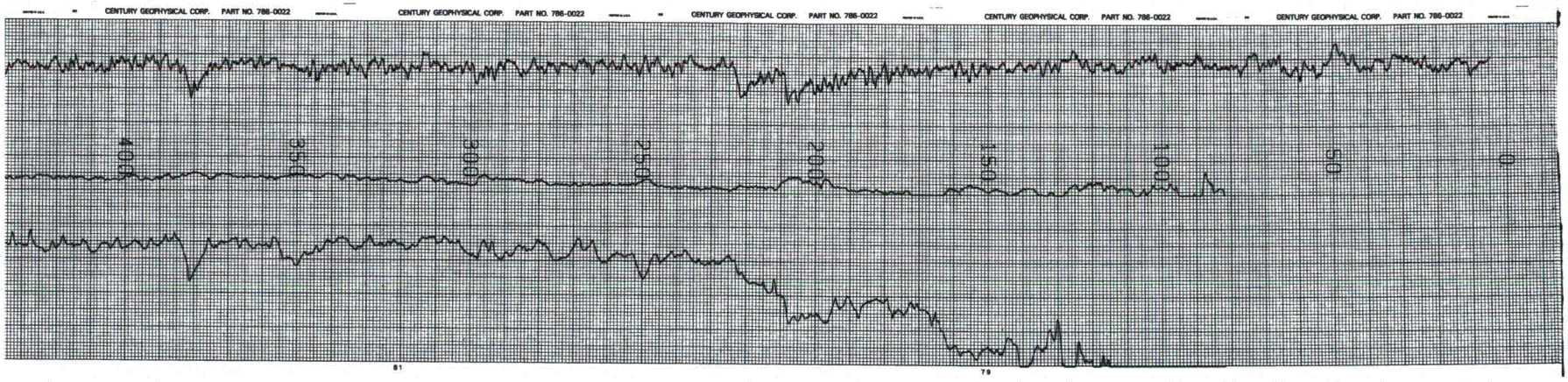
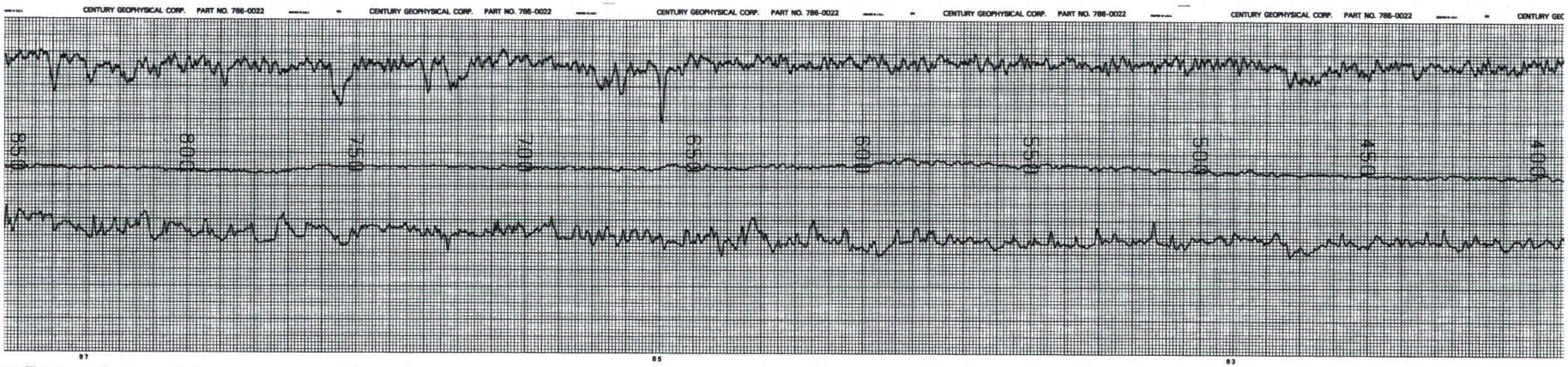
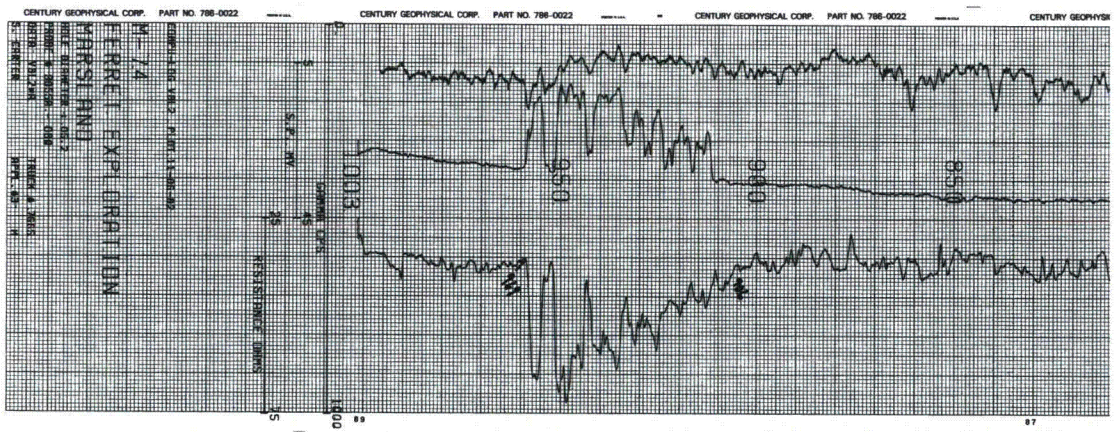


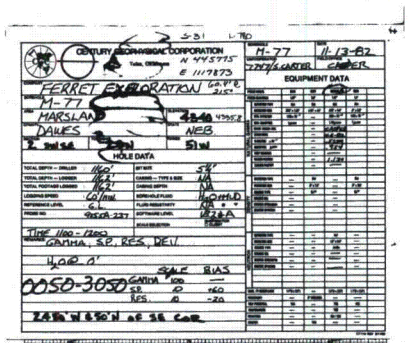



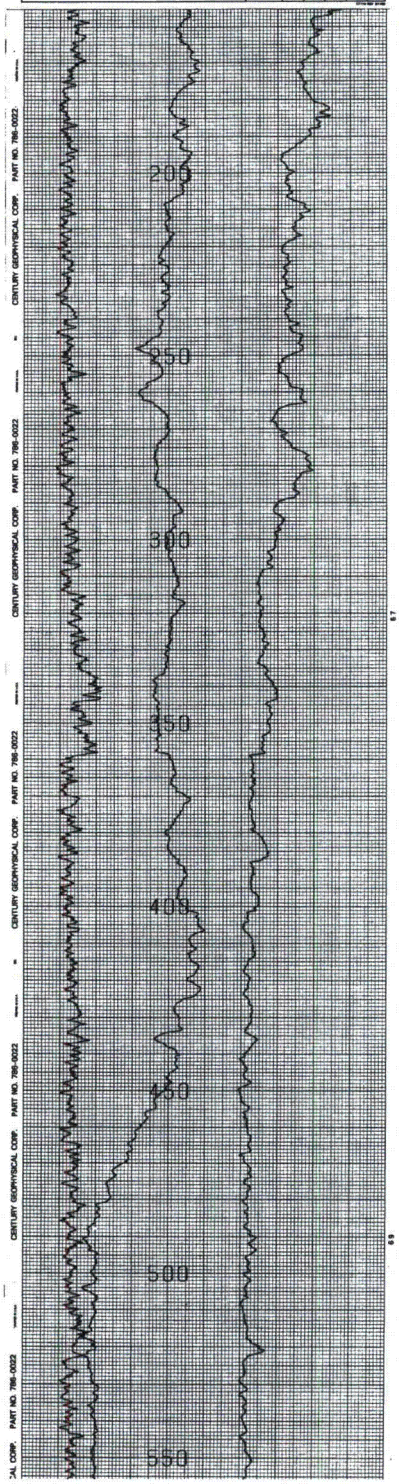

CROW BUTTE RESOURCES, INC.

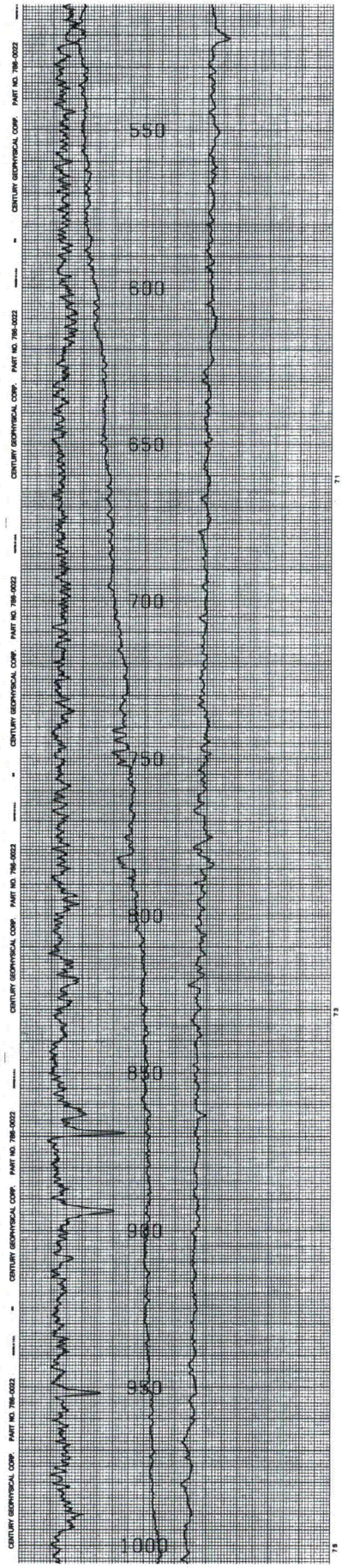
**LOG M-74**

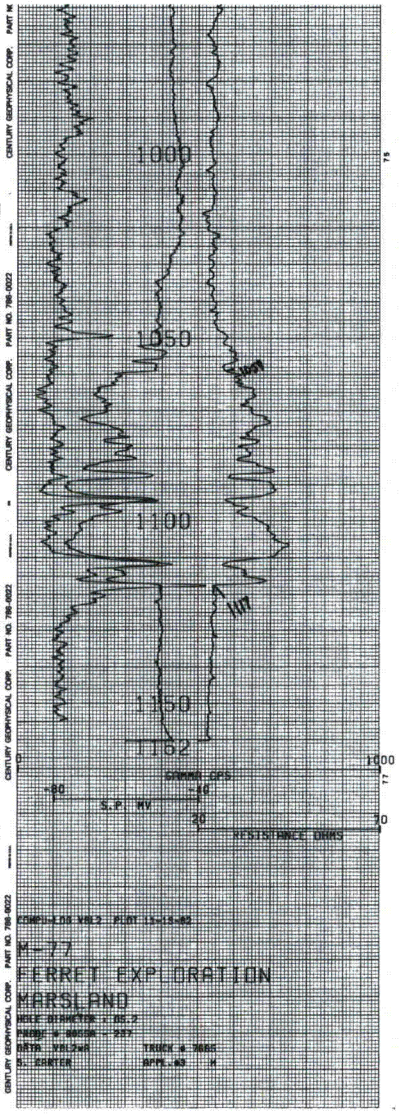
ARCADIS

630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com



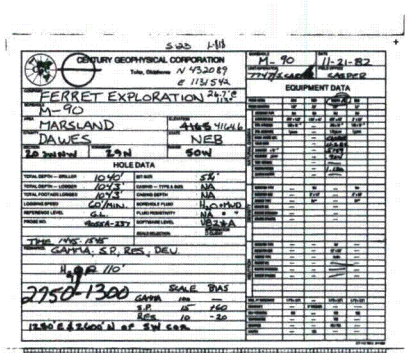



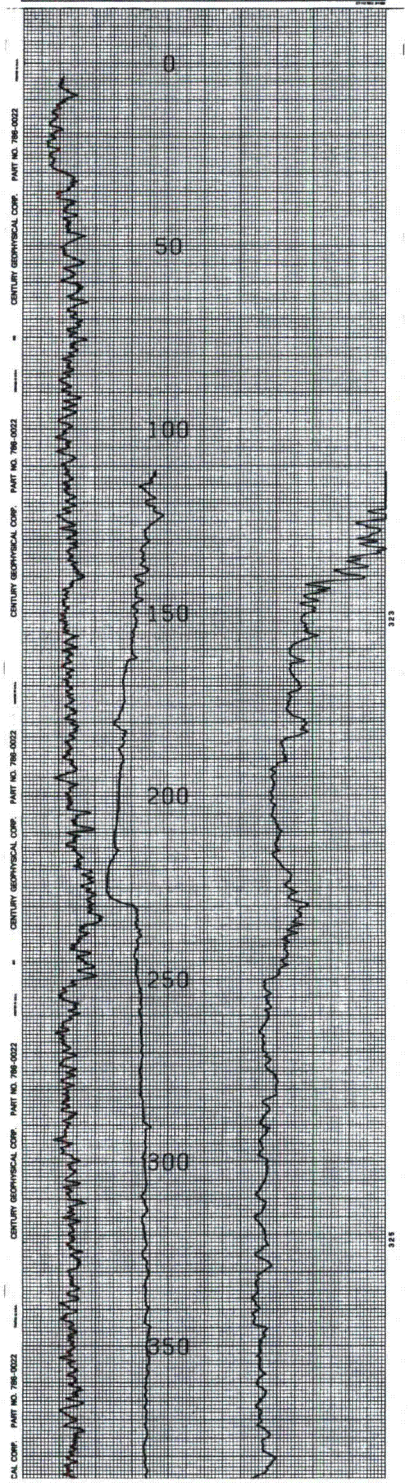

CROW BUTTE RESOURCES, INC.

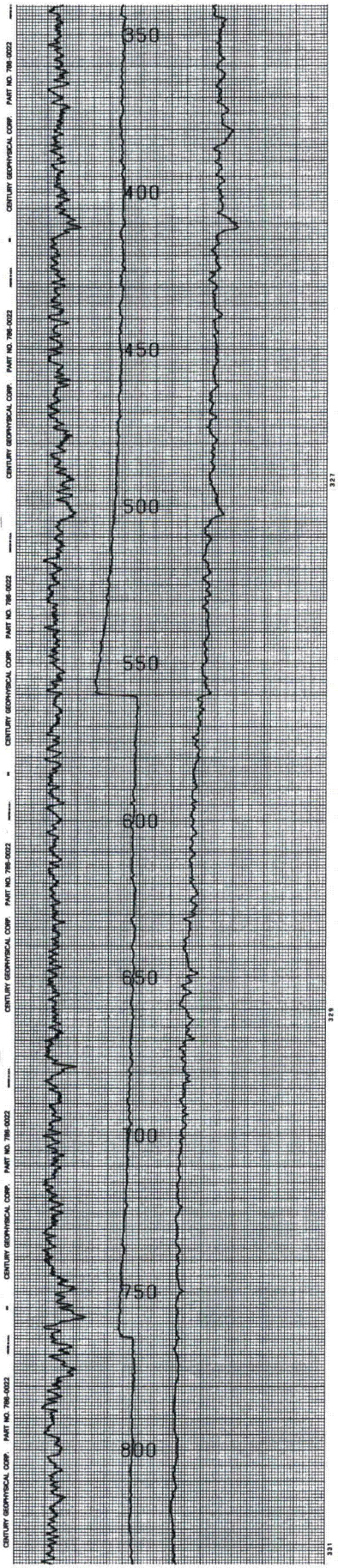
**LOG M-77**

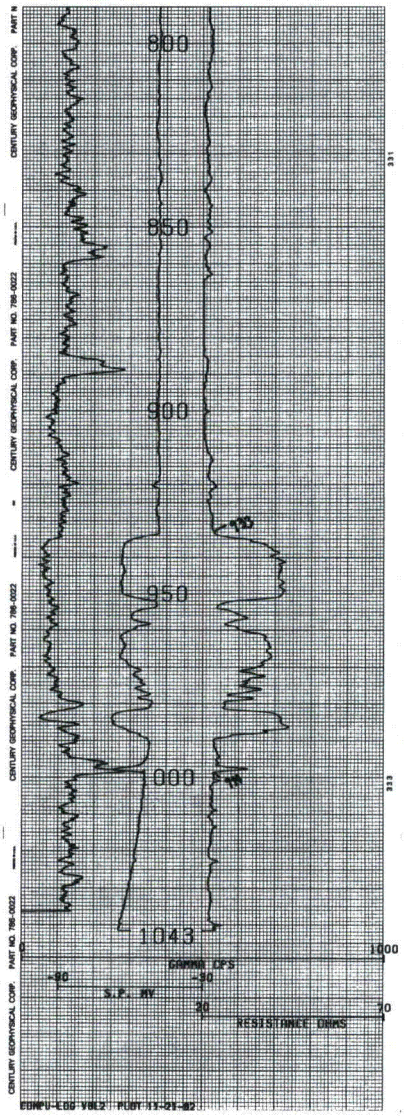
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca[illegible]\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO [illegible]/09/2012



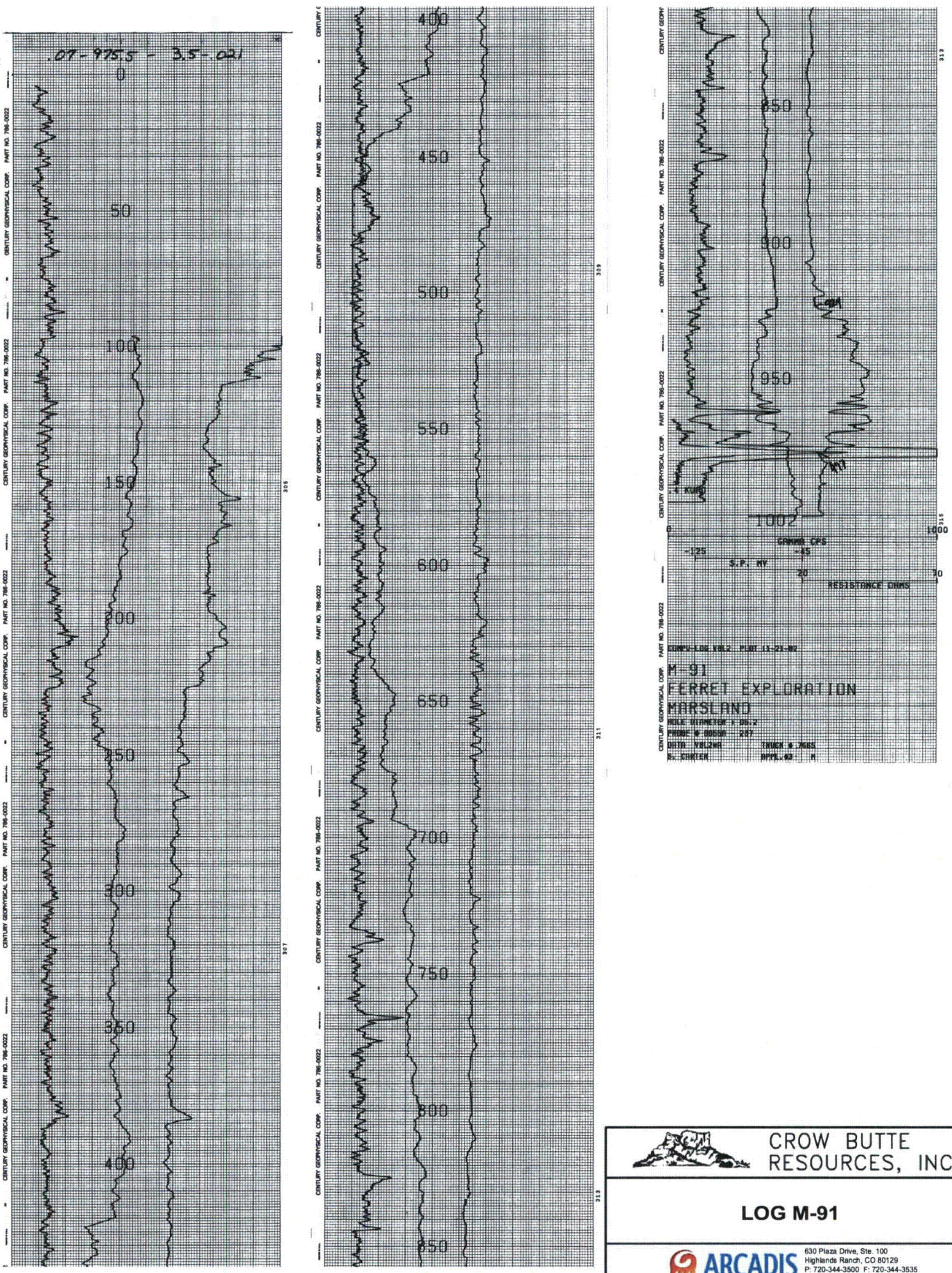




CROW BUTTE RESOURCES, INC.

