WEST RIDGE Resources, Inc.

West Ridge Mine

2001 Annual Report

Permit C/007/041

File in:
❑ Confidential
❑ Shelf
☒ Expandable
Refer to Record No 0025 Date 04/04/2002
In C/ 0070041/ 2002 Incoming
For additional information

WEST RIDGE
RESOURCES, INC.

P.O. BOX 1077
PRICE, UTAH 84501 - GARY -
PHONE: (435) 564-4000 4015
FAX: (435) 564-4002

COPY

April 4, 2002

Utah Coal Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Re: Annual Report, West Ridge Mine, C007/041

Dear Sirs:

WEST RIDGE Resources, Inc. is submitting 2 copies of the Annual Report.

Thank you for your consideration and please call if you have any questions.

Sincerely,

Gary E. Gray
Engineer

cc: Dave Shaver

RECEIVED
APR 05 2002
DIVISION OF
OIL, GAS AND MINING

GENERAL INFORMATION

Permittee Name	West Ridge Resources, Inc.
Mine Name	West Ridge
Operator Name (If other then permittee)	same
Permit Expiration Date	April 1, 2004
Permit Number	C/007/041
Authorized Representative Title	Mike W. Glasson
Phone Number	435-564-4015
Fax Number	435-564-4002
E-mail Address	
Mailing Address	P.O. Box 1077 Price, UT 84501
Resident Agent	Mike W. Glasson
Resident Agent Mailing Address	P.O. Box 1077 Price, UT 84501
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	42-02233	Underground Coal Mine	N/A
MSHA Impoundment(s)	N/A		
NPDES/UPDES Permit(s)	UTG040013		04/30/2003
PSD Permit(s) (Air)	DAQE-055-99		N/A

Other

CERTIFIED REPORTS

Certified Reports:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On File	
Excess Spoil Piles	☐	X	☐	☐	
Refuse Piles	☐	X	☐	☐	
Impoundments	☐	X	☐	☐	
Other					
Sediment Pond	X	☐	X	☐	Annual
	☐	☐	☐	☐	

REPORTING OF OTHER TECHNICAL DATA

Technical Data:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On file	
Climatological	X	☐	X	☐	
Subsidence Monitoring	X	☐	X	☐	
Vegetation Monitoring	X	☐	X	☐	
	☐	☐	☐	☐	
Soils Monitoring	X	☐	☐	X	Submitted as part of Mid Term Review
Water Monitoring	☐	☐	☐	☐	
First quarter	X	☐	☐	X	
Second quarter	X	☐	☐	X	
Third quarter	X	☐	☐	X	
Fourth quarter	X	☐	☐	X	
Geological / Geophysical	☐	X	☐	☐	
Engineering	☐	X	☐	☐	
Other Data					
Abandoned U'grd Eqpt	X	☐	X	☐	None Abandoned
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Legal / Financial Update	Required		Included or on File with DOGM		Comments
	Yes	No	Included	On file	
Department of Commerce, Annual Report Officers	X	☐	X	☐	
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

MINE MAPS

Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
	Mine Map 2001	X	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Additional attachment to this report? **Yes** ☐ **No** X

APPENDIX A

Certified Reports

As required under R645-301-514

CONTENTS

Annual Pond Inspection

WEST RIDGE RESOURCES, INC.
2001 ANNUAL POND INSPECTION REPORT

POND: *West Ridge Sediment Pond* ***LOCATION:*** *West Ridge Mine*

IMPOUNDMENTS	
(1) Stability	*Slopes Stable.*
(2) Structural Weakness/Erosion	*None Noted.*
(3) Potential Safety Hazards	*None Noted.*
(4) Depth of Impounded Water	*Upper: 1.0' - Frozen, Lower: Dry - 7" Snow.*
(5) Existing Storage Capacity	*7.816 acre feet.*
(6) Monitoring Procedures	*Quarterly Inspection.* *U.P.D.E.S. Discharge.*

SEDIMENT PONDS ONLY	***Cell A (Upper)***	***Cell B (Lower)***
(7) Sediment Accumulation (Elevation)	*6938.2*	*6926.0*
(8) Sediment Cleanout Level (Elevation)	*6942.8*	*N/A*
(9) Principle Spillway (Elevation)	*6952.5*	*6937.0*
(10) Emergency Spillway (Elevation)	*6952.5*	*6938.0*
(11) Existing Sediment Capacity (To Cleanout)	*0.935 acre feet.*	*N/A*

GENERAL	
(12) Comments/Recommendations	*Pond Completed in 1999. 2 Cells.* *No Inflow. No Discharge.*

STATEMENT

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Dan W. Guy

(Signature)

12/13/01

(Date)

UTAH REGISTERED PROFESSIONAL ENGINEER #154168 DAN W. GUY 12/13/01

APPENDIX B

Reporting of Technical Data

Including monitoring data, reports, maps, and other information
As required under the approved plan or as required by the Division

In accordance with the requirement of R645-310-130 and R645-301-140

CONTENTS

Subsidence Data

Abandoned Equipment

Vegetation Monitoring

Soils Monitoring

Precipitation Log

Subsidence

The subsidence of the surface at West Ridge due to longwall mining is being monitored annually by photogrammetric methods. Longwall mining commenced in 2001, and has continuously operated since then. The current mining area has only one panel that has been mined and has not progressed far enough to cause significant surface subsidence. The subsidence survey confirms this.

The subsidence monitoring program currently covers 739 points on the surface. Each year these will be expanded to cover the area to be mined for the next year. None of these points yet show subsidence of more than 1 foot.

Olympus Aerial Surveys, Inc.
Report for October 14, 2001
For
[redacted].
WESTRIDGE MINE SUBSIDENCE STUDY

