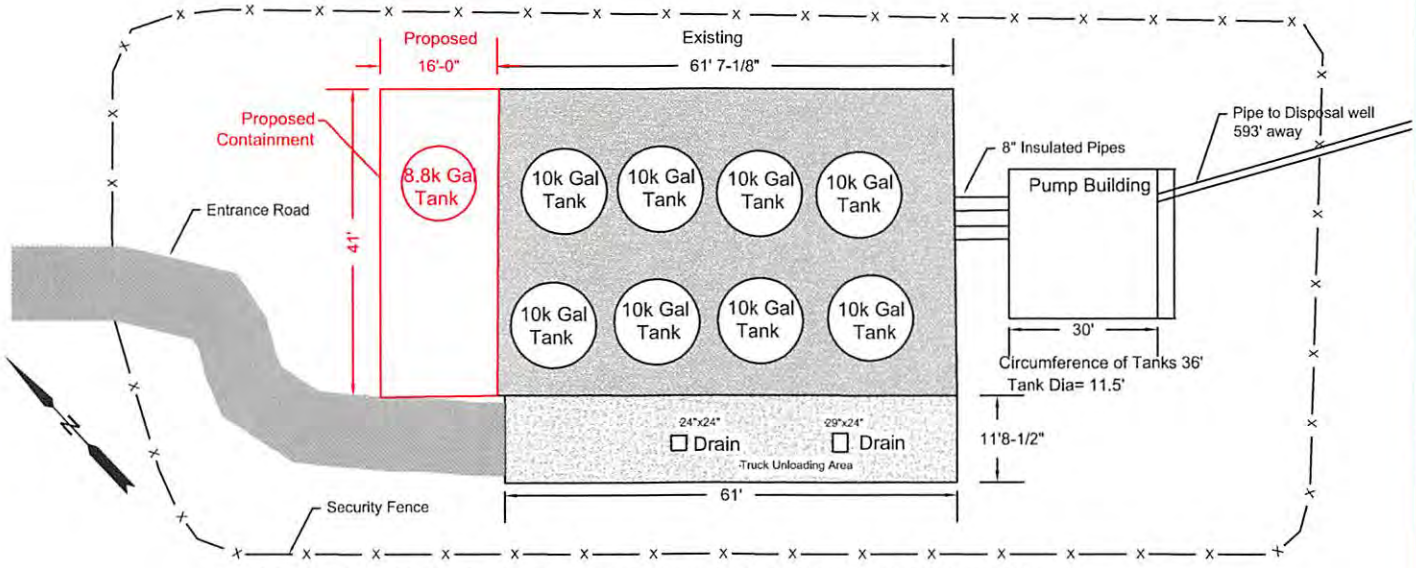
Regards,

Bob Dills, P.E.
D.R. Price Engineering and Land Surveying, Inc., P.C.
P.O. Box 1270
Honaker, VA 24260
Phone: 276-991-9100
Fax: 276-991-9103



Proposed Containment Wall

Typical x-section
(nts)



1. The drains in the truck unloading area are recirculated back into the disposal well.
2. First two tanks closest to pump building are used for containment.
3. Two 8" insulated pipes transport fluid to the pump

Aerial View

Existing Containment

1. The volume of the containment is 7,152 cf. or (53,496 gal.)
-Calculations: Volume=L x W x H,
-Containment Volume= 61.59 x 41.16 x 4.16 =10,607 cf
-10,607 cf - 3,455 cf (cubic feet displaced by the eight tanks) = 7,152 cf
-1 cf= 7.48 gal, 7,152 cf. x 7.48 gal.= 53,496 gal. 11,000 gal < 53,496
2. Tanks are single walled plastic.
3.Containment is constructed of cinder block and concrete

Proposed Containment

1. The volume of the containment is 2,740 cf. or (20,495 gal.)
-Calculations: Volume=L x W x H,
-Containment Volume= 16 x 41.16 x 4.16 =2,740 cf
-Displaced Vol=4.16 3.14 x 10^2 /4 = 327 cf
-Vol available = 2740 cf - 327 cf = 2413 cf or 18,049 gal
-Tank Vol = 210 bbl = 8820 gal.
-18,049 gal > 8820 gal; capacity ok
2.Containment is constructed of cinder block and concrete

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www.drpeandls.com

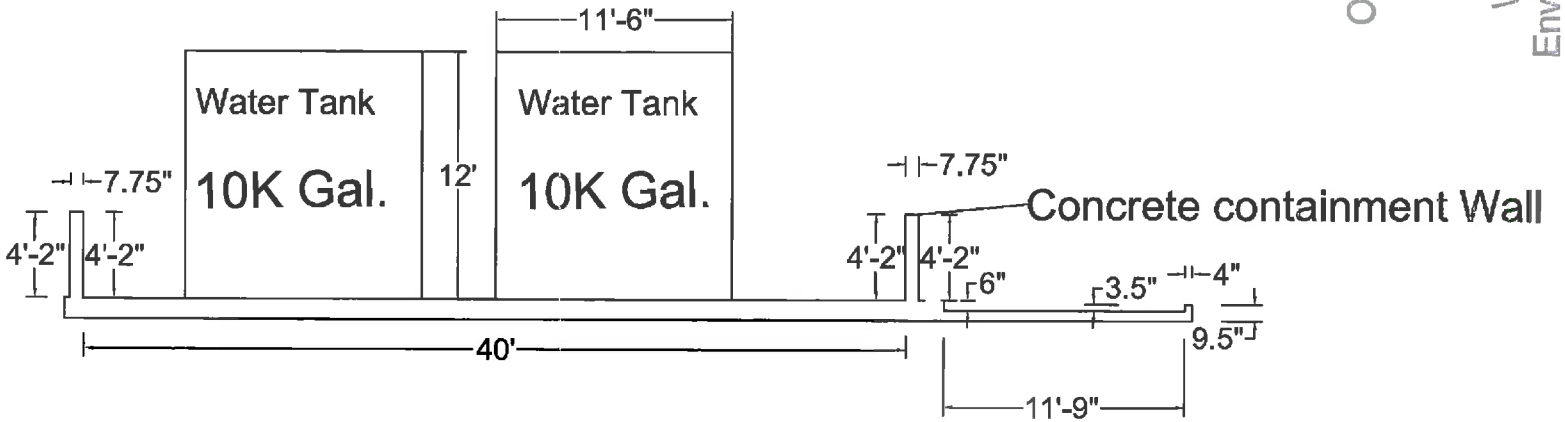
TANK ADDITION
&
SECONDARY
CONTAINMENT SYSTEM
ADDITION

CAMP CREEK
DISPOSAL SERVICES
P.O. BOX 555
Rosedale, VA. 24260

SCALE: 1" = 25' DATE: 1/16/17

P:\BrandonB\Gasfield Services Disposal Well Renewal\WVDEP UIC Permit Renewal\SPCC Plan\Tanks & Containment.dwg

Cross Section View



1. The volume of the containment is 7,152 cf. or (53,496 gal.)
-Calculations: Volume=L x W x H,
-Containment Volume= 61.59 x 41.16 x 4.16 =10,607 cf
-10,607 cf - 3,455 cf (cubic feet displaced by the eight tanks) = 7,152 cf
-1 cf= 7.48 gal, 7,152 cf. x 7.48 gal.= 53,496 gal. 11,000 gal < 53,496
2. Tanks are single walled plastic.
3.Containment is constructed of cinder block and concrete

D.R. Price Engineering & Land Surveying Inc., P.C.	**Camp Creek Disposal Services** **P.O. BOX 555** **Rosedale, VA. 24260**	SECONDARY CONTAINMENT SYSTEM CROSS SECTION VIEW Scale: ~1"=10'

CHECKLIST FOR FILING A UIC PERMIT APPLICATION

Please utilize this checklist to ensure you have prepared, completed, and enclosed all required documentation and payment to ensure a timely review of your submittal.

Operator	Thomas Shrader		
Existing UIC Permit ID Number	2D0550319	UIC Well API Number	47-05500319

Office of Oil and Gas Office Use Only	
Permit Reviewer	
Date Received	
Administratively Complete Date	
Approved Date	
Permit Issued	

Please check the fees and payment included.

Fees		Payment Type	
UIC Permit Fee: $500	✓	Check	✓
Groundwater Protection Plan (GPP) Fee: $50.00		Electronic	
		Other	

Please check the items completed and enclosed.

- [✓] Checklist
- [ ] UIC-1
  - [✓] Section 1 – Facility Information
  - [✓] Section 2 – Operator Information
  - [✓] Section 3 – Application Information
  - [✓] Section 4 – Applicant/Activity Request and Type
  - [✓] Section 5 – Brief description of the Nature of the Business
  - [✓] CERTIFICATION
- [ ] Section 6 – Construction
  - [ ] Appendix A Injection Well Form
  - [✓] Appendix B Storage Tank Inventory
- [ ] Section 7 – Area of Review
  - [ ] Appendix C Wells Within the Area of Review

Received

JAN 18 2017

Office of Oil and Gas
WV Dept. of Environmental Protection

☐ Appendix D Public Service District Affidavit

☐ Appendix E Water Sources

☐ Appendix F Area Permit Wells

☐ Section 8 – Geological Data on Injection and Confining Zones

☐ Section 9 – Operating Requirements / Data

☐ Appendix G Wells Serviced by Injection Well

☐ Section 10 – Monitoring

☐ Section 11 – Groundwater Protection Plan (GPP)

☐ Appendix H Groundwater Protection Plan (GPP)

☐ Section 12 – Plugging and Abandonment

☐ Section 13 – Additional Bonding

☐ Section 14 – Financial Responsibility

☐ Appendix I Financial Responsibility

☐ Section 15 – Site Security Plan

☐ Appendix J Site Security for Commercial Wells

☐ Section 16 – Additional Information

☐ Appendix K Other Permit Approvals

NOTE: For all 2D wells an additional bond in the amount of $5,000 is required.

Reviewed by (Print Name): _____

Reviewed by (Sign): _____

Date Reviewed: _____

APPENDIX B
Storage Tank Inventory

API #	Tank ID	Tank Location (UTM NAD 83 Meters)		Installation Date	Tank Age (Months)	Construction Material (Steel, plastic, etc.)	Capacity (gallons)	Type of Fluid Stored	Volume of Fluid Stored (gallons)	Tank Type Single/Double Wall
		Northing	Easting							
	to be determied	37.49651	81.10721	TBD	0	Plastic	8800	Brine	8800	Single

APPENDIX B
Storage Tank Inventory

*= Tank Number Inaccessable

API #	Tank ID	Tank Location (UTM NAD 83 Meters)		Installation Date	Tank Age (Months)	Construction Material (Steel, plastic, etc.)	Capacity (gallons)	Type of Fluid Stored	Volume of Fluid Stored (gallons)	Tank Type Single/Double Wall
		Northing	Easting							
	250904215	55111.554	590529.221		60	Plastic	10,000	Brine water	10,000	Single
	250905640	55111.554	590529.221		60	Plastic	10,000	Brine water	10,000	Single
	250901932	55111.554	590529.221		60	Plastic	10,000	Brine water	10,000	Single
	4*	55100.455	590529.208		60	Plastic	10,000	Brine water	10,000	Single
	5*	55111.544	590538.064		60	Plastic	10,000	Brine water	10,000	Single
	251004502	55100.445	590538.051		60	Plastic	10,000	Brine water	10,000	Single
	250905424	55100.445	590538.051		60	Plastic	10,000	Brine water	10,000	Single
	250902080	55100.445	590538.051		60	Plastic	10,000	Brine Water	10,000	Single

Volumetric Calculations: Secondary Containment

Volume= L x W x H

Secondary containment: 61.59' (Length) x 41.16' **(Width)** x 4.16' (Height) = 10,607 cubic feet (cf)* Entire Containment

Area= 3.14 x r^2, 3.14 x 5.75^2= 103.81 square feet (sf), 103.81 sf x 4.16= 431.87 cf

431.87cf x 8 (number of tanks)= 3,455cf *Cubic Feet Displaced by the eight tanks

10,607cf-3,455cf= 7,152 cf

1 cf= 7.48 gallons (gal) 7.48gal. x 7,152cf= 53,496 gal

10,000gal(110%)= 11,000 gal

11,000 gal < 53,496 gal

UIC-1
(4/25)

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
www.dep.wv.gov/oil-and-gas

UNDERGROUND INJECTION CONTROL (UIC) PERMIT APPLICATION

UIC PERMIT ID # 2D0550319 API # 47-05500319 WELL # 14137

Section I. Facility Information

Facility Name: Camp Creek Disposal Services

Address: P.O. Box 555

City: Rosedale State: VA Zip: 24280

County: Russell

Location description:

Well is located in the Jumping Branch District of Mercer County in the Camp Creek Watershed in the Athens 7.5 min Quadrangle at an elevation of 1967'

Location of well(s) or approximate center of field/project in UTM NAD 83 (meters):

Northing: 54965.188 Easting: 590700.520

Environmental Contact Information:

Name: Thomas Shrader Title: President

Phone: 276-880-2323 Email: pitstop@mounet.com

Received
JAN 18 2017
Office of Oil and Gas
WV Dept. of Environmental Protection

Section 2. Operator Information

Operator Name: C. Thomas Shrader

Operator ID: 14397

Address: P.O. Box 555

City: Rosedale State: VA Zip: 24280

County: Russell

Contact Name: Tommy Shrader Contact Title: President

Contact Phone: 276-8802323 Contact Email: pitstop@mounet.com

Section 3. Applicant Information

Ownership Status: ■ PRIVATE ☐ PUBLIC ☐ FEDERAL ☐ STATE
☐ OTHER (explain):

SIC code: ■ 1311 (2D, 2H, 2R) ☐ 1479 (3S) ☐ OTHER (explain):

Section 4. Applicant / Activity Request and Type:

A. Apply for a new UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
B. Reissue existing UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
C. Modify existing UIC Permit: ■ 2D ☐ 2H ☐ 2R ☐ 3S
(Submit only documentation pertaining to the modification request)
2D COMMERCIAL FACILITY: ■ YES ☐ NO

Section 5. Briefly describe the nature of business and the activities to be conducted:

Add an additional 8800 gallon storage tank and associated secondary containment for the purpose of storing fluid from adjacent tanks. This fluid will be stored for short times while cleaning of the adjacent tanks are cleaned.
No other changes to the existing permit is necessary.

CERTIFICATION

All permit applications must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, or by a principal executive or ranking elected official for a public agency, or a [1]duly authorized representative in accordance with 47CSR13-13.11.b.

A. Name and title of person applying for permit:

Print Name: C. Thomas Shrader

Print Title: President

B. Signature and Date.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature: Tommy Shrader

Date: 9/12/14

[1] A person is a duly authorized representative if:

The authorization is made in writing by a person described in subdivision 47CSR13-13.11.a.

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of the plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility.

The written authorization is submitted to the Director.

(4/25)

APPENDIX A
Injection Well Form

1) GEOLOGIC TARGET FORMATION Big Lime and Huron Shale

Depth 2262, 4608 Feet (top) 2572, 5720 Feet (bottom)

2) Estimated Depth of Completed Well, (or actual depth of existing well): 5876 Feet

3) Approximate water strata depths: Fresh 93':225':310' Feet Salt N/A Feet

4) Approximate coal seam depths: N/A

5) Is coal being mined in the area? Yes ☐ No ☑

6) Virgin reservoir pressure in target formation 780 psig Source Field Estimate

7) Estimated reservoir fracture pressure 3985 psig (BHFP)

8) MAXIMUM PROPOSED INJECTION OPERATIONS:

Injection rate (bbl/hour) 300

Injection volume (bbl/day)

Injection pressure (psig)

Bottom hole pressure (psig) 3687

9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:

Brine water from the production of gas wells.

Temperature of injected fluid: (°F) Unknown

10) FILTERS (IF ANY)

3 phase filtering from 100 micron to 5 micron.

11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

N/A

APPENDIX A (cont.)

12. Casing and Tubing Program

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	12 3/4"	new	LS		21'	21'	Sand In
Fresh Water	9 5/8"	new	LS	26	225'	225'	410 sks
Coal	2 3/8" x 4 1/2"						
Intermediate 1	7"	new	LS	17	1281'	1281'	230 sks
Intermediate 2							
Production	4 1/2"	new	M-65	9.5	5828'	5828'	410 sks
Tubing	2 3/8"	new	J-55	4.6	4595'	4595'	
Liners							

* See Well Operator's Report Below*

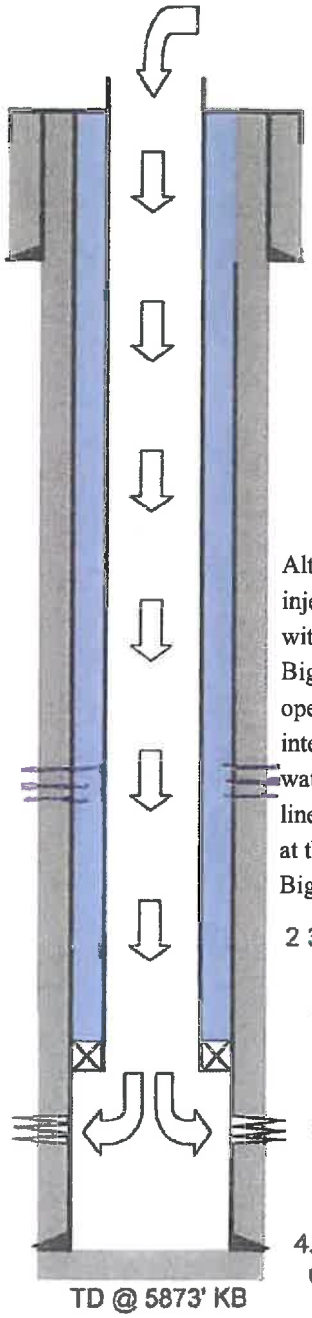
TYPE	Wellbore Diameter	Casing Size	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./sk)	Cement to Surface ? (Y or N)
Conductor							
Fresh Water							
Coal							
Intermediate 1							
Intermediate 2							
Production							
Tubing							
Liners							

PACKERS	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	Tension Packer			
Sizes:	2 3/8"			
Depths Set:	4563'			

Well No. 14397
047-055-00319
Mercer County. WV

Camp Creek Disposal Services Inc.