**LOG M-90**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca[redacted]\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO [redacted]/09/2012

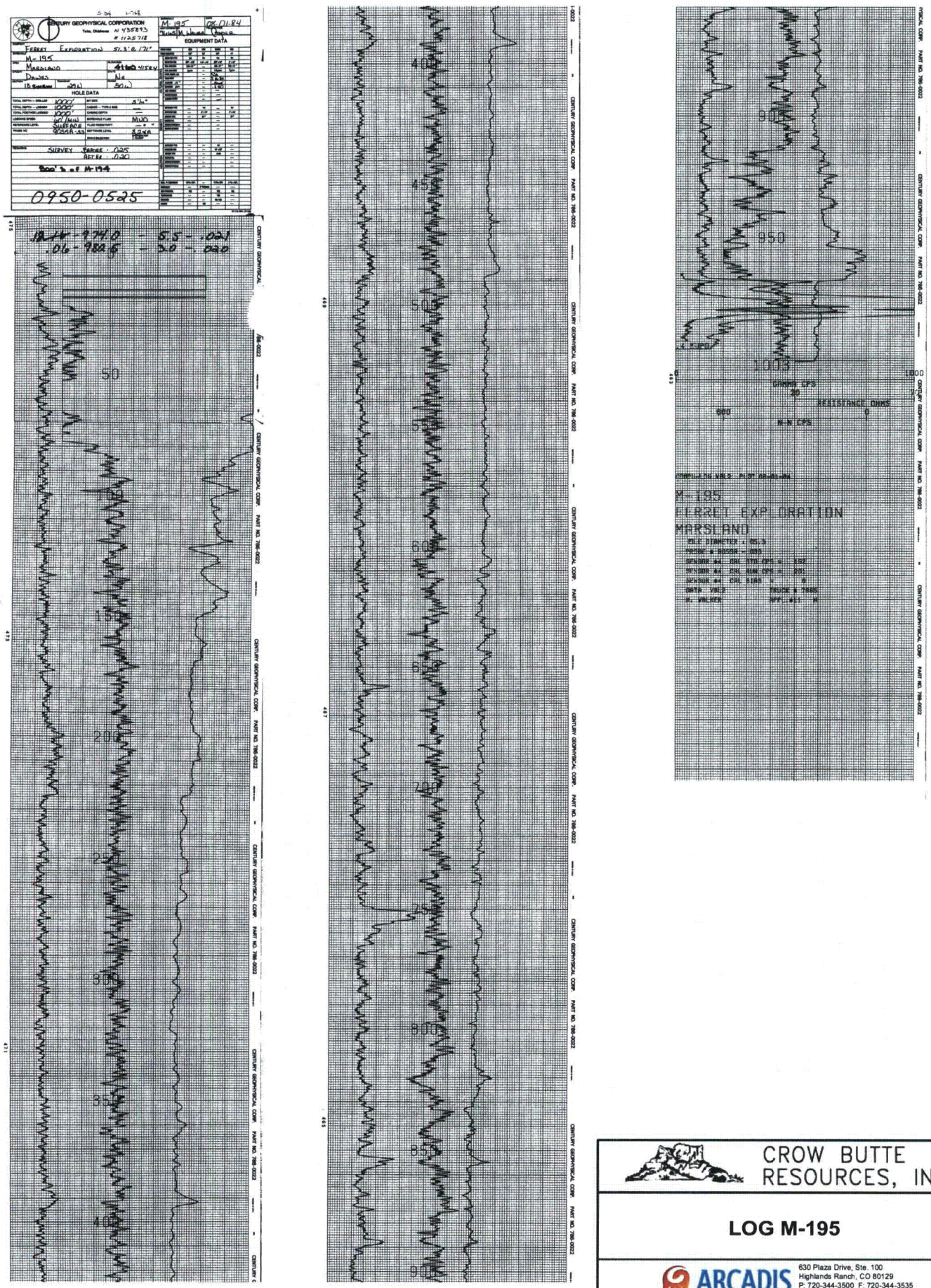



CROW BUTTE RESOURCES, INC.

**LOG M-91**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012

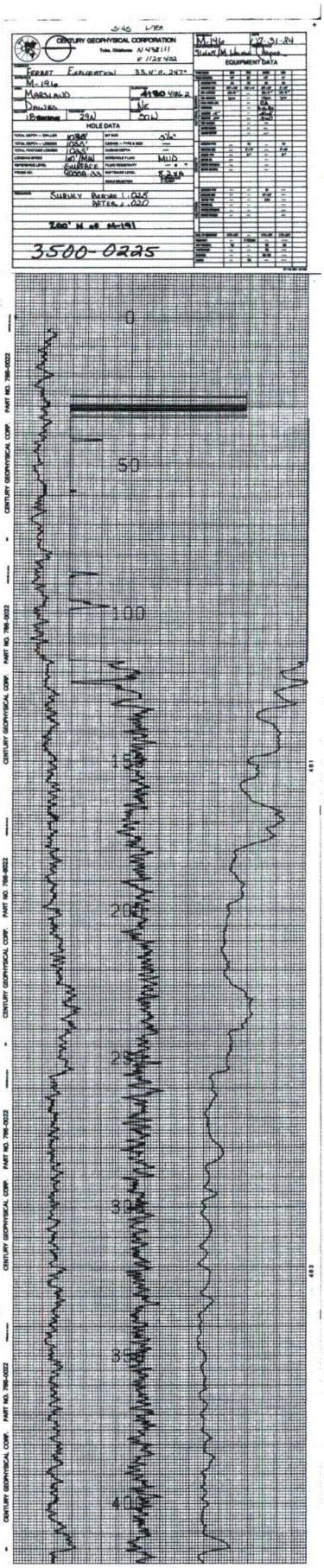


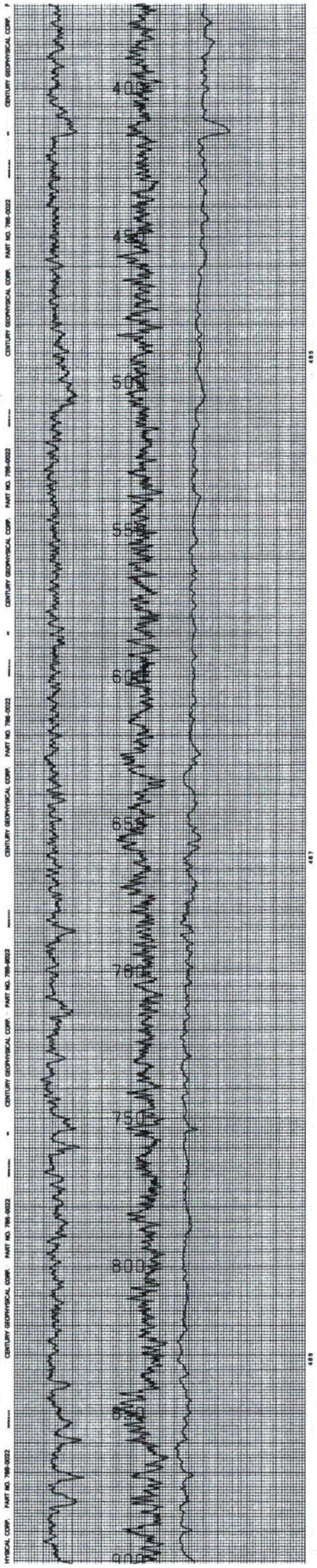

CROW BUTTE RESOURCES, INC.

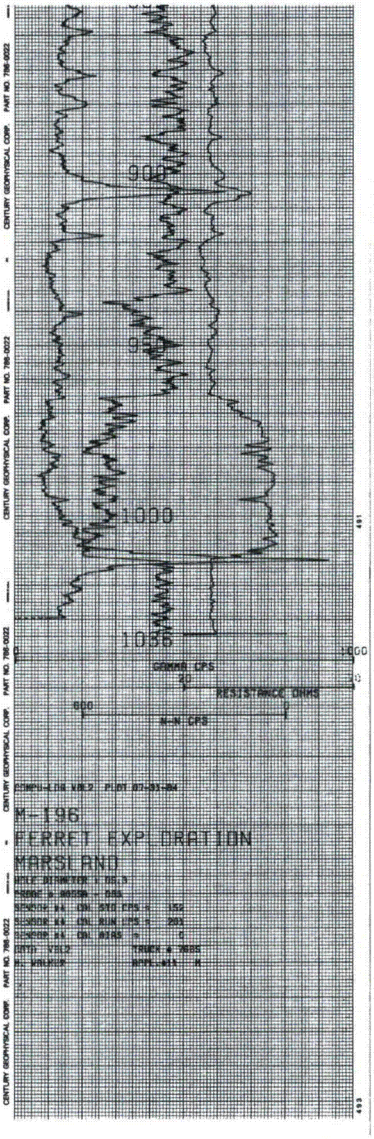
**LOG M-195**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: ...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustration\LogFigures\ Formatted By: J.Chen @ Boulder, CO ... 5/09/2012



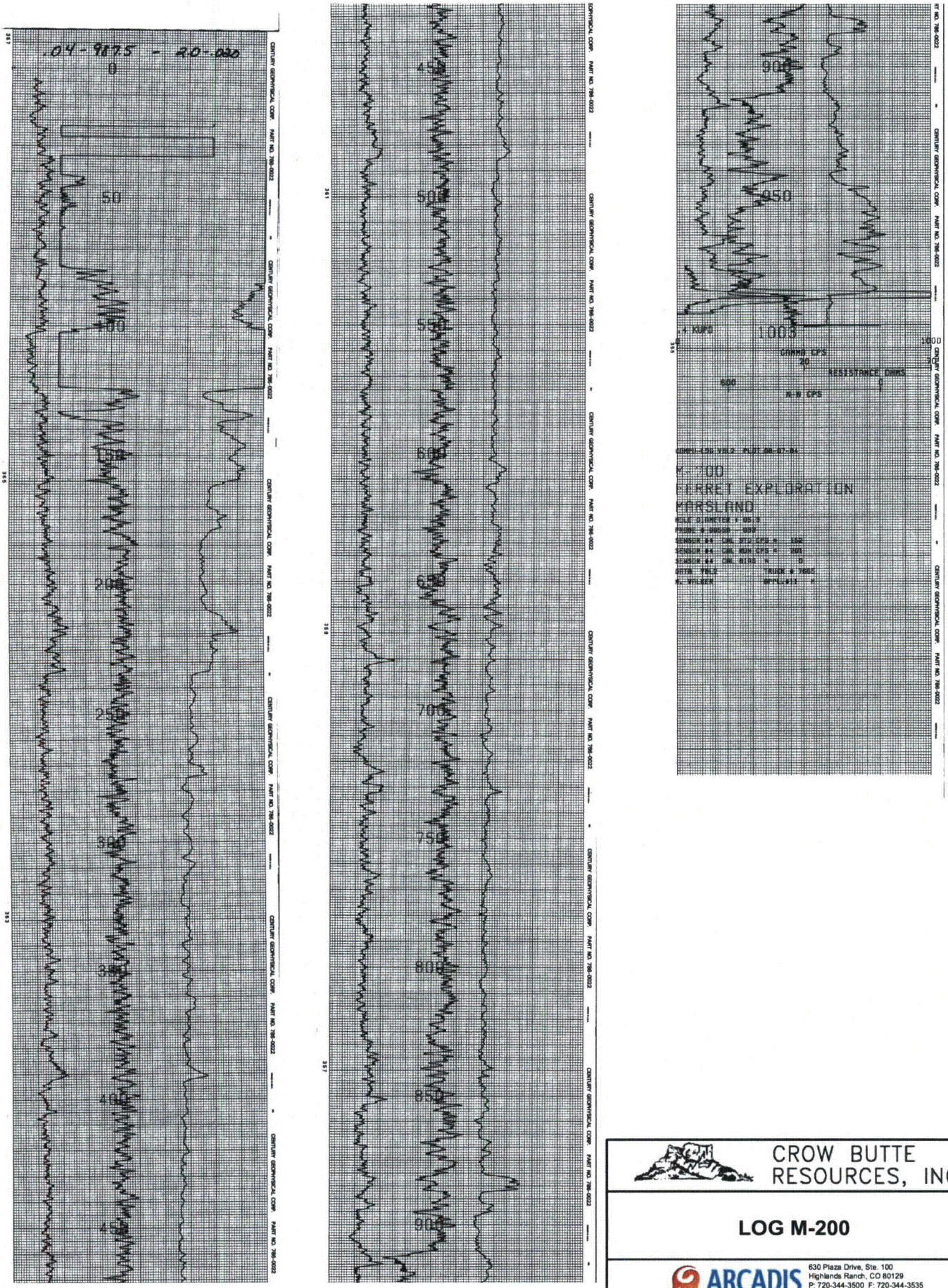



CROW BUTTE RESOURCES, INC.

**LOG M-196**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...05/09/2012

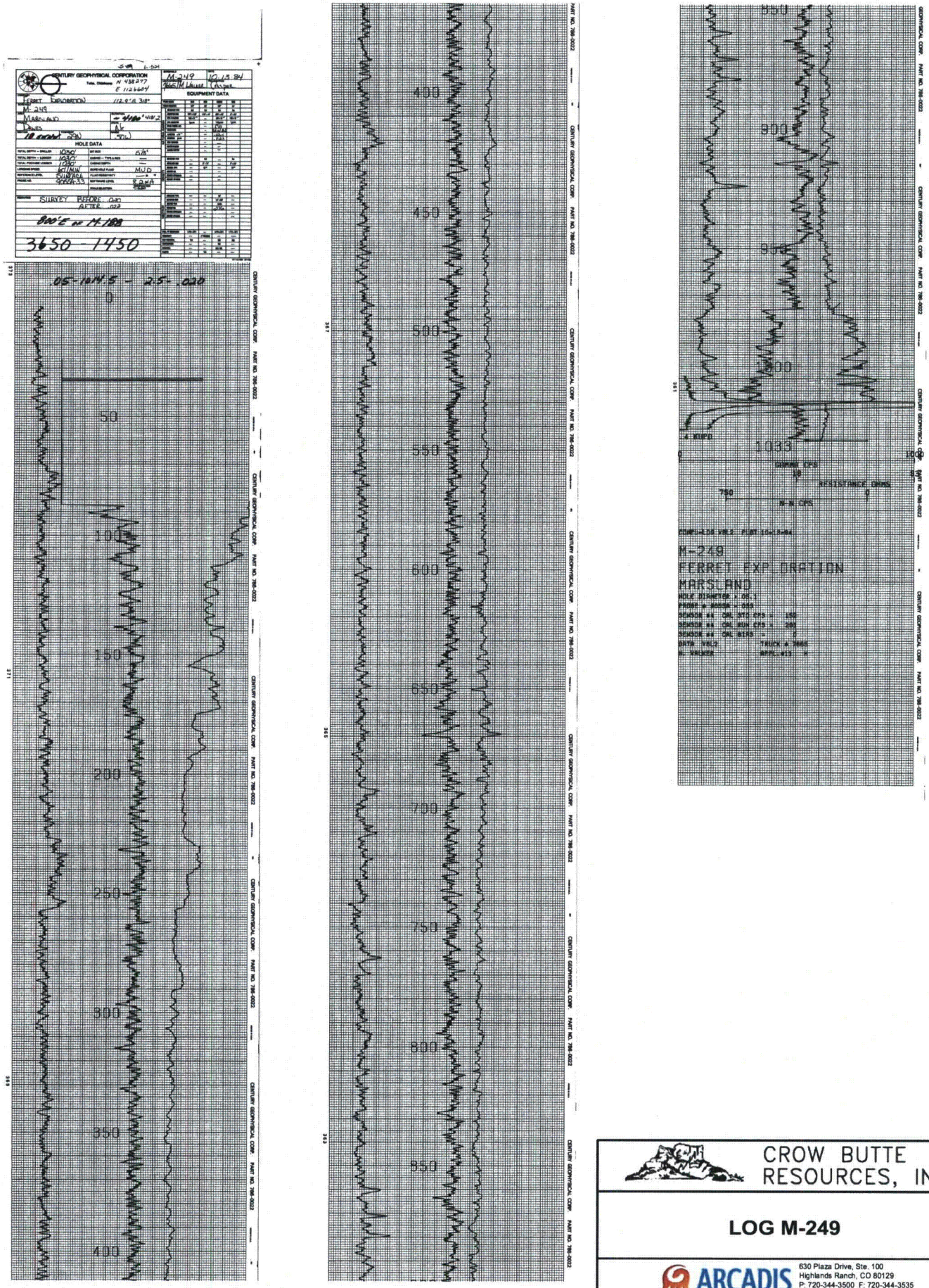



CROW BUTTE RESOURCES, INC.

**LOG M-200**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: X:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 03/09/2012

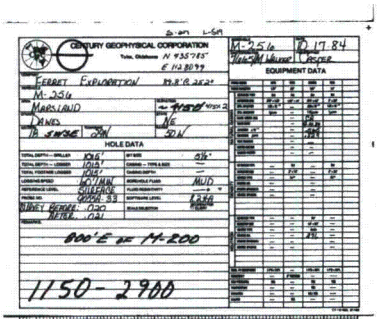


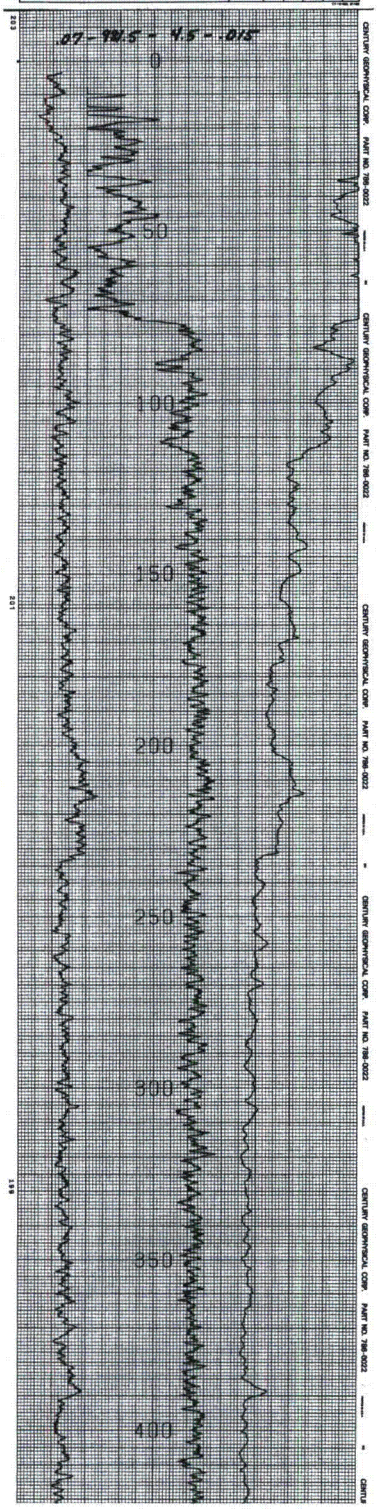

CROW BUTTE RESOURCES, INC.