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
101	25282.582	37088.596	7045.326	-53.777	7099.103	101	Stockpile area
102	25315.264	35744.230	7126.290	+0.156	7126.134	102	
103	25323.388	34805.468	7352.874	+0.132	7352.742	103	
104	25325.604	36781.657	7032.670	+0.869	7031.801	104	
105	25358.892	33843.995	7045.519	+0.017	7045.502	105	
106	25359.440	36518.978	6966.388	+1.057	6965.331	106	
107	25362.041	35511.993	7195.826	+0.117	7195.709	107	
108	25363.798	37690.136	7348.026	+0.010	7348.016	108	
109	25368.610	33526.107	7051.656	-0.073	7051.729	109	
110	25375.684	37355.591	7207.072	-0.043	7207.115	110	
111	25389.036	35184.230	7339.796	-0.013	7339.809	111	
112	25421.306	34506.467	7365.990	+0.035	7365.955	112	
113	25455.568	34180.280	7287.522	+0.044	7287.478	113	
114	25467.636	36204.421	7085.464	+0.045	7085.419	114	
115	25501.371	36836.543	7126.471	-0.011	7126.482	115	
116	25510.821	35403.356	7321.195	-0.013	7321.208	116	
117	25563.654	37083.522	7206.783	+0.030	7206.753	117	
118	25568.477	36592.115	7005.080	+1.912	7003.168	118	
119	25581.105	36061.683	7198.249	+0.185	7198.064	119	
120	25620.372	37245.464	7277.260	-0.064	7277.324	120	
121	25640.832	35057.487	7493.511	+0.022	7493.489	121	
122	25674.861	37482.887	7529.588	+0.032	7529.556	122	
123	25683.112	33498.034	7327.025	-0.011	7327.036	123	
124	25713.230	37824.935	7692.926	+0.390	7692.536	124	
125	25722.208	35714.318	7379.594	+0.467	7379.127	125	
126	25742.010	36892.385	7022.111	+2.843	7019.268	126	
127	25749.156	33939.254	7393.335	+0.077	7393.258	127	
128	25818.025	34222.145	7575.317	+0.038	7575.279	128	
129	25850.846	34584.418	7778.622	-0.007	7778.629	129	
130	25865.742	35951.996	7331.573	+0.066	7331.507	130	
131	25869.381	36690.126	7073.748	-0.045	7073.793	131	
132	25911.793	34955.402	7731.640	+0.153	7731.487	132	
133	25922.308	37196.491	7155.616	+2.710	7152.906	133	
134	25927.660	35504.965	7607.839	+0.015	7607.824	134	
135	25948.408	33489.089	7486.301	+0.037	7486.264	135	
136	25985.845	36202.398	7346.435	+0.079	7346.356	136	
137	26052.071	33796.410	7587.052	-0.002	7587.054	137	
138	26117.252	37534.221	7288.000	+0.813	7287.187	138	
139	26117.505	35307.509	7773.137	-0.023	7773.160	139	
140	26130.227	36853.129	7076.497	-0.050	7076.547	140	
141	26134.846	37875.341	7504.565	+1.912	7502.653	141	
142	26142.747	34182.734	7830.244	+0.043	7830.201	142	
143	26167.019	34529.137	7969.501	-0.011	7969.512	143	
144	26195.229	35674.026	7668.014	-0.005	7668.019	144	
145	26215.193	34709.085	8005.820	+0.064	8005.756	145	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
146	26221.129	35977.590	7591.785	-0.059	7591.844	146	
147	26237.664	33465.521	7391.878	-0.063	7391.941	147	
148	26265.358	36540.863	7249.778	-0.013	7249.791	148	
149	26320.150	35178.984	7921.445	+0.033	7921.412	149	
150	26342.955	37022.043	7128.170	-0-	N/A	150	
151	26360.299	33894.769	7453.088	+0.062	7453.026	151	
152	26377.593	37246.247	7070.024	-0.096	7070.120	152	
153	26422.147	34505.082	7832.277	+0.08	7832.197	153	
154	26441.619	34932.989	8071.901	0.242	8071.659	154	
155	26455.972	33527.754	7241.231	+0.056	7241.175	155	
156	26456.501	37922.660	7486.774	+0.25	7486.524	156	
157	26482.036	36621.978	7444.105	-0.022	7444.127	157	
158	26490.790	35621.447	7903.957	+0.029	7903.928	158	
159	26507.174	34240.305	7686.500	+0.08	7686.420	159	
160	26517.475	36179.905	7550.272	+0.221	7550.051	160	
161	26599.535	34808.139	8003.097	+0.135	8002.962	161	
162	26600.020	35103.910	8132.344	+0.011	8132.333	162	
163	26624.084	37559.260	7129.183	+5.216	7123.967	163	
164	26657.549	33869.231	7323.074	-0.022	7323.096	164	
165	26663.309	36463.517	7574.066	+0.022	7574.044	165	
166	26674.139	37236.836	7157.749	-0-	N/A	166	
167	26722.589	34434.205	7781.767	+0.025	7781.742	167	
168	26784.011	36847.101	7439.946	-0-	N/A	168	
169	26786.018	35319.600	8104.769	-0.022	8104.791	169	
170	26802.191	37914.605	7325.426	+0.243	7325.183	170	
171	26810.309	36071.187	7741.598	-0-	N/A	171	
172	26832.773	34634.931	7937.553	-0.025	7937.578	172	
173	26834.594	34236.302	7665.483	-0.021	7665.504	173	
174	26845.180	34776.786	8013.682	+0.182	8013.500	174	
175	26847.742	37639.723	7106.329	+5.454	7100.875	175	
176	26851.937	33537.771	7210.319	+0.12	7210.199	176	
177	26866.758	37293.418	7200.491	+0.005	7200.486	177	
178	26868.431	35055.767	8071.403	+0.103	8071.300	178	
179	26914.143	35453.108	8086.475	+0.006	8086.469	179	
180	26932.963	36340.570	7778.699	+1.521	7777.178	180	
181	26966.442	33835.353	7475.141	-0.597	7475.738	181	
182	27003.523	34412.569	7819.774	-0.049	7819.823	182	
183	27040.316	35841.833	7994.813	+0.168	7994.645	183	
184	27050.338	36964.317	7448.444	+0.006	7448.438	184	
185	27067.537	35540.783	8105.651	+0.102	8105.549	185	
186	27077.504	34151.188	7646.345	-0.039	7646.384	186	
187	27099.676	34604.104	7840.982	+0.003	7840.979	187	
188	27100.595	37888.190	7138.729	+2.548	7136.181	188	
189	27110.390	33477.657	7167.019	+0.01	7167.009	189	
190	27134.911	35237.969	8022.388	+0.186	8022.202	190	
191	27140.884	36054.030	7987.219	+0.158	7987.061	191	
192	27152.535	36548.740	7658.718	-0-	N/A	192	
193	27158.759	34821.309	7919.374	-0.002	7919.376	193	
194	27171.588	33827.341	7353.679	+0.087	7353.592	194	
195	27268.902	35748.194	8093.647	+1.151	8092.496	195	
196	27292.402	35032.470	7992.819	+0.115	7992.704	196	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
197	27325.287	37405.849	7448.770	+1.005	7447.765	197	
198	27368.325	36884.578	7703.593	+0.032	7703.561	198	
199	27399.930	34418.329	7608.530	+0.028	7608.502	199	
200	27405.973	35560.267	8102.813	+1.575	8101.238	200	
201	27409.011	33870.873	7230.645	-0.003	7230.648	201	
202	27414.047	34633.301	7649.221	+0.003	7649.218	202	
203	27415.653	36640.553	7820.004	+0.017	7819.987	203	
204	27454.069	34164.227	7403.384	+0.135	7403.249	204	
205	27456.666	33482.145	7009.507	+0.01	7009.497	205	
206	27523.402	36113.395	8059.360	-0.005	8059.365	206	
207	27550.164	37123.349	7723.011	+0.052	7722.959	207	
208	27559.780	35840.512	8074.356	+0.022	8074.334	208	
209	27600.511	34818.830	7705.791	-0.029	7705.820	209	
210	27609.990	35204.927	8055.870	+0.656	8055.214	210	
211	27650.756	37819.730	7368.602	+0.030	7368.572	211	
212	27660.190	36013.754	8066.647	+0.137	8066.510	212	
213	27672.716	34150.851	7255.689	-0.027	7255.716	213	
214	27687.715	33519.231	6962.525	+0.170	6962.355	214	
215	27704.128	34545.070	7544.558	+0.003	7544.555	215	
216	27706.257	35524.696	8042.216	+0.335	8041.881	216	
217	27708.280	33836.194	7086.633	+0.006	7086.627	217	
218	27720.677	36782.233	7917.880	-0.892	7918.772	218	
219	27750.125	36497.835	8031.171	+0.067	8031.104	219	
220	27759.461	36182.083	8074.931	+0.078	8074.853	220	
221	27779.312	37349.791	7622.159	-0-	N/A	221	
222	27827.354	34994.001	7850.110	+0.150	7849.960	222	
223	27863.980	35895.789	8056.752	+0.022	8056.730	223	
224	27928.416	32701.112	7458.929	+0.036	7458.893	224	
225	27955.310	33753.157	7009.353	+0.095	7009.258	225	
226	27965.813	31341.857	7691.832	+0.070	7691.762	226	
227	27978.352	34407.336	7376.537	-0.047	7376.584	227	
228	27980.196	32132.803	7344.534	+0.008	7344.526	228	
229	27985.503	35620.087	7953.585	+3.313	7950.272	229	
230	27998.479	34122.630	7198.008	+0.012	7197.996	230	
231	28003.219	34710.240	7639.135	+0.056	7639.079	231	
232	28005.950	36502.716	8047.279	+0.009	8047.270	232	
233	28024.756	36128.582	8039.417	+1.647	8037.770	233	
234	28074.588	33052.009	7350.885	+0.127	7350.758	234	
235	28075.414	35260.117	7906.143	+0.099	7906.044	235	
236	28080.162	30917.712	7991.844	+0.057	7991.787	236	
237	28098.345	31954.344	7428.678	-0.030	7428.708	237	
238	28116.310	35045.198	7897.897	+0.236	7897.661	238	
239	28141.163	37774.736	7679.944	+0.027	7679.917	239	
240	28180.545	33387.076	7265.239	+0.074	7265.165	240	
241	28205.323	32642.914	7675.678	-0.045	7675.723	241	
242	28227.164	34865.760	7783.416	+0.117	7783.299	242	
243	28247.285	31067.009	7987.806	-0.022	7987.828	243	
244	28249.401	31271.531	7850.355	-0.025	7850.380	244	
245	28258.998	36206.129	7980.815	+1.643	7979.172	245	
246	28269.474	31524.683	7749.947	+0.007	7749.940	246	
247	28271.677	34443.085	7468.774	+0.061	7468.713	247	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
248	28286.136	33911.057	7019.977	-0.029	7020.006	248	
249	28295.476	35647.112	7836.534	+0.066	7836.468	249	
250	28296.427	35857.195	7944.687	+0.323	7944.364	250	
251	28314.564	36508.277	8005.590	+0.193	8005.397	251	
252	28324.692	34143.667	7162.455	+0.105	7162.350	252	
253	28328.394	35364.109	7757.835	+0.801	7757.034	253	
254	28333.946	32263.319	7681.662	+0.027	7681.635	254	
255	28348.805	38152.120	7622.123	+0.005	7622.118	255	
256	28375.708	36733.146	8043.597	+0.079	8043.518	256	
257	28433.832	31786.526	7760.337	+0.041	7760.296	257	
258	28459.190	37349.912	7927.812	+0.456	7927.356	258	
259	28474.129	35633.213	7796.571	-0.060	7796.631	259	
260	28476.589	36016.833	7906.756	+0.473	7906.283	260	
261	28493.215	33173.101	7504.783	+0.065	7504.718	261	
262	28500.804	32632.173	7813.643	+0.043	7813.600	262	
263	28518.114	30897.220	8142.805	+0.015	8142.790	263	
264	28520.465	37047.317	8005.590	-0.007	8005.597	264	
265	28570.378	34659.754	7502.639	+0.156	7502.483	265	
266	28571.810	35226.565	7613.055	+0.082	7612.973	266	
267	28598.671	36582.249	7973.604	+0.140	7973.464	267	
268	28602.810	36292.684	7893.678	+0.048	7893.630	268	
269	28609.913	32958.197	7704.387	-0.016	7704.403	269	
270	28631.047	34377.878	7187.998	+0.061	7187.937	270	
271	28640.441	34088.624	7058.597	+0.071	7058.526	271	
272	28640.555	35769.798	7809.994	+0.270	7809.724	272	
273	28647.537	33811.105	7145.772	+0.068	7145.704	273	
274	28665.489	31080.495	8121.585	-0.035	8121.620	274	
275	28687.076	34953.371	7538.575	+0.007	7538.568	275	
276	28705.508	32029.349	7908.250	+0.036	7908.214	276	
277	28719.865	36826.689	8028.908	+0.439	8028.469	277	
278	28789.999	32357.934	7965.081	-0.016	7965.097	278	
279	28809.678	32789.896	7766.504	-0.036	7766.540	279	
280	28824.226	38024.605	7684.030	+0.082	7683.948	280	
281	28835.779	31344.048	8101.100	+0.040	8101.060	281	
282	28843.485	31593.076	8065.966	+0.048	8065.918	282	
283	28851.989	36239.435	7867.637	+0.073	7867.564	283	
284	28852.948	35305.300	7501.297	-0.028	7501.325	284	
285	28855.233	35562.752	7643.699	+0.030	7643.669	285	
286	28859.125	37097.742	7977.631	+0.016	7977.615	286	
287	28881.193	34401.938	7095.032	-0.018	7095.050	287	
288	28900.894	36566.702	7954.965	+0.223	7954.742	288	
289	28908.835	33691.818	7194.564	-0.039	7194.603	289	
290	28939.094	34865.227	7406.337	+0.054	7406.283	290	
291	28952.880	35933.554	7796.992	+0.041	7796.951	291	
292	28970.447	30889.614	7896.649	-0.029	7896.678	292	
293	28974.357	37521.681	7849.497	-0.022	7849.519	293	
294	28980.314	33999.184	7242.228	+0.004	7242.224	294	
295	28998.883	32096.918	8054.145	-0.008	8054.153	295	
296	29069.123	33520.387	7297.432	+0.003	7297.429	296	
297	29090.021	35561.722	7751.622	+0.257	7751.365	297	
298	29098.666	36826.178	8023.002	+0.001	8023.001	298	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
299	29117.053	34610.687	7118.273	-0.008	7118.281	299	
300	29132.880	31246.677	7973.525	+0.013	7973.512	300	
301	29161.673	31847.833	8180.068	+0.042	8180.026	301	
302	29169.238	34058.105	7408.266	+0.067	7408.199	302	
303	29181.034	35360.429	7592.805	+0.110	7592.695	303	
304	29195.313	37854.219	7762.897	-0.005	7762.902	304	
305	29206.627	37119.901	7964.323	-0-	7964.323	305	
306	29208.001	34412.493	7244.107	-0.033	7244.140	306	
307	29209.683	33682.918	7569.470	-0.073	7569.543	307	
308	29209.746	31567.112	8043.792	-0.043	8043.835	308	
309	29231.126	30847.625	7760.704	+0.027	7760.677	309	
310	29236.913	34954.054	7341.215	+0.197	7341.018	310	
311	29272.120	36150.458	7797.990	+1.319	7796.671	311	
312	29291.590	36483.196	7913.928	+0.260	7913.668	312	
313	29305.435	33109.226	7541.018	-0.009	7541.027	313	
314	29361.532	33446.561	7541.715	+1.412	7540.303	314	
315	29369.679	34063.935	7507.573	-0.059	7507.632	315	
316	29383.498	35834.257	7738.467	+1.711	7736.756	316	
317	29452.972	34667.737	7273.715	+0.276	7273.439	317	
318	29469.730	30895.973	7753.655	-0.016	7753.671	318	
319	29472.426	31229.796	7788.238	-0.005	7788.243	319	
320	29480.712	36806.146	8005.974	+0.257	8005.717	320	
321	29490.462	32004.084	8104.073	-0.071	8104.144	321	
322	29497.443	33922.483	7604.089	+0.017	7604.072	322	
323	29501.030	35347.942	7413.317	+0.727	7412.590	323	
324	29504.447	37076.767	7990.518	+0.209	7990.309	324	
325	29512.816	38141.533	7837.799	-0.025	7837.824	325	
326	29520.573	35615.077	7588.165	+0.020	7588.145	326	
327	29525.260	35072.645	7272.986	+0.146	7272.840	327	
328	29547.478	37816.846	7867.944	+0.063	7867.881	328	
329	29549.388	36159.603	7857.627	-0.037	7857.664	329	
330	29558.179	31707.921	7992.101	+0.123	7991.978	330	
331	29585.288	33685.292	7783.098	-0.005	7783.103	331	
332	29585.716	32219.990	8025.289	+0.187	8025.102	332	
333	29592.377	34125.513	7603.943	+0.350	7603.593	333	
334	29618.225	37323.909	7964.707	+0.427	7964.280	334	
335	29622.354	33354.559	7684.416	-0.036	7684.452	335	
336	29679.345	36443.497	7934.293	+0.267	7934.026	336	
337	29679.973	31449.128	7797.343	-0.037	7797.380	337	
338	29688.543	30857.807	7582.503	+0.014	7582.489	338	
339	29717.340	33035.198	7688.161	+0.054	7688.107	339	
340	29742.259	36160.343	7927.697	+0.298	7927.399	340	
341	29759.516	36761.155	7986.299	+1.304	7984.995	341	
342	29770.334	37674.236	7939.318	-0.012	7939.330	342	
343	29776.938	37096.954	7990.441	+0.058	7990.383	343	
344	29782.042	35771.678	7721.324	+0.016	7721.308	344	
345	29789.459	31937.914	8014.863	+0.155	8014.708	345	
346	29795.153	33697.780	7876.458	-0.041	7876.499	346	
347	29798.499	31704.411	7990.376	-0.041	7990.417	347	
348	29802.357	35142.130	7311.185	+0.064	7311.121	348	
349	29812.111	31198.820	7682.030	+0.053	7681.977	349	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
350	29849.540	37400.460	8002.790	+0.113	8002.677	350	
351	29849.607	35433.692	7441.391	-0.019	7441.410	351	
352	29874.730	38032.160	7918.185	+0.010	7918.175	352	
353	29916.930	36412.243	7917.303	+0.003	7917.300	353	
354	29923.881	33354.203	7901.018	+0.076	7900.942	354	
355	29979.464	33077.167	7830.457	+0.523	7829.934	355	
356	29981.326	32275.131	8049.079	+0.218	8048.861	356	
357	29996.027	30892.480	7377.318	-0.332	7377.650	357	
358	30017.004	36611.676	7927.160	+0.398	7926.762	358	
359	30031.364	31170.120	7715.474	+0.106	7715.368	359	
360	30055.950	34113.379	7735.079	-0.019	7735.098	360	
361	30060.160	31661.776	7859.350	-0.053	7859.403	361	
362	30062.437	36183.986	7866.103	+0.016	7866.087	362	
363	30077.410	31995.066	7978.518	+0.818	7977.700	363	
364	30086.982	35404.213	7347.581	+0.216	7347.365	364	
365	30094.127	36861.008	7921.867	+0.174	7921.693	365	
366	30097.024	37126.983	7921.714	-0.019	7921.733	366	
367	30103.480	37395.769	7935.827	+0.324	7935.503	367	
368	30112.605	35866.517	7708.130	-0.085	7708.215	368	
369	30126.980	37953.644	8003.634	+0.079	8003.555	369	
370	30136.739	37702.032	7940.430	+0.102	7940.328	370	
371	30172.141	33742.087	7978.701	-0.021	7978.722	371	
372	30189.584	32905.368	7954.471	+0.143	7954.328	372	
373	30259.429	33154.828	7964.420	+0.066	7964.354	373	
374	30263.033	36507.808	7855.595	-0.042	7855.637	374	
375	30273.708	33475.762	8008.805	+0.123	8008.682	375	
376	30281.997	30910.874	7361.972	+0.008	7361.964	376	
377	30283.066	32401.365	8040.525	-0.011	8040.536	377	
378	30322.262	38020.272	7990.441	+0.018	7990.423	378	
379	30323.406	31340.235	7680.010	+0.051	7679.959	379	
380	30362.363	35420.239	7267.387	+0.055	7267.332	380	
381	30379.049	36874.499	7796.609	+0.003	7796.606	381	
382	30380.624	35861.022	7659.155	-0.002	7659.157	382	
383	30386.470	32713.894	8007.667	+0.406	8007.261	383	
384	30387.644	36189.053	7734.747	-0.013	7734.760	384	
385	30388.201	32036.750	7988.687	+0.610	7988.077	385	
386	30397.777	37368.178	7839.832	+0.080	7839.752	386	
387	30415.593	37734.503	7878.606	+0.028	7878.578	387	
388	30426.885	32267.182	8020.296	+0.010	8020.286	388	
389	30440.116	31037.195	7694.402	+0.050	7694.352	389	
390	30455.553	35552.838	7367.103	-0.021	7367.124	390	
391	30462.498	38514.027	7847.246	+0.004	7847.242	391	
392	30473.910	37092.082	7779.696	+0.053	7779.643	392	
393	30533.469	34238.103	7863.498	-0.043	7863.541	393	
394	30562.573	33005.310	8057.706	+0.118	8057.588	394	
395	30565.230	31664.264	7966.696	+0.092	7966.604	395	
396	30568.683	32423.155	8082.413	+0.036	8082.377	396	
397	30591.060	33317.619	8062.956	+0.039	8062.917	397	
398	30592.264	33805.770	8021.287	+0.014	8021.273	398	
399	30594.627	32732.366	8069.013	+0.057	8068.956	399	
400	30605.171	38061.814	7972.178	+0.236	7971.942	400	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
401	30617.629	33502.980	8085.717	+0.064	8085.653	401	
402	30618.642	30911.132	7692.125	-0.006	7692.131	402	
403	30626.898	36515.501	7700.307	-0.004	7700.311	403	
404	30641.144	39257.504	7652.384	+0.268	7652.116	404	
405	30641.237	36840.537	7693.825	-0.005	7693.830	405	
406	30652.318	32261.673	8069.307	+0.035	8069.272	406	
407	30657.983	31994.886	8087.076	+0.160	8086.916	407	
408	30664.349	36042.182	7604.196	+0.045	7604.151	408	
409	30669.173	37713.186	7864.799	-0.008	7864.807	409	
410	30672.742	34784.607	7710.298	-0.026	7710.324	410	
411	30704.517	37489.200	7754.422	+0.124	7754.298	411	
412	30741.787	37179.400	7695.819	+1.67	7694.149	412	
413	30795.757	38936.118	7732.575	-0.013	7732.588	413	
414	30799.693	33611.466	8088.434	+0.136	8088.298	414	
415	30810.942	36226.367	7644.351	+0.043	7644.308	415	
416	30846.927	31114.528	7881.487	+0.037	7881.450	416	
417	30847.818	32903.090	7967.834	+0.006	7967.828	417	
418	30851.365	32595.835	8000.068	+0.070	7999.998	418	
419	30855.575	37960.301	7965.163	+0.005	7965.158	419	
420	30863.755	33203.280	7993.129	+0.118	7993.011	420	
421	30870.715	31546.547	8028.924	+0.376	8028.548	421	
422	30877.547	35866.760	7392.108	-0.004	7392.112	422	
423	30881.941	34490.333	7874.365	+0.008	7874.357	423	
424	30939.988	38089.209	8038.488	-0.020	8038.508	424	
425	30958.196	37085.494	7734.977	-0.003	7734.980	425	
426	30958.602	32271.376	7931.783	+0.112	7931.671	426	
427	30965.511	34086.153	7953.223	-0-	7953.223	427	
428	30965.893	39297.685	7739.926	-0.008	7739.934	428	
429	30984.127	37421.497	7828.825	+0.129	7828.696	429	
430	30994.095	36845.814	7651.561	+0.039	7651.522	430	
431	30998.719	30877.758	7681.851	+0.023	7681.828	431	
432	31026.327	36449.376	7616.430	+0.104	7616.326	432	
433	31040.640	34942.316	7726.635	+0.007	7726.628	433	
434	31045.697	33493.993	8025.950	-0.021	8025.971	434	
435	31051.300	33774.808	8045.885	+0.060	8045.825	435	
436	31062.926	31984.461	7930.939	+0.353	7930.586	436	
437	31065.300	36131.184	7595.106	+0.056	7595.050	437	
438	31076.266	31162.416	7843.358	-0.078	7843.436	438	
439	31088.830	35430.889	7611.909	-0.026	7611.935	439	
440	31118.905	37915.447	8074.498	+0.046	8074.452	440	
441	31122.072	34306.196	7962.291	+0.029	7962.262	441	
442	31174.756	32925.865	7861.736	+0.064	7861.672	442	
443	31180.297	35341.563	7649.503	-0.034	7649.537	443	
444	31189.619	31463.935	7837.212	-0.044	7837.256	444	
445	31195.085	32584.570	7842.425	+0.041	7842.384	445	
446	31222.404	36230.189	7570.983	+0.043	7570.940	446	
447	31225.660	31759.109	7903.221	+0.003	7903.218	447	
448	31234.995	36902.587	7701.074	+0.698	7700.376	448	
449	31266.695	33207.092	7902.597	+0.018	7902.579	449	
450	31268.858	33827.516	8067.178	-0.002	8067.180	450	
451	31271.710	37167.734	7821.845	+0.453	7821.392	451	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
452	31281.215	38275.746	8056.623	+0.461	8056.162	452	
453	31305.534	31079.029	7671.307	-0.021	7671.328	453	
454	31310.646	34159.809	8007.594	+0.018	8007.576	454	
455	31318.797	37586.268	7877.583	-0.019	7877.602	455	
456	31324.467	39307.395	7831.909	+0.071	7831.838	456	
457	31348.320	33514.895	7984.759	-0.002	7984.761	457	
458	31349.245	35085.029	7743.119	-0.001	7743.120	458	
459	31352.063	36710.407	7601.971	+0.140	7601.831	459	
460	31366.399	36548.742	7559.937	+0.294	7559.643	460	
461	31382.520	30816.440	7530.432	+0.066	7530.366	461	
462	31398.477	37937.581	7962.140	-0.019	7962.159	462	
463	31400.889	32234.894	7728.214	+0.411	7727.803	463	
464	31466.211	31397.424	7651.061	+0.991	7650.070	464	
465	31484.683	32885.902	7763.788	-0.021	7763.809	465	
466	31548.682	32577.004	7637.534	+0.186	7637.348	466	
467	31565.872	31833.058	7728.434	-0.032	7728.466	467	
468	31566.642	35302.241	7763.641	+0.071	7763.570	468	
469	31567.195	33151.946	7900.247	0.036	7900.211	469	
470	31578.202	34011.232	8098.420	+0.017	8098.403	470	
471	31578.550	38205.326	8029.047	+0.022	8029.025	471	
472	31597.621	35713.972	7645.905	+0.022	7645.883	472	
473	31599.065	34338.679	8047.133	+0.004	8047.129	473	
474	31611.514	30856.934	7492.367	+0.765	7491.602	474	
475	31627.574	37208.687	7696.403	-0.015	7696.418	475	
476	31629.116	33732.788	8062.222	+0.530	8061.692	476	
477	31637.759	34935.580	7906.965	+0.015	7906.950	477	
478	31639.778	34683.474	7954.838	+0.100	7954.738	478	
479	31649.982	38459.793	8136.441	+0.070	8136.371	479	
480	31652.984	31563.446	7601.397	+0.038	7601.359	480	
481	31654.967	36195.286	7552.729	+0.071	7552.658	481	
482	31655.182	39302.757	7988.821	+1.025	7987.796	482	
483	31660.294	36484.406	7582.910	+0.158	7582.752	483	
484	31686.403	31128.302	7539.184	+0.016	7539.168	484	
485	31689.905	37810.382	7828.289	+0.087	7828.202	485	
486	31709.704	37516.945	7684.535	-0.752	7685.287	486	
487	31713.881	32024.489	7587.753	+0.045	7587.708	487	
488	31721.348	32326.863	7559.301	+0.015	7559.286	488	
489	31727.656	36869.845	7544.328	+0.172	7544.156	489	
490	31765.984	32944.707	7803.217	+0.430	7802.787	490	
491	31772.276	33430.633	7941.695	+0.013	7941.682	491	
492	31777.701	34076.211	8142.034	-0.034	8142.068	492	
493	31882.984	36068.794	7636.947	+0.049	7636.898	493	
494	31895.218	38042.066	7914.227	-0.031	7914.258	494	
495	31902.188	33898.195	8090.270	-0.015	8090.285	495	
496	31914.851	38566.015	8307.421	+0.024	8307.397	496	
497	31921.622	39306.387	8152.077	-0.036	8152.113	497	
498	31923.698	31367.303	7402.246	+0.153	7402.093	498	
499	31923.926	35504.733	7836.001	+0.013	7835.988	499	
500	31927.978	37197.327	7569.190	-0.018	7569.208	500	
501	31929.731	34397.138	8127.533	+0.007	8127.526	501	
502	31943.067	32708.826	7649.980	+0.213	7649.767	502	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
503	31959.872	34961.711	8001.499	+0.041	8001.458	503	
504	31977.553	37715.161	7747.978	+0.023	7747.955	504	
505	31982.594	38272.243	8054.496	+0.021	8054.475	505	
506	31992.345	33213.199	7826.639	-0.059	7826.698	506	
507	31993.892	30953.459	7250.757	+0.027	7250.730	507	
508	32000.684	32240.434	7461.120	-0.011	7461.131	508	
509	32001.670	37492.855	7671.396	-0.023	7671.419	509	
510	32007.421	31776.551	7476.690	+0.048	7476.642	510	
511	32011.399	36349.738	7733.023	-0.050	7733.073	511	
512	32015.561	36775.261	7616.954	+0.045	7616.909	512	
513	32061.367	34182.644	8241.010	-0.011	8241.021	513	
514	32079.401	33481.282	7922.862	+0.370	7922.492	514	
515	32081.559	38972.439	8269.621	+0.042	8269.579	515	
516	32120.340	32417.523	7560.989	+0.041	7560.948	516	
517	32125.445	33740.384	8037.110	+0.014	8037.096	517	
518	32137.355	34592.113	8158.738	+0.028	8158.710	518	
519	32164.751	34049.121	8137.555	+0.020	8137.535	519	
520	32164.814	36395.704	7784.091	=E490	N/A	520	
521	32185.696	39177.760	8322.049	-0.003	8322.052	521	
522	32196.702	34320.273	8252.354	-0.013	8252.367	522	
523	32197.245	38699.331	8446.385	+0.046	8446.339	523	
524	32207.664	32992.205	7851.824	+0.454	7851.370	524	
525	32211.274	35895.741	7786.439	-0.014	7786.453	525	
526	32214.564	36147.455	7742.678	+0.010	7742.668	526	
527	32219.660	39418.016	8361.828	+0.008	8361.820	527	
528	32221.735	31524.011	7416.657	-0.032	7416.689	528	
529	32224.207	36877.232	7639.928	+0.068	7639.860	529	
530	32230.014	37966.647	7843.433	-0.024	7843.457	530	
531	32236.569	35231.630	8018.387	-0.052	8018.439	531	
532	32242.935	33438.943	7946.321	-0.044	7946.365	532	
533	32258.897	31034.417	7172.376	-0-	7172.376	533	
534	32267.171	37369.917	7652.740	-0.051	7652.791	534	
535	32270.687	38328.817	8056.176	+0.089	8056.087	535	
536	32299.210	32022.477	7396.060	+0.014	7396.046	536	
537	32305.918	32713.463	7763.604	+0.047	7763.557	537	
538	32348.927	34538.813	8273.757	-0.020	8273.777	538	
539	32373.537	37689.721	7697.528	-0.015	7697.543	539	
540	32375.882	34868.066	8196.038	-0.018	8196.056	540	
541	32422.154	30894.463	7316.660	+0.065	7316.595	541	
542	32441.839	32931.843	7839.709	+0.049	7839.660	542	
543	32453.894	36284.548	7872.505	+0.004	7872.501	543	
544	32464.173	34558.443	8351.073	+0.160	8350.913	544	
545	32473.152	31322.460	7201.022	-0.008	7201.030	545	
546	32481.482	38826.906	8568.519	+0.141	8568.378	546	
547	32505.534	35108.559	8195.560	+0.228	8195.332	547	
548	32509.748	39054.462	8556.055	+0.046	8556.009	548	
549	32512.054	37907.082	7796.976	-0.004	7796.980	549	
550	32518.598	34106.988	8066.627	+0.024	8066.603	550	
551	32519.019	33218.967	7823.078	+0.036	7823.042	551	
552	32520.762	35488.705	8037.247	-0.001	8037.248	552	
553	32521.118	39357.148	8561.018	-0.013	8561.031	553	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
554	32522.626	37072.640	7745.909	+0.016	7745.893	554	
555	32522.708	31941.910	7281.231	-0-	7281.231	555	
556	32523.041	35846.149	7949.368	-0.005	7949.373	556	
557	32525.105	38655.522	8443.362	-0.054	8443.416	557	
558	32526.101	31665.311	7246.399	+0.019	7246.380	558	
559	32534.553	33825.348	7945.660	+0.209	7945.451	559	
560	32538.638	38335.950	8145.405	+0.039	8145.366	560	
561	32546.614	32440.823	7584.912	-0.111	7585.023	561	
562	32557.408	31170.504	7306.256	+0.081	7306.175	562	
563	32589.666	32139.718	7370.472	+0.022	7370.450	563	
564	32591.676	33577.554	7864.196	+0.033	7864.163	564	
565	32613.669	36682.424	7781.296	+0.020	7781.276	565	
566	32624.355	37480.713	7755.854	+0.028	7755.826	566	
567	32657.895	34704.796	8414.182	-0.115	8414.297	567	
568	32672.296	32997.926	7755.784	-0.037	7755.821	568	
569	32696.739	31305.851	7373.390	+0.078	7373.312	569	
570	32716.427	35282.075	8207.324	+0.037	8207.287	570	
571	32723.111	38751.564	8450.527	+0.065	8450.462	571	
572	32726.822	31610.687	7336.449	+0.080	7336.369	572	
573	32744.943	30863.605	7474.898	+0.072	7474.826	573	
574	32757.664	36173.263	7992.278	+0.022	7992.256	574	
575	32804.019	34426.485	8188.145	+0.009	8188.136	575	
576	32804.235	37818.030	7751.934	+0.006	7751.928	576	
577	32807.137	39374.857	8745.693	-0.045	8745.738	577	
578	32814.530	31890.017	7405.550	+0.679	7404.871	578	
579	32815.524	36458.364	7893.737	+0.168	7893.569	579	
580	32815.985	38523.671	8216.325	+0.044	8216.281	580	
581	32820.966	34879.555	8440.835	+0.153	8440.682	581	
582	32824.271	33189.682	7726.819	+0.675	7726.144	582	
583	32825.684	32673.211	7610.008	-0.041	7610.049	583	
584	32839.571	34052.214	8007.777	-0.040	8007.817	584	
585	32839.625	37275.725	7852.870	+0.081	7852.789	585	
586	32849.098	35905.918	8099.565	+0.075	8099.490	586	
587	32867.469	32138.878	7321.616	-0.007	7321.623	587	
588	32888.929	38068.075	7913.409	+0.050	7913.359	588	
589	32911.092	32357.355	7392.370	+0.052	7392.318	589	
590	32912.631	33468.954	7805.456	+0.042	7805.414	590	
591	32918.016	35499.356	8226.778	+0.115	8226.663	591	
592	32918.223	39015.587	8538.927	+0.009	8538.918	592	
593	32920.528	36917.206	7922.047	-0.007	7922.054	593	
594	32993.888	31030.761	7531.030	-0.040	7531.070	594	
595	32995.215	39341.298	8668.375	-0.002	8668.377	595	
596	33000.958	34401.740	8107.892	-0.060	8107.952	596	
597	33006.769	33089.467	7712.280	+0.318	7711.962	597	
598	33050.724	33247.281	7718.595	+0.414	7718.181	598	
599	33051.661	36734.106	7973.078	+0.049	7973.029	599	
600	33054.426	31436.713	7495.952	-0.021	7495.973	600	
601	33096.741	35142.632	8489.479	+0.036	8489.443	601	
602	33097.590	36201.142	8112.740	+0.057	8112.683	602	
603	33117.499	37628.832	7880.236	+0.085	7880.151	603	
604	33124.502	30823.225	7639.744	+0.095	7639.649	604	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
656	33772.494	32058.008	7648.495	+0.035	7648.460	656	
657	33782.418	32616.058	7610.816	+0.307	7610.509	657	
658	33784.577	31390.905	7826.205	-0.035	7826.240	658	
659	33789.358	35662.623	8684.273	+0.004	8684.269	659	
660	33807.090	33028.884	7577.707	-0.002	7577.709	660	
661	33817.295	30943.926	7987.536	+0.027	7987.509	661	
662	33823.960	37752.265	8241.296	+0.053	8241.243	662	
663	33834.136	38092.267	8177.018	+0.018	8177.000	663	
664	33846.521	38870.511	8653.241	+0.006	8653.235	664	
665	33852.496	37349.642	8299.767	+0.054	8299.713	665	
666	33879.901	38257.491	8278.171	+0.009	8278.162	666	
667	33879.953	33824.602	7655.525	+0.014	7655.511	667	
668	33894.206	31833.803	7693.099	+0.113	7692.986	668	
669	33901.757	36994.624	8529.004	-0.019	8529.023	669	
670	33902.509	36282.251	8569.074	+0.134	8568.940	670	
671	33916.887	34983.706	8221.248	+0.057	8221.191	671	
672	33924.234	38530.925	8515.721	+0.267	8515.454	672	
673	33948.719	33236.972	7606.458	-0.050	7606.508	673	
674	33952.258	34754.504	8096.541	+0.087	8096.454	674	
675	33954.203	36521.756	8615.422	+0.343	8615.079	675	
676	33966.907	32703.492	7684.066	+0.627	7683.439	676	
677	33974.734	34120.033	7761.271	+0.069	7761.202	677	
678	33990.379	35308.519	8463.166	+0.035	8463.131	678	
679	33990.465	32284.859	7524.598	+0.329	7524.269	679	
680	33990.640	34441.621	7936.490	-0.045	7936.535	680	
681	33998.708	31185.593	7910.456	+0.022	7910.434	681	
682	34006.062	35832.812	8771.199	+0.011	8771.188	682	
683	34007.451	36822.877	8588.310	+0.03	8588.280	683	
684	34021.119	30740.143	8089.607	+0.005	8089.602	684	
685	34044.351	31614.027	7749.055	+0.094	7748.961	685	
686	34080.027	32616.948	7685.120	+0.532	7684.588	686	
687	34092.635	32052.022	7645.367	-0.043	7645.410	687	
688	34139.917	33441.432	7685.964	+0.069	7685.895	688	
689	34156.213	32368.774	7658.478	+0.194	7658.284	689	
690	34198.141	34785.779	8123.515	+0.039	8123.476	690	
691	34213.395	33589.615	7710.954	+0.022	7710.932	691	
692	34244.444	33077.281	7704.311	-0.005	7704.316	692	
693	34259.261	35932.084	8817.076	+0.012	8817.064	693	
694	34264.223	35596.531	8652.806	+0.021	8652.785	694	
695	34302.866	33927.928	7728.073	+0.028	7728.045	695	
696	34314.557	32157.117	7658.056	+0.049	7658.007	696	
697	34316.823	36715.951	8744.014	-0.037	8744.051	697	
698	34319.644	34174.598	7783.629	+0.045	7783.584	698	
699	34325.777	31752.493	7752.324	+0.391	7751.933	699	
700	34327.275	35305.690	8516.739	+0.131	8516.608	700	
701	34328.763	34999.666	8259.955	-0.032	8259.987	701	
702	34338.861	34416.826	7915.741	+0.082	7915.659	702	
703	34343.996	32573.635	7777.560	-0.043	7777.603	703	
704	34348.011	36309.657	8790.472	+0.019	8790.453	704	
705	34411.106	33349.135	7818.121	+0.072	7818.049	705	
706	34525.048	32870.274	7882.654	+0.113	7882.541	706	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
707	34537.366	34497.614	7926.581	+0.226	7926.355	707	
708	34546.183	31498.762	7875.448	+0.007	7875.441	708	
709	34562.147	35878.136	8804.373	+0.015	8804.358	709	
710	34563.944	34766.174	8064.524	+0.074	8064.450	710	
711	34565.635	36735.525	8728.263	+0.066	8728.197	711	
712	34577.890	31890.251	7737.069	+0.015	7737.054	712	
713	34579.616	34124.061	7815.432	-0.002	7815.434	713	
714	34580.487	35334.072	8534.125	+0.007	8534.118	714	
715	34587.594	32551.084	7791.092	-0.811	7791.903	715	
716	34594.903	33838.369	7859.183	+0.173	7859.010	716	
717	34614.170	32043.899	7803.746	+0.02	7803.726	717	
718	34650.699	35543.950	8664.913	-0.012	8664.925	718	
719	34665.964	33267.195	7919.208	-0.016	7919.224	719	
720	34670.535	36400.896	8755.847	-0.011	8755.858	720	
721	34685.821	35029.838	8291.937	+0.100	8291.837	721	
722	34727.677	33566.917	7914.024	+0.505	7913.519	722	
723	34735.899	31273.167	7989.188	+0.010	7989.178	723	
724	34758.771	32007.251	7868.348	-0.002	7868.350	724	
725	34764.307	32308.927	7826.979	-0.023	7827.002	725	
726	34791.439	32909.773	7970.735	+0.092	7970.643	726	
727	34832.276	34491.560	8095.862	-0.082	8095.944	727	
728	34840.931	31131.306	8053.545	+0.085	8053.460	728	
729	34842.675	31777.094	7863.533	-0-	7863.533	729	
730	34849.298	36747.207	8692.440	+0.188	8692.252	730	
731	34880.244	36161.460	8753.887	-0.022	8753.909	731	
732	34884.869	35257.609	8564.174	-0.011	8564.185	732	
733	34891.272	35828.925	8797.419	+0.143	8797.276	733	
734	34897.369	33171.472	8044.898	+0.334	8044.564	734	
735	34900.109	35591.601	8759.749	-0.012	8759.761	735	
736	34906.285	34819.351	8362.483	-0.026	8362.509	736	
737	34940.802	32602.684	7890.351	+0.046	7890.305	737	
738	34948.109	33755.514	8006.892	+0.001	8006.891	738	
739	34967.610	34062.711	8039.554	-0.018	8039.572	739	
740	35063.718	32289.411	7998.221	+0.017	7998.204	740	
741	35069.048	32879.461	8034.775	+0.194	8034.581	741	
742	35081.636	31939.594	8005.954	+0.014	8005.940	742	
743	35098.075	30701.067	8270.726	+0.033	8270.693	743	
744	35098.921	31308.831	8001.209	+0.009	8001.200	744	
745	35103.030	31678.936	7954.180	+0.007	7954.173	745	
746	35110.664	36449.959	8691.024	+0.008	8691.016	746	
747	35149.098	33545.571	8136.644	+0.016	8136.628	747	
748	35161.900	35064.344	8608.426	-0.008	8608.434	748	
749	35172.196	35889.696	8776.491	-0.067	8776.558	749	
750	35175.320	34125.653	8126.591	+0.065	8126.526	750	
751	35204.737	36190.549	8721.722	-0.009	8721.731	751	
752	35222.912	36694.255	8603.844	+0.047	8603.797	752	
753	35227.097	35605.454	8790.049	+0.022	8790.027	753	
754	35232.293	34879.983	8536.128	-0.010	8536.138	754	
755	35232.680	35347.057	8711.276	+0.003	8711.273	755	
756	35238.355	33238.067	8249.509	+0.337	8249.172	756	
757	35243.085	34444.664	8190.018	+0.149	8189.869	757	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
758	35249.972	32663.114	8058.958	+0.020	8058.938	758	
759	35294.324	31939.692	8123.314	-0.003	8123.317	759	
760	35320.421	32304.662	8097.761	+0.049	8097.712	760	
761	35383.032	33736.253	8265.214	-0.002	8265.216	761	
762	35429.573	31661.420	8161.591	-0.068	8161.659	762	
763	35461.705	36169.144	8696.430	-0.028	8696.458	763	
764	35465.764	35040.380	8684.696	+0.004	8684.692	764	
765	35473.553	34029.349	8316.549	+0.231	8316.318	765	
766	35476.742	33183.998	8451.130	+0.043	8451.087	766	
767	35488.302	31919.626	8232.274	+0.014	8232.260	767	
768	35492.981	35921.666	8726.444	+0.038	8726.406	768	
769	35506.384	31397.719	8185.843	+0.064	8185.779	769	
770	35506.867	35584.398	8771.769	-0.035	8771.804	770	
771	35513.147	35287.845	8789.441	+0.009	8789.432	771	
772	35516.666	33492.545	8397.505	+0.017	8397.488	772	
773	35524.617	34796.643	8543.855	+0.309	8543.546	773	
774	35535.378	32903.758	8335.939	+0.032	8335.907	774	
775	35558.716	36598.641	8566.965	-0.033	8566.998	775	
776	35577.158	36777.749	8534.661	+0.187	8534.474	776	
777	35583.765	32240.938	8282.564	+0.036	8282.528	777	
778	35592.223	34453.366	8440.004	+0.723	8439.281	778	
779	35622.628	31160.796	8297.615	-0.042	8297.657	779	
780	35645.476	32497.774	8315.794	+0.003	8315.791	780	
781	35672.377	31568.943	8363.722	+0.063	8363.659	781	
782	35754.644	33974.598	8549.328	+0.077	8549.251	782	
783	35776.458	32942.833	8548.076	+0.073	8548.003	783	
784	35781.451	34924.771	8642.018	+0.030	8641.988	784	
785	35791.189	35928.278	8687.522	+0.017	8687.505	785	
786	35793.592	35212.551	8775.704	+0.018	8775.686	786	
787	35793.774	33580.333	8614.472	-0.175	8614.647	787	
788	35795.922	33209.206	8670.780	-0.040	8670.820	788	
789	35809.311	34627.597	8584.279	+0.009	8584.270	789	
790	35815.988	36380.456	8568.109	+0.002	8568.107	790	
791	35823.705	32154.117	8436.068	+0.057	8436.011	791	
792	35837.947	31117.097	8489.286	+0.033	8489.253	792	
793	35841.815	35597.541	8743.114	-0.009	8743.123	793	
794	35844.647	34333.006	8601.486	+0.024	8601.462	794	
795	35848.148	31760.290	8499.937	-0.002	8499.939	795	
796	35874.340	36741.438	8509.119	-0.002	8509.121	796	
797	35933.472	32474.234	8563.841	+0.210	8563.631	797	
798	35977.819	30943.024	8550.944	+0.028	8550.916	798	
799	35981.921	31492.088	8597.931	+0.014	8597.917	799	
800	36006.934	32811.099	8702.153	-0.080	8702.233	800	
801	36044.749	35014.866	8782.143	-0-	8782.143	801	
802	36060.230	31917.312	8636.730	-0.001	8636.731	802	
803	36081.599	36420.240	8537.165	-0.003	8537.168	803	
804	36083.438	33585.577	8764.149	-0.005	8764.154	804	
805	36085.913	33232.092	8799.887	-0.010	8799.897	805	
806	36136.218	31684.153	8736.898	+0.024	8736.874	806	
807	36137.199	34740.385	8782.179	+0.036	8782.143	807	
808	36142.312	32284.424	8694.585	+0.028	8694.557	808	

