Filed: 1/8/2014 8:23:01 AM WEQC

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Approved Form 1 (S)

See file 1 of for original form.

I.A: Application for Small Mine Permit, Form 1(s)

This section contains the signed and approved Form 1 (s) and the DEQ Director's and LQD Administrator's approval letter.

Copy

NOTE: **DO NOT MODIFY THIS FORM.** Use typewriter or print neatly with blue ink. Submit two (2) copies one of which must contain an original signature. ***Pages 1 & 2 must be initialed and dated where indicated.***

STATE OF WYOMING

DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION
APPLICATION FOR
SMALL MINING PERMIT OR
AMENDMENT TO A SMALL MINING PERMIT

In accordance with Wyoming Statute §35-11-401(j), for noncoal surface mining operations, involving not more than ten thousand (10,000) cubic yards of overburden and ten (10) acres of affected land in any one (1) year.

1. (a) Name, Mailing Address, Phone Number, and Fax Number of Applicant: Willits Company Inc., P.O. Box 825 Cheyenne WY 82003
ph: (307) 634-2300 fax: (307) 634-2310

(b) If the applicant is a partnership, association, (corporation) or limited liability co., (circle one) the names and addresses of all managers, partners and executives directly responsible for operations in this State: If the applicant is a partnership, association or corporation, the names and addresses of all managers, partners and executives directly responsible for operations in this State:

Name: Robert Willits Address: P.O. Box 825, Cheyenne, WY 82003
Title: President Phone No. (307) 634-2300

Name: Colleen Willits Address: P.O. Box 825, Cheyenne WY 82003
Title: Vice President/Secretary Phone No. (307) 634-2300

Name: _____ Address: _____
Title: _____ Phone No. _____

Name: _____ Address: _____
Title: _____ Phone No. _____

2. Name, mailing address, telephone number, and fax number of the agent or person to whom any notice under the provisions of Wyoming Environmental Quality Act or Rules and Regulations adopted thereunder may be sent: Robert Willits, P.O. Box 825, Cheyenne WY 82003
ph: (307) 634-2300 fax: (307) 634-2310

3. Attach the following information as part of the specific appendices:

(a) APPENDIX "A"

Names and addresses of surface and mineral owners of record within the proposed permit (amendment) area.

(b) APPENDIX "B"

(i) Names and last known addresses of the owners of record of the surface rights of the lands immediately adjacent to the proposed permit (amendment) area.

(c) APPENDIX "C"

(i) All lands to be included in the proposed permit (amendment) area shall be tabulated by legal subdivision, section, township, range, and county, if any, and the number of acres for each subdivision listed.

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(ii) Lands which are to be part of the proposed permit (amendment) area, for which no right to mine is claimed shall be identified in item (c)(i) above as such and tabulated separately listing the number of acres for each legal subdivision.

(iii) Lands which are located within other permit areas shall be identified and a copy of the land use agreement with the other permittee shall be attached as part of this application.

(iv) An original United States Geological Survey topographic map showing; (1) the permit area boundary; (2) the boundaries of the lands to be affected; (3) the location of adjudicated groundwater wells inside and within one-half mile of the permit area; and (4) the outline of all areas previously disturbed by or which will be affected by underground mining.

(d) APPENDIX "D"

Support information as described in Land Quality Division Noncoal Rules and Regulations, Chapter 9, Section 1.(a)(i)(C).

4. Mineral(s) to be mined: Quarry Rock, Granite, Sand and Gravel
Mining method to be used: surface mining

5. Estimated dates of commencement and termination of the proposed operation:

Start: 10/1/08 (upon approval of permit) Terminate: 10/30/2058

5. The total number of acres in the proposed permit (amendment) area and an estimate of the total number of acres to be affected by the operation:

Permit Acres		Approved Acreage to Affect	
Original Permit		Original Permit	
Approved Amendments		Approved Amendments	
This Application	255.9	This Application	
Total Acres	255.9	Total Acres	

Note: Total Affected Acreage must not exceed ten (10) acres per year.

7. The name, if any, by which the permit (amendment) lands or any part thereof are known: _____

8. A filing fee of $100.00 ($200.00 for amendments) plus $10.00 for each acre in the requested permit (amendment) area. The maximum fee shall not exceed $2000.00.

9. The application shall include a mining plan and reclamation plan dealing with the extent to which the mining operation will disturb, change or deface the lands to be affected, the proposed future use or uses and the plan whereby the operator will reclaim the affected lands to the proposed future use or uses. The mining plan and reclamation plan shall be consistent with the objectives and purposes of the Wyoming Environmental Quality Act and the Rules and Regulations promulgated.

10. The applicant may have the local Soil Conservation District assist in preparation of, provide data for, permit research, review and comment upon the reclamation.

11. The following obligation is incumbent upon the applicant upon approval of this application:

(a) The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit, to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

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FINAL SWORN STATEMENT

State of Wyoming)
)ss
County of Laramie)

I Robert Willits being duly sworn on my oath that I am the applicant (or chief executive officer of the applicant if a corporation) for the foregoing mining permit (amendment); that I have read the said application and fully know the contents thereof; that all statements contained in the permit (amendment) application are true and correct to my best knowledge and belief, by execution of this statement I certify that Willits Company Inc. has the right and power by legal estate owned to mine from the land for which this permit (amendment) is desired; that Willits Company Inc has not forfeited, or is not involved in forfeiture proceedings for, a bond posted for reclamation purposes; and by completion and submission of this application, hereby give consent to allow the Director, the Administrator and/or his authorized representatives, at reasonable times and upon presentation of appropriate credentials, to enter upon and have access to any and all lands covered by this permit and amendments thereto and to inspect and copy any records or documents, obtain or monitor any samples or sampling, for any activities associated with the operation and permit. Records or equipment shall not require advance notice.

Dated this 14th day of October, 2008.

(Corporate Seal)

Signature: R C Willits

Name: Robert C. Willits
(Printed or typed)

Title: _____

The foregoing instrument was acknowledged before me by Robert C. Willits this 14th day of October, 2008.

Witness my hand and official seal.

Raymond J. Milczewski
(Notary Public or Secretary if a Corporation)

Raymond J. Milczewski
(Name printed or typed)

(Notary Seal)

My Commission Expires: 9/16/2011

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Form 1(s)
Rev. 6/01
Page 3 of 4

Permit No. _____
TFN No. _____

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THE STATE OF WYOMING)
)ss
DEPARTMENT OF ENVIRONMENTAL QUALITY)

This is to certify that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This permit (amendment) grants only the right to affect the land described in Appendix "C" of the application.

Acceptance of the approved permit/amendment obligates the operator to abide by the standard conditions specified in Item 11. of this application form. Any condition and/or special condition attached to approval of this permit/amendment shall supersede and/or replace any conflicts with the original permit, amendments or any revision.

Additional special conditions and limitations are as follows:

Approved: _____
Administrator
Land Quality Division
Department of Environmental Quality

Approved: _____
Director
Department of Environmental Quality

Effective Date: _____

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Permit No. _____
TFN No. _____

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Approved Form 3

See file 1 of for original form.

I.B: License to Mine Application, Form 3

This section contains the signed and approved Form 3 for Willing Company Inc.
At this time, Willits Company Inc. is the only licensee.

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NOTE: **DO NOT CUT OR MODIFY THIS FORM.** Use typewriter or print neatly with blue or black ink. Submit two (2) copies one of which must be an original Form 3 as supplied by the Department of Environmental Quality, Land Quality Division.

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STATE OF WYOMING
DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION
APPLICATION FOR LICENSE TO MINE

This application in duplicate for a license to mine is submitted in accordance with the provisions of the Wyoming Statute §35-11-410.

1. Name, telephone number, and mailing address of applicant: Willits Company Inc. P.O. Box 825 Cheyenne, WY 82003, ph: (307) 634-2300

2. Location of mining operation (County): Laramie

3. (a) A copy of the mining permit, submitted herewith, for the lands which are to be affected by the proposed mining operation:

   Permit No. _____ Issued _____ day of _____, _____.

   (b) If the applicant is other than the permit holder, a copy of the instrument of permission submitted herewith, from the permit holder granting to the applicant the right thereto;

4. If the applicant is other than the permit holder:

   (a) A statement that the applicant has never had a permit issued by the Administrator revoked;

   (b) Or license to mine issued by the board revoked;

   (c) Or bond posted to comply with the act forfeited for intentional and substantial violation of the provisions of this act.

5. Maps showing the location and the numbers of acres to be affected by the proposed mining operation for the first year of operation if less than the full extent of the permit area.

   (Map of affected area may be submitted with legal description if desired). The scale of maps shall be reasonable so as to show necessary detail, width of map not to exceed 48".

   Suggested scales:
   Up to 10 acres - 1" = 100'
   Up to 40 acres - 1" = 200'
   40 acres or more - 1" = 400'

6. Date (month and year) when operation will commence: 10/1/08
   Estimated date (year) of termination of the proposed mining operation: 10/30/2058

7. A fee of $25.00.

8. Name, telephone number, and address of the agent or persons to whom any notice under the provisions of the Wyoming Environmental Quality Act, Land Quality Division or Rules and Regulations adopted thereunder may be sent: Robert Willits, P.O. Box 825, Cheyenne, WY 82003

9. The provisions of this license are severable, and if any provision of the license, or the application of any provision of this license to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this license shall not be affected thereby.

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Permit No. _____
TFN No. _____

53/N

FINAL SWORN STATEMENT

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State of Wyoming)
)ss.
County of Laramie)

I Robert W. Willits being duly sworn on my oath that I am the applicant (or the President or Vice President if the applicant is a corporation) for the foregoing "License to Mine"; that I have read the said application and fully know the contents, thereof; and that all statements contained in the License to Mine application are true and correct to my best knowledge and belief; by execution of this statement I certify that Willits Company Inc., applicant or entities controlled by or under common control with the applicant has the right and power by the legal estate owned to mine from the land for which this License to Mine is desired; that applicant or entities controlled by or under common control with the plicant has not forfeited, or is not involved in forfeiture proceedings for, a bond posted for reclamation purposes; and if a **surface coal mining application**, that applicant or entities controlled by or under common control with the applicant has paid the reclamation fees for this and all coal mining operations under the jurisdiction of P.L. 95-87 as required by Title IV of that law; and that applicant or entities controlled by or under common control with the applicant has not had any Federal or State Coal mining permits suspended or revoked the five years preceding the date of this application.

Dated this 14th day of October, 2008.

Signature R C Willits

(Corporate Seal)

Name Robert C. Willits
(printed or typed)

Title

The foregoing instrument was acknowledged before me by Robert C Willits, is 14 day of October, 2008.

Witness my hand and official seal.

Raymond J. Mil
Notary Public or Secretary if a Corporation

Raymond J. Milczewski
Title (Name printed or typed)

RAYMOND J. MILCZEWSKI-NOTARY PUBLIC
COUNTY OF LARAMIE STATE OF WYOMING
MY COMMISSION EXPIRES SEP. 14, 2011

This application when returned to you with the validating signature of the Administrator of the Land Quality Division, Department of Environmental Quality, becomes your License No. _____.
Effective date: _____.

Approved by:

By: _____
Administrator
Land Quality Division
Department of Environmental Quality

_____
Director
Department of Environmental Quality

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FORM 3
Rev. 1/00

Permit No. _____
TFN No. _____

Table I.C-1				
Reclamation Task	**Production Unit**	**Cost ($)/Unit**	**Cost for Task**	**Chapter 12 Appendix**
Highwall Reduction/Backfill				
Drill and blast costs (rubble zones) ***	1,800 CY	$3.00 CY	$5,400.00	Per LQD
Dozing/Backfill Costs	90,000 CY	$0.29 CY	$26,460.00	E
Rough Grade	5.73 Acre	$79.16 Acre	$453.59	M
Process Pond Grading	750.00 CY	$0.29 CY	$220.50	E
Final Grade	5.73 Acre	$64.77 Acre	$371.13	G
Ripping of Pit Floor	5.73 Acre	$1,048.11 Acre	$6,005.67	I1
Noxious Weed Prevention**	10.00 Acre	$15.00 Acre	$150.00	
Fence Installation/Removal	2,000 LF	$0.50 LF	$1,000.00	H
Topsoil Distribution	2,311 CY	$0.99 CY	$2,297.13	B
Revegetation	10.00 Acre	$650.00 Acre	$6,500.00	Q
Subtotal			**$48,858**	
Contingency for Misc Items		35%	$17,100.31	
Total Bond (to the nearest hundred)			**$66,000**	

*Assumes first year annual mining quantities at an estimated 392,000 tons. This estimate is subject to change depending on economic conditions. Surface disturbance will consume a much greater acreage and is depicted within the bond calculation.

**80% of weed spraying costs paid for by Laramie County Weed and Pest. Only 20% of estimated costs included in bond calculation.

***Cost for task of blasting rubble zones provided by LQD and based on estimate provided by Yenter Blasting contractors.

SUPERSEDES 03/062

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Surface Owner
Consent

I.C.1: Reclamation Performance Bond – Bond Calculations

This section contains the reclamation bond estimate for existing disturbance under the ET1472 authorization, and projected disturbance for the first year of mining under the small mine permit authorization. Subsequent Annual Reports will contain updated and revised bond calculations as the mining operation develops. **Table I.C-1 contains the calculated reclamation bond estimate.**

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Reclamation Performance Bond Calculations

Pit Backfill and Highwall Reduction

A. Area Bond*

1. Highwall Reduction: At the time of reclamation, a stability analysis will be performed by an experienced engineer or geologist to ensure highwalls are stable. The reclaimed surface incorporates the final highwalls benches into the post mining topography if the highwall height is larger than thirty (30) feet tall. If highwall heights are less than thirty (30) feet tall, the highwall slope will be reduced through the use of mine wastes (manufactured fines and rejected materials), blasting and/or imported clean fill. Should highwalls exceeding thirty (30) feet in height be deemed unstable, rubble zones will be created by drilling and blasting those unstable zones. As a precautionary measure, the **bond estimate** contains the creation of two rubble zones for **existing and one-year projected disturbance**. The number or rubble zones were based on **1400** linear feet of highwall that would not be completely backfilled and reduced to a 3:1 slope. Rubble zones were estimated to be placed at approximately **700** foot intervals.

    a. Slope Reduction: Mining at Harriman Quarry will utilize sixty (60) foot benches and during reclamation the bottom most bench will be backfilled with mine wastes (manufactured fines and rejected materials) and/or imported clean fill to half of the vertical height of the higwall (thirty (30) feet). The backfilled areas will be compacted, graded and reduced to a 3:1 slope to ensure stability of the benched highwall system. **Existing and one-year projected disturbance will yield a total of approximately 2300** linear feet of highwall. **Approximately 850** feet of this highwall will have an average height of sixty (60) feet; **approximately 550** feet will have an average height of forty-five (45) feet; and **approximately 900** feet will have an average height of thirty (30) feet. Based on the above backfilling technique, all **2300** linear feet of highwall **are considered backfilled thirty feet high and reduced to a 3:1 slope in the bond estimate (in practice, the western highwall will always remain open during mining)**. A total of **approximately 118,000** CY will need to be backfilled using a Caterpillar **D9N** Dozer. It is estimated this material will need to be moved approximately 150 feet
    b. Breaking Higwalls (Rubble Zones): Two (2) rubble zones measuring 20' x 60' x 20'. Each rubble zone contains 900 CY. A total of 1800 CY will require blasting to create these rubble zones.

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NOTE FOR ALL DESCRIPTIONS CALCULATIONS BELOW:
The information presented below is used to calculate reclamation cost if the mine required immediate reclamation. Because the permit area has been platted and zoned for commercial/industrial postmining land use, most of the activities presented below (i.e., rough grading, pond backfill, final grading, scarification, topsoil distribution, seeding/revegetation) will not occur immediately following mining. Some rough grading, some final grading, and some temporary seeding will likely occur immediately following mining, but many other activities will not. The description of activities and reclamation bond estimate presented below assume full reclamation for existing and one-year projected disturbance areas as a precaution in the event that immediate, full reclamation is necessary.

2. Rough Grade Backfill: **Approximately 12.9 acres of disturbance are used for the rough grading calculations. This encompasses the approximate total existing and one-year projected disturbance area. In practice, none of this area will be initially reclaimed as the area will be used for mine operations. As fill material becomes available, portions of the mined area will be brought to rough grade, and drainage will be routed through sediment control facilities to the constructed drainage channel and the undisturbed, premining channels.** Rough grading will only be completed on those areas that have been mined.

3. Process Pond Backfilling: Two (2) process ponds measuring 20' x 10' x 50' each will be backfilled. The total estimated cubic yards to backfill these ponds is 750 CY. The cost was determined by assuming a 150 foot haul with a D9N dozer. This reclamation cost is included in Process Pond **Backfill**/Grading line item.

4. Final Grade Backfill: **Approximately 12.9 acres of disturbance are used for the final grading calculations. This encompasses the approximate total existing and one-year projected disturbance area. In practice, none of this area will be initially reclaimed as the area will be used for mine operations. As fill material becomes available, portions of the mined area will be brought to pre-topsoil final grade, and drainage will be routed through sediment control facilities to the constructed drainage channel and the undisturbed, premining channels.** Final grading will only be completed on those areas that have been mined.

B. Incremental Bond*

1. **Scarification/Ripping** of Pit Floor: The pit floor will be **scarified or ripped with a grader or dozer (depending on compaction levels)** prior to topsoil application to promote successful vegetation establishment. **As noted above, this task is actually unlikely to be undertaken pit floor-wide. The presence of compacted substrate is generally beneficial to the futur**

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development of the site as a commercial/industrial use. Scarification/ripping activities will eventually occur in areas where commercial/industrial infrastructure will not be installed (i.e., future parking islands, stormwater facilities, open areas, etc.) Approximately 12.9 acres of disturbance are used for the scarification calculations. This encompasses the approximate total existing and one-year projected disturbance area.