Current Configuration
Elevation: 1790'



9 5/8" 26# casing @ 225' CTS

7" 17# casing @ 1281' CTS

Lime 1820'-3187'

Perforations 2262'-2572'
32 Holes

Although the Big Lime was perforated there is no brine water being injected into this layer. The casing extends past these perforations with a packer at 4,653'. This packer prevents any back flow into the Big Lime and maintains a positive rock pressure to inform the operator of the well that the Big Lime is still intact and that the integrity of the well is secure. Therefore, sealing them off and brine water being injected only into the Huron Shale formation. These lines on the drawing do not illustrate perforations through the tubing at the Big Lime. It just shows that during the drilling process that the Big Lime was perforated.

2 3/8" 4.6# Tubing @ 4595'
Set Tension Packer@ 4563'

Huron 4000'-5876'

Perforations 4608' - 5720' (61 holes)

4.5" 9.5# M-65 casing @ 5828'
Cement w/ 410 sks TOC @

TD @ 5873' KB

WR-35
Rev (5-01)

DATE:
API # : 47 055 00319

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Mills, Ray O. Operator Well No.: 14397 Rev

LOCATION: Elevation 1967' Quadrangle: Athens 7.5'

District: Jumping Branch County Mercer
Latitude: 1790 Feet South of 37 Deg. 30 Min. 00 Sec.
Longitude 6390 Feet West of 81 Deg. 05 Min. 00 Sec.

Company: Dominion Exploration & Production, Inc

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: P O Box 1248				
Jane Lew, WV 26378				
Agent: Rodney J. Biggs				
Inspector: Barry Stollings				
Date Permit Issued: 12/01/2006				
Date Well Work Commenced: 03/30/2007	12 ¾"	21'	21'	Sand In
Date Well Work Completed: 04/17/2007				
Verbal Plugging N/A	9 5/8"	225'	225'	410 sks
Date Permission granted on: N/A				
Rotary X Cable Rig	7"	1281'	1281'	230 sks
Total Depth (feet): 5873'				
Fresh Water Depth (ft.): 22', 93', 225', 310'	4 ½'	5828'	5828'	410 sks
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): N/A				

OPEN FLOW DATA

Lower Huron 5540-5720'
Upper Huron 5120-5124'
Shale Fracture 4608-4910'

Producing formation Pickaway Pay zone depth (ft) 2566-2572'
Gas: Initial open flow Trace MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 12 Hours
Static rock Pressure psig (surface pressure) after 12 Hours

Second producing formation Lime Fracture Pay zone depth (ft) 2262-2272'
Gas: Initial open flow * MCF/d Oil: Initial open flow * Bbl/d
Final open flow * MCF/d Final open flow * Bbl/d
Time of open flow between initial and final tests * Hours
Static rock Pressure * psig (surface pressure) after * Hours

*Commingled with previous formations

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Received

Signed: _____
By: Rodney J. Biggs
Date: _____

4/17/07 PERFORMED 5 STAGE FRAC.
LOWER HURON (1) 5540'- 5720' (20 HOLES) - 75 Q FOAM FRAC - 15,171# 20/40 SAND, 152 BBL CLEAN FLUID, 444,000 SCF N2, BDP 2555#, ATP 2810#, AIR 25.1 BPM.
UPPER HURON (2) 5120'- 5124' (20 HOLES) PUMPED 500 GAL 15% HCL DROPPED 3 1/4" FRAC BALL) - 75 Q FOAM FRAC - 20,024# 20/40 SAND, 159 BBL CLEAN FLUID, 420,700 SCF N2, BDP 3000#, ATP 2667#, AIR 25.1 BPM.
SHALE FRACTURE (3) 4608'- 4910' (21 HOLES) PUMPED 500 GAL 15% HCL (DROPPED 3 3/8" FRAC BALL) - 75 Q FOAM FRAC - 15,279# 20/40 SAND, 147 BBL CLEAN FLUID, 272,200 SCF N2, BDP 2515#, ATP 2118#, AIR 25.1 BPM.
PICKAWAY (4) 2566'- 2572' (12 HOLES) - PUMPED 500 GAL 15% HCL (DROPPED 3 1/2" FRAC BALL) - ACID/ N2 ASSIST - 3000 GAL OF 28% HCL, 98 BBL CLEAN FLUID, 46,200 SCF N2, BDP 1500#, ATP 960#, AIR 10 BPM.
LIME FRACTURE (5) 2262'-2272' PUMPED 500 GAL 15% HCL (DROPPED 3 3/4" FRAC BALL) - ACID / N2 ASSIST - 3000 GAL OF 28% GELLED ACID, 70 BBL CLEAN FLUID, 50,400 SCF N2, BDP 1466#, ATP 947#, AIR 10 BPM, ISIP 1154#, 3 MIN SIP 1071#.

Fill	0	5
Sandy Shale	5	15
Sandstone	15	290
Ravencliff	290	333
Avis	333	410
Shale	410	951
U Maxton	951	1130
Shale	1130	1509
L Maxton	1509	1624
Shale	1624	

GAMMA RAY / FORMATION TOPS

DEPI # 14397rev 047-055-00319

			TOP	BASE	
LOWER MAXTON			1672	1694	
LITTLE LIME			1820	2289	
BIG LIME			2289	3187	
PRICE FORMATION			3187	3980	
WEIR SAND			3537	3574	
SUNBURY SHALE			3910	3980	
BEREA			3980	4000	
UPPER HURON			4620	5750	
LOWER HURON			5750	TD	
LTD				5876	

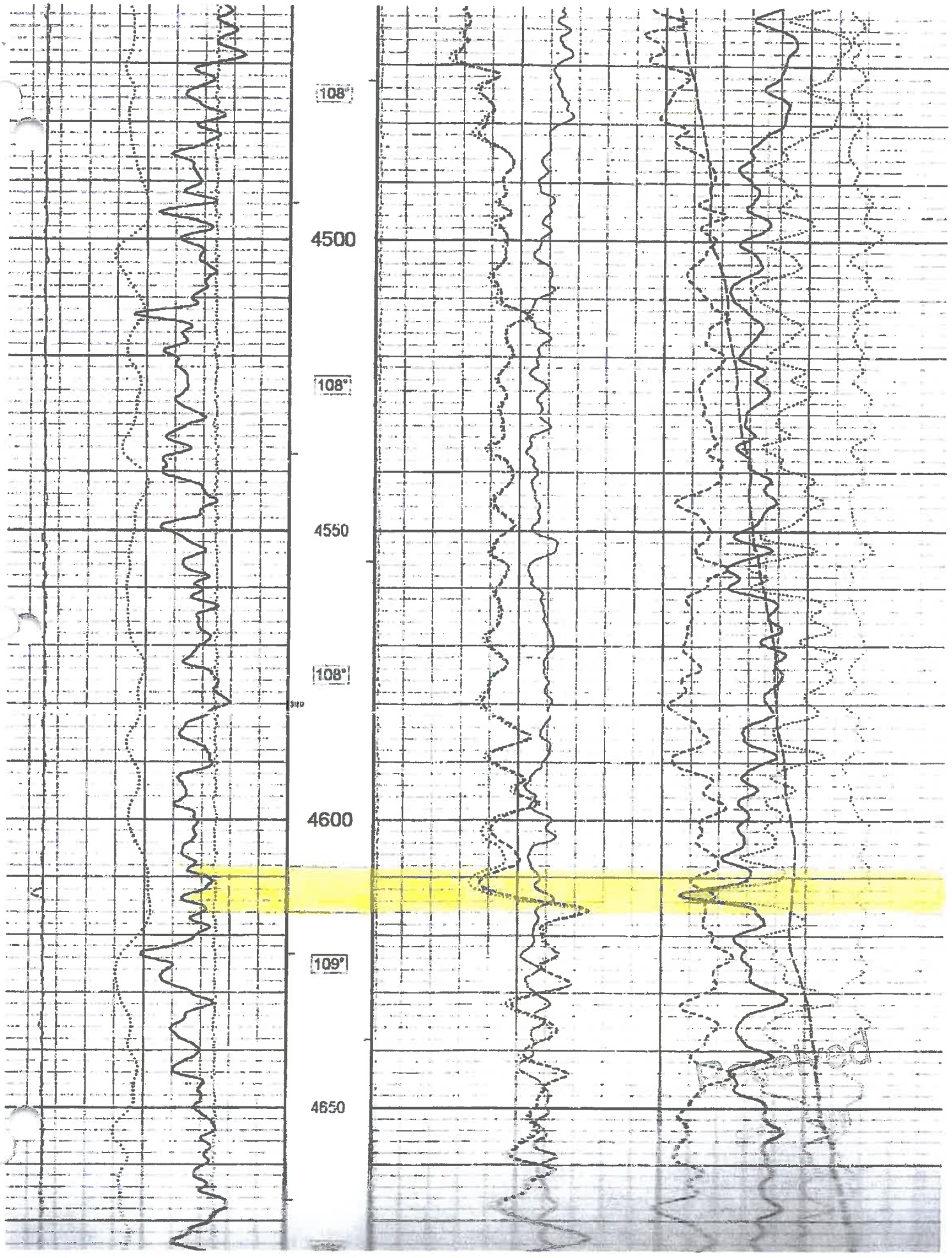
Zone 1: Huron Shale

The Huron Shale in this well is proposed as the primary disposal zone and has a total interval length of 1256' extending from the top at 4620' to 5876' (TD of the well) with eight specific sections of the interval for a total of 36 feet being perforated with a total of 61 holes to be utilized for disposal. Copies of log sections on the adjacent page show the perforated sections highlighted in yellow.

The Huron Shale in this area appears to be wet and lays south and east of primary production in the Huron Shale. Few wells exist in the immediate area due to a lack of production potential and high water saturations in the Huron Shale. Porosity values are difficult to determine and vary greatly within shale intervals due to primary porosity being fracture porosity rather than matrix porosity but appear to vary from on average 2 to 6 percent as derived from the well log.

The Huron Shale is a member of the Upper Devonian Shale and is composed of fractured black and gray shales and siltstones and encompasses a large area within the state in which the stratigraphy, thickness, organic geochemistry and thermal maturity of shale sequence varies widely. Porosities historically range from 1 to 3 percent with permeability ranging from 0.1 to 10 microdarcies. The Huron Shale is overlain by the Berea Sandstone and underlain by the Hanover Shale.