POINT	EASTING	NORTHING	2000 ELEVATION	2001 DIFFERENCE	2001 ELEVATION	POINT	COMMENTS
809	36147.963	36664.225	8480.822	+0.104	8480.718	809	
810	36152.276	35978.141	8632.252	-0.030	8632.282	810	
811	36170.976	35599.747	8734.028	+0.016	8734.012	811	
812	36183.555	34131.536	8799.708	+0.047	8799.661	812	
813	36195.631	35329.037	8762.539	+0.005	8762.534	813	
814	36222.682	33883.494	8774.094	-0.098	8774.192	814	
815	36232.444	32824.490	8824.356	+0.053	8824.303	815	
816	36233.662	34378.700	8796.918	+0.038	8796.880	816	
817	36268.087	36244.227	8562.922	+0.044	8562.878	817	
818	36280.147	32559.155	8794.681	+0.098	8794.583	818	
819	36312.213	31173.487	8825.691	+0.089	8825.602	819	
820	36416.968	32306.640	8806.853	-0.011	8806.864	820	
821	36428.314	33888.851	8771.876	-0.033	8771.909	821	
822	36436.416	34214.779	8800.602	-0.003	8800.605	822	
823	36442.099	32597.840	8780.081	+0.024	8780.057	823	
824	36446.652	33636.504	8739.751	+0.003	8739.748	824	
825	36466.141	30837.671	8926.258	+0.040	8926.218	825	
826	36468.582	31724.511	8878.909	+0.007	8878.902	826	
827	36469.266	33040.735	8759.320	+0.008	8759.312	827	
828	36504.533	33375.905	8714.424	+0.027	8714.397	828	
829	36504.755	31993.927	8848.116	-0.002	8848.118	829	
830	36512.125	34969.720	8778.959	-0.015	8778.974	830	
831	36513.288	35904.773	8694.498	+0.021	8694.477	831	
832	36517.175	35619.680	8739.215	+0.014	8739.201	832	
833	36518.317	31452.503	8896.189	+0.046	8896.143	833	
834	36525.265	36701.664	8462.327	-0.010	8462.337	834	
835	36526.675	35333.738	8759.856	-0.024	8759.880	835	
836	36534.244	34614.812	8790.657	-0.003	8790.660	836	
837	36550.795	31237.938	8912.056	+0.009	8912.047	837	
838	36554.534	36270.287	8562.135	+0.010	8562.125	838	
839	36593.865	36593.865	8942.342	+0.024	8942.318	839	