2. Topsoil Distribution: On average, **approximately** (3) inches of topsoil will be **salvaged** from the **existing and one-year projected disturbance area (12.9** acres) and stockpiled per the mine plan. The exact location of the topsoil stockpiles are unknown at this time so an estimated **1,000** foot haul was used to estimate the cost. Topsoil will be spread using a combination of equipment such as scrapers, loaders and graders. The pit floor and access road will be **scarified**/ripped with a **grader**/dozer prior to topsoil application to promote successful vegetation establishment. **Please refer to notes above regarding delay in topsoil application (and overall reclamation) due to commercial/industrial postmining land use approval.**

3. Demolition: No permanent structures will be erected **through the one-year projected disturbance time frame. Therefore, no demolition costs are included in the reclamation bond estimate.**

4. Revegetation and Weed Prevention: Revegetation will occur as detailed in the Reclamation Plan. Weed control as well as other post-seeding maintenance will be performed should reclamation occur **within the one-year projected disturbance time frame. Approximately 12.9 acres of disturbance are used for the revegetation and weed prevention calculations. This encompasses the approximate total existing and one-year projected disturbance area. Please refer to notes above regarding delay in revegatation activities (and overall reclamation) due to commercial/industrial postmining land use approval.**

5. **Fencing (and Other, Future Infrastructure): A cost to install 2000 LF of fencing has been included in the bond estimate per LQD request. In general, however, the landowner has requested that all installed infrastructure remain in-place for their use in the postmining environment.**

6. Miscellaneous Items: A contingency of **25%** for Mobilization, overhead, profit, project design, administration and accounting was used.

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Table I.C-1: Reclamation Bond Estimate Worksheet

Willits Company, Inc.	Harriman Quarry	Current Authorization #: ET1472	Estimate For: SP Application TFN 5 3/062 (2013)
Mine Statistics	Through Current Reporting Period	1-Year Projection - Next Reporting Period	Current and 1-Year Projected Totals
Disturbed Acreage	9.80	3.09	12.89
Topsoil Quantity (CY)	6866.00	2164.89	9030.89
Topsoil Depth (FT)	0.43	0.43	0.25
Highwall Backfill Height (FT)	30.00	30.00	30.00
Length of Highwall (FT)	1800.00	567.55	2367.55
Highwall Length:Acreage Ratio	183.67	183.67	183.67
Highwall Backfill Slope (X:1)	3.00	3.00	3.00
Highwall Reduction Total (CY)	90000.00	28377.55	118377.55
Cost Calculations	Quantity	Unit Cost	Cost/Task
Highwall Reduction Backfill (CY)[1]	118377.55	$0.351	$41,550.52
Rough Grading (Acres)[2]	12.89	$93.42	$1,204.18
Drill And Blast - Rubble Zones (CY)[5]	1800.00	$3.00	$5,400.00
Process Pond Backfill/Grading (CY)	7500.00	$0.351	$2,632.50
Final Grading (Acres)[2]	12.89	$75.25	$969.97
Scarification (Acres)[2]	12.89	$69.02	$889.67
Topsoil Distribution (CY)[3]	9030.89	$1.084	$9,789.49
Seeding/Revegetation (Acres)[4]	12.89	$650.00	$8,378.50
Fence Installation (LF)	2000.00	$0.50	$1,000.00
Noxious Weed Prevention (AC)[6]	12.89	$15.00	$193.35
Subtotal ($)			**$72,008.18**
Contingency Percentage	25.00%	Contingency Amount	$18,002.05
Total Bond with Contingency Rounded Up to the Nearest $100			**$90,100.00**
Current Bond Amount ($)			**$11,000.00**
Bond Adjustment ($)			**$79,100.00**

Notes

[1]LQD Guideline 12, December 2012, App E, Pg 28; Dozing, < 150', 0% grade, D9 Class Machine.

[2]LQD Guideline 12, December 2012 - No Adjustments.

[3]LQD Guideline 12, December 2012, App B, Pg 18, Case #1; Scraper Distribution, 1000' One-Way

[4]Personal communication with Rocky Mountain Reclamation.

[5]Based on estimate from Yenter Blasting.

[6]Based on cost estimate from Laramie County W&P - 80% of cost covered by LCWP; amount in estimate is 20% of total cost and is the cost to the operator.

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I.C.1: Reclamation Performance Bond – Bond Calculations

This section contains the bond calculations projected for the first twelve (12) months of the mining operation. Subsequent Annual Reports will contain updated and revised bond calculations as the mining operation develops. Table I.C-1 contains the total calculated bond.

SUPERSEDED

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Reclamation Performance Bond Calculations

Pit Backfill and Highwall Reduction

A. Area Bond*

1. Highwall Reduction: At the time of reclamation, a stability analysis will be performed by an experienced engineer or geologist to ensure highwalls are stable. The reclaimed surface incorporates the final highwalls benches into the post mining topography if the highwall height is larger than thirty (30) feet tall. If highwall heights are less than thirty (30) feet tall, the highwall slope will be reduced through the use of mine wastes (manufactured fines and rejected materials), blasting and/or imported clean fill. Should highwalls exceeding thirty (30) feet in height be deemed unstable, rubble zones will be created by drilling and blasting those unstable zones. As a precautionary measure, the highwall reduction cost item contains the creation of two rubble zones for the year one mining block. The number or rubble zones were based on 1100 linear feet of highwall that would not be completely backfilled and reduced to a 3:1 slope. Rubble zones were estimated to be placed at approximately 500 foot intervals.

    a. Slope Reduction: Mining at Harriman Quarry will utilize sixty (60) foot benches and during reclamation the bottom most bench will be backfilled with mine wastes (manufactured fines and rejected materials) and/or imported clean fill to half of the vertical height of the higwall (thirty (30) feet). The backfilled areas will be compacted, graded and reduced to a 3:1 slope to ensure stability of the benched highwall system. The year one mining block will have a total of 1800 linear feet of highwall. 700 feet of this highwall will have an average height of sixty (60) feet; 400 feet will have an average height of forty-five (45) feet; and 700 feet will have an average height of thirty (30) feet. Based on the above backfilling technique, all 1800 linear feet of highwall will be backfilled thirty feet high and reduced to a 3:1 slope. A total of 90,000 CY will need to be backfilled using a Caterpillar D8N Dozer. It is estimated this material will need to be moved approximately 150 feet
    b. Breaking Higwalls (Rubble Zones): Two (2) rubble zones measuring 20' x 60' x 20'. Each rubble zone contains 900 CY. A total of 1800 CY will require blasting to create these rubble zones.

2. Rough Grade Backfill: Approximately 5.73 disturbed acres will require rough grading. Per the requirements of the first reclamation performance bond calculation, cost for grading will only depict the first 12 months of mining. Rough grading will only be completed on those areas that have been mined. Surface disturbance within the first year of mining will encompass a much larger area, but will not require rough grade backfill, only topsoil distribution.

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3. Process Pond Backfilling: Two (2) process ponds measuring 20' x 10' x 50' each will be backfilled. The total estimated cubic yards to backfill these ponds is 750 CY. The cost was determined by assuming a 150 foot haul with a D9N dozer. This reclamation cost is included in Process Pond Grading line item.

4. Final Grade Backfill: Approximately 5.73 disturbed acres will require final grading. Drainage will be routed to the premining channels and all contours would be blended to match those of the surrounding areas. Final grading will only be completed on those areas that have been mined. Surface disturbance within the first year of mining will encompass a much larger area, but will only require topsoil distribution.

B. Incremental Bond*

1. Ripping of Pit Floor: The pit floor will be ripped with a dozer prior to topsoil application to promote successful vegetation establishment.
The disturbed area requiring ripping is Approximately 5.73 acres.

2. Topsoil Distribution: On average, an approximate (3) inches of topsoil will be removed from the affected area (5.73 acres) and stockpiled per the mine plan. The exact location of the topsoil stockpiles are unknown at this time so an estimated 500 foot haul was used to estimate the cost. Topsoil will be spread using a combination of equipment such as scrapers, loaders and graders. The pit floor and access road will be ripped with a dozer prior to topsoil application to promote successful vegetation establishment.

3. Demolition: No permanent structures will be erected in the first twelve (12) months of mining.

4. Revegetation: Vegetation mixes will be used in accordance to the premining baseline study outlined in D-8. Weed control as well as other post-seeding maintenance will be performed should reclamation occur within 12 months of the start of mining operations. A total of ten (10) acres is being used for the bond estimate even though the mining disturbance is only 5.73 acres. This increased revegetation acreage is to cover any potential surface disturbance that occurs beyond that of the actual mining block.

5. Miscellaneous Items: A contingency of 35% for Mobilization, overhead, profit, project design, administration and accounting was used.

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Table I.C-1				
Reclamation Task	**Production Unit**	**Cost ($)/Unit**	**Cost for Task**	**Chapter 12 Appendix**
Highwall Reduction/Backfill				
Drill and blast costs (rubble zones) ***	1,800 CY	$3.00 CY	$5,400.00	Per LQD
Dozing/Backfill Costs	90,000 CY	$0.29 CY	$26,460.00	E
Rough Grade	5.73 Acre	$79.16 Acre	$453.59	M
Process Pond Grading	750.00 CY	$0.29 CY	$220.50	E
Final Grade	5.73 Acre	$64.77 Acre	$371.13	G
Ripping of Pit Floor	5.73 Acre	$1,048.11 Acre	$6,005.67	I1
Noxious Weed Prevention**	10.00 Acre	$15.00 Acre	$150.00	
Fence Installation/Removal	2,000 LF	$0.50 LF	$1,000.00	H
Topsoil Distribution	2,311 CY	$0.99 CY	$2,297.13	B
Revegetation	10.00 Acre	$650.00 Acre	$6,500.00	Q
Subtotal			**$48,858**	
Contingency for Misc Items		35%	$17,100.31	
Total Bond (to the nearest hundred)			**$66,000**	

*Assumes first year annual mining quantities at an estimated 392,000 tons. This estimate is subject to change depending on economic conditions. Surface disturbance will consume a much greater acreage and is depicted within the bond calculation.

**80% of weed spraying costs paid for by Laramie County Weed and Pest. Only 20% of estimated costs included in bond calculation.

***Cost for task of blasting rubble zones provided by LQD and based on estimate provided by Yenter Blasting contractors.

SUPERSEDES 53/062
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I.D: Surface Owner Consent LQD Form 8

This section contains signed LQD Form 8 statements by Kelly Kamarad, Beth Farwell and John Willits who are the surface and mineral owners for the lands within the permit area.

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SURFACE LANDOWNER'S CONSENT

I, Kelly Kamarad, CERTIFY that I hold surface rights on the following lands on which John Willits, Kelly Kamarad, Beth Farwell holds mineral estate rights:

Portion of the N 1/2	Section	13	, T.	13	N.,R.	70	W.
Portion of the N 1/2	Section	14	, T.	13	N.,R.	70	W.
Portion of the SW 1/2 NW 1/4	Section	18	, T.	13	N.,R.	69	W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.

County of Laramie.

I have examined the mining plans and reclamation plan prepared by Willits Company Inc in compliance with the Wyoming ENVIRONMENTAL QUALITY ACT, and do hereby approve said plans, and give my consent to enter and carry out said mining and reclamation programs on said lands as proposed therein.

Dated this 10th day of October, 20 08.

Surface Landowner (Signature)

Kelly M Kamarad
Name (printed or typed)

Colleen M Willits 11/30/09
(Witness) (Date)

Form 8
Rev. 10/99

J.D-2

RECEIVED
OCT 15 2008
WDEQ/LQD

5 3/0/02

SURFACE LANDOWNER'S CONSENT

I, Beth Farwell, CERTIFY that I hold surface rights on the following lands on which John Willits, Kelly Kennard, Beth Farwell holds mineral estate rights:

Portion of the N 1/2	Section	13	, T.	13	N.,R.	70	W.
Portion of the N 1/2	Section	14	, T.	13	N.,R.	70	W.
Portion of the SW1/2 NW 1/4	Section	18	, T.	13	N.,R.	69	W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.

County of Laramie.

I have examined the mining plans and reclamation plan prepared by Willits Company INC in compliance with the Wyoming ENVIRONMENTAL QUALITY ACT, and do hereby approve said plans, and give my consent to enter and carry out said mining and reclamation programs on said lands as proposed therein.

Dated this third day of October, 2008.

Beth Farwell
Surface Landowner (Signature)

Beth Farwell
Name (printed or typed)

(Witness) 10-3-08 (Date)

RECEIVED OCT 15 2008 WDEQ/LQD

Form 8
Rev. 10/99

ID-3

5 3/062

SURFACE LANDOWNER'S CONSENT

I, John Willits, CERTIFY that I hold surface rights on the following lands on which John Willits, Kelly Kamaiad, Beth Farwell holds mineral estate rights:

Portion of the N 1/2	Section	13	, T.	13	N.,R.	70	W.
Portion of the N 1/2	Section	14	, T.	13	N.,R.	70	W.
Portion of the SW1/2 NW1/4	Section	18	, T.	13	N.,R.	69	W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.
	Section		, T.		N.,R.		W.

County of Laramie.

I have examined the mining plans and reclamation plan prepared by Willits Company Inc. in compliance with the Wyoming ENVIRONMENTAL QUALITY ACT, and do hereby approve said plans, and give my consent to enter and carry out said mining and reclamation programs on said lands as proposed therein.

Dated this 10th day of Oct., 2008.

Surface Landowner (Signature)

John Willits
Name (printed or typed)

Colleen M Willits 1/30/09
(Witness) (Date)

Form 8
Rev. 10/99

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WDEQ/LQD

I.D-4

5 3/01.2

Other Consent Statements

I.E: Other Owner Consent Statements

There are no occupied dwellings, homes, public buildings, schools, churches, community or institutional buildings, parks or cemeteries within three hundred feet (300 ft) of the lands which will be affected by Willits Company, Inc.'s operations; thus no additional consent statements are presented.

Dwelling w/in 300ft
NONE
2 500' GC
2 1000' Fire & School

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Other Permits

I.F: List of Permits from Other Agencies Associated with the Mining Operation

This section lists the permitting agency and permit number for any such non DEQ/Land Quality Division permits necessary in association with this Small Mining Operation. In general, the permits are not included in this section but are available from Willits Company, Inc. upon Request.

Willits Company, Inc. has obtained a DEQ Air Quality Division Permit Nos. CT-1298 and CT-9641for the in-pit crusher and screening operations. Should other equipment be used for mining, Willits Company Inc will work with the AQD to obtain the appropriate permits. Both Permits are included in this section on pages I.F-18 through I.F-21.

Willits Company, Inc. has obtained a DEQ Air Quality Division Permit No.CT-9443 for the operating site of Harriman Quarry. This permit is included on pages I.F-16 and I.F-17.

Willits Company, Inc. commits to dispose of Solid and Hazardous Waste in accordance with the Solid and Hazardous Waste Division and Regulations. Willits Company will contact the DEQ Solid and Hazardous Waste Division for a permit prior to importing non-hazardous solid waste. It is not anticipated this will be needed.

Willits Company, Inc. has obtained permit 13346R from the Wyoming State Engineer's Office. This permit allows construction of a permanent reservoir as well as the appropriation of surface water within the permitted area. A copy of this permit has been included on pages I.F-8 and I.F-9.

Willits Company Inc. has obtained permit 190934 from the Wyoming State Engineer's office. This permit adjudicates water rights for any groundwater encountered during the mining process. A copy of this permit has been included on pages I.F-14 and I.F-15.

Willits Company, Inc. has obtained a Wyoming Department of Transportation Access Approach Permit No. LA-01J-11410. A copy of this permit has been included on pages I.F-10 and I.F-11.

The US Department of the Army Corps of Engineers has determined the wetlands on the permitted area do not have a significant nexus to traditionally navigable water and thus are not waters of the United States. A letter outlining this decision is included on pages I.F-12 and I.F-13. Willits Company, Inc. has committed to **working with appropriate LQD staff (i.e., vegetation ecologists, hydrologists) to identify areas that are appropriate for opportunistic establishment of wet meadows and hydrophytic vegetation. These areas will be identified as**

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reclamation progresses based on the existence of appropriate hydrology to support wet meadows and hydrophytic vegetation.

The proposed permit area has been platted as the Quarry Tract Subdivision by the Laramie County Planning and Development Office. Approval of the final plat grants Willits Company, Inc. permission to mine on this land. A letter from the Laramie County Planning and Development Office stating that the final plat has been approved is included on pages I.F-6 and I.F-7. **The final plat was recorded on April 27, 2010 by the Laramie County Planning and Development Office. A copy of the final, recorded plat map is included as Exhibit I.F-1, page I.F-7A at the end of this section.**

Willits Company, Inc. has obtained a Storm Water Discharge permit from the Wyoming Pollutant Discharge Elimination System (WYPDES). This permit authorization number is WYR320591. The permit approval letter with permit authorization number is included on page I.F-3

Willits Company, Inc. has obtained written documentation from the Wyoming Department of Transportation (WYDOT) agreeing in principle to our planned operation. Willits Company, Inc. will abide by the requests of WYDOT that are outlined in this letter, and will work directly with WYDOT until it is deemed they no longer require such notification. The letter outlining these items is included on page I.F-4 and I.F-5. On June 5th, 2009 Willits Company, Inc. committed to WYDOT to limit blasting in which Interstate 80 will be closed **to no more than** 6 times a year. Willits Company, Inc. will work directly with WYDOT for scheduling of these blasts involving interstate closure and should WYDOT deem more/fewer blasts are allowable, Willits Company Inc, will adhere to their requests. **Any changes to blasting schedules or coordination required by WYDOT will be forwarded to LQD through a permit revision request.** If blasting on the permitted site does not require closure of Interstate 80, then WYDOT will not be involved. **While the mine has been operating under a Limited Mining Operation authorization (2009), Interstate 80 has been closed between 2 and 6 times per year for blasting. Coordination with WYDOT during this time has gone well, and no issues are expected to occur in the future.**

Willits Company, Inc. will notify the Union Pacific Railroad prior to blasting on the proposed site. On June 5th, 2009, representatives of UPRR informed Willits Company, Inc. they would like to be present for the first blast, but may not have a required presence for future blasts. They request advanced notice be given as they would like to check the train schedules in that area and coordinate blasting times. Willits Company, Inc has agreed to give UPRR prior notice of blasting and coordinate blasts with their specific contact. **Any changes to blasting schedules or coordination required by UPRR will be forwarded to LQD through a permit revision request.**

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WDEQ/LQD

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

Authorization to Discharge Storm Water Associated Mineral Mining Activities (except fuels) Under the Wyoming Pollutant Discharge Elimination System

In compliance with the provisions of Chapter 2 of the Wyoming Water Quality Rules and Regulations, the Wyoming Environmental Quality Act, and the federal Water Pollution Control Act,

Willits Company Inc

Harriman Pit (Willits Co.)