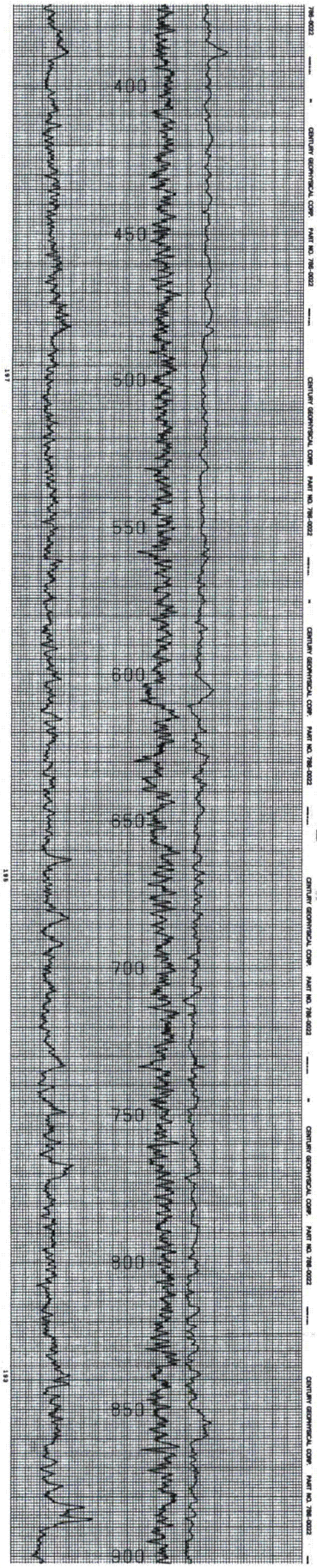
**LOG M-249**

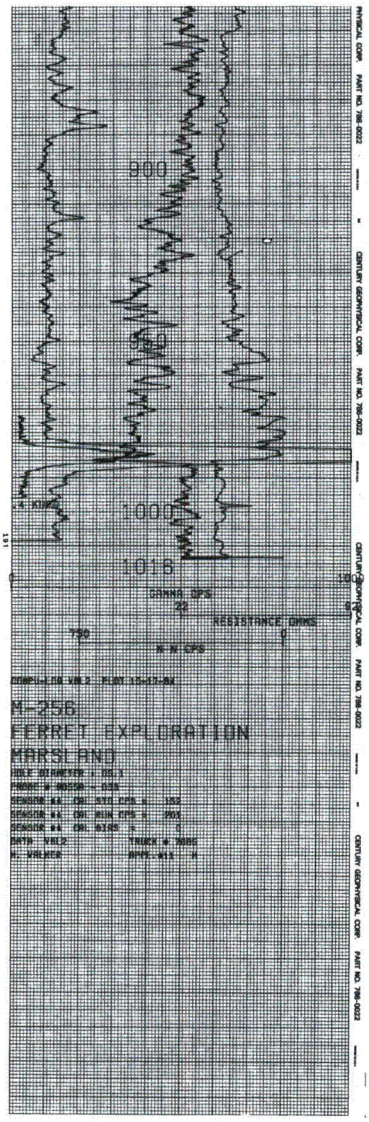
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: A:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



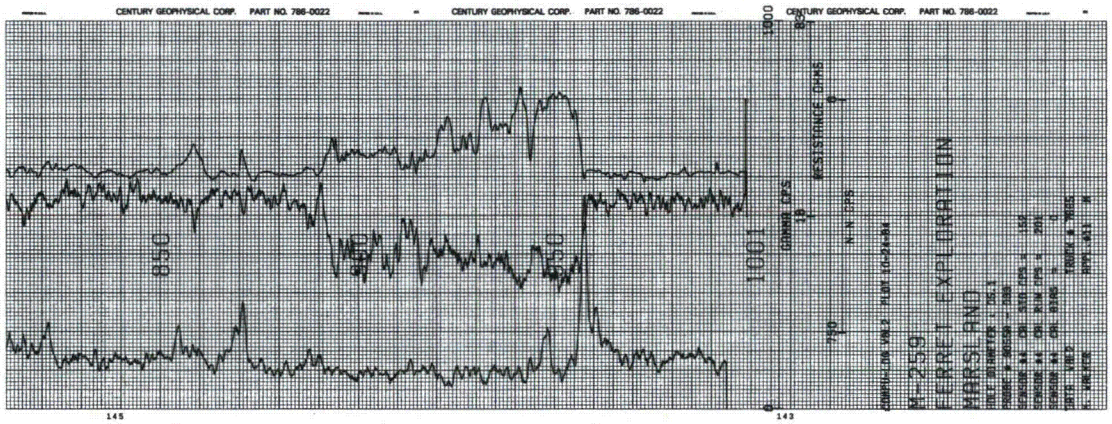



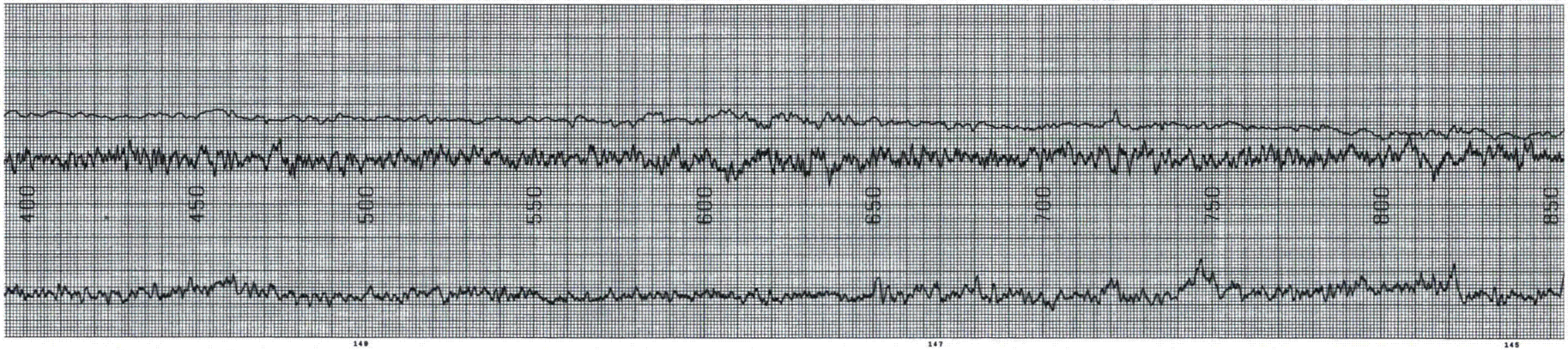

CROW BUTTE RESOURCES, INC.

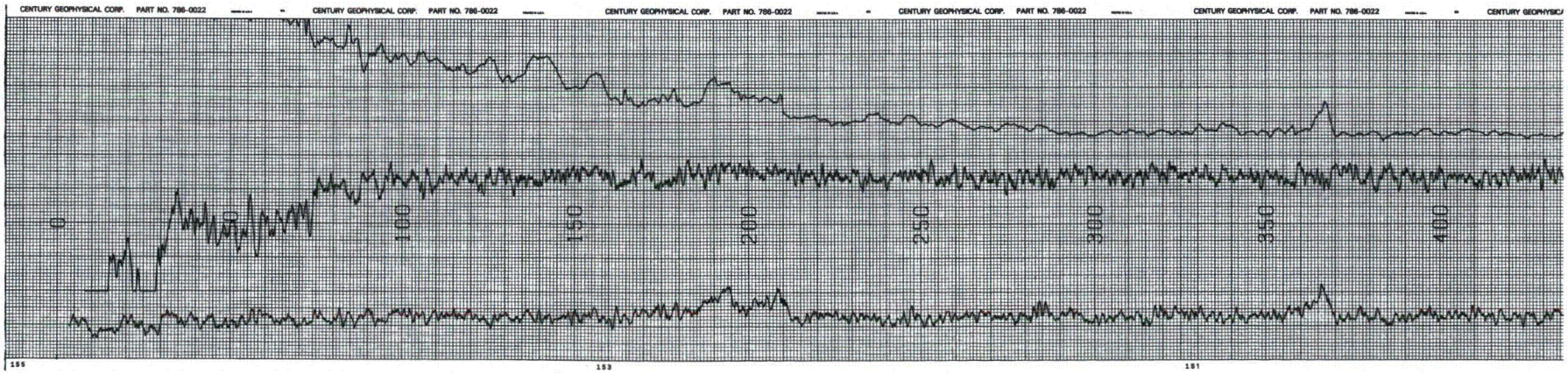
**LOG M-256**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012



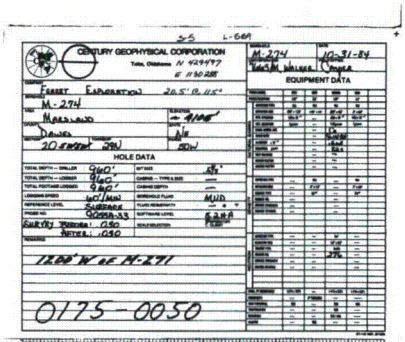



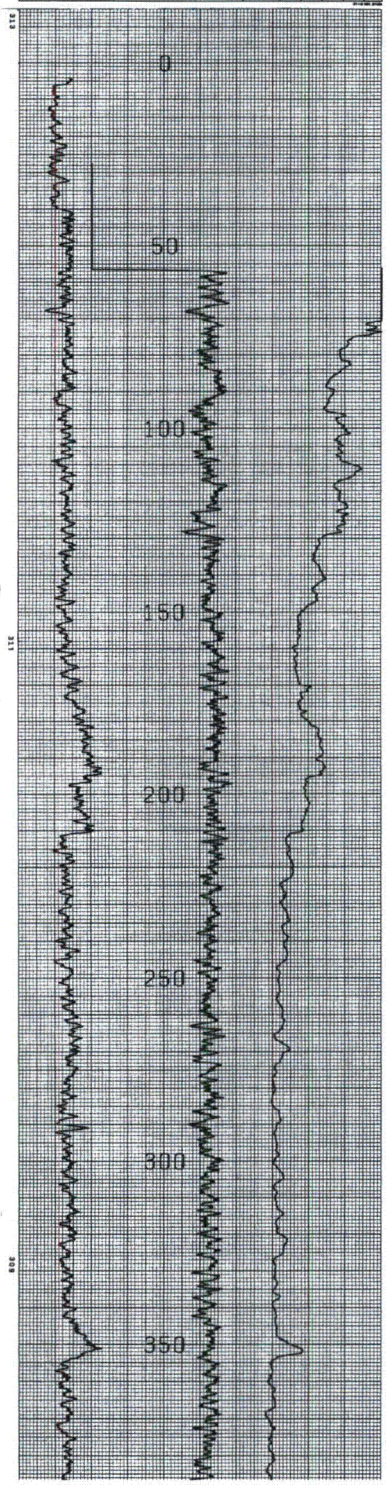



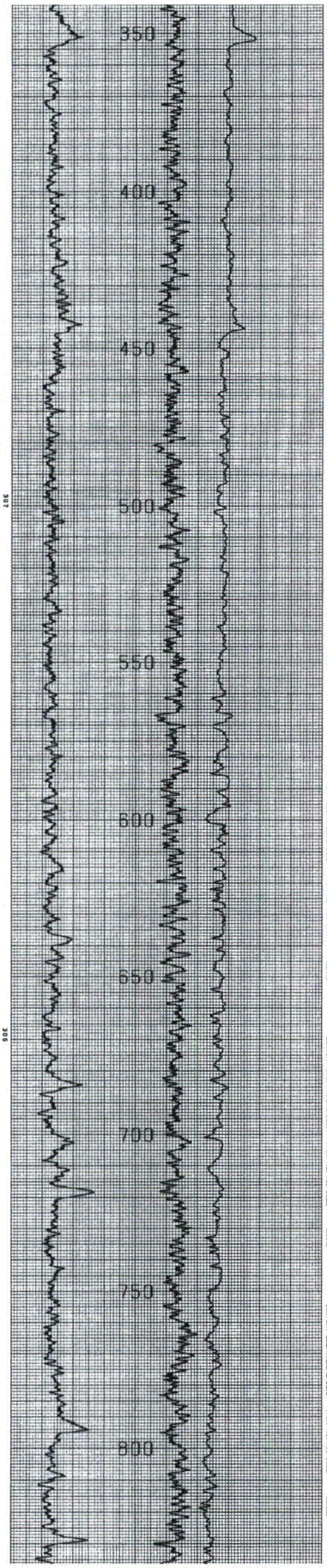

CROW BUTTE RESOURCES, INC.

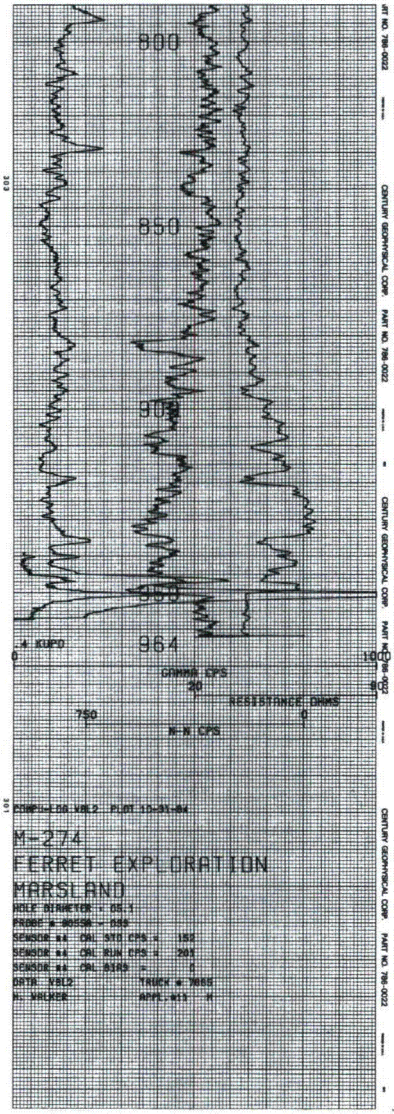
**LOG M-259**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com



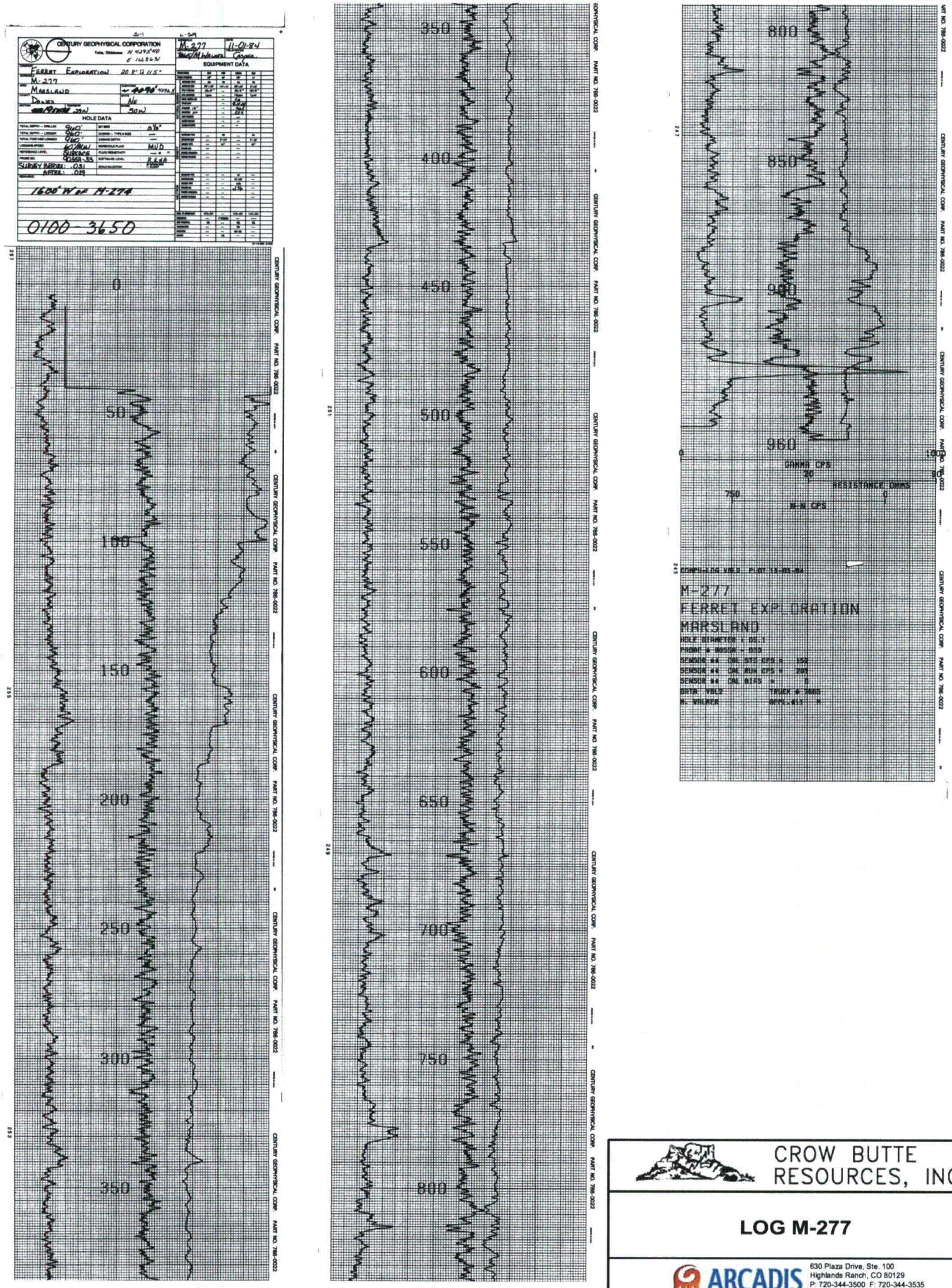




CROW BUTTE RESOURCES, INC.

**LOG M-274**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012

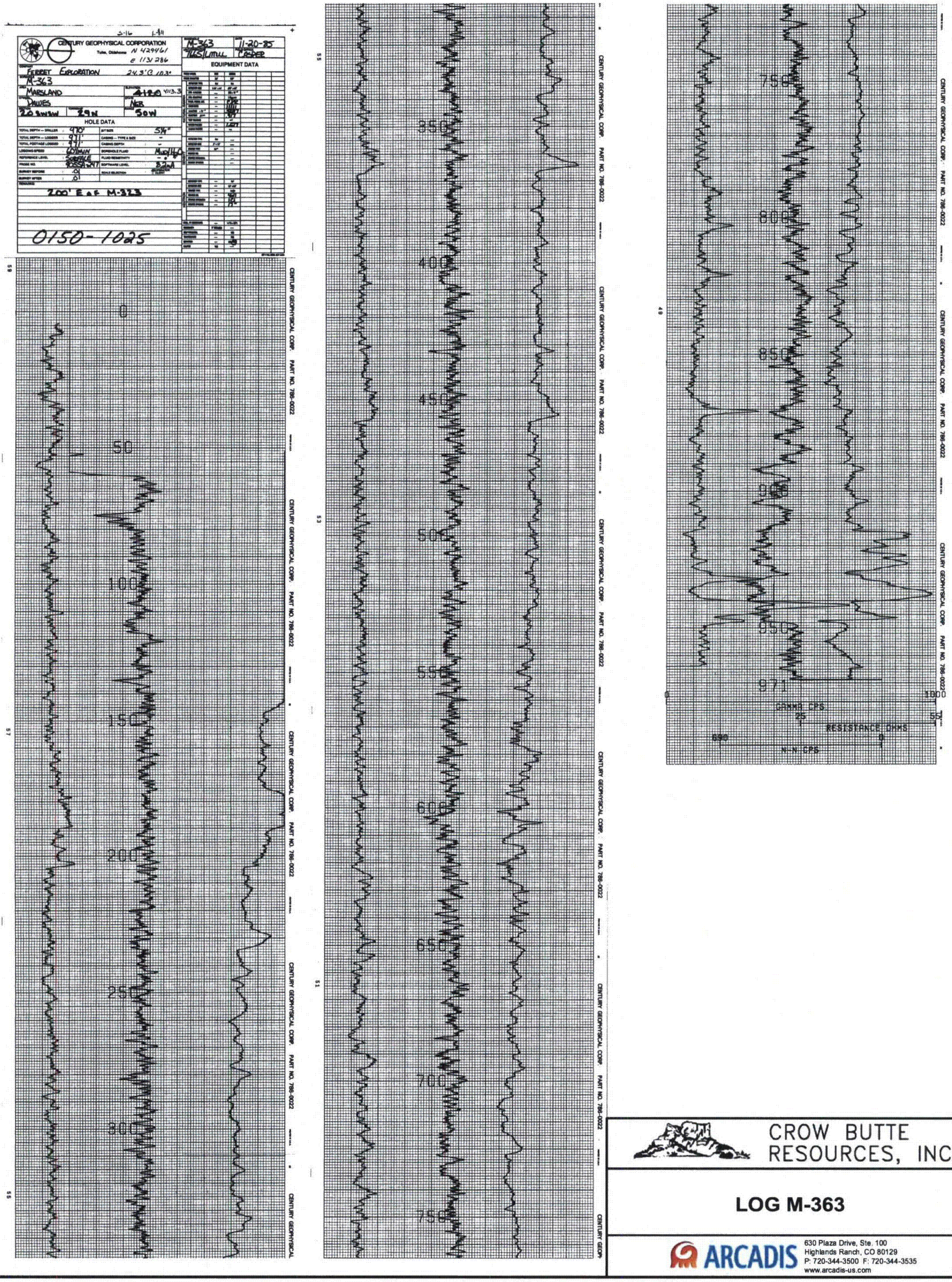



CROW BUTTE RESOURCES, INC.

**LOG M-277**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca ...:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...05/09/2012

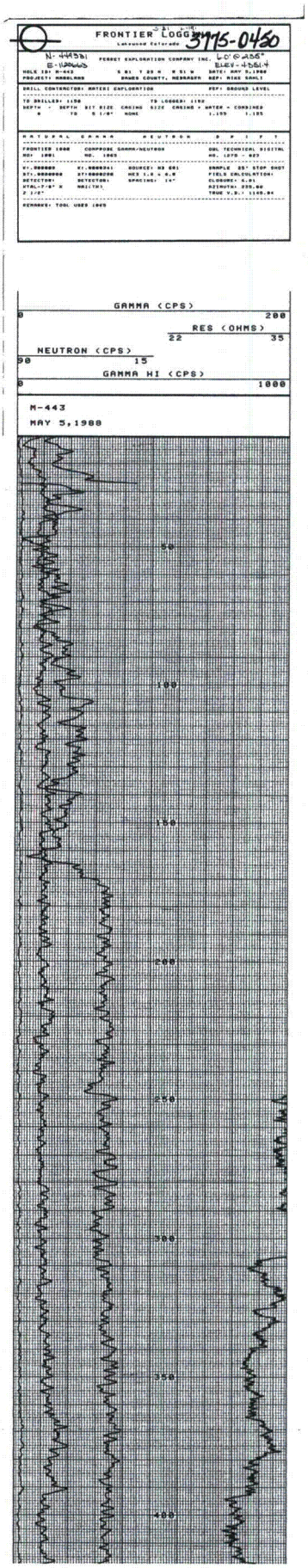


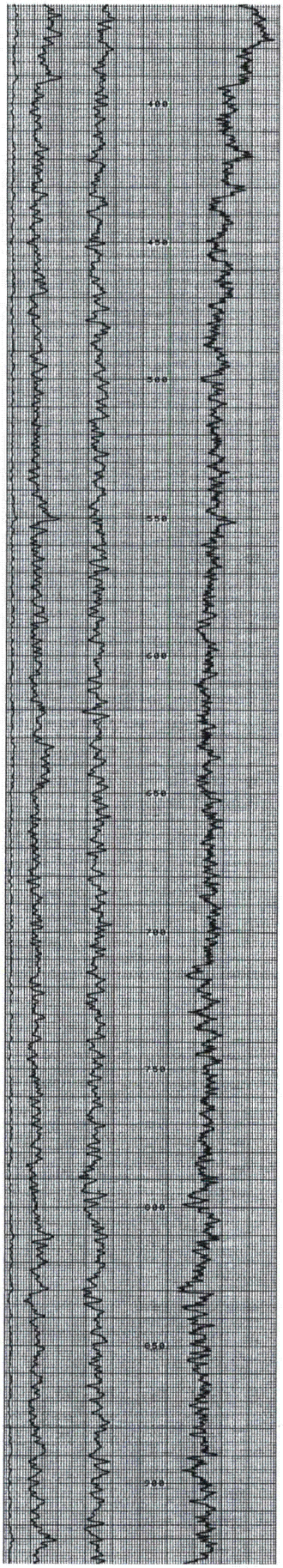

CROW BUTTE RESOURCES, INC.