Other Technical Data

No equipment or machinery was abandoned underground in 2001.

No known hazardous substances or waste oil in reportable quantities were left underground in 2000.

The Mine Map shows no locations of the above items due to their absence.

Vegetation Monitoring

Patrick Collins of Mt. Nebo Scientific performed the required vegetation monitoring. His report of the monitoring is attached.

VEGETATION MONITORING
AT THE
WEST RIDGE MINE, UTAH
2001

Prepared
for

WEST RIDGE RESOURCES, INC.

Prepared by

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for

WEST RIDGE RESOURCES, INC
West Ridge Mine
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March 2002

INTRODUCTION

The following document addresses the results of vegetation monitoring of seeded areas and revegetation test plots results for 2001 at the West Ridge Mine. The following is a list of areas monitored and reported within this document.

Engineer's Parking Lot Slopes	Sediment Pond Slopes
Conveyor Drop Road Slopes	Warehouse/Storage Lot Slopes
Conveyor Drop Road Berm	Topsoil Stockpile
Road Slopes (Loadout to Warehouse)	Test Plot - Midfork Cut
Mine Office Parking Lot Slopes	Test Plot - Midfork Stockpile
Coal Pile Slopes	Test Plot - Strych Fill
Road Slopes (East of Loadout)	Test Plot - Strych Stockpile
Loadout Area Slopes	

METHODS

Vegetation sampling was conducted on revegetated sites and test plots. Quantitative and qualitative data were taken on each site. A qualitative data sheet is given below for each of these sites. Each data sheet will briefly describe the sample parameters and notes for each sample area. Following the qualitative data sheet a spreadsheet with the summed quantitative data has been provided.

QUALITATIVE DATA

Qualitative data were recorded on all sites. A qualitative data sheet for each site is included in this report and provides the following information: site name, general area, sample date, observers, slope, exposure, animal disturbance, erosion damage, cover, dominant plant species observed, and other pertinent notes.

When quantitative data were recorded, the results are sometimes shown on these data sheets or reference to where the data is located.

Site Name

The sample site name is given. The site names were chosen with reference to where they were located.

Mine Site

The "Area" on the data sheets is a reference to the general mine or property areas for quick reference and general use.

Date

Sample dates are also provided. All sample dates are within the 2001 growing season.

Workers

Lists the names of the individuals who recorded the data.

Exposure

Exposure was recorded on each site. Often the site had several exposure differences. In those cases, "variable" was written for the exposure on the data sheet.

Animal Disturbance

Values were given to the relative use by animal species at each site. The values and a brief explanation are given below.

None -	(or negligible) - no animal use was observed.
Slight -	only little animal use was observed by droppings, tracks, or cropped vegetation.
Moderate -	a fair degree of use was observed, mostly by the cropped vegetation. Several inches of production still remained available for use by the animals.
Severe -	animal use had taken nearly all of the available current year's production.

Erosion

Erosion of the area was also assessed by qualitative methods. Actual measurements, descriptive notes or values described below were given to each site.

None -	(or negligible) - no erosion was observed.
Slight -	small erosion rills beginning, usually less than 2:1 (2 inches wide

by 1 inches deep).

Moderate - erosional rills and gullies from 2:1 to 4:2.

Severe - erosional rills and gullies over to 4:2 were observed.

Cover

Cover differences or notes may be given on the data sheet or references to the quantitative data.

Dominant Plant Species Observed

Sometimes plant species that were observed but were not encountered in the quadrats when sampling. Many of these species were recorded here. However, some of the species were also encountered in the quadrats. Therefore, to get a list of all species on a given site, one should refer to both quantitative and qualitative data sheets.

Notes

Site-specific, pertinent notes about each area were also taken i.e. identification of special considerations, areas of differential growth patterns, etc. Notes on specific methodologies on each site were also described here.

Photographs

Color photographs were taken for each site and are included in this report for documentation.

QUANTITATIVE DATA

Cover and Composition

Cover estimates were made using ocular methods with randomly or regularly placed meter square quadrats. Total living cover, litter, rock and bareground were recorded. Cover by species was also recorded. Raw data summations were included in this report. They provide all means and standard deviations. Species composition was also assessed from the quadrats. Because these data are presented to observe only trends for revegetation success and soil stabilization, no attempt was made to achieve sample adequacy for each individual site.

Woody Species Density

In some areas woody plant densities estimates were needed. Densities were recorded using 5 ft x 15 ft belt transects. In the belt transect method total counts of the woody species were conducted in each transect. They were then summed and averaged to calculate the number of individuals per acre.

RESULTS

Data sheets for qualitative and quantitative (including raw data) sampling are included in this report. This gives the reviewer an overall view of the revegetation success of each area. For results of the above parameters, refer to the site-specific data sheets.

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Engineer's Parking Lot Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P. Collins

SLOPE: 21 deg.

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: negligible

EROSION: negligible

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Salsola pestifer
Achillea millefolium
Medicago sativa
Machaeranthera canescens
Halogeton glomeratus
Kochia scoparia

GRASSES
Elymus lanceolatus
Poa pratensis
Elymus spicatus
Elymus smithii

NOTES:

- At the time of sampling, the site had some areas with a lot of cover whereas other areas were more bare.
- The areas with more cover had desirable species while other areas were composed of "weedy" species.
- One area had recently been re-disturbed so it had virtually no living cover.
- See photograph of the site included with this report.
- *Subsequent to sampling this area, the bare spots were hand-seeded and raked in February 2002.*

ANDALEX
West Ridge Mine
Engineers Parking Lot Slopes
Exposure: Variable
Slope: 21 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Salsola pestifer	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Achillea millefolium	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	0.00	5.00	0.00	0.00	8.00	20.00	0.00
Machaeranthera canescens	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Halogeton glomeratus	0.00	0.00	10.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus lanceolatus	15.00	0.00	0.00	5.00	5.00	8.00	0.00
Poa pratensis	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus spicatus	0.00	0.00	0.00	3.00	7.00	0.00	0.00
Elymus smithii	10.00	10.00	5.00	5.00	5.00	2.00	0.00
COVER							
Total Living Cover	35.00	15.00	20.00	13.00	25.00	30.00	0.00
Litter	5.00	5.00	3.00	2.00	5.00	2.00	0.00
Bareground	35.00	55.00	50.00	60.00	45.00	40.00	65.00
Rock	25.00	25.00	27.00	25.00	25.00	28.00	35.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	ERR
Forbs	14.29	33.33	75.00	0.00	32.00	66.67	ERR
Grasses	85.71	66.67	25.00	100.00	68.00	33.33	ERR

ANDALEX
West Ridge
Engineers Parking Lot Slopes
Exposure: Variable
Slope: 21 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
0.00	0.00	15.00	1.50	4.50	10.00	*Salsola pestifer*
0.00	0.00	0.00	0.50	1.50	10.00	*Achillea millefolium*
0.00	0.00	5.00	3.80	6.08	40.00	*Medicago sativa*
0.00	3.00	5.00	1.30	2.05	30.00	*Machaeranthera canescens*
0.00	30.00	0.00	4.00	9.17	20.00	*Halogeton glomeratus*
5.00	0.00	0.00	0.50	1.50	10.00	*Kochia scoparia*
						GRASSES
25.00	7.00	5.00	7.00	7.40	70.00	*Elymus lanceolatus*
0.00	0.00	0.00	0.50	1.50	10.00	*Poa pratensis*
10.00	0.00	10.00	3.00	4.10	40.00	*Elymus spicatus*
0.00	0.00	0.00	3.70	3.77	60.00	*Elymus smithii*
						COVER
40.00	40.00	40.00	25.90	12.79		Total Living Cover
5.00	5.00	10.00	4.30	2.41		Litter
30.00	30.00	25.00	43.40	12.89		Bareground
25.00	25.00	25.00	26.40	2.73		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
12.50	82.50	62.50	37.88	29.88		Forbs
87.50	17.50	37.50	52.12	32.18		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Conveyor Drop Road Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 38 deg.

