Nichols Ranch ISR Project
U.S.N.R.C Source Material
SUA-1597
Jane Dough Amendment

Volume V

Appendices JD-A, JD-B, JD-C-1 through JD-C-3, JD-E, JD-D1 through JD-D4, Addendum JD-D4-A and Figures and Exhibits

Uranerz
ENERGY CORPORATION

Uranerz Energy Corporation
PO Box 50850
Casper, WY 82605-0850
307-265-8900

April 2014

APPENDIX A

OWNERS OF RECORD OF SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
JANE DOUGH UNIT

APPENDIX A
OWNERS OF RECORD FOR SURFACE AND MINERAL RIGHTS WITHIN THE PERMIT AREA (JANE DOUGH UNIT)

Township 43 North, Range 76 West 6th PM Section 20: SE/4NW/4, S/2NE/4, N/2SE/4, SE/4SE/4	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850
Locatable Minerals including Uranium SE/4	UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: Oil and Gas-S/2NE/4, SE/4SE/4 Sec 20	ABO PETRO CORPORATION 105 S 4th Street Artesia, New Mexico 88210 ANADARKO E&P ONSHORE LLC P.O. Box 173779 Denver, Colorado 80217 MYCO INDUSTRIES INC 105 S 4th Street Artesia, New Mexico 88210 OXY Y-1 COMPANY P.O. Box 27570 Houston, Texas 77227 SHARBRO ENERGY LLC P.O. Box 840 Artesia, New Mexico 88211

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Township 43 North, Range 76 West 6th PM **Section 20: SE/4NW/4, S/2NE/4, N/2SE/4,** **SE/4SE/4**	
Lease Owner: **Oil and Gas-S/2NE/4, SE/4SE/4 Sec 20** **(continued)**	WPX ENERGY ROCKY MOUNTAIN LLC P.O. Box 3102 Tulsa, Oklahoma 74101 YATES INDUSTRIES LLC P.O. Box 1091 Artesia, New Mexico 88211 YATES PETROLEUM CORPORATION 105 S 4th Street Artesia, New Mexico 88210
Lease Owner: **Oil and Gas – SE/4NW/4 Sec 20**	LOS CHICOS P.O. Box 900 Artesia, New Mexico 88211 MYCO INDUSTRIES INC 105 S 4th Street Artesia, New Mexico 88210 SACRAMENTO PARTNERS LP 105 S 4th Street Artesia, New Mexico 88210 SHARBRO ENERGY LLC P.O. Box 840 Artesia, New Mexico 88211 TRUST Q 105 S 4th Street Artesia, New Mexico 88210 YATES INDUSTRIES LLC P.O. Box 1091 Artesia, New Mexico 88211

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas – SE/4NW/4 Sec 20** **(continued)**	YATES PETROLEUM CORPORATION 105 S 4th Street Artesia, New Mexico 88210
Lease Owner: **Coal Bed Methane – SE/4NW/4 Sec 20**	WPX ENERGY ROCKY MOUNTAIN LLC P.O. Box 3102 Tulsa, Oklahoma 74101
Royalty Owner: **Uranium – S/2 NE/4, SE/4 Sec 20**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803
Township 43 North, Range 76 West 6th PM **Section 20: SW/4SE/4** **SURFACE OWNER:**	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas – SW/4SE/4 Sec 20**	ABO PETRO CORPORATION 105 S 4th Street Artesia, New Mexico 88210 ANADARKO E&P ONSHORE LLC P.O. Box 173779 Denver, Colorado 80217

APPENDIX A
OWNERS OF RECORD FOR SURFACE AND MINERAL RIGHTS WITHIN THE PERMIT AREA (JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas – SW/4SE/4 Sec 20** **(continued)**	MYCO INDUSTRIES INC 105 S 4th Street Artesia, New Mexico 88210 OXY Y-1 COMPANY P.O. Box 27570 Houston, Texas 77227 SHARBRO ENERGY LLC P.O. Box 840 Artesia, New Mexico 88211 WPX ENERGY ROCKY MOUNTAIN LLC P.O. Box 3102 Tulsa, Oklahoma 74101 YATES INDUSTRIES LLC P.O. Box 1091 Artesia, New Mexico 88211 YATES PETROLEUM CORPORATION 105 S 4th Street Artesia, New Mexico 88210
Royalty Owner: **Uranium – SW/4SE/4 Sec 20**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803
Township 43 North, Range 76 West 6th PM **Section 20: SW/4NW/4** **SURFACE OWNER:**	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER: **Other Minerals, including Uranium**	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Royalty Owner: **Uranium**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718 LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701 PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644 TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402
MINERAL OWNER: **Oil and Gas**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718 LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701
Lease Owner: **Oil and Gas**	ANADARKO PETROLEUM COMPANY P.O. Box 173779 Denver, Colorado 80217 LANCE OIL & GASE COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Lease Owner: **Oil and Gas** **(continued)**	SAMSON RESOURCES COMPANY Samson Plaza, Two West 2nd Street Tulsa, Oklahoma 74103

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO. 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Overriding Royalty Owner: **Oil and Gas**	AA ENERGY CORPORATION 1500 Fidelity Union Tower Dallas, Texas 75201 WIND RIVER RESOURCES, INC. P.O. Box 2944 Casper, Wyoming 82602 POWDER RIVER OIL & GAS VENTURES LLC-II P.O. Box 36157 Denver, Colorado 802602 MEAGER OIL & GAS PROPERTIES INC 6040 Greenwood Plaza Blvd Greenwood Village, Colorado 80111 PENWELL PROPERTIES 3838 Oak Lawn Ave, Suite 1216 Dallas, Texas 75219 HEADINGTON OIL COMPANY 7557 Rambler Road, Suite 1100 Dallas, Texas 75231
Township 43 North, Range 76 West 6th PM **Section 20: SW/4**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
Mineral Owner: **Oil, Gas, and other minerals**	PAX IRVINE MINERAL TRUST Edna C. Irvine and Lee R. Irvine, Successor Trustees 15443 E. Firerock Country Club Dr. Fountain Hills, Arizona 85268

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Uranium**	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil & Gas**	EOG RESOURCES, INC. 600 17th Street, Suite 1000 North Denver, Colorado 80202
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Royalty Owner: **Oil and Gas**	WILLIAM & SALLY IRVINE VAN & HERMA W. IRVINE No addresses available MOSS TRUE BLOOD No address available LANCE OIL & GAS COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Township 43 North, Range 76 West 6th PM **Section 21: N/2NW/4, NW/4NE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER: **Other minerals including Uranium**	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Royalty Owner: **Uranium**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Royalty Owner: **Uranium** **(continued)**	LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701 PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644 TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402
MINERAL OWNER: **Oil and Gas**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718 LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701
Lease Owner: **Oil and Gas**	ANADARKO PETROLEUM COMPANY P.O. Box 173779 Denver, Colorado 80217 LANCE OIL & GAS COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202 ENCORE ENERGY OPERATING 5847 San Felipe, Suite 3000 Houston, Texas 77057
Overriding Royalty Owner: **Oil and Gas**	AA ENERGY CORPORATION 1500 Fidelity Union Tower Dallas, Texas 75201

APPENDIX A
OWNERS OF RECORD FOR SURFACE
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(JANE DOUGH UNIT) (Continued)

Overriding Royalty Owner: **Oil and Gas** **(continued)**	WIND RIVER RESOURCES, INC. P.O. Box 2944 Casper, Wyoming 82602 POWDER RIVER OIL & GAS VENTURES LLC-II P.O. Box 36157 Denver, Colorado 802602
Township 43 North, Range 76 West 6th PM **Section 21: S/2NW/4, SW/4/SE/4, SW/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850
W/2SW/4 only	UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Royalty Owner: **Uranium**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803
Township 43 North, Range 76 West 6th PM **Section 21: SW/4NE/4, NW/4SE/4**	

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(JANE DOUGH UNIT) (Continued)

SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Township 43 North, Range 76 West 6th PM **Section 27: W/2SW/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Township 43 North, Range 76 West 6th PM **Section 28: E/2E/2NE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Township 43 North, Range 76 West 6th PM **Section 28: NW/4, W/2NE/4, W/2E/2NE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Royalty Owner: **Uranium**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803
Township 43 North, Range 76 West 6th PM **Section 28: S/2**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	NELROY , LLC 2868 East 72nd Street Tulsa, Oklahoma 74136
MINERAL OWNER: **(continued)**	IBERLIN MINERAL PARTNERSHIP 975 Iberlin Ranch Road Gillette, Wyoming 82716 FCN, INC. Attn: Jaymie Hauer 2845 North 27th Avenue #4 Bozeman, Montana 59718

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

MINERAL OWNER: **(continued)**	DONALD AND SUZANNE COOPER 1555 Bellaire Drive Casper, Wyoming 82604 BLACK GOLD ENTERPRISES, LLC Attn: Judy Taylor 5770 SW 203rd Ave Aloha, Oregon 97007 TRAUTWEIN FAMILY, LLC 900 8th Street Wheatland, Wyoming 82201 MATSUDA MINERAL RIGHTS TRUST Attn: Michael Matsuda 514 West County Road 78 Wellington, Colorado 80549 TRIIPLE S INVESTMENTS, LLC Attn: Donelle Schlicht 46 Dahlia Casper, Wyoming 82604 ERIC A. TAYLOR 1080 Park Blvd., #307 San Diego, California 92101 BRADFORD HOLMES 2201 E. San Juan Phoenix, Arizona 85016 LAURA DAY 8301 East Keim Drive Scottsdale, Arizona 85250 DIANA K. KINTZ LIVING TRUST 4746 Yarrow Place Colorado Springs, Colorado 80917 H. HOWARD COOPER 1225 County Road 14 Meeker, Colorado 81641

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (*Continued*)

MINERAL OWNER: **(continued)**	JUDY RAE KOLZ 447 Whitetail Lane Grand Junction, Colorado 81503 MATTHEW LAWRENCE KOLZ 8020 Orchard Path Road Colorado Springs, Colorado 80919
Lease Owner: **Uranium**	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil & Gas**	SAMSON RESOURCES COMPANY Samson Plaza, Two West 2nd Street Tulsa, Oklahoma 74103
Royalty Owner: **Oil and Gas**	TRIAXIS, LLC P.O. Box 1575 Casper, Wyoming 82602
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Township 43 North, Range 76 West 6th PM **Section 29: E/2NE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Locatable Minerals including Uranium	UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Royalty Owner: **Uranium**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803
Township 43 North, Range 76 West 6th PM **Section 29: W/2NE/4, SE/4**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium:	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Royalty Owner: **Uranium**	EXCALIBUR INDUSTRIES 1800 Lake View Drive P.O. Box 3551 Duluth, Minnesota 55803

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Township 43 North, Range 76 West 6th PM **Section 29: W/2**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	PAX IRVINE MINERAL TRUST Edna C. Irvine and Lee R. Irvine, Successor Trustees 15443 E. Firerock Country Club Dr. Fountain Hills, Arizona 85268 PAMELA CAMPBELL 6115 Kennedy Drive Chevy Chase, Maryland 20815 R KEITH MOORE P.O. Box 1738 Sun Valley, Idaho 83353 MARY LOU FERRIS 36 Tallmadge Ave. Chatham, New Jersey 07928 BRIAN MOORE 165 West 20th Street Apt. 6B New York, New York 10011 RAYMOND KIRK MOORE 6 Church Street Belfast, Maine 04915
Lease Owner: **Uranium**	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas**	EOG RESOURCES, INC. 600 17th Street, Suite 1000 North Denver, Colorado 80202
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Royalty Owner: **Oil and Gas**	WILLIAM & SALLY IRVINE VAN & HERMA W. IRVINE No addresses available MOSS TRUE BLOOD No address available LANCE OIL & GAS COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Township 43 North, Range 76 West 6th PM **Section 30: SE/4**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Township 43 North, Range 76 West 6th PM **Section 31: E/2E/2**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850
Locatable Minerals including Uranium (continued)	UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Township 43 North, Range 76 West 6th PM **Section 31: NW/4NE/4; W/2SE/4**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK L.P. P.O. Box 53 Laketown, Utah 84038
MINERAL OWNER:	PAX IRVINE MINERAL TRUST Edna C. Irvine and Lee R. Irvine, Successor Trustees 15443 E. Firerock Country Club Dr. Fountain Hills, Arizona 85268

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Uranium**	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	EOG RESOURCES, INC. 600 17th Street, Suite 1000 North Denver, Colorado 80202
Royalty Owner: **Oil and Gas**	WILLIAM & SALLY IRVINE VAN & HERMA W. IRVINE No addresses available MOSS TRUE BLOOD No address available
Royalty Owner: **Oil and Gas** **(continued)**	LANCE OIL & GAS COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Township 43 North, Range 76 West 6th PM **Section 32: S/2**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Township 43 North, Range 76 West 6th PM **Section 32: N/2**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	NELROY , LLC 2868 East 72nd Street Tulsa, Oklahoma 74136 IBERLIN MINERAL PARTNERSHIP 975 Iberlin Ranch Road Gillette, Wyoming 82716 FCN, INC. Attn: Jaymie Hauer 2845 North 27th Avenue #4 Bozeman, Montana 59718 DONALD AND SUZANNE COOPER 1555 Bellaire Drive Casper, Wyoming 82604 BLACK GOLD ENTERPRISES, LLC Attn: Judy Taylor 5770 SW 203rd Ave Aloha, Oregon 97007

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

MINERAL OWNER: **(Continued)**	TRAUTWEIN FAMILY, LLC 900 8th Street Wheatland, Wyoming 82201 MATSUDA MINERAL RIGHTS TRUST Attn: Michael Matsuda 514 West County Road 78 Wellington, Colorado 80549 TRIIPLE S INVESTMENTS, LLC Attn: Donelle Schlicht 46 Dahlia Casper, Wyoming 82604 ERIC A. TAYLOR 1080 Park Blvd., #307 San Diego, California 92101 BRADFORD HOLMES 2201 E. San Juan Phoenix, Arizona 85016 LAURA DAY 8301 East Keim Drive Scottsdale, Arizona 85250 DIANA K. KINTZ LIVING TRUST 4746 Yarrow Place Colorado Springs, Colorado 80917 GEORGE W.CLAY IV 1505 P.B. Lane Wichita Falls, Texas 76302 H. HOWARD COOPER 1225 County Road 14 Meeker, Colorado 81641 JUDY RAE KOLZ 447 Whitetail Lane Grand Junction, Colorado 81503

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

MINERAL OWNER: **(Continued)**	MATTHEW LAWRENCE KOLZ 8020 Orchard Path Road Colorado Springs, Colorado
Lease Owner: **Uranium**	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR , LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil & Gas**	SAMSON RESOURCES COMPANY Samson Plaza, Two West 2nd Street Tulsa, Oklahoma 74103 CONTENENTAL LAND RESOURCES LLC P.O. Box 2170 Edmond, Oklahoma 73083
Lease Owner: **Coal Bed Methane**	BILL BARRETT CORP. 1099 18th Street, Suite 2300 Denver, Colorado 80202 WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202
Township 43 North, Range 76 West 6th PM **Section 33: W/2NW/4**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003

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OWNERS OF RECORD FOR SURFACE
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(JANE DOUGH UNIT) (Continued)

Locatable Minerals including Uranium	URANERZ ENERGY CORPORATION P.O. Box 50850 Casper, Wyoming 82605-0850 UNITED NUCLEAR, LLC 120 South Durbin Casper, Wyoming 82601
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Township 43 North, Range 76 West 6th PM **Section 33: N/2NE/4, E/2NW/4**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Royalty Owner: **Uranium**	TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402 PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Royalty Owner: **Uranium** **(continued)**	JOHN S. WOLD 139 W. 2nd Street Casper, Wyoming 82601 PAGE JENKINS 830 Midland Savings Building Denver, Colorado 80202 ELDRIDGE L. LOCKHART 2747 So. Poplar Casper, Wyoming 82601
Township 43 North, Range 76 West 6th PM **Section 34: NW/4NW/4**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	JOHN OLIVER ANDERSON 7462 Parkridge Circle Salt Lake City, Utah 84121 CBM GAS COMPANY, LLC P.O. Box 40 Dewey, Oklahoma 74029 DON COLTON 2172 Gambel Oak Drive Sandy, Utah 84092

APPENDIX A
OWNERS OF RECORD FOR SURFACE
AND MINERAL RIGHTS WITHIN THE PERMIT AREA
(JANE DOUGH UNIT) (Continued)

Lease Owner: **Oil and Gas** **(continued)**	GREGG COLTON 65 S Pfeifferhorn Drive Alpine, Utah 84004 MICHAEL PINNELL 8171 Old Coventry Circle Sandy, Utah 84093
Royalty Owner: **Uranium**	TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402 PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644 JOHN S. WOLD 139 W. 2nd Street Casper, Wyoming 82601 PAGE JENKINS 830 Midland Savings Building Denver, Colorado 80202 ELDRIDGE L. LOCKHART 2747 So. Poplar Casper, Wyoming 82601

APPENDIX B

SURFACE OWNERS OF RECORD
WITHIN ½ MILE OF PERMIT AREA
JANE DOUGH UNIT

APPENDIX B
SURFACE OWNERS OF RECORD
WITHIN ½ MILE OF PERMIT AREA
JANE DOUGH UNIT

Township 43 North, Range 76 West 6th PM **Section 15: W/2SW/4** **Section 17: SE/4, S/2SW/4** **Section 18: S/2SE/4** **Section 19: NE/4** **Section 20: N/2N/2** **Section 21: E/2E/2** **Section 22: W/2NW/4, SW/4** **Section 27: NW/4,W/2NE/4,E/2SW/4,W/2SE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY LP Attn: Patricia Clark 1026 Brown Road Gillette, Wyoming 82718
Township 43 North, Range 76 West 6th PM **Section 19: SE/4** **Section 30: N/2, SW/4** **Section 31: W/2, SW/4NE/4**	
SURFACE OWNER:	DRY FORK LAND & LIVESTOCK LLC Attn: Dee Johnson P.O. Box 53 Laketown, Utah 84038
Township 43 North, Range 76 West 6th PM **Section 16: S/2**	
SURFACE OWNER:	STATE OF WYOMING State Land Office 122 W. 25th Street – 3 West Herschler Bldg Cheyenne, Wyoming 82003-1828
GRAZING LEASE OWNER:	T-CHAIR LAND COMPANY LP Attn: Patricia Clark 1026 Brown Road Gillette, Wyoming 82718

APPENDIX B
SURFACE OWNERS OF RECORD
WITHIN ½ MILE OF PERMIT AREA
JANE DOUGH UNIT

Township 43 North, Range 76 West 6th PM **Section 33: S/2NE/4, S/2** **Section 34: NE/4NW/4, W/2NE/4, NW/4SE/4, N/2SW/4**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
Township 42 North, Range 76 West 6th PM **Section 4: NW/4** **Section 5: N/2** **Section 6: N/2**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716

APPENDIX C

LEGAL DESCRIPTION, RIGHT TO MINE, AND NO RIGHT TO MINE
LANDS WITHIN THE PERMIT AREA
JANE DOUGH UNIT

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LEGAL DESCRIPTION

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. § 35-11-406,(a),(vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. § 35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. § 35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. § 35-11-103,(e)(viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

PERMIT BOUNDARY LEGAL DESCRIPTION:

S/2N/2, S/2	Section 20,	T. 43 N.,	R. 76 W.,	Acres	480.00
W/2, W/2E/2	Section 21,	T. 43 N.,	R. 76 W.,	Acres	480.00
W/2SW/4	Section 27,	T. 43 N.,	R. 76 W.,	Acres	80.00
All	Section 28,	T. 43 N.,	R. 76 W.,	Acres	640.00
All	Section 29,	T. 43 N.,	R. 76 W.,	Acres	640.00
SE/4	Section 30,	T. 43 N.,	R. 76 W.,	Acres	160.00
N/2NE/4, SE/4NE/4, SE/4	Section 31,	T. 43 N.,	R. 76 W.,	Acres	280.00
All	Section 32,	T. 43 N.,	R. 76 W.,	Acres	640.00
NW/4, N/2NE/4	Section 33,	T. 43 N.,	R. 76 W.,	Acres	240.00
NW/4NW/4	Section 34,	T. 43 N.,	R. 76 W.,	Acres	40.00

COUNTY of Johnson and Campbell — Subtotal Above Acres 3,680.00

Municipal Corporation — Total Permit Acres 3,680.00

Reviewed (complied), DEQ/LQD	Applicant Signature
Date	Date
Checked, DEQ/LCD	Permit No.
Date	TFN

NO RIGHT TO MINE

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

NO RIGHT TO MINE CAMPBELL COUNTY

N/2NW/4, NW/4NE/4, SW/4NE/4, NW/4SE/4	Section	21 T. 43 N., R. 76 W., Acres	200.00
W/2SW/4	Section	27 T. 43 N., R. 76 W., Acres	80.00
E/2E/2NE/4	Section	28 T. 43 N., R. 76 W., Acres	40.00
E/2NW/4, N/2NE/4	Section	33 T. 43 N., R. 76 W., Acres	160.00
E/2NW/4	Section	34 T. 43 N., R. 76 W., Acres	80.00

COUNTY of Campbell	Subtotal Above Acres	520.00
Municipal Corporation	Total Permit (Amendment) Acres	3,680.00

Reviewed (complied), DEQ/LQD	Applicant Signature
Date	Date
Checked, DEQ/LCD	Permit No.
Date	TFN

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

NO RIGHT TO MINE JOHNSON COUNTY

SW/4NW/4 Section 20 T. 43 N., R. 76 W., Acres 40.00

COUNTY of Campbell	Subtotal Above Acres	40.00
Municipal Corporation	Total Permit (Amendment) Acres	3,680.00

Reviewed (complied), DEQ/LQD	Applicant Signature
Date	Date
Checked, DEQ/LCD	Permit No.
Date	TFN

RIGHT TO MINE

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

RIGHT TO MINE CAMPBELL COUNTY

S/2NE/2, SE/4	Section	20 T. 43 N., R. 76 W., Acres	240.00
S/2NW/4, SW/4SE/4, SW/4	Section	21 T. 43 N., R. 76 W., Acres	280.00
W/2E/2NE/4, W/2NE/4, SE/4, W/2	Section	28 T. 43 N., R. 76 W., Acres	600.00
E/2	Section	29 T. 43 N., R. 76 W., Acres	320.00
E/2	Section	32 T. 43 N., R. 76 W., Acres	320.00
W/2NW/4	Section	33 T. 43 N., R. 76 W., Acres	80.00
COUNTY of Campbell	Subtotal Above Acres		1,840.00
Municipal Corporation	Total Permit (Amendment) Acres		3,680.00

Reviewed (complied), DEQ/LQD	Applicant Signature
Date	Date
Checked, DEQ/LCD	Permit No.
Date	TFN

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

RIGHT TO MINE

S/2NE/2, SE/4	Section	20 T. 43 N.,	R. 76 W.,	Acres 240.00
S/2NW/4, SW/4SE/4, SW/4	Section	21 T. 43 N.,	R. 76 W.,	Acres 280.00
W/2E/2NE/4, W/2NE/4, SE/4, W/2	Section	28 T. 43 N.,	R. 76 W.,	Acres 600.00
E/2	Section	29 T. 43 N.,	R. 76 W.,	Acres 320.00
E/2	Section	32 T. 43 N.,	R. 76 W.,	Acres 320.00
W/2NW/4	Section	33 T. 43 N.,	R. 76 W.,	Acres 80.00

COUNTY OF Campbell — Subtotal Above Acres 1,840.00

Municipal Corporation — Total Permit (Amendment) Acres 3,680.00

Reviewed (complied), DEQ/LQD

_____

Date_____

Checked DEQ/LQD

Date_____

Applicant Signature

Date_____

Permit No._____

TFN_____

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

RIGHT TO MINE JOHNSON COUNTY

SE/4NW/4, SW/4	Section	20 T. 43 N., R. 76 W.,	Acres	200.00
W/2	Section	29 T. 43 N., R. 76 W.,	Acres	320.00
SE/4	Section	30 T. 43 N., R. 76 W.,	Acres	160.00
N/2NE/4, SE/4NE/4, SE/4	Section	31 T. 43 N., R. 76 W.,	Acres	280.00
W/2	Section	32 T. 43 N., R. 76 W.,	Acres	320.00

COUNTY of Johnson	Subtotal Above Acres	1,280.00
Municipal Corporation	Total Permit (Amendment) Acres	3,680.00

Reviewed (complied), DEQ/LQD	Applicant Signature
Date	Date
Checked, DEQ/LCD	Permit No.
Date	TFN

APPENDIX "C"
JANE DOUGH UNIT

This appendix "C" represents the location of lands by legal subdivision, section, township, range, county, and municipal corporation, if any, (W.S. §35-11-406, (a), (vi)) and the number of acres in each description. No mining activity may take place on land for which there is not in effect a valid mining permit (W.S. §35-11-405). To include additional lands within a permit area it is necessary to amend the permit (W.S. §35-11-406, (a)(xii)), so care should be taken to include all lands necessary to the mining and reclamation operation as defined in W.S. §35-11-103, (e), (viii). All acreage figures should be obtained from official survey documents or recent surveys if available. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

RIGHT TO MINE

SE/4NW/4, SW/4	Section	20	T. 43 N.,	R. 76 W.,	Acres 200.00
W/2	Section	29	T. 43 N.,	R. 76 W.,	Acres 320.00
SE/4	Section	30	T. 43 N.,	R. 76 W.,	Acres 160.00
N/2NE/4, SE/4NE/4, SE/4	Section	31	T. 43 N.,	R. 76 W.,	Acres 280.00
W/2	Section	32	T. 43 N.,	R. 76 W.,	Acres 320.00

COUNTY OF Johnson — Subtotal Above Acres 1,280.00

Municipal Corporation — Total Permit (Amendment) Acres 3,680.00

Reviewed (complied), DEQ/LQD

_____

Date_____

Checked DEQ/LQD

Date_____

Applicant Signature

Date_____

Permit No._____

TFN_____

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

Township 43 North, Range 76 West 6th PM
Section 21: N/2NW/4, NW/4NE/4

SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER: **Other minerals including Uranium**	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Royalty Owner: **Uranium**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
	LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701
	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
	TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402
MINERAL OWNER: **Oil and Gas**	T-CHAIR MINERAL, LP Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
	LEHRER MINERALS, LLC 9 Yates Terrace Fort Morgan, Colorado 80701
Lease Owner: **Oil and Gas**	ANADARKO PETROLEUM COMPANY P.O. Box 173779 Denver, Colorado 80217

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

Lease Owner: **Oil and Gas** **(continued)**	LANCE OIL & GAS COMPANY 1099 18th Street, Suite 1800 Denver, Colorado 80202
Lease Owner: **Coal Bed Methane**	WILLIAMS PRODUCTION RMT CO 1515 Arapaho Street, Tower 3, #1000 Denver, Colorado 80202 ENCORE ENERGY OPERATING 5847 San Felipe, Suite 3000 Houston, Texas 77057
Overriding Royalty Owner: **Oil and Gas**	AA ENERGY CORPORATION 1500 Fidelity Union Tower Dallas, Texas 75201 WIND RIVER RESOURCES, INC. P.O. Box 2944 Casper, Wyoming 82602 POWDER RIVER OIL & GAS VENTURES LLC-II P.O. Box 36157 Denver, Colorado 802602
Total Acreage:	120.00 Acres
Township 43 North, Range 76 West 6th PM **Section 21: SW/4NE/4, NW/4SE/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Overriding Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Total Acreage:	80.00 acres
Township 43 North, Range 76 West 6th PM **Section 27: W/2SW/4**	
SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Overriding Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Total Acreage:	80.00 acres

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

Township 43 North, Range 76 West 6th PM
Section 28: E/2E/2NE/4

SURFACE OWNER:	T-CHAIR LAND COMPANY, L.P. Attn: Patricia Clark 1024 Brown Road Gillette, Wyoming 82718
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	SM Energy Company 1775 Sherman Street, Suite 1200 Denver, Colorado 80203
Overriding Royalty Owner: **Uranium**	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
Total Acreage:	40.00 acres

Township 43 North, Range 76 West 6th PM
Section 33: N/2NE/4, E/2NW/4

SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716
MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	TRUE OIL P.O. Box 2360 Casper, Wyoming 82602
Royalty Owner: **Uranium**	TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402
	PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644
	JOHN S. WOLD 139 W. 2nd Street Casper, Wyoming 82601
	PAGE JENKINS 830 Midland Savings Building Denver, Colorado 80202
	ELDRIDGE L. LOCKHART 2747 So. Poplar Casper, Wyoming 82601
Total Acreage:	160.00 acres
Township 43 North, Range 76 West 6th PM **Section 34: NW/4NW/4**	
SURFACE OWNER:	IBERLIN RANCH LP 975 Iberlin Ranch Road Gillette, Wyoming 82716

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

MINERAL OWNER:	UNITED STATES OF AMERICA Bureau of Land Management P.O. Box 1828 Cheyenne, Wyoming 82003
Locatable Minerals including Uranium	POWER RESOURCES, INC P.O. Box 1210 Glenrock, Wyoming 82637
Lease Owner: **Oil and Gas**	JOHN OLIVER ANDERSON 7462 Parkridge Circle Salt Lake City, Utah 84121 CBM GAS COMPANY, LLC P.O. Box 40 Dewey, Oklahoma 74029 DON COLTON 2172 Gambel Oak Drive Sandy, Utah 84092 GREGG COLTON 65 S Pfeifferhorn Drive Alpine, Utah 84004 MICHAEL PINNELL 8171 Old Coventry Circle Sandy, Utah 84093
Royalty Owner: **Uranium**	TENNESSEE VALLEY AUTHORITY 1101 Market Street Chattanooga, Tennessee 37402 PATHFINDER MINES CORPORATION P.O. Box 730 Mills, Wyoming 82644 JOHN S. WOLD 139 W. 2nd Street Casper, Wyoming 82601

APPENDIX C
NO RIGHT TO MINE
LANDS WITHIN THE
PERMIT AREA
JANE DOUGH UNIT

	PAGE JENKINS 830 Midland Savings Building Denver, Colorado 80202
Royalty Owner: **Uranium**	ELDRIDGE L. LOCKHART 2747 So. Poplar Casper, Wyoming 82601
Total Acreage:	40.00 acres

APPENDIX E

PERMITS AND LICENSES REQUIRED FOR
THE NICHOLS RANCH ISR PROJECT
and
INFORMATIONAL MAPS

APPENDIX E

E.1 PERMITS AND LICENSES REQUIRED FOR THE NICHOLS RANCH ISR PROJECT

Various state and federal permits and licenses that are needed or are in-hand for the Nichols Ranch ISR Project are listed in Table 10-1. Prior to the start of mining (the injection of lixivant into the ore zone aquifer), Uranerz Energy Corporation will have obtained all the necessary permits, licenses, and approvals required by the Wyoming Department of Environmental Quality and the Nuclear Regulatory Commission.