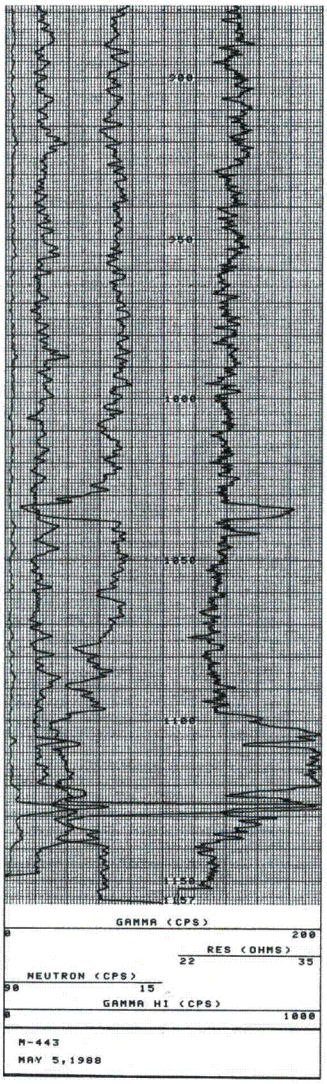
**LOG M-363**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: X:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



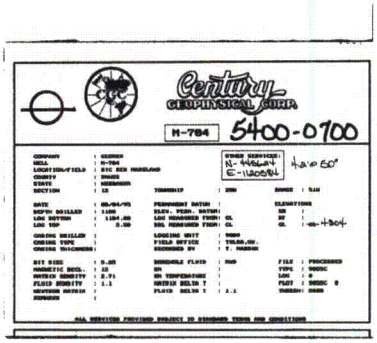


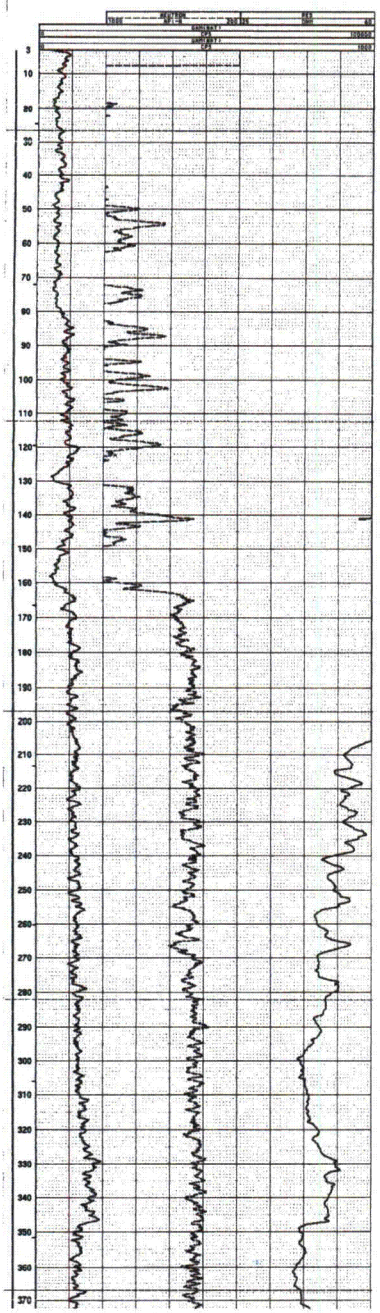

CROW BUTTE RESOURCES, INC.

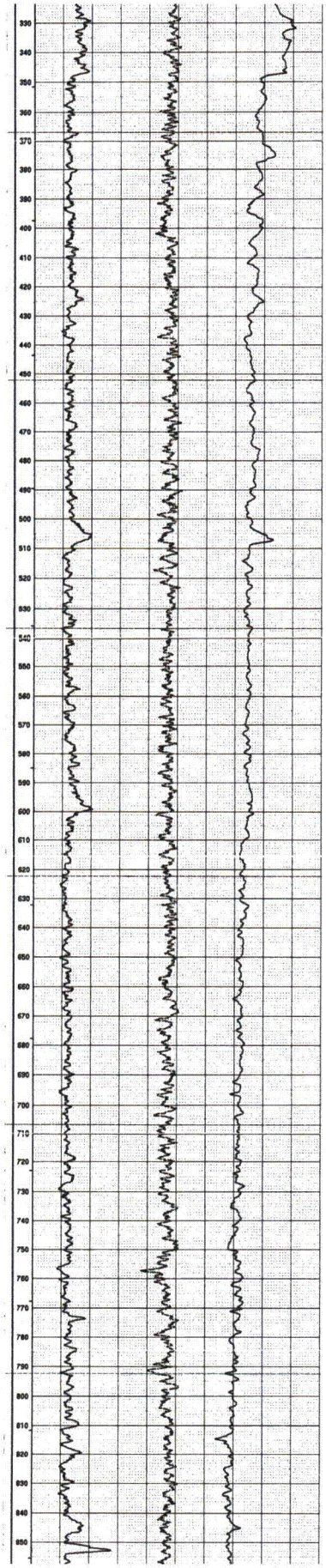
**LOG M-443**

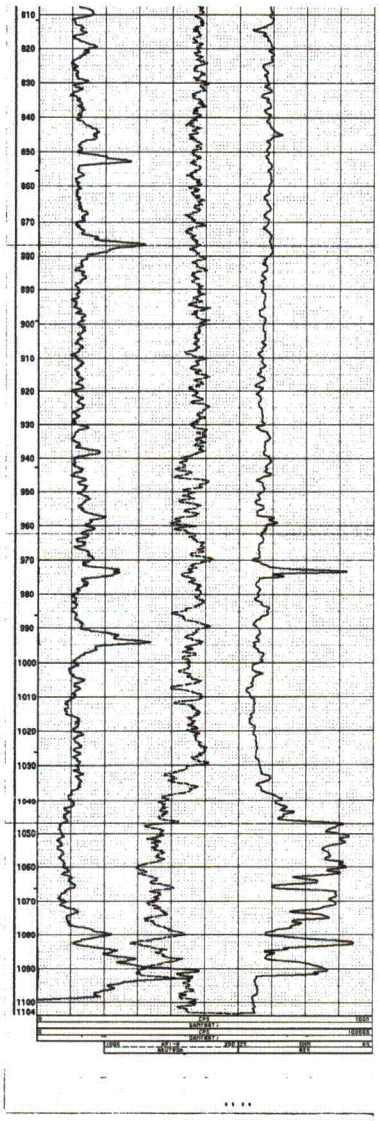
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012





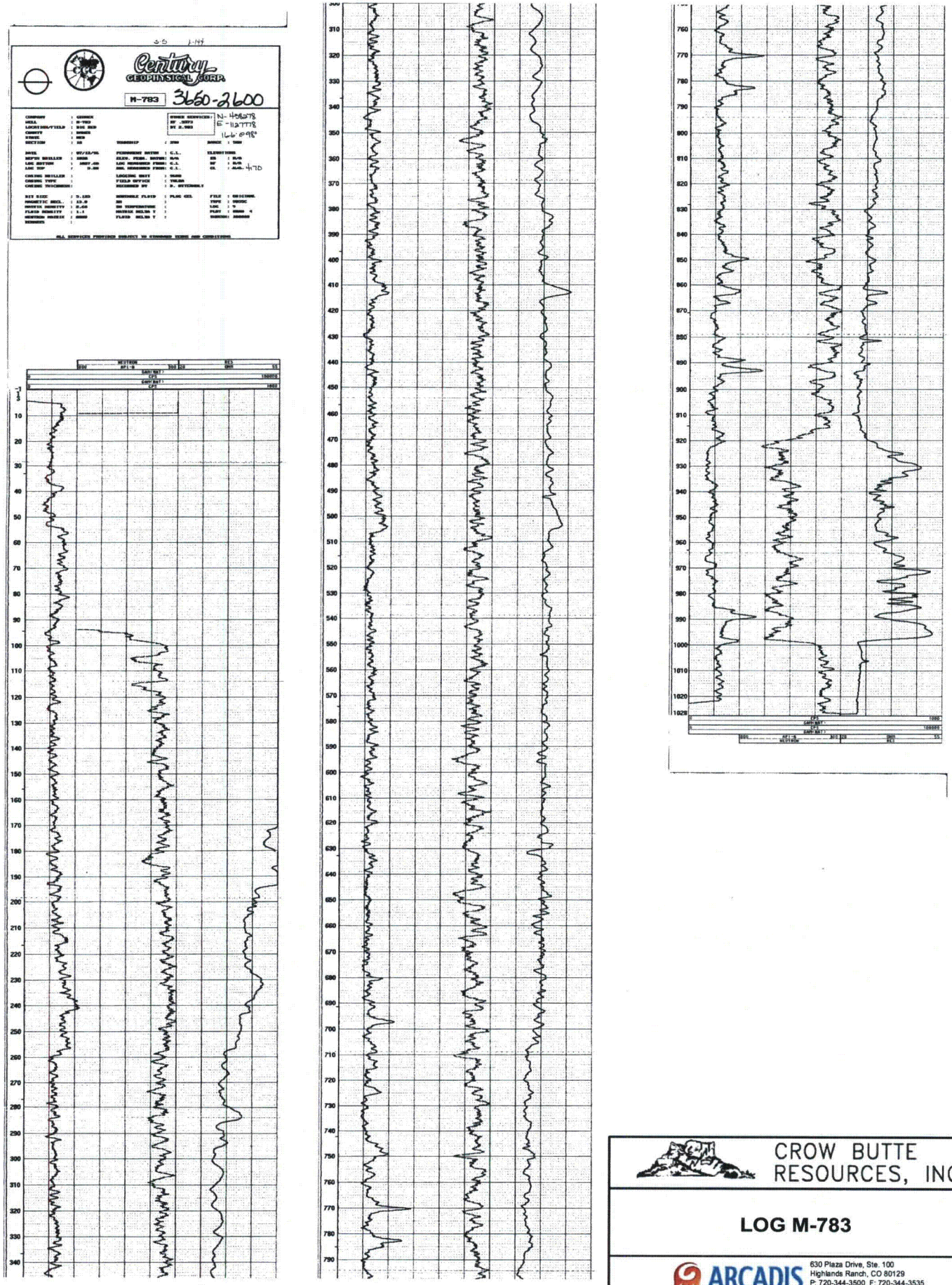


CROW BUTTE RESOURCES, INC.

**LOG M-704**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012

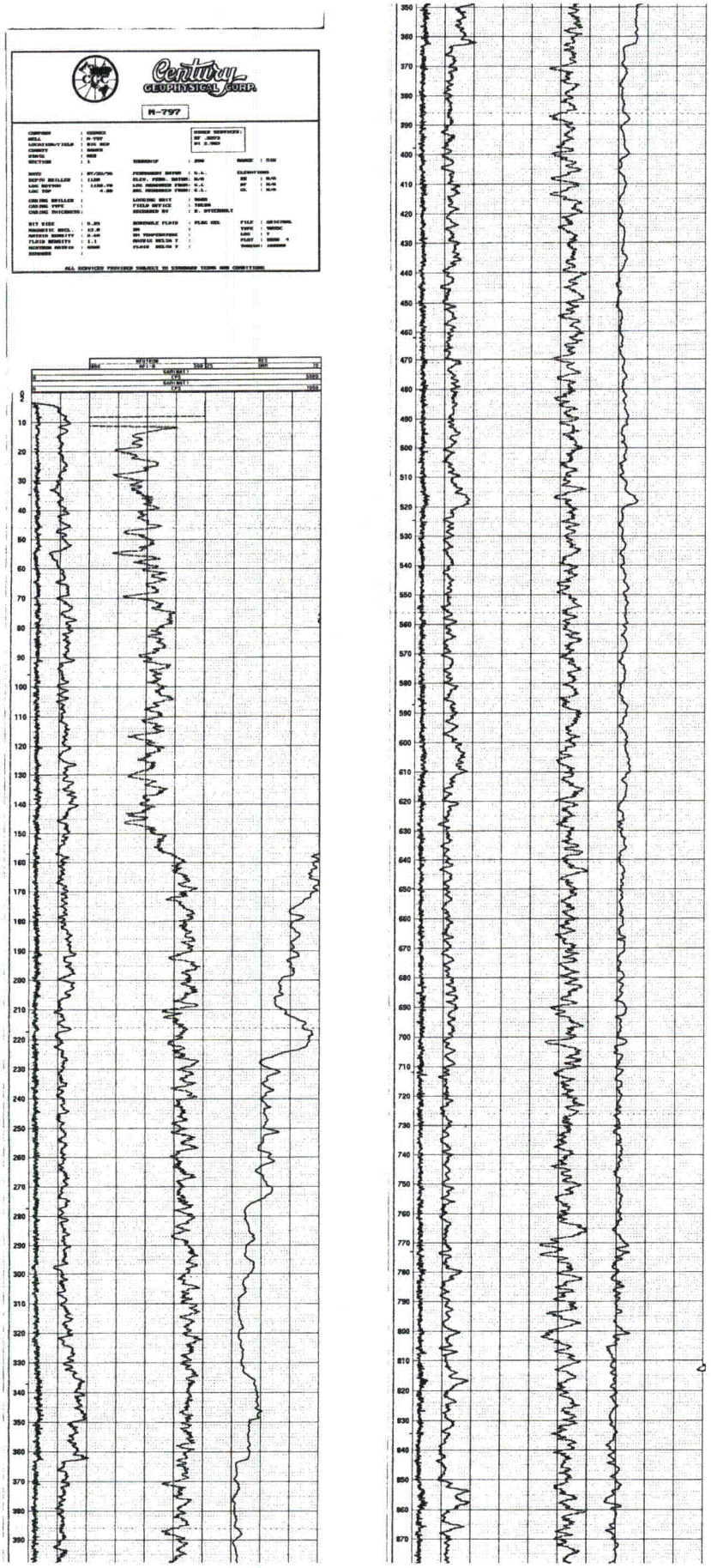



CROW BUTTE RESOURCES, INC.

**LOG M-783**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...5/09/2012

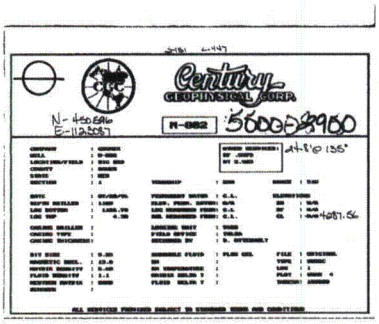


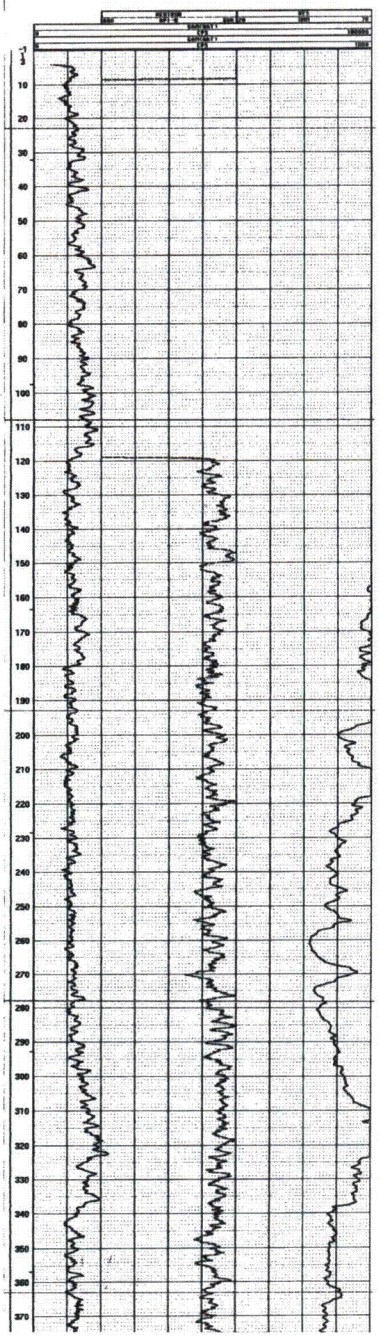

CROW BUTTE RESOURCES, INC.

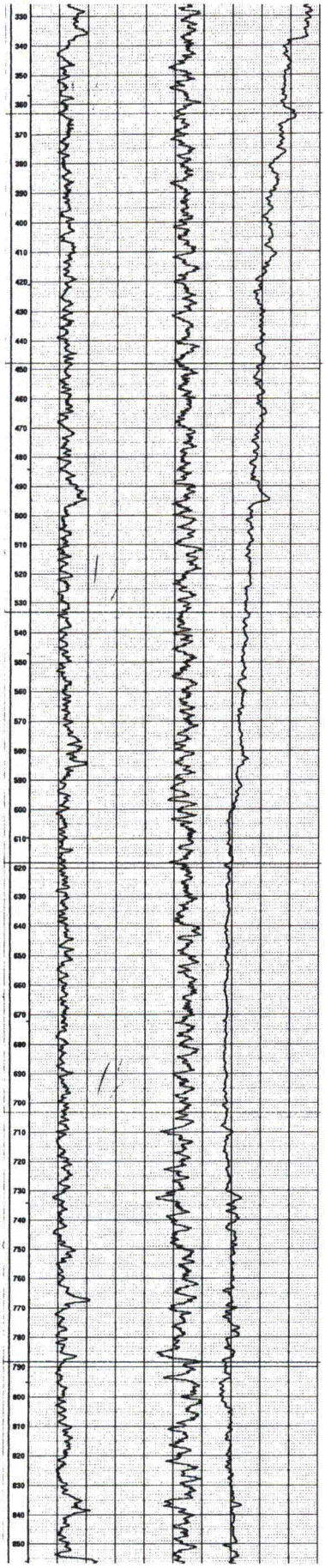
**LOG M-797**

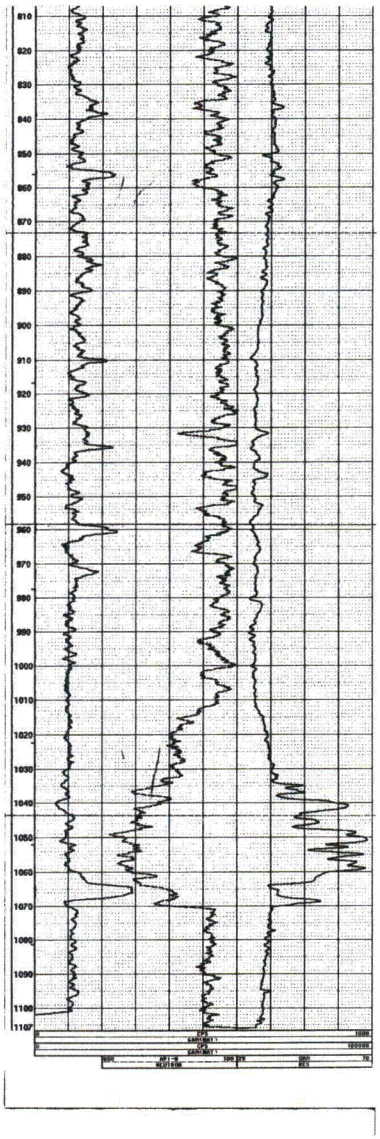
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012





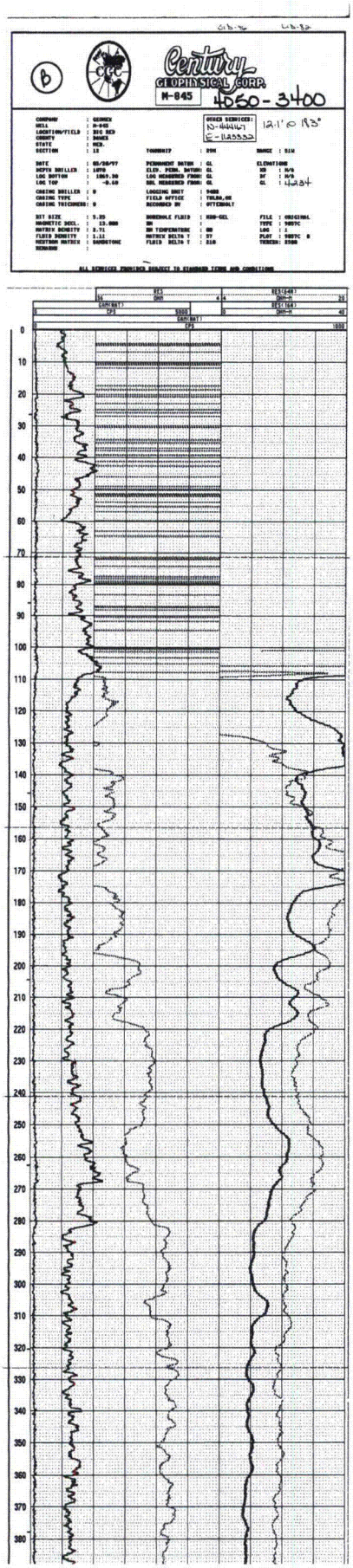


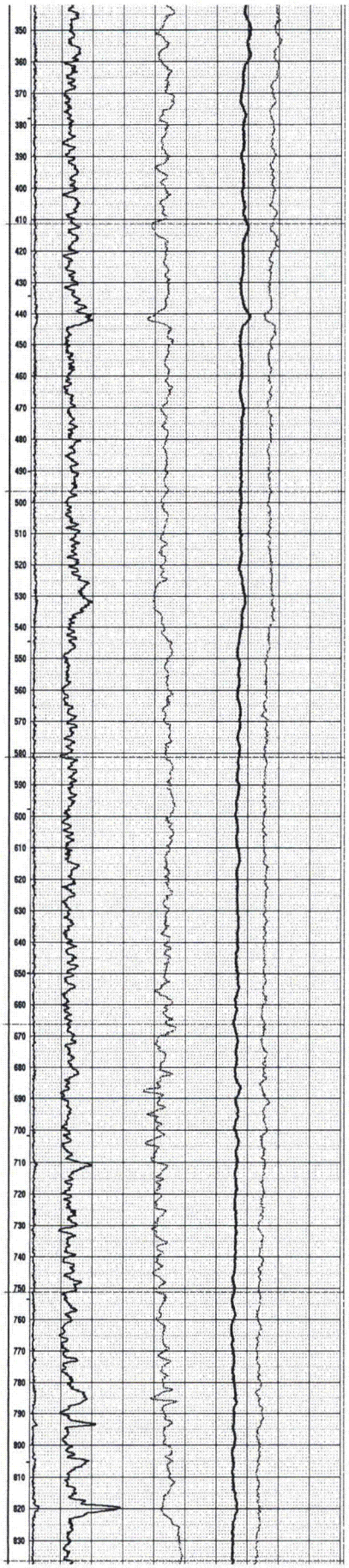
CROW BUTTE RESOURCES, INC.