EXPOSURE: NE

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Slight in some areas. Areas where there were a lot of rock, erosion was negligible.

COVER: (Not sampled, see Notes below)

DOMINANT PLANT SPECIES OBSERVED:

NOTES:

- Area was not sampled because there was little or no cover (see photograph).
- *Area was later hydroseeded (November 2001) after the sampling in the area was done.*

ANDALEX
West Ridge Mine
Conveyor Drop Road Slope
Exposure: North East
Slope: 38 deg

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
		(NOT SEEDED AT THE TIME OF SAMPLING, SEE QUALITATIVE NOTES)					
FORBS							
GRASSES							

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Conveyor Drop Road Berm

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: variable

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Not sampled, see Notes below)

DOMINANT PLANT SPECIES OBSERVED:

NOTES:

- Area was not sampled because there was little or no cover (see photograph).
- *Area was later hydroseeded (November 2001) after the sampling in the area was done.*

ANDALEX
West Ridge Mine
Conveyor Drop Road Berm
Exposure: Variable
Slope: Variable
Sample Date: 11-12 Sept 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
		(NOT SEEDED AT THE TIME OF SAMPLING, SEE QUALITATIVE NOTES)					
FORBS							
GRASSES							

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Road Slopes (Loadout to Warehouse)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 37 deg.

EXPOSURE: NE

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible, especially for such a steep slope.

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Medicago sativa
Lactuca serriola

GRASSES
Elymus lanceolatus
Stipa hymenoides
Elymus spicatus
Elymus smithii

NOTES:

- Slope looked good.
- There was good cover. There was a lot of wild lettuce present.
- To view area, refer to the photograph of the site included in this report.

ANDALEX
West Ridge Mine
Road Slopes (Loadout to Warehouse)
Exposure: North East
Slope: 37 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Medicago sativa	15.00	0.00	50.00	0.00	0.00	3.00	35.00
Lactuca serriola	0.00	10.00	0.00	10.00	5.00	7.00	5.00
GRASSES							
Elymus lanceolatus	20.00	10.00	10.00	40.00	5.00	8.00	0.00
Stipa hymenoides	0.00	0.00	5.00	0.00	0.00	15.00	0.00
Elymus spicatus	0.00	5.00	0.00	10.00	35.00	7.00	10.00
Elymus smithii	0.00	0.00	0.00	0.00	5.00	0.00	0.00
COVER							
Total Living Cover	35.00	25.00	65.00	60.00	50.00	40.00	50.00
Litter	5.00	5.00	7.00	10.00	10.00	10.00	10.00
Bareground	40.00	45.00	20.00	10.00	10.00	25.00	20.00
Rock	20.00	25.00	8.00	20.00	30.00	25.00	20.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	42.86	40.00	76.92	16.67	10.00	25.00	80.00
Grasses	57.14	60.00	23.08	83.33	90.00	75.00	20.00

ANDALEX
West Ridge
Road Slopes (Loadout to Warehouse)
Exposure: North East
Slope: 37 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
20.00	0.00	10.00	13.30	16.40	60.00	*Medicago sativa*
0.00	20.00	20.00	7.70	7.11	70.00	*Lactuca serriola*
						GRASSES
5.00	5.00	20.00	12.30	11.07	90.00	*Elymus lanceolatus*
0.00	0.00	0.00	2.00	4.58	20.00	*Stipa hymenoides*
0.00	0.00	0.00	6.70	10.25	50.00	*Elymus spicatus*
0.00	0.00	0.00	0.50	1.50	10.00	*Elymus smithii*
						COVER
25.00	25.00	50.00	42.50	14.01		Total Living Cover
5.00	5.00	10.00	7.70	2.37		Litter
45.00	40.00	20.00	27.50	13.09		Bareground
25.00	30.00	20.00	22.30	6.05		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
80.00	80.00	60.00	51.14	26.46		Forbs
20.00	20.00	40.00	48.86	26.46		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Mine Office Parking Lot Slopes (west)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 30 deg.

EXPOSURE: NW

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Not sampled, see Notes below)

DOMINANT PLANT SPECIES OBSERVED:

NOTES:

- Area was not sampled because there was little or no cover (see photograph).
- *Some of this area was later hydroseeded (November 2001) after the sampling in the area was done.*

ANDALEX
West Ridge Mine
Mine Office Parking Slopes (West)
Exposure: North West
Slope: 30 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
		(NOT SEEDED AT THE TIME OF SAMPLING, SEE QUALITATIVE NOTES)					
FORBS							
GRASSES							

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Coal Pile Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 35 deg.

EXPOSURE: S

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible in most areas. Some slight erosion in bare areas.

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Salsola pestifer
Astragalus cicer
Chenopodium fremontii
Medicago sativa

GRASSES
Elymus lanceolatus
Stipa hymenoides
Elymus smithii

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- There were no woody species for density measurements by belt transects.

ANDALEX
West Ridge Mine
Coal Pile Slopes
Exposure: South
Slope: 35 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Salsola pestifer	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Astragalus cicer	15.00	0.00	0.00	0.00	0.00	0.00	0.00
Chenopodium fremontii	3.00	0.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	0.00	35.00	65.00	25.00	30.00	15.00	30.00
GRASSES							
Elymus lanceolatus	0.00	30.00	0.00	10.00	0.00	15.00	10.00
Stipa hymenoides	0.00	0.00	0.00	10.00	15.00	10.00	5.00
Elymus smithii	2.00	0.00	5.00	5.00	0.00	5.00	0.00
COVER							
Total Living Cover	25.00	65.00	70.00	50.00	45.00	45.00	45.00
Litter	5.00	10.00	10.00	10.00	10.00	15.00	10.00
Bareground	35.00	15.00	10.00	15.00	15.00	15.00	35.00
Rock	35.00	10.00	10.00	25.00	30.00	25.00	10.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	92.00	53.85	92.86	50.00	66.67	33.33	66.67
Grasses	8.00	46.15	7.14	50.00	33.33	66.67	33.33

ANDALEX
West Ridge
Coal Pile Slopes
Exposure: South
Slope: 35 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
0.00	0.00	0.00	0.50	1.50	10.00	*Salsola pestifer*
0.00	0.00	0.00	1.50	4.50	10.00	*Astragalus cicer*
0.00	0.00	0.00	0.30	0.90	10.00	*Chenopodium fremontii*
20.00	0.00	24.00	24.40	17.67	80.00	*Medicago sativa*
						GRASSES
15.00	4.00	10.00	9.40	8.85	70.00	*Elymus lanceolatus*
0.00	4.00	4.00	4.80	5.02	60.00	*Stipa hymenoides*
0.00	2.00	5.00	2.40	2.24	60.00	*Elymus smithii*
						COVER
35.00	10.00	43.00	43.30	16.58		Total Living Cover
5.00	2.00	7.00	8.40	3.50		Litter
15.00	60.00	30.00	24.50	14.74		Bareground
45.00	28.00	20.00	23.80	11.04		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
57.14	0.00	55.81	56.83	25.63		Forbs
42.86	100.00	44.19	43.17	25.63		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Road Slopes (East of Loadout)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 37 deg.

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Some "slight" to "moderate" erosion beginning in some areas.

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Medicago sativa

GRASSES
Elymus lanceolatus
Elymus spicatus
Stipa hymenoides
Elymus smithii

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Not a lot of cover, but the site had good diversity where there was cover.
- Some long-distance-scanning methods were used due to slope danger by conventional sampling.
- *Area was later hydroseeded (November 2001) after the sampling in the area was done.*

ANDALEX
West Ridge Mine
Road Slopes (East of Loadout)
Exposure: West
Slope: 37 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Medicago sativa	0.00	0.00	2.00	0.00	15.00	0.00	5.00
GRASSES							
Elymus lanceolatus	5.00	0.00	0.00	2.00	5.00	5.00	5.00
Elymus spicatus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	5.00	7.00	0.00	0.00	0.00	5.00	5.00
Elymus smithii	5.00	8.00	3.00	0.00	5.00	10.00	10.00
COVER							
Total Living Cover	15.00	15.00	5.00	2.00	25.00	20.00	25.00
Litter	3.00	5.00	3.00	3.00	5.00	5.00	5.00
Bareground	55.00	50.00	65.00	60.00	35.00	35.00	30.00
Rock	27.00	30.00	27.00	35.00	35.00	40.00	40.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	0.00	0.00	40.00	0.00	60.00	0.00	20.00
Grasses	100.00	100.00	60.00	100.00	40.00	100.00	80.00

ANDALEX
West Ridge
Road Slopes (East of Loadout)
Exposure: West
Slope: 37 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
3.00	5.00	5.00	3.50	4.36	60.00	*Medicago sativa*
						GRASSES
0.00	5.00	10.00	3.70	3.03	70.00	*Elymus lanceolatus*
10.00	5.00	10.00	2.50	4.03	30.00	*Elymus spicatus*
0.00	5.00	0.00	2.70	2.76	50.00	*Stipa hymenoides*
7.00	5.00	5.00	5.80	2.93	90.00	*Elymus smithii*
						COVER
20.00	25.00	30.00	18.20	8.61		Total Living Cover
5.00	5.00	10.00	4.90	1.92		Litter
55.00	45.00	50.00	48.00	11.00		Bareground
20.00	25.00	10.00	28.90	8.84		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
15.00	20.00	16.67	17.17	18.86		Forbs
85.00	80.00	83.33	82.83	18.86		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Loadout Area Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 20 to 30 deg.

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Salsola pestifer
Artemisia ludoviciana
Lactuca serriola
Medicago sativa
Achillea millefolium
Chenopodium fremontii

GRASSES
Elymus lanceolatus
Elymus spicatus
Elymus smithii

NOTES:
- The site looked good, but it should look much better in 2 years.
- To view the area, refer to the photograph of the site included in this report.
- There were no woody species for density measurements by belt transects.
- Not a lot of cover, but the site had good diversity where there was cover.

ANDALEX
West Ridge Mine
Loadout Area Slopes
Exposure: Variable
Slope: 20 - 30 deg.
Sample Date: 11-12 Sept 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Salsola pestifer	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Artemisia ludoviciana	0.00	0.00	0.00	3.00	0.00	0.00	0.00
Lactuca serriola	2.00	0.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	20.00	15.00	3.00	7.00	25.00	15.00	10.00
Achillea millefolium	0.00	0.00	2.00	0.00	0.00	0.00	0.00
Chenopodium fremontii	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus lanceolatus	0.00	20.00	5.00	25.00	5.00	5.00	10.00
Elymus spicatus	0.00	0.00	10.00	5.00	0.00	25.00	10.00
Elymus smithii	0.00	0.00	0.00	0.00	5.00	0.00	0.00
COVER							
Total Living Cover	22.00	35.00	20.00	40.00	35.00	45.00	30.00
Litter	3.00	10.00	10.00	15.00	5.00	15.00	5.00
Bareground	35.00	45.00	55.00	20.00	35.00	20.00	45.00
Rock	40.00	10.00	15.00	25.00	25.00	20.00	20.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	100.00	42.86	25.00	25.00	71.43	33.33	33.33
Grasses	0.00	57.14	75.00	75.00	28.57	66.67	66.67

ANDALEX
West Ridge
Loadout Area Slopes
Exposure: Variable
Slope: 20 - 30 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
0.00	0.00	25.00	2.50	7.50	10.00	*Salsola pestifer*
10.00	0.00	0.00	1.30	3.03	20.00	*Artemisia ludoviciana*
0.00	0.00	0.00	0.20	0.60	10.00	*Lactuca serriola*
0.00	15.00	0.00	11.00	8.05	80.00	*Medicago sativa*
0.00	0.00	0.00	0.20	0.60	10.00	*Achillea millefolium*
5.00	0.00	0.00	0.50	1.50	10.00	*Chenopodium fremontii*
						GRASSES
0.00	0.00	0.00	7.00	8.43	60.00	*Elymus lanceolatus*
10.00	10.00	0.00	7.00	7.48	60.00	*Elymus spicatus*
0.00	0.00	0.00	0.50	1.50	10.00	*Elymus smithii*
						COVER
25.00	25.00	25.00	30.20	7.83		Total Living Cover
10.00	10.00	5.00	8.80	3.99		Litter
40.00	50.00	45.00	39.00	11.14		Bareground
25.00	15.00	25.00	22.00	7.81		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
60.00	60.00	100.00	55.10	26.94		Forbs
40.00	40.00	0.00	44.90	26.94		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Sediment Pond Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 10-20 deg.

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Medicago sativa
Kochia scoparia
Halogeton glomeratus

GRASSES
Elymus lanceolatus
Elymus spicatus
Elymus smithii

NOTES:

- The cover was "patchy" (good cover in some areas and bare in others).
- To view the area, refer to the photograph of the site included in this report.
- One of the "weedy" patches appeared to have been re-disturbed for some reason.

ANDALEX
West Ridge Mine
Sediment Pond Slopes
Exposure: Variable
Slope: 10 - 20 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Medicago sativa	5.00	10.00	10.00	35.00	5.00	10.00	25.00
Kochia scoparia	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus lanceolatus	20.00	15.00	0.00	0.00	0.00	10.00	20.00
Elymus spicatus	0.00	5.00	0.00	5.00	0.00	0.00	0.00
Elymus smithii	5.00	5.00	0.00	0.00	0.00	5.00	0.00
COVER							
Total Living Cover	30.00	35.00	10.00	40.00	15.00	25.00	45.00
Litter	5.00	10.00	5.00	10.00	3.00	5.00	10.00
Bareground	40.00	30.00	55.00	15.00	60.00	50.00	30.00
Rock	25.00	25.00	30.00	35.00	22.00	20.00	15.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	16.67	28.57	100.00	87.50	100.00	40.00	55.56
Grasses	83.33	71.43	0.00	12.50	0.00	60.00	44.44

ANDALEX
West Ridge
Sediment Pond Slopes
Exposure: Variable
Slope: 10 - 20 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
20.00	2.00	5.00	12.70	10.08	100.00	*Medicago sativa*
0.00	0.00	0.00	1.00	3.00	10.00	*Kochia scoparia*
5.00	5.00	0.00	1.00	2.00	20.00	*Halogeton glomeratus*
						GRASSES
5.00	0.00	5.00	7.50	7.83	60.00	*Elymus lanceolatus*
0.00	0.00	10.00	2.00	3.32	30.00	*Elymus spicatus*
5.00	0.00	0.00	2.00	2.45	40.00	*Elymus smithii*
						COVER
35.00	7.00	20.00	26.20	12.29		Total Living Cover
10.00	3.00	5.00	6.60	2.87		Litter
35.00	50.00	15.00	38.00	15.03		Bareground
20.00	40.00	60.00	29.20	12.48		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
71.43	100.00	25.00	62.47	31.84		Forbs
28.57	0.00	75.00	37.53	31.84		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Warehouse/Storage Lot Slopes

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 39 deg.

EXPOSURE: NE

ANIMAL USE/DISTURBANCE: Negligible

EROSION: "Slight" due to slope steepness and little cover, but there were lots of rocks that were helping to impede erosion.