Permit, License, or Approval Name	Agency	Status
Source Material License	NRC	SUA-1597
Permit to Mine	WDEQ-LQD	#778
Permit to Appropriate Groundwater	WSEO	Existing wells are approved, new well permits will be filed prior to drilling
DEQ Drilling Permit	WDEQ-LQD	No. 336 & 378 DN
BLM Drilling Permit (Hank Only)	BLM	W-169662
Deep Disposal Well Permits	WDEQ-WQD	10-392
WYPDES – LCGP	WDEQ-WQD	WYR104331
WYPDES - IGP	WDEQ-WQD	WYR001394
11(e) Byproduct/Waste Disposal Agreement	N/A	In place
Permit to Construct Septic Leach Field	County	Permit with Johnson County
Air Quality Permit - Construction	WDEQ-AQD	CT-8644
Air Quality Permit - Operations	WDEQ-AQD	In preparation
NOTES: NRC – Nuclear Regulatory Commission		
WDEQ-LQD – Wyoming Department of Environmental Quality Land Quality Division		
WDEQ-WQD – Wyoming Department of Environmental Quality Water Quality Division		
WDEQ-AQD – Wyoming Department of Environmental Quality Air Quality Division		
WSEO – Wyoming State Engineer's Office		

E.2 INFORMATIONAL MAPS

The Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD) requires certain maps for a new permit application. The information that is required by the WDEQ-LQD is listed below along with the section of the permit application that the maps are located. The information is as follows:

- The permit area boundary clearly identified – Exhibits E-1 and E-2 of Appendix E.
- Lands to be affected over the life of the mine – Figures 3-9 and 3-10 of the Mine Plan.
- Location and names of all roads, rights-of-way, easements, and utility lines – Figure 1-3 of the Mine Plan.
- Drainage areas within and surrounding the proposed permit area, including all surface water features – Figure D6-1 of Appendix D6.
- List and map of owners of adjudicated and permitted water rights within and adjacent to the permit area – These items are found in Appendix D6.
- List and map of all water well owners with and adjacent to the permit area – These items are found in Appendix D6.
- List and map of all Wyoming State Engineer Office (SEO) well permits inside and within three miles of the permit – These items are found in Appendix D6.
- List of all known drill holes and monitor wells of 4 inches or less in diameter that have not been registered with the State Engineers Office – This information is contained in Appendix D6.

APPENDIX JD-D1:

LAND USE

April 2014

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JD-D1.0 LAND USE

JD-D1.1 LAND USES

The Jane Dough Unit is located immediately adjacent to the Nichols Ranch Unit and the location of this area is shown on Figure JD-D1-1. Past (last 20 years) and present land uses within the Jane Dough Unit are described as cropland (e.g., hay production), grazing land (e.g., livestock grazing), wildlife habitat, industrial commercial (e.g., oil/gas development and coalbed methane development) (Figure JD-D1-1 and Exhibit JD-D1-1). There are no occupied dwellings, public buildings, schools, churches, institutional buildings, cemeteries, or public parks within the project area and a 300-ft buffer. Coalbed methane development has begun within the project area within the past three years, but Uranerz does not anticipate that in situ recovery operations will interfere with ongoing coalbed methane production. There are no lands within the Jane Dough Unit listed as rare or uncommon by the Wyoming Environmental Quality Council.

The project area and all lands that are disturbed and reclaimed by Uranerz will be returned to their original land uses (refer to Figure JD-D1-1) as described above.

JD-D1.2 DEMOGRAPHY

JD-D1.2.1 Campbell County

Land uses in Campbell County consist of agriculture, coal mines, developed areas such as the towns of Gillette and Wright, and other mineral extraction areas and pipelines that are scattered throughout the county. With the current and projected demand for energy, additional land use conversion from agriculture to mineral extraction is expected.

Campbell County covers approximately 3,066,880 acres, ranking it the seventh largest county in Wyoming. Land ownership within the county is a combination of private (individual, partnerships, and corporate), state, and federal. Federal ownership consists of 375,172 acres

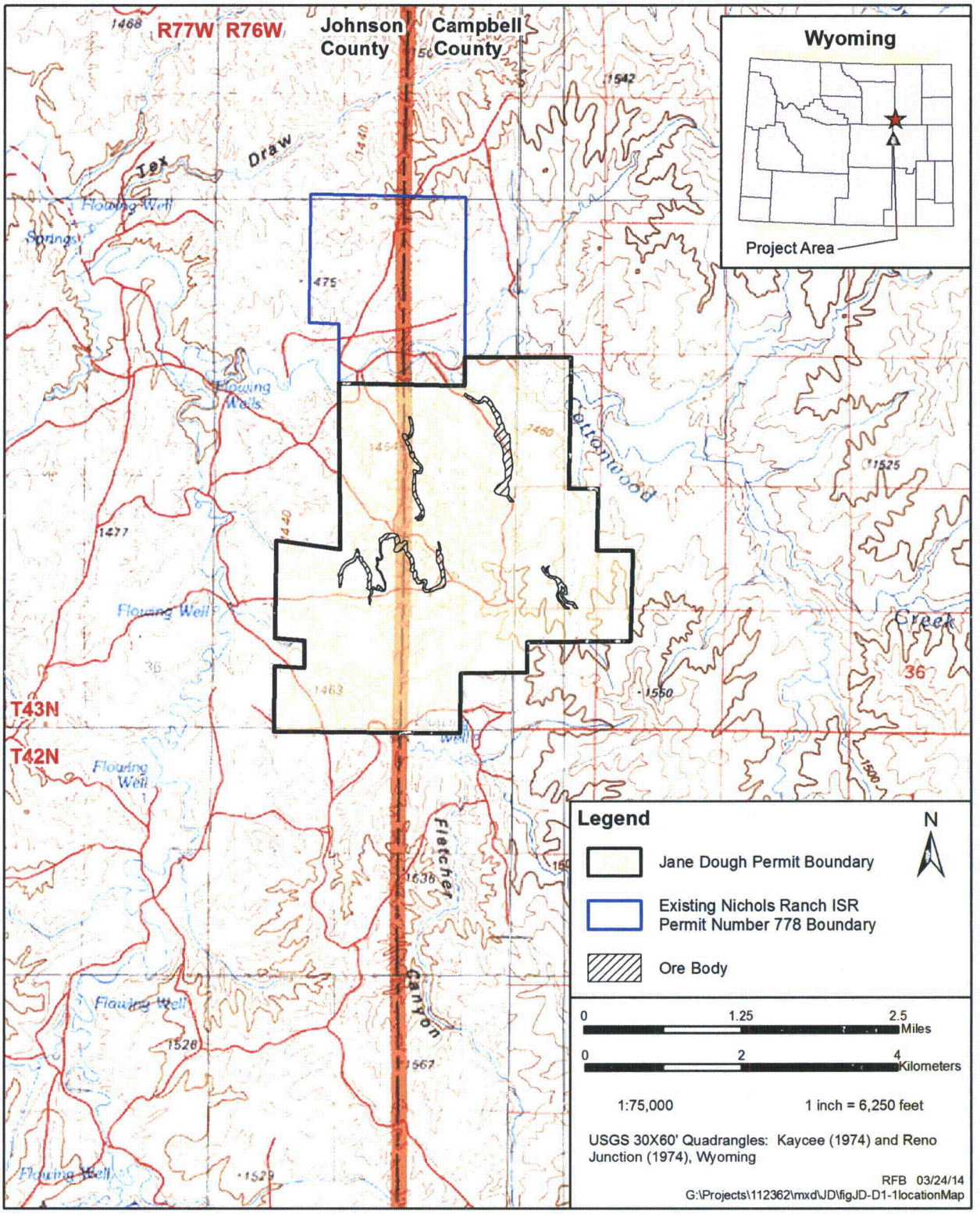

Figure JD-D1-1 Jane Dough Unit Location Map.

managed by the Bureau of Land Management and the U.S. Forest Service. State and local lands total 196,532 acres, along with 2,495,176 acres of private land (Equality State Almanac 2010). Campbell County had an estimated population of 46,618 people in 2011 (U.S. Census Bureau Population Division 2011).

JD-D1.2.2 Johnson County

Land use in Johnson County consists of agriculture, developed areas such as Buffalo and Kaycee, oil/gas development, coalbed methane development, and mining. Johnson County covers approximately 2,671,808 acres with ownership being divided as follows: 829,469 acres of federal land, 1,603,991 acres of private land (individuals, partnerships, and corporations), and 238,348 acres of state and local land (Equality State Almanac 2010). Campbell County had an estimated population of 8,642 people in 2011 (U.S. Census Bureau Population Division 2011).

Exhibit JD-D1-1 and Table JD-D1-1 provide information on residents located near the project area. Table JD-D1-2 lists the towns located within a 50-mile radius of the Jane Dough Unit, along with their locations from the project and most recent population estimate.

JD-D1.3 RANCH AND COMMUNITY LOCATIONS

Table JD-D1-1 Residents Nearest to the Jane Dough Unit.

Nearest Residences	Number of Inhabitants	Distance from Permit Area (mile)	Direction
T-Chair (Rolling Pin) Ranch	5	1.0	East
Pfister Ranch	3	5.4	Northeast
Pumpkin Buttes Ranch	2	4.7	East
Van Buggenum Ranch	0	9.6	East
Ruby Ranch	2	11.2	East
Dry Fork Ranch	3	0.9	West
Christensen Ranch	1	6.5	South

Table JD-D1-2 Towns Within a 50-miles Radius of the Jane Dough Unit.

City	Population[1]	Distance from Permit Area (mile)	Direction
Gillette	29,087	46	Northeast
Buffalo[2]	4,585	57	Northwest
Kaycee	263	35	West
Midwest	404	25	Southwest
Edgerton	195	23	Southwest
Wright	1,807	22	East
Casper[2]	55,316	61	Southwest

[1] Source: As of 2010, U.S. Census Bureau Population Division (2011).
[2] Major Wyoming towns just beyond 50 miles.

JD-D1.4 REFERENCES

Equality State Almanac. 2010. Economic Analysis Division, Department of Administration and Information. State of Wyoming.

U.S. Census Bureau Population Division. 2011. Wyoming Population Estimates. For 2010 <http://quickfacts.census.gov/qfd/states/56000.html>. Accessed October 17, 2012.

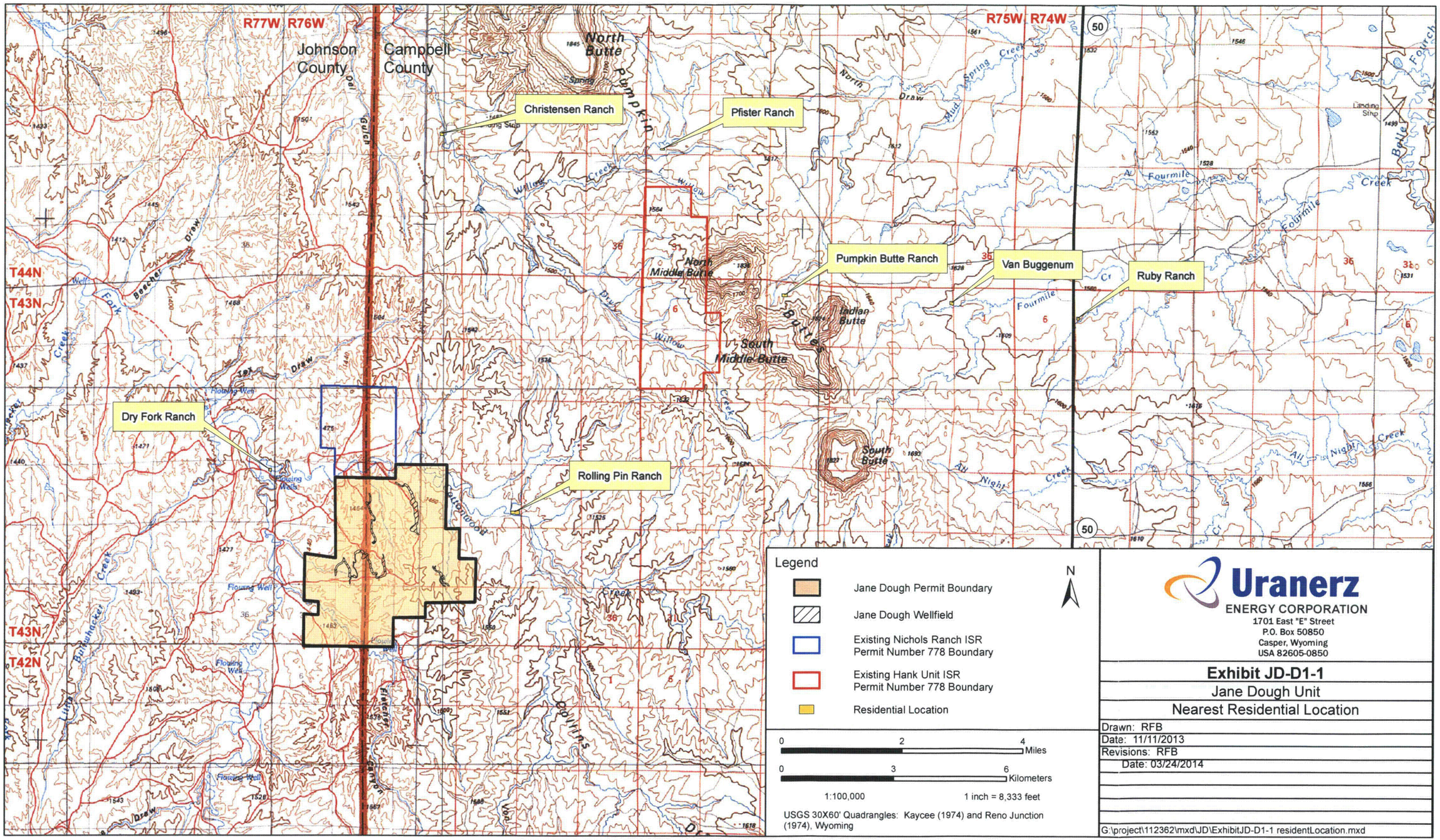

Exhibit JD-D1-1 Jane Dough Unit, Nearest Residential Location.

APPENDIX JD-D2:

HISTORY

April 2014

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JD-D2.0 HISTORY

JD-D2.1 PROJECT BACKGROUND

The Jane Dough Unit is located in southwestern Campbell County and southeastern Johnson County, Wyoming, approximately 46 air miles southwest of Gillette, Wyoming (refer to Figure JD-D1-1). The project area consists of a total of 3,680 acres. The topography of the Jane Dough Unit consists of rolling upland terrain dissected by numerous erosional drainages. The Jane Dough Unit is located immediately south of the Nichols Ranch Unit and approximately 3 miles southwest of Hank Unit (refer to Exhibit JD-D1-1).

The project area is located within the 10- to 14-inch Northern Plains zone of northeastern Wyoming (Natural Resources Conservation Service [NRCS] 1988.) Elevations range from 4,670 to 4,960 feet above mean sea level (AMSL). Annual precipitation varies from 10 to 14 inches, with approximately 35 to 41% falling during the normal growing season. Growth of native warm-season plants begins about May 15 and continues to approximately August 15 (NRCS 1988). According to on-site vegetation mapping discussed in Appendix D8 of this permit application, two primary vegetation types occur in the project area--sagebrush shrubland and mixed grassland--and they account for approximately 93% of the vegetation in the permit area.

The surface ownership of the project area is entirely private. The uranium mineral underlying the project area is a combination of federal and fee mineral.

Uranerz plans to mine the Jane Dough Unit ore zone using the in situ recovery solution technique. This is the same method currently being utilized at the Nichols Ranch Unit. By using this method of mining, surface disturbances in the project area and surrounding areas will be minimal. Uranerz is not aware of any manmade structures within the project area other than several water wells and coalbed methane wells.

JD-D2.2 HISTORY OF THE AREA

History of the Jane Dough Unit is very similar to the Nichols Ranch and Hank Unit areas. The Jane Dough Unit is located southwest of the Pumpkin Buttes in the Powder River Basin of Wyoming. The Pumpkin Buttes have served as an area landmark for travelers and land occupants for centuries.

The discovery of gold in Montana during the early 1860s fostered a rush of emigrants and gold seekers, and viable routes were necessary to pass through the Powder River Basin which, at the time, was the principal buffalo hunting grounds of the Sioux and their allies, the Arapaho and Cheyenne (Lowe 1999). The shortest was the Bozeman Trail (1863-1866), which departed from the Oregon Trail on the North Platte River and went north along the east side of the Big Horn Mountain range to the Yellowstone River. In 1865 and 1866, as part of federally funded wagon road projects, James Sawyers led road-building expeditions from the Niobrara River west across the basin to the forts constructed by the U.S. Army to protect the Bozeman Trail (Lowe 1999; Doyle 2000). Sawyers' 1865 route passed south of and nearby Pumpkin Buttes.

Several emigrant trains along the Bozeman Trail as well as Sawyers' expedition were confronted and/or attacked by the tribes for the perceived invasion of their hunting grounds initially set aside in the Fort Laramie Treaty of 1851 (Lowe 1999; Doyle 2000). Subsequently, Native Americans used Pumpkin Buttes to monitor the movement of U.S. troops and wagon trains along the Bozeman Trail, which passed several miles southwest of the buttes.

The Bozeman Trial was closed to emigrant traffic after 1866, and the army forts along this route were closed and removed as part of the 1868 Fort Laramie Treaty (Lowe 1999; Doyle 2000). Following the end of the Indian wars in the late 1870s, the Powder River Basin was open to settlement under the *1862 Homestead Act* and subsequent homestead acts passed in the 1870s (e.g., *Timber Culture Act* and *Desert Land Act*) and early nineteenth century (e.g., *1909 Expanded Homestead Act* and *1916 Stock Raising Homestead Act*) (Larson 1978). The region's dry climate and lack of surface water made it difficult for small farming and ranch operations, but dryland farming techniques and irrigation projects allowed people to make a living growing

agricultural crops and raising livestock. Today, many large-scale ranching operations continue to operate in the permit area.

Oil, coal, uranium, and coalbed methane were discovered in the Powder River Basin, providing an additional economic basis to the existing ranching industry. Specifically, small deposits of uranium were discovered near Pumpkin Buttes in the early 1950s after the U.S. Geological Survey drew attention to area's potential in 1951. The production and demand of yellow cake, the processed byproduct of uranium ore, increased steadily from the 1950s through the early 1980s, when nuclear energy waned in the U.S. (Larson 1978).

JD-D2.3 REFERENCES

Doyle, Susan B. 2000. *Journeys to the Land of Gold: Emigrant Diaries from the Bozeman Trail, 1863-1866.* Two Volumes. Montana Historical Society Press, Helena.

Larson, Taft A. 1978. *History of Wyoming.* Second edition, revised. University of Nebraska Press, Lincoln and London.

Lowe, James A. 1999. *The Bridger Trail: A Viable Route to the Gold Fields of Montana Territory in 1864.* Arthur H. Clark Company, Spokane, Washington.

Natural Resources Conservation Service. 1988. Technical guide to range sites and range conditions 7-9 inch, Green River and Great Divide Basins. Technical Guide Notice No. WY-99, Section IIB. U.S. Department of Agriculture, Natural Resource Conservation Service, Casper, Wyoming.

APPENDIX JD-D3:

ARCHAEOLOGY

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JD-D3.0 ARCHAEOLOGY

JD-D3.1 INTRODUCTION

TRC Environmental Corporation (TRC) summarized historical and archaeological information about the Jane Dough Unit in the inventory report presented in Addendum JD-D3-A. The report and the information presented below include the results of a file search from Wyoming State Historic Preservation Office (WSHPO) for the project area. The file search includes information for historical and archaeological sites. Addendum JD-D3-A and Addendum JD-D3-B contain information that is considered confidential information under 10 C.F.R. 2.390; therefore, this information is contained in a binder labeled as Confidential Information for Uranerz and must be withheld from public disclosure.

JD-D3.2 CULTURAL RESOURCES

JD-D3.2.1 Completed Archaeological Projects

A file search (WSHPO File Search No. 25735) was conducted through the Cultural Records Office of the WSHPO for Sections 20, 21, 27, 28, 29, 30, 31, 32, 33, and 34, T43N, R76W, on May 14, 2010, and includes a description of archaeological and historical resources within the Jane Dough Unit and includes the full sections of land directly associated with this project. The Jane Dough Unit occurs within a majority of these legal descriptions. Once the list of sites is obtained from the WSHPO database, the sites within each section were plotted to determine if they occur within the physical boundaries of the Jane Dough Unit. The file search for this area indicates that 10 projects have been conducted with 31 archaeological and historic sites located within the full sections listed above.

The 10 projects conducted within the full sections listed above were completed between 1984 and 2008 for a variety of energy development projects, including five coalbed methane (CBM) plans of development (PODs), four oil/gas wellfield surveys, and one seismic project (Table JD-D3-1). The projects consist of nine (9) Class III inventories and one historic trail evaluation project. Of the nine inventory projects seven contain inventory areas that overlap

Table JD-D3-1 Cultural Resource Inventories Completed Within or near Uranerz's Jane Dough Unit.

Accession No. [1]	Project Name	Contractor [2]	Type [3]	Legal Location
84-540	77 Drill Holes and Block	TVA	B	Section 27, T43N, R76W
84-725	Taylor Unit No. 9	PAS	B	Section 33, T43N, R76W
99-1041	Dry Fork Block Survey	PAS	B	Sections 29, 30, 31, 32, and 33, T43N, R76W
99-1142	West Pumpkin Buttes Prospect	PAS	B	Section 34, T43N, R76W
4-2191	East Bullwhacker CBM POD	SWCA	B	Sections 20, 29, 30, 31, and 32, T43N, R76W
4-2191-3	East Bullwhacker CBM POD Trails Evaluation	ACR	B/L	Sections 30 and 31, T43N, R76W
6-615	Mojave 3-D Seismic Project	TRC	L	Section 31, T43N, R76W
6-1465	Dry Willow Phase 2 POD	Arcadis	B	Section 27, R43N, R76W
7-1669	Blade CBM POD	ACR	B/L	Sections 20, 21, 28, and 29, T43N, R76W
8-425	Tex Draw Federal POD	WLS	B	Sections 20, 21, 27, 28, and 29, T43N, R76W
--	Jane Dough Unit ISR Project	TRC	B	Sections 20, 28, 29, and 32, T43N, R76W

1 -- = report has not been accessioned.
2 ACR = ACR Consultants, Inc.; Arcadis = Arcadis U.S. Inc.; PAS = Pronghorn Archaeological Services; SWCA = SWCA Environmental Consultants; TRC = TRC Environmental Corporation; TVA = Tennessee Valley Authority; WLS = Western Land Services.
3 B = block; B/L = combination block/linear; L = linear.

with the current project area. Based on comprehensive inventory area and project accession dates, four of these inventory projects (WSHPO Project Nos. 99-1041, 99-1142, 4-2191, and 8-425) were utilized to determine which portions of the current project area did not require additional Class III inventory. Approximately 2,660 acres of the 3,680-acre Jane Dough Unit had been previously inventoried in association with these four projects and are shown on Exhibit JD-D3-1 and discussed below.

The northern portion of the Jane Dough Unit, including the S1/2N1/2, NSE1/4, and S1/4ESE1/4 of Section 20, all of the project portions in Sections 21 and 27, the N1/2 of Section 28, and the E1/2NE1/4 of Section 29, T43N, R76W, was inventoried by Western Land Services as part of

the Tex Draw Federal Plan of Development (POD) project. The inventory report for that project was accessioned by WSHPO in 2008 (Project No. 8-425). The E1/2SW1/4 and SW1/4SE1/4 of Section 20 in the northern portion of the Jane Dough Unit and all of southwestern portion of the project area in Sections 30 and 31 were inventoried by SWCA Environmental Consultants (SWCA) as part of the East Bullwhacker CBM POD. The report was accessioned by WSHPO in 2004 (Project No. 4-2191). The central portion of the Jane Dough Unit, including the W1/2NE1/4 and SE1/4 of Section 29, the S1/2 of Section 32, and all of the project area within Section 33, was inventoried by Pronghorn Archaeological Services (PAS) in 1999 as part of the Dry Fork Block Survey. The report was accessioned by WSHPO in 1999 (Project No. 99-1041). The portion of the project area in Section 34 in the southeastern portion of the Jane Dough Unit was inventoried by PAS in 1999 as part of the West Pumpkin Buttes Prospect. The report was accessioned by WSHPO in 1999 (Project No. 99-1142).

TRC evaluated the current Jane Dough Unit area and determined that a majority of the project area had been previously inventoried as described above. However, a total of 1,040 acres had not been inventoried. As a result, TRC inventoried the remaining uninventoried portion of the project area (portions of Sections 20, 28, 29, and 32, T43N, R76W) in 2010 and the report is presented in Addendum JD-D3-A and it has been added to Table JD-D3-1. Results of the 2010 inventory indicate that no newly identified historical or archaeological sites were found; however, one newly identified segment and three previously identified segments of the Deadwood Road were recorded. This report will be reviewed by NRC and WDEQ/LQD and will be submitted to the WSHPO for review after it is accepted by the NRC.

JD-D3.2.2 Sites

Fourteen sites have been recorded within the Jane Dough Unit boundary covered by the file search and the inventory completed in 2010 by TRC. The 14 sites consist of nine prehistoric and five historic sites (Table JD-D3-2 and Exhibit JD-D3-2).

Table JD-D3-2 Recorded Sites Within or near Uranerz's Jane Dough Unit.