Sections 13 & 14, Township 13 North, Range 70 West; Section 18, Township 13 North, Range 69 West, Laramie County

and located within the State of Wyoming which has or may discharge storm water associated with mineral mining activities, is hereby authorized to discharge to the surface waters of the State of Wyoming in accordance with the requirements of this permit which was issued September 1, 2007.

Coverage under the general permit expires March 31, 2012.

This facility has been assigned **permit authorization number WYR320591**

Authorization under this general permit is effective beginning 1/29/2009.

The permittee listed above is subject to a statutorily-required annual $100 fee (see W.S. §35-11-312) for as long as this authorization is active or until the general permit expires. See Part 5 of the general permit for information regarding termination of coverage.

Attached is a signed copy of the general permit.

If you have questions concerning the conditions of the permit, contact Barb Sahl at (307) 777-7570 or John Gorman at (307) 777-5622.

Authorized Signature
Department of Environmental Quality/Water Quality Division

Received
FEB 2 2009
Willits Company Inc

Mailing Address:
Willits Company Inc
Robert Willits
PO Box 825
Cheyenne, WY 82003

Harriman Quarry
Permit #

I.F-3

5 3/062

Wyoming
Department of Transportation

"Providing a safe, high quality, and efficient transportation system"

Dave Freudenthal
Governor

John F. Cox
Director

District One
3411 South Third Street
Laramie, Wyoming 82070-8315
(307) 745-2100

Received
FEB 6 2009
Willits Company Inc

February 3 , 2009

Willits Company, Inc.
P. O. Box 825
1417 West Avenue
Cheyenne, WY 82003-0825

ATTN: Matt Farwell
Controller

RE: Mining Operation at Harriman Interchange

Dear Mr. Farwell:

We are in receipt of your letter outlining your proposed mining operation adjacent to I-80 at the Harriman Interchange. WYDOT agrees in principle with your planned operation. When you get further along with your plans and have a schedule of operation we need to meet with you again to be sure the Maintenance Supervisor and Patrol Lieutenant for that road section are all in agreement with your planned operation for traffic control on I-80.

At this point we believe that you will need to stop traffic on I-80 during the blasting operation and to accomplish any clean up of fly rock after that. A traffic control company capable of bringing traffic into one lane and stopping them safely will be required. The details of how that operation works will need to be discussed with the District Traffic Engineer, Randy Griesbach, Patrol Lieutenant, Scot Montgomery and the Maintenance Supervisor, Milt Poteet.

We are requesting a two week advance notice on the three times per year that you will be doing the blasting so we can be sure to have people scheduled to monitor the situation. If inclement weather occurs during a planned blasting period we will not allow interstate traffic to be stopped so that must be taken into account also. Inclement weather could include , but not limited to, rain or hail so the road surface is wet, snow and ice so that the road surface is slick or has the potential to be hazardous.

We will work with you concerning material that is in the highway right of way and could be mined to help out our snow drifting situation and also make good gravel. Our Right of Way

Harriman Quarry
Permit #

I.F.4

5 3/062

division will need to be involved at that point to work up an agreement for that material.

Please keep us informed as to your progress in getting this operation started.

Sincerely,

T.I. McGary, P.E.
District Maintenance Engineer

XC J.S. Gould, P.E., District Engineer
J.G. Gillespie, Maintenance Technician
R.K. Westbrook, Maintenance Technician
R.R. Griesbach, P.E., District Traffic Engineer
P.L. Persson, P.E., District Construction Engineer
Tye Fix, Maintenance Area Manager
M. U. Poteet, Maintenance Supervisor
Captain Perry Jones, Patrol, Cheyenne
Lieutenant Derrick Mickelson, Patrol, Laramie
Lieutenant Scot Montgomery, Patrol, Cheyenne
John Sherman, Right of Way, Cheyenne
File A-LetterForm.wpd

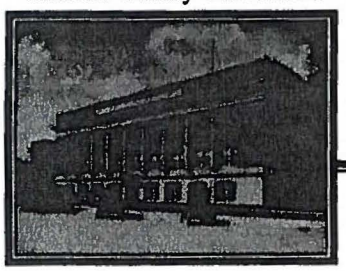
FEB 11 2003

Harriman Quarry
Permit #

I.F-5

5 3/062

Historic County Courthouse



LARAMIE COUNTY
PLANNING AND DEVELOPMENT OFFICE

Planning • Zoning • Building Permit • Mapping

Received
MAY 08 2009
Willits Company Inc

Matt Farwell et. al.
P.O. Box 825
Cheyenne, WY 82001

May 6, 2009

Dear Mr. Farwell,

This letter is to inform you that on May 5, 2009 the Laramie County Board of Commissioners voted (2-1) to approve your application for a Final Plat and Subdivision Permit for Quarry Tract Subdivision with the following conditions:

1. That the Community Facility Fees be paid in full prior to recording the Final Plat.
2. That following corrections shall be made:
   i. The easement indicated by High West Energy shall be documented and shown on the Final Plat.
   ii. The names of owners listed in the dedication language on the plat shall match the names recorded on the deed. (Book 2061, Page 225.)
3. That a copy of the State approval for the mining operation be submitted to the Planning and Development Office when it is granted.

Please bring the original plat map to the Laramie County Planning and Development Office, along with payment of the following Community Facility Fees: $12,625.00. Planning and Development staff will obtain the required signatures and will contact you when the Final Plat is complete for recording.

The Final Plat of Quarry Tract Subdivision must be submitted to the Laramie County Clerk's Office within eighteen (18) months of May 5, 2009. Should the Final Plat not be submitted for recording within this period, the plat will be declared void. You will be required to submit the following to the Laramie County Clerk's office for recording:

1. The reproducible original of the Final Plat.
2. Two (2) reproducible film copies of the Final Plat.
3. One (1) blueline copy of the Final Plat.
4. Required filing Fee.

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310 West 19th Street • Suite 400 • Cheyenne, Wyoming 82001
(307) 633-4303 Fax (307) 633-4519
planning@laramiecounty.com

I.F-6

Please contact the Laramie County Planning and Development Office if you have any questions.

Sincerely,

Abby S. Yenco
Senior Planner

Cc: AVI, PC.

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MAR 18 2010
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310 West 19th Street • Suite 400 • Cheyenne, Wyoming 82001
(307) 633-4303 Fax (307) 633-4519
planning@laramiecounty.com

T.F-7

LEGEND

- ■ APPROXIMATE LOCATION ¼ CORNER
- ● FOUND 1-1/2" ALUMINUM CAP PLS 2500
- ● FOUND GLO BRASS CAP
- ◉ FOUND 3-1/4" ALUMINUM CAP PLS 2500
- ▫ FOUND WYDOT RIGHT OF WAY MARKER
- ○ SET 2" ALUMINUM CAP WY PLS 10838

(M) DENOTES MEASURED DATA FROM THIS SURVEY

(R) DENOTES RECORD INFORMATION FROM A SURVEY BY STEIL SURVEYING SERVICES, UNRECORDED

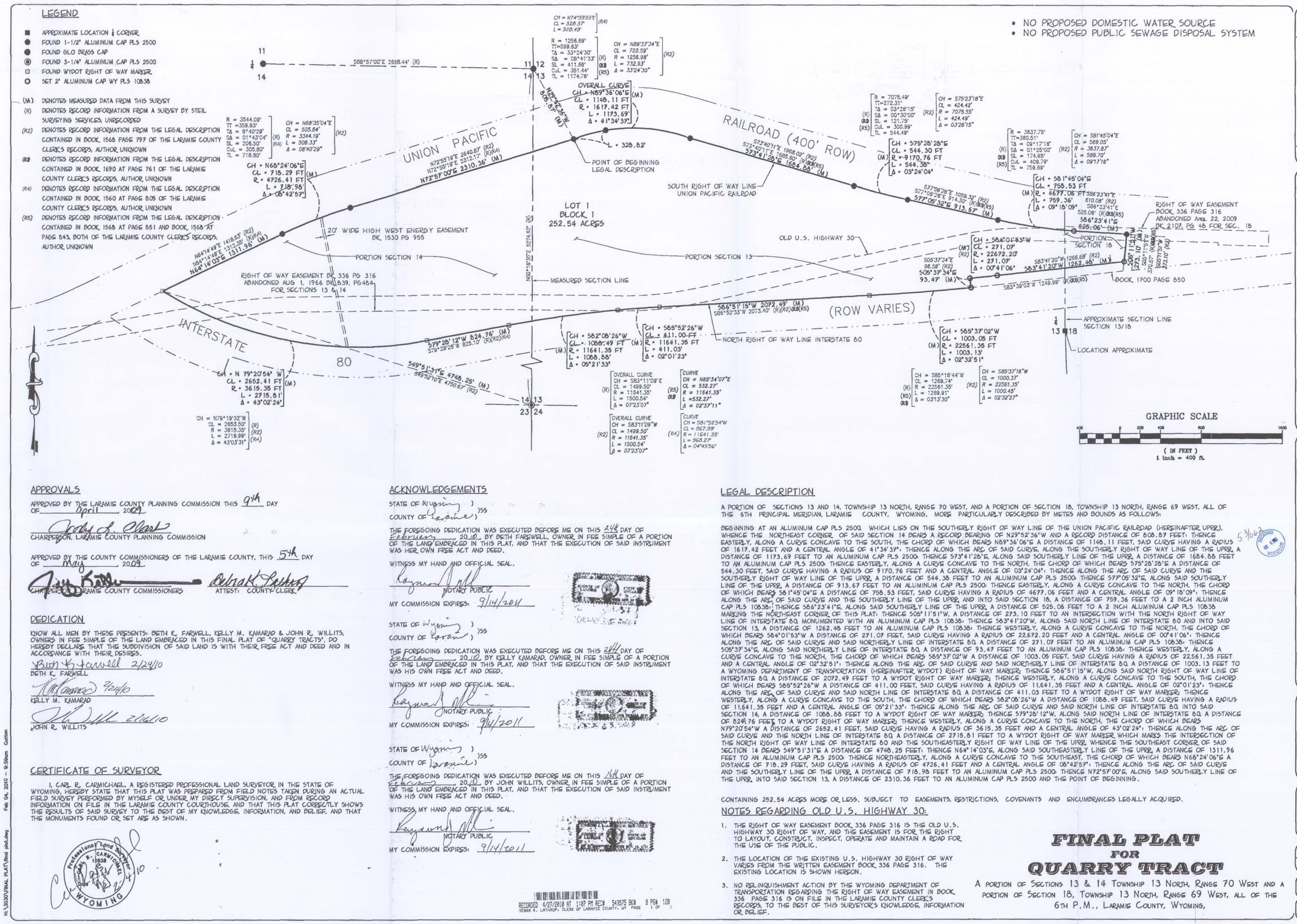
(R2) DENOTES RECORD INFORMATION FROM THE LEGAL DESCRIPTION CONTAINED IN BOOK 1568 PAGE 797 OF THE LARAMIE COUNTY CLERK'S RECORDS, AUTHOR UNKNOWN

(R3) DENOTES RECORD INFORMATION FROM THE LEGAL DESCRIPTION CONTAINED IN BOOK 1690 AT PAGE 761 OF THE LARAMIE COUNTY CLERK'S RECORDS, AUTHOR UNKNOWN

(R4) DENOTES RECORD INFORMATION FROM THE LEGAL DESCRIPTION CONTAINED IN BOOK 1560 AT PAGE 805 OF THE LARAMIE COUNTY CLERK'S RECORDS, AUTHOR UNKNOWN

(R5) DENOTES RECORD INFORMATION FROM THE LEGAL DESCRIPTION CONTAINED IN BOOK 1568 AT PAGE 851 AND BOOK 1568 AT PAGE 843, BOTH OF THE LARAMIE COUNTY CLERK'S RECORDS, AUTHOR UNKNOWN

- NO PROPOSED DOMESTIC WATER SOURCE
- NO PROPOSED PUBLIC SEWAGE DISPOSAL SYSTEM



APPROVALS

APPROVED BY THE LARAMIE COUNTY PLANNING COMMISSION THIS 9th DAY OF April, 2009.

CHAIRPERSON, LARAMIE COUNTY PLANNING COMMISSION

APPROVED BY THE COUNTY COMMISSIONERS OF THE LARAMIE COUNTY, THIS 5th DAY OF May, 2009.

CHAIRPERSON, LARAMIE COUNTY COMMISSIONERS — ATTEST: COUNTY CLERK

DEDICATION

KNOW ALL MEN BY THESE PRESENTS: BETH K. FARWELL, KELLY M. KAMARAD & JOHN R. WILLITS, OWNERS IN FEE SIMPLE OF THE LAND EMBRACED IN THIS FINAL PLAT OF "QUARRY TRACTS", DO HEREBY DECLARE THAT THE SUBDIVISION OF SAID LAND IS WITH THEIR FREE ACT AND DEED AND IN ACCORDANCE WITH THEIR DESIRES.

2/24/10
BETH K. FARWELL

2/24/10
KELLY M. KAMARAD

2/26/10
JOHN R. WILLITS

CERTIFICATE OF SURVEYOR

I, CARL R. CARMICHAEL, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF WYOMING, HEREBY STATE THAT THIS PLAT WAS PREPARED FROM FIELD NOTES TAKEN DURING AN ACTUAL FIELD SURVEY PERFORMED BY MYSELF OR UNDER MY DIRECT SUPERVISION, AND FROM RECORD INFORMATION ON FILE IN THE LARAMIE COUNTY COURTHOUSE, AND THAT THIS PLAT CORRECTLY SHOWS THE RESULTS OF SAID SURVEY TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, AND THAT THE MONUMENTS FOUND OR SET ARE AS SHOWN.

Professional Land Surveyor — Carl R. Carmichael — 10838 — WYOMING

ACKNOWLEDGEMENTS

STATE OF Wyoming)
COUNTY OF Laramie) SS

THE FOREGOING DEDICATION WAS EXECUTED BEFORE ME ON THIS 24th DAY OF February, 2010, BY BETH FARWELL, OWNER IN FEE SIMPLE OF A PORTION OF THE LAND EMBRACED IN THIS PLAT, AND THAT THE EXECUTION OF SAID INSTRUMENT WAS HER OWN FREE ACT AND DEED.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC
MY COMMISSION EXPIRES: 9/14/2011

STATE OF Wyoming)
COUNTY OF Laramie) SS

THE FOREGOING DEDICATION WAS EXECUTED BEFORE ME ON THIS 24th DAY OF February, 2010, BY KELLY KAMARAD, OWNER IN FEE SIMPLE OF A PORTION OF THE LAND EMBRACED IN THIS PLAT, AND THAT THE EXECUTION OF SAID INSTRUMENT WAS HIS OWN FREE ACT AND DEED.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC
MY COMMISSION EXPIRES: 9/14/2011

STATE OF Wyoming)
COUNTY OF Laramie) SS

THE FOREGOING DEDICATION WAS EXECUTED BEFORE ME ON THIS 26th DAY OF February, 2010, BY JOHN WILLITS, OWNER IN FEE SIMPLE OF A PORTION OF THE LAND EMBRACED IN THIS PLAT, AND THAT THE EXECUTION OF SAID INSTRUMENT WAS HIS OWN FREE ACT AND DEED.