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Medicago sativa

GRASSES
Elymus lanceolatus
Stipa hymenoides
Elymus smithii

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- The slope behind the bathouse was new and very steep.
- There were no woody species for density measurements by belt transects.
- *Area was later hydroseeded (November 2001) after the sampling in the area was done.*

ANDALEX
West Ridge Mine
Warehouse/Storage Lot Slopes
Exposure: North East
Slope: 39 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Medicago sativa	2.00	0.00	1.00	5.00	0.00	5.00	0.00
GRASSES							
Elymus lanceolatus	8.00	5.00	6.00	10.00	0.00	5.00	10.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	15.00	0.00
Elymus smithii	0.00	0.00	0.00	10.00	10.00	0.00	5.00
COVER							
Total Living Cover	10.00	5.00	7.00	25.00	10.00	25.00	15.00
Litter	3.00	2.00	3.00	5.00	3.00	5.00	5.00
Bareground	60.00	70.00	65.00	40.00	65.00	45.00	40.00
Rock	27.00	23.00	25.00	30.00	22.00	25.00	40.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	20.00	0.00	14.29	20.00	0.00	20.00	0.00
Grasses	80.00	100.00	85.71	80.00	100.00	80.00	100.00

ANDALEX
West Ridge Mine
Warehouse/Storage Lot Slopes
Exposure: North East
Slope: 39 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
						FORBS
0.00	5.00	10.00	2.80	3.19	60.00	*Medicago sativa*
						GRASSES
25.00	10.00	10.00	8.90	6.19	90.00	*Elymus lanceolatus*
0.00	0.00	0.00	1.50	4.50	10.00	*Stipa hymenoides*
0.00	10.00	10.00	4.50	4.72	50.00	*Elymus smithii*
						COVER
25.00	25.00	30.00	17.70	8.75		Total Living Cover
5.00	5.00	10.00	4.60	2.11		Litter
35.00	40.00	30.00	49.00	13.75		Bareground
35.00	30.00	30.00	28.70	5.29		Rock
						% COMPOSITION
0.00	0.00	0.00	0.00	0.00		Shrubs
0.00	20.00	33.33	12.76	11.34		Forbs
100.00	80.00	66.67	87.24	11.34		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Topsoil Stockpile

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 1-20 deg.

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible. Gouging greatly helped impede erosion.

COVER: (see attached quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

TREES & SHRUBS
Symphoricarpos oreophilus

FORBS
Achillea millefolium
Aster sp.
Artemisia ludoviciana
Medicago sativa
Astragalus cicer
Chenopodium fremontii

GRASSES
Elymus lanceolatus
Elymus spicatus
Elymus spp.
Poa pratensis
Elymus smithii

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Most of the cover was located in the "gouges".
- There were no woody species for density measurements by belt transects.
- The slopes "upstream" didn't have as much cover and had more "weedy" species.
- Overall the site looked "very good" considering the short time it has been since seeding.

ANDALEX
West Ridge Mine
Topsoil Stock Pile
Exposure: Variable
Slope: 1 - 20 deg.

Sample Date: 11-12 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Symphoricarpos oreophilus	0.00	0.00	0.00	10.00	0.00	0.00	0.00
FORBS							
Achillea millefolium	0.00	0.00	0.00	3.00	20.00	5.00	0.00
Aster sp.	0.00	0.00	0.00	3.00	0.00	0.00	0.00
Artemisia ludoviciana	0.00	0.00	0.00	2.00	0.00	0.00	0.00
Medicago sativa	0.00	0.00	0.00	7.00	0.00	0.00	5.00
Astragalus cicer	7.00	0.00	0.00	0.00	0.00	0.00	0.00
Chenopodium fremontii	8.00	20.00	0.00	0.00	5.00	0.00	0.00
GRASSES							
Elymus lanceolatus	7.00	0.00	0.00	15.00	10.00	0.00	5.00
Elymus spicatus	10.00	0.00	0.00	0.00	10.00	70.00	0.00
Elymus spp.	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Poa pratensis	0.00	0.00	15.00	0.00	5.00	0.00	0.00
Elymus smithii	8.00	0.00	0.00	10.00	15.00	10.00	10.00
COVER							
Total Living Cover	40.00	20.00	15.00	55.00	65.00	85.00	20.00
Litter	5.00	10.00	5.00	10.00	5.00	5.00	5.00
Bareground	35.00	60.00	60.00	20.00	15.00	5.00	45.00
Rock	20.00	10.00	20.00	15.00	15.00	5.00	30.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	18.18	0.00	0.00	0.00
Forbs	37.50	100.00	0.00	27.27	38.46	5.88	25.00
Grasses	62.50	0.00	100.00	54.55	61.54	94.12	75.00

ANDALEX
West Ridge Mine
Topsoil Stock Pile
Exposure: Variable
Slope: 1 - 20 deg.
Sample Date: 11-12 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	0.00	1.00	3.00	10.00	*Symphoricarpos oreophilus*
						FORBS
0.00	0.00	0.00	2.80	5.96	30.00	*Achillea millefolium*
0.00	0.00	0.00	0.30	0.90	10.00	*Aster sp.*
7.00	0.00	0.00	0.90	2.12	20.00	*Artemisia ludoviciana*
0.00	0.00	0.00	1.20	2.44	20.00	*Medicago sativa*
0.00	0.00	0.00	0.70	2.10	10.00	*Astragalus cicer*
0.00	5.00	18.00	5.60	7.24	50.00	*Chenopodium fremontii*
						GRASSES
0.00	0.00	0.00	3.70	5.12	40.00	*Elymus lanceolatus*
0.00	0.00	0.00	9.00	20.71	30.00	*Elymus spicatus*
0.00	0.00	0.00	0.50	1.50	10.00	*Elymus spp.*
0.00	10.00	2.00	3.20	5.02	40.00	*Poa pratensis*
28.00	0.00	5.00	8.60	8.11	70.00	*Elymus smithii*
						COVER
35.00	15.00	25.00	37.50	22.61		Total Living Cover
25.00	5.00	5.00	8.00	6.00		Litter
20.00	60.00	40.00	36.00	19.34		Bareground
20.00	20.00	30.00	18.50	7.43		Rock
						% COMPOSITION
0.00	0.00	0.00	1.82	5.45		Shrubs
20.00	33.33	72.00	35.94	28.40		Forbs
80.00	66.67	28.00	62.24	28.37		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Test Plot (Midfork Cut)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 28 deg.

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached data summaries)

DOMINANT PLANT SPECIES OBSERVED:

TREES & SHRUBS

Prunus virginiana

FORBS

Achillea millefolium

Artemisia ludoviciana

Medicago sativa

Urtica dioica

GRASSES

Elymus smithii

Elymus spicatus

Elymus lanceolatus

Table 1: Test Plot: Midfork Cut Total Cover

	Mean	SDev
Total Living Cover	32.50	9.68
Litter	6.25	2.17
Bareground	50.63	10.73
Rock	10.63	3.90

Table 2: Test Plot - Midfork Cut Cover By Species

	Mean	SDev	Freq
TREES & SHRUBS			
Prunus virginiana	0.63	1.65	12.50
FORBS			
Achillea millefolium	6.25	4.21	100.00
Artemisia ludoviciana	1.00	1.80	25.00
Medicago sativa	2.75	2.22	75.00
Urtica dioica	0.63	1.65	12.50
GRASSES			
Elymus smithii	9.00	3.08	100.00
Elymus spicatus	3.75	3.31	62.50
Elymus lanceolatus	8.50	4.56	87.50

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Refer to Tables 1, 2, & 3 additional data summations.
- For a graphic comparison of living cover of all plots see Fig. 1 later in the report.
- For a graphic comparison of composition of all plots see Fig. 2 later in the report.
- For a graphic comparison of woody species density of all plots see Fig. 3 later in the report.

Table 3: Test Plot: MidFork Cut Composition

	Mean	SDev
Shrubs	1.56	4.13
Forbs	32.67	7.02
Grasses	65.76	9.03

ANDALEX
West Ridge Mine
Test Plot
Mid Fork Cut Area
Exposure: West
Slope: 28 deg.
Sample Date: 11 Sept 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Prunus virginiana	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
Achillea millefolium	7.00	3.00	3.00	2.00	10.00	3.00	15.00
Artemisia ludoviciana	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Medicago sativa	3.00	7.00	2.00	3.00	5.00	2.00	0.00
Urtica dioica	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus smithii	10.00	5.00	5.00	7.00	10.00	10.00	15.00
Elymus spicatus	0.00	5.00	5.00	0.00	5.00	10.00	5.00
Elymus lanceolatus	10.00	5.00	0.00	13.00	10.00	15.00	5.00
COVER							
Total Living Cover	30.00	25.00	15.00	25.00	40.00	45.00	40.00
Litter	5.00	5.00	5.00	10.00	5.00	10.00	5.00
Bareground	50.00	65.00	65.00	55.00	45.00	30.00	45.00
Rock	15.00	5.00	15.00	10.00	10.00	15.00	10.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	33.33	40.00	33.33	20.00	37.50	22.22	37.50
Grasses	66.67	60.00	66.67	80.00	62.50	77.78	62.50

ANDALEX
West Ridge Mine
Test Plot
Mid Fork Cut Area
Exposure: West
Slope: 28 deg.
Sample Date: 11 Sept 01

8.00	Mean	SDev	Freq	
				TREES & SHRUBS
5.00	0.63	1.65	12.50	*Prunus virginiana*
				FORBS
7.00	6.25	4.21	100.00	*Achillea millefolium*
3.00	1.00	1.80	25.00	*Artemisia ludoviciana*
0.00	2.75	2.22	75.00	*Medicago sativa*
5.00	0.63	1.65	12.50	*Urtica dioica*
				GRASSES
10.00	9.00	3.08	100.00	*Elymus smithii*
0.00	3.75	3.31	62.50	*Elymus spicatus*
10.00	8.50	4.56	87.50	*Elymus lanceolatus*
				COVER
40.00	32.50	9.68		Total Living Cover
5.00	6.25	2.17		Litter
50.00	50.63	10.73		Bareground
5.00	10.63	3.90		Rock
				% COMPOSITION
12.50	1.56	4.13		Shrubs
37.50	32.67	7.02		Forbs
50.00	65.76	9.03		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Test Plot (Midfork Stockpile)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 0-5 deg.

EXPOSURE: SW

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached data summaries)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Artemisia ludoviciana
Urtica dioica
Achillea millefolium

GRASSES
Elymus smithii
Muhlenbergia sp
Elymus lanceolatus

Table 1: Test Plot: Midfork Stockpile Total Cover

	Mean	SDev
Total Living Cover	70.63	14.67
Litter	8.88	8.45
Bareground	12.38	9.78
Rock	8.13	6.58

Table 2: Test Plot - Midfork Stockpile Cover By Species

FORBS	Mean	SDev	Freq
Artemisia ludoviciana	2.50	4.33	25.00
Urtica dioica	55.00	26.81	100.00
Achillea millefolium	0.63	1.65	12.50
GRASSES			
Elymus smithii	5.00	7.91	50.00
Muhlenbergia sp	1.88	4.96	12.50
Elymus lanceolatus	5.63	7.68	62.50

Table 3: Test Plot: Midfork Stockpile Composition

	Mean	SDev
Shrubs	0.00	0.00
Forbs	79.20	25.46

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Refer to Tables 1, 2, & 3 additional data summations.
- For a graphic comparison of living cover of all plots see Fig. 1 later in the report.
- For a graphic comparison of composition of all plots see Fig. 2 later in the report.
- For a graphic comparison of woody species density of all plots see Fig. 3 later in the report.

ANDALEX
West Ridge Mine
Test Plot
Mid Fork Stockpile
Exposure: South West
Slope: 0 - 5 deg

Sample Date: 11 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Artemisia ludoviciana	10.00	0.00	0.00	10.00	0.00	0.00	0.00
Urtica dioica	25.00	40.00	90.00	50.00	10.00	70.00	85.00
Achillea millefolium	0.00	0.00	0.00	0.00	0.00	5.00	0.00
GRASSES							
Elymus smithii	0.00	5.00	0.00	5.00	25.00	0.00	0.00
Muhlenbergia sp	15.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	0.00	5.00	0.00	5.00	25.00	5.00	0.00
COVER							
Total Living Cover	50.00	50.00	90.00	70.00	60.00	80.00	85.00
Litter	10.00	30.00	1.00	5.00	10.00	5.00	5.00
Bareground	35.00	10.00	4.00	20.00	5.00	10.00	5.00
Rock	5.00	10.00	5.00	5.00	25.00	5.00	5.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	70.00	80.00	100.00	85.71	16.67	93.75	100.00
Grasses	30.00	20.00	0.00	14.29	83.33	6.25	0.00

ANDALEX
West Ridge Mine
Test Plot
Mid Fork Stockpile
Exposure: South West
Slope: 0 - 5 deg
Sample Date: 11 Sept 01

8.00	Mean	SDev	Freq	
				TREES & SHRUBS
				FORBS
0.00	2.50	4.33	25.00	*Artemisia ludoviciana*
70.00	55.00	26.81	100.00	*Urtica dioica*
0.00	0.63	1.65	12.50	*Achillea millefolium*
				GRASSES
5.00	5.00	7.91	50.00	*Elymus smithii*
0.00	1.88	4.96	12.50	*Muhlenbergia sp*
5.00	5.63	7.68	62.50	*Elymus lanceolatus*
				COVER
80.00	70.63	14.67		Total Living Cover
5.00	8.88	8.45		Litter
10.00	12.38	9.78		Bareground
5.00	8.13	6.58		Rock
				% COMPOSITION
0.00	0.00	0.00		Shrubs
87.50	79.20	25.46		Forbs
12.50	20.80	25.46		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Test Plot (Strych Fill)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: 2 deg.

EXPOSURE: S

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached data summaries)

DOMINANT PLANT SPECIES OBSERVED:

TREES & SHRUBS
Rosa woodsii

FORBS
Artemisia ludoviciana
Achillea millefolium
Medicago sativa

GRASSES
Elymus smithii
Elymus spicatus
Stipa hymenoides
Elymus lanceolatus

Table 1: Test Plot: Strych Fill Total Cover

	Mean	SDev
Total Living Cover	41.88	3.48
Litter	9.75	9.71
Bareground	29.63	15.32
Rock	18.75	11.66

Table 2: Test Plot: Strych Fill Cover by Species

Strych Fill Area	Mean	SDev	Freq
TREES & SHRUBS			
Rosa woodsii	1.25	2.17	25.00
FORBS			
Artemisia ludoviciana	0.63	1.65	12.50
Achillea millefolium	5.00	3.54	75.00
Medicago sativa	11.25	3.31	100.00
GRASSES			
Elymus smithii	7.50	2.50	100.00
Elymus spicatus	7.50	6.12	75.00
Stipa hymenoides	1.88	3.48	25.00
Elymus lanceolatus	6.88	3.48	100.00

Table 3: Test Plot: Strych Fill Composition

	Mean	SDev
Shrubs	2.95	5.12
Forbs	40.82	10.01
Grasses	56.23	8.02

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Refer to Tables 1, 2, & 3 additional data summations.
- For a graphic comparison of living cover of all plots see Fig. 1 later in the report.
- For a graphic comparison of composition of all plots see Fig. 2 later in the report.
- For a graphic comparison of woody species density of all plots see Fig. 3 later in the report.

