

**CATHODIC PROTECTION
GROUNDBED INSTALLATION
AT**

**DEVON ENERGY
N.E.B.U # 50A M WELL MV/DK
LOCATION: SEC. 25, T31N, R8W
SAN JUAN COUNTY, NEW MEXICO
30-045-31199**



**Advanced Corrosion & Environmental Services
P.O. Box 2767
Farmington, New Mexico 87499**

June 30, 2003

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator DEVON ENERGY PRODUCTION, LP Location: Unit Sec. 25 Twp 31

Name of Well/Wells or Pipeline Serviced N.E.B.U. # 50A - M WELL M

Elevation 6405' Completion Date 6/30/03 Total Depth 400' Land Type*

Casing, Sizes, Types & Depths 8" PVC SURFACE CASING TO 20'

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amount

N/A

Depths & thickness of water zones with description of water when p

Fresh, Clear, Salty, Sulphur, Etc. GROUNDWATER OR ANY MOISTU

WAS NOT ENCOUNTERED THROUGHOUT THE TOTAL DEPTH OF

Depths gas encountered: N/A

Type & amount of coke breeze used: 55-50 Lb BAG (2750 Lbs) SW- LOR

Depths anodes placed: 319', 325', 331', 337', 343', 349', 355', 361', 367', 373'

Depths vent pipes placed: FROM SURFACE TO 400'.

Vent pipe perforations: APPROXIMATELY EVERY TWO FEET.

Remarks: NO GROUNDWATER

If any of the above data is unavailable, please indicate so. Copy logs, including Drillers Log, Water Analyses & Well Bore Schematic be submitted when available. Unplugged abandoned wells are to be

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Soil Boring/Well Log

Client: Devon Energy Production, LP

Well Location/No: N.E.B.U. #50A - M Well MV/DK

TNSP: T - 31 - N

RNGE: R - 8 - W

SEC: 25

County: San Juan

State: New Mexico

Contractor: Advanced Corrosion & Env. Svs.

Drilling Co: Baily Drilling Co.

Spud Date: 6/28/2003

Date Completed: 6/30/2003

Elevation (if available): 6405'

Type of well: Cathodic Protection

Drilling method: Air Drilling

Logged by: Al Chaharlang

Remarks: Lithology was described visually from the cuttings.

Depth (ft)	Sample Type	Lithology	Lithology Description
0		silt/clay	Light brown silty clay and dry to 4'.
10	cuttings		From 0 to 20', 8" PVC surface casing was installed.
20			Yellow to tan sandstone to 20'.
30	cuttings	sand/sand stone	From 20' to 50' yellowish sand to sandstone.
40			
50			
60	cuttings	sand stone/shale	From 50' to 100' Lt. gray to blue sand stone and shale (clay) interchanging, dry, and hard.
70			
80			
90			
100			
110	cuttings	silt/shale	From 100' to 180' Lt. gray silt and shale (clay) interchanging, dry.
120			
130			
140			
150			
160			
170			
180			
190	cuttings	shale	From 180' to 240' Lt. blue to gray shale (clay), dry.
200			
210			
220	cuttings	shale	From 220' to 260' Lt. gray shale (clay), dry.
230			
240			
250			
260	cuttings	silt/sandstone	From 260' to 360' Lt. gray silt/sand, sand stone, dry.
270			
280			

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[illegible]

Proposed location of
CP Junction Box

8" PVC cap

2x2 concrete
pad

20' 8" PVC casing

8" PVC casing

8" dia borehole

12-Anode leadwire
(gauge #8 HMMW PE)

1" perforated
PVC ventpipe

TD = 400'

Length of Coke Breeze
(Loresco SW 2750 Lbs)

154'

Length of anode string plus 6' spacing
(12-2"x60"-D51 Cast Iron anodes)

126'