Site No.	Time Period[1]	Site Type	NRHP Eligibility Status [2]	Legal Location
48CA1568/48JO2292	H	Deadwood Road	E/WSHPO	Sections 27, 28, 29, 30, 31, 33, and 34, T43N, R76W
48CA5393	P	Lithic scatter	NE/WSHPO	Section 20, T43N, R76W
48CA5394	H	Trash scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5395	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5396	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5397	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5398	H	Oil/gas wellfield	NE/WSHPO	Section 21, T43N, R76W
48CA5399	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5400	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5401	P	Lithic scatter	NE/WSHPO	Section 21, T43N, R76W
48CA5412	P	Lithic scatter	NE/WSHPO	Section 28, T43N, R76W
48CA6583	H	Trash scatter	NE/WSHPO	Section 27, T43N, R76W
48JO134	H	Bozeman Trail	E/WSHPO	Sections 30 and 31, T43N, R76W
48JO3452	P	Lithic scatter	NE/WSHPO	Section 32, T43N, R76W

[1] H = historic; P = prehistoric.
[2] E = eligible; E/WSHPO = eligible with WSHPO concurrence; NE = not eligible; NE/WSHPO = not eligible with WSHPO concurrence; U/WSHPO = unevaluated with WSHPO concurrence.

JD-D3.2.3 Potential Effects to Cultural Resources Within the Jane Dough Unit

The results of the current and previously conducted Class III inventories indicate that 14 sites and two IRs are located within the project area for Uranerz's Jane Dough Unit (Table JD-D3-3). The 14 sites consist of two sites that are eligible for listing on the NRHP and 12 that are ineligible. There will be no effect to the 12 ineligible sites and the two IRs because of their NRHP eligibility, and no further work is recommended for those cultural resources. A discussion of the project effects and management recommendations for the two NRHP-eligible sites is provided below.

Table JD-D3-3 Summary of Project Effects and Management Recommendations for Sites Within the Jane Dough Unit.

Site No.	Site Type	Current NRHP Eligibility Recommendation	Project Effects and Management Recommendations
Eligible Sites			
48JO134-Segment 65	Bozeman Trail-Segment 65	Eligible-Noncontributing	No adverse effect
48JO134-Segment 66	Bozeman Trail-Segment 66	Eligible-Contributing	No adverse effect with physical avoidance; no adverse visual effects
48JO2292-Segment 14[1]	Deadwood Road-Segment 14	Eligible-Noncontributing	No adverse effect
48JO2292-Segment 15[1]	Deadwood Road-Segment 15	Eligible-Noncontributing	No adverse effect
48JO2292-Segment 16[1]	Deadwood Road-Segment 16	Eligible-Contributing	No adverse effect with physical avoidance; no adverse visual effects
48CA1568-Segment 31[1]	Deadwood Road-Segment 31	Eligible-Noncontributing	No adverse effect
Not Eligible Sites			
48CA5393	Lithic scatter	Not eligible	No effect
48CA5394	Trash scatter	Not eligible	No effect
48CA5395	Lithic scatter	Not eligible	No effect
48CA5396	Lithic scatter	Not eligible	No effect
48CA5397	Lithic scatter	Not eligible	No effect
48CA5398	Oil/gas well field	Not eligible	No effect
48CA5399	Lithic scatter	Not eligible	No effect
48CA5400	Lithic scatter	Not eligible	No effect
48CA5401	Lithic scatter	Not eligible	No effect
48CA5412	Lithic scatter	Not eligible	No effect
48CA6583	Trash scatter	Not eligible	No effect
48JO3452	Lithic scatter	Not eligible	No effect
Isolated Resources			
IR-1	Lithic scatter	Not eligible	No effect
IR-2	Biface	Not eligible	No effect

[1] Site 48CA1568 and 48JO2292 (Deadwood Road) are treated as one historic site.

Two segments of the NRHP-eligible Bozeman Trail (Site 48JO134-Segments 65 and 66) and four segments of the NRHP-eligible Deadwood Road (Site 48CA1568-Segment 31 and Site 48JO2292-Segments 14, 15, and 16) were revisited or recorded within the project area in 2010. One of the two Bozeman Trail segments (Site 48JO134-Segment 65) and three of the four segments of the Deadwood Road (Site 48CA1568-Segment 31 and Site 48JO2292-Segments 14 and 15) are recommended as noncontributing segments. There will be no adverse effect to these segments because of their NRHP eligibility, and no further work is recommended.

The remaining segments of the Deadwood Road (48JO2292-Segment 16) and the Bozeman Trail (48JO134-Segment 66) are both recommended as contributing to their sites' overall eligibilities. While the two segments are both located outside the proposed wellfield, they could be potentially disturbed by other project-related activities. However, the project will have no adverse physical effect on either segment because Uranerz will avoid direct ground-disturbing activities to the segments. Furthermore, there will be no adverse visual effects to either segment because the integrity of the setting has been significantly compromised and no longer contributes to either segment's overall eligibility status.

In addition, Uranerz activities will not significantly impact the viewshed of any NRHP-eligible sites (e.g., Bozeman Trail and Deadwood Road segments) located outside the Jane Dough Unit project area because the proposed disturbances are consistent with the existing widespread visual disturbances associated with ongoing CBM and ISR development on the surrounding landscape.

JD-D3.3 PALEONTOLOGICAL RESOURCES

A paleontological survey was conducted for the Jane Dough Unit. The survey was conducted by Ms. Melissa Connely of Stratigraphic Rex, LLC of Casper, Wyoming. Ms. Connely holds a permit from the Bureau of Land Management for paleontological resources and is also an earth sciences instructor at Casper College in Casper, Wyoming. The survey did not produce any vertebrate fossil bearing strata and no vertebrate fossils were discovered. However, some limited invertebrate fossils (e.g., clams and mollusks) were discovered, these resources were located on private lands and are not scientifically important. The results of the survey of the Jane Dough

Unit indicate that the Jane Dough Unit will not have any impact to significant fossil remains because of the geology and poor exposures of fossil bearing sediments. One recommendation from the survey is to have a paleontological monitor present to oversee any major ground disturbing events when more than a few feet of surface are removed. The complete paleontological survey is attached as Addendum JD-D3-B.

JD-D3.4 RECOMMENDATIONS AND MITIGATION MEASURES

Relevant recommendations and mitigation measures are presented in the Mine Plan.

ADDENDUM JD-D3-A:

CLASS III CULTURAL RESOURCE INVENTORY OF THE
URANERZ ENERGY CORPORATION'S,
JANE DOUGH UNIT OF THE NICHOLS RANCH ISR PROJECT

Refer to Confidential Binder

ADDENDUM JD-D3-B:

PALEONTOLOGICAL FIELD SURVEY,
JANE DOUGH SURVEY

Refer to Confidential Binder

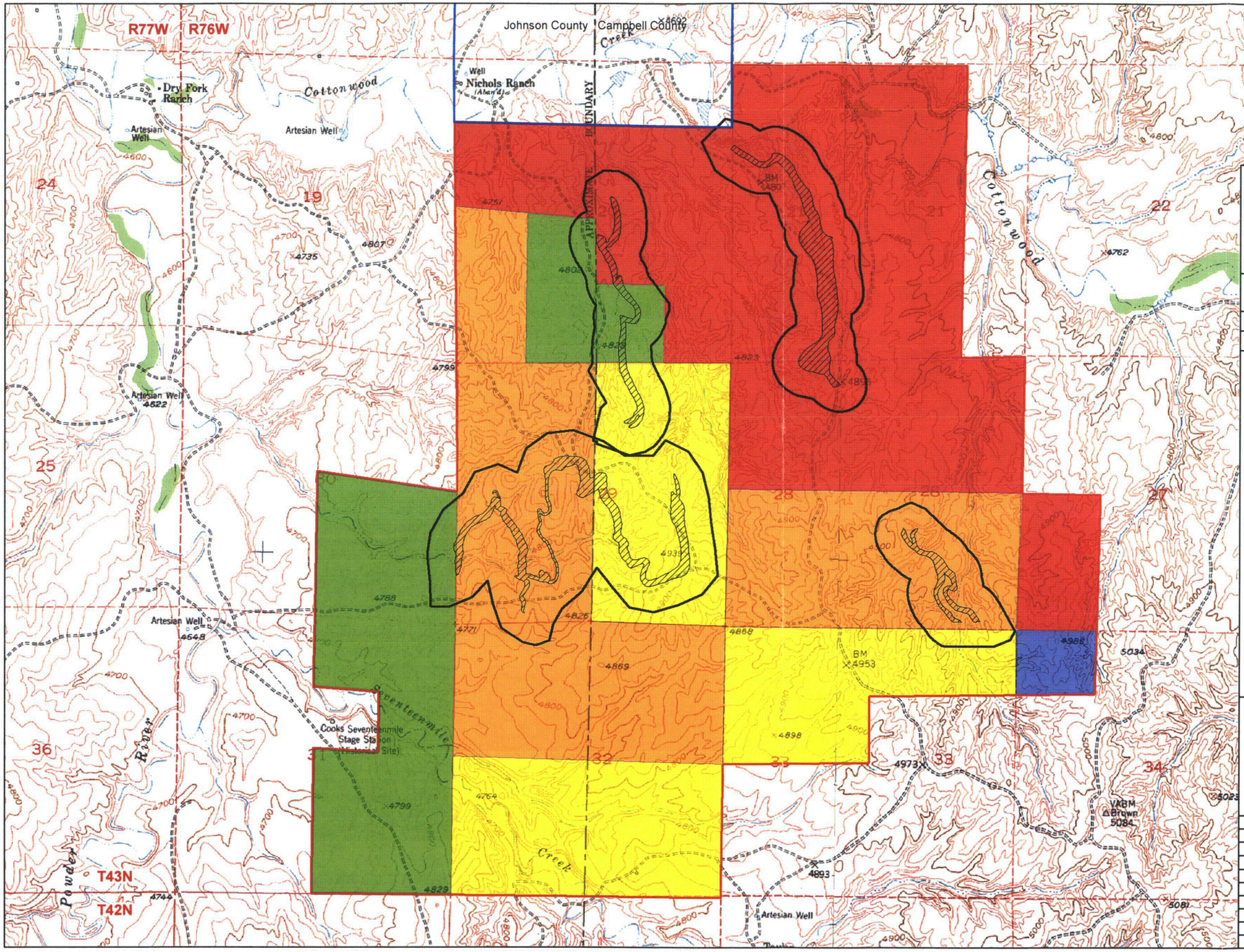

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Exhibit JD-D3-1

Jane Dough Unit
Inventoried Areas

N

Legend

- Projected Wellfield
- Outer Extent of Monitor Well Locations
- Jane Dough Permit Boundary
- Existing Nichols Ranch ISR Permit Number 778 Boundary

Cultural

- East Bullwhacker CBM POD (SWCA; 4-2191)
- Tex Draw Federal POD (Western Land Services; 8-425)
- Dry Fork Block Survey (Pronghorn Archaeological Services; 99-1041)
- West Pumpkin Buttes Prospect (Pronghorn Archaeological Services; 99-1142)
- Uranerz Jane Dough Unit ISR Project (TRC) (October 2012)

0 1 Miles
0 1.5 Kilometers

1:24,000 1 inch = 2,000 feet

USGS 7.5' Quadrangles: Dry Fork Ranch (1953, Photoinspected 1973), and Rolling Pin Ranch (1953, Photoinspected 1973), Wyoming

Drawn: RFB Checked: SK
Date: 11/11/2013

Revision	Description
BW 2/24/14	Update Jane Dough wellfield outline

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Confidential Information Submitted under 10 CFR 2.390

Disclosure is Limited Under the National Historic Preservation Act, Section 304 (16 U.S.C. 470w-3(a))

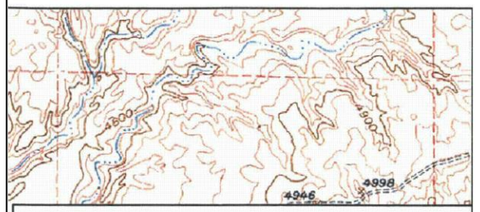

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Exhibit JD-D3-2

Jane Dough Unit

Map Showing Location of Cultural Resources

Legend

N

- Projected Wellfield
- Outer Extent of Monitor Well Locations
- Jane Dough Unit Permit Boundary
- Existing Nichols Ranch ISR Permit Number 778 Boundary

Cultural

- Isolated Resource
- 48JO134 - Bozeman Trail
- 48CA1568/48JO2292 - Deadwood Road
- Contributing Segment
- Noncontributing Segment
- No Evidence Found
- Eligible Site
- Not Eligible Site
- Unevaluated Site

0 1 Miles

0 1.5 Kilometers

1:24,000 1 inch = 2,000 feet

USGS 7.5' Quadrangles: Dry Fork Ranch (1953, Photoinspected 1973), and Rolling Pin Ranch (1953, Photoinspected 1973), Wyoming

Drawn: RFB Checked: SK

Date: 11/11/2013

Revision	Description
BW 03/13/14	Update Jane Dough wellfield outline and boundary

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APPENDIX JD-D4:

CLIMATOLOGY

April 2014

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ADDENDUM

JD-D4.1.0 METEOROLOGICAL DATA

JD-D4.1.1 INTRODUCTION

The Nichols Ranch ISR Project area is located in northeastern Wyoming, where the climate is generally classified as having relatively low annual precipitation (10-20 inches per year) but it is sufficient for the growth of short sparse grass. This climate is due in part to the effective barrier to moisture from the Pacific Ocean offered by numerous mountain ranges that run primarily north and south throughout the state, perpendicular to the prevailing west winds. The topography in this portion of Wyoming tends to restrict the passage of storms and thereby restricts precipitation in eastern Wyoming (Curtis and Grimes 2004).

Uranerz installed a meteorological station at the central processing plant within the adjacent Nichols Ranch Unit. This meteorological station (referred to as the Nicholas Ranch met station) became operational in July 2011 and data for temperature, wind speed and wind direction have been collected, analyzed. Meteorological data has also been collected from the seven meteorological stations that surround the project area (between 25 and 62 mi) (Table JD-D4-1 and Figure JD-D4-1). These seven met stations encompass all existing met stations within 62 mi of the Nichols Ranch ISR Project area. Six of the stations are operated by the National Weather Service (NWS) and one station is operated by a private firm (Intermountain Laboratory (IML). The Antelope Coal Company Mine (Antelope) met station is operated and maintained in accordance an air quality permit issued by the Wyoming Department of Environmental Quality/Air Quality Division (WDEQ/AQD) and has been in operation since 1987. Data recovery for the Antelope met station is greater than 90% for all parameters. The six National Weather Service (NWS) stations were selected because they are the closest meteorological stations to the Nichols Ranch ISR Project area and will be used to provide regional and local weather information that is relevant to the Nichols Ranch ISR Project area.

All of the selected meteorological weather stations provide temperature and precipitation data. Only the Casper, Antelope, Gillette, and Buffalo met stations provide wind data and only the Casper met station reports relative humidity and evaporation data.

Table JD-D4-1 Meteorological Stations Included in Climate Analysis.

Weather Station (ID Number)	Data Collected By	Distance from Nichols Ranch ISR Project Area (miles)	Direction from Nichols Ranch ISR Project Area (compass)	Elevation (ft above sea level)	Meteorological Parameters Used in this Report	Period of Records [2]
Antelope [3]	IML	48.5	ESE	4,675	Wind, temperature, precipitation	1987-2007
Buffalo (481165) [1]	NWS	58	NW	4,670	Wind, temperature, precipitation	1899-2007
Casper (481570) [1&4]	NWS	60	SSW	5,338	Wind, temperature, precipitation, humidity, evaporation	1948-2007
Dull Center 1 SE (482725) [1]	NWS	54	ESE	4,415	Temperature, precipitation	1926-2007
Gillette 9 ESE (483855) [1]	NWS	46.5	NNW	4,640	Wind, temperature, precipitation	1902-2006
Glenrock 5 ESE (483950) [1]	NWS	62	S	4,948	Temperature, precipitation	1941-2006
Midwest (486195) [1]	NWS	25	SW	4,860	Temperature, precipitation	1939-2006

[1] Data was obtained from the western Regional Climate Center website http://www.wrcc.dri.edu/summary/Climsmwy.html. Temperature is measured 2 m Above Ground Level (AGL) anemometers are 20 feet AGL and precipitation is collected 2-3 feet AGL.

[2] The period of record indicates the beginning and ending dates for which the station was open. IMPORTANT: The availability of data from any given station is not directly related to the period of record. Many stations do not provide data to NCDC. To determine what data is available for a given station, please check the station's Data Inventories. Please contact NCDC if confirmation of data availability is needed.

[3] IML = Inter-Mountain Labs Temperature is measured 3 m AGL and anemometers are 10 m AGL.

[4] Data was obtained Wyoming Climate Atlas Curtis and Grimes 2004.

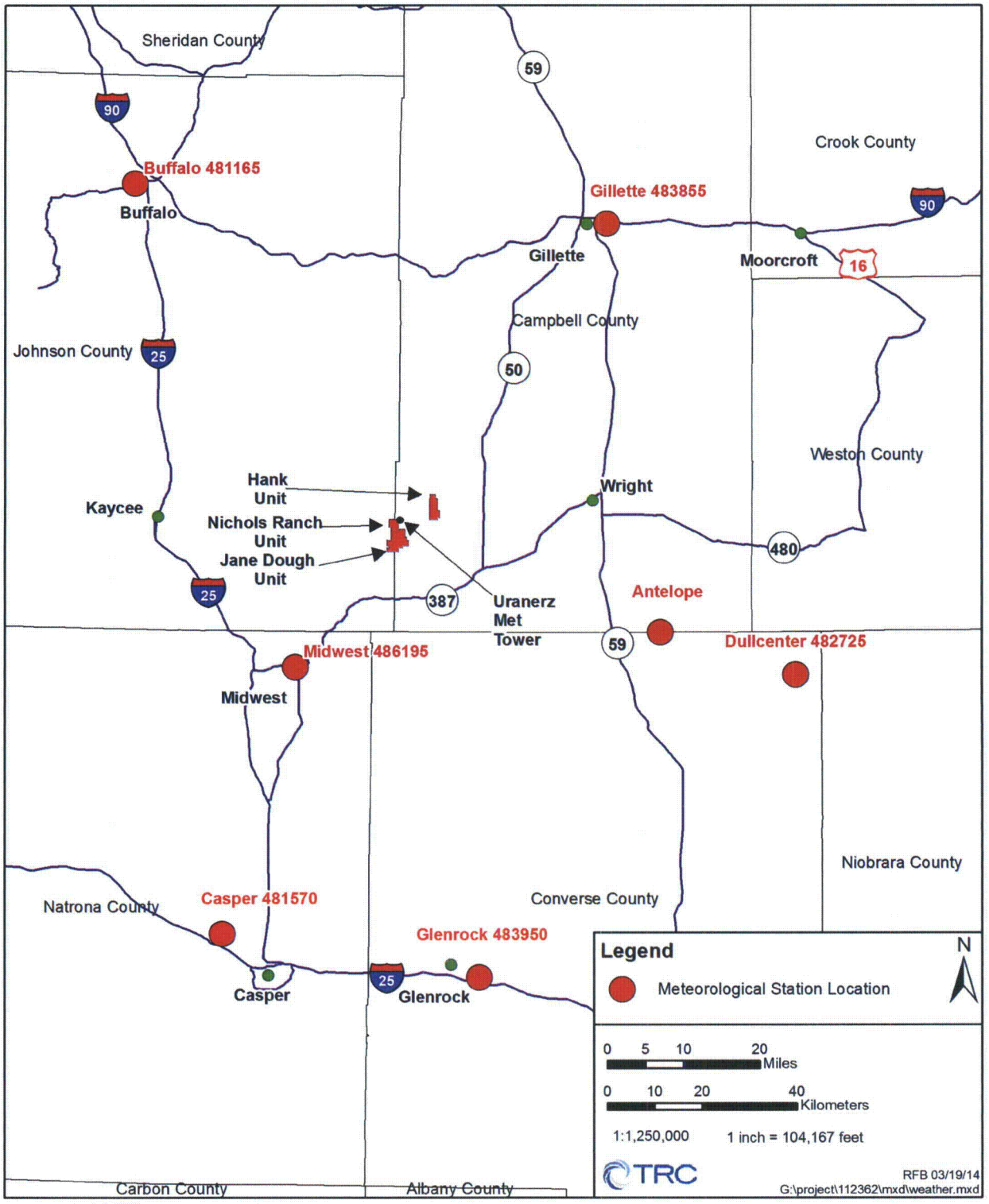


Figure JD-D4-1 Location of Regional Meteorological Stations.

The Antelope met station was chosen as a surrogate met station for the Nichols Ranch ISR Project area based on the meteorological parameters measured (e.g., wind speed and direction, temperature and precipitation), its relatively close proximity to the Nichols Ranch ISR Project area and most importantly its similarity of topography and vegetation to the Nichols Ranch ISR Project area. Specifically, the Nichols Ranch ISR Project area is characterized by rolling hills and it is located in a semi-arid or steppe climate and vegetation types are mainly native grasses with some sagebrush and sparse woody coverage. As documented in Table JD-D4-1 and Figure JD-D4-1, the Antelope met station is located approximately 48.5 mi east-southeast from the Nichols Ranch ISR Project area. The Antelope met station is located on gently rolling hills with native grasses and shrub plant communities (Knight 1994). There are no major topographic or vegetation differences between the meteorological conditions at the Nichols Ranch ISR and the Antelope met station site except for minor differences related to microclimates associated with each location.

The Casper, Gillette, or Buffalo met stations could also be used as the surrogate met station for the Nichols Ranch ISR Project area. However, a review of the physical location of these sites and the data collected from these sites indicated that these met stations would not be the most appropriate surrogate sites as discussed below.

The Casper met station is located approximately 60 miles southwest of the Nichols Ranch ISR project area. The Casper met station is also located approximately 5 mi north of Casper Mountain which is the north extend of the Laramie Mountain Range (Knight 1994). Casper Mountain rises about 2,700 feet above the city of Casper and about 2,500 feet above the elevation of the Casper met station. While winds at the Casper met station are predominately from the southwest the local weather patterns are likely affected to some degree by Casper Mountain which is a major local topographic feature and would likely result in more microclimate affects compared to those that would be expected at the Nichols Ranch ISR Project area. Therefore, based on the increased distance of the Casper met station to the Nichols Ranch ISR Project area and the microclimatic effects of Casper Mountain it is reasonable to hypothesize that the Antelope met station is a better surrogate met station.

The Gillette and Buffalo met stations are located approximately 46.5 miles north-northwest and 58 miles northwest of the Nichols Ranch ISR Project area, respectively. The wind pattern for these stations generally show a westerly pattern with a relatively strong component from the north that appears to be reflective of a stronger northern influence of Canadian weather systems that push down directly from northern latitudes or from pacific weather systems that move around the Big Horn Mountain Range and then south. Therefore, based on the microclimatic effects of Big Horn Mountain Range on these two met stations it is reasonable to postulate that the Antelope met station would be a better surrogate met station.

The Antelope station offers the most representative data for the generation of the monthly wind roses and seasonal diurnal temperature norms required by the NRC. The NRC also approved use of the Antelope met station for Energy Metals Corporation's Moore Ranch Uranium Project License Application that is located approximately 10 mi south of the Nichols Ranch ISR Project area. The other meteorological stations presented in Table 2-7 will be used in the discussion of regional climatology and meteorology.

Regarding maintenance, inspections, and service of the Antelope met station, it is important to note that Uranerz did not collect data, operate, or maintain the Antelope met station. As noted above, the Antelope met station is operated and maintained by IML in accordance with an air quality permit issued by the WDEQ/AQD and has been in operation since 1987. Since this station is required by the WDEQ/AQD the Antelope met station is operated and maintained in accordance with the EPA's regulatory modeling application criteria and adheres within a strict set of operating and maintenance guidelines. These system/equipment accuracies and resolutions are generally more stringent than those of National Weather Service systems. In accordance with EPA guidelines, the Antelope met station is audited once every six months and calibrations and repairs are performed on an "as found" basis. It should also be noted that the WDEQ/AQD typically has not identified issues or concerns with the collection of data from this station. Had there been any problems with data collection from this met station the WDE/AQD would have required appropriate corrective action. All calibrations and repairs at this station are performed immediately after they are identified as the EPA minimum data recovery criteria is 75%. As stated in above, data recovery from this site is greater than 90% for all parameters.

JD-D4.1.2 TEMPERATURE

Summer temperatures vary widely across the state of Wyoming, with the typical climate characterized by warm sunny days and cool nights. State record high and low temperatures are 116°F and -66°F, respectively (Curtis and Grimes 2004). A meteorological station was established at the Nichols Ranch ISR Project area in late June 2011 to collect site-specific baseline meteorological data. Data was collected from June 28, 2011 through July 3, 2013 and included wind speed and direction, standard deviation of wind direction, and ambient temperature. Data recovery was 100% for all parameters. Based on 2 years of temperature data collected at this station, the maximum temperature recorded was 100.8°F and the minimum temperature was -9.6°F (IML 2013). On average, for this region of Wyoming, summer temperatures reach 90°F or above about 48 times per year, while winter temperatures fall to 0°F or below about 18 times per year (Martner 1986). On average, there are 100-125 frost-free days a year in the project area, with the length of frost-free days decreasing with increasing elevation (Martner 1986).

The mean monthly temperatures for the Nichols Ranch ISR Project area based on 2 years of data collected in the project area and are summarized in Table JD-D4-2.

Table JD-D4-2 Mean Monthly Temperatures for Nichols Ranch Met Station[1].

Month	Daily Mean Temperature (°F)
January	26.9
February	26.7
March	40.2
April	42.4
May	54.3
June	67.5
July	74.3
August	72.7
September	61.9
October	46.5
November	36.1
December	26.4

[1] Source (IML 2013) and includes data for 2 years only.

Figure JD-D4-2 compares monthly average temperature for Year 1, the Baseline Year and Year 2 and the monthly average high and low temperature for both years. Temperatures were similar in Year 1 and 2 with the exception of a cooler spring in 2013 compared to 2012 (IML 2013).

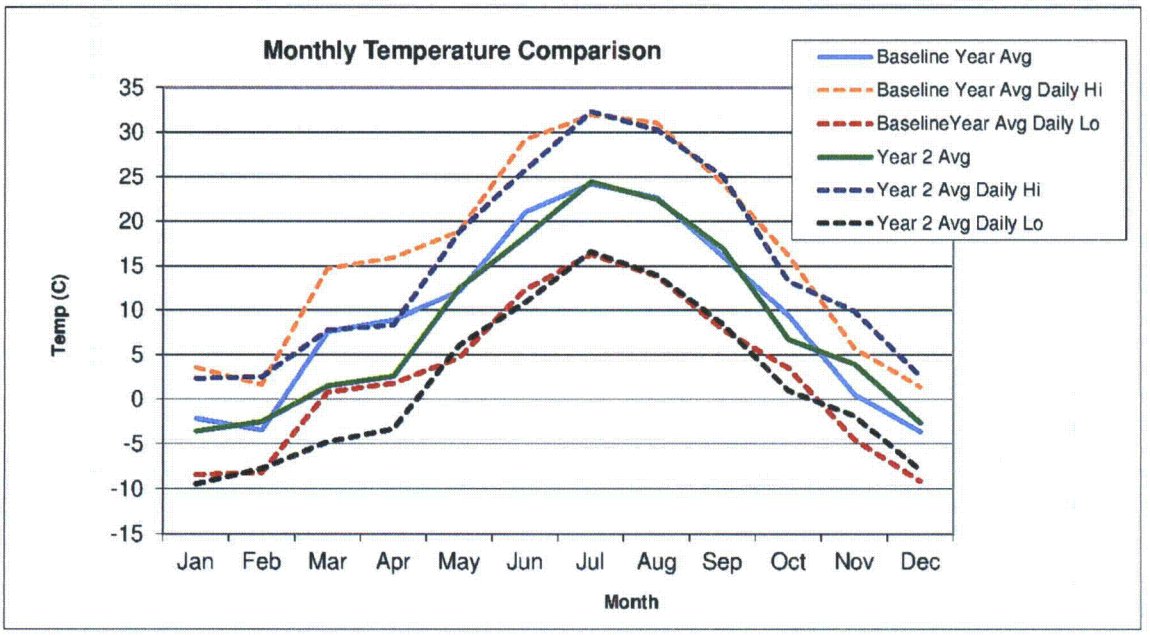


Figure JD-D4-2 Monthly Temperature Comparison from the Nichols Ranch Met Station.