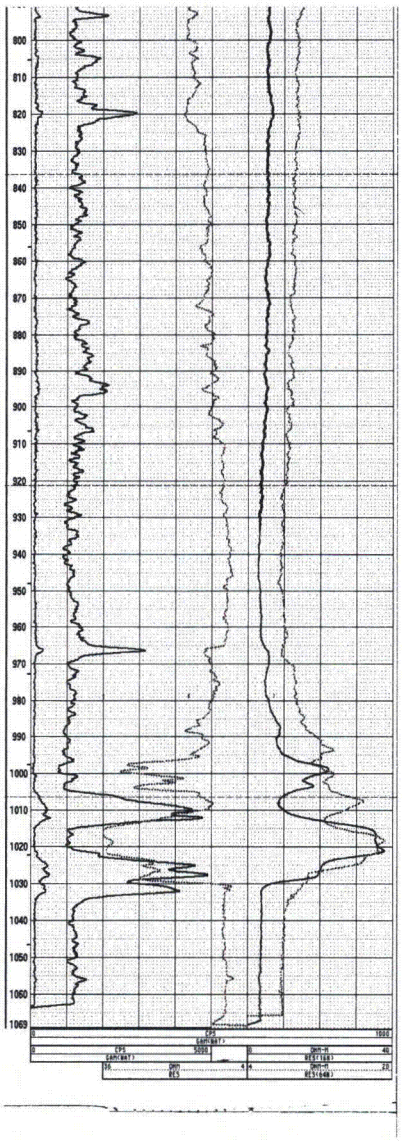
**LOG M-802**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



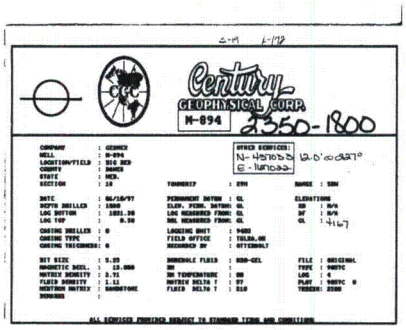


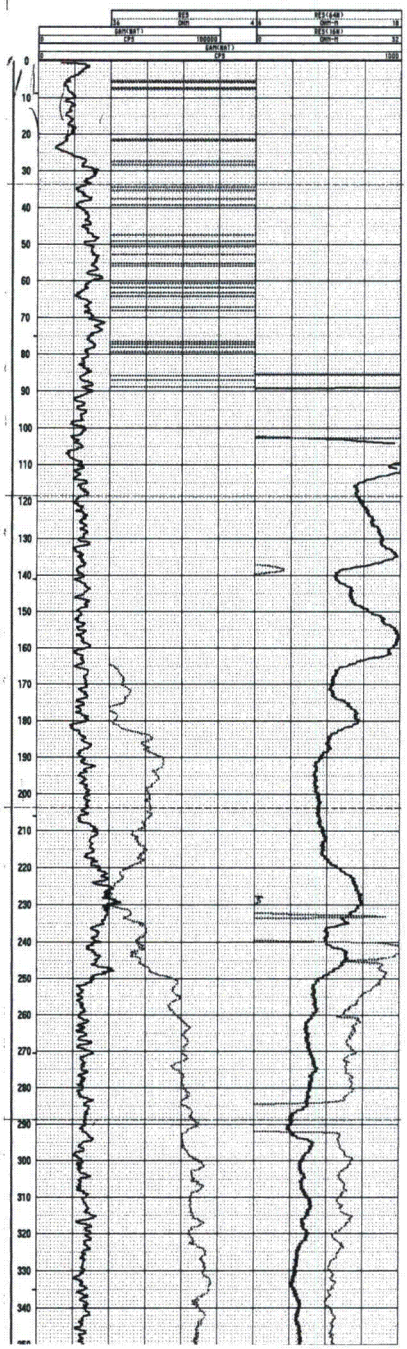
CROW BUTTE RESOURCES, INC.

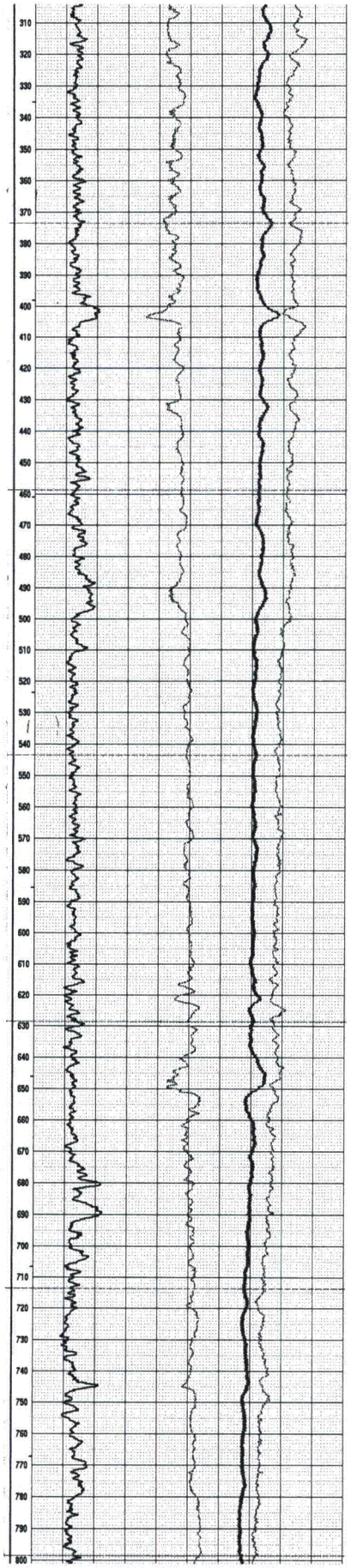
**LOG M-845**

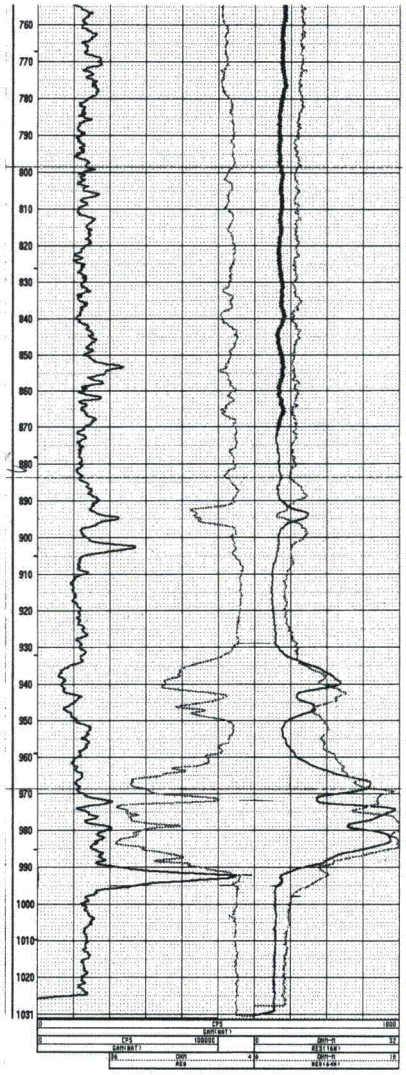
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc[redacted]\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO [redacted]5/09/2012



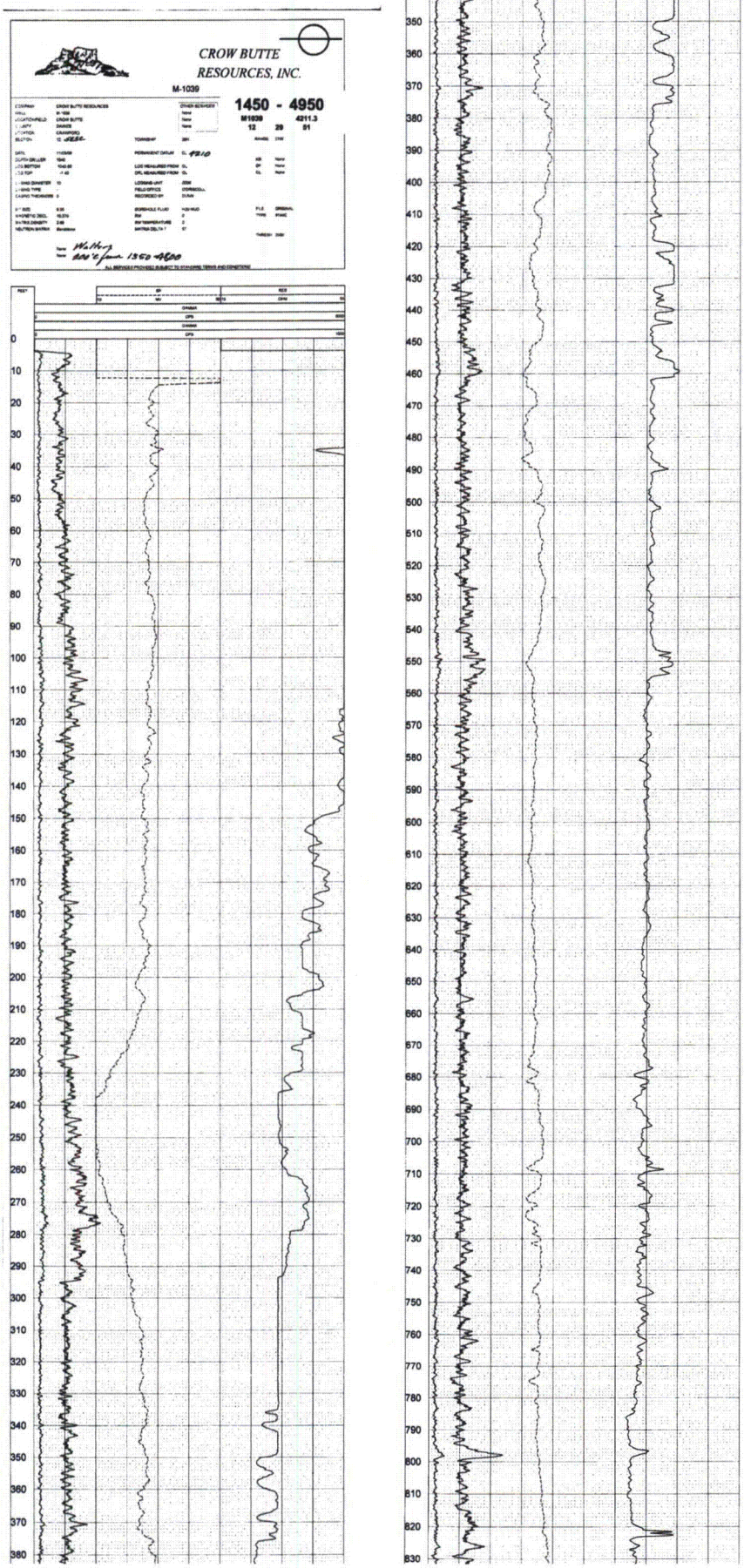


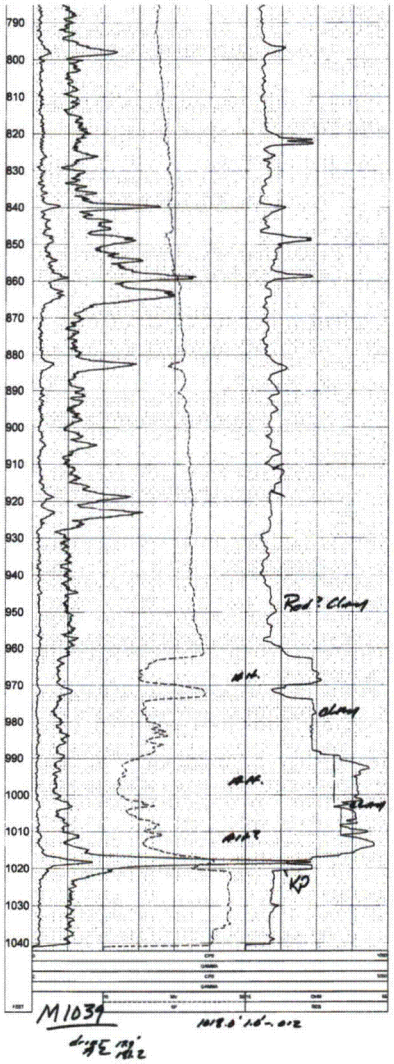

CROW BUTTE RESOURCES, INC.

**LOG M-894**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc... K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...5/09/2012



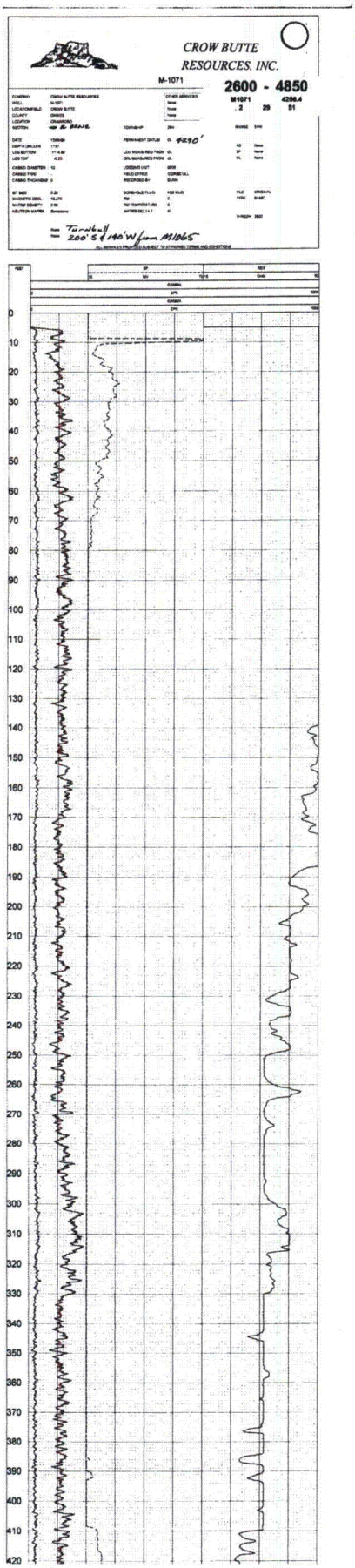



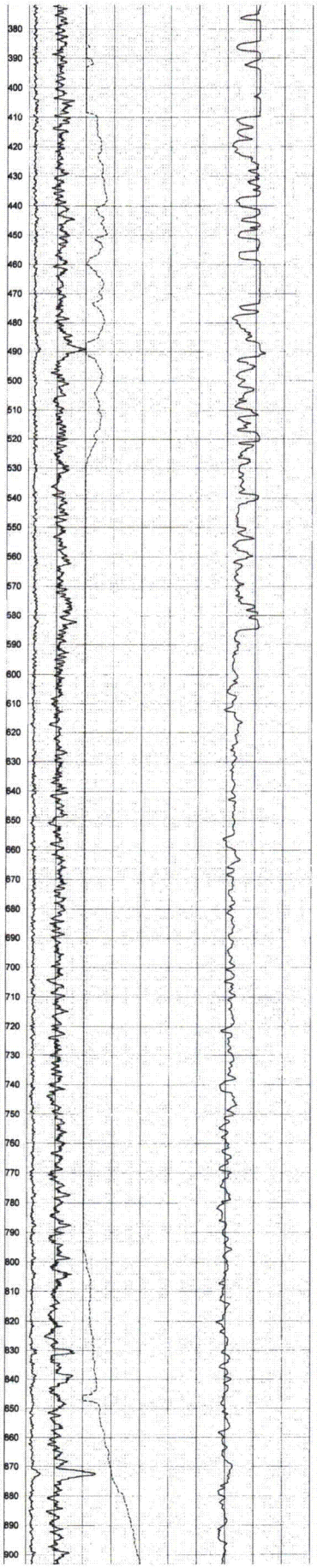

CROW BUTTE RESOURCES, INC.

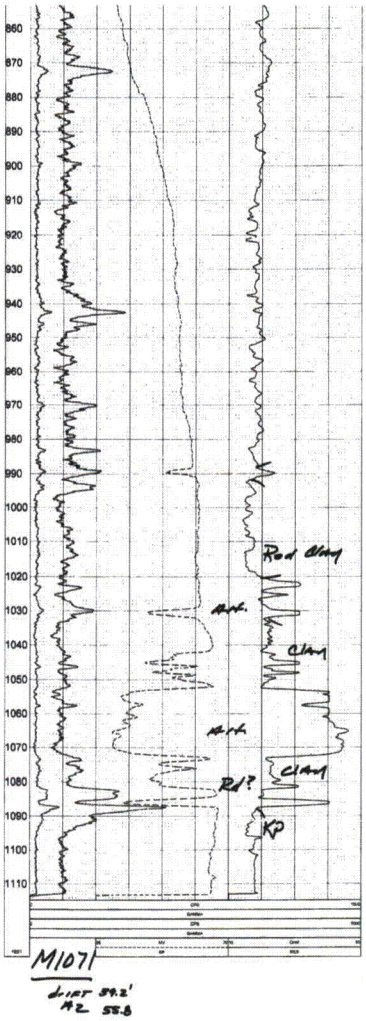
**LOG M-1039**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



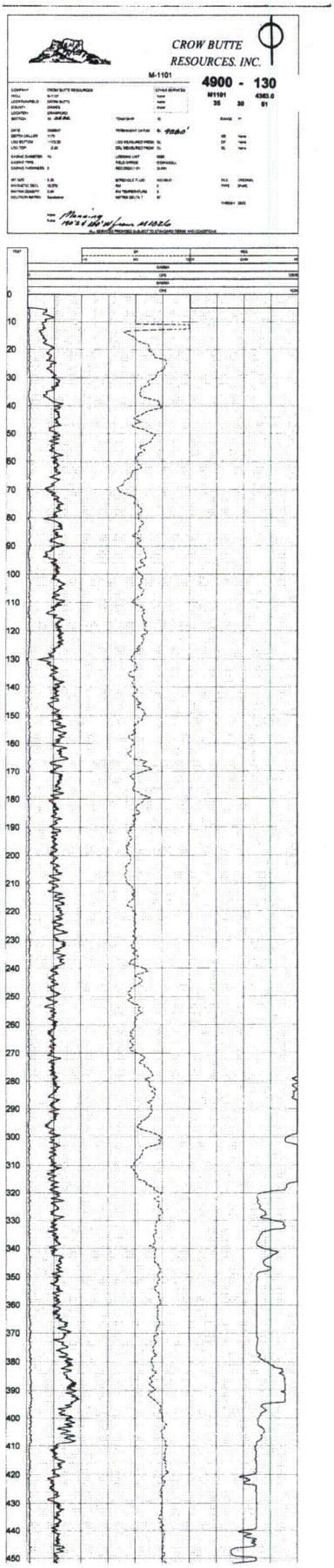


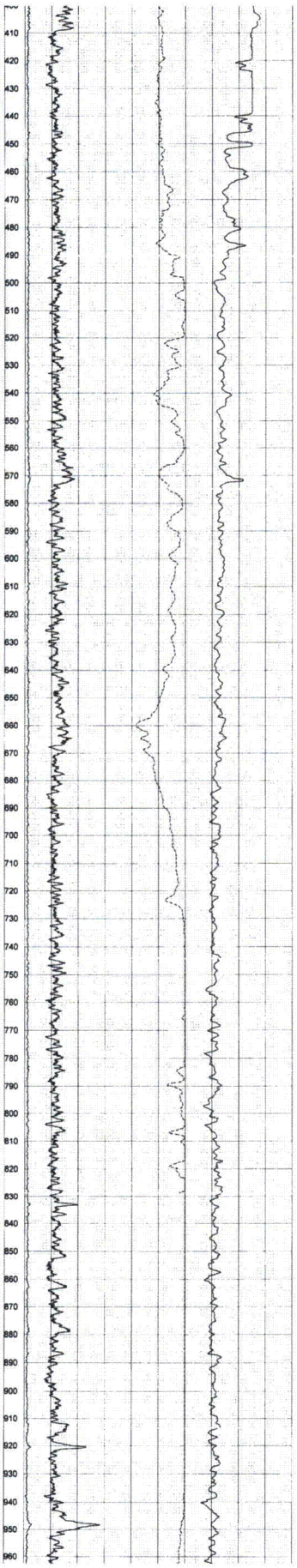

CROW BUTTE RESOURCES, INC.