Also included within this section is a copy of the injection/step rate test data from testing conducted on 9/29/2008. This data indicates the shale section of this well to readily accept fluid at good injection rates with minimal pressures that are well within the WVDEP guidelines. It is anticipated that the Huron Shale will make an excellent disposal zone with no likelihood of affecting production in the area.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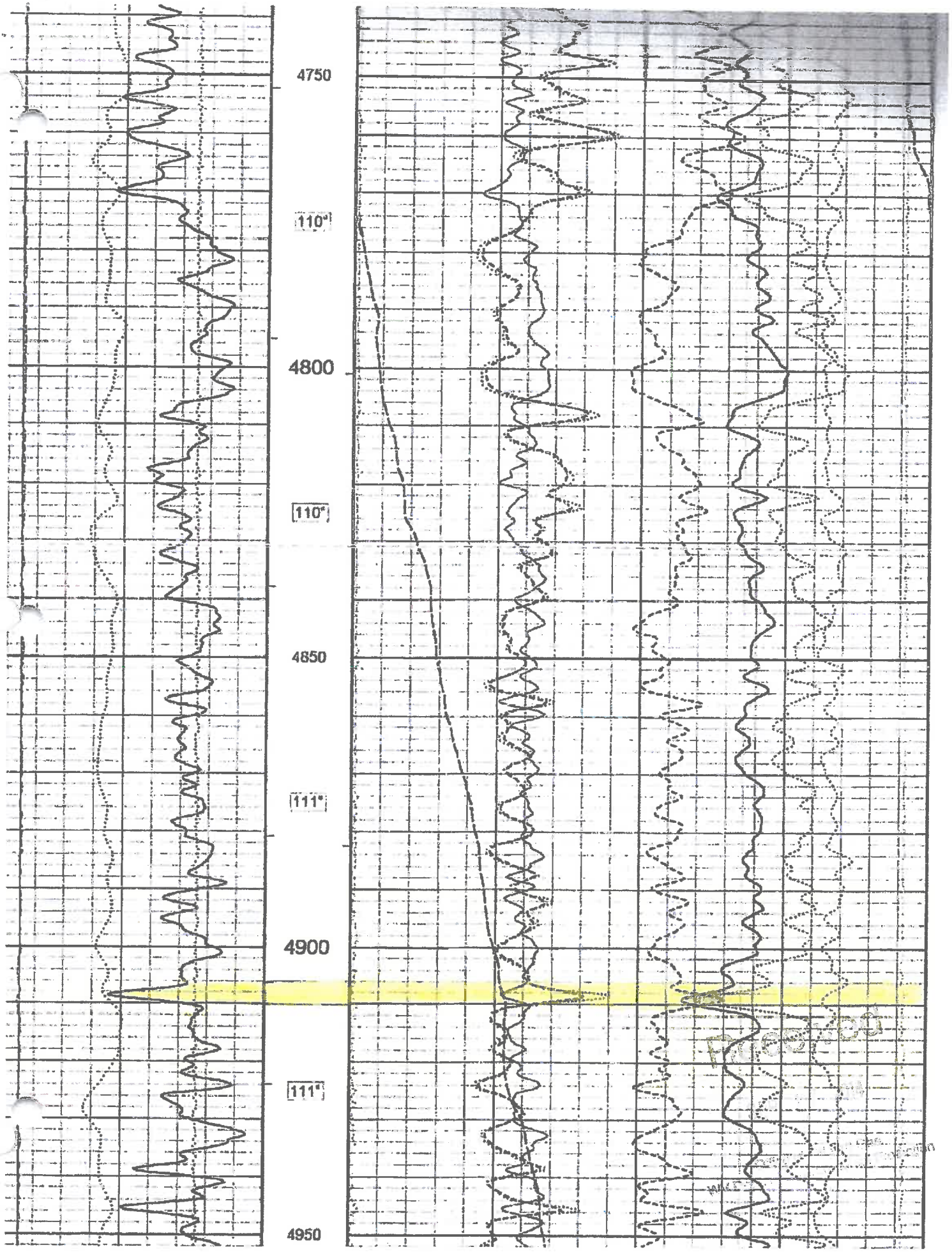
108°
4550
108°
4600
109°
4650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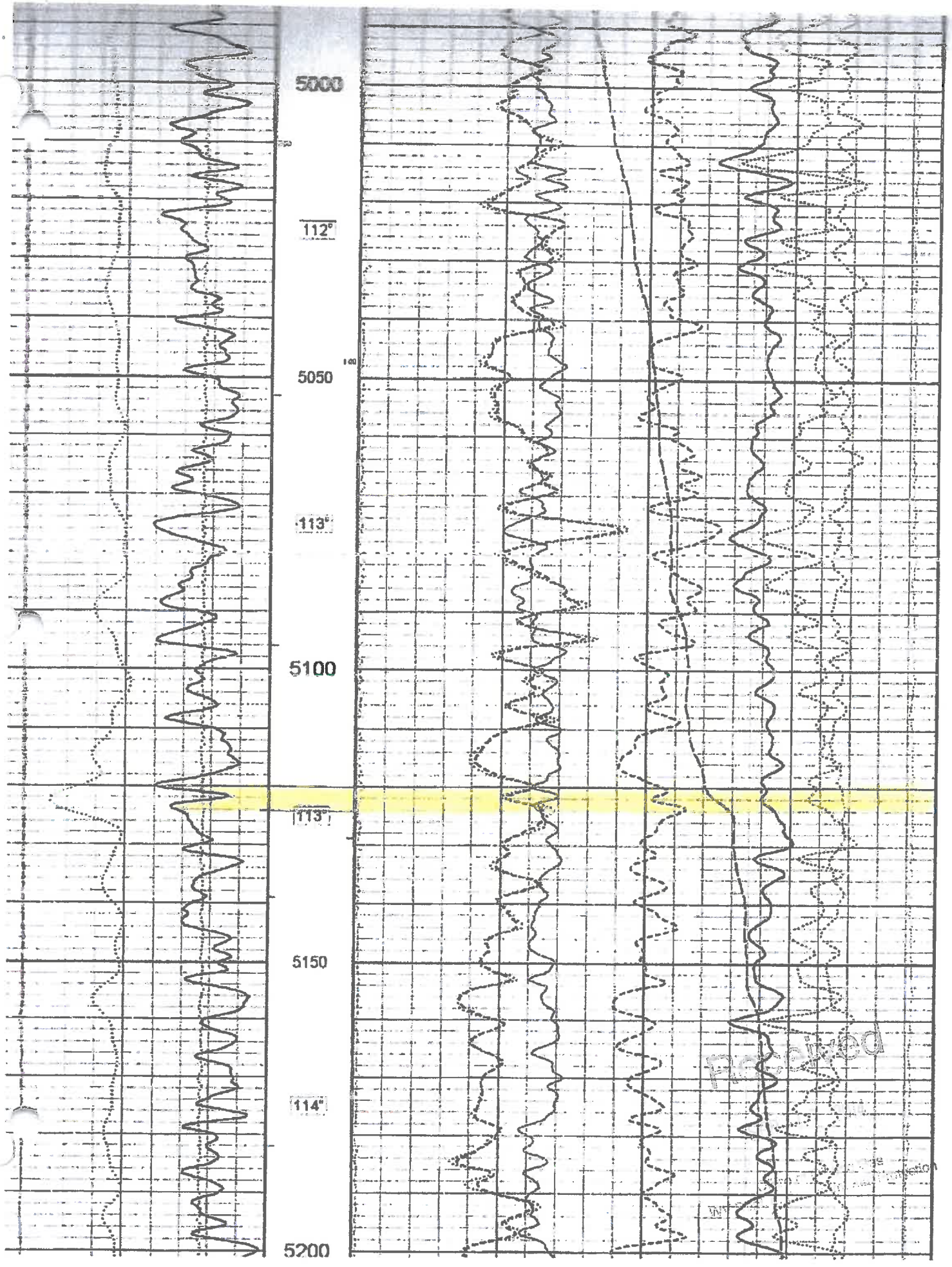
4950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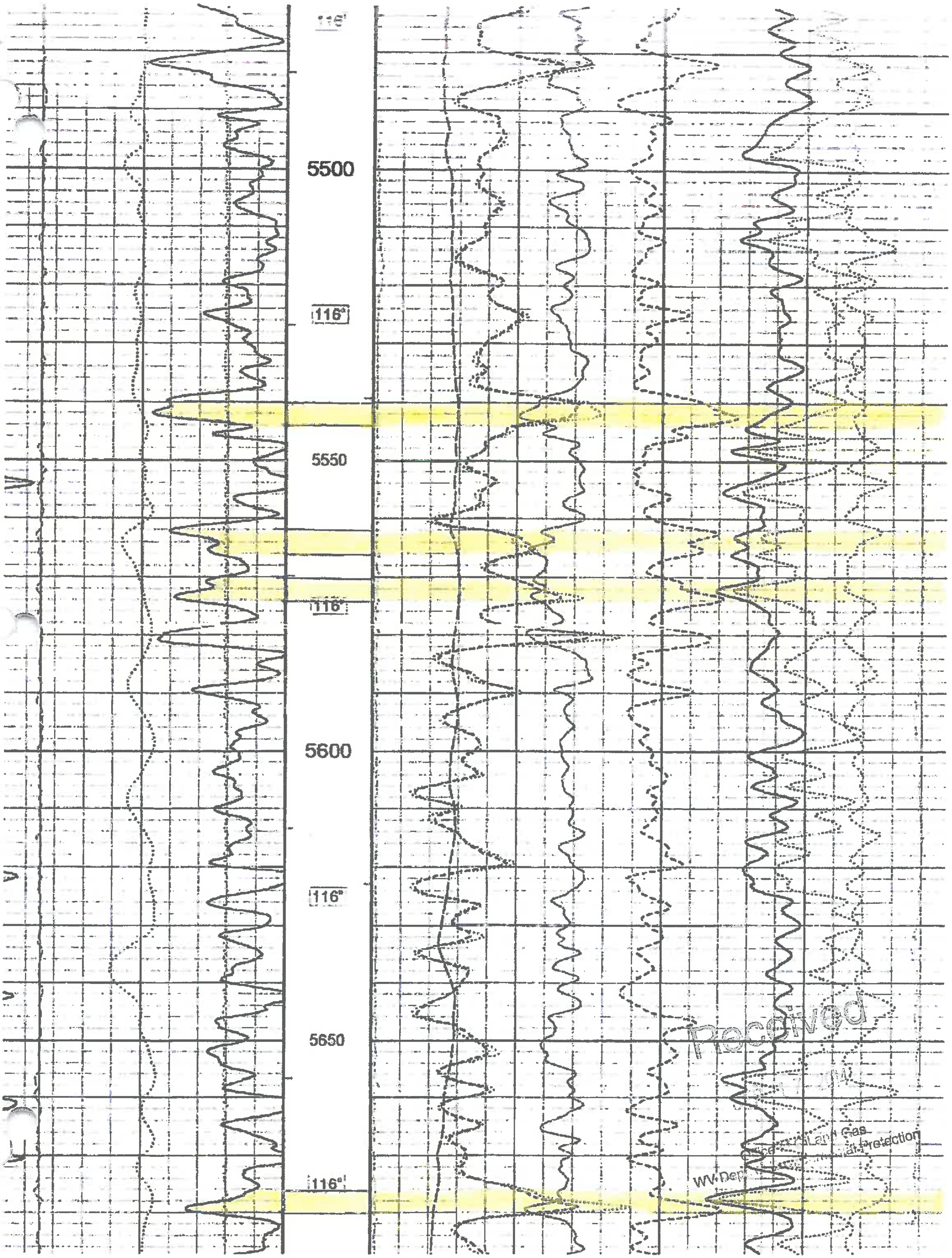
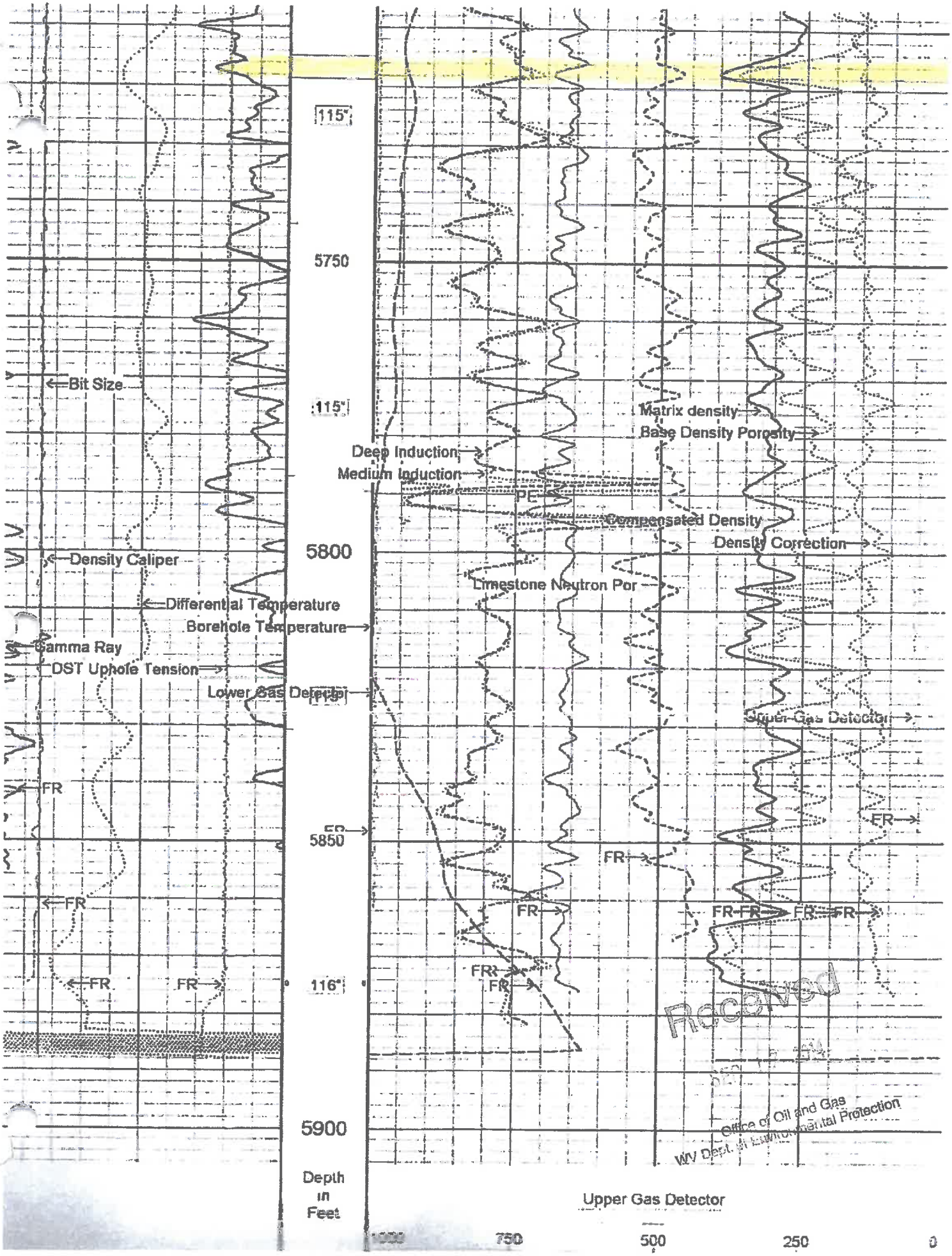
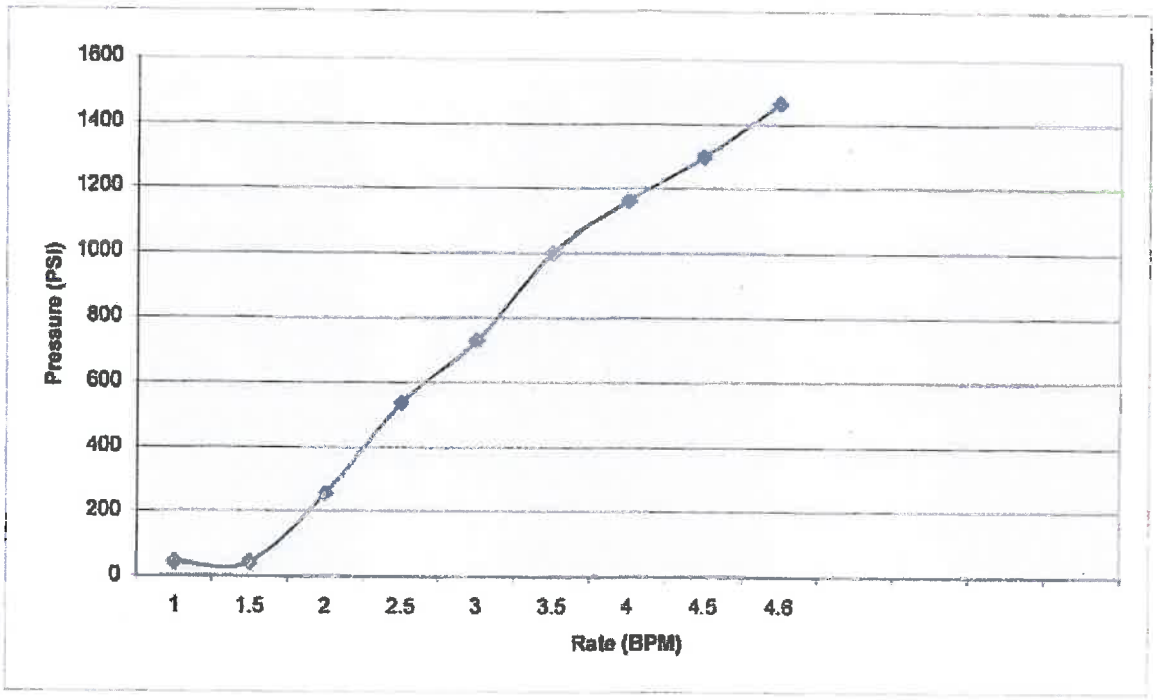
5050
113°
5100
113°
5150
114°
5200


116'
5500
116'
5550
116'
5600
116'
5650
116'
Received
Gas
Protection



Gas Field Services Well No. 14397 Injection Test/Shale

9/29/2008

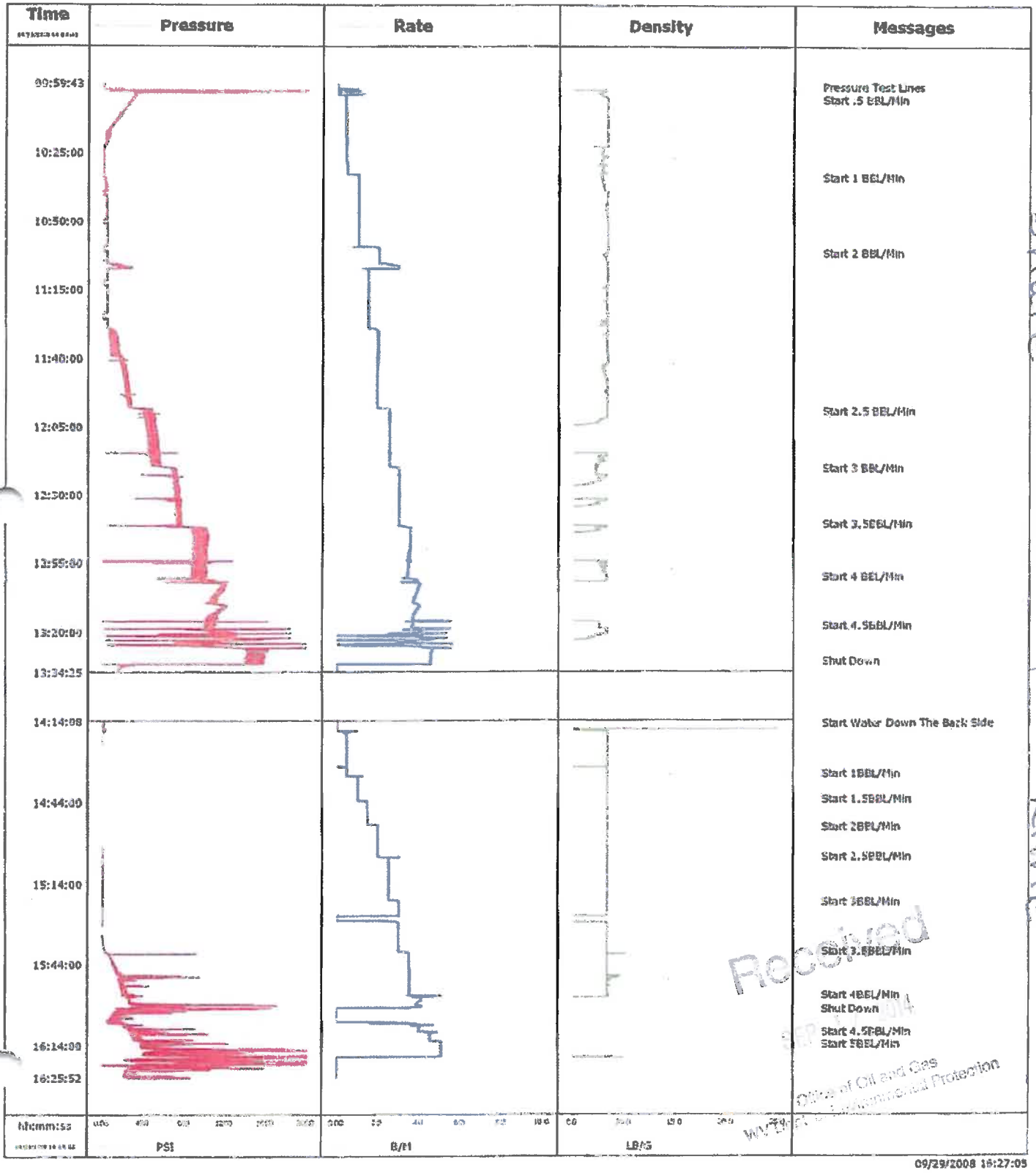


Rate	Pressure
1	41
1.5	41
2	256
2.5	536
3	730
3.5	1000
4	1160
4.5	1300
4.6	1465

Schlumberger — Cementing Job Report

CemCAT v1.0

Well	DEPI 14397	**Client**	Dominion EP INC
Field		**SIR No.**	2200457387
Engineer	Chris Gilbert	**Job Type**	Pump Rental
Country	United States	**Job Date**	09-29-2008