Figure JD-D4-2 compares the 2-year baseline-period for the Nichols Ranch met station to the long-term monthly average temperatures for Antelope met station. Figure JD-D4-3 compares the 2-year baseline-period for the Nichols Ranch met station to the long-term monthly average temperatures for Casper met station. Average temperatures typically fluctuate from year to year, reflecting variations in synoptic scale weather patterns. Notwithstanding these fluctuations, Figures JD-D4-2 and JD-D4-3 demonstrate good correlation between the two-year baseline period at the Nichols Ranch met station and for the long-term period at the Antelope met station and Casper met station.

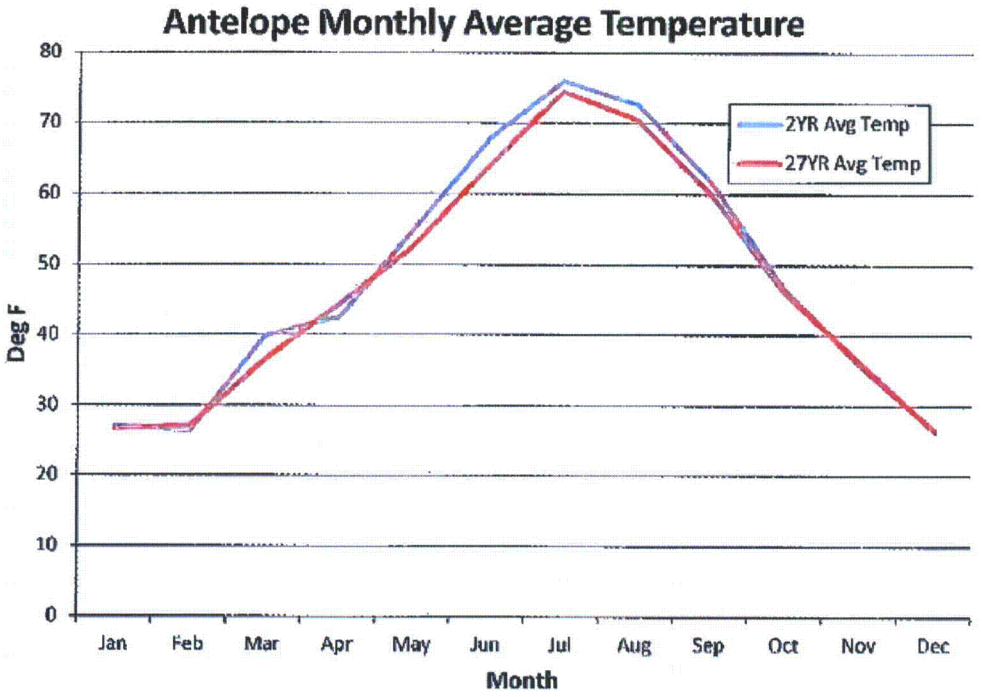


Figure JD-D4-2 Comparison of Short-term and Long-term Temperature Data from the Antelope Met Station.

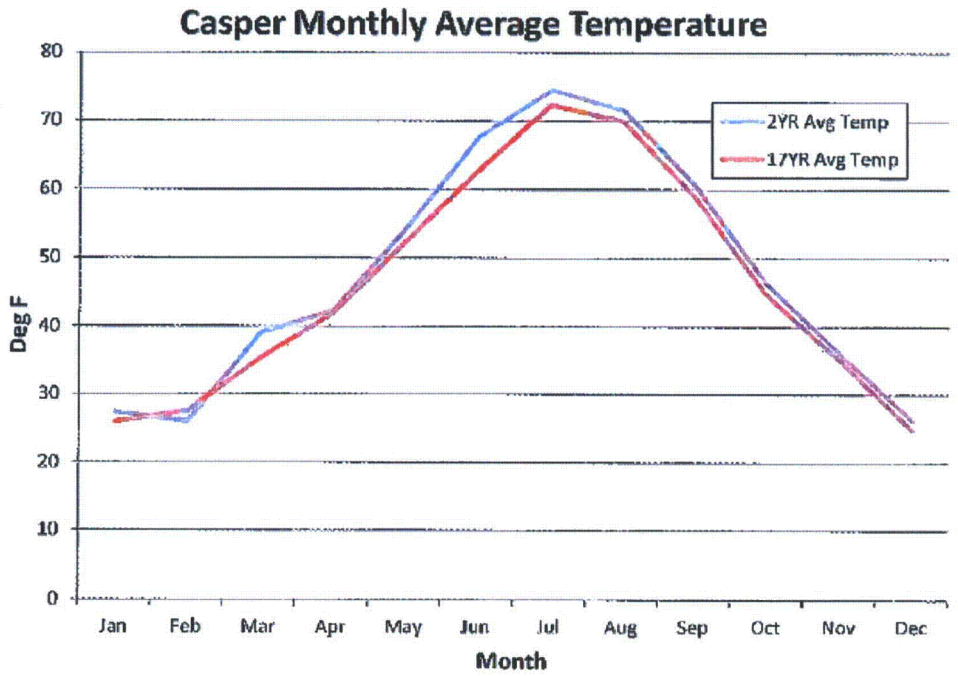


Figure JD-D4-3 Comparison of Short-term and Long-term Temperature Data from the Casper Met Station.

JD-D4.1.3 PRECIPITATION

Precipitation data was not collected at the Nichols Ranch ISR Project area. The nearest precipitation station is the National Weather Service Midwest 1SW weather station, which is located approximately 27 mi southwest of the project area. Average monthly and annual precipitation values for data collected at the Midwest 1SW weather station for the 30-year period 1971-2000 are summarized in Table JD-D4-3. During this 30-year period, average maximum precipitation occurs during the month of May, and average minimum precipitation occurs during the month of January (Curtis and Grimes 2004). In winter, mean annual snowfall totals are 45-53 inches (Curtis and Grimes 2004). The average number of days with snowfall totals of 1 inch or more is 16 to 26 days for the area, with the highest average monthly snowfall occurring from February to April (Martner 1986).

Table JD-D4-3 Average Precipitation Values.[1]

Month	Inches
January	0.54
February	0.61
March	0.95
April	1.71
May	2.55
June	1.95
July	1.35
August	0.72
September	0.86
October	1.13
November	0.69
December	0.70
Annual	13.76

1 Data from Midwest 1 SW weather station for 1971-2000.

JD-D4.1.4 WIND

JD-D4.1.4.1 Wind Speed

Based on 2 years of wind data collected hourly at the Nichols Ranch met station, the average wind speed was 10.6 mph. The highest wind speed collected was 51.3 mph. The weakest winds occur in the mornings and the strongest winds generally occur in early to mid-afternoon. Figure JD-D4-4 provides a monthly comparison between the Baseline Year, Year 1, to Year 2, a second year of data. Figure JD-D4-5 compares the wind roses for the two, 12-month monitoring periods for the baseline year and second year of data collected at the Nichols Ranch met station. The wind roses demonstrate consistent wind speed and direction from year to year.

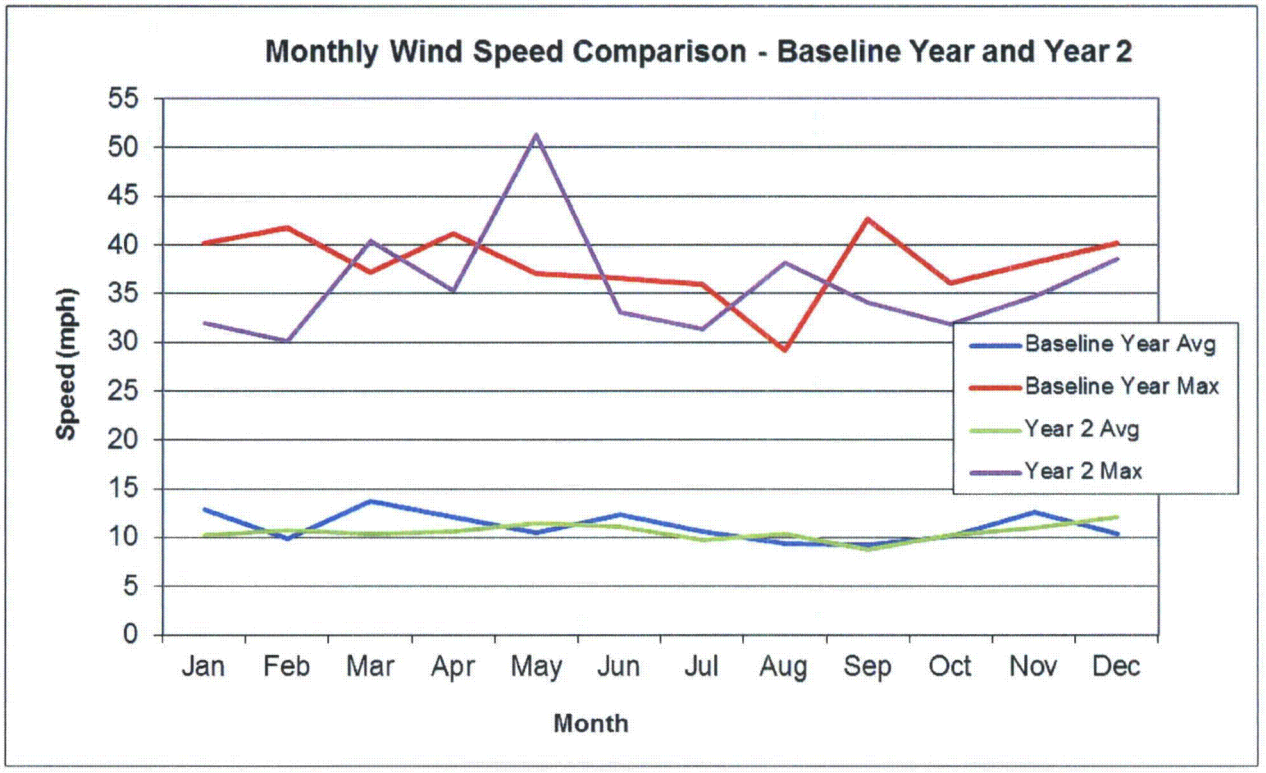


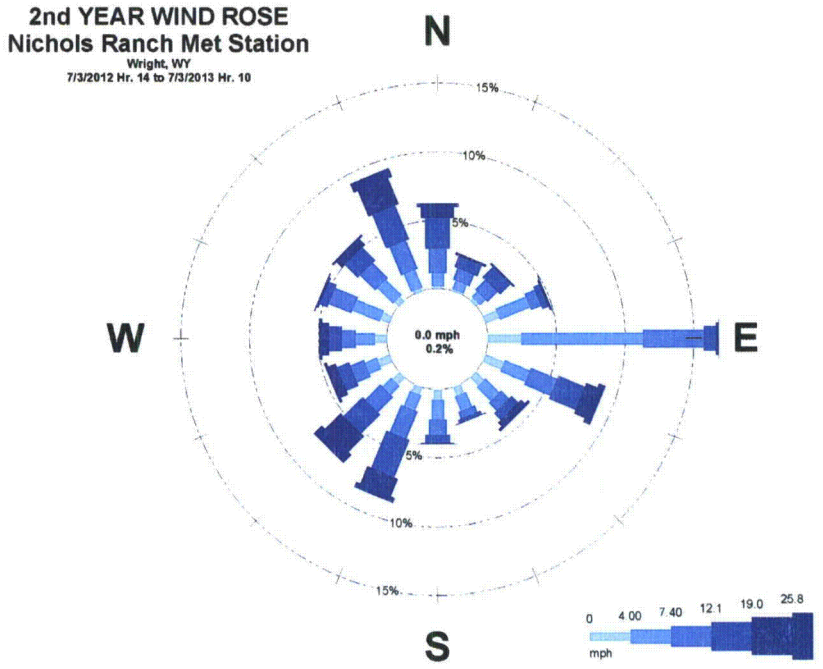
Figure JD-D4-4 Nichols Ranch Met Station Monthly Wind Speed Statistics, Baseline (Year 1) and Year 2 Comparison.

JD-D4.1.4.2 Wind Speed Frequency

Two consecutive years of on-site meteorological data was used to determine site-specific wind speed frequency and wind direction. Using this data, wind roses and a frequency distribution were developed. Additional on-site data was combined with this information to develop atmospheric stability classes and a joint frequency distribution. This information was in turn used as one of the key input parameters for the MILDOS model. The stability class/joint frequency distribution can be found in Addendum D11A (MILDOS Report). To ensure the representativeness of the short-term to the long-term meteorological data, the 2-years of on-site meteorological data were compared to long-term data from three representative NWS Station located at the Antelope site, Casper site, and Gillette site. This analysis is presented in Addendum JD-D4-A and the comparison shows that the on-site data are consistent with long-term conditions.

As noted above, wind speeds were divided into six classifications ranging from mild (zero to three mph) to strong (>24 mph) a seventh classification is denoted as "calm," indicating wind speeds below the instrument threshold (IML 2013).

The percent of the time that winds occur in each of the seven wind speed categories can be represented as a wind speed frequency distribution. Figure JD-D4-6 compares the frequency of occurrence of each of the seven classifications during the Baseline Year and Year 2 at Nichols Ranch. The percent of the time the wind speed falls within each of the seven wind speed classes shown, is quite similar for the two monitoring periods.



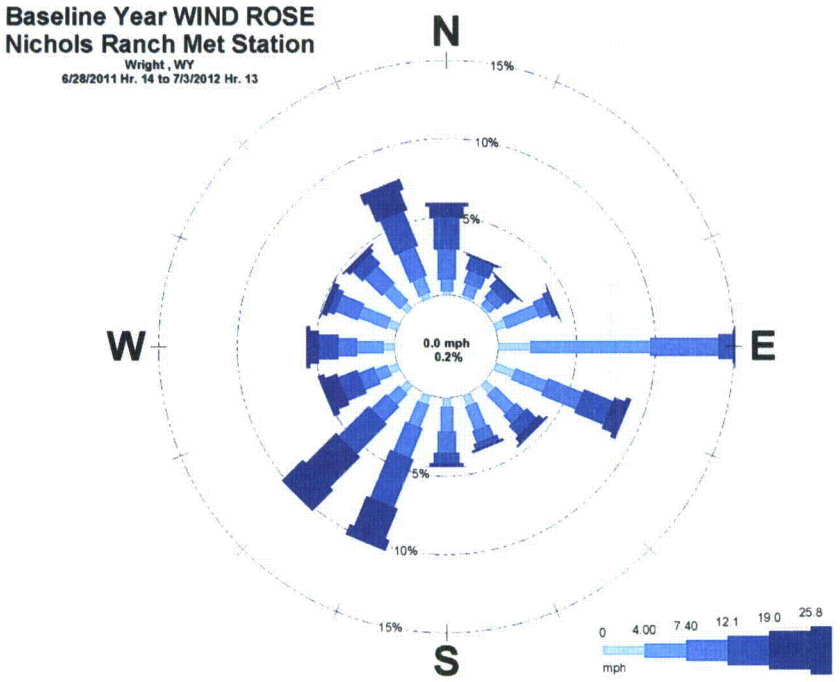


Figure JD-D4-5 Nichols Ranch Wind Rose Comparison, Baseline (Year 1) and Year 2.

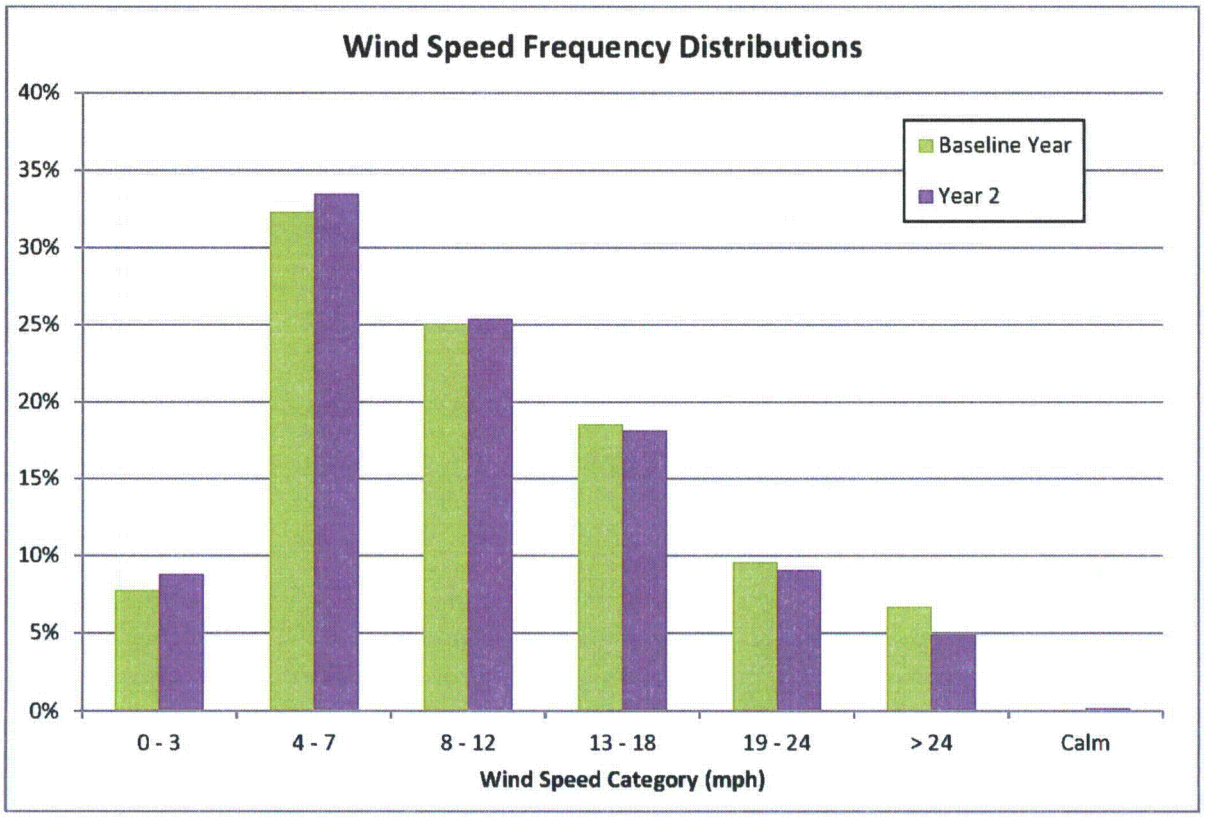


Figure JD-D4-6 Nichols Ranch Wind Speed Frequency Distributions Year 1 and Year 2.

JD-D4.1.4.3 Wind Direction

Predominant wind direction was from the east accounting for 16.8% of the possible winds (see Figures JD-D4-5 and JD-D4-6) (IML 2013). Wind direction was similar from year to year.

JD-D4.1.4.4 Wind Direction Frequency

As noted in Section JD-D4.1.3.3, MILDOS-AREA model incorporated the pertinent data from the on-site Nichols Ranch met station, which included the 16 point wind direction frequency shown in Figures JD-D4-5 and JD-D4-7. Figure JD-D4-7 shows that the percent of the time the wind direction falls within each of the 16 compass directions. The figure also includes a "calm" category. Again, using data from the on-site station, a fractional joint frequency distribution

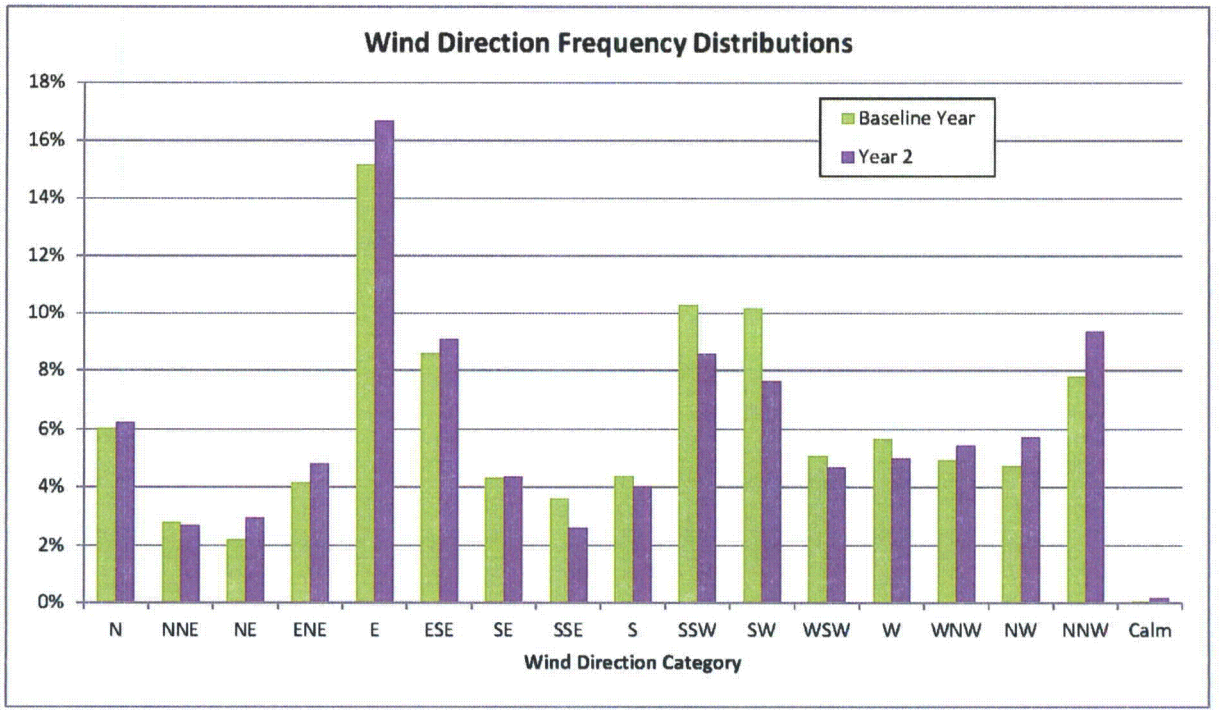


Figure JD-D4-7 Wind Direction Frequency Distributions Year 1 and Year 2 From Nichols Ranch Met Station.

(decimal-base) of wind speed, wind direction and 6 atmospheric stability classes were used in the MILDOS-AREA model to estimate radiological impacts in 16 compass directions from the site for the project life.

JD-D4.1.5 LAKE EVAPORATION AND EVAPOTRANSPIRATION

Average annual lake evaporation for the project area is estimated to be 45 inches, and annual potential evapotranspiration is estimated to be 23 to 24 inches (Martner 1986).

JD-D4.2.0 AIR QUALITY PERMIT

JD-D4.2.1 GENERAL

Uranerz will prepare and submit a modification to WDEQ/AQD for the Jane Dough Unit to its existing air quality construction permit (CT-8644) for the Nichols Ranch ISR project. The application will include all required information for construction and operation of the Jane Dough Unit.

JD-D4.2.2 IMPACTS

Impacts on air quality associated with the operations of the Jane Dough Unit will be very minimal. Access to the project area will be via 8.5 mi of Campbell County maintained gravel road, 8.5 miles of gravel ranch roads if accessing the project area from Wyoming Highway 50, or approximately 22.3 miles of gravel ranch roads if accessing the property from U.S. Highway 387. Both the county and ranch roads are currently used by numerous oil/gas and coal bed methane companies that are active in the region. These roads have been developed and range from 18- to 24-feet wide crowned-and-ditch roads. The closest residence to the access route through the Jane Dough is the Dry Fork Ranch located approximately 1 mile west of the route and the Rolling Pin Ranch located approximately 3.0 miles east of the route. Because there is a strong east, southwest, and south-southwest wind direction, dust produced by the mining operations and vehicular traffic will generally be blown to the west and northeast, and will not affect ranching operations. Another factor that reduces the impact from vehicular traffic is the fact that it is an area source as opposed to a point source. As an area source, particulates are distributed over the length of the access road and not concentrated at any of the nearby ranches. Lastly, because the source term's duration is intermittent - workers arriving in the morning and leaving the site at the end of the work day- the generation of particulates is limited to these short time periods, and this further reduces impacts.

Particulate emissions associated with the Jane Dough Unit will also be minimal. Of the 3,680 acres within the project area, approximately 170 acres or less of lands will be disturbed

with stripping of topsoil. In order to reduce particulate emissions in the well field by drilling equipment and well field maintenance vehicles, access roads will be maintained by motorized patrol. Natural vegetation will also be left undisturbed whenever possible to prevent wind erosion.

Vehicle traffic entering the Jane Dough Unit is estimated at eight passenger vehicles per day per week along with six tractor trailers per week. Fugitive dust emissions from this traffic are estimated at approximately 135.9 tons per year using the longer of the two access routes as a basis for the fugitive dust calculations. Well field fugitive dust emissions were not considered in calculating the overall fugitive dust emissions since the well field is not considered a major source of emissions. Estimated fugitive dust emissions during construction of the facilities of the Nichols Ranch ISR Project were also not included in the fugitive dust emission calculation since the amount of vehicular activity that will be taking place during the construction will be similar to the traffic of the actual operation. Figure JD-D4-8 outlines the methods used to calculate the fugitive dust emissions.

Assumptions:

1. For the purpose of calculating fugitive dust emissions, the well field was not considered a significant emitting source.

2. Estimated daily vehicle traffic includes eight passenger/truck vehicles entering the Nichols Ranch ISR Project. Approximately six tractor trailers will also travel to the permit area per week.

3. Estimated disturbance within the 3,680 acre Jane Dough Unit is 170 acres or less.

4. All fugitive dust calculations were based on AP-42 Chapter 13.2.2 (EPA 2014).

5. Calculation data assumption:
   Wyoming Unpaved Road Surface Material Surface Silt Content = 4.2% (Source AP-42)
   Access road vehicle speed = 30 mph
   Access road length = 15 mile

Calculations:

Access Road Vehicle Miles per Day

$$\frac{8\ vehicles}{day} \times 15\ miles = \frac{120\ miles}{day}$$

$$\frac{0.86\ semi's}{day} \times 15\ miles = \frac{12.9\ miles}{day}$$

Vehicle Miles per Year

$$Passenger\ \ Vehicles \Rightarrow \frac{120\ miles}{day} \times \frac{7\ days}{week} \times \frac{52\ weeks}{year} = \frac{43,680\ miles}{year}$$

$$Semi's \Rightarrow \frac{12.9\ miles}{day} \times \frac{7\ days}{week} \times \frac{52\ weeks}{year} = \frac{4,695.6\ miles}{year}$$

Figure JD-D4-8 Fugitive Dust Calculations (1 of 3).

Emissions for Unpaved Roads

$$E = \frac{\left[k \left(\frac{s}{12} \right)^{a} \left(\frac{S}{30} \right)^{b} \right]}{\left(\frac{M}{0.5} \right)^{c}} - C$$

Where:

E = size specific emission factor (lbs/vehicle mile traveled)
s = surface material silt content (%) from AP 42 Tables
W = mean vehicle weight (tons)
M = surface material moisture content (%)
S = mean vehicle speed (miles per hour)
C = emission factor from AP 42 Tables

For PM-10:

k, a, b, and c are constants derived from AP 42 13.2.2
k = 1.5
a = 0.9
b = 0.45
c = N/A or 1

Correcting For Natural Mitigation:

$$E = \left[\frac{\left[k \left(\frac{s}{12} \right)^{a} \left(\frac{S}{30} \right)^{b} \right]}{\left(\frac{M}{0.5} \right)^{c}} - C \right] \left[\frac{(365 - P)}{365} \right]$$

Where: P = number of days in a year with at least 0.01 inches of precipitation from AP 42 charts

Figure JD-D4-8 Fugitive Dust Calculations (2 of 3).

Therefore, using the following inputs:

s = 4.2
a = 0.9
b = 0.45
c = 1
S = 30 miles per hour
M = 0.5
C = 0.0047
P = 100

E = 0.420 lbs/vehicle miles traveled

Total Fugitive Dust Emissions

Total Vehicle Miles Traveled per Year = 47,375.6 miles per vehicle

9 vehicles total, so

$$\left(9 \text{ vehicles}\right) \times \left(47375.6 \text{ miles per year}\right) \times \left(0.42 \text{ lbs per VMT}\right) = 179{,}079.8 \text{ lbs per year or } 89.5 \text{ tons per year}$$

This is below the 250 tons per year standard established for PSD.