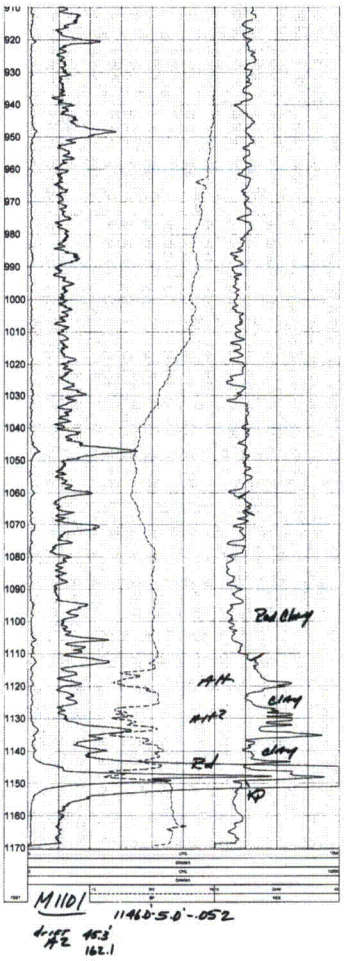
**LOG M-1071**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: X:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



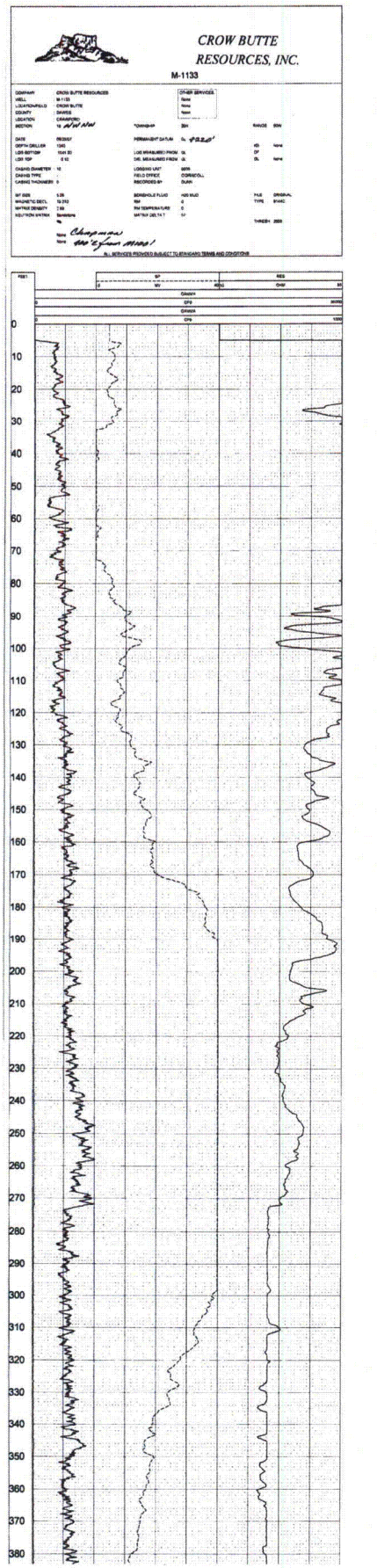


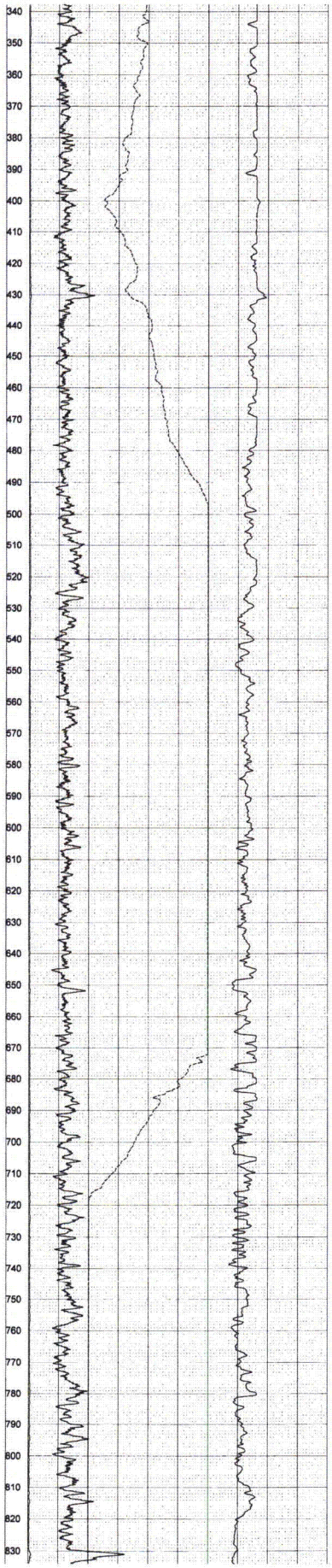

CROW BUTTE RESOURCES, INC.

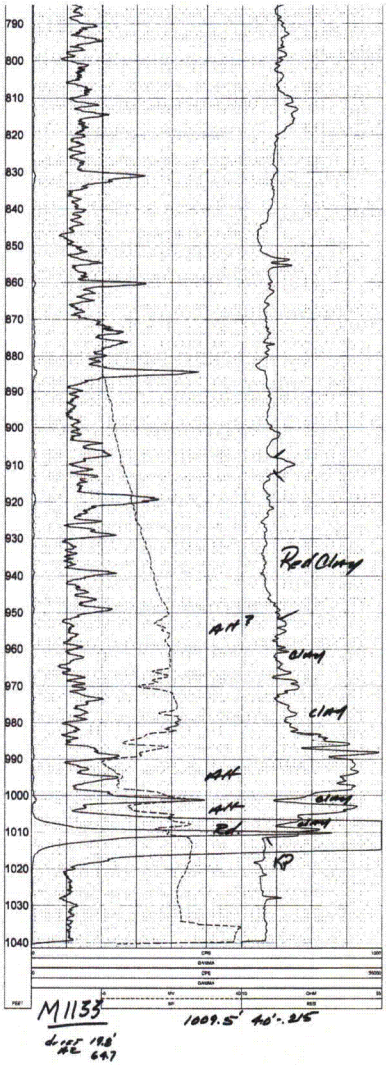
**LOG M-1101**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



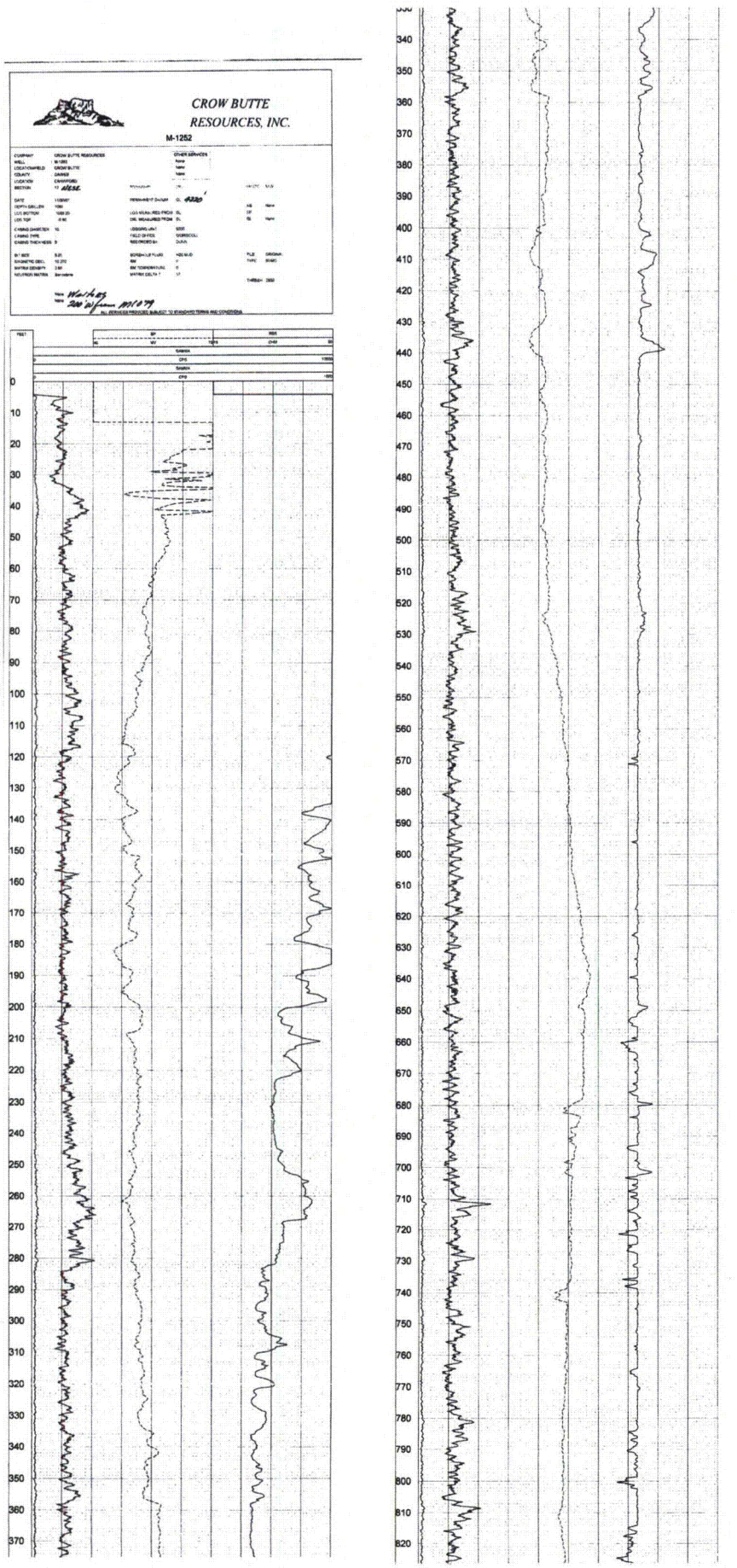



CROW BUTTE
RESOURCES, INC.

**LOG M-1133**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012

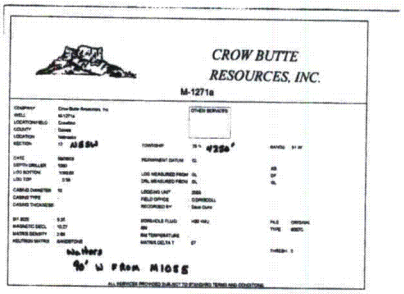


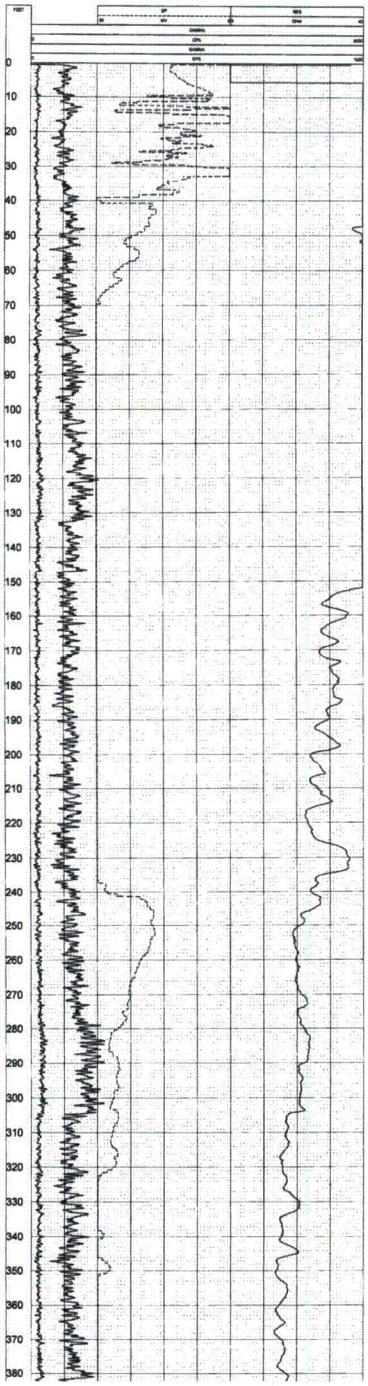

CROW BUTTE RESOURCES, INC.

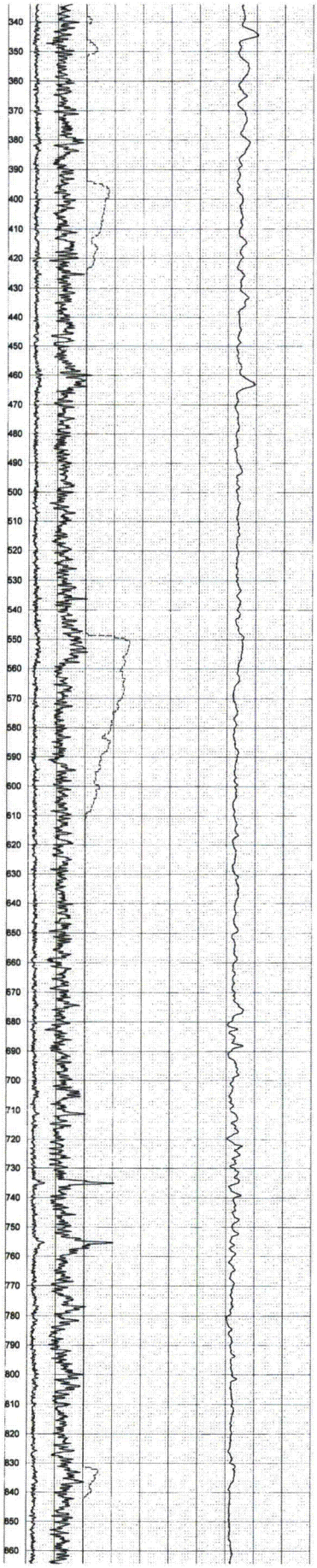
**LOG M-1252**

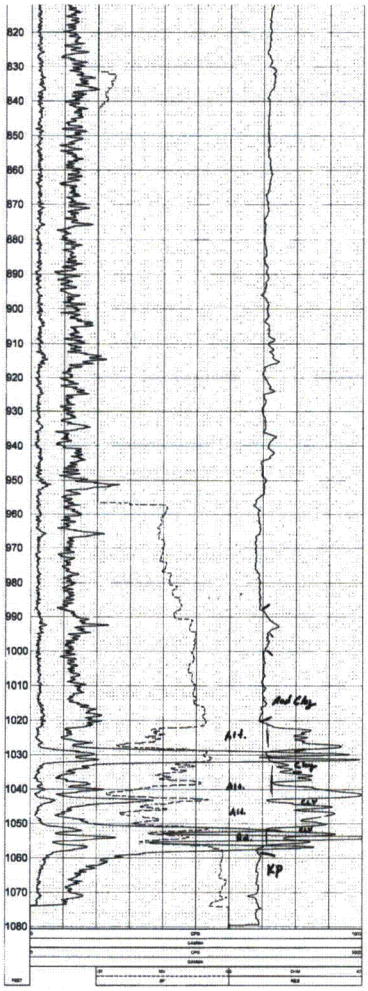
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca[illegible]:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO [illegible]5/09/2012







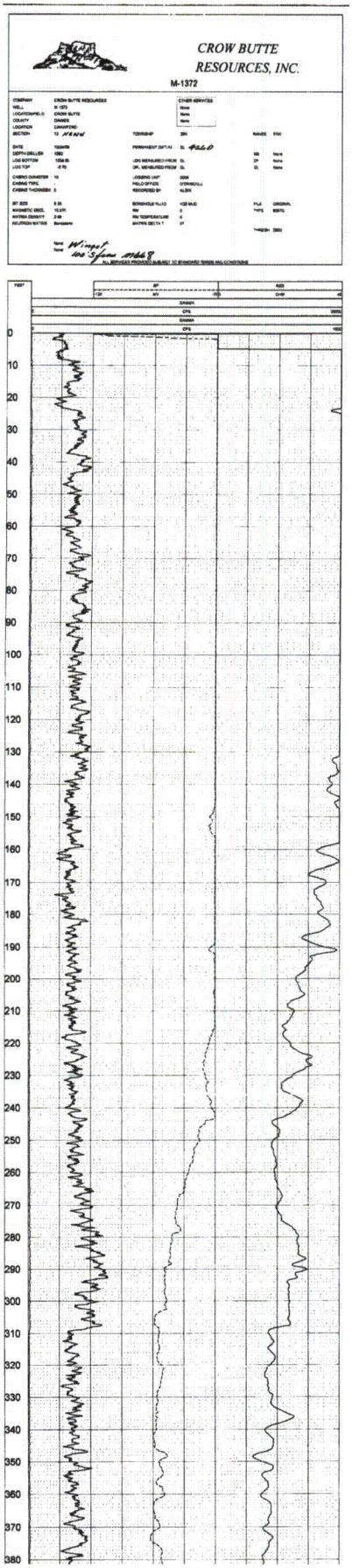

M1271

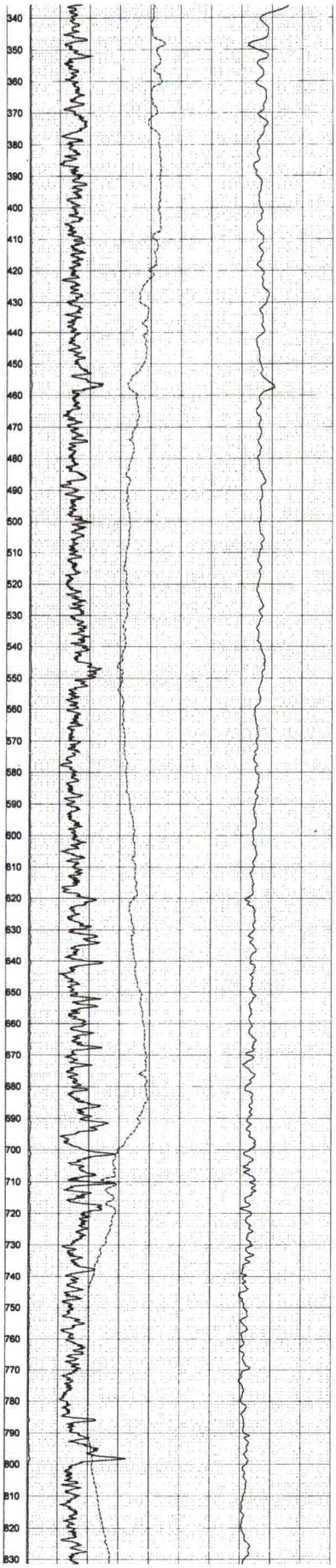
CROW BUTTE
RESOURCES, INC.