ANDALEX
West Ridge Mine
Test Plot
Strych Fill
Exposure: South
Slope: 2 deg
Sample Date: 11 Sept 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Rosa woodsii	0.00	5.00	5.00	0.00	0.00	0.00	0.00
FORBS							
Artemisia ludoviciana	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Achillea millefolium	10.00	5.00	0.00	10.00	5.00	0.00	5.00
Medicago sativa	10.00	5.00	15.00	10.00	10.00	15.00	10.00
GRASSES							
Elymus smithii	10.00	5.00	5.00	10.00	10.00	5.00	10.00
Elymus spicatus	10.00	20.00	10.00	5.00	0.00	10.00	0.00
Stipa hymenoides	0.00	0.00	0.00	0.00	10.00	5.00	0.00
Elymus lanceolatus	5.00	5.00	5.00	5.00	5.00	10.00	15.00
COVER							
Total Living Cover	45.00	45.00	40.00	40.00	40.00	45.00	45.00
Litter	5.00	5.00	5.00	5.00	8.00	10.00	35.00
Bareground	35.00	40.00	40.00	40.00	7.00	15.00	10.00
Rock	15.00	10.00	15.00	15.00	45.00	30.00	10.00
% COMPOSITION							
Shrubs	0.00	11.11	12.50	0.00	0.00	0.00	0.00
Forbs	44.44	22.22	37.50	50.00	37.50	33.33	44.44
Grasses	55.56	66.67	50.00	50.00	62.50	66.67	55.56

ANDALEX
West Ridge Mine
Test Plot
Strych Fill
Exposure: South
Slope: 2 deg
Sample Date: 11 Sept 01

8.00	Mean	SDev	Freq	
				TREES & SHRUBS
0.00	1.25	2.17	25.00	*Rosa woodsii*
				FORBS
0.00	0.63	1.65	12.50	*Artemisia ludoviciana*
5.00	5.00	3.54	75.00	*Achillea millefolium*
15.00	11.25	3.31	100.00	*Medicago sativa*
				GRASSES
5.00	7.50	2.50	100.00	*Elymus smithii*
5.00	7.50	6.12	75.00	*Elymus spicatus*
0.00	1.88	3.48	25.00	*Stipa hymenoides*
5.00	6.88	3.48	100.00	*Elymus lanceolatus*
				COVER
35.00	41.88	3.48		Total Living Cover
5.00	9.75	9.71		Litter
50.00	29.63	15.32		Bareground
10.00	18.75	11.66		Rock
				% COMPOSITION
0.00	2.95	5.12		Shrubs
57.14	40.82	10.01		Forbs
42.86	56.23	8.02		Grasses

WEST RIDGE MINE
QUALITATIVE DATA SHEET &
QUANTITATIVE SAMPLING NOTES

SITE NAME: Test Plot (Strych Stockpile)

MINE SITE: West Ridge Mine

DATE: September 11-12, 2001

WORKERS: P.D. Collins

SLOPE: variable

EXPOSURE: variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (see attached data summaries)

DOMINANT PLANT SPECIES OBSERVED:

FORBS
Medicago sativa
Artemisia ludoviciana
Achillea millefolium

GRASSES
Poa pratensis
Elymus smithii
Elymus spicatus
Elymus lanceolatus

Table 1: Test Plot: Strych Stockpile Total Cover

	Mean	SDev
Total Living Cover	53.13	7.47
Litter	9.75	5.52
Bareground	28.38	11.22
Rock	8.75	4.84

Table 2: Test Plot: Strych Stockpile Cover by Species

FORBS			
Medicago sativa	10.00	5.00	100.00
Artemisia ludoviciana	2.13	2.80	37.50
Achillea millefolium	2.50	2.50	50.00
GRASSES			
Poa pratensis	3.13	4.96	37.50
Elymus smithii	14.38	6.02	100.00
Elymus spicatus	6.00	4.69	75.00
Elymus lanceolatus	15.00	5.59	100.00

Table 3: Test Plot: Strych Stockpile Composition

	Mean	SDev
Shrubs	0.00	0.00
Forbs	28.57	12.01

NOTES:

- To view the area, refer to the photograph of the site included in this report.
- Refer to Tables 1, 2, & 3 additional data summations.
- For a graphic comparison of living cover of all plots see Fig. 1 later in the report.
- For a graphic comparison of composition of all plots see Fig. 2 later in the report.
- For a graphic comparison of woody species density of all plots see Fig. 3 later in the report.

ANDALEX
West Ridge Mine
Test Plot
Strych Stockpile
Exposure: Variable
Slope: Variable
Sample Date: 11 Sept 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
FORBS							
Medicago sativa	5.00	10.00	10.00	5.00	15.00	20.00	10.00
Artemisia ludoviciana	5.00	0.00	7.00	0.00	0.00	0.00	5.00
Achillea millefolium	0.00	5.00	0.00	5.00	5.00	5.00	0.00
GRASSES							
Poa pratensis	5.00	0.00	5.00	0.00	0.00	0.00	0.00
Elymus smithii	25.00	5.00	13.00	15.00	7.00	15.00	20.00
Elymus spicatus	0.00	10.00	5.00	5.00	8.00	5.00	0.00
Elymus lanceolatus	25.00	20.00	5.00	15.00	15.00	10.00	15.00
COVER							
Total Living Cover	65.00	50.00	45.00	45.00	50.00	55.00	50.00
Litter	5.00	10.00	5.00	5.00	10.00	10.00	10.00
Bareground	25.00	35.00	45.00	40.00	20.00	25.00	30.00
Rock	5.00	5.00	5.00	10.00	20.00	10.00	10.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forbs	15.38	30.00	37.78	22.22	40.00	45.45	30.00
Grasses	84.62	70.00	62.22	77.78	60.00	54.55	70.00

ANDALEX
West Ridge Mine
Test Plot
Strych Stockpile
Exposure: Variable
Slope: Variable
Sample Date: 11 Sept 01

8.00	Mean	SDev	Freq	
				TREES & SHRUBS
				FORBS
5.00	10.00	5.00	100.00	*Medicago sativa*
0.00	2.13	2.80	37.50	*Artemisia ludoviciana*
0.00	2.50	2.50	50.00	*Achillea millefolium*
				GRASSES
15.00	3.13	4.96	37.50	*Poa pratensis*
15.00	14.38	6.02	100.00	*Elymus smithii*
15.00	6.00	4.69	75.00	*Elymus spicatus*
15.00	15.00	5.59	100.00	*Elymus lanceolatus*
				COVER
65.00	53.13	7.47		Total Living Cover
23.00	9.75	5.52		Litter
7.00	28.38	11.22		Bareground
5.00	8.75	4.84		Rock
				% COMPOSITION
0.00	0.00	0.00		Shrubs
7.69	28.57	12.01		Forbs
92.31	71.43	12.01		Grasses

FIG. 1: WEST RIDGE MINE TEST PLOT
Total Living Cover

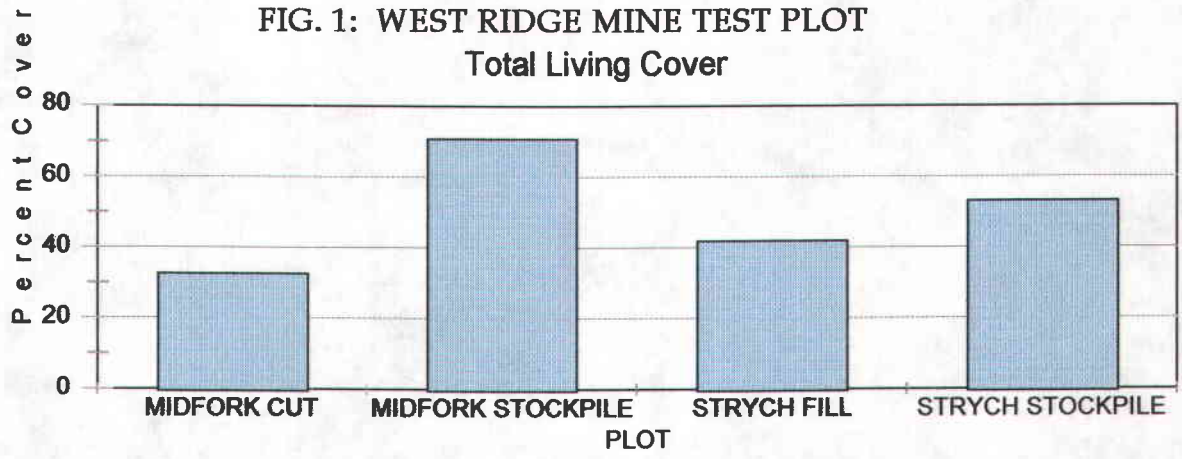


FIG 2: WEST RIDGE MINE TEST PLOT
Species Composition

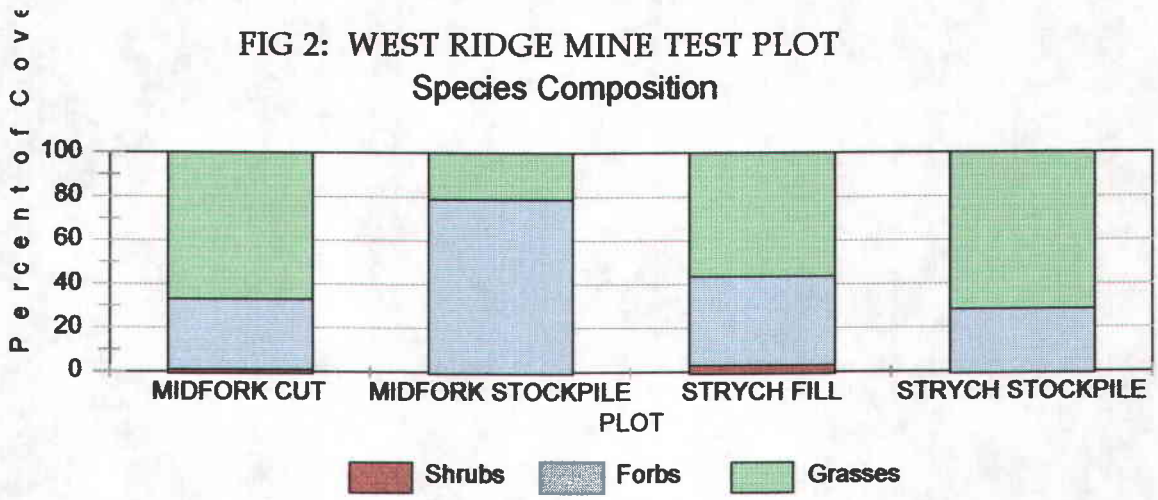
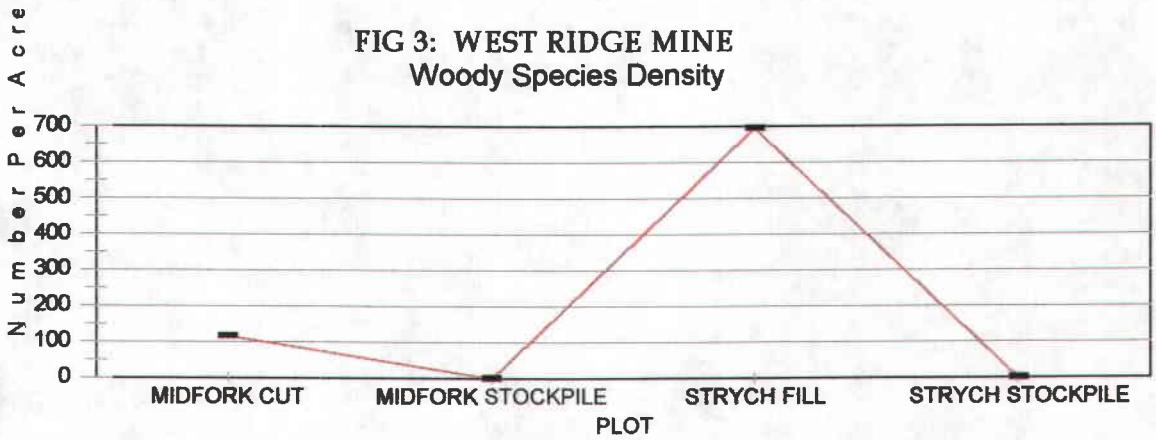


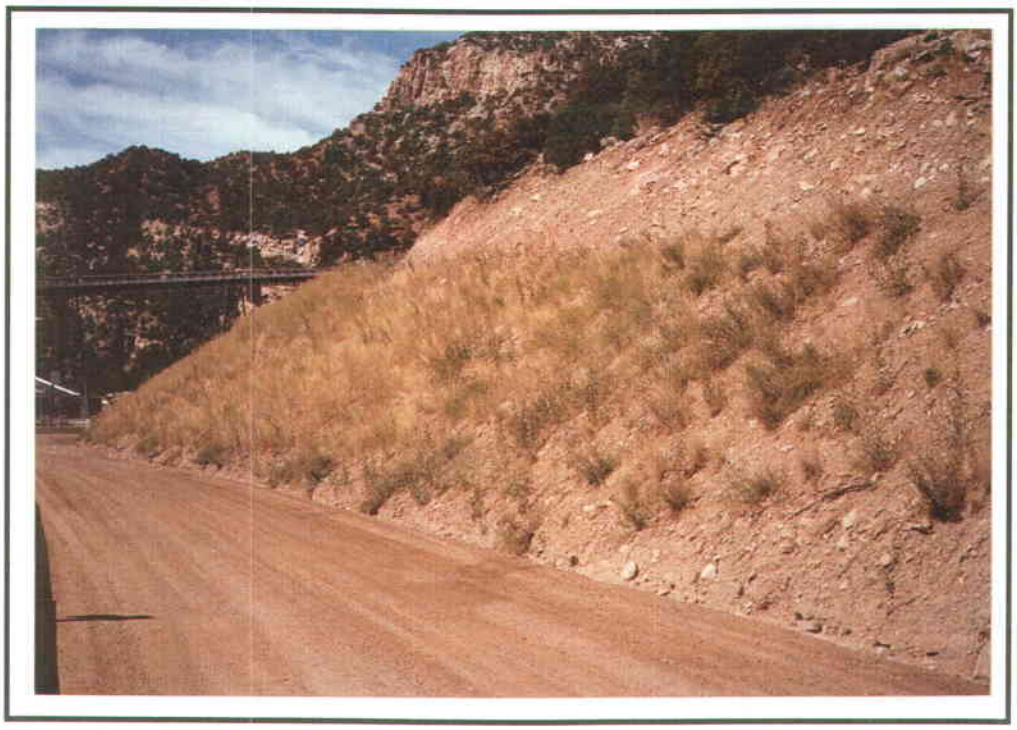
FIG 3: WEST RIDGE MINE
Woody Species Density