WITNESS MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC
MY COMMISSION EXPIRES: 9/14/2011

RECORDED 4/27/2010 AT 1:07 PM REC# 54357S BK# 9 PG# 128
DEBRA K. LATHROP, CLERK OF LARAMIE COUNTY, WY PAGE 1 OF 1

LEGAL DESCRIPTION

A PORTION OF SECTIONS 13 AND 14, TOWNSHIP 13 NORTH, RANGE 70 WEST, AND A PORTION OF SECTION 18, TOWNSHIP 13 NORTH, RANGE 69 WEST, ALL OF THE 6TH PRINCIPAL MERIDIAN, LARAMIE COUNTY, WYOMING, MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT AN ALUMINUM CAP PLS 2500, WHICH LIES ON THE SOUTHERLY RIGHT OF WAY LINE OF THE UNION PACIFIC RAILROAD (HEREINAFTER UPRR), WHENCE THE NORTHEAST CORNER OF SAID SECTION 14 BEARS A RECORD BEARING OF N29°52'36"W AND A RECORD DISTANCE OF 808.87 FEET; THENCE EASTERLY, ALONG A CURVE CONCAVE TO THE SOUTH, THE CHORD OF WHICH BEARS N89°36'06"E A DISTANCE OF 1148.11 FEET, SAID CURVE HAVING A RADIUS OF 1617.42 FEET AND A CENTRAL ANGLE OF 41°34'37"; THENCE ALONG THE ARC OF SAID CURVE, ALONG THE SOUTHERLY RIGHT OF WAY LINE OF THE UPRR, A DISTANCE OF 1173.69 FEET TO AN ALUMINUM CAP PLS 2500; THENCE 573°41'25"E, ALONG SAID SOUTHERLY LINE OF THE UPRR, A DISTANCE OF 1684.88 FEET TO AN ALUMINUM CAP PLS 2500; THENCE EASTERLY, ALONG A CURVE CONCAVE TO THE NORTH, THE CHORD OF WHICH BEARS S75°26'28"E A DISTANCE OF 544.30 FEET, SAID CURVE HAVING A RADIUS OF 9170.76 FEET AND A CENTRAL ANGLE OF 03°24'04"; THENCE ALONG THE ARC OF SAID CURVE AND THE SOUTHERLY RIGHT OF WAY LINE OF THE UPRR, A DISTANCE OF 544.38 FEET TO AN ALUMINUM CAP PLS 2500; THENCE S77°05'32"E, ALONG SAID SOUTHERLY LINE OF THE UPRR, A DISTANCE OF 913.67 FEET TO AN ALUMINUM CAP PLS 2500; THENCE EASTERLY, ALONG A CURVE CONCAVE TO THE NORTH, THE CHORD OF WHICH BEARS S81°45'04"E A DISTANCE OF 758.53 FEET, SAID CURVE HAVING A RADIUS OF 4677.06 FEET AND A CENTRAL ANGLE OF 09°18'09"; THENCE ALONG THE ARC OF SAID CURVE AND THE SOUTHERLY LINE OF THE UPRR, AND INTO SAID SECTION 18, A DISTANCE OF 759.36 FEET TO A 2 INCH ALUMINUM CAP PLS 10838; THENCE S86°23'41"E, ALONG SAID SOUTHERLY LINE OF THE UPRR, A DISTANCE OF 525.06 FEET TO A 2 INCH ALUMINUM CAP PLS 10838 MARKING THE NORTHEAST CORNER OF THIS PLAT; THENCE S05°11'51"W, A DISTANCE OF 273.10 FEET TO AN INTERSECTION WITH THE NORTH RIGHT OF WAY LINE OF INTERSTATE 80, MONUMENTED WITH AN ALUMINUM CAP PLS 10838; THENCE S83°41'20"W, ALONG SAID NORTH LINE OF INTERSTATE 80 AND INTO SAID SECTION 13, A DISTANCE OF 1262.48 FEET TO AN ALUMINUM CAP PLS 10838; THENCE WESTERLY, ALONG A CURVE CONCAVE TO THE NORTH, THE CHORD OF WHICH BEARS S84°01'53"W A DISTANCE OF 271.07 FEET, SAID CURVE HAVING A RADIUS OF 22,672.20 FEET AND A CENTRAL ANGLE OF 00°41'06"; THENCE ALONG THE ARC OF SAID CURVE AND SAID NORTHERLY LINE OF INTERSTATE 80, A DISTANCE OF 271.07 FEET TO AN ALUMINUM CAP PLS 10838; THENCE S05°37'34"E, ALONG SAID NORTHERLY LINE OF INTERSTATE 80, A DISTANCE OF 93.47 FEET TO AN ALUMINUM CAP PLS 10838; THENCE WESTERLY, ALONG A CURVE CONCAVE TO THE NORTH, THE CHORD OF WHICH BEARS S85°37'02"W A DISTANCE OF 1003.05 FEET, SAID CURVE HAVING A RADIUS OF 22,561.35 FEET AND A CENTRAL ANGLE OF 02°32'51"; THENCE ALONG THE ARC OF SAID CURVE AND SAID NORTHERLY LINE OF INTERSTATE 80, A DISTANCE OF 1003.13 FEET TO A WYOMING DEPARTMENT OF TRANSPORTATION (HEREINAFTER WYDOT) RIGHT OF WAY MARKER; THENCE S86°51'15"W, ALONG SAID NORTH RIGHT OF WAY LINE OF INTERSTATE 80, A DISTANCE OF 2072.49 FEET TO A WYDOT RIGHT OF WAY MARKER; THENCE WESTERLY, ALONG A CURVE CONCAVE TO THE SOUTH, THE CHORD OF WHICH BEARS S85°52'26"W A DISTANCE OF 411.00 FEET, SAID CURVE HAVING A RADIUS OF 11,641.35 FEET AND A CENTRAL ANGLE OF 02°01'23"; THENCE ALONG THE ARC OF SAID CURVE AND SAID NORTH LINE OF INTERSTATE 80, A DISTANCE OF 411.03 FEET TO A WYDOT RIGHT OF WAY MARKER; THENCE WESTERLY, ALONG A CURVE CONCAVE TO THE SOUTH, THE CHORD OF WHICH BEARS S82°08'26"W A DISTANCE OF 1088.49 FEET, SAID CURVE HAVING A RADIUS OF 11,641.35 FEET AND A CENTRAL ANGLE OF 05°21'33"; THENCE ALONG THE ARC OF SAID CURVE AND SAID NORTH LINE OF INTERSTATE 80, INTO SAID SECTION 14, A DISTANCE OF 1088.88 FEET TO A WYDOT RIGHT OF WAY MARKER; THENCE S79°28'12"W, ALONG SAID NORTH LINE OF INTERSTATE 80, A DISTANCE OF 824.76 FEET TO A WYDOT RIGHT OF WAY MARKER; THENCE WESTERLY, ALONG A CURVE CONCAVE TO THE NORTH, THE CHORD OF WHICH BEARS N79°20'54"W A DISTANCE OF 2652.41 FEET, SAID CURVE HAVING A RADIUS OF 3615.35 FEET AND A CENTRAL ANGLE OF 43°02'24"; THENCE ALONG THE ARC OF SAID CURVE AND THE NORTH LINE OF INTERSTATE 80, A DISTANCE OF 2715.81 FEET TO A WYDOT RIGHT OF WAY MARKER WHICH MARKS THE INTERSECTION OF THE NORTH RIGHT OF WAY LINE OF INTERSTATE 80 AND THE SOUTHEASTERLY RIGHT OF WAY LINE OF THE UPRR; WHENCE THE SOUTHEAST CORNER OF SAID SECTION 14 BEARS S49°51'31"E A DISTANCE OF 4748.25 FEET; THENCE N64°14'03"E, ALONG SAID SOUTHEASTERLY LINE OF THE UPRR, A DISTANCE OF 1311.96 FEET TO AN ALUMINUM CAP PLS 2500; THENCE NORTHEASTERLY, ALONG A CURVE CONCAVE TO THE SOUTHEAST, THE CHORD OF WHICH BEARS N68°24'06"E A DISTANCE OF 718.29 FEET, SAID CURVE HAVING A RADIUS OF 4726.41 FEET AND A CENTRAL ANGLE OF 08°42'57"; THENCE ALONG THE ARC OF SAID CURVE AND THE SOUTHERLY LINE OF THE UPRR, A DISTANCE OF 718.98 FEET TO AN ALUMINUM CAP PLS 2500; THENCE N72°57'00"E, ALONG SAID SOUTHERLY LINE OF THE UPRR, INTO SAID SECTION 13, A DISTANCE OF 2310.36 FEET TO AN ALUMINUM CAP PLS 2500 AND THE POINT OF BEGINNING.

CONTAINING 252.54 ACRES MORE OR LESS, SUBJECT TO EASEMENTS, RESTRICTIONS, COVENANTS AND ENCUMBRANCES LEGALLY ACQUIRED.

NOTES REGARDING OLD U.S. HIGHWAY 30:

1. THE RIGHT OF WAY EASEMENT BOOK 336 PAGE 316 IS THE OLD U.S. HIGHWAY 30 RIGHT OF WAY, AND THE EASEMENT IS FOR THE RIGHT TO LAYOUT, CONSTRUCT, INSPECT, OPERATE AND MAINTAIN A ROAD FOR THE USE OF THE PUBLIC.
2. THE LOCATION OF THE EXISTING U.S. HIGHWAY 30 RIGHT OF WAY VARIES FROM THE WRITTEN EASEMENT BOOK 336 PAGE 316. THE EXISTING LOCATION IS SHOWN HEREON.
3. NO RELINQUISHMENT ACTION BY THE WYOMING DEPARTMENT OF TRANSPORTATION REGARDING THE RIGHT OF WAY EASEMENT IN BOOK 336 PAGE 316 IS ON FILE IN THE LARAMIE COUNTY CLERK'S RECORDS, TO THE BEST OF THIS SURVEYOR'S KNOWLEDGE, INFORMATION OR BELIEF.

FINAL PLAT FOR QUARRY TRACT

A PORTION OF SECTIONS 13 & 14 TOWNSHIP 13 NORTH, RANGE 70 WEST AND A PORTION OF SECTION 18, TOWNSHIP 13 NORTH, RANGE 69 WEST, ALL OF THE 6TH P.M., LARAMIE COUNTY, WYOMING.

NO.	REVISION	DATE

PREPARED FOR:
BETH K. FARWELL
KELLY M. KAMARAD
JOHN R. WILLITS

PROJECT: QUARRY TRACT

DRAWING TITLE: FINAL PLAT

engineering planning surveying — CVI p.c.
PHONE (307) 632-6019
1108 OLD TOWN LANE, SUITE 101
CHEYENNE WY 82009

DESIGNED BY: CRC/CRJ	DRAWN BY: CRJ
CHECKED BY: CRC	DATE: 1-09

JOB NO.: 2-3030.09

DRAWING NO. 1 OF 1

H:\3030\FINAL PLAT\final plat.dwg Feb 04, 2010 - 9:58am Carlton

9/12/08 1:10 pm

Form S.W. 3
Rev. 6/2/2006

S003 9022
25.00
9/12/08
J. FELTNER

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

SCANNED FEB 25 2009

APPLICATION FOR PERMIT TO APPROPRIATE SURFACE WATER

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

Filing/Priority Date

THE STATE OF WYOMING
STATE ENGINEER'S OFFICE } SS.

This instrument was received and filed for record on the 12th day of September, 2008, at 1:10 o'clock P M.

John R. Barnes for State Engineer

Recorded in Book 69 of Reservoir Permits, on Page 96

Fee Paid $ 25.00 Map Filed B

WATER DIVISION NO. 1 DISTRICT NO. 1 TEMPORARY FILING NO. 34 6/248

PERMIT NO. 13346 RESERVOIR
B-12

NAME OF FACILITY

THE Harriman Quarry RESERVOIR

1. Name(s), mailing address and phone no. of applicant(s) is/are Matt Farwell, Willis Company, PO Box 825 Cheyenne, WY 82003

E-mail address: Matt.Farwell@williscompanyinc.com
(if more than one applicant, designate one to act as Agent for the others)

2. Name & address of agent to receive correspondence and notices Tom Kent P.E., AVI PC, 2035 Westland Rd, Cheyenne, WY 82001 307.637.6017

E-mail address: kent@avipc.com

3. The use to which the water is to be applied is Industrial (Dust control)
(a) If more than one beneficial use of water is applied for, the reservoir capacity must be allocated in acre-feet to the various uses:

Active Capacity	Inactive Capacity
2.60 ~~1.97~~ ac-ft industrial (dust control)	

JMR

(b) The area of the high water line of the reservoir is 0.29 acres.
(c) The total available capacity of the reservoir is 2.60 acre-feet.
(d) If enlargement, the capacity of this enlargement is n/a acre-feet.

4. The source of the proposed appropriation is QUARRY DRAW, TRIBUTARY Lodge Tree Creek, TRIBUTARY SOUTH PLATTE RIVER

JMR

5. The outlet of the proposed reservoir is located S58°56'47"E, 4374.9 feet distant from the NW corner of Section 13 T. 13 N., R. 70 W., and is in the SENE ~~corner~~ of Section 13 T. 13 N., R. 70 W.
Lot ____ Block ____ Subdivision Name ____
Latitude (Decimal Degrees) N41.09862° Longitude (Decimal Degrees) W105.17775E°

6. Are any of the lands covered by the proposed reservoir owned by the State or Federal government? If so, describe lands and designate whether State or Federally owned. No

7. Fill out for either (a) or (b):
(a) The reservoir is located in the channel of QUARRY DRAW
(b) The reservoir is to be filled through the —
Canal which has a carrying capacity of — cubic feet per second (c.f.s.)

8. (a) The dam is to be constructed as follows: compacted earth with rip rap protection
contents = 1,575 cubic yards.
(b) The water face of the dam is to be protected from wave action in the following manner: rip rap surface
(c) The dam height, as measured by the dam crest elevation minus the lowest downstream toe elevation is 20 feet.

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Permit No. 13346 Res. Page No. 96 (Leave Blank)

I.F-8

THE STATE OF WYOMING }
STATE ENGINEER

TEMPORARY FILING NO. 34 6/248

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This permit grants only the right to use the water available in the stream after all prior rights are satisfied.

This permit is granted for storage of 2.6 acre-feet of water from all sources in any one year, for industrial (dust abatement) purposes only.

The applicant has requested waiver of the five-foot freeboard requirement and such waiver is granted by the State Engineer's endorsement hereon. However, such waiver does not relieve the appropriator of responsibility for safety of operation of the reservoir or of liability in case of failure of the dam.

This permit is issued subject to the terms of the Platte River Recovery Implementation Program (PRRIP) of January 1, 2007. This permit was reviewed by the PRRIP Coordinator. No Program related limitations are required because facility will not affect flows at the Colorado / Wyoming state line within the South Platte River Basin.

The State Engineer may, at his discretion, require and order that suitable measurement devices be installed at this facility to determine the quantity of water depleted under this permit, and may also require submission of written record of these quantities, at any future date, for the purpose of enforcing provisions of the PRRIP of January 1, 2007. Suitability of measuring devices so installed or records so submitted upon the State Engineer's order shall be determined by the State Engineer or his designated water administration officials.

The holder of this permit shall inspect the spillway after each runoff event with the potential to flow through the spillway. Any erosion that has occurred shall be repaired in anticipation of the next runoff event.

This permit is conditioned on the holder of this permit securing and/or providing free and unencumbered access to this reservoir site to allow State Engineer personnel to perform their duties as prescribed by Law. These duties include, but are not limited to, construction inspections and water administration.

The time for completing the construction of the reservoir shall terminate on December 31, 20 11.

Witness my hand this 13th day of FEBRUARY, A.D. 2009.

FOR Patrick T. Tyrrell
PATRICK T. TYRRELL, State Engineer

Permit No. 13346 Res.

Page No. 96 (Leave Blank)

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REV 4/02

WYOMING DEPARTMENT OF TRANSPORTATION
ACCESS PERMIT APPLICANT

Date of Application: _____

The Undersigned hereby makes application for permission to construct an access driveway(s) described below and as shown on the attached sketch or plan "hereby made part of this application" to:

TO BE FILLED OUT BY PROPERTY OWNER

LOCATION OF PROPERTY:

Located on Highway 218 (Hanna Road) in Laramie County, approximately 1 miles N of Interstate 80 and Harriman Rd Junction, for INGRESS or EGRESS to a Commercial/Industrial Business, on the W side of the Highway.

N,S,E,W — *City, town or Highway Junction* — *RESIDENCE OR TYPE OF BUSINESS* — *N,S,E,W*

AGREEMENT:

I, the undersigned property owner, request permission to construct an access driveway on department right-of-way for the above property, subject to the restrictions and regulations contained in the "RULES AND REGULATIONS FOR ACCESS DRIVEWAY(S) TO WYOMING STATE HIGHWAYS" current edition. In consideration of these regulations, the applicant agrees:

1) To construct the driveway in a safe manner so as not to interfere with existing authorized facilities previously permitted nor endanger public travel and to perform all related work in a neat and workmanlike manner, to use materials acceptable to the Department of Transportation and leave the right-of-way clean and in a condition equal to or better than the original condition.

2) To fully protect any traffic on the highway during construction covered hereunder by proper barricades, flaggers, and/or signs as shown in the TRAFFIC CONTROL FOR ROADWAY WORK OPERATIONS manual, and to hold harmless the Wyoming Department of Transportation, its officers and employees from all dangers, expenses, claims or liabilities arising out of any alleged damages of any nature to person or property, due to the construction performance or nonperformance of work, or existence of said driveway.

3) That no driveway shall be constructed such that there will be parking or servicing of vehicles within the highway right-of-way.

4) That the profile grade of the driveway shall be constructed as indicated on attached sketch or plan sheet(s) and shall in no case be graded or maintained in such a way that water/mud will run out onto the highway surface.

5) That this permit shall become **VOID** if construction is not completed within 30 days after initiation of construction or one (1) year from approval date if construction has not been started.

6) That any change in land use which could generate greater traffic volumes or vehicle types will nullify this agreement and a new application must be submitted for approval.

7) That the Wyoming Department of Transportation reserves the right to inspect this installation at any time during construction until accepted by the Department, and to require changes at any time necessary to provide protection of life and property on or adjacent to the highway. Once the approach/access has been accepted by the Department it then becomes the property of the Wyoming Department of Transportation and theirs to maintain and repair except for snow or debris removal.

8) To any additional requirements as described in the DISTRICT ENGINEERING , REQUIREMENTS/COMMENTS section on the back page of this permit, and/or any on attached sketch or plan sheets.

APPLICANT John Willits, Kelly Kennard, Beth Farwell (Print) ADDRESS PO Box 825

FIRM NAME Willits Company Inc. CITY Cheyenne STATE WY ZIP 82003

PHONE NUMBER (307) 634-2300 SIGNATURE Beth Farwell

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53/062

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Access Location and Design Information:

Maintenance Section: LA01J, Project Number: I080-06(171), RIGHT or LEFT Station: 90+079.

Milepost: 3.03 RIGHT or LEFT, Roadway Classification: LOCAL ROAD.

Section: 18, Township: 13N, Range: 69W.

Approach width ≈ 26 FT, with ~~40~~ SEE ATTACHMENT FT radius. Surface Type: 6" ASPHALT.

Drainage Structure Required YES / NO, Length: N/A Diameter or Width: N/A Type: N/A,

Slope 8:1 and/or valley gutter to be located _____ feet from edge of pavement. _____ feet from centerline to R.O.W.

Right of Way Division: **PERMIT NUMBER:** LA-01J-11410.

ACCESS CONTROL: FULL _____, LIMITED ✓, NONE _____, NONE ASSUMED _____.

SIGNATURE Linda S Shiers, TITLE Adm. Specialist, DATE 3-23-09

District Engineering:

PRELIMINARY FIELD INSPECTION BY: CLYDE E HARNDEN, D.T.T. (include title), DATE 3.19.09.