From the above calculations, it is estimated that an emission rate of 135.9 tons per year can be expected for the Jane Dough Unit. As this is below the 250 tons per year threshold for PSD review, an analysis to determine air quality impact is considered unnecessary.

Figure JD-D4-8 Fugitive Dust Calculations (3 of 3).

All other emissions from the Jane Dough Unit are minimal. Table JD-D4-4 summarizes all potential air quality emissions from the Jane Dough Unit.

Table JD-D4-4 Emissions Inventory for the Jane Dough Unit.

Emission	Estimated Emission (tons/year)
CO_2	353.70
HCL	0.017
H_2O_2	0.003
NaOH	0.0003
Fugitive Dust	135.9

JD-D4.3.0 REFERENCES

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ADDENDUM JD-D4-A

DEMONSTRATION OF LONG-TERM REPRESENTATION OF BASE-LINE METEOROLOGICAL MONITORING AT THE NICHOLS RANCH SITE

Addendum to Supplemental Meteorology Report

Demonstration of Long-Term Representativeness of Baseline-Period Meteorological Monitoring at Nichols Ranch Site

18 February 2014

Uranerz Energy Corporation

Casper, Wyoming

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Contents

Background

NRC has requested that Uranerz provide justification for its claim that two years of baseline meteorological monitoring at the Nichols Ranch site are representative of long-term weather conditions at that site.

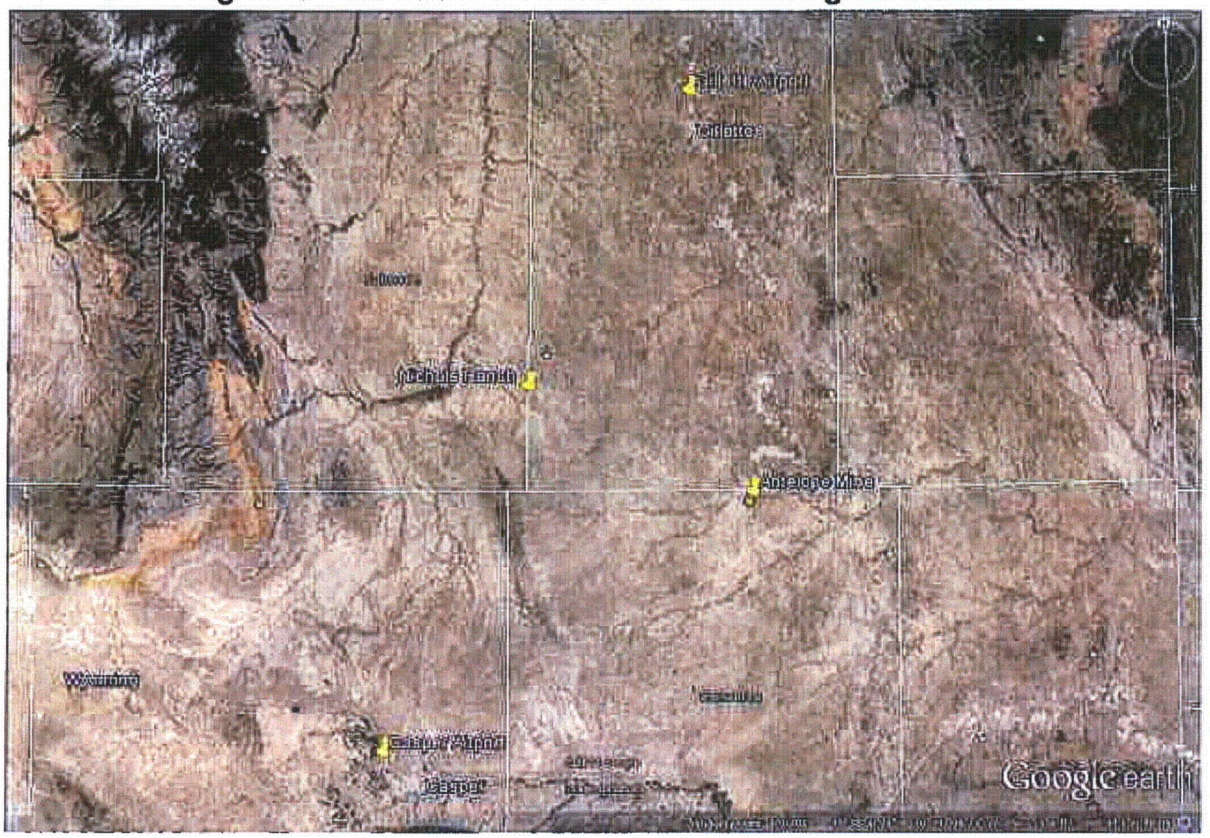
Regulatory Guide 3.63 states, "The minimum amount of meteorological data needed for a siting evaluation is considered to be that amount of data gathered on a continuous basis for a consecutive 12-month period that is representative of long-term (e.g., 30 years) meteorological conditions in the site vicinity. To determine whether the period during which the onsite data was collected is representational, compare a concurrent period of meteorological data from a National Weather Service (NWS) station with the long-term meteorological data from that NWS station. The NWS station selected for this comparison should, if possible, be in a similar geographical and topographical location and be reasonably close (preferably within 50 miles (80 kilometers)) to the site. In some sections of the country, the spacing between NWS stations may necessitate the selection of an NWS station more than 50 miles away. The reduced data and supportive documentation should be retained and should be available for review for the period of facility operation."[3]

The purpose of this study is to satisfy NRC's request in conformance with Regulatory Guide 3.63. For this purpose, three reference sites (Figure 1) are analyzed for the degree of similarity between meteorological conditions during the two-year baseline period (from 7/1/2011 through 6/30/2013) and meteorological conditions over a longer term (the entire period of record). The analytical approach is to compare hourly distributions of wind speed, wind direction, and atmospheric stability class, as well as monthly average temperatures between these short and longer-term periods at each of the three reference sites.

Justification of Reference Site Selection

The two NWS stations closest to the Nichols Ranch site that monitor hourly wind data are the Casper and Gillette airports. The Casper site is approximately 59 miles south-southwest of Nichols Ranch, while the Gillette site is approximately 51 miles north-northeast of Nichols Ranch. Both sites exhibit mildly rolling terrain and sparse vegetation. The Casper site has an approximate elevation of 5,200 ft. and the Gillette site has an approximate elevation of 4,500 ft. (the Nichols Ranch site is at approximately 4,800 ft.). Valid hourly meteorological data for the Casper site are available from the National Climatic Data Center (NCDC) for the period 1/1/1997 through 12/31/2013 (17 years). Valid hourly meteorological data for the Gillette site are available from NCDC for the period 1/1/1999 through 12/31/2013 (15 years).

Figure 1 – On-Site and Reference Meteorological Stations



Because both Casper and Gillette are slightly farther than 50 miles from Nichols Ranch, and because the available hourly meteorological data cover only 17 years and 15 years respectively, a third reference site was also evaluated. The Antelope Mine lies approximately 37 miles east-southeast of Nichols Ranch, in similar terrain and at nearly the same elevation (approximately 4,700 ft.). Hourly meteorological data have been collected at the Antelope station for the past 27 years. Instrument specifications and data quality assurance at the Antelope station meet or exceed NWS standards, and satisfy Regulatory Guide 3.63 and NUREG-1569 requirements as acknowledged by NRC in a September 14, 2006 letter from NRC to High Plains Uranium.[2] The Antelope meteorological station also meets EPA guidance with respect to meteorological monitoring for regulatory modeling applications.[1] Joint wind speed and direction data recoveries at this site were 93% for the 27-year period and 99% for the baseline period.

Comparison of Wind Speed and Direction Distributions

Figure 2 compares the short-term and long-term wind roses at Antelope Mine. The wind rose on top reflects the 2-year baseline monitoring period, while the one on the bottom reflects 27 years of monitoring. It can be seen that distribution of wind speeds and directions is very similar between the 27-year and 2-year monitoring periods.

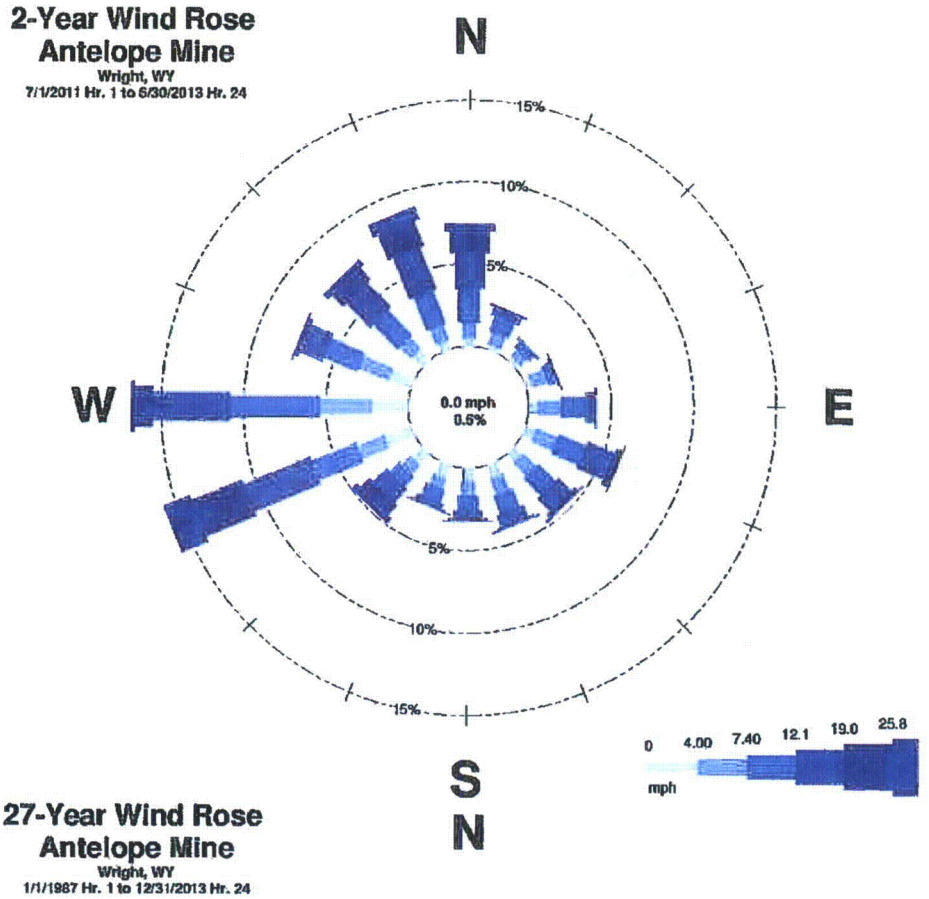
In order to quantify this similarity, it is useful to isolate wind speed and wind direction variables and correlate short-term and long-term frequency distributions. This enables an assessment of the degree to which the distributions of wind speed class and wind direction frequencies from baseline monitoring at a particular location represent the long-term distributions at that same location.

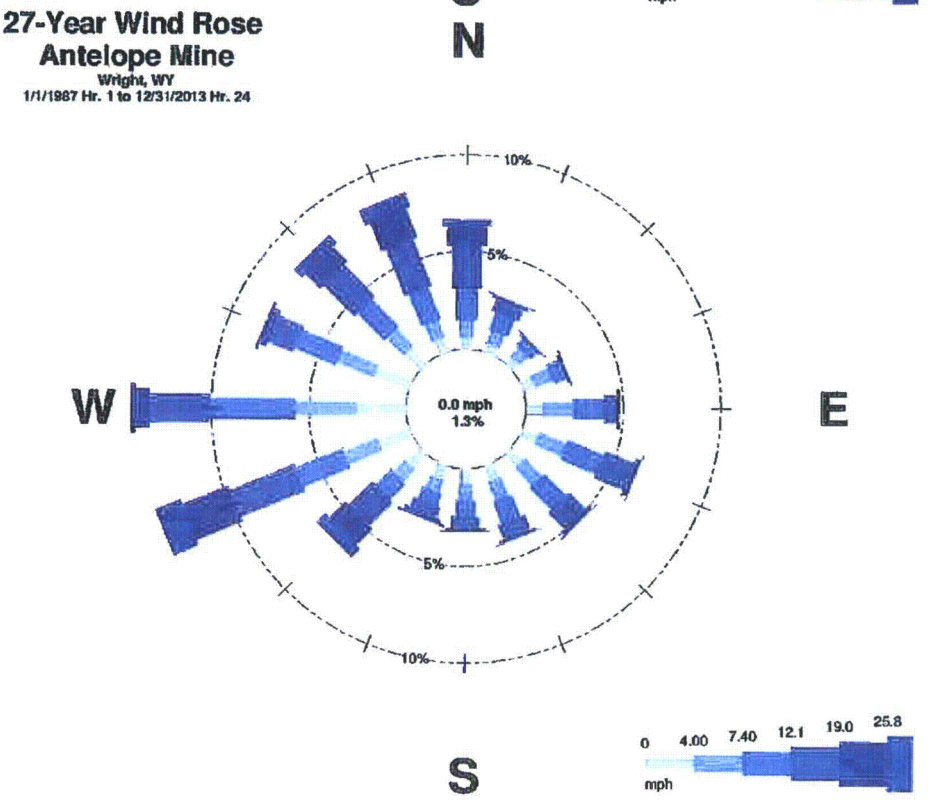
For the joint frequency wind distribution used in the MILDOS-AREA model, wind speeds are divided into six classifications ranging from mild (< 3 mph) to strong (> 24 mph). Adding calm winds (0 mph) yields seven classifications in all. Figure 3 compares the frequency of occurrence of each of the seven classifications during the 2-year and 27-year periods. The percent of the time the wind speed falls within each of the seven wind speed classes shown, is quite similar for the two monitoring periods. Likewise, wind directions are divided into 17 categories corresponding to the 16 compass directions illustrated in the wind roses plus a calm category. Figure 4 compares the frequency of occurrence of each of the 17 direction categories during the 2-year and 27-year periods.

The percent of the time that winds occur in each of the seven wind speed categories can be represented as a wind speed frequency distribution. The percent of the time that winds blow from each of the seventeen directions can be represented as a wind direction frequency distribution. For each parameter, the 2-year and 27-year distributions can then be compared. Linear regression analysis provides a useful tool to assess the degree of correlation between short and long-term distributions.

The objective of a linear regression analysis is to show that the value of one variable "x" (short-term wind speed or direction frequency) reliably represents or predicts the value of another variable "y" (long-term wind speed or direction frequency). In order to demonstrate that short-term wind patterns reliably represent the longer term wind patterns, the short-term wind frequency values (x) constitute the independent variable and the long-term values (y) are the dependent variable. Each point on the graph represents a specific wind speed class, or a specific wind direction category, depending on the context. Calm winds constitute a separate class and a separate wind direction.

Figure 2 – Antelope Mine Wind Rose Comparison





Hence, there are 7 points for the wind speed analysis and 17 points for the wind direction analysis. The "x" value of each point corresponds to the short-term frequency of occurrence of a particular wind speed class or wind direction category. The "y" value of that point corresponds to the long-term frequency of occurrence of that same wind speed class or wind direction category.

If "x" and "y" are similarly distributed, then graphing them as described above will produce a scatterplot of points approximating a straight line with a slope near 1. If the "x" and "y" values are closely correlated the regression analysis will produce a coefficient of determination (R^2) close to 1. Since the sum of all the "x" values and the sum of all the "y" values are each equal to 1 (inherent to probability distributions), an R^2 close to 1 indicates the individual short-term frequencies closely match their long-term counterparts. In regression analysis, a p-value near zero reflects a very high confidence that the correlation is real. An R^2 close to 1 and a p-value close to zero show with a high confidence that the short and long-term wind speed and direction distributions are similarly distributed, in which case the demonstration of long-term representativeness will have been made.

This is not to suggest causation, only relation, which is all that regression analysis can justify. The variable "x" does not cause "y." In this analysis the independent and dependent variables are related to each other through a third variable "z", which represents the regional climatic system superimposed on the local topography. The variable "z" causes both "x" and "y," in this case by the same mechanism.

Figure 5 presents this correlation for the wind speed distributions at the Antelope site. Each point represents one of the seven wind speed classes. The "x" coordinate corresponds to the percent of the 2-year period during which the wind speed fell in a given class, while the "y" coordinate corresponds to the percent of the 27-year period during which the wind speed fell in that same class. The regression line in Figure 5 represents the least-squares fit to the seven data points. The corresponding R^2 value of 0.989 implies very strong linear correlation between short and long-term wind speed classifications. The p-value of 0.000 reflects a very high confidence that the correlation is real.

A similar analysis can be performed for wind direction frequencies. Figure 6 presents this correlation, again for the Antelope site. Each point represents one of the seventeen wind direction categories. The x coordinate corresponds to the percent of the 2-year period during which the wind blew from a given direction, while the y coordinate corresponds to the percent of the 27-year period during which the wind blew from that same direction. The regression line in Figure 6 represents the least-squares fit to the seventeen data points. The corresponding R^2 value of 0.968 implies very strong linear

correlation between short and long-term wind direction classifications. The p-value of 0.000 reflects a very high confidence that the correlation is real.

Two years of baseline hourly averages provide a sufficient number of data points to perform the same regression analysis on the joint frequency distributions. These distributions are constructed for the 2-year and 27-year periods with each joint class defined by the combination of a specific wind speed class and a specific wind direction category. Figure 7 shows an R^2 value of 0.943 and a low p-value of 0.000 for the joint frequency correlation. This joint analysis constitutes a more demanding statistical comparison than the individual wind speed and wind direction distributions, since it requires that the short and long-term wind directions be distributed similarly within each wind speed class. In this sense it provides a quantitative measure of the similarity between the short-term and long-term wind roses.

Figure 3 – Antelope Mine Wind Speed Distributions

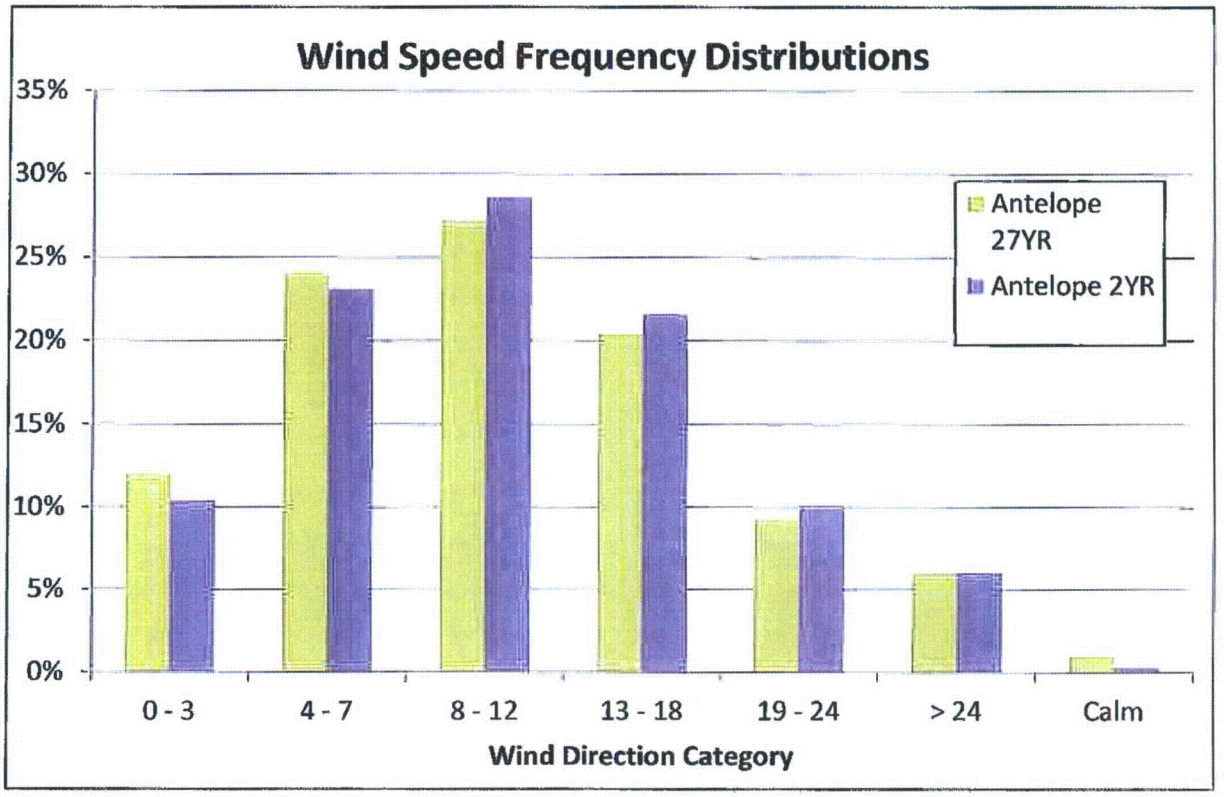


Figure 4 – Antelope Mine Wind Direction Distributions

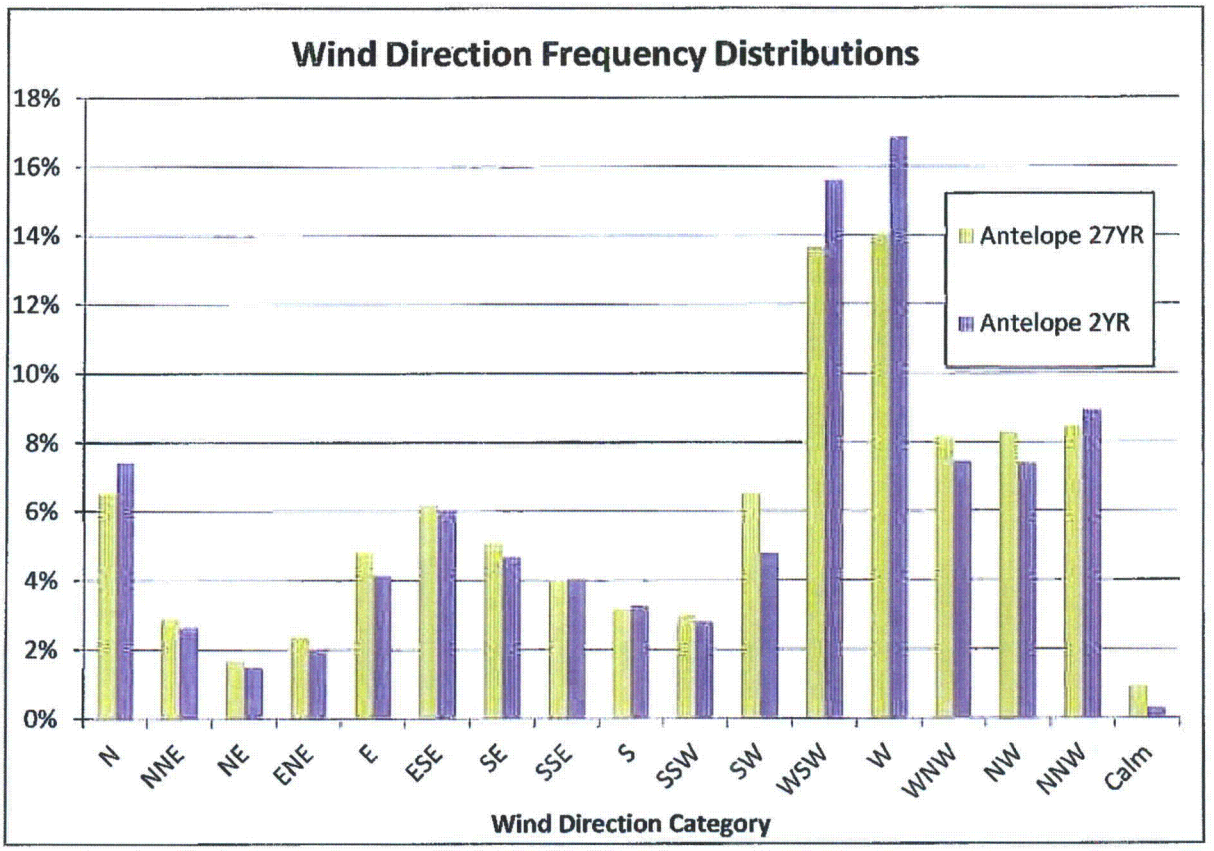


Figure 5 – Antelope Mine Wind Speed Comparison

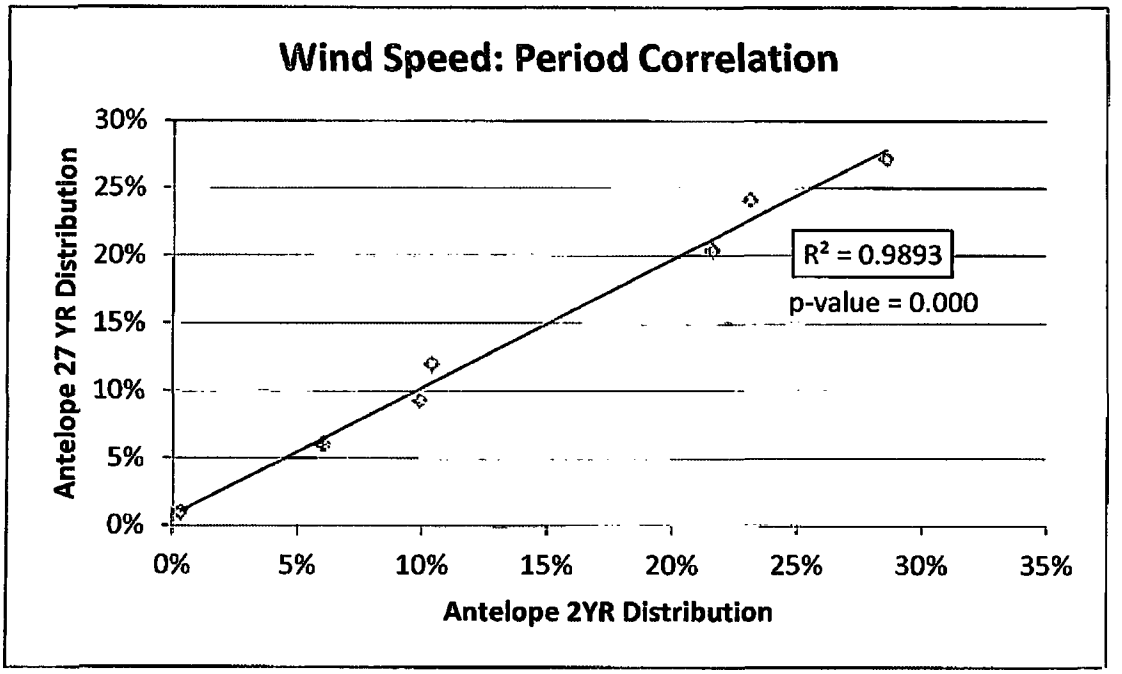


Figure 6 – Antelope Mine Wind Direction Comparison

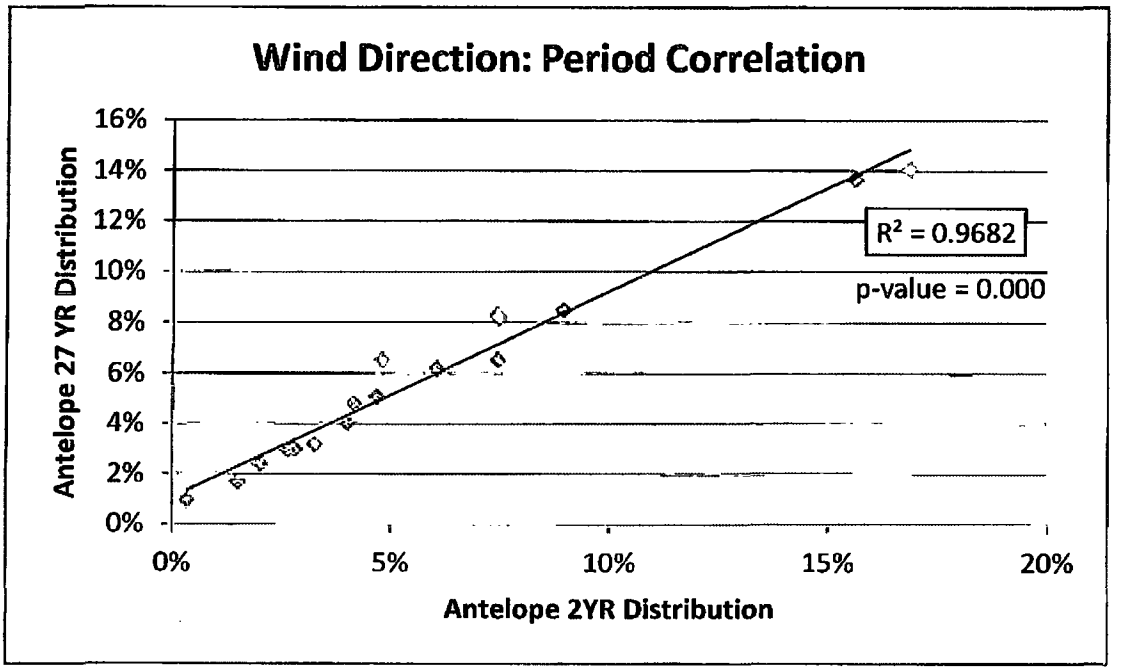
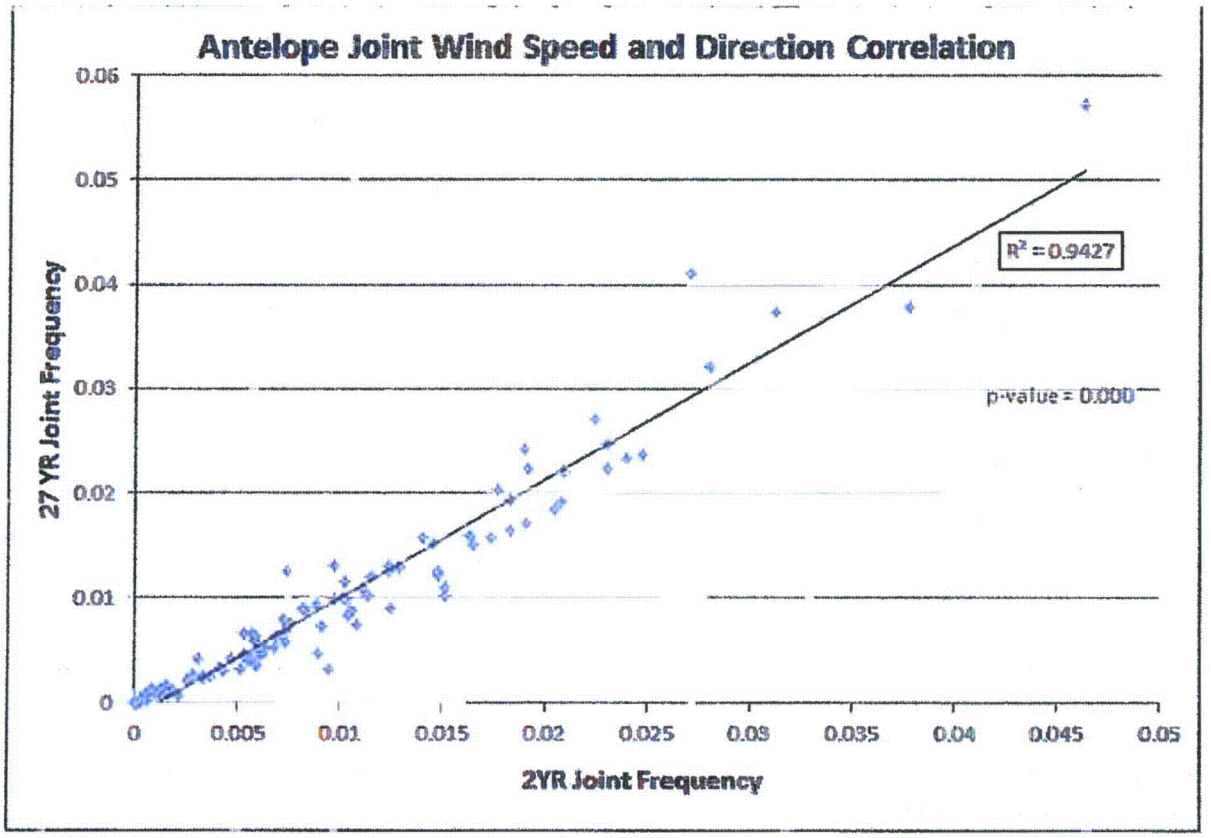