09/29/2008 16:27:05

Received
SEP 30 2008
Office of Oil and Gas
Environmental Protection

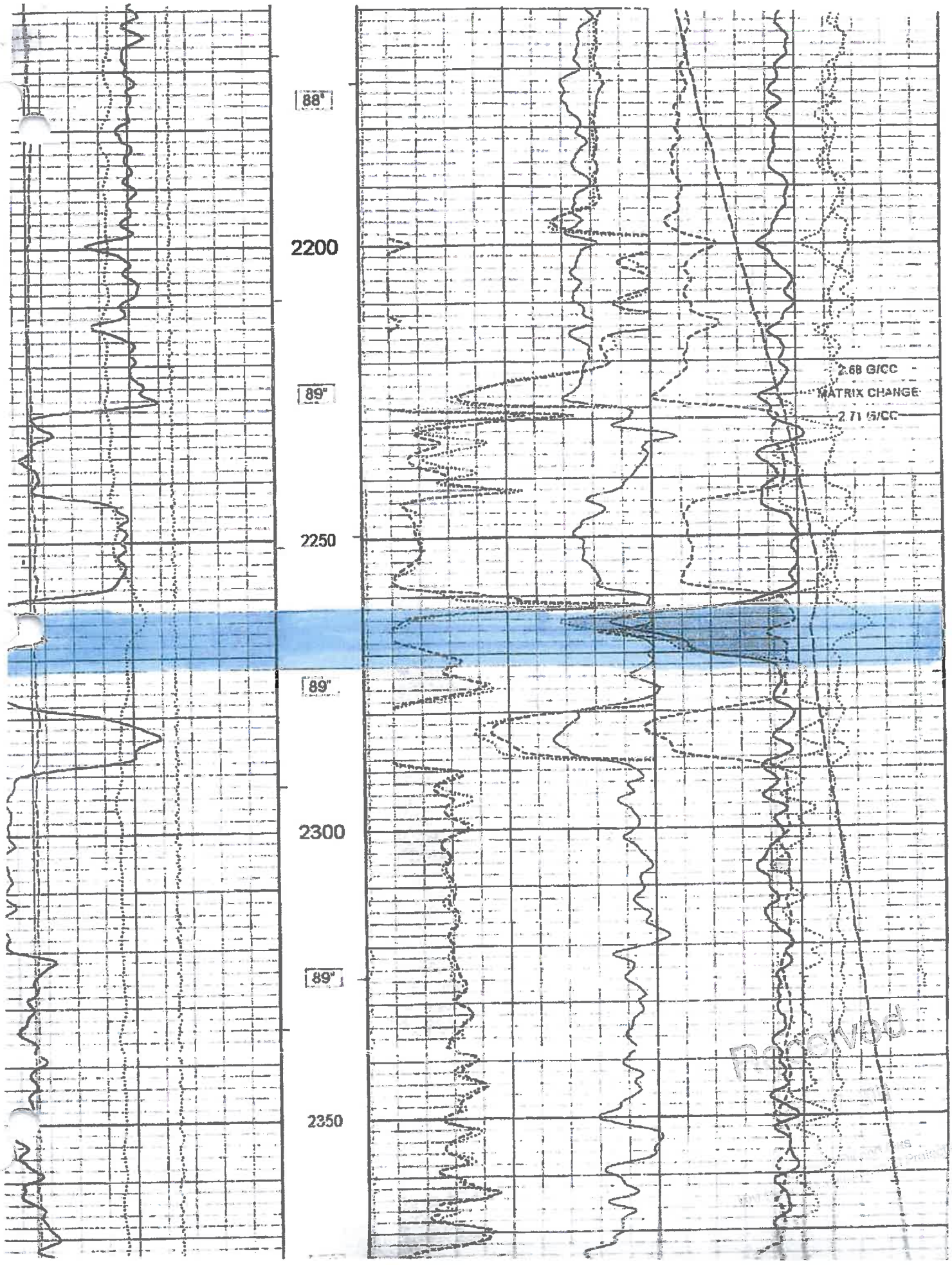
Zone 2: Big Lime/Greenbrier Limestone

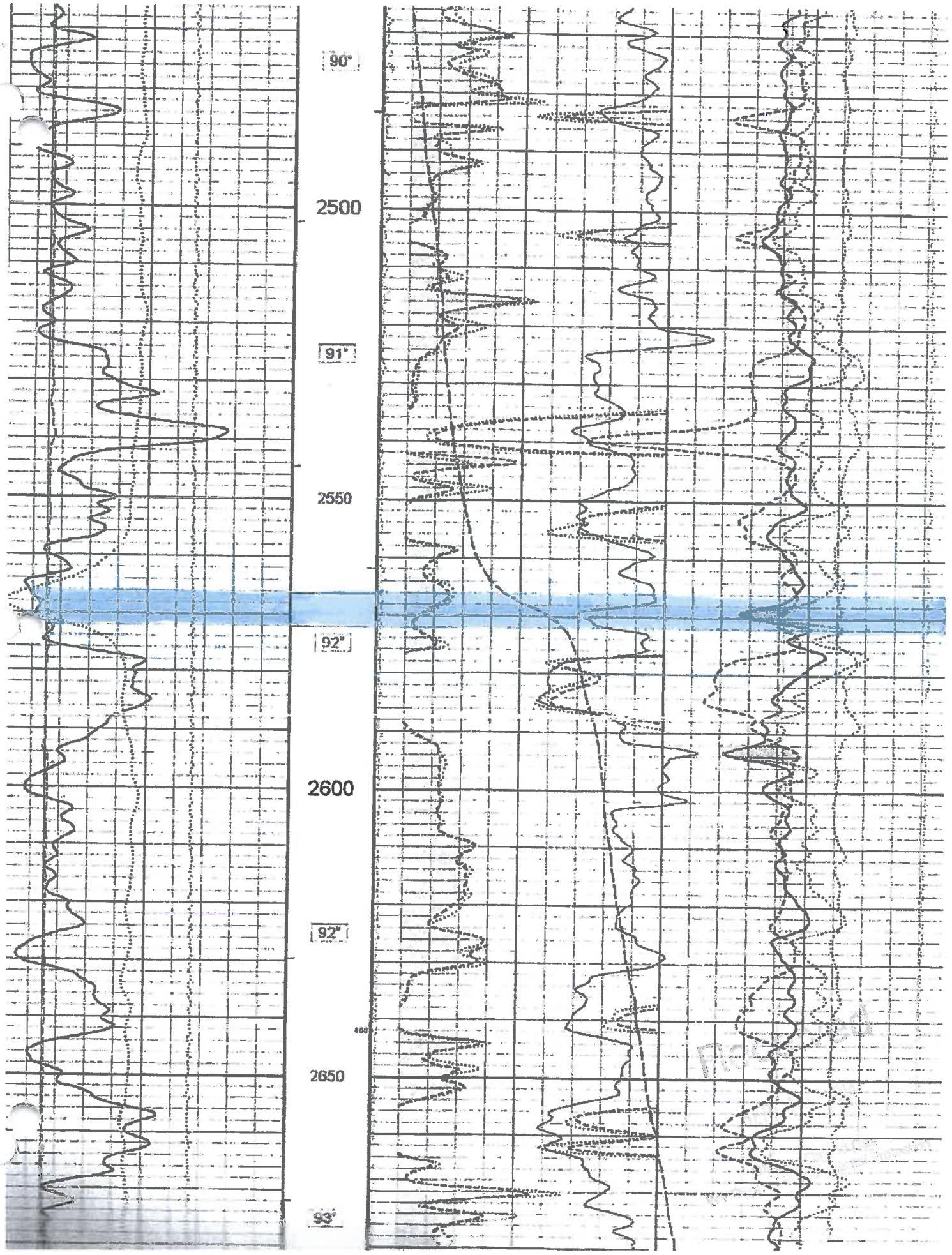
The Greenbrier Limestone and more specifically the Big Lime formation in this well is proposed as the secondary disposal zone and has a total interval length of 1367' extending from the top at 1820' in the Little Lime to 3187' at the bottom of the Big Lime. There are two specific sections of the interval for a total of 16 feet being perforated with a total of 32 holes to be utilized for disposal with the top of the perforated interval at 2262'and the bottom at 2572'. Copies of log sections on the adjacent page show the perforated sections highlighted in blue.

The Lime in this area appears to also be wet and lays east of established production in the Big Lime. Few wells exist in the immediate area due to a lack of production potential and high water saturations in the Lime. Porosity values from the well log range from 6 to 14 percent with density values running in the 2.50 grams/cc range.

The Greenbrier Limestone is a member of the Upper Mississippian Group and is a carbonate composed of limestone and dolomite and encompasses a large area within the state and is generally considered to be a marker bed in the state with statewide arial range. Porosities historically range from 3 to 28 percent averaging 11 percent with permeability ranging from 1.0 to 15 microdarcies. The Big Lime is overlain by the Big Lime and various shale stringers and is underlain by the Big Injun sandstone.

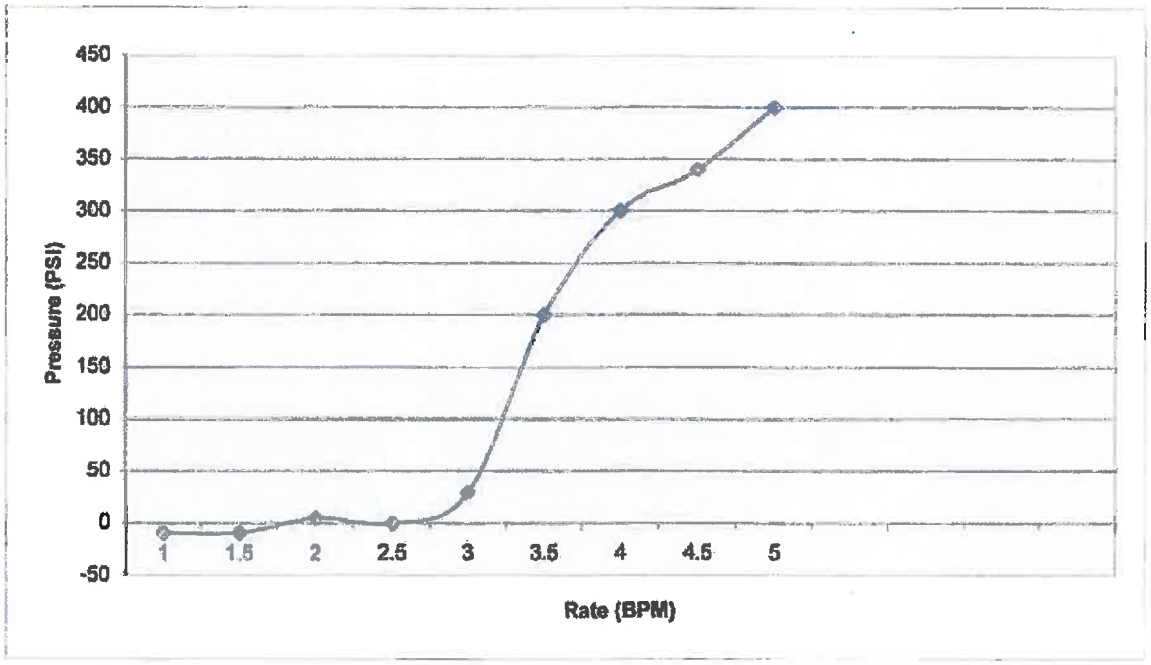
Also included within this section is a copy of the injection/step rate test data form testing conducted on 9/29/2008. This data indicates the shale section of this well to readily accept fluid at good injection rates with minimal pressures that are well within the WVDEP guidelines. It is anticipated that the Big Lime will make an excellent disposal zone with no likelihood of affecting production in the area.


88"
2200
89"
2.68 G/CC
MATRIX CHANGE
2.71 G/CC
2250
89"
2300
89"
2350


90°
2500
91°
2550
92°
2600
92°
2650
93°

Gas Field Services Well No. 14397 InjectionTest /Lime

9/29/2008



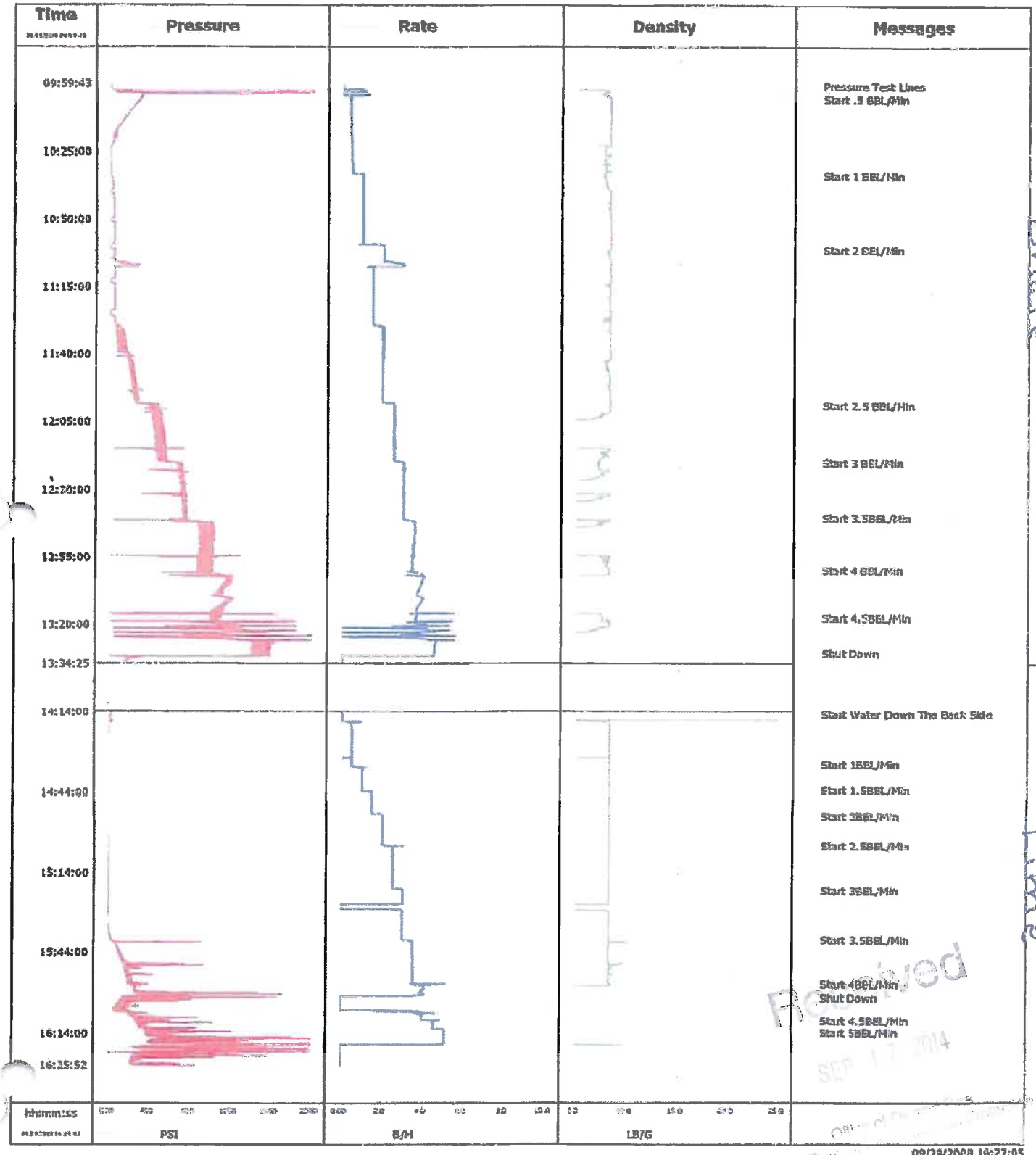
Rate	Pressure
1	-9
1.5	-9
2	5
2.5	0
3	29
3.5	200
4	300
4.5	340
5	400

Schlumberger

Cementing Job Report

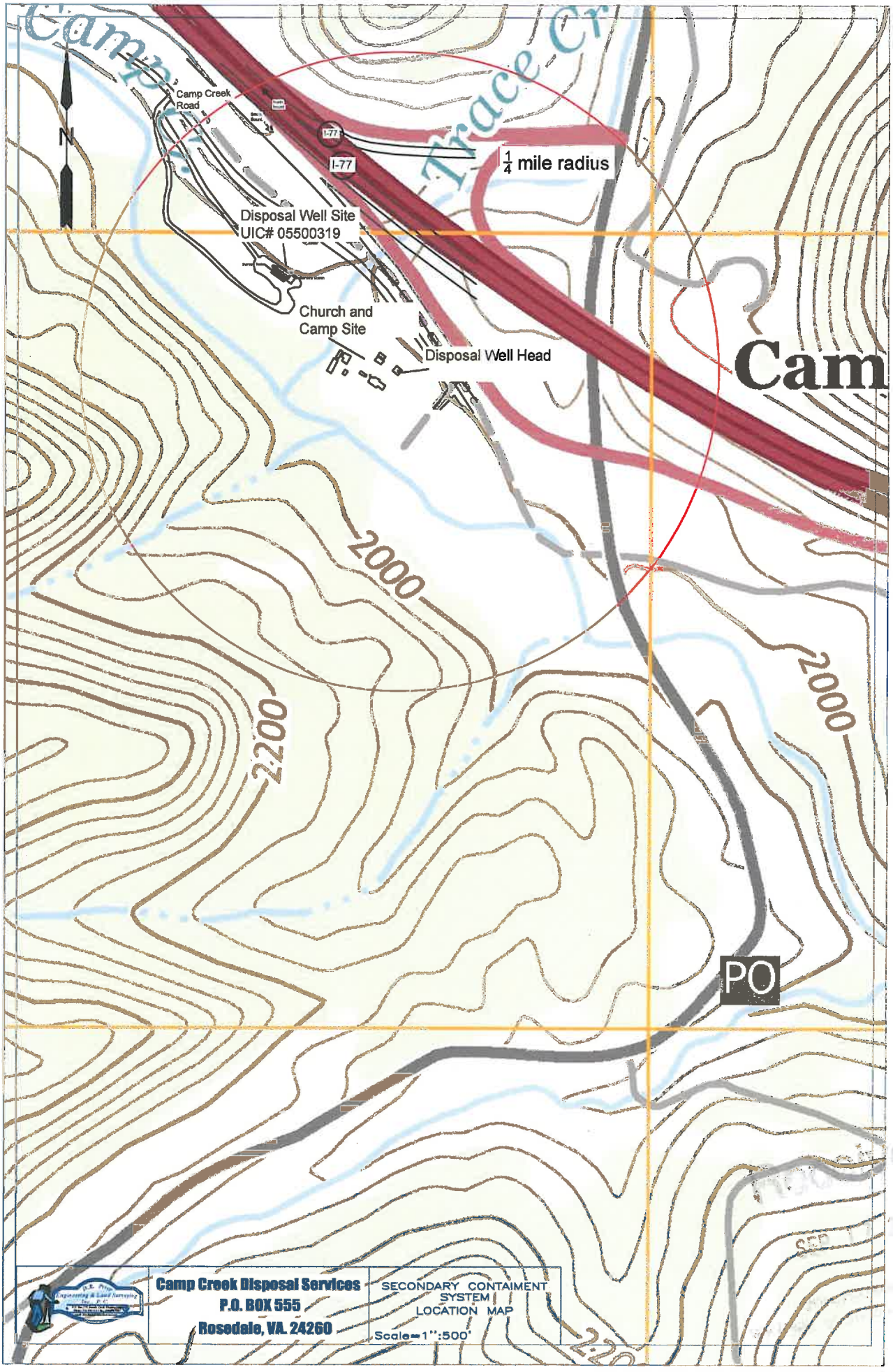
CemCAT v1.0

Well	DEPI 14397	**Client**	Dominion EP INC
Field		**SER No.**	2200457387
Engineer	Chris Gilbert	**Job Type**	Pump Rental
Country	United States	**Job Date**	09-29-2008