REQUIREMENTS / COMMENTS: IS EXISTING ACCESS. OLD PAVEMENT WILL BE REMOVED WITH SOLID BASE UNDERNEATH AND RE-PAVED WITH A TOTAL OF 6" OF NEW ASPHALT IN 2" LIFTS. PERMIT APPROVED BY ACCESS COMMITTEE.

APPROVAL FOR CONSTRUCTION:

THIS ACCESS IS HEREBY GRANTED, WITHIN THE CONDITIONS STATED HEREIN. DATE 6/29/09.

WYOMING DEPARTMENT OF TRANSPORTATION, BY Randall R. Heinbach, TITLE D.T.E. (District Engineer / District Traffic Engineer).

CONSTRUCTION INSPECTED:

I HAVE INSPECTED THIS ACCESS AND HAVE FOUND IT TO HAVE BEEN CONSTRUCTED AS PER THE REQUIREMENTS DESCRIBED BY THIS APPLICATION.

SIGNATURE _____, TITLE _____, DATE _____.

ACCESS ACCEPTANCE:

DISTRICT PERSONNEL HAVE INSPECTED THIS ACCESS DESCRIBED ON THIS APPLICATION AND ATTACHED DRAWING(S) AND HAVE FOUND THE ACCESS TO BE CONSTRUCTED IN THE MANNER AS PRESCRIBED ON THIS APPLICATION AND ATTACHED DRAWING(S).

_____, TITLE _____, DATE _____.
(District Engineer / District Traffic Engineer)

References: OPERATING POLICY 21-1 and RULES & REGULATIONS FOR ACCESS DRIVEWAYS TO WYOMING STATE HIGHWAYS. 53/062

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
WYOMING REGULATORY OFFICE
2232 DELL RANGE BOULEVARD, SUITE 210
CHEYENNE WY 82009-4942

REPLY TO
ATTENTION OF

June 12, 2009

Received
JUN 16 2009
Willits Company Inc

Wyoming Regulatory Office

Mr. Matt Farwell
Willits Company, Inc.
P.O. Box 825
Cheyenne, Wyoming 82003-0825

Dear Mr. Farwell:

This letter is in response to your request we received on May 13, 2009, for a jurisdictional determination on impacts to waters of the United States based on a wetland delineation conducted on property the Willits Company, Inc. is proposing to open a small mine upon. The proposed mine is located in the northern half of Section 13, the northern half of Section 14, Township 13 North, Range 70 West, and the southwest half of the northwest quarter of Section 18, Township 13 North, Range 69 West, all in Laramie County, Wyoming.

The U.S. Army Corps of Engineers regulates the placement of dredged and fill material into wetlands and other waters of the United States as authorized primarily by Section 404 of the Clean Water Act (33 U.S.C. 1344). The term "waters of the United States" has been broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce such as rivers, streams (including ephemeral streams), reservoirs, and lakes as well as wetlands adjacent to those areas. The Corps regulations are published in the Code of Federal Regulation at 33 CFR Parts 320 through 331. Information on Section 404 program requirements in Wyoming can be obtained from our web site at https://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm.

We have reviewed the data prepared by Intermountain Resources, Inc. dated May 7, 2009. Mr. Michael Burgan from our office also visited the site with you on April 28, 2009. Based upon documentation in the report and Mr. Burgan's site visit, we have determined that the methods used to identify wetlands on the property are consistent with the *Corps of Engineers Wetland Delineation Manual* dated January 1987. Therefore, the figure entitled *Map D10-1 Harriman Quarry Wetlands* in the report is an accurate depiction of locations and boundaries for wetlands and other waters on the property defined above.

On June 5, 2007, the Corps issued guidance on how to determine the jurisdictional status of wetlands adjacent to streams that are not navigable, based in part on the U.S. Supreme Court's June 19, 2006, decision in the case of *RAPANOS ET UX., ET AL. v. UNITED STATES*. Under the new guidance, wetlands that directly abut streams that flow for more than three months a year (relatively permanent waters) are waters of the United States. Wetlands that directly abut

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streams that flow for less than three months a year, and all wetlands that are adjacent to – but not directly abutting – any stream must have a significant nexus to a traditionally navigable water in order for the wetlands to be considered waters of the United States.

Based on the information provided, it has been determined that the wetlands adjacent and abutting the unnamed tributary to Lone Tree Creek identified in Intermountain Resource, Inc.'s report do not have a significant nexus to a traditionally navigable water, and are not waters of the United States. Therefore, Department of the Army authorization is not required for the project because it does not require the discharge of fill material in wetlands or other waters of the United States. This determination does not eliminate the requirement to obtain any other applicable federal, state, tribal, or local permits that may be required.

In the March 28, 2000, edition of the *Federal Register* (Vol. 65, No. 60), the Corps implemented an administrative appeals process for jurisdictional determinations. This letter serves as an approved jurisdictional determination. Willits Company, Inc. may appeal any determination to the Division Engineer's appeal officer, Mr. David Gesl, by obtaining a Notification of Administrative Appeal Options and Process (NAO) form at our web site. Section "D" of the NAO explains the procedures for appeal. The NAO form must be submitted to Mr. Gesl at the address shown on the form prior to **August 12, 2009**, or forfeit the right to an administrative appeal.

Thank you for your interest in cooperating with the requirements of the U.S. Army Corps of Engineers regulatory program. If you have any questions, please contact Mr. Michael Burgan at (307) 772-2300 and reference file No. NWO-2009-01038.

Sincerely,

Matthew A. Bilodeau
Program Manager
Wyoming Regulatory Office

Copy Furnished:

Jim Orpet
Intermountain Resources, Inc.
P.O. Box 1589
Laramie, Wyoming 82073

The Omaha District, Regulatory Branch, Wyoming Regulatory Office is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete a Customer Service Survey found on our web site at https://www.nwo.usace.army.mil/html/od-rwy/survey.htm Paper copies of the survey are also available upon request for those without Internet access.

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July 16, 2013 2:00pm
75.00
Check 015812

FORM U.W. 5
Rev. 9/09
FILING FEE SCHEDULE
ON REVERSE SIDE

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002
(307) 777-6163

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

APPLICATION FOR WELLS AND SPRINGS
Note: Only springs flowing 25 gallons per minute or less, where the proposed use is Domestic and/or Stock Watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY

Temporary Filing No. U.W. _____

PERMIT NO. U.W. _____
WATER DIVISION NO. ___ DISTRICT _____
U.W. DISTRICT _____

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING HARRIMAN #1

1. Name of applicant(s) WILLITS COMPANY, INC. Phone 307-634-2300
2. Address of applicant(s) P.O. BOX 825 CHEYENNE WY 82003
(MAILING ADDRESS) (CITY) (STATE) (ZIP)
3. Name & address of agent to receive correspondence and notices JONATHAN STAUFFER
P.O. BOX 774000-243 STEAMBOAT SPRINGS CO 80477 Phone 970-817-0600
(MAILING ADDRESS) (CITY) (STATE) (ZIP)
4. Use to which the water will be applied

☐ Domestic — Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totaling one acre or less. Number of houses served?____.

☐ Stock Watering — Normal livestock use at four tanks or less within one mile of well or spring. Stock-watering pipelines and commercial feedlots are a Miscellaneous use. Number of stock tanks?____.

☐ Irrigation — Watering of any lands for agricultural purposes not covered by the definition of domestic use (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., are Miscellaneous uses).

☐ Municipal — Use of water in incorporated Towns and Cities. Note 1: use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. are Miscellaneous uses. Note 2: a permit may be required by the Wyoming Department of Environmental Quality (WDEQ) if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Industrial — Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)

☒ Miscellaneous — Any use of water not defined under previous definitions such as stock-watering pipelines, subdivisions, mine dewatering, mineral/oil exploration drilling, potable supplies in office, etc. (Describe in REMARKS). Note: a permit may be required by the WDEQ if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Coalbed Methane — Water produced in the production of coal bed methane gas. Note: wells used in the production of coal bed methane gas will require a permit from the Wyoming Oil and Gas Conservation Commission.

☐ Monitor, Observation — Note: a WDEQ permit may be required. ☐ Test Well (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/4 NW 1/4 of Sec. 12, Township 14 North, Range 68 West.)
LARAMIE County, SE 1/4 NE 1/4 of Sec. 13, T. 13 N., R. 70 W. of the 6th P.M. (W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot/Tract ___ Block ___ of the _____ Subdivision (or Add'n) of _____. Resurvey Location: Tract _____, (or Lot) _____.

6. Estimated depth of the well or spring is 60 ft. Estimated production interval is 0 ft. to 25 ft.

7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: 125 gallons per minute. NOTE: if for Domestic and/or Stock-watering use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

(b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 5.
Circle appropriate units: (Gallons) (Acre Feet) NOTE: A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons.

8. Mark the point(s) or area(s) of use in the tabulation box below. Note: Upper row refers to the quarter of the section. Next row refers to the quarter of the quarter section.

TABULATION BOX

TWP	RNG	SEC	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
13	70	13	X	X	X	X	X	X	X	X									
13	69	18							X										
13	70	13				X	HARRIMAN QUARRY RESERVOIR (1394-R-)												

SEE REVERSE SIDE

Permit No. U.W. _____ Book No. _____ Page No. _____

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5 3/16/13

9. If for Irrigation use:
   a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
   b. ☐ Land will be irrigated from this well only.
   c. ☐ Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. If for Irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.:_____

11. The well or spring is to be constructed on lands owned by_____.
    (The granting of a permit does not constitute the granting of a right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by JOHN WILLITS, BETH FARWELL, KELLY KAMARAD.
    (If the landowner is not the applicant, a copy of the agreement relating to the usage of the appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.) NOTE: Water rights attach to the area(s) and/or point(s) of use. DEQ Mine TFN 53/062

REMARKS: GROUNDWATER ENCOUNTERED DURING MINING WILL BE STORED WITHIN DEPRESSIONS ON PIT FLOOR OR PUMPED INTO THE IMPOUNDMENT (13346 R) AFTER CAPTURE. ALL WATER CAPTURED WILL BE USED FOR FUTURE AGGREGATE PROCESSING. MINE DEWATERING, AGGREGATE PROCESSING, RESERVOIR SUPPLY, and Dust Abatement.
Re-filing of Permit No. U.W. 190931

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

Signature of Applicant or Authorized Agent — Date: JULY 16, 2013

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$50.00
COAL BED METHANE USE	$50.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, AND MISCELLANEOUS USES	$75.00
MONITOR (For water level measurements or chemical quality sampling) or TEST WELL USES	No Fee

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the _____ day of _____, A.D. 20____, at _____ o'clock _____ M.

Permit No. U.W. _____ for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.

Coal Bed Methane wells have Additional Conditions and Limitations on attachment sheet.

Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion must be filed within thirty (30) days of completion of construction, including pump installation.

Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 20____.

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this _____ day of _____, A.D. 20____.

PATRICK T. TYRRELL, State Engineer

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Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

July 28, 2009

Received
AUG 03 2009
Willits Company Inc

Mr. Matt Farwell
Controller
Willits Company, Inc.
PO Box 825
Cheyenne, WY 82003

Permit No. **CT-9443**

Dear Mr. Farwell:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Willits Company, Incorporated's application to establish the Harriman Quarry, which will include sand, gravel and granite crushing, screening, blasting, exposed acreage, stockpiling and haul activity, located in SE¼NE¼ of Section 13, T13N, R70W & SW1/4NW1/4 of Section 18, T13N, R69W, approximately nineteen (19) miles west of Cheyenne, in Laramie County, Wyoming. Willits Company, Inc. estimates an annual production rate of 500,000 tons. No concrete batch plants or hot mix asphalt plants are planned for this site.

Following this agency's proposed approval of the request as published June 25, 2009 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a thirty (30) day period in which to submit comments concerning the proposed new source, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to construct the Harriman Quarry as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 122 W. 25th Street, Cheyenne, WY 82002.

4. The owner or operator shall furnish the Administrator written notification of: (i) the anticipated date of initial startup not more than sixty (60) days or less than thirty (30) days prior to such date, and; (ii) the actual date of initial start-up within fifteen (15) days after such date in accordance with Chapter 6, Section 2(i) of the WAQSR.

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5. The date of commencement of construction shall be reported to the Administrator within thirty (30) days of such date. The permit shall become invalid if construction or modification is not commenced within twenty-four (24) months of the date of permit issuance or if construction is discontinued for a period of twenty-four (24) months or more in accordance with Chapter 6, Section 2(h) of the WAQSR. The Administrator may extend such time period(s) upon a satisfactory showing that an extension is justified.

Completed 8/13/09

6. Any crushing/screening equipment shall have separate valid air quality permit(s) prior to locating/operating at this site.

7. Hot mix asphalt plants or concrete batch plants cannot be located/operated at this site unless authorized by an appropriate permit modification.

8. That all work areas, disturbed areas and stockpiles shall be treated with water and/or chemical dust suppressants on a schedule sufficient to control fugitive dust.

9. All unpaved haul roads shall be treated with water and/or chemical dust suppressants on a schedule sufficient to control fugitive dust from vehicular traffic and wind erosion. At a minimum, two (2) applications of chemical dust suppressant shall be applied annually in accordance with the manufacturer's recommendations. The chemical dust suppressant shall be maintained continuously to the extent that it remains a viable control measure, which may require additional applications. All unpaved portions of haul roads shall receive an initial treatment of chemical dust suppressant prior to any hauling activities at the beginning of each construction season.

10. Willits Company, Inc. shall maintain a log book listing the dates, amount of dust suppressant applied, areas treated, water usage and operating hours of the water truck. The log shall be maintained on site for a period of at least five (5) years and shall be made available to the Division upon request.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 4 and 5. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

David A. Finley
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Glenn Spangler

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THE STATE OF WYOMING

JIM GERINGER
GOVERNOR

Department of Environmental Quality

Herschler Building ● 122 West 25th Street ● Cheyenne, Wyoming 82002

ADMINISTRATION	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZARDOUS WASTE	WATER QUALITY
(307) 777-7758	(307) 777-6145	(307) 777-7391	(307) 777-7368	(307) 777-7756	(307) 777-7752	(307) 777-7781
FAX 777-7682	FAX 634-0799	FAX 777-5616	FAX 777-6937	FAX 634-0799	FAX 777-5973	FAX 777-5973

November 5, 1996

Mr. Robert Willits
President
Willits Company, Inc.
P.O. Box 825
Cheyenne, WY 82003

Permit No. CT-1298

Dear Mr. Willits:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Willits Company, Incorporated's application to construct an Eljay Model CS45-5163 portable crushing and screening plant in the SW¼NW¼ of Section 23, T16N, R73W, approximately 1.5 miles northeast of Laramie, in Albany County, Wyoming.

Following this agency's proposed approval of the request as published October 3, 1996 and in accordance with Section 21(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed new source, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to construct the crushing and screening plant as described in the application is hereby granted pursuant to Section 21 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

2. That all commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That written notification of the anticipated date of initial start-up be provided as early as possible, but in any case the actual date of initial startup be provided within 15 days after such date.

4. That construction/operation of this facility must commence within 24 months of the date of permit issuance, in accordance with Section 21(h) of the Wyoming Air Quality Standards and Regulations, or the permit becomes invalid. The Administrator may extend the period based on a satisfactory justification of the requested extension.

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5. That water sprays be located at all belt transfer points, crusher inlets and outlets, shaker screens and discharge points to achieve adequate control of fugitive dust emissions. The water spray system must be used during all operating hours to the extent necessary to limit emissions to ten percent (10%) opacity from any belt transfer point, belt conveyor or screen and to fifteen (15%) opacity from any crusher as determined by WAQS&R, Section 22, Appendix II-A, Method 9.

6. That all haul roads, access roads, work areas and stockpiles shall be treated with water and if necessary chemical dust suppressants on a schedule sufficient to control fugitive dust from vehicular traffic and wind erosion.

7. That in accordance with Section 21(b)(ii) of the WAQS&R, Willits Company, Inc. shall submit a "self issuance" relocate permit for each new location. Such permit shall be executed and a copy shall be provided to the Air Quality Division prior to operation at the new location.

8. That the proposed facility shall comply with all applicable parts of the Wyoming Air Quality Standards Section 22, New Source Performance Standards - Subpart OOO.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Section 21 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 3, 4, and 7. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

Charles A. Collins
Administrator
Air Quality Division

Dennis Hemmer
Director
Dept. of Environmental Quality

CAC:DH/BJD

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Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

September 29, 2009

Mr. Matt Farwell
Controller
Willits Company, Inc.
PO Box 825
Cheyenne, WY 82003

Permit No. **CT-9641**

Dear Mr. Farwell:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Willits Company, Incorporated's application to install portable crushing/screening and conveyor equipment to be initially located at the Harriman Quarry in the SE1/4NE1/4 of Section 13, T13N, R70W, approximately nineteen (19) miles west of Cheyenne, in Laramie County, Wyoming. Maximum production for the crushing equipment is reported at 500,000 tons per year (tpy) and 200 tons per hour (tph). The portable equipment consists of the following:

- 1995 Cedar Rapids 30X42 jaw crusher (SN 44415) (primary crusher)
- 1999 Cedar Rapids CSC380 cone crusher (SN 48190) with FSG6203 6X20 screen
- 1,800 hp Caterpillar 3512 diesel generator (SN CMJ01443)
- Six (6) conveyor belts

Following this agency's proposed approval of the request as published August 27, 2009 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a thirty (30) day period in which to submit comments concerning the proposed new source, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to construct the Harriman Quarry as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That all notifications, reports and correspondences associated with this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002.

53/062

4. That the allowable opacity for fugitive emissions associated with the crushing equipment shall be limited to 15%, the allowable opacity for screen, conveyor transfer points and other fugitive emission points shall be limited to 10% as determined by 40 CFR part 60, Appendix A, Method 9.