Figure 7 – Antelope Mine Joint Wind Speed and Direction Comparison



The same analysis is presented for the NWS sites at Casper (Figures 8 through 13) and Gillette (Figures 14 through 19). The resulting coefficients of determination closely resemble the Antelope Mine analysis, all with p-values of 0.000. The following table summarizes these results. Appendix A to this document presents detailed graphical and statistical outputs.

Short/Long Term Regression Analysis – Coefficient of Determination R^2

Reference Site	Wind Speed (WS)	Wind Direction (WD)	Joint WS-WD
Antelope Mine	0.989	0.968	0.943
Gillette Airport	0.972	0.984	0.980
Casper Airport	0.946	0.982	0.953

Figure 8 – Casper Wind Rose Comparison

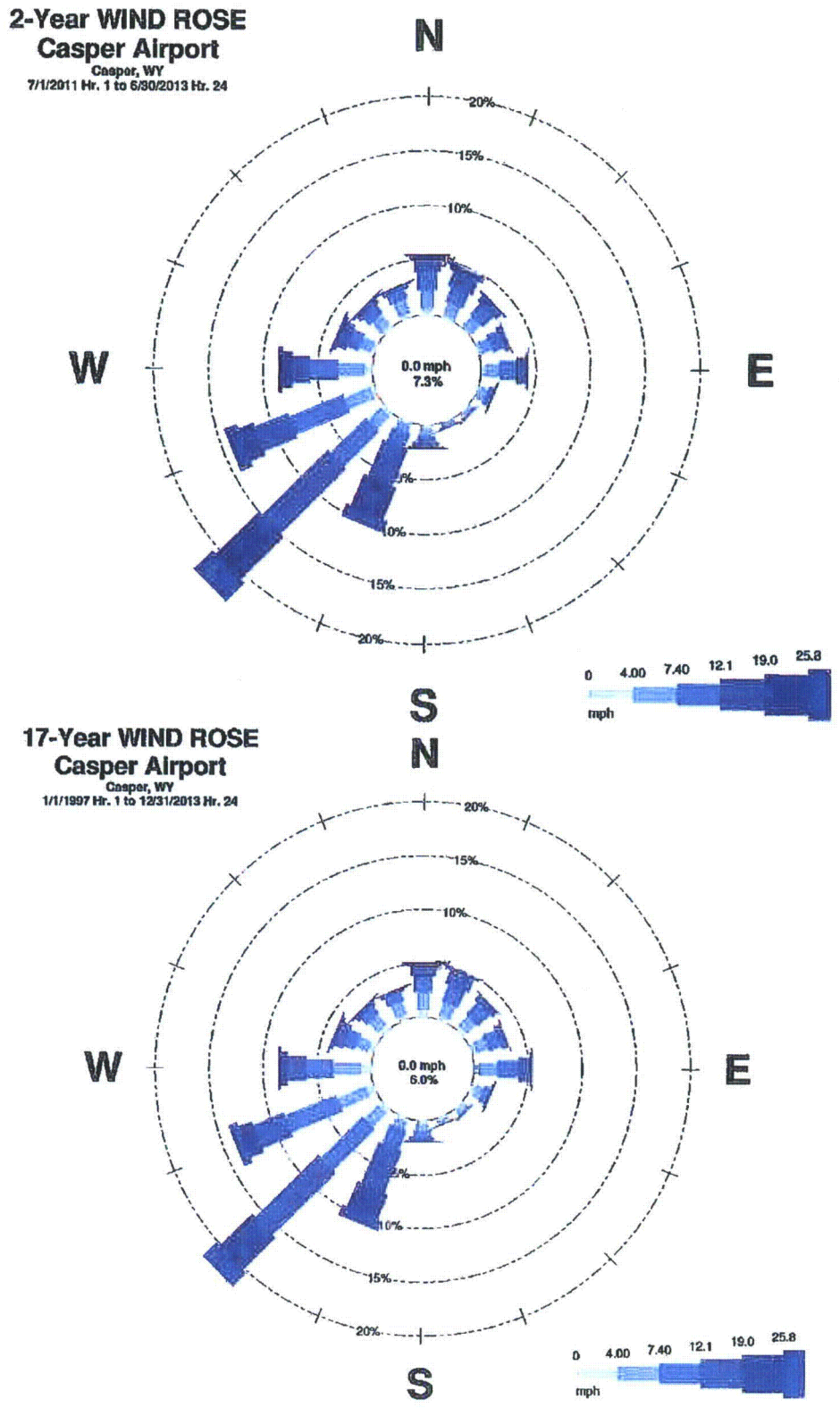


Figure 9 – Casper Wind Speed Distributions

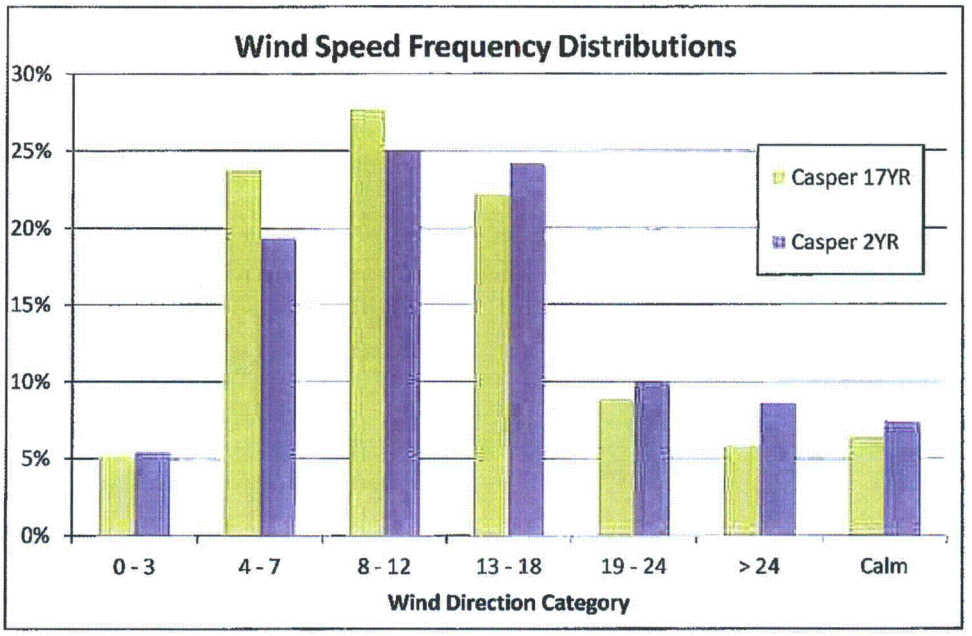


Figure 10 – Casper Wind Direction Distributions

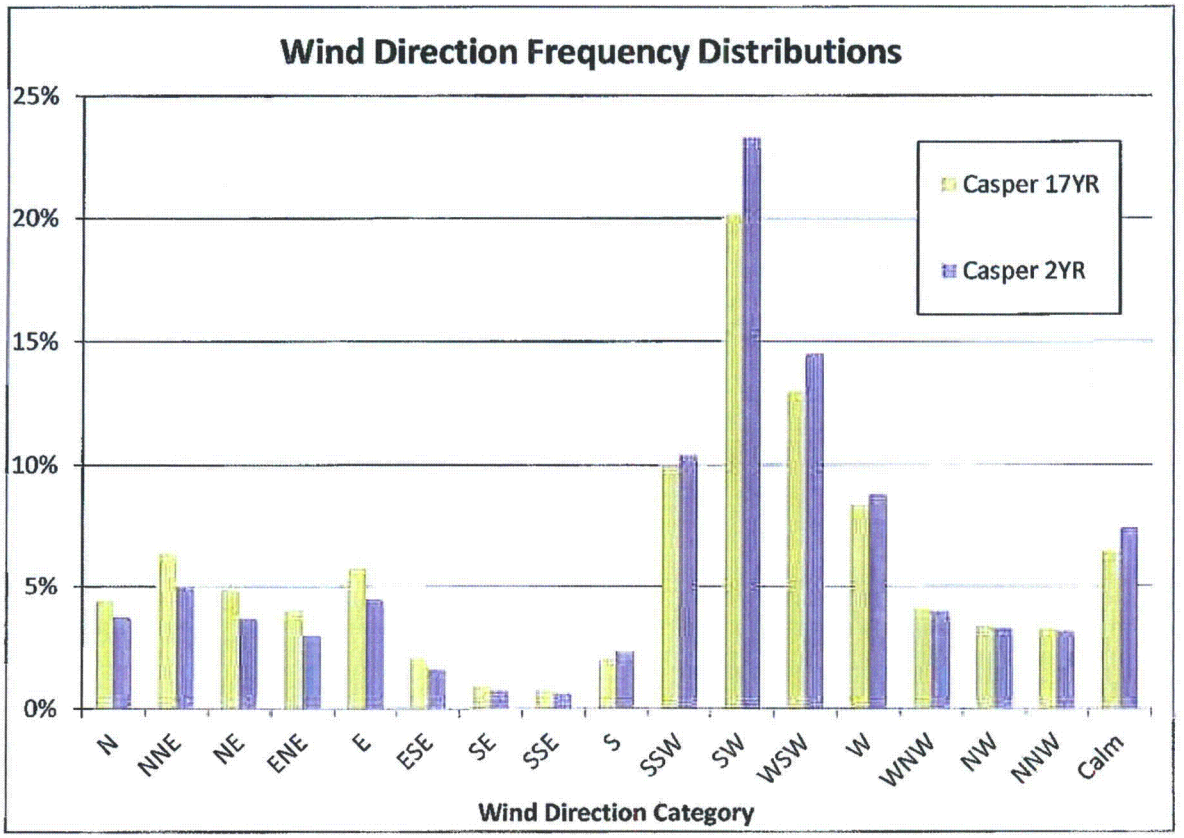


Figure 11 – Casper Wind Speed Comparison

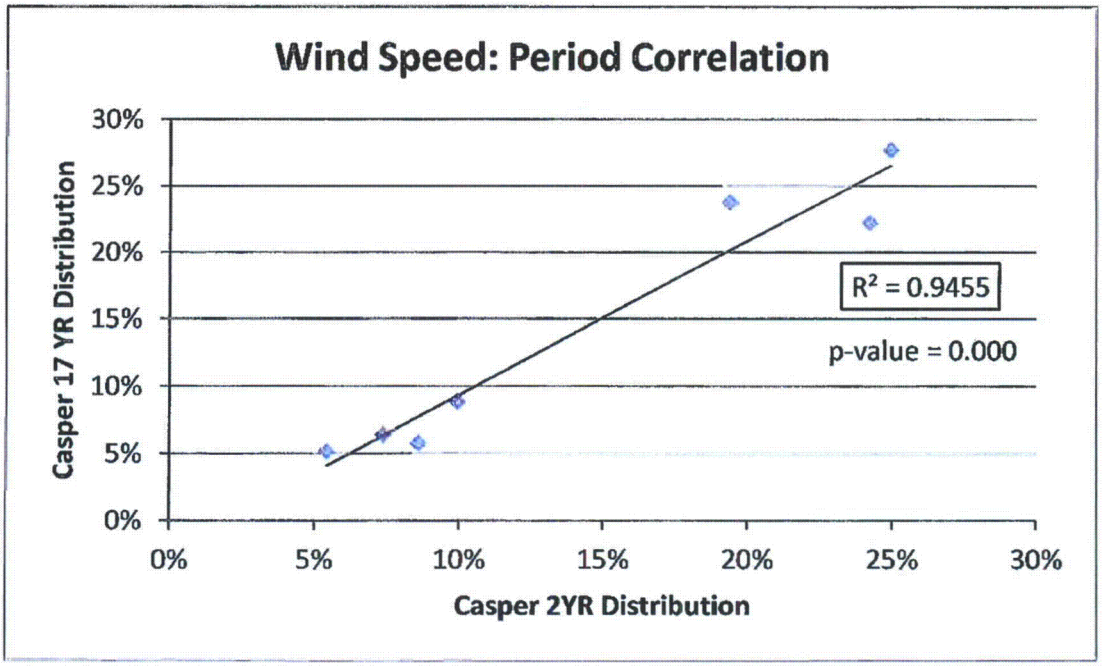


Figure 12 – Casper Wind Direction Comparison

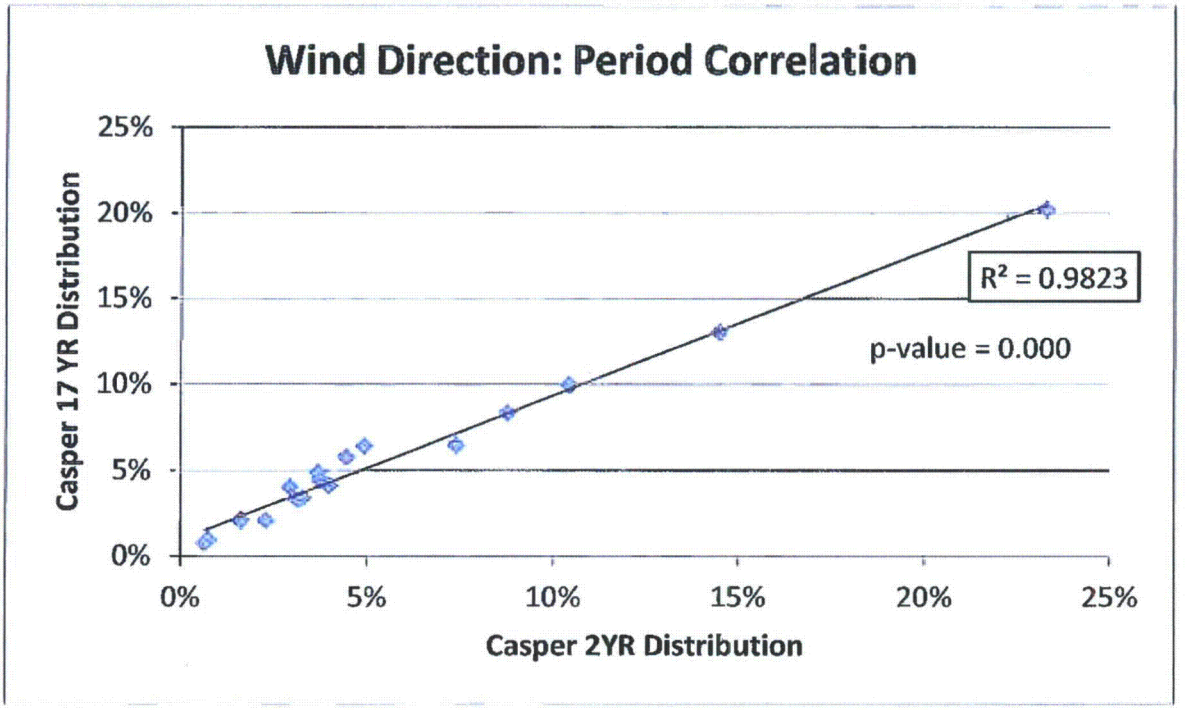


Figure 13 – Casper Joint Wind Speed and Direction Comparison

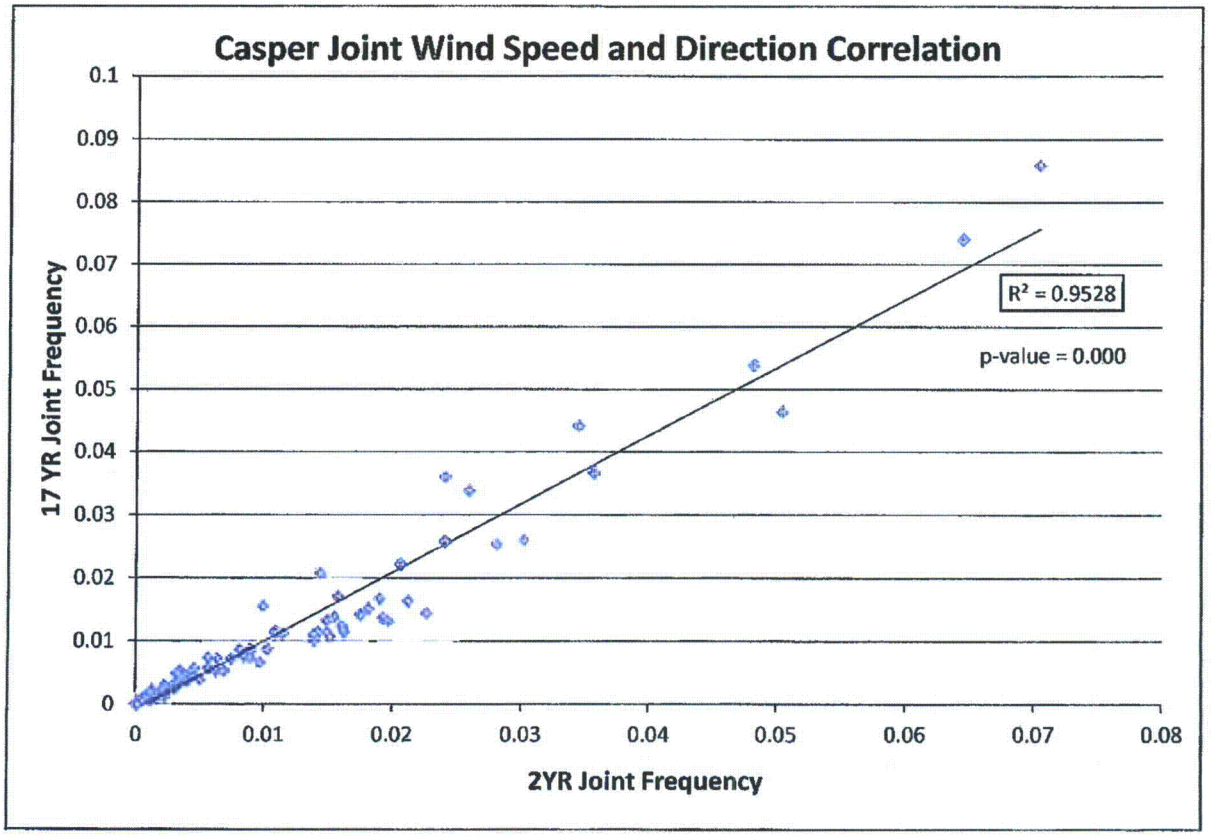
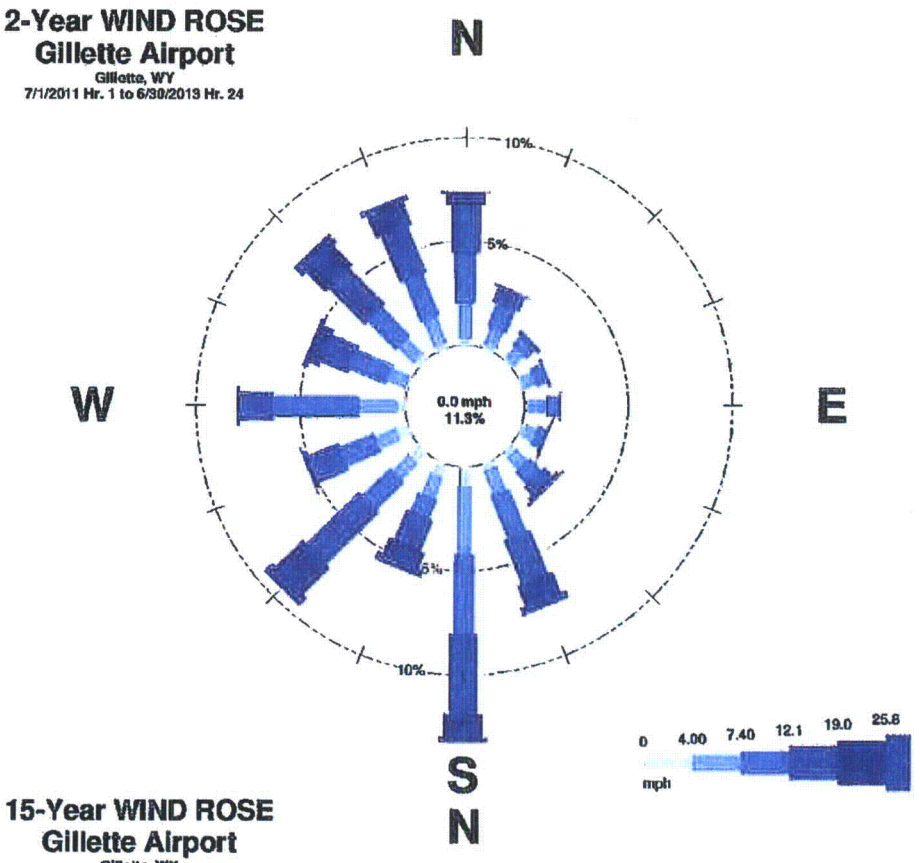