09/29/2008 16:27:05

Received
SEP 17 2014


Camp Creek
Trace Cr
N
Camp Creek Road
I-77
I-77
1/4 mile radius
Disposal Well Site
UIC# 05500319
Church and
Camp Site
Disposal Well Head
Cam
2000
2200
2000
PO
2200
Camp Creek Disposal Services
P.O. BOX 555
Rosedale, VA. 24260
SECONDARY CONTAIMENT
SYSTEM
LOCATION MAP
Scale=1":500'

Appendix C

Wells Within the Area of Review (N/A)

There are no wells within the area of review.

APPENDIX C

Wells within the Area of Review

API #	Well Type	Well Status (Active, Abandoned, Shut-in, Plugged)	Northing (UTM NAD 83 Meters)	Easting (UTM NAD 83 Meters)	Penetrate Injection Zone (Y or N)	Penetrate Confining Zone (Y or N)	Total Vertical Depth	Surface Elevation

Make as many copies as necessary and include page numbers as appropriate.

APPENDIX D

Public Service District Affidavit

Underground Injection Control Permit applicants must identify all publically recorded drinking water sources within a one (1) mile radius of the proposed injection well facility. If no drinking water sources are present within this radius a written affidavit shall be supplied by the local Public Service District (PSD) as ample verification.

"I certify under penalty of law that (state name of business)

_____

has verified with the public service district (state name of PSD)

_____

that there are no such publically recorded sources.

_____

(Signature of Authorized Representative)

Sworn and subscribed to before me this _____ day of _____, 20_____.

_____, my commission expires _____

(Notary Signature)

_____.

APPENDIX E
Water Sources

Operator: _____ Year 2014 UIC Permit # 2D0550319

* ND- Not Detected

		Source # CC-1	Source # CC-2	Source # CC-3	Source # D-Well
Water Source Name					
Northing		4219201.837	4219136.552	4219350.161	4149812.124
Easting		572013.666	571750.298	572114.216	490704.213
Parameter	Units				
TPH - GRO	mg/L	ND	ND	ND	3.86
TPH - DRO	mg/L	ND	ND	ND	59.1
TPH - ORO	mg/L	ND	ND	ND	27.8
BTEX	mg/L				
Chloride	mg/L	100	512	525	132,000
Sodium	mg/L				64,800
Total Dissolved Solids (TDS)	mg/L	416	1,530	1,300	210,000
Aluminum	mg/L	0.013	ND	ND	ND
Arsenic	mg/L	ND	ND	ND	ND
Barium	mg/L	0.603	0.094	0.038	1,370
Iron	mg/L	0.030	1.04	0.058	253
Manganese	mg/L	0.031	0.374	0.059	10.4
pH	SU	7.22	6.60	6.91	6.01
Calcium	mg/L	63.5	221	6.14	16,500
Sulfate	mg/L	5.04	91.5	38.2	770
MBAS	mg/L	ND	ND	ND	2.07
Dissolved Methane	mg/L	71.4	ND	19.8	637
Dissolved Ethane	mg/L	ND	ND	ND	389
Dissolved Butane	mg/L	ND	ND	ND	179
Dissolved Propane	mg/L	ND	ND	ND	217
Bacteria (Total Coliform)	c/100mL	Present	Absent	Absent	Absent

REIC

Improving the environment, one client at a time...

REI Consultants, Inc.
PO Box 286
Beaver, WV 25813
TEL: 304.255.2500
Website: www.reiclabs.com

3029-C Peters Creek Road
Roanoke, VA 24019
TEL: 540.777.1276

101 17th Street
Ashland, KY 41101
TEL: 606.393.5027

1557 Commerce Road, Suite 201
Verona, VA 24482
TEL: 540.248.0183

16 Commerce Drive
Westover, WV 26501
TEL: 304.241.5861

Friday, November 21, 2014

BRANDON BLEVINS
D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC
1541 THOMPSON CREEK ROAD
HONAKER, VA 24260

TEL: (276) 991-9100
FAX:

RE: CAMP CREEK DISPOSAL SERVICE
Work Order #: 1411H76

Dear BRANDON BLEVINS:

REI Consultants, Inc. received 5 sample(s) on 11/14/2014 for the analyses presented in the following report.

Bobby Adams

Bobby Adams

REI Consultants, Inc. - Case Narrative

WO#: 1411H76

Date Reported: 11/21/2014

Client: D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC

Project: CAMP CREEK DISPOSAL SERVICE

The analytical results presented in this report were produced using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. Verification of required sample preservation (as required) is recorded on associated laboratory logs. Any deviation from compliance or method modification is identified within the body of this report by a qualifier footnote which is defined at the bottom of this page.

All sample results for solid samples are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as TTHM and HAA5, may vary slightly from the sum of the individual parameter results, due to rounding of individual results, as required by EPA.

The test results in this report meet all NELAP (and/or VELAP) requirements for parameters except as noted in this report.

Please note if the sample collection time is not provided on the Chain of Custody, the default recording will be 0:00:00. This may cause some tests to be apparently analyzed out of hold.

All tests performed by REIC Service Centers are designated by an annotation on the test code. All other tests were performed by REIC's Main Laboratory in Beaver, WV.

DEFINITIONS:
MCL: Maximum Contaminant Level
MDL: Method Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.
Mg/Kg or mg/L: Units of part per million (PPM) - milligram per Kilogram (weight/weight) or milligram per Liter (weight/volume).
NA: Not Applicable
ND: Not Detected at the PQL or MDL
PQL: Practical Quantitation Limit; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below PQL are reported either as ND or as a number with a "J" qualifier.
Qual: Qualifier that applies to the analyte reported.
TIC: Tentatively Identified Compound, Estimated Concentration denoted by "J" qualifier.
Ug/Kg or ug/L: Units of part per billion (PPB) - microgram per kilogram (weight/weight) or microgram per liter (weight/volume).

QUALIFIERS:
X: Reported value exceeds required MCL
B: Analyte detected in the associated Method Blank at a concentration > 1/2 the PQL
E: Analyte concentration reported that exceeds the upper calibration standard. Greater uncertainty is associated with this result and data should be consider estimated.
H: Holding time for preparation or analysis has been exceeded.
J: Analyte concentration is reported, and is less than the PQL and greater than or equal to the MDL. The result reported is an estimate.
S: % REC (% recovery) exceeds control limits

CERTIFICATIONS:
Beaver, WV: WVDHHR 00412CM, WVDEP 060, VADCLS 00281, KYDEP 90039, TNDEQ TN02926, NCDWQ 466, PADEP 68-00839, VADCLS (VELAP) 460148
Bioassay (Beaver, WV): WVDEP 060, VADCLS(VELAP) 460148, PADEP 68-00839
Roanoke, VA: VADCLS(VELAP) 460150
Verona, VA: VADCLS(VELAP) 460151
Ashland, KY: KYDEP 00094, WVDEP 389
Morgantown, WV: WVDHHR 003112M, WVDEP 387

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 11:53:00 AM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-01A	**Matrix:**	Liquid
Client Sample ID:	CC-1	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP			**Method: EPA 200.7 Rev. 4.4 (1994)**				**Analyst: CGW**	
Aluminum	0.013	0.005	0.100	NA	J	mg/L	11/18/2014 3:51 PM	PA/VA
Arsenic	ND	0.020	0.200	NA		mg/L	11/18/2014 3:51 PM	PA/VA
Barium	0.603	0.002	0.100	NA		mg/L	11/18/2014 3:51 PM	PA/VA
Calcium	63.5	0.050	1.00	NA		mg/L	11/18/2014 3:51 PM	PA/VA
Iron	0.030	0.010	0.100	NA	J	mg/L	11/18/2014 3:51 PM	PA/VA
Manganese	0.031	0.002	0.100	NA	J	mg/L	11/18/2014 3:51 PM	PA/VA
SEMI-VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CL**	
TPH (Diesel Range)	ND	0.07	0.14	NA		mg/L	11/17/2014 5:46 PM	PA/VA
TPH (Oil Range)	ND	0.05	0.14	NA		mg/L	11/17/2014 5:46 PM	
Surr: o-Terphenyl	89.5	NA	28.3-152	NA		%REC	11/17/2014 5:46 PM	
DISSOLVED GASES			**Method: GC-FID**				**Analyst: JC**	
Methane	71.4	5.00	10.0	NA		µg/L	11/18/2014 3:14 PM	
Ethane	ND	7.50	15.0	NA		µg/L	11/18/2014 3:14 PM	
Propane	ND	10.0	20.0	NA		µg/L	11/18/2014 3:14 PM	
Butane	ND	12.5	25.0	NA		µg/L	11/18/2014 3:14 PM	

Notes:

Sample vial arrived at laboratory containing headspace.

VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CB**	
TPH (Gasoline Range)	ND	0.250	0.500	NA		mg/L	11/18/2014 2:53 PM	PA/VA
Surr: 2,5-Dibromotoluene	79.1	NA	37.2-152	NA		%REC	11/18/2014 2:53 PM	
VOLATILE ORGANIC COMPOUNDS			**Method: SW8021B (1996)**				**Analyst: CB**	
Benzene	ND	0.500	1.00	NA		µg/L	11/18/2014 2:53 PM	PA/VA
Toluene	ND	0.500	1.00	NA		µg/L	11/18/2014 2:53 PM	PA/VA
Ethylbenzene	ND	0.500	1.00	NA		µg/L	11/18/2014 2:53 PM	PA/VA
m,p-Xylene	ND	1.00	2.00	NA		µg/L	11/18/2014 2:53 PM	PA/VA
o-Xylene	ND	0.500	1.00	NA		µg/L	11/18/2014 2:53 PM	PA/VA
Surr: 1,1,1-Trifluorotoluene	97.9	NA	61.2-135	NA		%REC	11/18/2014 2:53 PM	
SURFACTANTS			**Method: SM5540 C-2000**				**Analyst: CC**	
MBAS (calibrated on MW340 LAS)	ND	0.0250	0.0625	NA		mg/L	11/14/2014 6:30 PM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 11:53:00 AM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-01A	**Matrix:**	Liquid
Client Sample ID:	CC-1	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
COLIFORM BY P/A			**Method: SM9223B-PA**				**Analyst: CC**	
E-Coli	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
Total Coliform	PRESENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
ANIONS by ION CHROMATOGRAPHY			**Method: EPA 300.0, Rev.2.1 (1993)**				**Analyst: CF**	
Chloride	100	0.50	5.00	NA		mg/L	11/17/2014 8:23 PM	PA/VA
Sulfate	5.04	1.00	5.00	NA		mg/L	11/17/2014 8:23 PM	PA/VA
TOTAL DISSOLVED SOLIDS			**Method: SM2540 C-1997**				**Analyst: KY**	
Total Dissolved Solids	416	5	10	NA		mg/L	11/15/2014 5:30 PM	PA/VA
TOTAL SUSPENDED SOLIDS			**Method: SM2540 D-1997**				**Analyst: KY**	
Total Suspended Solids	ND	1.0	5.0	NA		mg/L	11/15/2014 4:34 PM	PA/VA
pH - LAB TEST, HOLD TIME EXPIRED			**Method: SM4500-H+-B-2000**				**Analyst: DSD**	
pH	7.22	NA	NA	NA		SU	11/18/2014 4:10 PM	PA
ORGANIC CARBON, TOTAL			**Method: SM5310 C-2000**				**Analyst: DSD**	
Total Organic Carbon	0.50	0.20	1.00	NA	J	mg/L	11/18/2014 10:52 AM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 11:30:00 AM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-02A	**Matrix:**	Liquid
Client Sample ID:	CC-2	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP			**Method: EPA 200.7 Rev. 4.4 (1994)**				**Analyst: CGW**	
Aluminum	ND	0.005	0.100	NA		mg/L	11/18/2014 3:54 PM	PA/VA
Arsenic	ND	0.020	0.200	NA		mg/L	11/18/2014 3:54 PM	PA/VA
Barium	0.094	0.002	0.100	NA	J	mg/L	11/18/2014 3:54 PM	PA/VA
Calcium	221	0.050	1.00	NA		mg/L	11/18/2014 3:54 PM	PA/VA
Iron	1.04	0.010	0.100	NA		mg/L	11/18/2014 3:54 PM	PA/VA
Manganese	0.374	0.002	0.100	NA		mg/L	11/18/2014 3:54 PM	PA/VA
SEMI-VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CL**	
TPH (Diesel Range)	ND	0.06	0.13	NA		mg/L	11/17/2014 6:19 PM	PA/VA
TPH (Oil Range)	ND	0.05	0.13	NA		mg/L	11/17/2014 6:19 PM	
Surr: o-Terphenyl	54.5	NA	28.3-152	NA		%REC	11/17/2014 6:19 PM	
DISSOLVED GASES			**Method: GC-FID**				**Analyst: JC**	
Methane	ND	5.00	10.0	NA		µg/L	11/18/2014 2:45 PM	
Ethane	ND	7.50	15.0	NA		µg/L	11/18/2014 2:45 PM	
Propane	ND	10.0	20.0	NA		µg/L	11/18/2014 2:45 PM	
Butane	ND	12.5	25.0	NA		µg/L	11/18/2014 2:45 PM	
VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CB**	
TPH (Gasoline Range)	ND	0.250	0.500	NA		mg/L	11/18/2014 3:25 PM	PA/VA
Surr: 2,5-Dibromotoluene	81.5	NA	37.2-152	NA		%REC	11/18/2014 3:25 PM	
VOLATILE ORGANIC COMPOUNDS			**Method: SW8021B (1996)**				**Analyst: CB**	
Benzene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:25 PM	PA/VA
Toluene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:25 PM	PA/VA
Ethylbenzene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:25 PM	PA/VA
m,p-Xylene	ND	1.00	2.00	NA		µg/L	11/18/2014 3:25 PM	PA/VA
o-Xylene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:25 PM	PA/VA
Surr: 1,1,1-Trifluorotoluene	95.9	NA	61.2-135	NA		%REC	11/18/2014 3:25 PM	
SURFACTANTS			**Method: SM5540 C-2000**				**Analyst: CC**	
MBAS (calibrated on MW340 LAS)	ND	0.0250	0.0625	NA		mg/L	11/14/2014 6:30 PM	PA/VA
COLIFORM BY P/A			**Method: SM9223B-PA**				**Analyst: CC**	
E-Coli	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 11:30:00 AM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-02A	**Matrix:**	Liquid
Client Sample ID:	CC-2	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
Total Coliform	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
ANIONS by ION CHROMATOGRAPHY			**Method: EPA 300.0, Rev.2.1 (1993)**				**Analyst: CF**	
Chloride	512	2.50	25.0	NA		mg/L	11/17/2014 8:42 PM	PA/VA
Sulfate	91.5	1.00	5.00	NA		mg/L	11/17/2014 8:42 PM	PA/VA
TOTAL DISSOLVED SOLIDS			**Method: SM2540 C-1997**				**Analyst: KY**	
Total Dissolved Solids	1,530	20	40	NA		mg/L	11/15/2014 5:30 PM	PA/VA
TOTAL SUSPENDED SOLIDS			**Method: SM2540 D-1997**				**Analyst: KY**	
Total Suspended Solids	8.0	1.6	8.0	NA		mg/L	11/15/2014 4:34 PM	PA/VA
pH - LAB TEST, HOLD TIME EXPIRED			**Method: SM4500-H+-B-2000**				**Analyst: DSD**	
pH	6.60	NA	NA	NA		SU	11/18/2014 4:10 PM	PA
ORGANIC CARBON, TOTAL			**Method: SM5310 C-2000**				**Analyst: DSD**	
Total Organic Carbon	0.65	0.20	1.00	NA	J	mg/L	11/18/2014 10:52 AM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 12:15:00 PM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-03A	**Matrix:**	Liquid
Client Sample ID:	CC-3	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP			**Method: EPA 200.7 Rev. 4.4 (1994)**				**Analyst: CGW**	
Aluminum	ND	0.005	0.100	NA		mg/L	11/18/2014 3:57 PM	PA/VA
Arsenic	ND	0.020	0.200	NA		mg/L	11/18/2014 3:57 PM	PA/VA
Barium	0.038	0.002	0.100	NA	J	mg/L	11/18/2014 3:57 PM	PA/VA
Calcium	6.14	0.050	1.00	NA		mg/L	11/18/2014 3:57 PM	PA/VA
Iron	0.058	0.010	0.100	NA	J	mg/L	11/18/2014 3:57 PM	PA/VA
Manganese	0.059	0.002	0.100	NA	J	mg/L	11/18/2014 3:57 PM	PA/VA
SEMI-VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CL**	
TPH (Diesel Range)	ND	0.06	0.13	NA		mg/L	11/17/2014 6:52 PM	PA/VA
TPH (Oil Range)	ND	0.05	0.13	NA		mg/L	11/17/2014 6:52 PM	
Surr: o-Terphenyl	111	NA	28.3-152	NA		%REC	11/17/2014 6:52 PM	
DISSOLVED GASES			**Method: GC-FID**				**Analyst: JC**	
Methane	19.8	5.00	10.0	NA		µg/L	11/18/2014 3:19 PM	
Ethane	ND	7.50	15.0	NA		µg/L	11/18/2014 3:19 PM	
Propane	ND	10.0	20.0	NA		µg/L	11/18/2014 3:19 PM	
Butane	ND	12.5	25.0	NA		µg/L	11/18/2014 3:19 PM	

Notes:

Sample vial arrived at laboratory containing headspace.

VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CB**	
TPH (Gasoline Range)	ND	0.250	0.500	NA		mg/L	11/18/2014 3:56 PM	PA/VA
Surr: 2,5-Dibromotoluene	90.8	NA	37.2-152	NA		%REC	11/18/2014 3:56 PM	
VOLATILE ORGANIC COMPOUNDS			**Method: SW8021B (1996)**				**Analyst: CB**	
Benzene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:56 PM	PA/VA
Toluene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:56 PM	PA/VA
Ethylbenzene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:56 PM	PA/VA
m,p-Xylene	ND	1.00	2.00	NA		µg/L	11/18/2014 3:56 PM	PA/VA
o-Xylene	ND	0.500	1.00	NA		µg/L	11/18/2014 3:56 PM	PA/VA
Surr: 1,1,1-Trifluorotoluene	97.2	NA	61.2-135	NA		%REC	11/18/2014 3:56 PM	
SURFACTANTS			**Method: SM5540 C-2000**				**Analyst: CC**	
MBAS (calibrated on MW340 LAS)	ND	0.0250	0.0625	NA		mg/L	11/14/2014 6:30 PM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 12:15:00 PM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-03A	**Matrix:**	Liquid
Client Sample ID:	CC-3	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
COLIFORM BY P/A			**Method: SM9223B-PA**				**Analyst: CC**	
E-Coli	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
Total Coliform	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
ANIONS by ION CHROMATOGRAPHY			**Method: EPA 300.0, Rev.2.1 (1993)**				**Analyst: CF**	
Chloride	525	2.50	25.0	NA		mg/L	11/17/2014 10:17 PM	PA/VA
Sulfate	38.2	1.00	5.00	NA		mg/L	11/17/2014 10:17 PM	PA/VA
TOTAL DISSOLVED SOLIDS			**Method: SM2540 C-1997**				**Analyst: KY**	
Total Dissolved Solids	1,300	20	40	NA		mg/L	11/15/2014 5:30 PM	PA/VA
TOTAL SUSPENDED SOLIDS			**Method: SM2540 D-1997**				**Analyst: KY**	
Total Suspended Solids	ND	1.6	8.0	NA		mg/L	11/15/2014 4:34 PM	PA/VA
pH - LAB TEST, HOLD TIME EXPIRED			**Method: SM4500-H+-B-2000**				**Analyst: DSD**	
pH	6.91	NA	NA	NA		SU	11/18/2014 4:10 PM	PA
ORGANIC CARBON, TOTAL			**Method: SM5310 C-2000**				**Analyst: DSD**	
Total Organic Carbon	1.14	0.20	1.00	NA		mg/L	11/18/2014 10:52 AM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 4:00:00 PM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-04A	**Matrix:**	Liquid
Client Sample ID:	D-WELL	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
METALS BY ICP			**Method: EPA 200.7 Rev. 4.4 (1994)**				**Analyst: CGW**	
Aluminum	ND	0.050	1.00	NA		mg/L	11/18/2014 4:04 PM	PA/VA
Arsenic	ND	0.200	2.00	NA		mg/L	11/18/2014 4:04 PM	PA/VA
Barium	1,370	0.200	10.0	NA		mg/L	11/19/2014 6:05 PM	PA/VA
Calcium	16,500	5.00	100	NA		mg/L	11/19/2014 6:05 PM	PA/VA
Iron	253	0.100	1.00	NA		mg/L	11/18/2014 4:04 PM	PA/VA
Manganese	10.4	0.020	1.00	NA		mg/L	11/18/2014 4:04 PM	PA/VA
Sodium	64,800	500	10,000	NA		mg/L	11/20/2014 1:31 PM	PA/VA
SEMI-VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CL**	
TPH (Diesel Range)	59.1	0.04	0.10	NA		mg/L	11/17/2014 7:24 PM	PA/VA
TPH (Oil Range)	27.8	0.04	0.10	NA		mg/L	11/17/2014 7:24 PM	
Surr: o-Terphenyl	140	NA	28.3-152	NA		%REC	11/17/2014 7:24 PM	
DISSOLVED GASES			**Method: GC-FID**				**Analyst: JC**	
Methane	637	100	200	NA		µg/L	11/18/2014 6:20 PM	
Ethane	389	37.5	75.0	NA		µg/L	11/18/2014 5:16 PM	
Propane	217	50.0	100	NA		µg/L	11/18/2014 5:16 PM	
Butane	179	62.5	125	NA		µg/L	11/18/2014 5:16 PM	

Notes:

Sample vial arrived at laboratory containing headspace.

VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CB**	
TPH (Gasoline Range)	3.86	0.250	0.500	NA		mg/L	11/19/2014 12:31 PM	PA/VA
Surr: 2,5-Dibromotoluene	121	NA	37.2-152	NA		%REC	11/19/2014 12:31 PM	
VOLATILE ORGANIC COMPOUNDS			**Method: SW8021B (1996)**				**Analyst: CB**	
Benzene	130	0.500	1.00	NA		µg/L	11/19/2014 12:31 PM	PA/VA
Toluene	384	25.0	50.0	NA		µg/L	11/18/2014 4:28 PM	PA/VA
Ethylbenzene	16.1	0.500	1.00	NA		µg/L	11/19/2014 12:31 PM	PA/VA
m,p-Xylene	126	1.00	2.00	NA		µg/L	11/19/2014 12:31 PM	PA/VA
o-Xylene	53.3	0.500	1.00	NA		µg/L	11/19/2014 12:31 PM	PA/VA
Surr: 1,1,1-Trifluorotoluene	107	NA	61.2-135	NA		%REC	11/19/2014 12:31 PM	
SURFACTANTS			**Method: SM5540 C-2000**				**Analyst: CC**	
MBAS (calibrated on MW340 LAS)	2.07	0.200	0.500	NA		mg/L	11/14/2014 6:30 PM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 4:00:00 PM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-04A	**Matrix:**	Liquid
Client Sample ID:	D-WELL	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
COLIFORM BY P/A			**Method: SM9223B-PA**				**Analyst: CC**	
E-Coli	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
Total Coliform	ABSENT	NA	NA	NA		NA	11/14/2014 5:15 PM	
ANIONS by ION CHROMATOGRAPHY			**Method: EPA 300.0, Rev.2.1 (1993)**				**Analyst: CF**	
Chloride	132,000	500	5,000	NA		mg/L	11/17/2014 10:36 PM	PA/VA
Sulfate	770	25.0	125	NA		mg/L	11/17/2014 10:36 PM	PA/VA
TOTAL DISSOLVED SOLIDS			**Method: SM2540 C-1997**				**Analyst: KY**	
Total Dissolved Solids	210,000	50	100	NA		mg/L	11/15/2014 5:30 PM	PA/VA
TOTAL SUSPENDED SOLIDS			**Method: SM2540 D-1997**				**Analyst: KY**	
Total Suspended Solids	520	20.0	100	NA		mg/L	11/15/2014 4:34 PM	PA/VA
SPECIFIC GRAVITY			**Method: SM2710 F-2004**				**Analyst: KY**	
Specific Gravity	1.13	NA	NA	NA		NA	11/18/2014 9:15 AM	
pH - LAB TEST, HOLD TIME EXPIRED			**Method: SM4500-H+-B-2000**				**Analyst: DSD**	
pH	6.01	NA	NA	NA		SU	11/18/2014 4:10 PM	PA
ORGANIC CARBON, TOTAL			**Method: SM5310 C-2000**				**Analyst: DSD**	
Total Organic Carbon	24.8	0.20	1.00	NA		mg/L	11/18/2014 10:52 AM	PA/VA

REI Consultants, Inc. - Analytical Report

WO#: 1411H76

Date Reported: 11/21/2014

Client:	D.R. PRICE ENGINEERING AND LAND SURVEYING, INC.,PC	**Collection Date:**	11/14/2014 12:00:00 AM
Project:	CAMP CREEK DISPOSAL SERVICE	**Date Received:**	11/14/2014
Lab ID:	1411H76-05A	**Matrix:**	Trip Blank
Client Sample ID:	TRIP BLANK	**Site ID:**	

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
VOLATILE RANGE ORGANICS			**Method: SW8015C (2000)**				**Analyst: CB**	
TPH (Gasoline Range)	ND	0.250	0.500	NA		mg/L	11/18/2014 5:00 PM	PA/VA
Surr: 2,5-Dibromotoluene	89.4	NA	37.2-152	NA		%REC	11/18/2014 5:00 PM	
VOLATILE ORGANIC COMPOUNDS			**Method: SW8021B (1996)**				**Analyst: CB**	
Benzene	ND	0.500	1.00	NA		µg/L	11/18/2014 5:00 PM	PA/VA
Toluene	ND	0.500	1.00	NA		µg/L	11/18/2014 5:00 PM	PA/VA
Ethylbenzene	ND	0.500	1.00	NA		µg/L	11/18/2014 5:00 PM	PA/VA
m,p-Xylene	ND	1.00	2.00	NA		µg/L	11/18/2014 5:00 PM	PA/VA
o-Xylene	ND	0.500	1.00	NA		µg/L	11/18/2014 5:00 PM	PA/VA
Surr: 1,1,1-Trifluorotoluene	97.8	NA	61.2-135	NA		%REC	11/18/2014 5:00 PM	

APPENDIX F

Area Permit Wells

API #	Well Type (Injection, Production, Observation, Monitoring)	Well Status (Active, Abandoned, Shut-in, Plugged)	Northing (UTM NAD 83 Meters)	Easting (UTM NAD 83 Meters)
055-00285	Production	New(not drilled)	37.496489	81.106980

Make as many copies as necessary and include page numbers as appropriate.

WR-40 B

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
REPORT FOR WASTE DISPOSAL WELLS

MONTH /YEAR (MM/YYYY): 10/2014
WELL NO. 14397
API NO. 47- 55 - 319
PERMIT NO. UIC2D0550319

OPERATOR NAME: Camp Creek Disposal Services, Inc.

********MAXIMUM PERMITTED INJECTION PRESSURE 1,465 PSIG.********

DAY	OPERATING HOURS	ANNULUS PRESSURES (PSIG)		MAXIMUM DAILY INJECTION PRESSURE (PSIG)	SHUT IN PRESSURE (PSIG)	VOLUME IN BBLS AND/OR MCF. 647,650		RATE IN GALLONS PER MINUTE	
		TUBING	OTHER			DAILY	ACCUMULATED	MAXIMUM	MINIMUM
1	0	545	525	810	0	0	647650	0	0
2	0	545	525	810	0	0	647650	0	0
3	12	545	525	810	0	1,440	649090	100	80
4	0	545	525	810	0	0	649090	0	0
5	0	545	525	810	0	0	649090	0	0
6	0	545	525	810	0	0	649090	0	0
7	0	545	525	810	0	0	649090	0	0
8	12	545	525	810	0	1,440	650530	100	80
9	0	545	525	810	0	0	650530	0	0
10	0	545	525	810	0	0	650530	0	0
11	0	545	525	810	0	0	650530	0	0
12	12	545	525	810	0	1,440	651970	100	80
13	0	545	525	810	0	0	651970	0	0
14	0	545	525	810	0	0	651970	0	0
15	12	545	525	810	0	1,440	653410	100	80
16	0	545	525	810	0	0	653410	0	0
17	0	545	525	810	0	0	653410	0	0
18	12	545	525	810	0	1,440	654850	100	80
19	0	545	525	810	0	0	654850	0	0
20	0	545	525	810	0	0	654850	0	0
21	12	545	525	810	0	1,440	656290	100	80
22	0	545	525	810	0	0	656290	0	0
23	0	545	525	810	0	0	656290	0	0
24	12	545	525	810	0	1,440	657730	100	80
25	0	545	525	810	0	0	657730	0	0
26	0	545	525	810	0	0	657730	0	0
27	12	545	525	810	0	1,440	659170	100	80
28	0	545	525	810	0	0	659170	0	0
29	0	545	525	810	0	0	659170	0	0
30	0	545	525	810	0	0	659170	0	0
31	12	545	525	810	0	1,440	660610	100	80
TOTALS	108	545	525	810	0	12,960	660,610	100	80

I HEREBY CERTIFY THAT THE INFORMATION ON THIS REPORT IS TRUE AND CORRECT. BY: TOMMY SHRADER
TITLE: PRESIDENT

Section 9

1. A. Average Daily volume of fluid injected: 1,440 BBLS
   B. Maximum Daily volume of fluid: 1,440 BBLS
   C. Average injection Pressure: 810 PSIG
   D. Maximum injection pressure: 1,465 PSIG

Section 9

Contingency Plan

- Monitoring and periodic routine investigative procedures will be performed on the injection well as required by applicable laws, permits and regulations. Pertinent data will be reviewed regularly by qualified operations and forwarded to the agencies as required. Monitoring pressure gauges and testing will be designed to assure well integrity and safe operation.
- If the well fails required continuous monitoring or periodic testing standards, the well will be shut-in and the agency notified according to applicable regulations and permit conditions. After investigations into the cause for the failure, work plans will be prepared and reviewed with the regulations for repairing the problem.
- If a work over is performed on the well, mechanical integrity testing will be conducted as required by applicable regulations before the well is returned to service. Copies of all work reports and logs will be forwarded to the regulatory agencies per applicable requirements.
- During the period of time required for the well work over or for shut-ins due to failure, the contingency plans of the facility will include the following:

    a. If shut-in is sufficiently brief, the fluids accumulated during this period of time will be collected in the disposal tanks on site and kept in storage at the facility until it can be disposed of at the well.
    b. If required due to length of shut-in and well failure, operations will be altered to reduce wastewater disposal requirements and/or alternate offsite disposal will be arranged at another disposal well.

APPENDIX G

Wells Serviced by Injection Wells

API #	Operator	Producing Formation
45-105-12739	EQT	Weir Formation
47-081-01407	CNX	Upper Beckley Formation
47-081-01448	CNX	Upper Beckley Formation
47-081-01451	CNX	Upper Beckley Formation
47-081-01494	CNX	Upper Beckley Formation

Make as many copies as necessary and include page numbers as appropriate.

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name: Camp Creek Disposal Services

County: Mercer

Facility Location:

Postal Service Address:	P.O. Box 555 Rosedale, Va	24280
Latitude and Longitude:	54965.188	590700.520

Contact Information:

Person:	C. Thomas Shrader
Phone Number:	276-880-2323
E-mail Address:	pitstop@mounet.com

Date: 8/26/2014

1. A list of all operations that may contaminate the groundwater.

The well is grouted the entire depth to the confining layer. The disposal layer is confined above and below by shale that lacks porosity and that has no fractures or porosity streaks. These characteristics make the shale great at containing fluids. Therefore, any groundwater contamination would originate from surface contamination. The main possibility of a contamination comes from the pipes and pumping station on the site (i.e. a leak or break down of a section of pipe or a pump malfunction).

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

Berms are constructed around the above ground storage tanks and the well head itself to prevent and contain any type of spillage. Several pumps are in place on the pipes and pumping station to immediately stop and depressurize the system in case of a spill or malfunction of the system. Also, the initial two inch steel pipe leading to the well head is double cased within a four inch pipe.