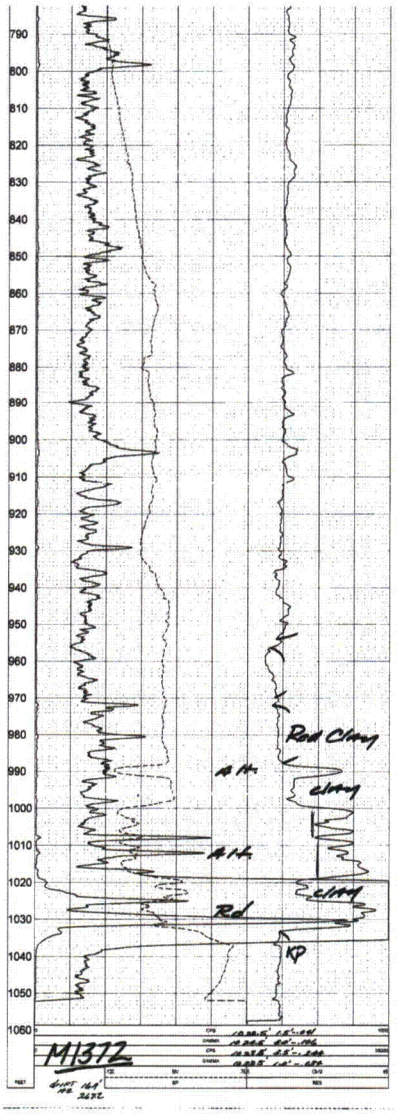
**LOG M-1271**

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...5/09/2012



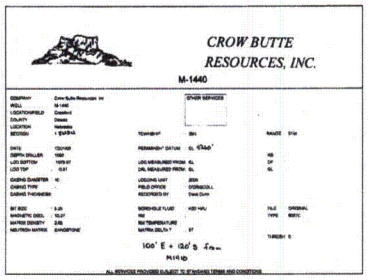


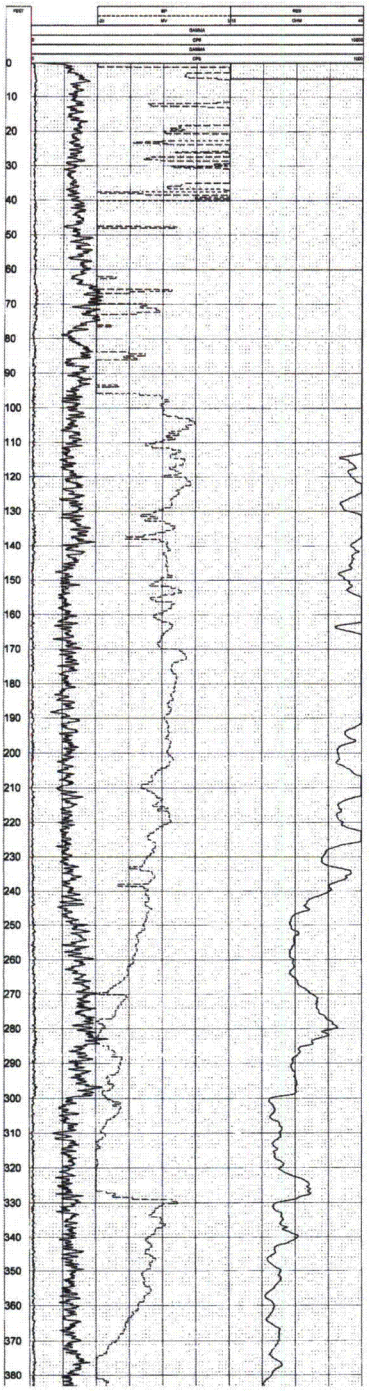

CROW BUTTE
RESOURCES, INC.

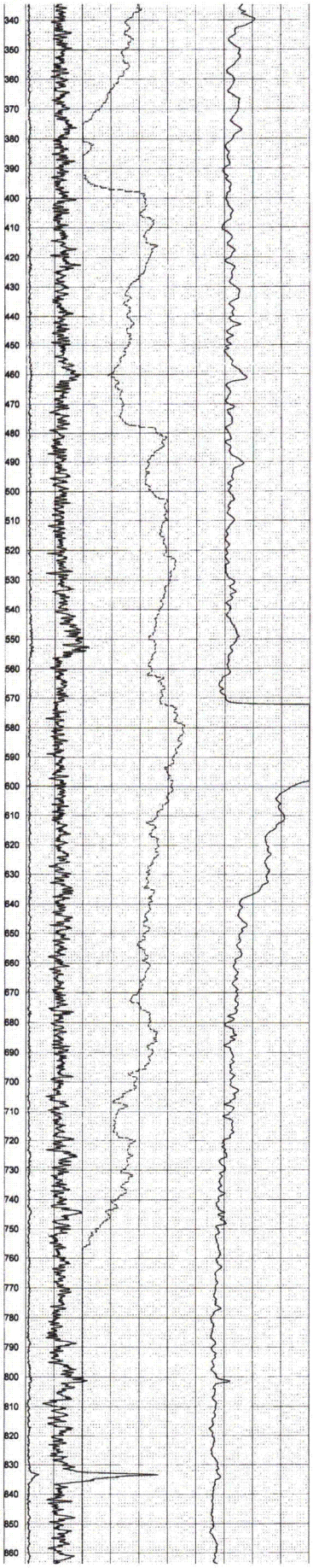
**LOG M-1372**

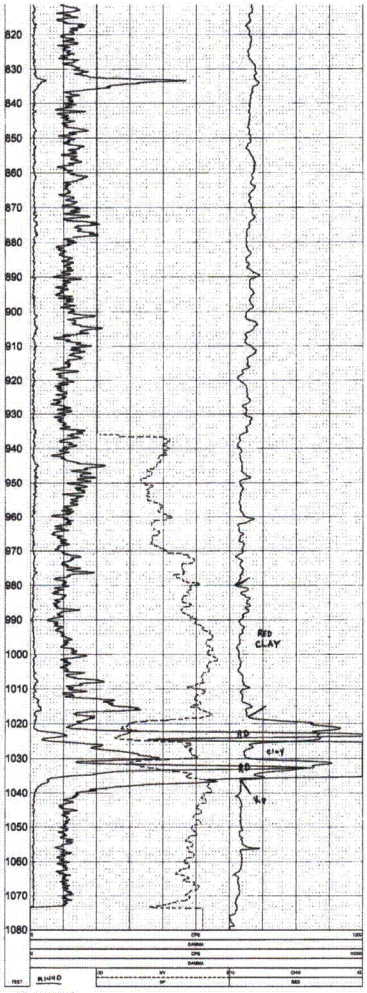
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012







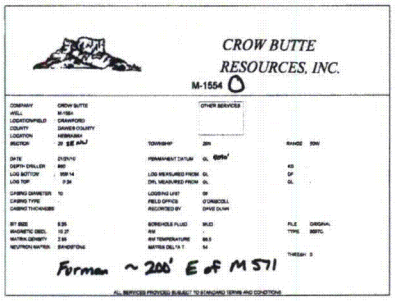

AZMI: 240.3°
DIST: 22.9'
1023.0' - 1.0' - 0.013%
1028.5' - 5.0' - 0.034%
1032.0' - 4.0' - 0.052%

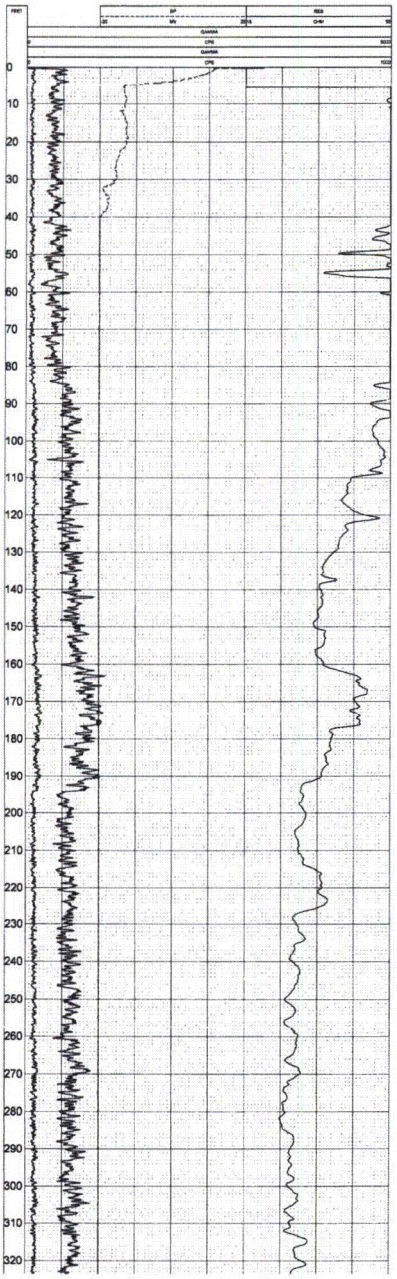
CROW BUTTE
RESOURCES, INC.

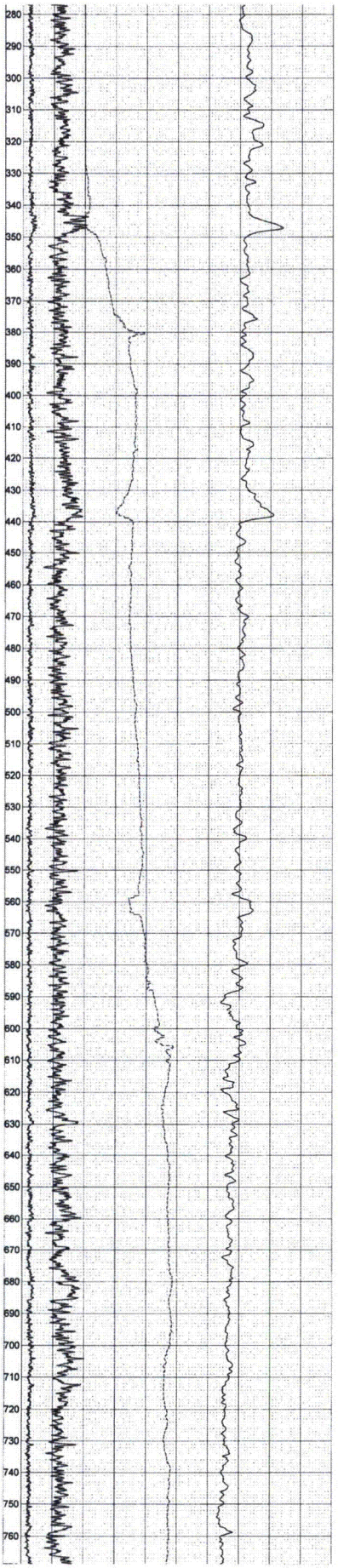
**LOG M-1440**

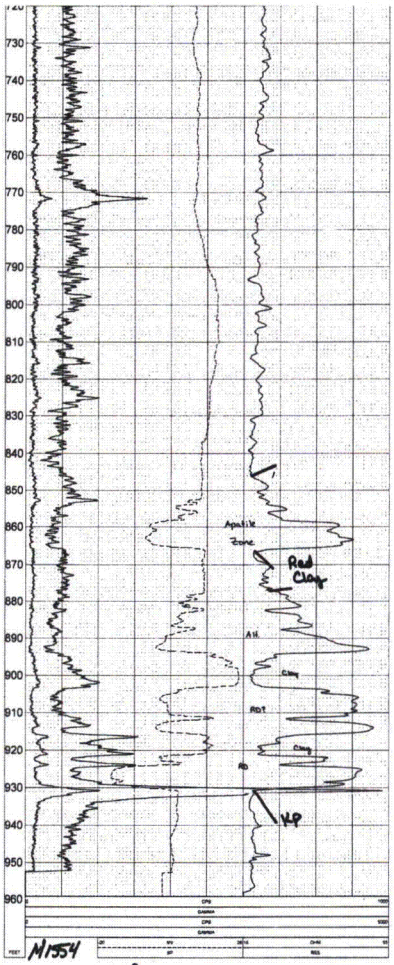
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on 05/09/2012





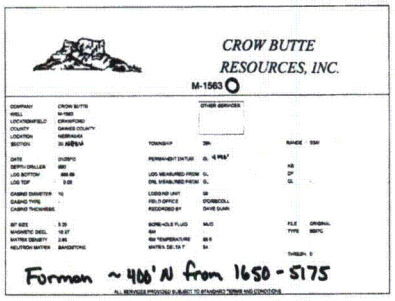

M1554
AZM: 149.5°
DIST: 30.6'

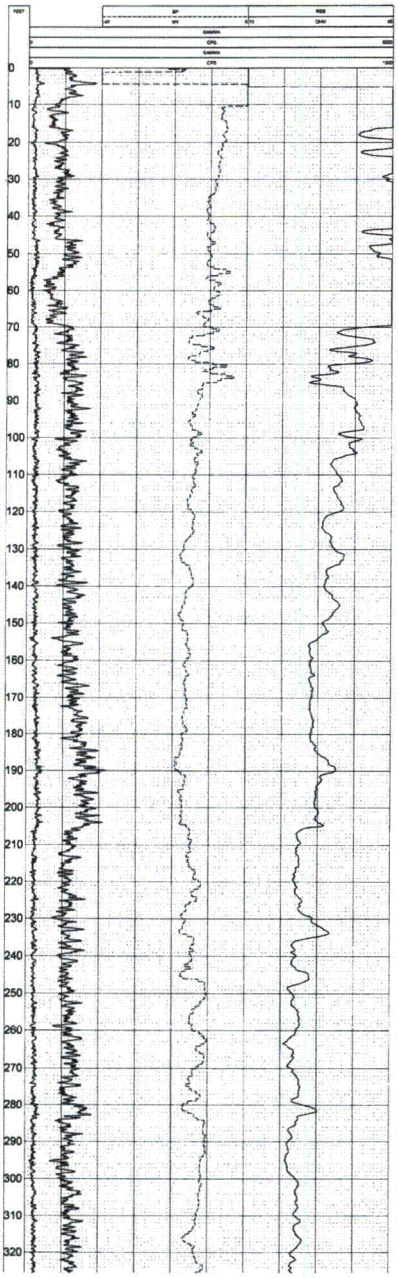
CROW BUTTE RESOURCES, INC.

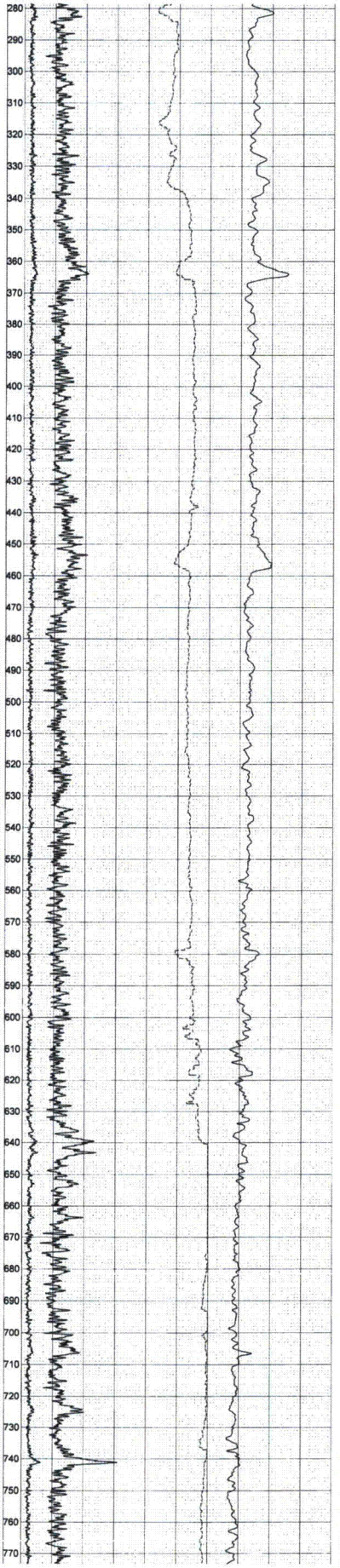
**LOG M-1554**

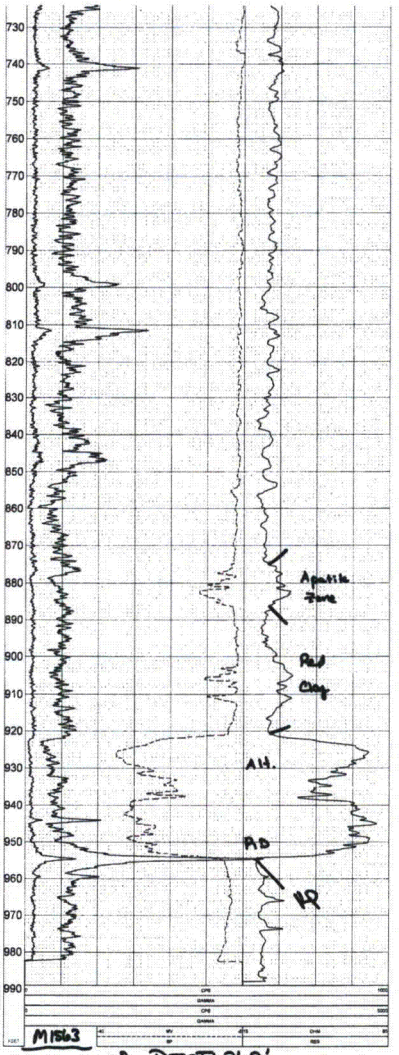
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loca[illegible]:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO [illegible]5/09/2012





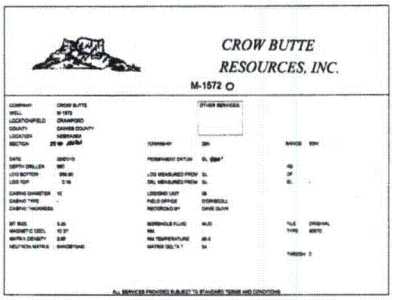


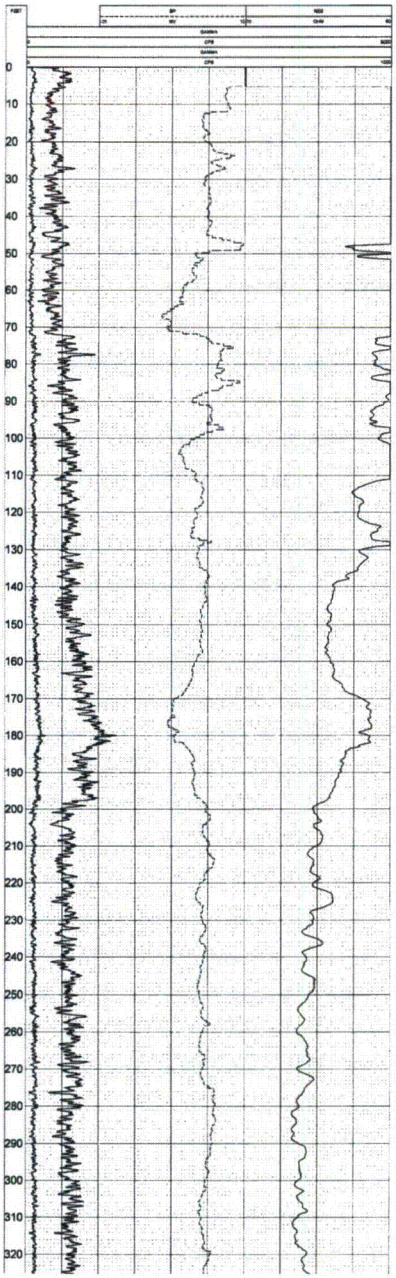

CROW BUTTE RESOURCES, INC.

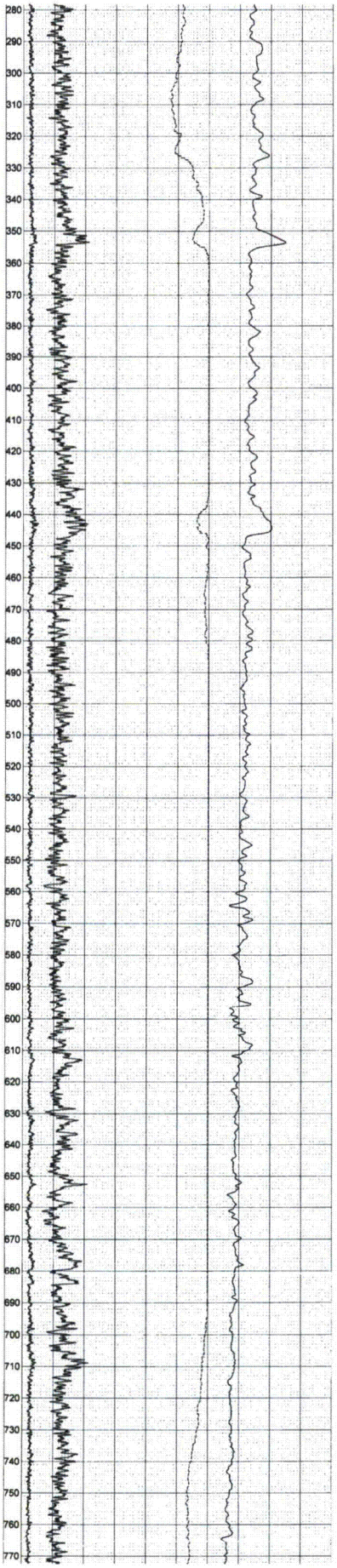
**LOG M-1563**

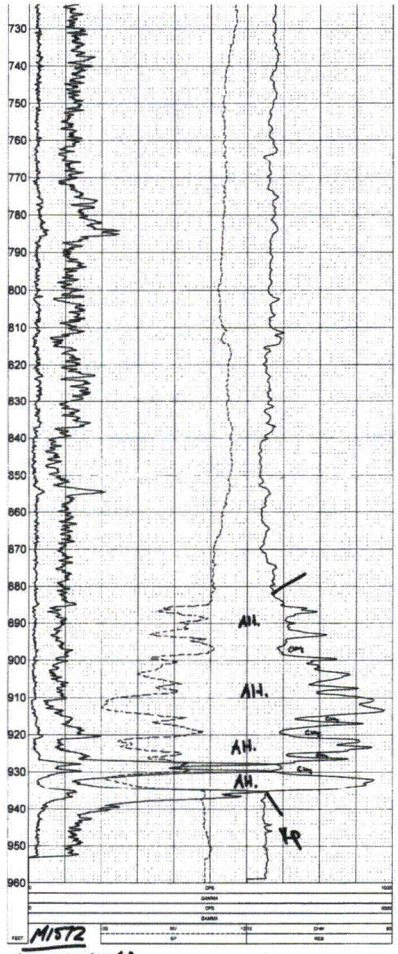
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Loc...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...05/09/2012








AZM: 45.6°
DIST: 7.2'

CROW BUTTE
RESOURCES, INC.