Figure 14 – Gillette Wind Rose Comparison



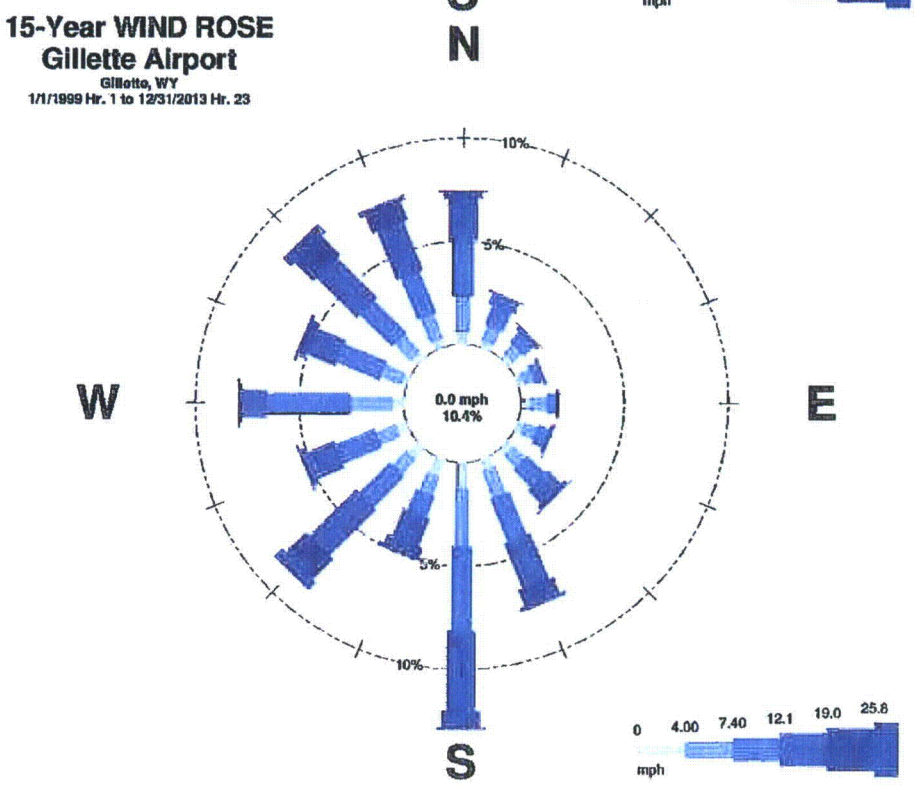


Figure 15 – Gillette Wind Speed Distributions

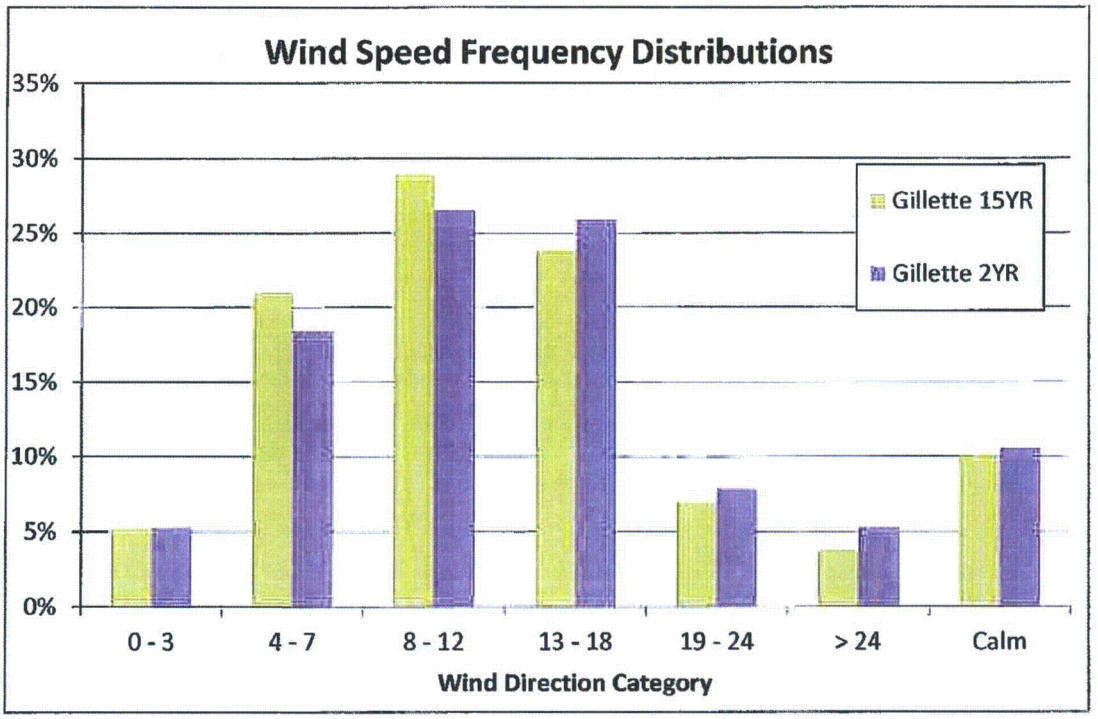


Figure 16 – Gillette Wind Direction Distributions

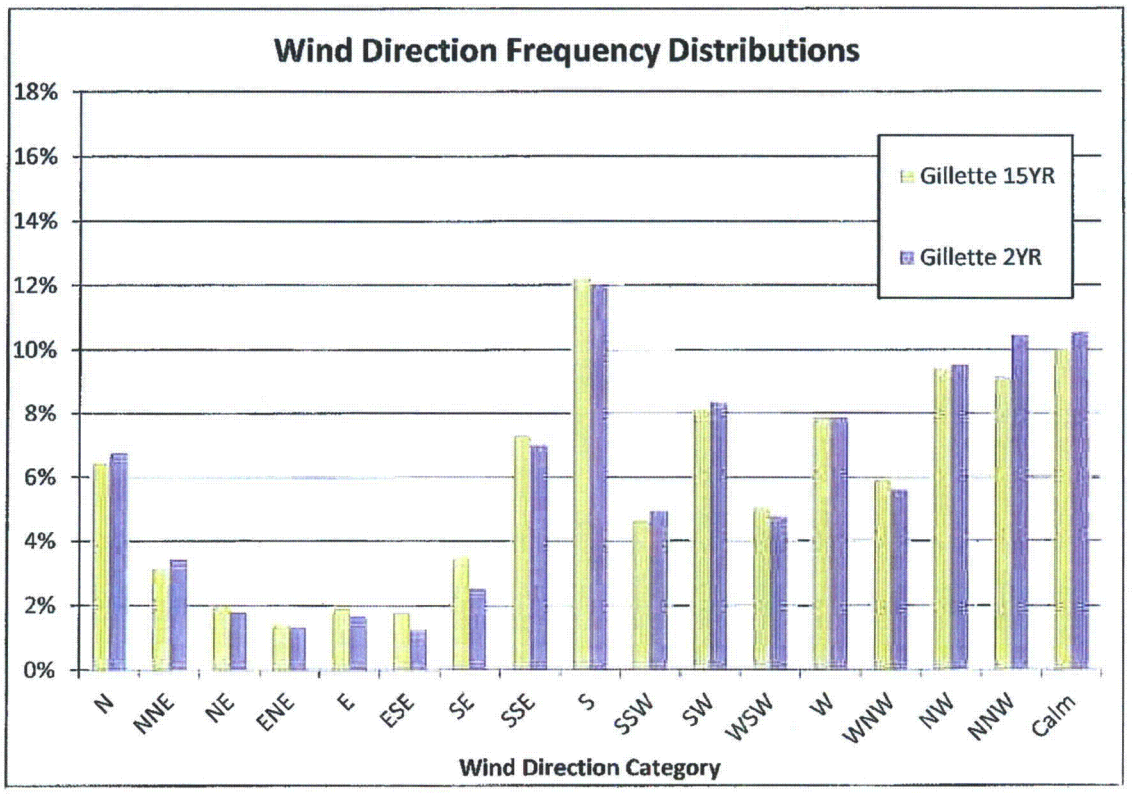


Figure 17 – Gillette Wind Speed Comparison

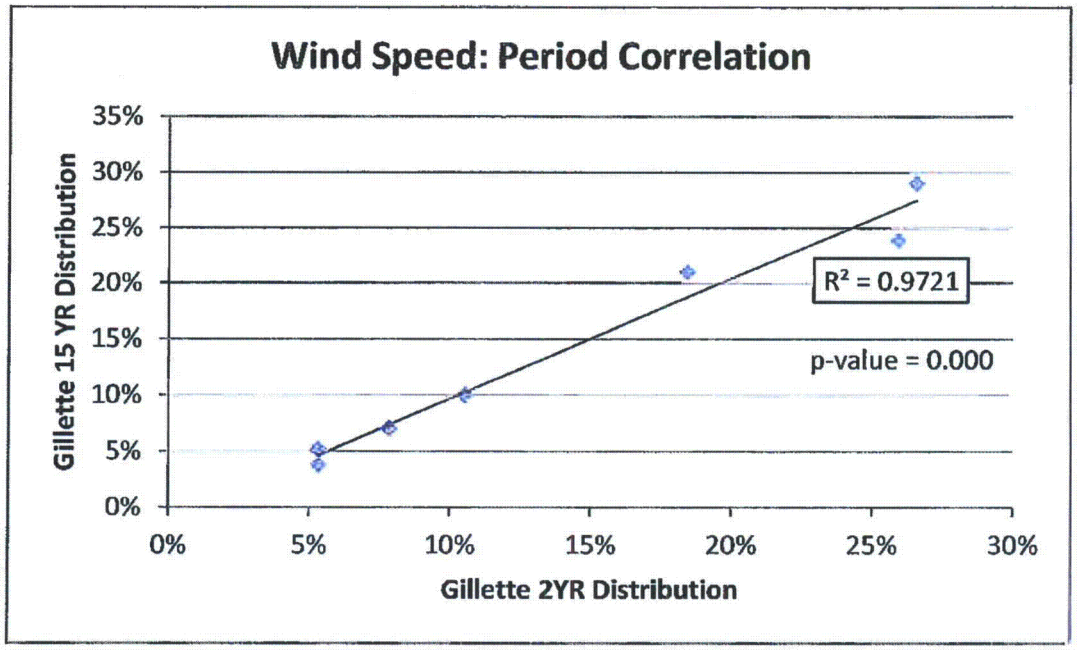


Figure 18 – Gillette Wind Direction Comparison

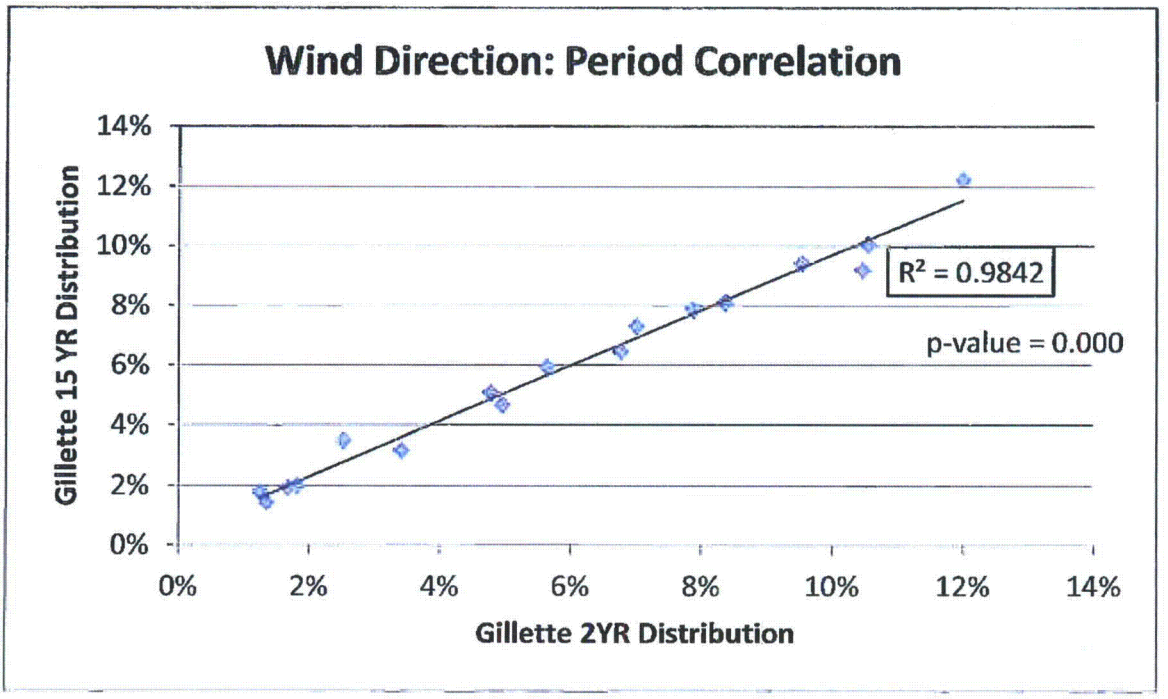
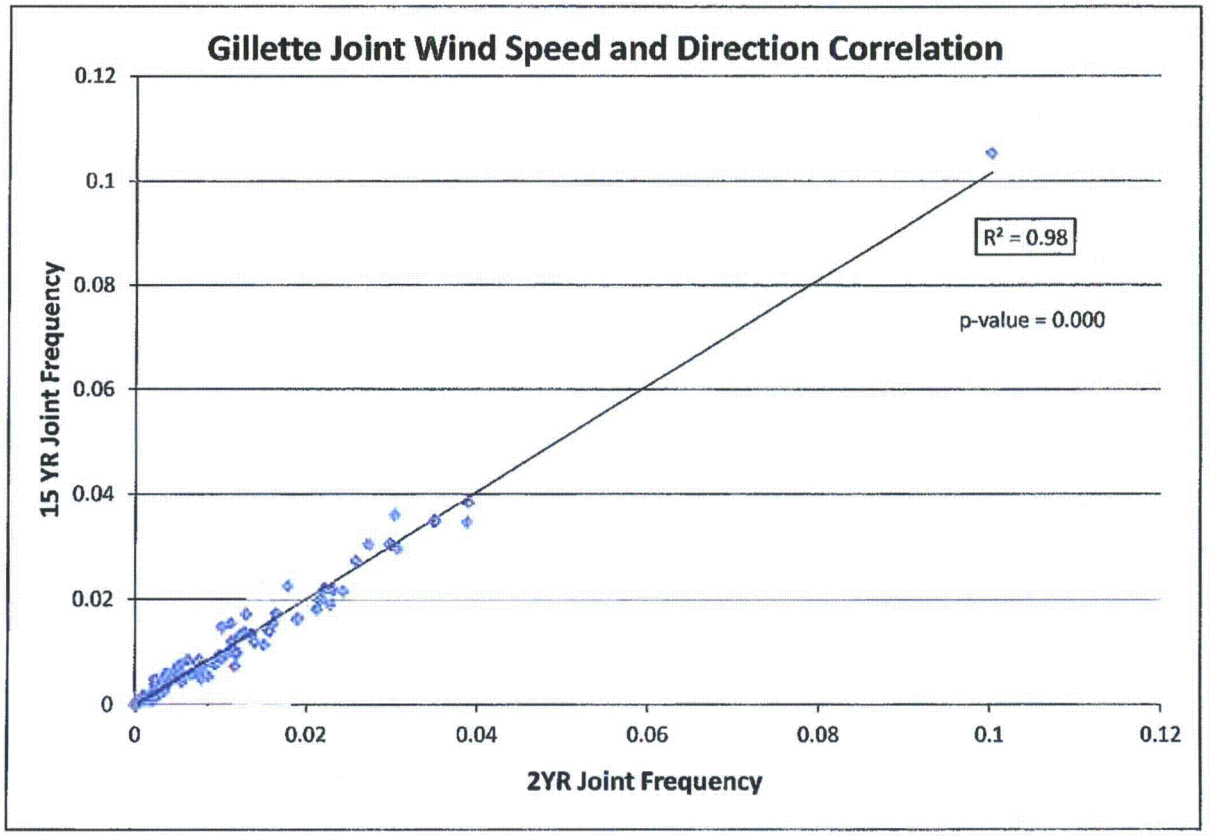


Figure 19 – Antelope Mine Joint Wind Speed and Direction Comparison



Figures 2 through 19 offer conclusive evidence that monitored wind conditions during the 7/1/2011 to 6/30/2013 baseline monitoring period adequately represent wind conditions over the last 27 years at the Antelope site, the last 17 years at the Casper site, and the last 15 years at the Gillette site. Since the two-year wind data serve as reliable predictors of the long-term wind conditions at these surrounding locations, and since the Nichols Ranch site experiences similar regional weather patterns, it is proposed here that the two-year baseline monitoring at the Nichols Ranch site represents long-term wind conditions at that site.

Comparison of Atmospheric Stability Class Distributions

Atmospheric stability is classified from A to F according to the Pasquill Gifford method, with A representing the least stable and F representing the most stable atmospheric conditions. Stability Classes A through C are generally considered to be unstable, Class D is considered to be neutral to slightly unstable, and Classes E and F are considered to be stable. Common techniques for assigning Pasquill Gifford stability classes include the sigma-theta (σ_θ) method and the solar-radiation-delta-T (SRDT) method.

Figure 20 compares the baseline-period and long-term atmospheric stability class distributions derived from wind data at Antelope Mine using the σ_θ method. Clearly, the two-year and 27-year distributions are closely matched. Figure 21 quantifies the similarity using linear regression analysis in a fashion similar to that described above for wind speed and direction distributions. For the Antelope Mine stability class distributions, a coefficient of determination (R^2) of 0.996 reflects very strong correlation between the two-year baseline period and the 27-year period of record at Antelope Mine. The regression analysis produced a p-value of 0.000, indicating a high degree of confidence in this correlation. Detailed graphical and statistical outputs from this analysis can be found in Appendix A to this document.

The Casper and Gillette NWS sites lacked sufficient data to compute atmospheric stability classes. Neither site publishes hourly values for σ_θ. Solar radiation and vertical temperature difference are not monitored at these sites.

Figure 20 – Antelope Mine Atmospheric Stability Class Distribution

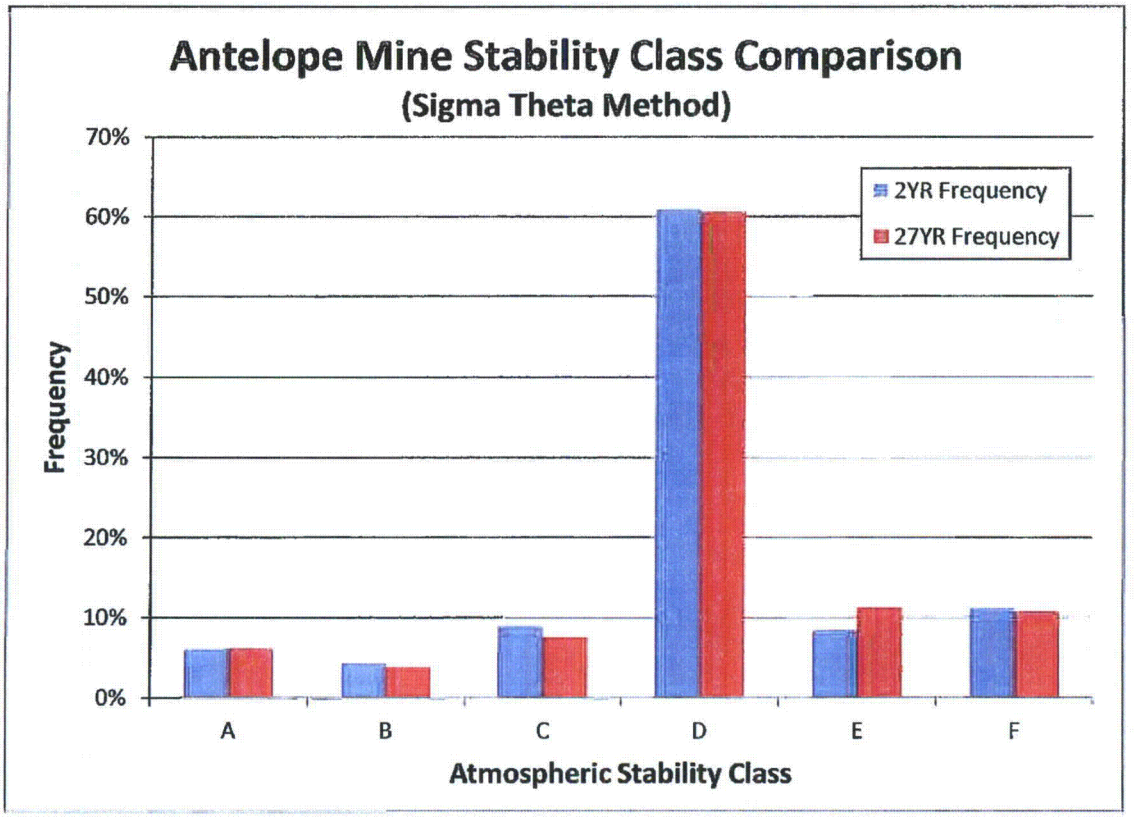
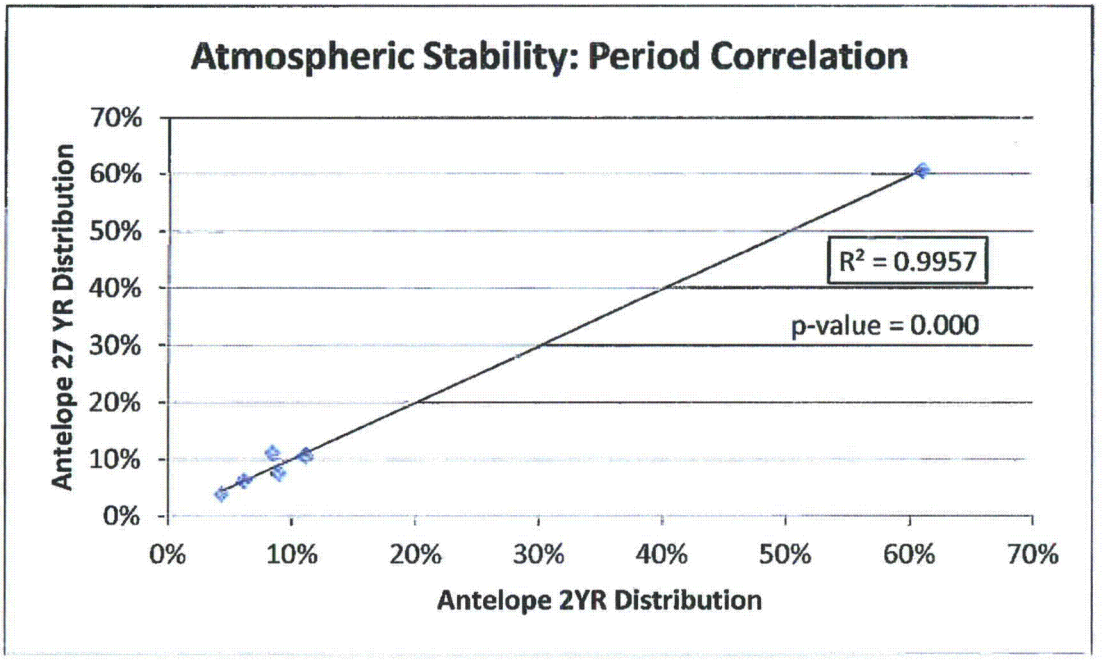


Figure 21 – Antelope Mine Atmospheric Stability Class Comparison



Comparison of Monthly Average Temperature Distributions

Figure 22 compares baseline-period and long-term, monthly average temperatures at the Antelope Mine. Figure 23 shows the same comparison for Casper. Valid, long-term temperature data were not available from the Gillette site. Average temperatures typically fluctuate from year to year, reflecting variations in synoptic scale weather patterns. Notwithstanding these fluctuations, Figures 22 and 23 demonstrate good agreement between the two-year baseline period and the long-term period at each site.

Figure 22 – Antelope Mine Monthly Average Temperature Comparison

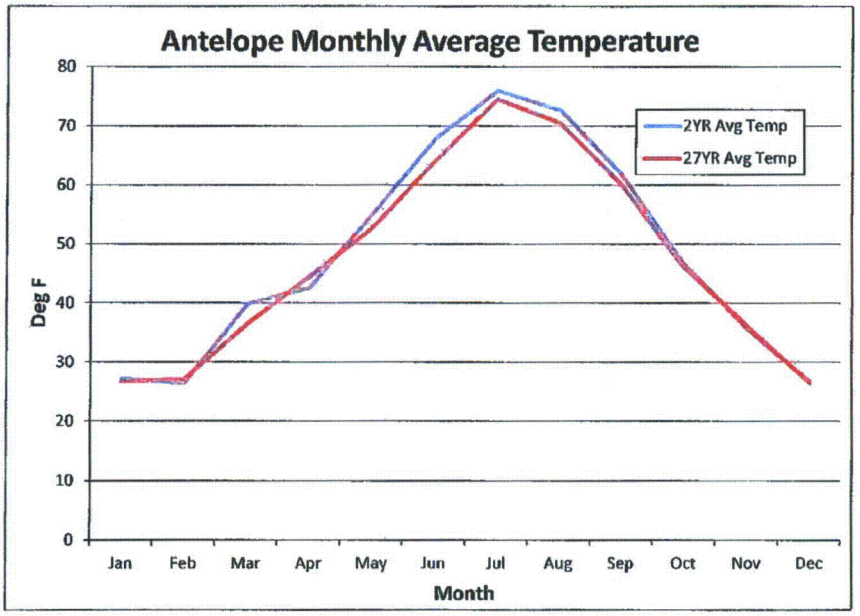
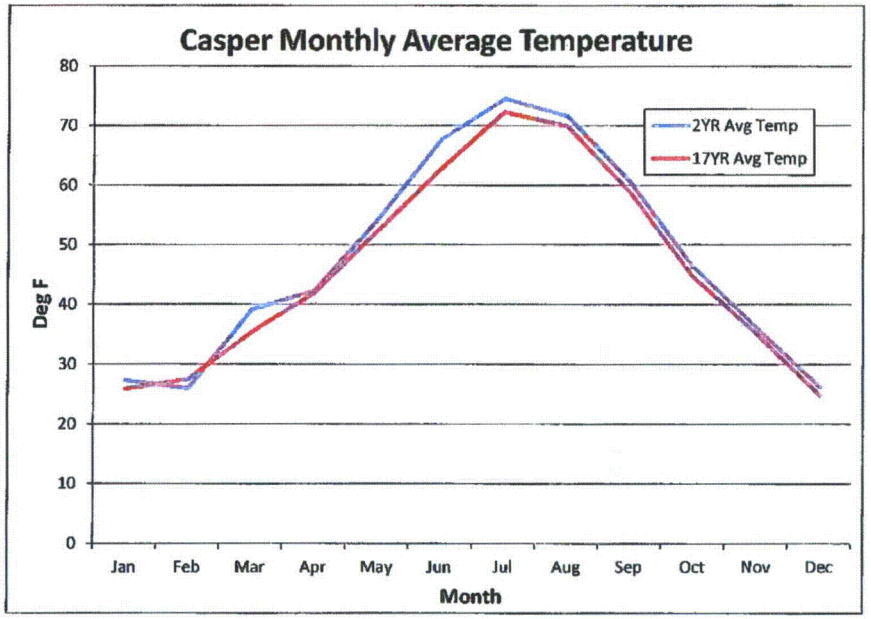


Figure 23 – Casper Monthly Average Temperature Comparison



Conclusions

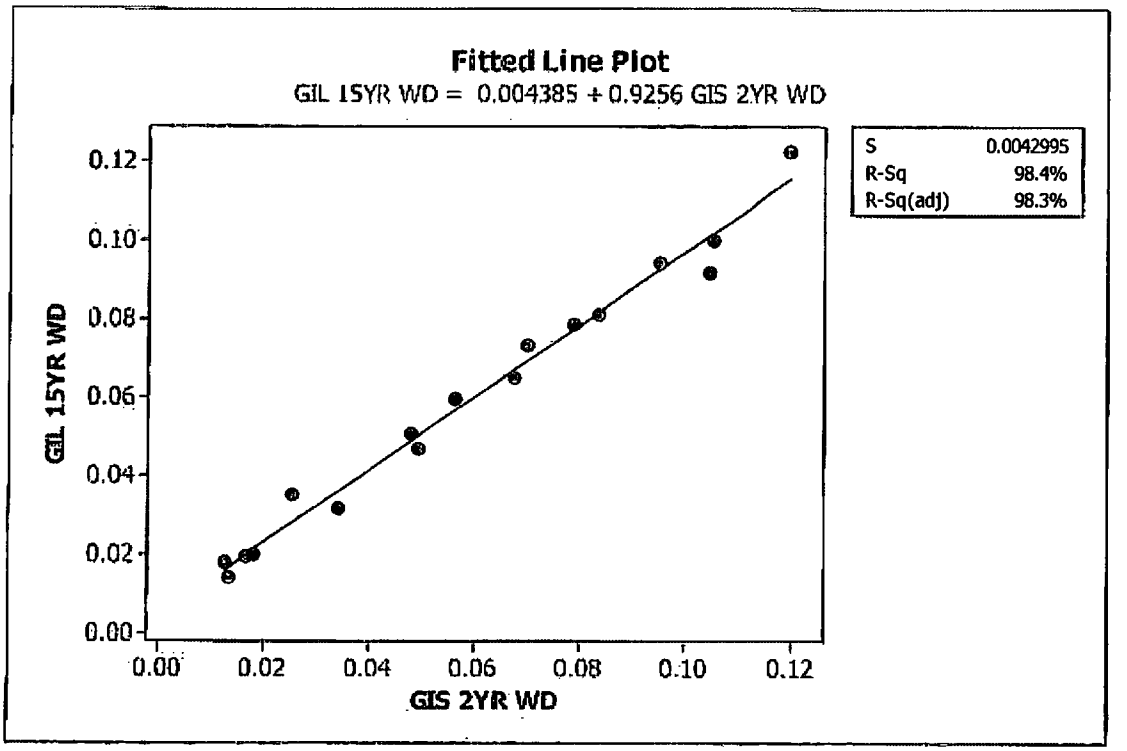
For all three reference sites, the conclusion regarding wind speed and direction distributions is that the consistently low p-values from regression analyses render the high coefficients of determination (near 1.0) statistically significant. The strong correlation implied between wind characteristics during the baseline monitoring period and wind characteristics over a longer period is real at the Casper, Gillette and Antelope Mine sites. The same can be said for stability class distributions at the Antelope Mine and monthly average temperature distributions at Casper and the Antelope Mine. One may infer that similar relationships exist between short-term and long-term weather conditions at the Nichols Ranch site, some 37 miles west-northwest of Antelope Mine and somewhat centrally located between the three reference sites. This justifies the conclusion that on-site meteorological data from the baseline period represent the long term.

References

1. On-Site Meteorological Program Guideline for Regulatory Modeling Applications, EPA, February 2002.
2. Letter from Paul Michalak, NRC to Leland Huffman, High Plains Uranium, September 14, 2006.
3. NRC Regulatory Guide 3.63, Onsite Meteorological Measurement Program for Uranium Recovery Facilities – Data Acquisition and Reporting, March 1988.