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5. That the crushing/screening equipment shall be equipped with a wet suppression system to control fugitive emissions from the crushing/screening equipment. The wet suppression system shall operate to the extent necessary comply with the allowable opacity limits established in condition 4.

6. That all unpaved portions of the haul roads, access roads, work areas and stockpiles associated with this crushing equipment shall be treated with water and/or chemical dust suppressants on a schedule sufficient to control fugitive dust from vehicular traffic and wind erosion.

7. That Willits Company, Inc. shall comply with all applicable requirements of 40 CFR part 60, subpart OOO.

8. In accordance with Chapter 6, Section 2(b)(ii) of the WAQSR, Willits Company, Inc. shall submit a "self-issuance" relocate permit for each new location. Such permit shall be executed and copies provided to the Air Quality Division prior to operation at the new location. A fee will be assessed upon issuance of the relocation permit.

9. Willits Company, Inc. shall keep a copy of the permit and the relocation permit with the portable crushing/screening equipment at all times.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with condition 8. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

for David A. Finley
Administrator
Air Quality Division

John V. Corra
Director
Dept. of Environmental Quality

cc: Glenn Spangler

53062

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Matt Farwell

From: Sahl, Barbara [Bsahl@wyo.gov]
Sent: Thursday, January 21, 2010 12:47 PM
To: Matt Farwell
Subject: RE: Questions regarding WYPDES permitting

Hello Matt,

The only other water permit you might need is a WYPDES wastewater permit. You would only need that if you will have sort of wash or process water that *could* leave the pit *and* enter a surface drainage (surface water of the state), whether it's dry or not. If your ponds are big enough to hold all of that water and storm water too, then that permit is unnecessary.

You might also need an Air Quality permit. If you haven't talked to those folks yet, you should.

I hope this helps. If I've only confused the issue please call or e-mail.

b

Barb Sahl
Storm Water Program Coordinator
Water Quality Division
307-777-7570
fax - 307-777-5973

From: Matt Farwell [mailto:matt.farwell@willitscompanyinc.com]
Sent: Thursday, January 21, 2010 12:09 PM
To: Sahl, Barbara
Subject: Questions regarding WYPDES permitting

Hi Barbara,

I grabbed your email address off the WY Dept of Environmental Quality website.

I have a few questions regarding whether or not I need to secure a WYPDES permit for a quarry that we are in process of permitting through LQD.

There will be a few detention basins within the quarry that will trap and store runoff as well as be used for the processing of aggregate. The pit floor itself will channel all runoff from the disturbed are into these detention basins so no water should leave the disturbed area and the detention basins and sediment ponds we will have constructed will be plenty big enough to capture all of this water.

We have already obtained a Storm Water Discharge permit (Permit WYR320591).

Do we need any other permits from the WQD?

Thanks for your attention to this matter.

Matt

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I.G: Appendix A Surface and Mineral Ownership Rights Within the Permit Area

1. The names and last known address for owners in each of the categories interpreted by the LDQ for this requirement and as per §35-11-406(a)(iv) are listed below:

   John Willits
   1417 W 6th Ave
   Cheyenne, WY 82001

   Kelly Kamarad
   619 Shadow Mountain Trail
   Cheyenne, WY 82009

   Beth Farwell
   336 Scenic Dr
   Loveland, CO 80537

2. The names and last know address for owners of common minerals as per as per §35-11-406(a)(iv) are listed below:

   John Willits
   1417 W 6th Ave
   Cheyenne, WY 82001

   Kelly Kamarad
   619 Shadow Mountain Trail
   Cheyenne, WY 82009

   Beth Farwell
   336 Scenic Dr
   Loveland, CO 80537

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I.H Appendix B: Surface and Mineral Ownership Rights Adjacent to the Permit Area

A. The names and last know address for owners of record of surface rights of the lands immediately adjacent (within ½ mile) of the permit area as per §35-11-406(a)(v) are listed below:

Willadsen Brothers Partnership
796 Rd 103
Granite Canon, WY 82059

Quarter Circle F Quarter (In care of Circle Lone Tree Ranch Inc.)
P.O. Box 44
Cheyenne, WY 82003

Sharon K. Lamprecht
1112 W. Maximillian Way
Tuscon, AZ 85704

William R. Newbern ET AL
604 Road 103
Granite Canon, WY 82059

Aspen Holdings Inc.
4101 Evans Ave
Cheyenne, WY 52001

Kathleen L. Roberts
584 ST HWY 218
Granite Canon, WY 52059

Eric L. Ridley
P.O. Box 167
Granite Canon, WY 82059

Eric L. Ridley ET UX
P.O. Box 167
Granite Canon, WY 82059

Union Pacific Rail Road Company (In care of C/O Property Tax Dept)
1400 Douglas Stop 1640
Omaha, NE 68179

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Appendix B
Adjacent Surface and Mineral Ownership Rights

John Eldon Sutherland
P.O. Box 65
Granite Canon, WY 82059

State of Wyoming (In care of State Lands)
Herschler Building
Cheyenne, WY 82002

State of Wyoming (In care of Wyoming Department of Transportation (I80 Easement))
2001 Capitol Ave
Cheyenne, WY 82001

Laramie County School District #1 (Willadsen School)
2810 House Ave
Cheyenne, WY 82001

Pete L. Barajas
658 I-80 Service Rd
Granite Canyon, WY 82059

Angelo J. Fiorelli ET AL
4488 I-80 Service Rd
Burns, WY 82053

Kenneth C. Robert ET UX
584 Road 102
Granite Canyon, WY 82059

Laramie County (Fire District #10)
PO Box 608
Cheyenne, WY 82003

U.S Department of the Interior
Bureau of Land Management
Rawlins Field Office
1300 North Third
PO Box 2407
Rawlins, WY 82301

Also included in Appendix B are maps associated with the above surface owners in an effort to depict their location to the permit area.

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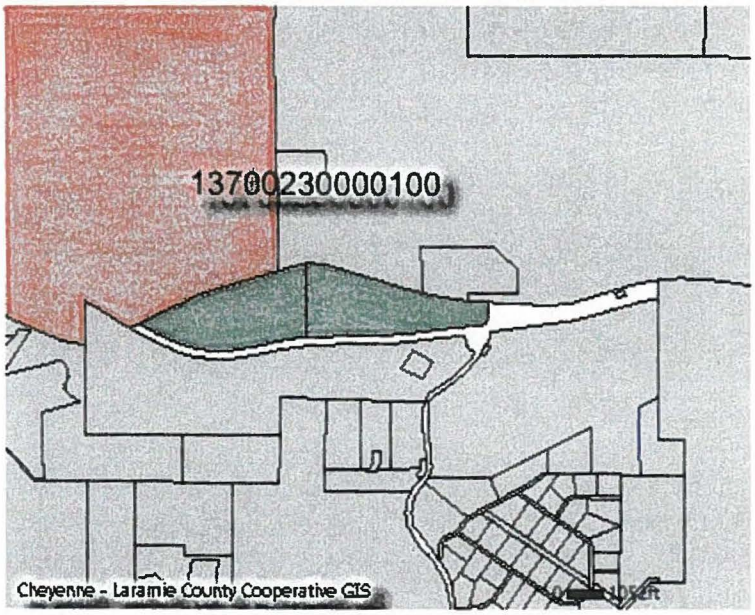
Parcel Map - Laramie County, Wyoming



Parcels

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This GIS website was made possible through the Environmental Protection Agency 2000-2001 EMPACT Grant as awarded to the City of Cheyenne-Laramie County Environmental Health Division. The success of this project is a testament to multi-jurisdictional cooperation and dedication.

Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13700230000100
Account Number	R0007830
County PIN Number	00013007002020
Site Address	796 ROAD 103
Owner Name	WILLADSEN BROTHERS PARTNERSHIP
In Care Of	
Owner Address	796 RD 103
Owner Address	GRANITE CANON. WY 82059
Acres	3341
Land Square Footage	145533959
Tax District	0110
Tax Code	A
Assessed Value	28025
Building Value	176290
Land Value	118716
Total Value	295006
Legal Description	13-70: S1/2 SEC 2; ALL SEC 3; S1/2 SEC 4; ALL EXC UPRR SEC 9; ALL

Gene Sabol
Name

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Building 1

Property Type	Residential
Building Number	1

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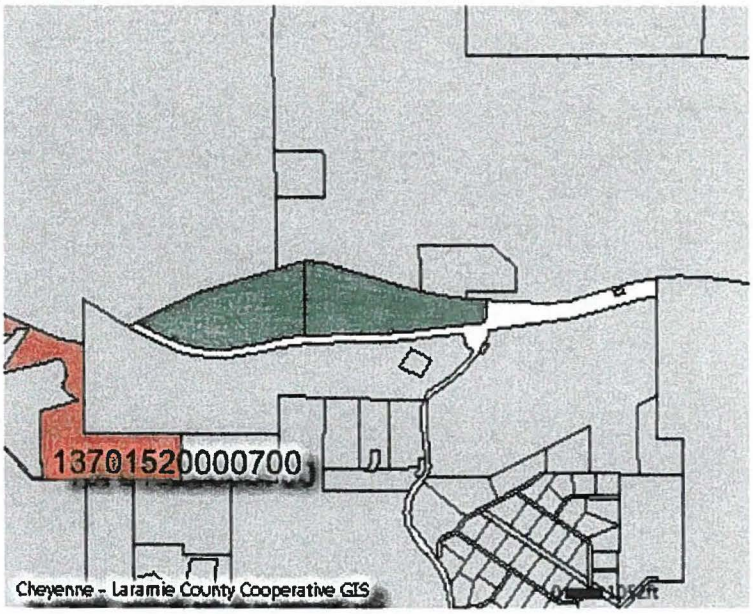
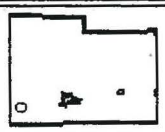
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701520000700
Account Number	R0053007
County PIN Number	00013007015080
Site Address	600 ROAD 103
Owner Name	QUARTER CIRCLE F QUARTER
In Care Of	CIRCLE LONE TREE RANCH INC
Owner Address	PO BOX 44
Owner Address	CHEYENNE. WY 82003-0044
Acres	231.25
Land Square Footage	10073250
Tax District	0110
Tax Code	A
Assessed Value	9419
Building Value	74391
Land Value	24761
Total Value	99152
Legal Description	/4 OF SEC 15 BEARS N 89 DEG 36' 45" E); TH N 02 DEG 35' 44" E. 1205.4'

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Building 1

Property Type	Residential
Building Number	1

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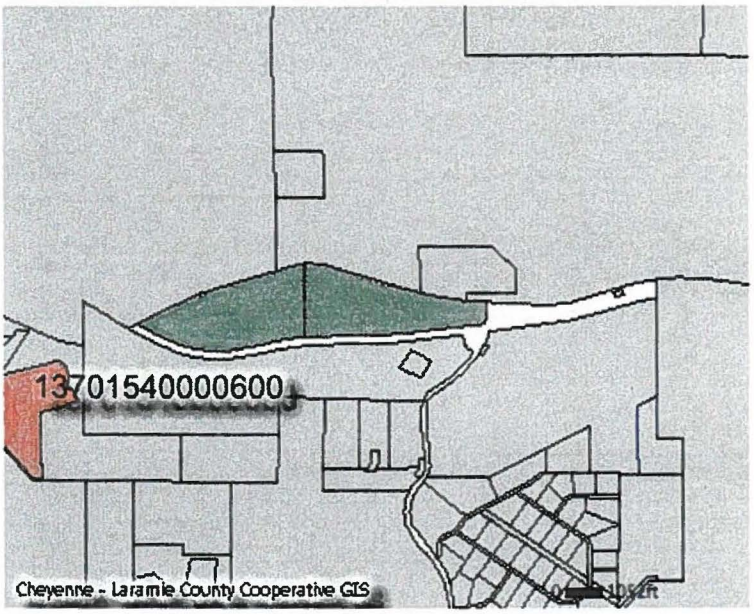
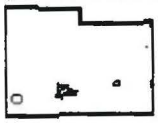
Parcel Map - Laramie County, Wyoming





Parcels

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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701540000600
Account Number	R0007842
County PIN Number	00013007015060
Site Address	
Owner Name	LAMPRECHT. SHARON K
In Care Of	
Owner Address	1112 W MAXIMILLIAN WAY
Owner Address	TUCSON. AZ 85704
Acres	87.57
Land Square Footage	3814550
Tax District	0110
Tax Code	A
Assessed Value	396
Building Value	0
Land Value	4170
Total Value	0
Legal Description	13-70: A POR OF SE1/4 SEC 15; POR OF N1/2NE1/4 SEC 22. DESC AS: BEG A

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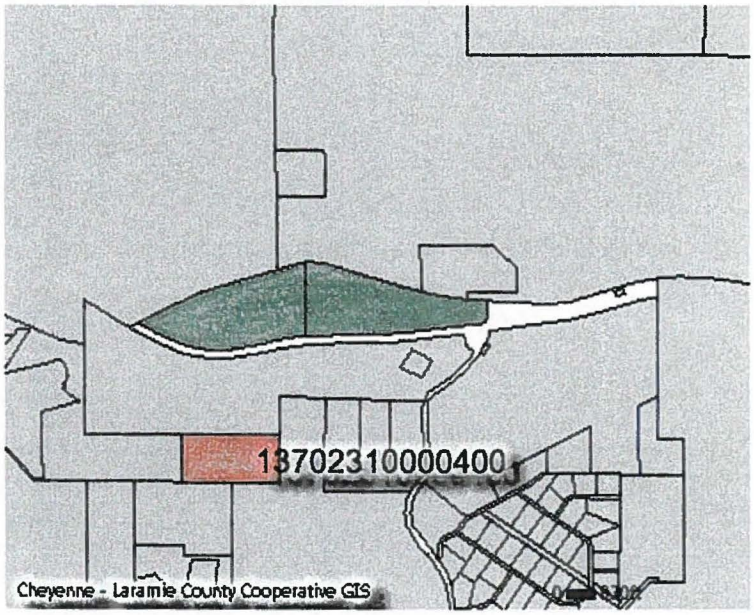
Parcel Map - Laramie County, Wyoming



Parcels

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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13702310000400
Account Number	R0007868
County PIN Number	00013007023050
Site Address	604 ROAD 103
Owner Name	NEWBERN. WILLIAM R ET AL
In Care Of	
Owner Address	604 ROAD 103
Owner Address	GRANITE CANON. WY 82059
Acres	80
Land Square Footage	3484800
Tax District	0110
Tax Code	A
Assessed Value	10377
Building Value	100022
Land Value	9199
Total Value	109221
Legal Description	13-70: N1/2NE1/4 SEC 23

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Building 1

Property Type	Residential
Building Number	1

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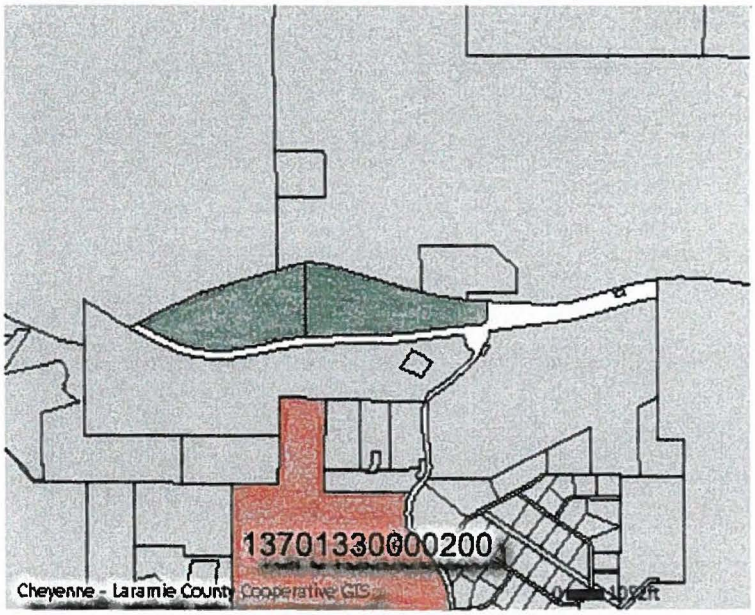
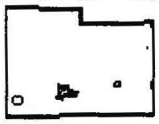
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701330000200
Account Number	R0007835
County PIN Number	00013007013021
Site Address	HARRIMAN
Owner Name	ASPEN HOLDINGS INC
In Care Of	
Owner Address	4101 EVANS AVE
Owner Address	CHEYENNE. WY 82001
Acres	555.7
Land Square Footage	24206293
Tax District	0110
Tax Code	A
Assessed Value	1713
Building Value	0
Land Value	18019
Total Value	0
Legal Description	24; TH N89DEG42'22"W. 1299.01' TO THE SW COR OF THE E1/2SE1/4 SEC 23;

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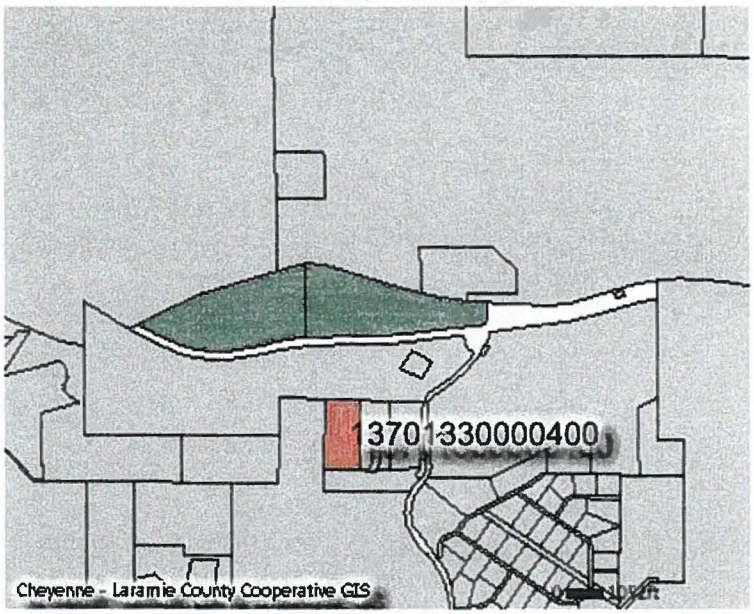
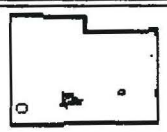
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701330000400
Account Number	R0047778
County PIN Number	00013007013030
Site Address	ST HWY 218
Owner Name	ROBERTS. KATHLEEN L
In Care Of	
Owner Address	584 ST HWY 218
Owner Address	GRANITE CANON. WY 82059
Acres	35
Land Square Footage	1524600
Tax District	0110
Tax Code	A
Assessed Value	240
Building Value	0
Land Value	2526
Total Value	0
Legal Description	13-70: POR OF S1/2 SEC 13; POR OF N1/2 SEC 24. DESC AS: BEG AT THE SW