3. List procedures to be used when designing and adding new equipment or operations.

A lock out and tag out procedure will be used to shut down all pumps while new equipment is being installed. The pipes will be depressurized and drained before any parts of the system will be serviced or replaced. ENPAC portable spill pallets will be used to catch any small remnants of fluid from the exposed pipes. Any fluid caught will be placed back into the storage tanks to be processed through the pumping system and disposed of into the well.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

The well is grouted, there is a cinder block containment with a concrete base in place around the above ground storage tanks. Also, the brine water is stored in storage tanks to prevent spillage onto the ground and the tanks themselves are in a concrete containment to catch any leakage in case a tank does malfunction. Pipes are used to safely transport the material from the tanks to the well. Gauges are used to monitor this transport of fluids.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

There are three water wells within the area near the disposal well. The water analysis shows that the water wells are not affected or influenced by the disposal well at all. The water wells are drilled to a maximum of 200' while the disposal well is approximately 5,876' deep. Also, the analysis illustrates that there is no leaching, flow or contact of the injection fluid and the USDW.

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

No waste material from the well or above ground storage tanks will be used for deicing or fill material. All fluid on site being stored in the above ground storage tanks will be pumped directly into the disposal well.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

The employees will be trained and familiar with the GPP and will be trained in the maintenance and inspection of the equipment on site to better prevent a spill. Employees will also be trained in proper cleanup procedures according to the GPP.

8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

All pipes and pumps will be inspected to insure no leaks or spills. Storage tanks will also be inspected to prevent any leakage. The pumps and pipes will be regularly tested to insure they are functioning properly (i.e. that the pumps and pipes are pressurized normally).

Signature: Tommy Shuler

Date: 9/12/14

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

To: WV Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, West Virginia 25304-2345
ATTN: Underground Injection Control Program

From: Camp Creek Disposal Services
P.O. Box 555
Rosedale, VA 24280

Date: 9-12-14

Subject: Underground Injection Control (UIC) Permit Application
047-055-00319
Requirement for Financial Responsibility

I, Tommy SHRADER, verify in accordance with 47CSR13-13.7.g., that I will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas.

Name: Tommy SHRADER

Signature: Tommy Shrader

Date: 9/12/14

APPENDIX J

Site Security for Commercial Facilities

Provide a detailed description of the method(s) utilized at the facility to restrict or prohibit illegal dumping of unauthorized waste or vandalism at the facility.

1. Complete enclosure of all wells, holding tank/pits and manifold assemblies within a chain link or other suitable fencing; and

2. Require that all gates and other entry points be locked when the facility is unattended; or

3. Providing tamper-proof seals for the master valve on each well (a "lock-out" or chain & padlock system would be more secure; however, these devices could create a potential safety hazard if the well needed to be quickly shut in due to an emergency); and

4. Installing locking caps on all valves and connections on holding tanks, unloading racks, and headers.

There is a chain link fence around the perimeter of the disposal well and around the AGSTs. The gate to the well is to be locked while unattended. Also, the pump house is locked at all times while unattended.

APPENDIX K

Identify permit or construction approvals received or applied for under the following programs:

Permit/approvals	ID Number
Hazardous Waste Management Program under RCRA	
NPDES Program	
Prevention of Significant Deterioration (PSD)	
Nonattainment Program	
Dredge or Fill	
NPDES/NPDES – Stormwater	
WVDEP – Office of Waste Management (OWM) – Solid Waste Facility	
WVDEP – OWM – RCRA (Hazardous Waste TSD or Transporter)	
WVDEP – OWM – UST	
CERCLA – Superfund	
WV Voluntary Remediation – Brownfields	
FIFRA – Federal Insecticide, Fungicide and Rodenticide Act	
Well Head Protection Program (WHPP)	
Underground Injection Control (UIC)	X
Toxic Substances Control Act (TSCA)	
Best Management Plans	
Management of Used Oil	
Other Relevant Permits (Specify):	

Plugging and Abandonment Plan

For

UIC# 2D0550319

Camp Creek Disposal Services Inc.
P.O. Box 555
Rosedale, VA 24280
Phone: (276) 880-2323

Table of Contents

List of Appendices

Introduction

This Plugging and Abandonment (P&A) Plan for this facility has been prepared to meet all the applicable requirements of the West Virginia Department of Environmental Protection Office of Oil and Gas.

Unsealed or improperly sealed wells may threaten public health and safety, and the quality of groundwater resources. Therefore, the proper abandonment of a well is a critical final step in its service life.

This plan will ensure that this facility properly plugs and abandons their disposal well if and when its ability to accept brine fluid has reached its maximum potential and economic operations have ended, the well encounters a problem that cannot be economically repaired, or the bottom hole location of the well will be moved to a higher elevation.

This plan shall isolate and protect all fresh and near fresh water zones, isolate and protect all commercial producing horizons for future development, and prevent leaks from or into the well.

1.0 General Facility Information

Name:	Camp Creek Disposal Services Inc.
Address:	Exit 20, I-77 N Camp Creek, WV (276) 880-2323
Geographic Location	USGS Quadrangle: Princeton, WV Latitude: 37°29'32.68N Longitude: 81°06'14.61"W County: Mercer
Owner/Operator:	Camp Creek Disposal Services Inc. 19708 Highway 19 Rosedale, VA 24280 (276) 880-2323
Primary Contacts:	1. Tommy Shrader, President Office: (276) 880-2323 2. Zachary Reed, Vice-President Office: (276) 880-2323

1.1 Location and Activities

The Camp Creek Disposal Services Inc. brine water storage is located in Mercer County, West Virginia near I-77. The facility is a brine water storage and disposal facility on an area of approximately 3-7 acres, off Interstate 77 North, Exit 20, Near Camp Creek. A Location Map (Figure A-1) is included in Appendix A depicting the location of this facility.

The facility is a brine water disposal plant, which disposes of brine water products used in gas well production. Brine water is stored on site in bulk containers for disposal.

The plant operates 6 days per week, year round. This office is attended from 8:00 am to 5:00 pm, Monday through Friday, with variable operation on Saturday, Sunday and holidays. A facility layout drawing (Figure A-2) showing the location of brine water storage structures is shown in Appendix A.

2.0 Well Characterization

Effective abandonment will depend on knowledge of the wells construction, geology, and the hydrogeology. The importance of a full characterization increases as the complexity of the well construction, site geology, and the rick of aquifer contamination increases. A Drill Log for Camp Creek Disposal Services well is included in Appendix B.

2.1 Well Preparation

If possible, the borehole must be cleared of obstructions prior to abandonment. Obstructions such as pumps, pipes, wiring, and air lines must be pulled. All obstacles must be removed from the borehole. An attempt should be made to pull the casing when it will not jeopardize the integrity of the borehole.

Damaged or poorly constructed wells may need to be redrilled in order to apply proper abandonment techniques. In a situation where intermixing of aquifers is likely, the borehole may need to be redrilled.

3.0 Materials and Methods

Sealant will be used the plugging and abandonment of the well to provide a watertight barrier to the migration of water into the well bore, in the annular spaces or in fractures and openings adjacent to the well bore. Sealants usually consist of Portland cement based grouts, "bentonite" clay "pills", or combinations of these substances. Additives are frequently used to enhance or delay specific properties such as viscosity, setting time, shrinkage, or strength.

This disposal well shall use a combination of neat cement grout and concrete grout as its sealants. Neat cement grout is generally formulated using a ratio of one 94lb. bag of Portland cement to no more than 6 gallons of water. This grout is typically used for sealing small openings, for penetrating any annular space outside the casings, and for filling voids in the surrounding rocks. Concrete grout consists of a ratio of not more than 6 gallons of water, one 94lb. bag of Portland cement, and an equal volume of sand. This grout is typically used for filling the upper part of the well above the water bearing zone, for plugging short sections of casings, or for filling large-diameter wells.

3.1 Recommendations and Methods

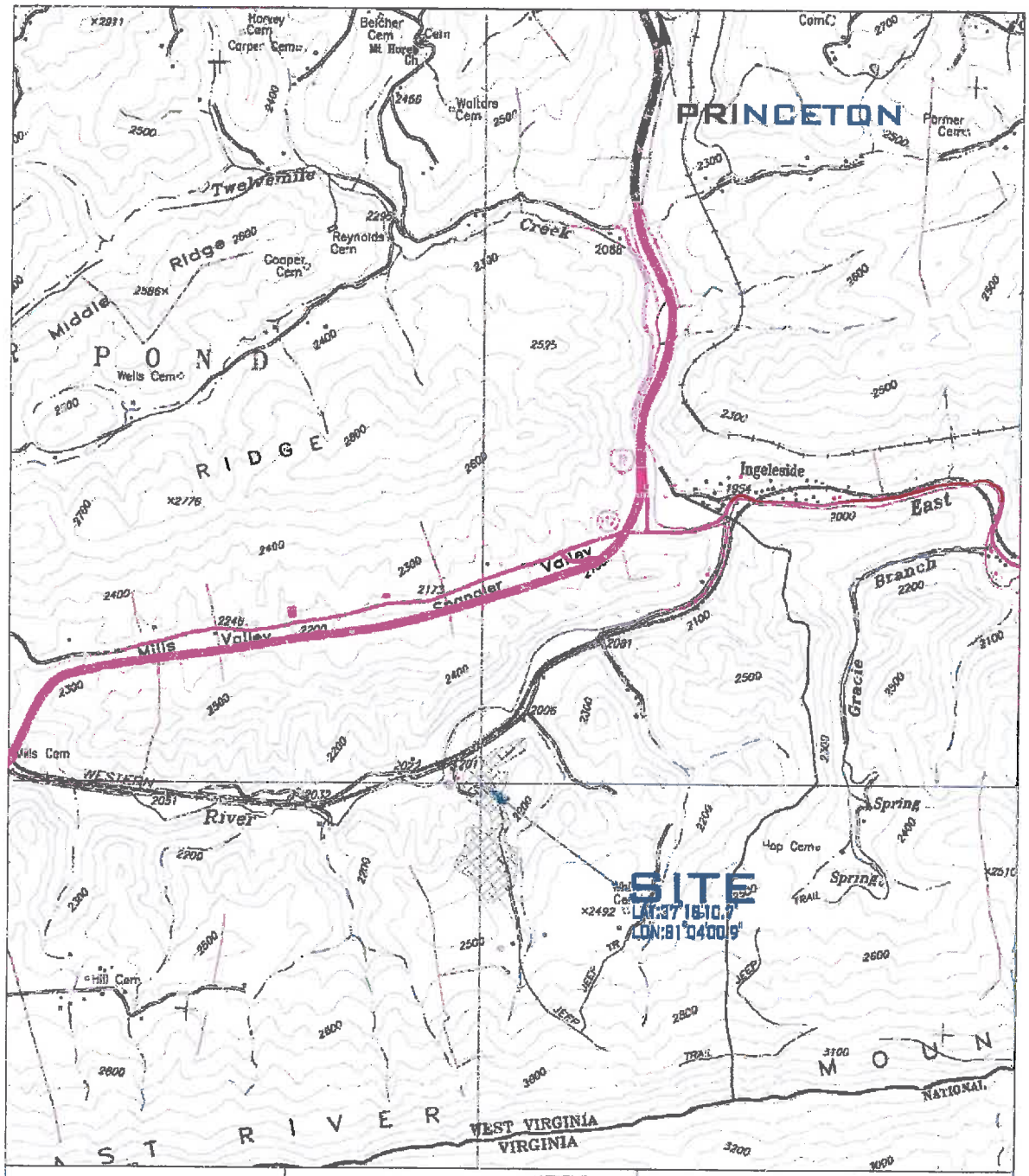
Using the Drillers Log attached Appendix B, the location of cement plugs shall be determined. The Drillers Log should identify the depths to perforations, joints, packers, etc. Cement to be pumped into the borehole using a tremie pipe.

1. Prior to the plugging and abandonment of the injection well the applicant will submit a revised plugging and abandonment plan to the director of the Underground Injection Control program (UIC) for review and approval.
2. A pressure mechanical integrity test should be performed on the well. The pressure test will be witnessed by the UIC and the test procedure will follow UIC Program procedures for pressure testing the disposal well. If leakage is indicated by the test, the location of the leakage will be identified, the impact to the environment evaluated, and this information submitted to UIC. An environmental remediation plan and implementation schedule and/or a repair plan will be submitted to the UIC for review and approval. No work will commence until the plan has been approved by the UIC.
3. The tubing and packers will be removed from the well.
4. A cement bond log and a gamma ray-neutron log will be run on the well and any other tests or logs determined necessary by UIC. The logs and test results will be submitted to UIC for review and approval. The logs and test results will include an interpretation of the log and tests by a person with the technical expertise to evaluate the data.
5. Based on the evaluation of the logs and tests conducted on the well, a plan for remedial work must be submitted to UIC for review and approval. The remedial work, determined necessary by UIC, will be performed. Remedial work will not commence until the plan has been approved by the UIC.
6. A cement retainer will be set at the base of the long string casing just above the injection interval. Failure risk shall be minimized by ensuring crossflow can be stopped. Use a tubing end plug with circulation to the side and upward, not downward. Use a heavily gelled bentonite "pill" below the cement plug depth. Use a custom spacer to separate the pill and the cement slurry. Use viscous thixotropic cement with setting time equal to the job time plus ½ hour. Rotate the centralized tubing during placement and gently withdraw at the end of pumping.
7. Cement will be displaced through the retainer, squeezing the injection interval with cement.
8. Perforations shall be identified and cement plugs shall be placed 100 ft. above and below perforations.
9. The well will be filled with neat cement grout and abandonment mud as needed.
10. Within 150 feet of the surface, a surface plug of concrete grout shall be placed in the borehole for strength.
11. The cement level will be observed in the casing after cement has set for 24 hours. If cement has fallen back, the casing will be filled with cement back to surface.
12. A metal cap will be welded to the casing inscribed with the UIC permit number and the date the well plugging was completed.
13. A map showing the tri-coordinate location (includes elevation) of the remaining wellhead prepared by a licensed professional land surveyor or professional engineer licensed to practice will be submitted to the UIC.
14. A plugging report with related details will be submitted to the UIC within 30 days of completing the plugging operation on a form provided by UIC. The work done with appropriate service company cementing reports and "day" reports will be submitted to the UIC.

4.0 Plugging Permit Packet

See Appendix D.

Appendix A
Location Map



Appendix B
Well Drillers Log

WELL DETAIL SUMMARY REPORT

Dominion

Today: 4/16/2009 Page 8
As Of: 4/15/2009

WELL: SWV 14297 MILLS, ROY O. Event: 1 Description: DEVELOPMENT DRILL & COMPL

WELLID#: WWV14297	API#: 4705500319
PU ID#: 55052	State: WV County: MERCER
Company ID: DEPI	Operator: DOMINION EXPLORATION & PRODUCTION
Well Type: DEV	Plan Formation: LOWER HURON
PLAN MD: 5,800 Field: STOVALL RIDGE	Partner:
Spud Date: 03/30/2007 Permit #:	F.I.L. Date: TD Date: 04/06/2007
TD: 5,873 TVD: 0 PBTD: 0 DSB:	Contractor:
CMC:	Phone Number:
GL: 2010 KB:	Rig Name: GASCO RIG #2

Operations @Report Time: WELL SOLD (SHUT-IN)

Initial Production Rates: MCFD: BOPD: BWPD: SICP: FCP: Tubing:

CASING DATA

Casing String	OD size	Weight	Grade	Conn	Hole Size	Shoe Depth	Run Date	# Centl.	Comments

CEMENT DATA

Casing String	Plug Time	CMT Type	Sacks	BBL Returns	Additives

ZONE PERFORATION DATA

ZONE	DATE	Start Depth(ft)	End Depth(ft)	Total Shots	Hole Size	Comments

STIMULATION DATA

ZONE	DATE	Vol(bbls)	# Prop	Max SD Conc	Total N2 (mscf)	Max Press(psi)	Avg Press/Avg Rate(psi)	Comments

Operations Summary

Date: 4/15/2009
04/14/09 WELL SOLD TO GAS FIELD SERVICES APRIL 1, 2009.

Date: 4/14/2009
09/29/08 RU SLB W/ PUMPED 12 BBL FRESH WATER DOWN THE TUBING INTO THE SHALE THEN WELL WENT ON VACUUM. PUMPED @ 3.0 BBL/MIN - 0#. 4.5 BBL/MIN - @ 50#. PUMPED 540 BBL INTO THE SHALE. INJECTED THROUGH THE ANNULUS OF TUBING AND 4-1/2" CASING INTO BIG LIME. PUMPED 500 BBL OF FRESH WATER 3.0 BBL/MIN - 0#, 4.0 BBL/MIN - 100#. SION. EVALUATING.

Date: 9/30/2008
09/29/08 RU SLB W/ PUMPED 12 BBL FRESH WATER DOWN THE TUBING INTO THE SHALE THEN WELL WENT ON VACUUM. PUMPED @ 3.0 BBL/MIN - 0#. 4.5 BBL/MIN - @ 50#. PUMPED 540 BBL INTO THE SHALE. INJECTED THROUGH THE ANNULUS OF TUBING AND 4-1/2" CASING INTO BIG LIME. PUMPED 500 BBL OF FRESH WATER 3.0 BBL/MIN - 0#, 4.0 BBL/MIN - 100#. SION. EVALUATING.