**LOG M-1572**

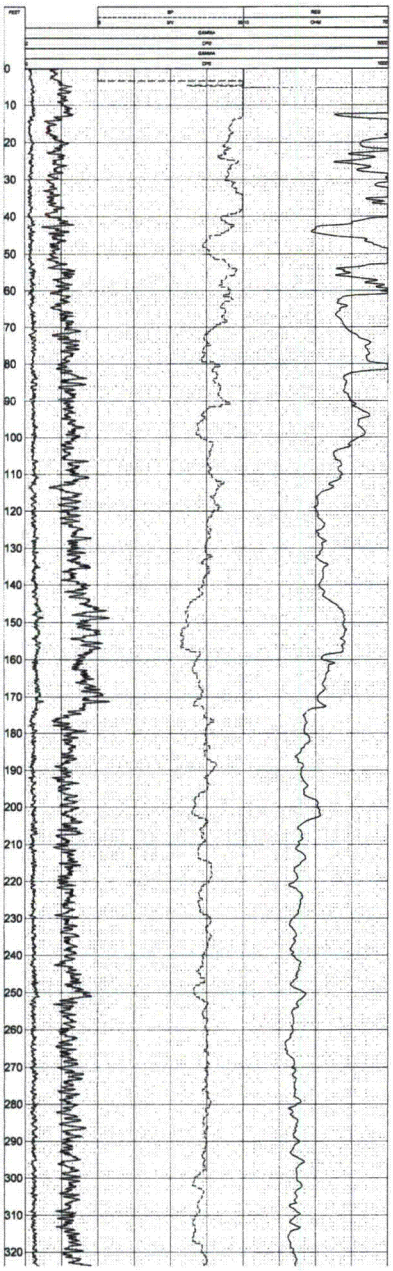
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

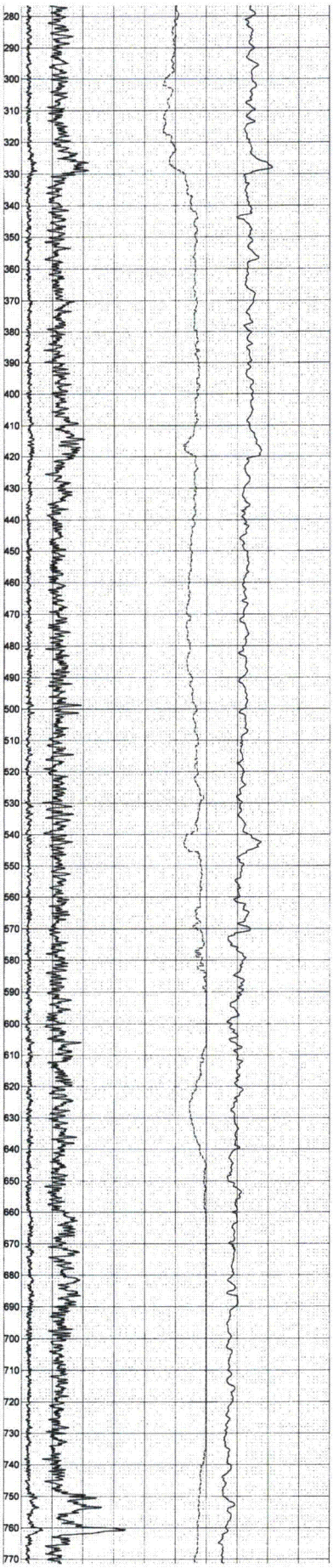
Source File Loc...\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO ...05/09/2012

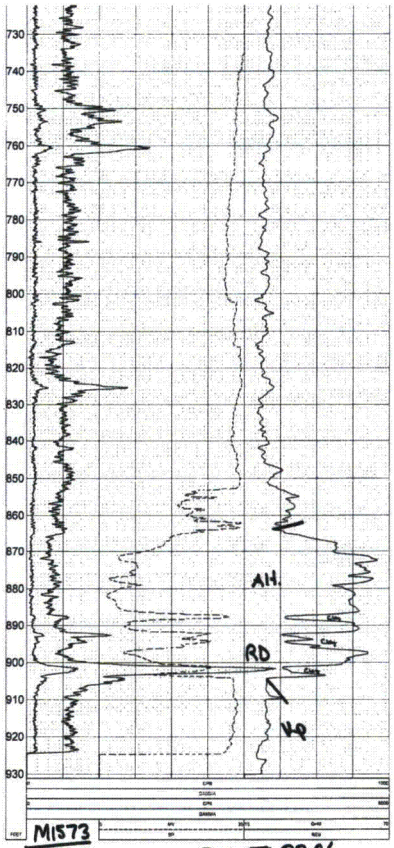
CROW BUTTE RESOURCES, INC.

M-1573

Furman ~200' E FROM M1556







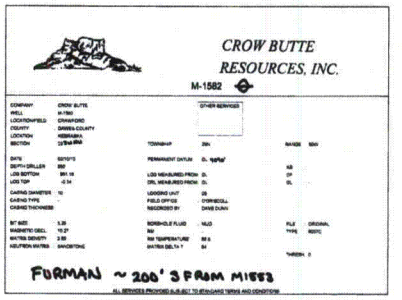

AZM: 200.1° DIST: 22.9'

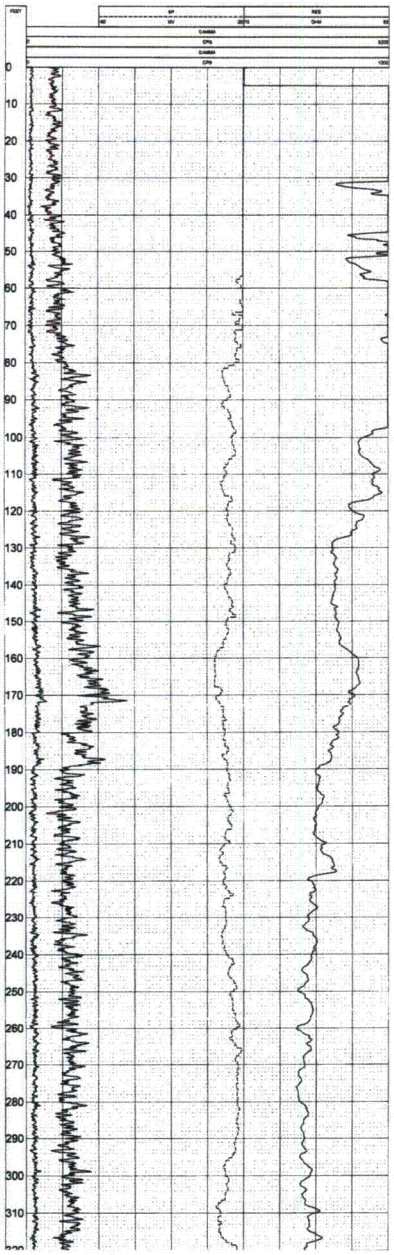
CROW BUTTE RESOURCES, INC.

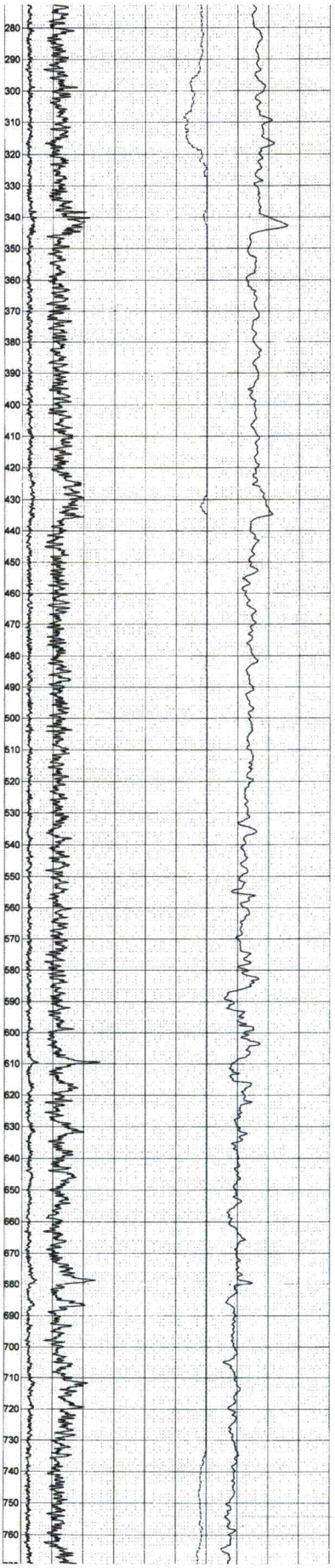
**LOG M-1573**

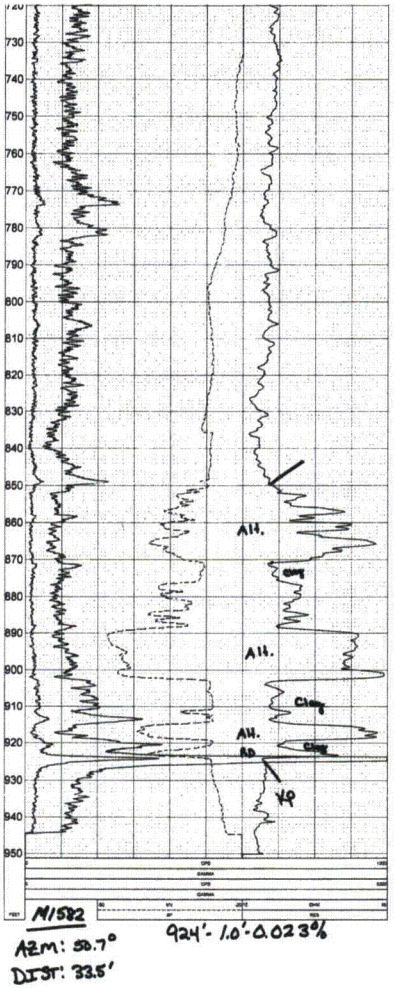
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: R:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012





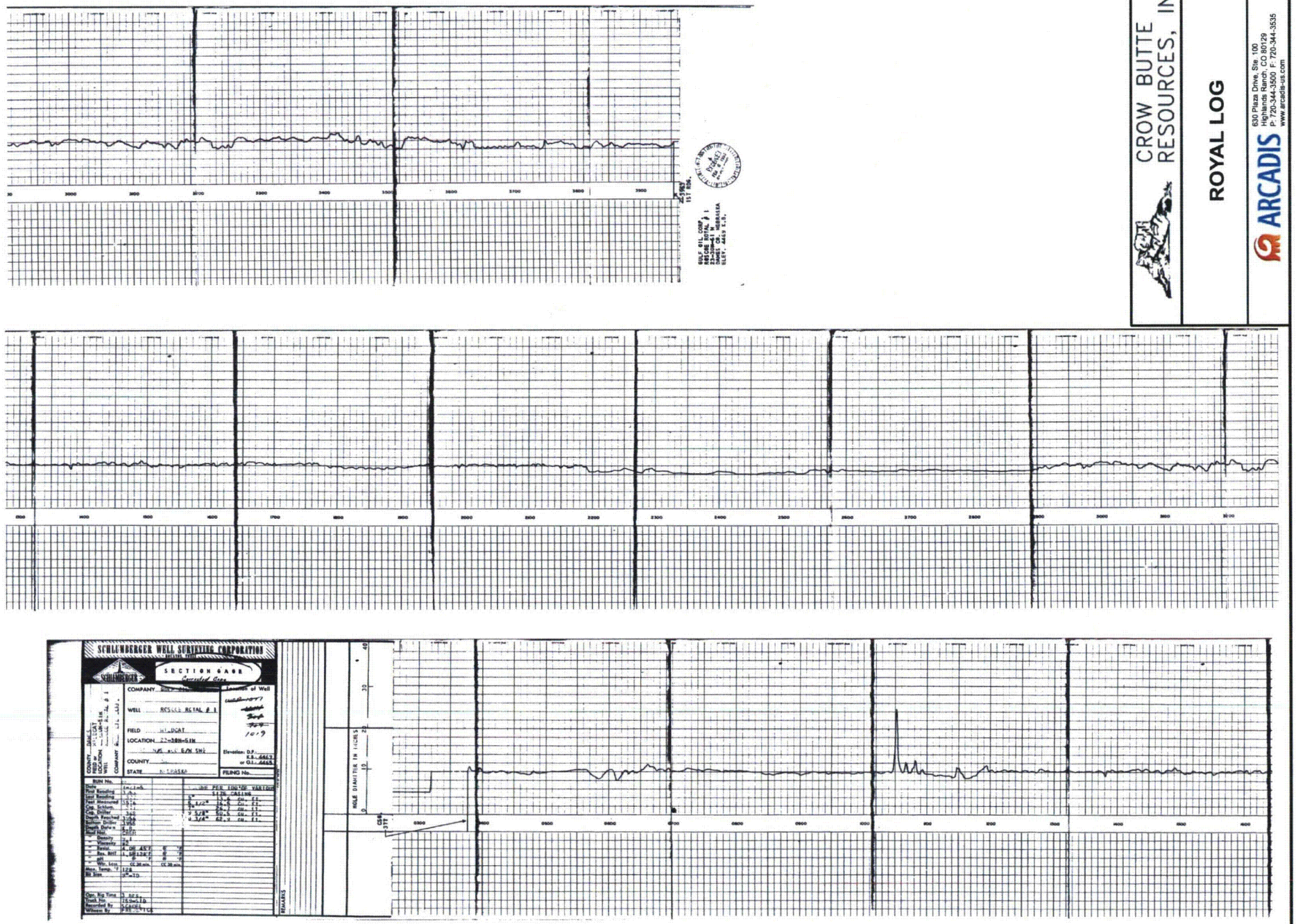



CROW BUTTE RESOURCES, INC.

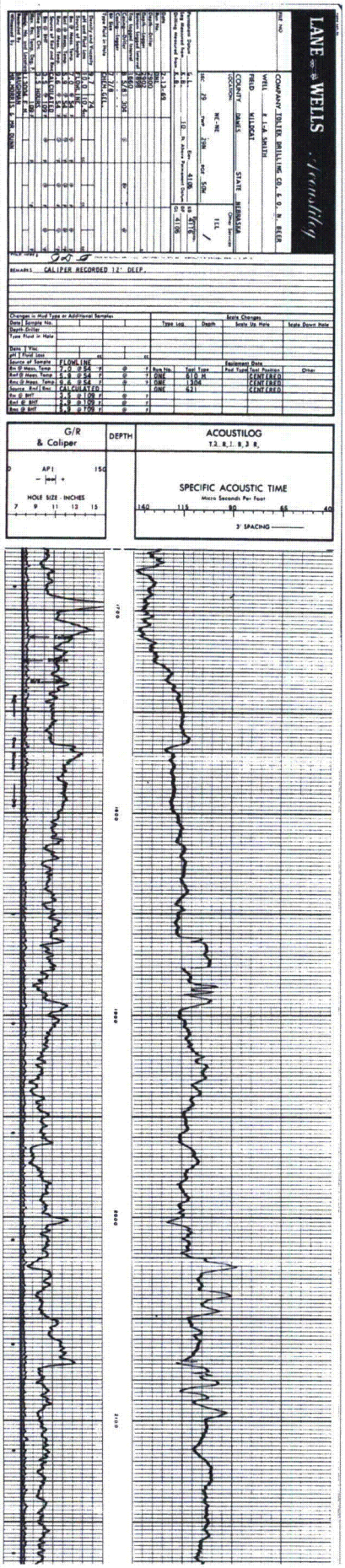
**LOG M-1582**

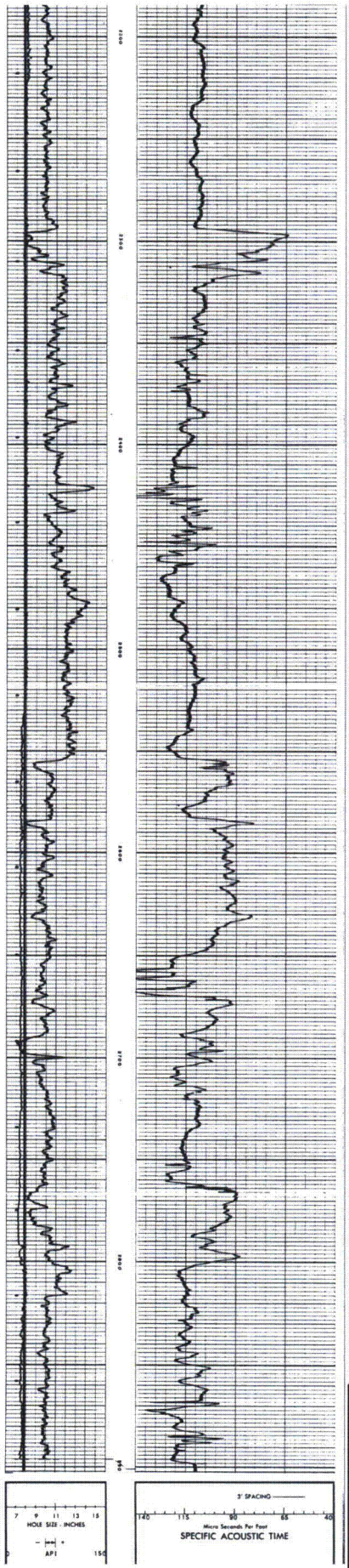
ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

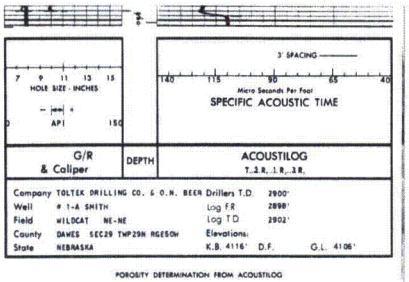
Source File Location: K:\CBR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO 05/09/2012



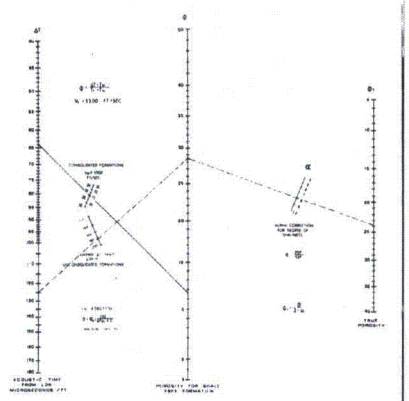

Source File Location: ...\CBR_Projects\CO001636_Marsland\3_IMAGES\IllustratorLogFigures\ Formatted By: J.Chen @ Boulder, CO on 5/09/2012



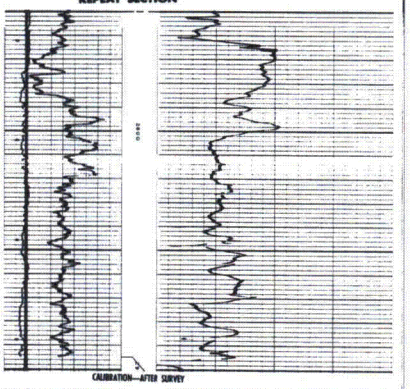



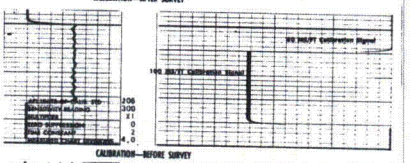

POROSITY DETERMINATION FROM ACOUSTILOG



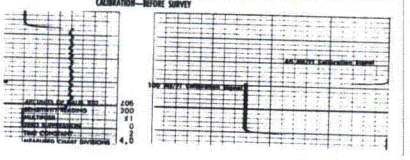
REPEAT SECTION



CALIBRATION—AFTER SURVEY



CALIBRATION—BEFORE SURVEY



CROW BUTTE RESOURCES, INC.

# SMITH 1A LOG

ARCADIS
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
P: 720-344-3500 F: 720-344-3535
www.arcadis-us.com

Source File Location: ...BR_Projects\CO001636_Marsland\3_IMAGES\Illustrator\LogFigures\ Formatted By: J.Chen @ Boulder, CO on ...9/2012