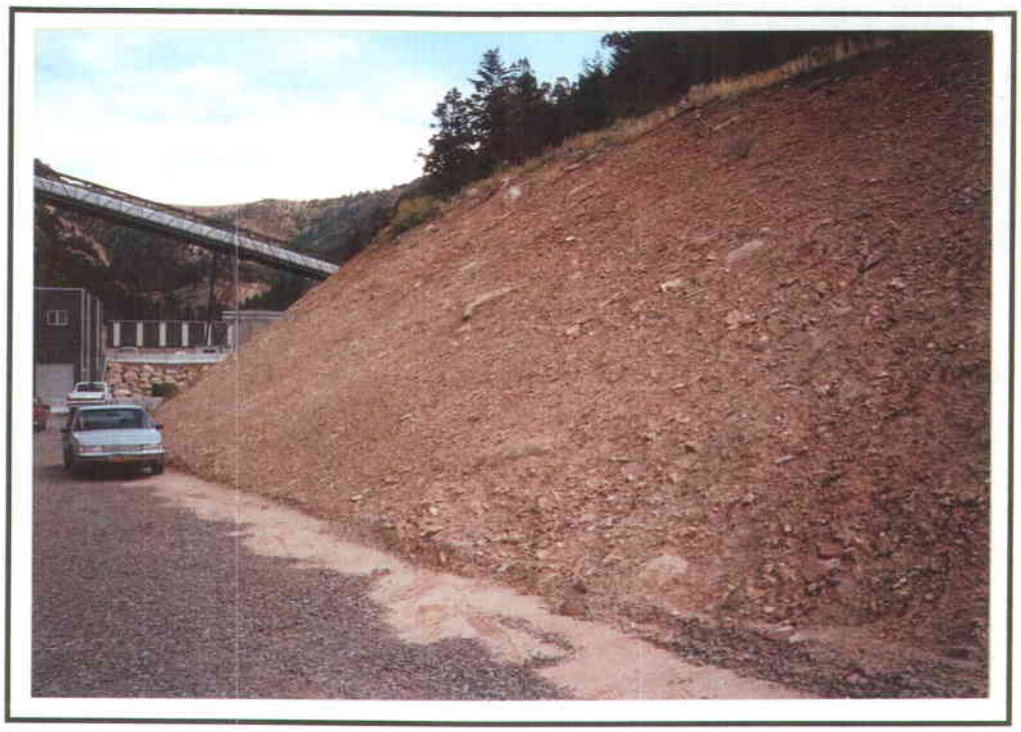
Engineer's Parking Lot Slopes

Conveyor Drop Road Slopes

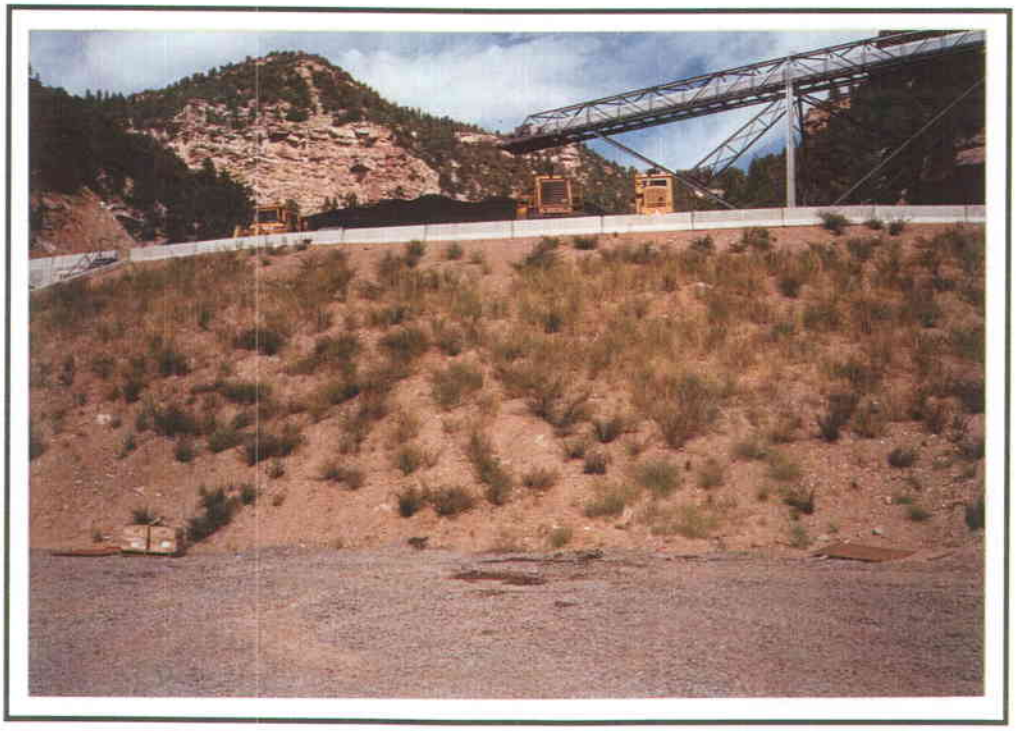
Conveyor Drop Road Berm



Road Slopes (Loadout to Warehouse)



Mine Office Parking Lot Slopes

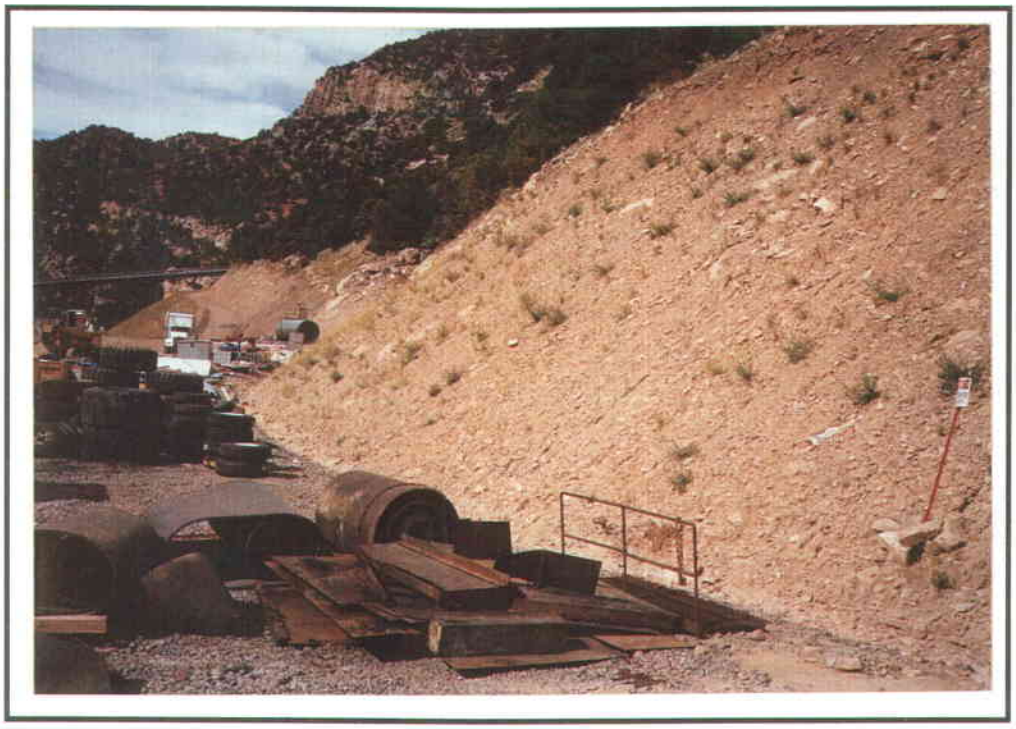


Coal Pile Slopes

Road Slopes (East of Loadout)

Loadout Area Slopes

Sediment Pond Slopes



Warehouse/Storage Lot Slopes

Topsoil Stockpile

Test Plot - Midfork Cut

Test Plot - Midfork Stockpile

Test Plot - Strych Fill

Test Plot - Strych Stockpile

Patrick Collins of Mt. Nebo Scientific performed the required soil sampling. The results of the lab analyses have been submitted to the Division as part of the mid-term review process.

ANNUAL SOIL MONITORING
AT THE
WEST RIDGE MINE, UTAH
2001

Prepared
for
WEST RIDGE RESOURCES, INC.

Prepared by

MT. NEBO SCIENTIFIC, INC.
330 East 400 South, Suite 6
Springville, Utah 84663
(801) 489-6937

Patrick D. Collins, Ph.D.

for

WEST RIDGE RESOURCES, INC
West Ridge Mine
P.O. Box 1077
Price, Utah 84501

February 7, 2002

INTRODUCTION

An "experimental practice" for the protection of soil resources was designed and implemented at the West Ridge Mine site. The experimental practice was designed to test the effectiveness of burying soils in-place rather than salvaging (removing) them and returning them at the time of final reclamation. The in-situ topsoil was covered with a geotextile material followed by bedding material to create working areas for surface operations of the mine.

As one means to monitor the buried soil resources, West Ridge Resources has committed to sampling mine pad areas in specific locations to determine whether or not they are being affected by coal and surface operations. In the document called *West Ridge Mine Experimental Practice Annual Evaluation 2000: Addendum to Appendix 2-6*, page 4, it states that "an annual monitoring program, starting in the year 2000, to sample and determine if the mine pad areas affected by the coal are being acidified". Number 2 on this same page states that "samples will be analyzed for acid/toxic-forming potential per Division guidelines....". In consulting with a soil specialist for the State of Utah, Division of Oil, Gas & Mining (DOGM) prior to sampling in 2001, it was determined that the most appropriate parameters to be analyzed on the mine pad areas were: pH, electrical conductivity (EC), sodium adsorption ratio (SAR) and calcium carbonate ($CaCO3$). Moreover, it was determined that sampling should be done at the depth of 6-12 inches as opposed to 3 inches as stated in addendum cited above.

METHODS

Soil samples were taken at the West Ridge Mine site in specified locations on September 11, 2001. Sample locations are shown on Map 2-2. A brief description of these locations follow.

T1	Located in the right fork, it was originally described to be 64 ft northwest of the Jersey Barrier in the center of the canyon. Because this location was so close to construction and where equipment was placed at the time, the sample was taken about 25 ft north of that location.
T2	Located in the left fork in the coal storage area, the sample was taken at the base of the dike in the center of the canyon.
T3	Located in the load-out area, the sample was take 54 ft uphill from the belt footer on the north side of the ditch.

The soil samples were taken at a depths from 3 to 6 inches at the above-described locations. Soils were analyzed at the Brigham Young University, Soil and Plant Analysis Laboratory. Parameters and laboratory methods used are shown below.

pH	ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 10-3.2, page 171. Perform pH on saturated paste.
ECe	Electrical conductivity reported as mmhos/cm 25°C. ASA Mono. No. 9, Part 2, (2 ed), 1982. Method 10-3.3, page 172-173.
SAR	Sodium Adsorption Ratio. Calculated from soluble Ca, Mg and Na.
CaCO3	Method S-13.20. Acetic acid dissolution method. Western States Laboratory Proficiency Testing Program. Soil and Plant Analytical Methods. 1998.

RESULTS

The laboratory results indicated no problems were evident from the parameters analyzed. The results are shown on Table 1. The laboratory report has been included in the Appendix of this report.

Table 1: Laboratory Results for Soil Sampling at West Ridge Mine (2001)

Sample No.	pH	EC	SAR	CaCO3
T1	8.04	6.20	2.19	19.21
T2	7.52	2.70	0.74	5.10
T3	7.83	4.20	1.94	15.00
Mean	7.80	4.37	1.62	13.10
SDev.	0.26	1.76	0.78	7.24

BRIGHAM YOUNG UNIVERSITY

Soil and Plant Analysis Laboratory
255 WIDB
Provo, UT 84602
378-2147

Date: 09-21-2001
Time: 19:51:14
Customer # 49
Telephone: 489-6937

Benson Agriculture and Food Institute

Agronomy and Horticulture Department

Name: Mt. Nebo Scientific
Street: P.O. Box 337
City: Springville State: Ut Zip: 84663

SOIL TEST REPORT AND RECOMMENDATIONS

Sample Identification	Crop to be Grown	pH	% Sand	% Silt	% Clay	Soil Texture	Cation Exchange meq/100g	% Organic Matter
T2	Natives	7.52						

Soil Test	Results	Very Low	Low	Ade-quate	High	Very High	Recommendations
Nitrate—Nitrogen ppm N							
Phosphorus ppm P							
Potassium ppm K							
Salinity-ECe mmhos/cm	2.70		X				no salinity problem
Calcium PPM Ca	369.30						
Magnesium PPM Mg	356.40						
Sodium PPM Na	83.36						
Sodium Adsorption Ratio SAR	0.74	X					no sodium hazard
% CaCO3	5.10						no acid problem

NOTES:

BRIGHAM YOUNG UNIVERSITY

Soil and Plant Analysis Laboratory
255 WIDB
Provo, UT 84602
378-2147

Date: 09-21-2001
Time: 19:51:47
Customer # 49
Telephone: 489-6937

Benson Agriculture and Food Institute

Agronomy and Horticulture Department

Name: Mt. Nebo Scientific
Street: P.O. Box 337
Springville | Ut | 84663
City | State | Zip

SOIL TEST REPORT AND RECOMMENDATIONS

Sample Identification	Crop to be Grown	pH	% Sand	% Silt	% Clay	Soil Texture	Cation Exchange meq/100g	% Organic Matter
T3	Natives	7.83						

Soil Test	Results	Very Low	Low	Ade-quate	High	Very High	Recommendations
Nitrate—Nitrogen ppm N							
Phosphorus ppm P							
Potassium ppm K							
Salinity-ECe mmhos/cm	4.20				X		salinity a problem for sensitive crops
Calcium PPM Ca	520.30						
Magnesium PPM Mg	243.80						
Sodium PPM Na	214.88						
Sodium Adsorption Ratio SAR	1.94		X				no sodium hazard
% CaCO3	15.00						no acid problem

NOTES:

BRIGHAM YOUNG UNIVERSITY

Soil and Plant Analysis Laboratory
255 WIDB
Provo, UT 84602
378-2147

Date: 09-21-2001
Time: 19:50:42
Customer # 49
Telephone: 489-6937

Benson Agriculture and Food Institute

Agronomy and Horticulture Department

Name: Mt. Nebo Scientific
Street: P.O. Box 337
Springville | Ut | 84663
City | State | Zip

SOIL TEST REPORT AND RECOMMENDATIONS

Sample Identification	Crop to be Grown	pH	% Sand	% Silt	% Clay	Soil Texture	Cation Exchange meq/100g	% Organic Matter
T1	Natives	8.04						

Soil Test	Results	Very Low	Low	Ade-quate	High	Very High	Recommendations
Nitrate—Nitrogen ppm N							
Phosphorus ppm P							
Potassium ppm K							
Salinity-ECe mmhos/cm	6.20				X		salinity a problem for sensitive crops
Calcium PPM Ca	661.90						
Magnesium PPM Mg	45.38						
Sodium PPM Na	215.84						
Sodium Adsorption Ratio SAR	2.19		X				no sodium hazard
% CaCO3	19.21						no acid problem

NOTES:

A rain gage has been purchased and installed. Records will be kept in 2002.

APPENDIX C

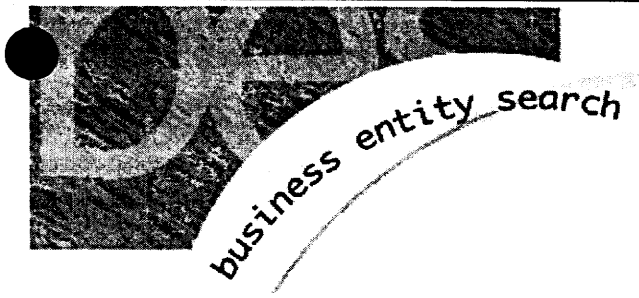
Legal Financial, Compliance and Related Information

Annual Report of Officers
As submitted to the Utah Department of Commerce

Other change in ownership and control information
As required under R645-301-110

CONTENTS

Department of Commerce Annual Report



Utah Department of Commerce

return to business entity search

Name	Type	City	Status
WEST RIDGE RESOURCES, INC.	Corporation	SALT LAKE CITY UT	Active

Principal Information

Position	Name	Address		
Director	DOUGLAS H SMITH	45 W 10000 S STE 401	SANDY	UT 84070
Director	PETER B GREEN	45 W 10000 S STE 401	SANDY	UT 84070
Director	RONALD C BEEDIE	45 W 10000 S STE 401	SANDY	UT 84070
President	DOUGLAS H SMITH	45 W 10000 S STE 401	SANDY	UT 84070
Registered Agent	JOHN S KIRKHAM	201 S MAIN STE 1100	SALT LAKE CITY	UT 84111
Secretary	JOHN BRADSHAW	45 W 10000 S STE 401	SANDY	UT 84070
Vice President	SAMUEL C QUIGLEY	45 W 10000 S STE 401	SANDY	UT 84070

Additional Principals on file at Division of Corporations:
N

Cancel | Do Another Search

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APPENDIX D

Mine Maps

As required under R645-302-525-270

CONTENTS

Mine Map with Production Areas

APPENDIX E

Other Information

In accordance with the requirements of R645-301 and R645-302

CONTENTS

None