Date: 9/29/2008
09/26/08 RAN 142 JTS 2 3/8" (4.7#) TUBING, SET @ 4595.40'. 4-1/2" PACKER SET @ 4582.15'.

Date: 9/26/2008
09/25/08 MIRU GFS SERVICE RIG. FILLED 2X - 250 BBL TANKS FOR INJECTION TEST. SDON.

Date: 9/25/2008
4/27/07 EVALUATING

Date: 6/17/2007
4/27/07 185# SICP. SWABBED HIT FLUID @ 3900'. SWABBED TO 4800'. FLUID STAYING AT 4800'. 8 HR OPEN FLOW - 20 TENTHS ON 1" - 47 MCF/D. EVALUATING

Date: 4/27/2007
4/26/07 185# SICP. SWABBED TO 5100'. FLUID (BRINE) LEVEL STAYING @ 5100'. MAKING @ 10 BBL/HR OF BRINE IF SWABBED. 8 HR OPEN FLOW - COULD NOT MEASURE ON 2" - <50 MCF/D.

Date: 4/26/2007
04/25/07 SICP - 200#. SWABBED TO 4500'. WELL SURGING. 8 HR OPEN FLOW - 18 TENTHS ON 2" - 179 MCF/D.

Date: 4/25/2007
4/24/07 750# SICP. DRLD OUT REMAINING BAFFLES AND CHECKED TD @ 5702'. SAND PUMPED TO 5705'. WELL SURGING. 8 HR OPEN FLOW - 15 TENTHS ON 2" - 155 MCF/D. SION.

Date: 4/24/2007
04/23/07 MI GFS SWAB RIG. 750# SICP. DRLD OUT BAFFLE @ 2535'. WELL SURGING. 8 HR OPEN FLOW - 20 TENTHS ON 2" - 188 MCF/D. SION.

Date: 4/22/2007
04/17/07 FLOWED WELL ON THROUGHOUT DAY. BLOWING WITH STEADY W/ LIGHT MIST. 24 HR OPEN FLOW - 29 ON 2" - 1.30 MMCF/D.

Date: 4/18/2007
4/17/07 PERFORMED 5 STAGE FRAC W/ SLB AND KEY ENERGY

Operations Summary

LOWER HURON (1) 5840'- 5720' (20 HOLES) - 75 Q FOAM FRAC - 15,171# 20/40 SAND, 152 BBL CLEAN FLUID, 444,000 SCF N2, BDP 2550#, ATP 2810#, AIR 25.1 BPM.
UPPER HURON (2) 5128'- 5124' (28 HOLES) PUMPED 500 GAL 15% HCL (DROPPED 5 1/4" FRAC BALL) - 75 Q FOAM FRAC - 28,924# 20/40 SAND, 159 BBL CLEAN FLUID, 405,700 SCF N2, BDP 3300#, ATP 2867#, AIR 25.4 BPM.
SHALE FRACTURE (3) 4608'- 4210' (21 HOLES) PUMPED 500 GAL 15% HCL (DROPPED 3 3/8" FRAC BALL) - 75 Q FOAM FRAC - 15,278# 20/40 SAND, 147 BBL CLEAN FLUID, 272,200 SCF N2, BDP 2515#, ATP 2118#, AIR 25.1 BPM.
PICKAWAY (4) 2508'- 2372' (12 HOLES) - PUMPED 500 GAL 15% HCL (DROPPED 3 1/2" FRAC BALL) - ACID/ N2 ASSIST - 3000 GAL OF 28% HCL, 98 BBL CLEAN FLUID, 46,200 SCF N2, BDP 1500#, ATP 960#, AIR 10 BPM.
LIME FRACTURE (5) 2362'-2272' PUMPED 500 GAL 15% HCL (DROPPED 3 3/4" FRAC BALL) - ACID / N2 ASSIST - 3000 GAL OF 28% GELLED ACID, 70 BBL CLEAN FLUID, 50,400 SCF N2, BDP 1468#, ATP 947#, AIR 10 BPM. ISIP 1154#, 5 MIN SIP 1071#. OPENED WELL ON 3/8" CHOKE TO PIT AND WORKED UP TO 2" OVERNIGHT. 10# ON 2" AND RECOVERED 2 FRAC BALLS, 2 FRAC BALL REMAINING. FLOWING WELL TO PIT ON 2" (REPORT TIME 4/18)

Date : 4/17/2007

4/16/07 RU KEY ENERGY AND RAN BOND LOG. TD - 5817', TOC - 1146'.

Date : 4/15/2007

4/5/07 RDMO GASCO RIG #3

Date : 4/9/2007

4/6/07 DRLG 6-1/2" HOLE THROUGHOUT DAY. TD 6 1/2" HOLE @ 5573' ON A/D. TOOH. LOGGED W/ WFT. LTD - 5575'. PAY ZONES IN LOWER HURON, UPPER HURON, DEVONIAN SHALE FRACTURES, PICKAWAY AND UNION. RAN 137 JTS 4 1/2" (M&E, 9.5#) CSG PLUS 3 PUPS. TF 5624' SET @ 5626' KB. LD INSERT - 5618'. RAN 7 CENTRALIZERS AND 3 BASKETS. 3.08" BAFFLE - 5618', 3.28" BAFFLE - 4607', 3.385" BAFFLE - 2675', 3.66" BAFFLE - 2336'. MARKER JT - 2155'- 2185'. GAS CHECK @ TD AFTER CSG - TRACE. RU SLB AND CEMENT W/ 410 SAX CBL POZ (1.42 YLD). PUMPED 3 BBL FW AHEAD. DISPLACED W/ 500 GAL 15% HCL AND 83 BBL TW. GTS. PD @ 7:20 AM. (4/7) BUMPED PLUG TO 600#. SDOW, WAITING TO BOND LOG. (REPORT 4/6) 926' LAST 24 HOURS

4/5/07 DRLD 6- 1/2" HOLE THROUGHOUT DAY. DRLG 6-1/2" HOLE ON A/D @ 5550'. 1170' LAST 24 HOURS

Date : 4/5/2007

4/4/07 DRLD 6-1/2" HOLE THROUGHOUT DAY. DRLG 6-1/2" HOLE ON A/D @ 4380'. GAS CHECKS - 3200' - 133 MCF/D, 3400' - 133 MCF/D, 3700' - 133 MCF/D, 4200' - 133 MCF/D. RIG BROKE DOWN. (REPORT 4/5 - 8:30AM) 1630' LAST 24 HOURS

Date : 4/4/2007

4/3/07 FINISH WOC. TIH W/ 6-1/2" HAMMER BIT AND RESUME DRLG. DRLD 6-1/2" HOLE THROUGHOUT DAY. GAS CHECK @ 3281' - 12 TENTHS ON 7" - 1,519 MMCF/D. GAS CHECK @ 2500' - 4 TENTHS ON 7" - 977 MCF/D. DRLG 6-1/2" HOLE ON A/D @ 2730'. (4/4) 1434' LAST 24 HOURS

Date : 4/3/2007

4/2/07 TD 8-7/8" HOLE @ 1316' ON A/D. MADE BIT TRIP @ 1060'. TOOH. RAN 28 JTS 7" (17#, LS) CSG SET 1281'. RU SLB AND CEMENT W/ 290 SAX OF CLASS A + 2% CACL2 + 1/4 PPS FLAKE (1.20). GTS. PD @ 11:30 PM. WOC. (REPORT TIME 4/3) 515' LAST 24 HOURS

Date : 4/2/2007

4/1/07 FINISH WOC. TIH W/ 8-7/8" HAMMER BIT. RESUME DRLG. DRLD TO 315' HIT 2" WATER STREAM. CONT. DRLG TO 350'. TOOH. TIH W/ OPENENDED DRILL PIPE. RU SLB AND CEMENT 80 SKS CEMENT PLUG W/ TYPE I + 10 PPS GYPSUM + 2% CACL2 + 10 PPS KOLITE (13.8 PPG, 1.79 CF/SK). JOB COMPLETED @ 8:00 PM. WOC. TIH W/ 6-7/8" HAMMER BIT AND RESUME DRLG. DRLG 6-7/8" HOLE @ 800' ON A/D. 450' LAST 24 HOURS

3/31/07 RU SLB AND CEMENT 9-5/8" W/ 200 SAX OF CLASS A + 2% CACL2 + 1/4 PPS FLAKE (1.20). GTS (100 SKS). PD @ 5:30AM. WOC. TIH W/ 6-7/8" HAMMER BIT AND RESUME DRLG. ENCOUNTERED 3" STREAM OF WATER @ 225'. TOOH. RU SUPERIOR AND SQUEEZED 50 SKS OF TYPE I + 10 PPS GYPSUM + 2% CACL2 + 10 PPS KOLITE (13.8 PPG, 1.79 CF/SK). JOB COMPLETED @ 11:30 PM. BEGIN WOC. 1' LAST 24 HOURS

3/30/07 MIRU GASCO RIG #3. SPUD WELL @ 7:00 PM. SET 21' 12-3/4" CONDUCTOR. TIH W/ 12-1/4" HAMMER BIT AND BEGIN DRLG. ENCOUNTERED 2" WATER STREAM @ 22' ENCOUNTERED 3" WATER STREAM @ 93'. TD 12-1/4" HOLE @ 226' ON FLUID. TOOH. RAN 5 JTS 9-5/8" (26#, LS) CSG SET 225'. 225' LAST 24 HOURS

Date : 2/27/2007

3/30/07 WILL MOVE IN GASCO RIG #3 TODAY.

Date : 2/26/2007

2/26/07 BUILDING LOCATION

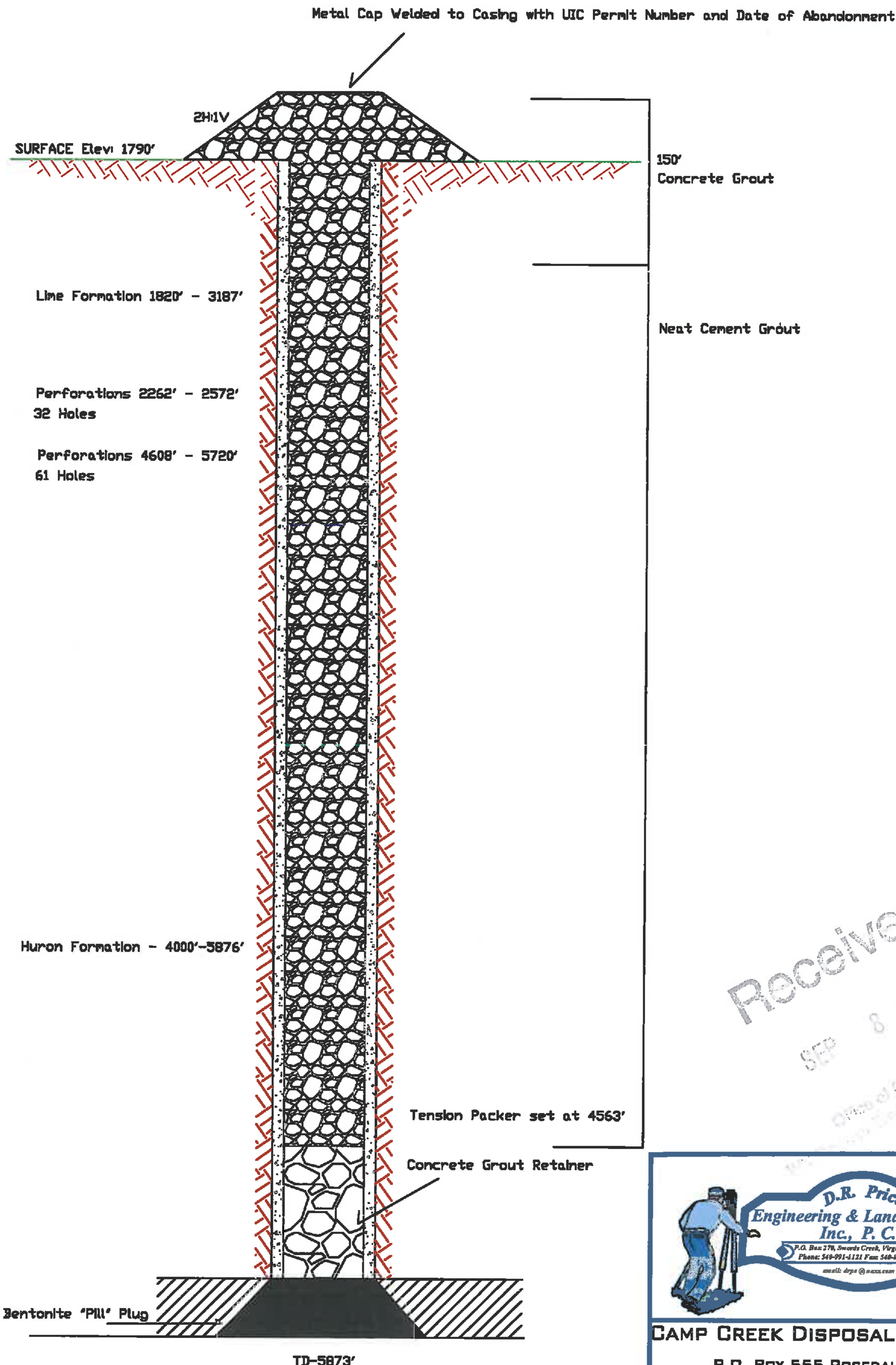
Date : 7/31/2006

7/31/06 BUILDING LOCATION

Appendix C
Disposal Well Schematic

Disposal Well Schematic

Note: Not Drawn to Scale



D.R. Price Engineering & Land Surveying Inc., P.C.

CAMP CREEK DISPOSAL SERVICES, IN

P.O. BOX 555 ROSEDALE, VA 24280

UNDERGROUND INJECTION WELL

Plugging and Abandonment Plan

Appendix D
Plugging Permit Packet

WW-4A
Revised 6-07

1) Date: _____
2) Operator's Well Number
_____

3) API Well No.: 47 - _____ - _____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name _____
Address _____
_____
(b) Name _____
Address _____
_____
(c) Name _____
Address _____
_____
6) Inspector _____
Address _____
_____
Telephone _____

5) (a) Coal Operator
Name _____
Address _____
_____
(b) Coal Owner(s) with Declaration
Name _____
Address _____
_____
Name _____
Address _____
_____
(c) Coal Lessee with Declaration
Name _____
Address _____
_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

(1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator _____
By: _____
Its: _____
Address _____
_____
Telephone _____

Subscribed and sworn before me this _____ day of _____

_____ Notary Public

My Commission Expires _____

Received
SEP 2015
WV Dept. of Oil and Gas
Environmental Protection

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-4B
Rev. 2/01

1) Date _____, 20_____
2) Operator's
Well No. _____
3) API Well No. 47-_____-_____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil _____/ Gas _____/ Liquid injection _____/ Waste disposal _____/
(If "Gas, Production ____ or Underground storage ____) Deep ____/ Shallow____

5) Location: Elevation_____ Watershed_____
District _____ County_____ Quadrangle_____

6) Well Operator _____
Address _____
_____

7) Designated Agent_____
Address_____
_____

8) Oil and Gas Inspector to be notified
Name_____
Address_____
_____

9) Plugging Contractor
Name_____
Address_____
_____

10) Work Order: The work order for the manner of plugging this well is as follows:

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector _____ Date _____

SURFACE OWNER WAIVER

Operator's Well
Number _____

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIVE (5) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

1) The proposed well work will constitute a hazard to the safety of persons.
2) The soil erosion and sediment control plan is not adequate or effective;
3) Damage would occur to publicly owned lands or resources;
4) The proposed well work fails to protect fresh water sources or supplies;
5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON
ETC.

_____ Date _____
Signature

FOR EXECUTION BY A CORPORATION,

Name _____
By _____
Its _____ Date _____

Signature Date

WW-4B

API No. _____
Farm Name _____
Well No. _____

INSTRUCTIONS TO COAL OPERATORS
OWNERS AND LESSEE

The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less then five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

WAIVER

The undersigned coal operator _____/ owner _____/ lessee _____/ of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____

_____

By: _____

Its _____

WW-9
(2/15)

API Number 47 - _____ - _____
Operator's Well No._____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name_____ OP Code _____

Watershed (HUC 10)_____ Quadrangle _____

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☐ No ☐

Will a pit be used? Yes ☐ No ☐

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.?_____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
_____ Underground Injection (UIC Permit Number_____)
_____ Reuse (at API Number_____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain_____

Will closed loop system be used? If so, describe: _____

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. _____

-If oil based, what type? Synthetic, petroleum, etc._____

Additives to be used in drilling medium?_____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc._____

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)_____

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature_____

Company Official (Typed Name)_____

Company Official Title_____

Subscribed and sworn before me this_____ day of_____, 20_____

_____ Notary Public

My commission expires_____

Form WW-9

Operator's Well No. _____

Proposed Revegetation Treatment: Acres Disturbed _____ Prevegetation pH _____

Lime _____ Tons/acre or to correct to pH _____

Fertilizer type _____

Fertilizer amount _____ lbs/acre

Mulch _____ Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No