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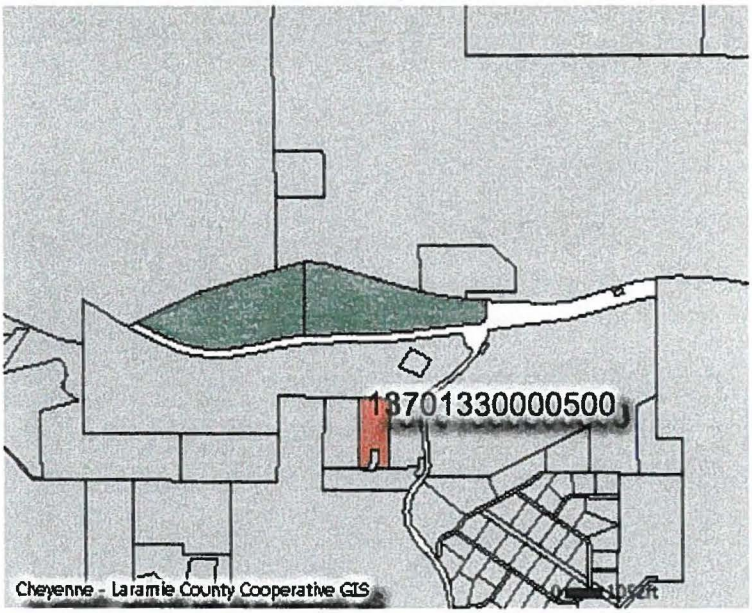
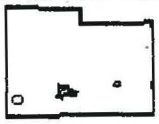
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701330000500
Account Number	R0047918
County PIN Number	00013007013040
Site Address	ST HWY 218
Owner Name	ROBERTS. KATHLEEN L
In Care Of	
Owner Address	584 ST HWY 218
Owner Address	GRANITE CANON. WY 82059
Acres	35
Land Square Footage	1524600
Tax District	0110
Tax Code	A
Assessed Value	530
Building Value	0
Land Value	5583
Total Value	0
Legal Description	13-70: POR OF S1/2 SEC 13; POR OF N1/2 SEC 24. DESC AS: BEG AT THE SW

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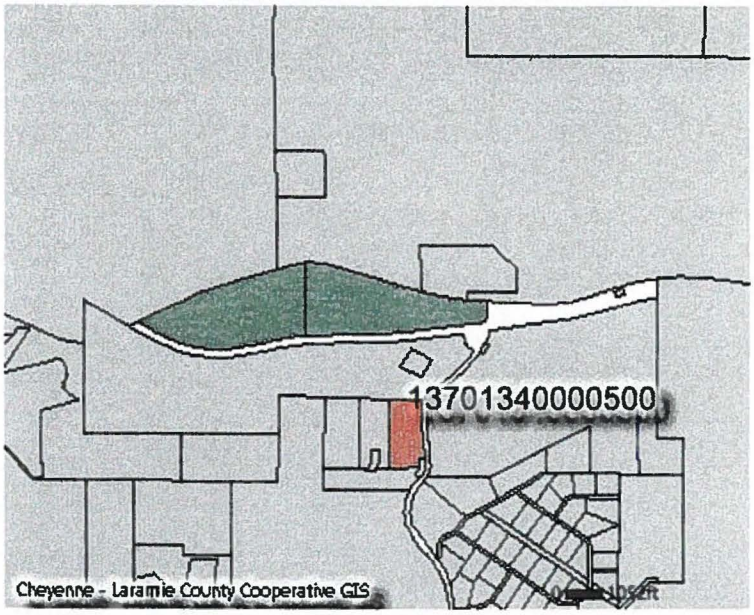
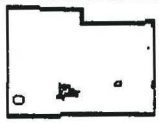
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701340000500
Account Number	R0047917
County PIN Number	00013007013050
Site Address	ST HWY 218
Owner Name	ROBERTS. KATHLEEN L
In Care Of	
Owner Address	584 ST HWY 218
Owner Address	GRANITE CANON. WY 82059
Acres	35
Land Square Footage	1524600
Tax District	0110
Tax Code	A
Assessed Value	624
Building Value	0
Land Value	6555
Total Value	0
Legal Description	13-70: POR OF S1/2 SEC 13; POR OF N1/2 SEC 24. DESC AS: BEG AT THE SW

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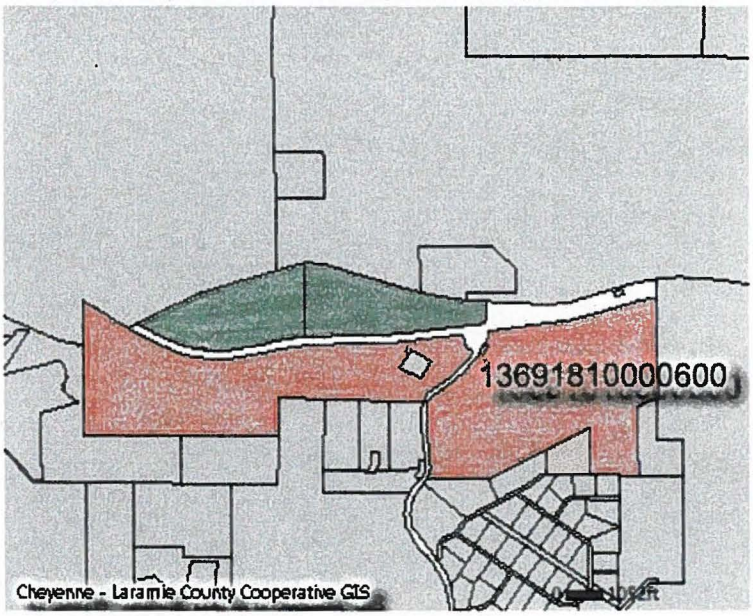
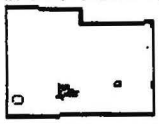
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13691810000600
Account Number	R0007783
County PIN Number	00013006918080
Site Address	622 ST HWY 218
Owner Name	RIDLEY. ERIC L
In Care Of	
Owner Address	PO BOX 167
Owner Address	GRANITE CANON. WY 82059
Acres	1091.16
Land Square Footage	47530929.2
Tax District	0110
Tax Code	A
Assessed Value	3877
Building Value	2386
Land Value	38419
Total Value	40805
Legal Description	41'; TH SWSTRLY. 253.72' ALONG A CURVE CONCAVE TO THE NW. RADIUS 1624.

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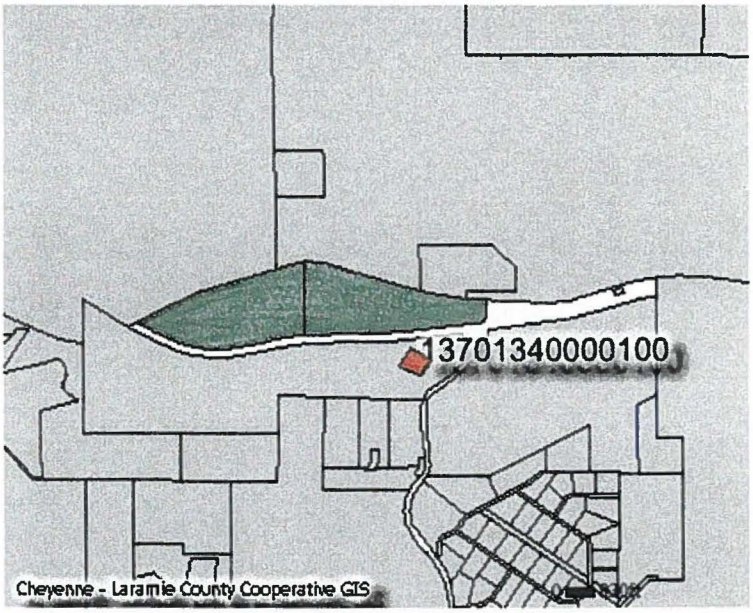
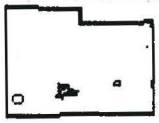
Parcel Map - Laramie County, Wyoming





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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13701340000100
Account Number	R0007837
County PIN Number	00013007013010
Site Address	622 ST HWY 218
Owner Name	RIDLEY. ERIC L ET UX
In Care Of	
Owner Address	PO BOX 167
Owner Address	GRANITE CANON. WY 82059
Acres	10
Land Square Footage	435600
Tax District	0110
Tax Code	A
Assessed Value	33325
Building Value	322459
Land Value	28328
Total Value	350787
Legal Description	13-70: A POR OF SEC 13. DESC AS: BEG AT THE SW COR OF SD SEC 13; (WHEN

Building 1

Property Type	Residential
Building Number	1

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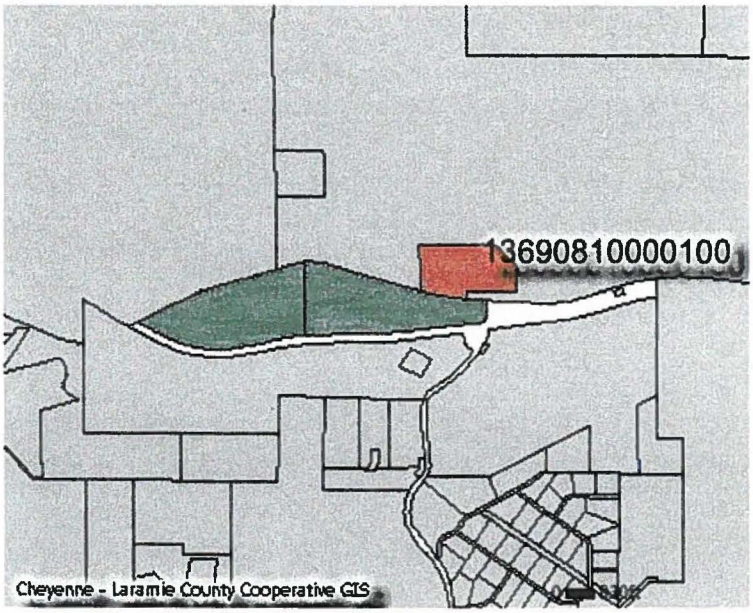
Parcel Map - Laramie County, Wyoming



Parcels

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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13690810000100
Account Number	R0007774
County PIN Number	00013006908010
Site Address	I 80 SERVICE
Owner Name	UNION PACIFIC RR CO
In Care Of	C/O PROPERTY TAX DEPT
Owner Address	1400 DOUGLAS STOP 1640
Owner Address	OMAHA. NE 68179-1640
Acres	160
Land Square Footage	6969600
Tax District	0110
Tax Code	A
Assessed Value	6900
Building Value	0
Land Value	60000
Total Value	0
Legal Description	13-69: NE1/4NE1/4. S1/2NE1/4. NW1/4SE1/4 SEC 8. COUNTY LINE PART LOT 1

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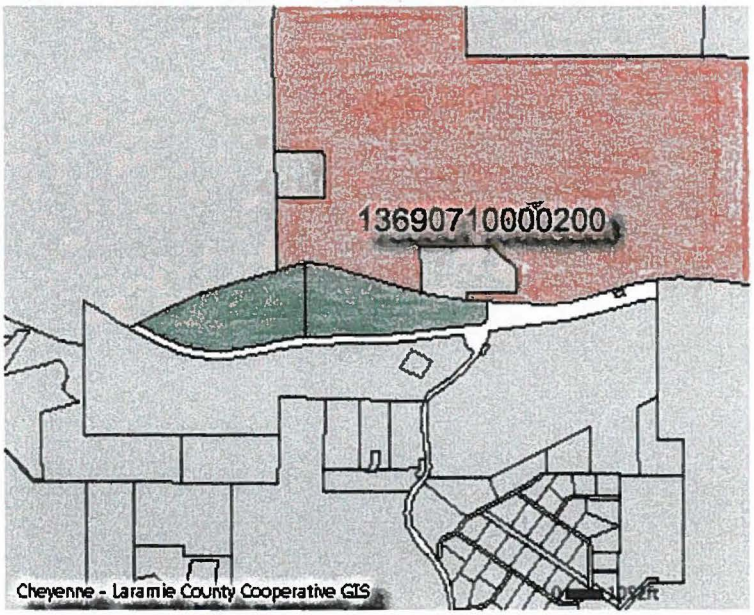
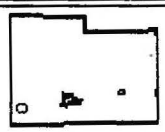
Parcel Map - Laramie County, Wyoming





Parcels

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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13690710000200
Account Number	R0007773
County PIN Number	00013006907010
Site Address	642 W I-80 SERVICE
Owner Name	SUTHERLAND. JOHN ELDON
In Care Of	
Owner Address	P O BOX 65
Owner Address	GRANITE CANON. WY 82059
Acres	2443.24
Land Square Footage	106427534
Tax District	0110
Tax Code	A
Assessed Value	61232
Building Value	562958
Land Value	81584
Total Value	644542
Legal Description	13-69: ALL SEC 7; W1/2. S1/2SE1/4. NE1/4SE1/4. NW1/4NE1/4 SEC 8; ALL

Building 1

Property Type	Residential
Building Number	1

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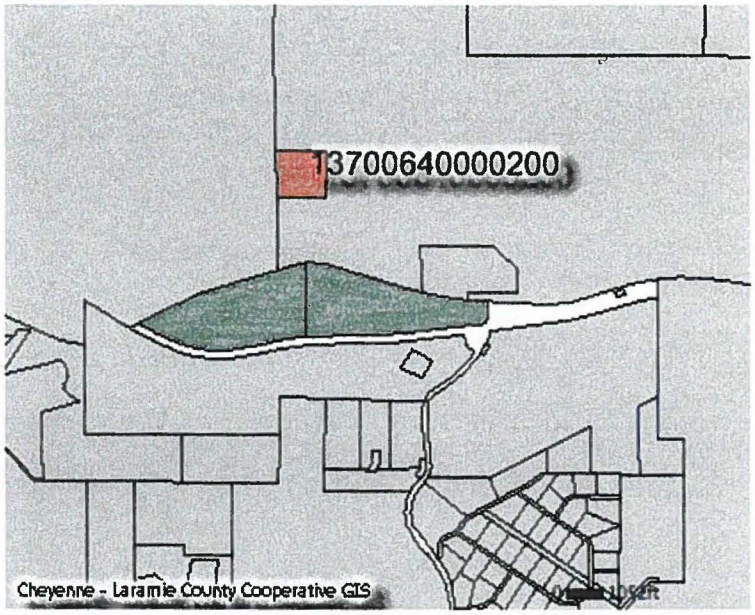
Parcel Map - Laramie County, Wyoming



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Owner record(s) as of January 1, 2008

Parcel Data

State PIN Number	13700640000200
Account Number	R0053204
County PIN Number	00013007006030
Site Address	VAC
Owner Name	STATE OF WYOMING
In Care Of	STATE LANDS
Owner Address	HERSCHLER BUILDING
Owner Address	CHEYENNE. WY 82002
Acres	955.24
Land Square Footage	41610254.4
Tax District	0110
Tax Code	E
Assessed Value	0
Building Value	0
Land Value	0
Total Value	0
Legal Description	13-70: SE1/4 SEC 6; NW1/4 SW1/4 SEC 12; S1/2 NW1/4 SEC 26; ALL SEC

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Appendix C

I.I Appendix C: Legal Description of Lands within the Permit Area and Original U.S.G.S Topographic Map

A. LQD Form C-1 is included as page number C-2. This form includes all lands which occur inside the permit area and include the access/haul road corridor to its junction with the nearest road maintained by a governmental agency. The agency maintained road is commonly known as Harriman Road.

B. There are **NO** lands for which no right to mine is claimed.

C. There are **NO** lands which are included in other Land Quality Division Permits.

D. A U.S.G.S topographic map is included as page number C5 (Map C-1) showing; 1) the area permit boundary; 2) projected affected land; 3) approximate boundary of adjacent lands (0.5 mile); 4) haul road; 5) adjudicated and good standing wells within 0.5 mile. There were no lands in the permit boundary that were previously affected by underground mining; therefore, the map does not display the outline of previously disturbed lands from underground mining. All future mining will be done from the surface, so the lands will not be affected by future underground mining.

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APPENDIX "C"

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

Portion of the N ½	Section 13	,T. 13	N.,R. 70	W.,	Acres 140.6
Portion of the N ½	Section 14	,T. 13	N.,R. 70	W.,	Acres 99.0
Portion of the SW ½ of the NW ¼	Section 18	,T. 13	N.,R. 69	W.,	Acres 4.4
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres
	Section	,T.	N.,R.	W.,	Acres

County of Laramie

Municipal Corporation None

Subtotal of Above Acres 244.0

Total Permit (Amendment) Acres 244.0

Applicant Signature

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APPENDIX "C"

Bearing and Distance Description

This Appendix "C" presents the location of lands by legal subdivision, section, township, range, county and municipal corporation, if any, [W.S. § 35-11-406(a)(vi)] and the number of acres in each bearing and distance description. No mining activity may take place on land for which there is not in effect a valid mining permit [W.S. § 35-11-405]. To include additional lands within a permit area it is necessary to amend the permit [W.S. § 35-11-406(a)(xii)], so care should be taken to include all lands necessary to the mining operation as defined in W.S. § 35-11-103, (e)(viii). Each description should be sufficient to locate the area on a U.S.G.S. topographic map without reference to any additional maps, diagrams, or descriptions. Each description should state the acreage encompassed by the description and the total permit acreage should be stated. An original U.S.G.S. topographic map with the permit area clearly outlined should accompany each permit application.