APPENDIX A – STATISTICAL OUTPUTS

Wind Direction Correlation – Gillette Site



Regression Analysis: GIL 15YR WD versus GIS 2YR WD

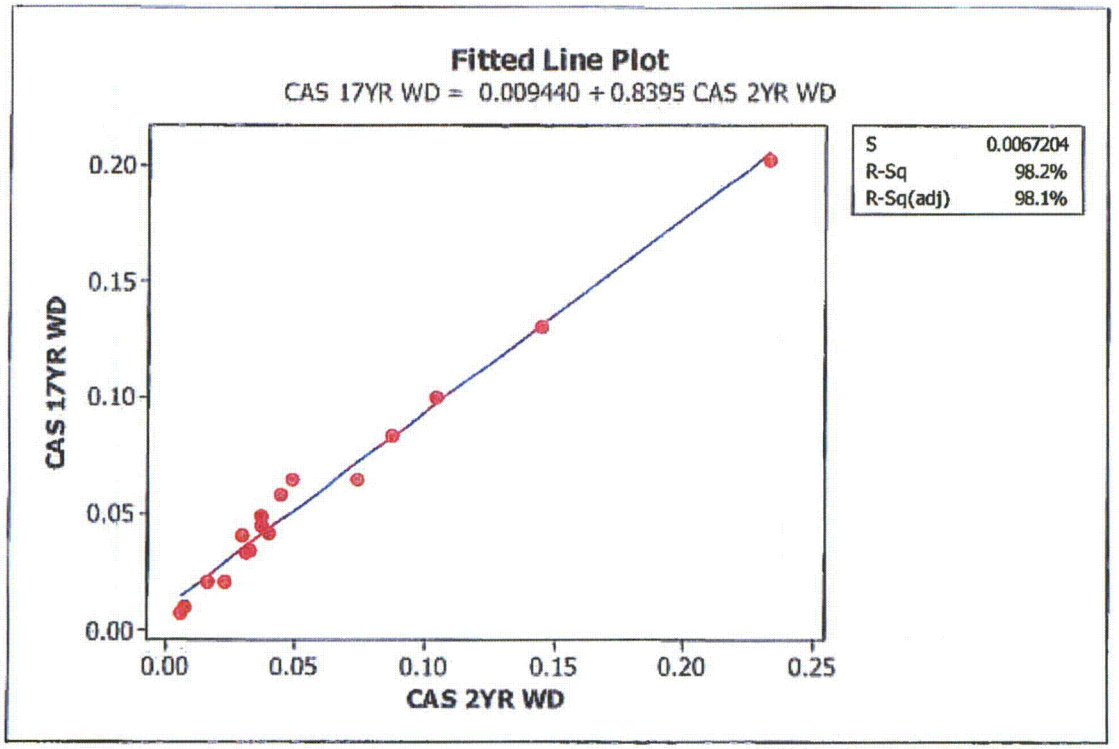
The regression equation is
GIL 15YR WD = 0.004385 + 0.9256 GIS 2YR WD

S = 0.00429954 R-Sq = 98.4% R-Sq(adj) = 98.3%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0172144	0.0172144	931.21	0.000
Error	15	0.0002773	0.0000185		
Total	16	0.0174917			

Wind Direction Correlation – Casper Site



Regression Analysis: CAS 17YR WD versus CAS 2YR WD

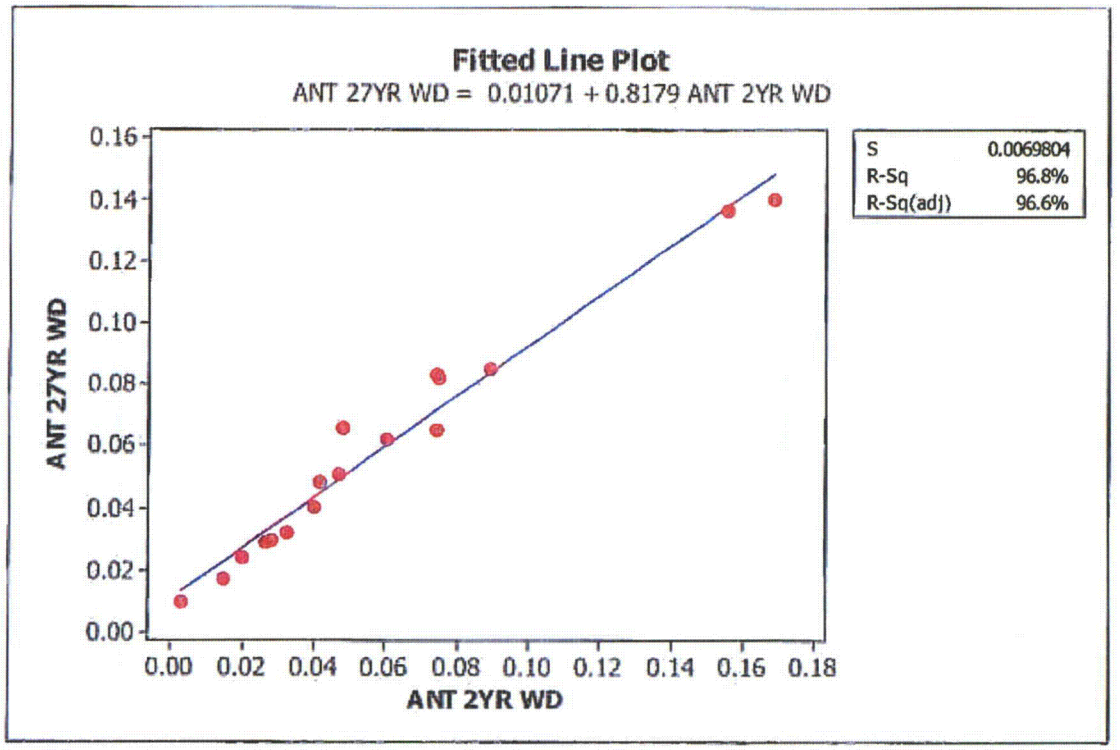
The regression equation is
CAS 17YR WD = 0.009440 + 0.8395 CAS 2YR WD

S = 0.00672043 R-Sq = 98.2% R-Sq(adj) = 98.1%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0375265	0.0375265	830.89	0.000
Error	15	0.0006775	0.0000452		
Total	16	0.0382039			

Wind Direction Correlation – Antelope Mine Site



Regression Analysis: ANT 27YR WD versus ANT 2YR WD

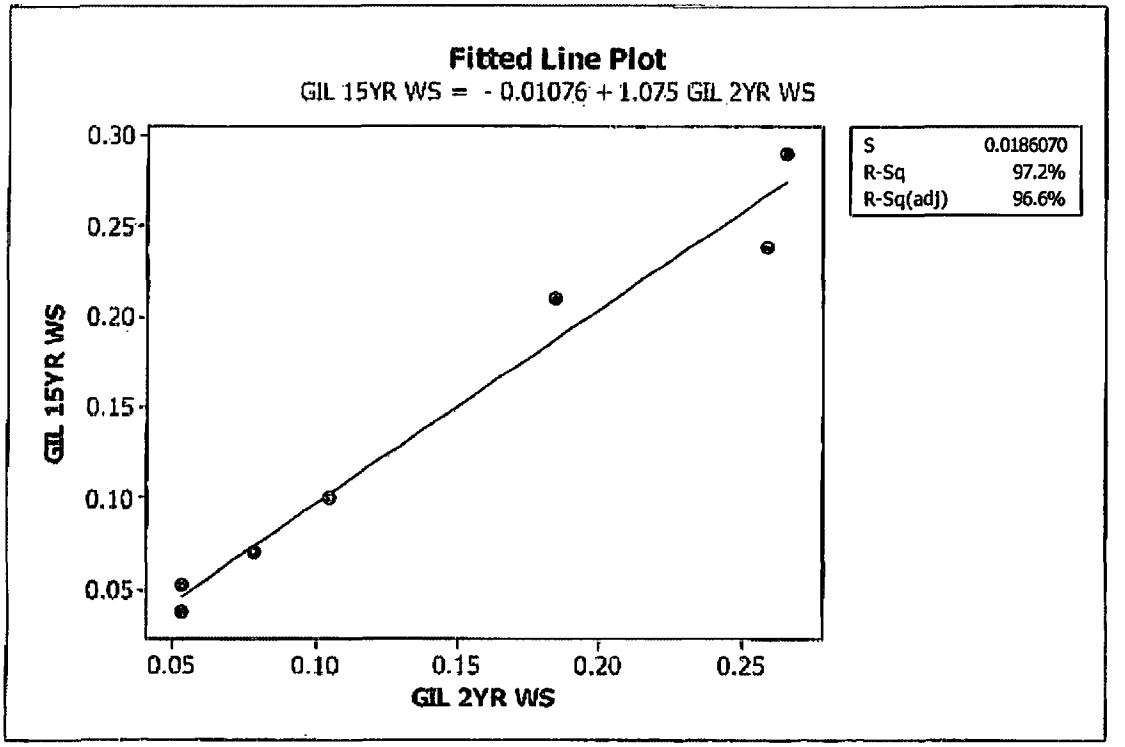
The regression equation is
ANT 27YR WD = 0.01071 + 0.8179 ANT 2YR WD

S = 0.00698037 R-Sq = 96.8% R-Sq(adj) = 96.6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0222690	0.0222690	457.03	0.000
Error	15	0.0007309	0.0000487		
Total	16	0.0229999			

Wind Speed Correlation – Gillette Site



Regression Analysis: GIL 15YR WS versus GIL 2YR WS

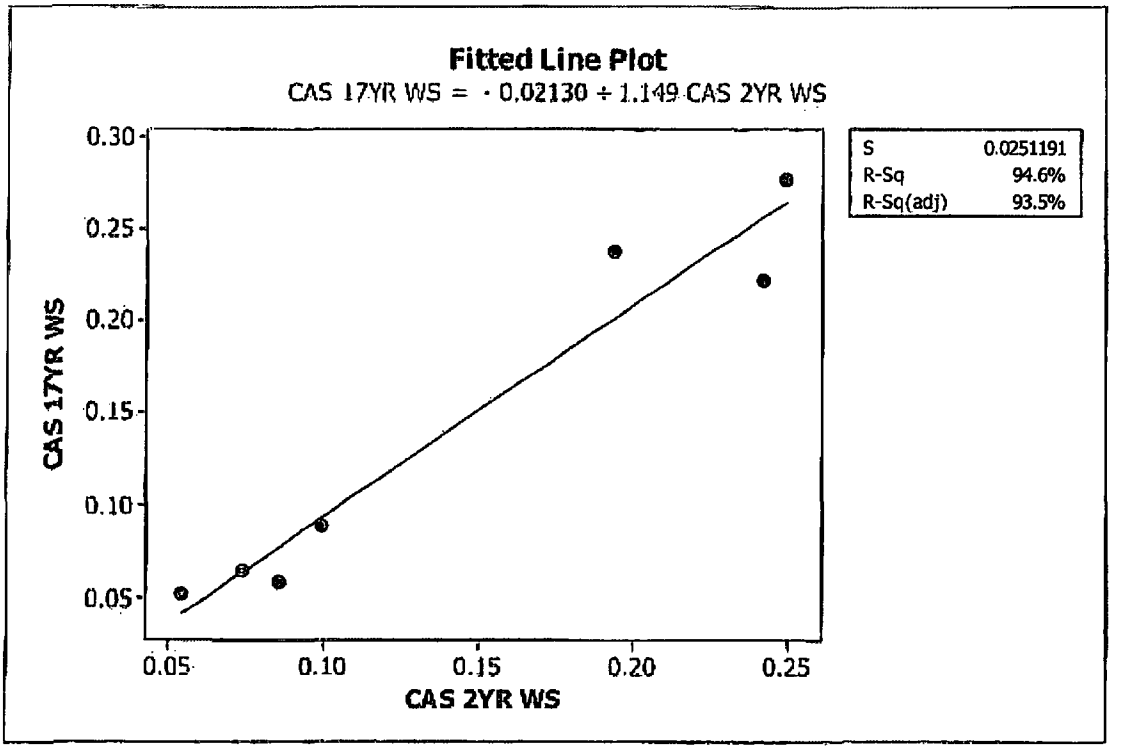
The regression equation is
GIL 15YR WS = - 0.01076 + 1.075 GIL 2YR WS

S = 0.0186070 R-Sq = 97.2% R-Sq(adj) = 96.6%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0600248	0.0600248	173.37	0.000
Error	5	0.0017311	0.0003462		
Total	6	0.0617559			

Wind Speed Correlation – Casper Site



Regression Analysis: CAS 17YR WS versus CAS 2YR WS

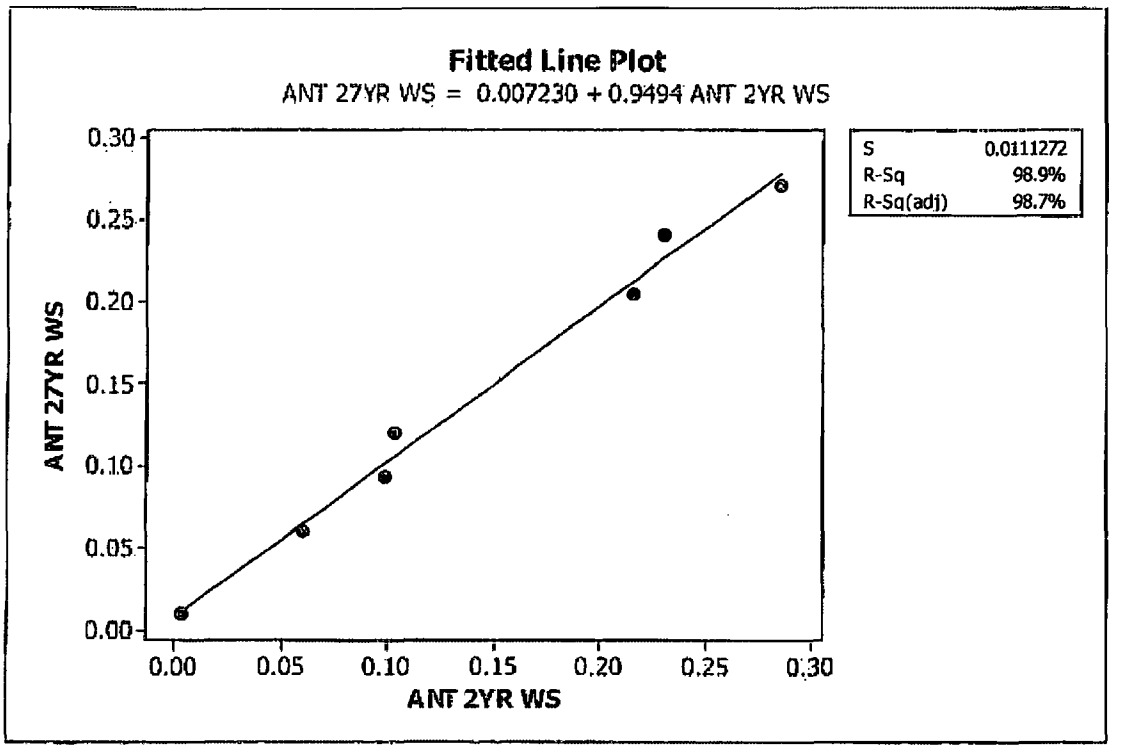
The regression equation is
CAS 17YR WS = - 0.02130 + 1.149 CAS 2YR WS

S = 0.0251191 R-Sq = 94.6% R-Sq(adj) = 93.5%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0547636	0.0547636	86.79	0.000
Error	5	0.0031549	0.0006310		
Total	6	0.0579184			

Wind Speed Correlation – Antelope Mine Site



Regression Analysis: ANT 27YR WS versus ANT 2YR WS

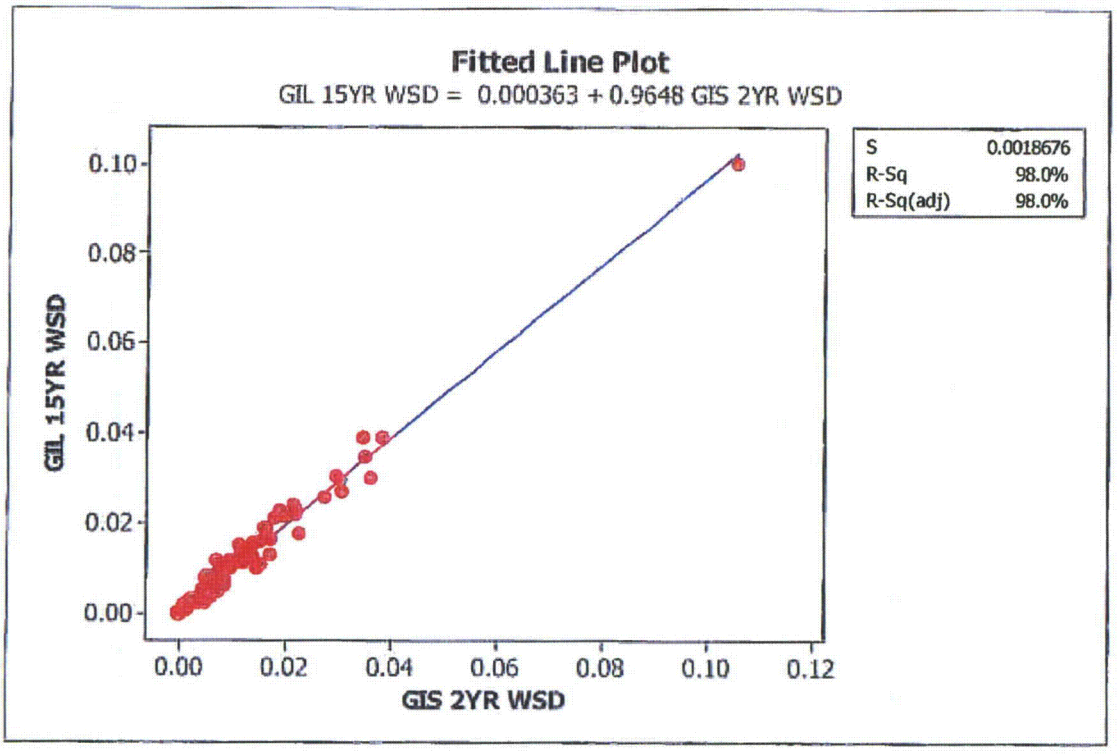
The regression equation is
ANT 27YR WS = 0.007230 + 0.9494 ANT 2YR WS

S = 0.0111272 R-Sq = 98.9% R-Sq(adj) = 98.7%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0570760	0.0570760	460.98	0.000
Error	5	0.0006191	0.0001238		
Total	6	0.0576950			

Joint Wind Speed and Direction Correlation – Gillette Site



Regression Analysis: GIL 15YR WSD versus GIS 2YR WSD

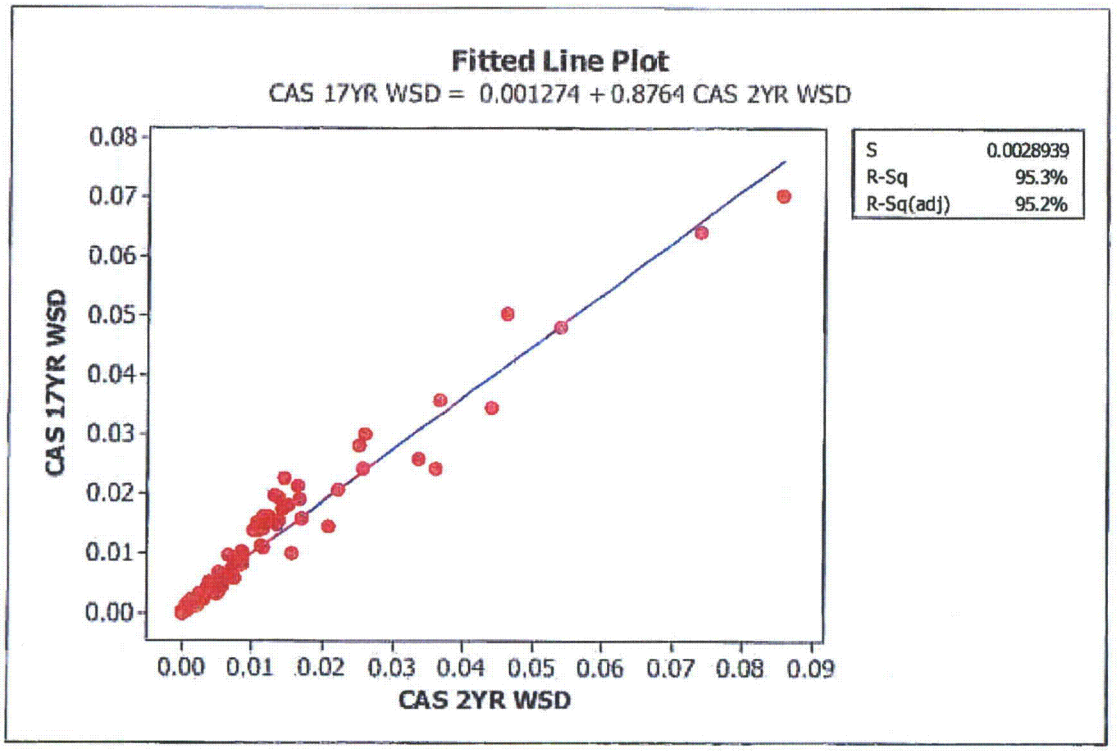
The regression equation is
GIL 15YR WSD = 0.000363 + 0.9648 GIS 2YR WSD

S = 0.00186761 R-Sq = 98.0% R-Sq(adj) = 98.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0162592	0.0162592	4661.48	0.000
Error	95	0.0003314	0.0000035		
Total	96	0.0165905			

Joint Wind Speed and Direction Correlation – Casper Site



Regression Analysis: CAS 17YR WSD versus CAS 2YR WSD

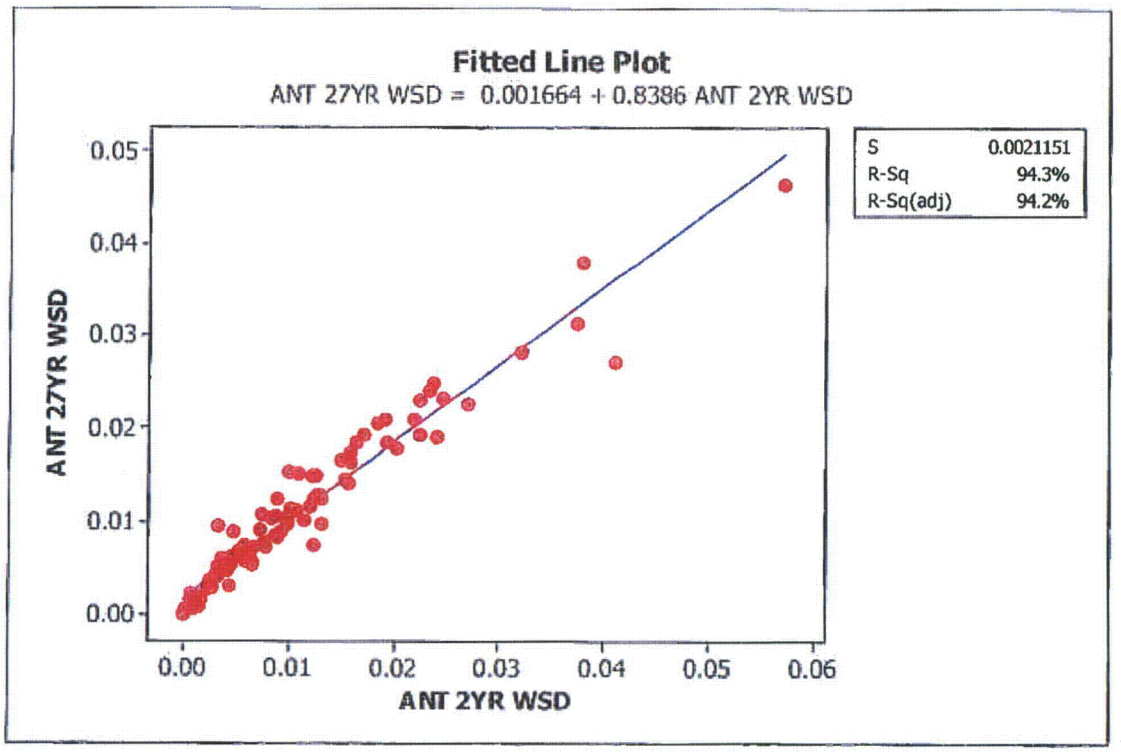
The regression equation is
CAS 17YR WSD = 0.001274 + 0.8764 CAS 2YR WSD

S = 0.00289388 R-Sq = 95.3% R-Sq(adj) = 95.2%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0160681	0.0160681	1918.68	0.000
Error	95	0.0007956	0.0000084		
Total	96	0.0168637			

Joint Wind Speed and Direction Correlation – Antelope Mine Site



Regression Analysis: ANT 27YR WSD versus ANT 2YR WSD

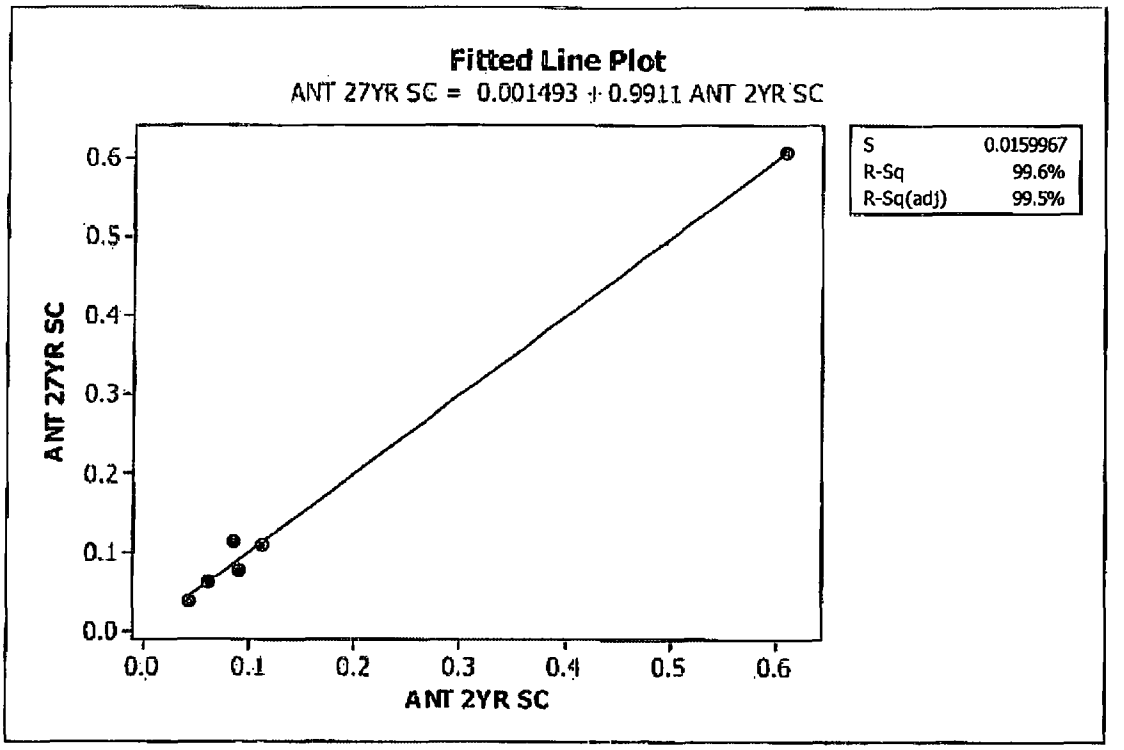
The regression equation is
ANT 27YR WSD = 0.001664 + 0.8386 ANT 2YR WSD

S = 0.00211511 R-Sq = 94.3% R-Sq(adj) = 94.2%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0069894	0.0069894	1562.34	0.000
Error	95	0.0004250	0.0000045		
Total	96	0.0074144			

Atmospheric Stability Class Correlation – Gillette Site



Regression Analysis: ANT 27YR SC versus ANT 2YR SC

The regression equation is
ANT 27YR SC = 0.001493 + 0.9911 ANT 2YR SC

S = 0.0159967 R-Sq = 99.6% R-Sq(adj) = 99.5%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.234470	0.234470	916.27	0.000
Error	4	0.001024	0.000256		
Total	5	0.235494			

The following 3 Drawings specifically reference

EXHIBITS

A-1 JANE DOUGH UNIT SURFACE AND MINERAL RIGHTS WITHIN PERMIT BOUNDARY

B-1 JANE DOUGH UNIT SURFACE AND MINERAL RIGHTS WITHIN ½ MILE PERMIT BOUNDARY

E-1 JANE DOUGH UNIT 1ST YEAR of PRODUCTION

D01 to D03