Coke Breeze

Devon
N.E.B.U. #50A
Well MV/DK



Advanced Corrosion & Environmental Services	
P.O. Box 2767	
Farmington, New Mexico 87499	
Tel: (505) 327-9461	
Site: Devon N.E.B.U. #50A	
Address: Sec. 25, T31N, R8W	
San Juan County, NM	
Fig. 1: Schematic diagram of groundbed installation	
Des. by: Al Chaharlang	
Prj Mgr: Al Chaharlang	
e:\devon\enrg\lcp-50	Date: 7/8/2003

Not to Scale

Advanced Corrosion & Environmental Services

CATHODIC PROTECTION (CP) GROUND BED INITIAL INSTALLATION RECORD

CLIENT: Devon Energy Production Company WELL NO: N.E.B.U. #50A NO. OF ANODES & TYPE: 12-D51 Cast Iron w/#8 HMW PE
 CONTACT PERSON: Dwane Oliver/Rick Hurford WELL LOCATION: T31N, R8W, Sec. 25 COKE BREEZE AMOUNT: 55 bags or 2750 Lbs Loresco SW
 JOB TYPE: Cathodic Protection CP WELL DIAMETER: 8" CASING DIAM. & LENGTH: 20 ft. 8" PVC surface casing
 DATE: 6/30/2003 TOTAL DEPTH: 400 FT.

Remarks: Groundwater was not encountered throughout the total depth.

Well Depth (ft)	Anode Log (+/-mv reading)	Well Depth (ft)	Anode Log (+/-mv reading)	Well Depth (ft)	Anode Log (+/-mv reading)	Well Depth (ft)	Anode Log (+/-mv reading)	Well Depth (ft)	Anode Log (+/-mv reading)	Well Depth (ft)	Anode Log (+/-mv reading)	Anode No.	Anode Design Depth (ft)	Before Coke Brze (+/-mv reading)	After Coke Brze (+/-mv reading)
0	PVC casing	105	0.1	205	0.1	305	0.2	405				1	385	0.90	1.70
5	PVC casing	110	0	210	0.1	310	0.2	410				2	379	2.20	4.30
10	PVC casing	115	0.1	215	0.1	315	0.3	415				3	373	2.70	4.40
15	PVC casing	120	0	220	0.1	320	0.2	420				4	367	1.70	4.20
20	PVC casing	125	0	225	0.1	325	0.2	425				5	361	1.30	3.70
25	0.1	130	0.1	230	0.1	330	0.2	430				6	355	1.30	3.60
30	0	135	0.1	235	0.1	335	0.3	435				7	349	0.70	2.90
35	0	140	0.1	240	0	340	0.4	440				8	343	0.50	2.40
40	0.1	145	0.1	245	0.1	345	0.4	445				9	337	0.30	1.70
45	0.2	150	0.1	250	0.1	350	0.6	450				10	331	0.20	1.40
50	0.1	155	0	255	0.1	355	1	455				11	325	0.20	1.40
55	0.1	160	0	260	0.1	360	1.5	460				12	319	0.20	1.50
60	0.1	165	0	265	0.2	365	1.5	465				13			
65	0.1	170	0.1	270	0.2	370	2	470				14			
70	0.1	175	0.2	275	0.3	375	2.3	475				15			
75	0.1	180	0.1	280	0.2	380	1.7	480				16			
80	0.1	185	0.1	285	0.2	385	1.2	485				17			
85	0.1	190	0.2	290	0.2	390	1.2 @ TD	490				18			
90	0.3	195	0.2	295	0.3	395		495				19			
95	0.1	200	0.2	300	0.2	400		500				20			
100	0.2														

c:\cp-dgnlog

Useful Equations:

External Shunt reading conversion: $\text{Current} = I = 50A/50mv \times (+/- mv \text{ meter reading})$ Anode Spacing = 6.0 ft.

$V = I \times R$ or $R = V/I$

Total Current, I = 6.8 Ampere (note: meter reading)

V = Voltage Applied = 11.07 Volts

R = Total Resistance = 1.92 Ohm

V/I =