Please See Attached "Legal Description."

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County of Laramie

Municipal Corporation

Subtotal of Above Acres 255.9

Total Permit (Amendment) Acres 255.9

Applicant Signature

Form C2
Rev. 7/97

53/010

LEGAL DESCRIPTION

A tract of land being a portion of Sections 13 and 14, Township 13 North, Range 70 West, and Section 18, Township 13 North, Range 69 West, 6th P.M., Laramie County, Wyoming, being more particularly described as follows:

Beginning at the intersection of the Northerly right of way of Interstate 80 and the Southerly right of way of the Union Pacific Rail Road, from which the southeast corner of said Section 14 bears S.49°52'10"E., a distance of 4750.67 feet; thence along the said Southerly right of way for the following eight courses; thence N.64°14'49"E., a distance of 1418.63 feet; thence 506.33 feet along a curve concave Southerly, said curve having a radius of 3344.19 feet and a central angle of 08°40'29" (chord direction of N.68°35'04"E., and a chord length of 505.84 feet); thence N.72°55'19"E., a distance of 2640.87 feet; thence 732.93 feet along a curve concave Southerly, said curve having a radius of 1256.98 feet and a central angle of 33°24'30" (chord direction of N.89°37'34"E., and a chord length of 722.59 feet); thence S.73°40'11"E., a distance of 1968.02 feet; thence 424.49 feet along a curve concave Northerly, said curve having a radius of 7075.55 feet and a central angle of 03°26'15" (chord direction of S.75°23'18"E., and a chord length of 424.42 feet); thence S.77°06'26"E., a distance of 1059.32 feet; thence 589.70 feet along a curve concave Northerly, said curve having a radius of 3637.87 feet and a central angle of 09°17'16" (chord direction of S.81°45'04"E., and a chord length of 589.05 feet); thence S.86°23'41"E., a distance of 610.08 feet; thence S.05°11'51"W., a distance of 273.10 feet to a point on the Northerly right of way of said Interstate 80; thence along said Northerly right of way for the following 8 courses; thence S.83°41'20"W., a distance of 1266.68 feet; thence 271.07 feet along a curve concave Northerly, said curve having a radius of 22672.20 feet and a central angle of 00°41'06" (chord direction of S.84°01'53"W., and a chord length of 271.07 feet); thence S.05°37'34"E., a distance of 96.56 feet; thence 1000.45 feet along a curve concave Northerly, said curve having a radius of 22561.35 feet and a central angle of 02°32'27" (chord direction of S.85°37'16"W., and a chord length of 1000.37 feet); thence S.86°52'33"W., a distance of 2073.40 feet; thence 1500.54 feet along a curve concave Southerly, said curve having a radius of 11641.35 feet and a central angle of 07°23'07" (chord direction of S.83°11'09"W., and a chord length of 1499.50 feet); thence S.79°29'26"W., a distance of 825.10 feet; thence 2716.99 feet along a curve concave Northerly, said curve having a radius of 3615.35 feet and a central angle of 43°03'31" (chord direction of N.79°19'32"W., and a chord length of 2653.50 feet) to the point of beginning. Containing 252.66 acres more of less, and subject to easements and encumbrance of record.

(Said tract of land being the same as those parcels recorded in page 7 of 8 of Book 1568, Page 791 and Book 1690, Page 761, EXCEPT Book 1700, Page 850, Laramie County Clerk's Office.)

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OCT 15 2009
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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GRANITE QUADRANGLE
WYOMING-LARAMIE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1956. Field checked 1962

Polyconic projection. 1927 North American datum
10,000-foot grid based on Wyoming coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled from aerial photographs taken 1976. Map edited 1978. This information not field checked

UTM GRID AND 1978 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
(GN, MN; 0°07' 2 MILS; 13° 231 MILS)

SCALE 1:24 000
1 ½ 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

WYOMING
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U.S. Route

GRANITE, WYO.
N4100-W10507.5/7.5

1962
PHOTOREVISED 1978
AMS 4966 II SW-SERIES V874

MAP
LEGEN
Permit
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First Public Notice

I.J: Proof of First (Completeness) Public Notice

Page number I.J-2 contains the Public notice published in the Wyoming Tribune Eagle once a week for two (2) consecutive weeks.

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5 3/

Proof of Publication

THE STATE OF WYOMING)
County of Laramie) ss.

AFFIDAVIT

L.D. Catalano of said County of Laramie, being first duly sworn, deposes and says that he is Controller; or Val Kealy, of said County of Laramie, being first duly sworn, deposes and says that she is the Office Manager of the

Wyoming Tribune-Eagle

a newspaper printed and published in said County and State, and in the Capitol of said State; that the notice of which the annexed is a true copy, has been published in the said newspaper.

for Two
Times, to wit:
February 20, 27, 2009

and that the first publication of said notice was made in said paper bearing date

February 20, A.D. 20 09

and that the last publication of said notice was made in said paper bearing date

February 27, A.D. 20 09

Val Kealy

Subscribed in my presence and sworn to before me by the aforesaid L.D. Catalano, Controller or Val Kealy, Office Manager.

this 3

Day of March, 20 09

My commission expires:
January 6, 2010

Ashlen N. Royal
Notary Public

PUBLIC NOTICE

The Willits Company, Inc. of Cheyenne Wyoming has filed a mining permit application with the Land Quality Division of the Wyoming Department of Environmental Quality for the mining of granite in Laramie County, Wyoming. The mine is located approximately 17 miles west of Cheyenne north of I-80 at M.P. 342. The application will be re-advertised for public comment prior to approval by the Department of Environmental Quality.

February 20, 27, 2009

5 3/062

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I.J-2

I.K: Proof of Final Public Notice

Page number I.K-2 contains the Public notice published in the Wyoming Tribune Eagle once a week for two (2) consecutive weeks.

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Data to be Entered upon Completion

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NEWSPAPER PUBLICATION AND NOTIFICATION FOR PROPOSED SMALL MINING PERMIT OR SMALL MINING PERMIT AMENDMENT

W.S. §35-11-406(j) - Second Publication

Upon notification by the Land Quality Division the applicant shall commence the following:

1. A copy of the application needs to filed with the Office of the County Clerk in the counties in which the proposed permit area is located no later than the first day of publication. THIS COPY SHOULD BE REMOVED FROM THE COUNTY CLERK'S OFFICE AFTER PERMIT APPROVAL. **Immediately following filing, submit an affidavit of filing from the Office of the County Clerk to the Land Quality Division.**

2. Publish a notice in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks (see sample format below).

3. Mail within five (5) days after the first publication copies of the notice to all parties as given in W.S. §35-11-406(j), (as amended in 1995), and an application mine plan map to the Wyoming Oil and Gas Commission, 330 S. Center, Casper, WY 82601-2840.

4. On completion of publication submit a sworn affidavit from the newspaper and a copy of the notice to the Land Quality Division.

5. As soon as possible and several weeks before the end of the public comment period, submit a sworn statement of mailing to the Land Quality Division. Please use the example affidavit of mailing which is attached.

SECOND PUBLICATION
SAMPLE FORMAT FOR SMALL MINING PERMITS/AMENDMENTS

Public Notice

The (Company Name) of (Main Company Location) has applied for a small mining permit (amendment) from the Land Quality Division of the Department of Environmental Quality for the State of Wyoming. The mining permit (amendment) area for the mining of (mineral e.g., sand & gravel, limestone, etc.) will be located in: (legal description of permit area - Section, Township, Range, County Name) County, Wyoming. (The area is) approximately (Locate the area relative to the closest town and a natural landmark, i.e.: a water source or a physical attribute of the area - ex: road, cliff, mountain, canyon, gorge, desert, etc.). The proposed operation is scheduled to begin (month and year) and is estimated to continue until (year). The land, after mining, will be returned to a (proposed use). * Information regarding the proposed mining operation and reclamation procedures may be reviewed in the Office of the Land Quality Division of the Department of Environmental Quality in Cheyenne and (Lander or Sheridan, Wyoming), the office of (Company Name) in (location), or the (County Name) County Clerk's Office _____, Wyoming. Written objections to the proposed mining operation must be received by the Administrator of the Land Quality Division of the Department of Environmental Quality, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002, before the close of business (Date 30 days after the last publication). If an objection is submitted a public hearing shall be held within twenty (20) days after the final date for filing objections unless a different period is stipulated to by the parties. The Council or Director shall publish notice of the time, date and location of the hearing or conference in a newspaper of general circulation in the locality of the proposed operation once a week for two (2) consecutive weeks immediately prior to the hearing or conference. The hearing shall be conducted as a contested case in accordance with the Wyoming Administrative Procedure Act (W.S. §16-3-101 through §16-3115), and the right of judicial review shall be afforded as provided in that act. All parties as given in W.S. §35-11-406(j) will be mailed a copy of this notice. The Wyoming Oil and Gas Commission will be mailed a copy of the application mine plan map as required in W.S. §35-11-406(j).

* If the amendment application also proposes a major permit revision, provide a general description of the revision within the public notice.

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BEFORE THE DEPARTMENT OF ENVIRONMENTAL QUALITY
LAND QUALITY DIVISION

IN THE MATTER OF THE (TYPE OF PERMIT))
PERMIT APPLICATION OF (ENTITY),)
TFN _____.)

AFFIDAVIT OF (NAME OF AFFIANT)
OF NOTICE

I, (NAME), after being duly sworn upon my oath, deposes and states as follows:

1. I am appointed to the office of (POSITION), for (COMPANY). I am submitting this affidavit to comply with the sworn statement requirement in W.S. §35-11-406(j). In my capacity as (POSITION), I am responsible for ensuring that (COMPANY NAME) has complied with the notice requirements in W.S. §35-11-406(j) for the above-captioned permit application. This application is for a new noncoal small mine permit/amendment.

2. On (DATE), (COMPANY NAME) received notice from the Department of Environmental Quality, Land Quality Division that it has determined our application is complete and suitable for final publication.

3. On (DATE), (NAME OF NEWSPAPER) printed the first notice in the required two week sequence for final publication of this application. On (DATE), (COMPANY NAME) mailed a copy of the notice to all surface owners of record of the land within the permit area, to all surface owners of record of immediately adjacent lands, and to all surface owners within one-half (½) mile of the proposed mining site. On (DATE), (COMPANY NAME) mailed a copy of the application mining plan map to the Wyoming Oil and Gas Commission.

DATED _____.

(SIGNATURE HERE)_____
(TYPE NAME AND TITLE HERE)

STATE OF WYOMING)
) ss.
COUNTY OF _____)

Subscribed, sworn to and acknowledged before me by (NAME) on this _____ day of ___ ____, 20__.

_____
Notary Public

My Commission expires:

Noncoal SOP No. 1.4
7/01
PNFORM 4.NON

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FORMAT NO. 4

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I.L: Proof of Filing with County Clerk

Page number I.L-2 contains the Affidavit of Filing from the Laramie County Clerk.

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I.M: Proof of Public Mailing

Page number I.M-2 contains the Affidavit which constitutes the proof of mailing for notification so all parties listed in Appendices A and B and proof of the mailing to the Wyoming Oils and Gas Commission.

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OCT 15 2008
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Small Mining Permit
Harriman Quarry

I.M-2

October 2008

5 3/062

Supporting
Information

Appendix D-1

II. Appendix D-1: General description of the premining, baseline condition of lands within the permit area

A. As per the land use categories listed in W.S. §35-11-103(e)(xxvii) the premining land use is "grazingland" which "includes rangelands and forestlands where the indigenous native vegetation is actively managed for grazing, browsing, occasional hay production, and occasional use by wildlife." This land use category applies to all lands within and surrounding the permit area.

Map C-1 of Appendix C and Map MP-1 of the Mine plan show the premining contours and topographic regime for all lands within and immediately surrounding the permit area.

Map RP-1 of the Reclamation Plan shows the proposed postmining contours and topographic regime at the same scale as the premining (Map MP-1) information.

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II. Appendix D-1: General description of the premining, baseline condition of lands within the permit area

A. As per the land use categories listed in W.S. §35-11-103(e)(xxxvii) the premining land use is "grazingland" which "includes rangelands and forestlands where the indigenous native vegetation is actively managed for grazing, browsing, occasional hay production, and occasional use by wildlife." This land use category applies to all lands within and surrounding the permit area.

Map C-1 and Map C-2 of Appendix C and Map MP-1 of the Mine plan show the premining contours and topographic regime for all lands within and immediately surrounding the permit area.

Map RP-1 of the Reclamation Plan shows the proposed postmining contours and topographic regime at the same scale as the premining information.

SUPERSEDED

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II.B Appendix D-3: Description of Archaeological and Cultural resources

A. The surface and mineral ownership within the permit area are both private. Willits Company, Inc. contacted the Wyoming State Historic Preservation Office (SHPO), which responded in the letter included on page number D-3-2. The SHPO's review of the existing files found that a cultural resource study has not been conducted in the permit area. Willits Company, Inc. has funded a Class III cultural Resource Inventory conducted by a SHPO approved cultural consolation group, TRC out of Laramie WY. TRC findings have been submitted to the LQD and should be stored in a private file related to this small mine permit. The recommendations prepared by TRC suggest that four historical sites should be recorded (48LA3161, 48LA3162, 48LA3163, 48LA117) however no specific sites should be avoided during mining thus no remediation plan has been prepared.

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ARTS. PARKS. HISTORY.
Wyoming State Parks & Cultural Resources

State Historic Preservation Office
Barrett Building, 3rd Floor
2301 Central Avenue
Cheyenne, WY 82002
Phone: (307) 777-7697
Fax: (307) 777-6421
http://wyoshpo.state.wy.us

August 12, 2008

Matt Farwell
Controller
Willits Company, Inc.
1417 West 6th Avenue
PO Box 825
Cheyenne, WY 82003-0825

Received
AUG 13 2008
Willits Company Inc

Re: Willits Company Small Mining Permit (SHPO File # 0808JPL006)

Dear Mr. Farwell:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project.

A search of our records shows that a cultural resource survey has not been conducted in the area of potential effect. Following 36 CFR Part 800, and prior to any ground disturbing activities, we recommend the Department of Environmental Quality (DEQ) carry out appropriate efforts necessary for identification of historic properties, which may include a file search, background research, consultation, consideration of visual effects, sample field investigations or field survey. The identification efforts must be conducted by a consultant meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983). A report detailing the results of these efforts must be provided to SHPO staff for our review and comment.

We have enclosed a copy of a cultural resource consultant's list for your use. Please refer to SHPO project control number #0808JPL006 on any future correspondence dealing with this project. If you have any questions, please contact John Laughlin at 307-777-3424.

Sincerely,

John P. Laughlin

John P. Laughlin
Archaeologist/Senior Historic Preservation Specialist

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Dave Freudenthal, Governor
Milward Simpson, Director

D-3-2

5/3/08

Appendix D-5

II.C. Appendix D-5: Description of Premining Topography and Overburden

A. Map C-1 shows the premining topographic regime based upon the U.S.G.S topographic map. The Mine Plan Map (MP-1) also shows premining contours in more detail and as of 2009.

The topography of the general area, which contains the proposed permit area, is primarily gentle to steep rolling hills.

The soil survey for Laramie County showed that the combination of topsoil and subsoil varied from roughly zero to fourteen inches (0-14). However, based on samples taken from the permit area, the majority of the area possesses an average of approximately three (3) inches of sandy-loam suitable for salvage. Under ET permit # 1472, we have **scraped**, ripped and removed all salvageable topsoil. Beneath that soil lays very gravelly, sandy loam to an average depth of ten (10) inches and variably fractured bedrock below this depth. As detailed in the Mine Plan, Willits Company, Inc. will selectively salvage and stockpile the topsoil/subsoil from the overburden where available.

According to the Granite Canyon Mine Plan, the main rock unit within the immediate vicinity of the permit area is the Sherman Granite, a rock type within the Sherman batholith. Regionally, the Sherman granite is a coarse-grained biotite-hornblende granite. Petrographic analyses of igneous rock within Granite Canyon Quarry (quarry immediately adjacent to the permit area), indicate that at is a lightly altered quartz dacite porphyry or a lightly altered rhyolite porphyry, possibly a hypabyssal devivative or border phase of the granite. Mineralogically, the igneous rock within the permit area is composed predominantly of feldspar and quartz, with minor hornblende, and less than 1% total of inert trace minerals including hematite, magnetite, apatite, sphene and zircon. This rock type is very resistant to weathering and is essentially chemically inert.

Inliers of older metamorphic rocks exist within the permit area. The older inliers of metasediments and metavolcanics occur as roof pendants of variable size and randomly throughout the igneous rock. The older metamorphic rocks contain considerably more mafic minerals than the igneous rocks and possess remnant-bedding planes in addition to stronger development of jointing and fracturing than is characteristic for the igneous rock. As a result, they are more susceptible to decomposition than the igneous rocks where expose to weathering.

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II.D. Appendix D-6: Description of Premining Surface and Groundwater

A. Surface Water

Map C-1 of Appendix C shows the major regional surface water features. A section of the Lone Tree Creek drainage channels does exist in the permit area. Willits Company Inc. has requested data from the Wyoming State Engineer's office regarding flow rates of Lone Tree Creek. According to the SEO, there is no flow rate data on file for the Lone Tree Creek. There is also no USGS or other standardized surface water quantity flow data available for Lone Tree Creek or its tributaries. The average surface water flow leaving the permit area is less than five (5) cubic foot per second.

There are numerous surface water rights associated with the Lone Tree Creek drainage. The permitted area contains a natural spring which also drains into the Lone Tree Creek tributary. The average flow rate of this natural spring is less than ten (10) cubic foot per second. Willits Company, Inc. owns water rights of this spring and is planning to create a temporary impoundment to capture the runoff of this spring. The maximum storage volume of this reservoir is 2.6 acre-feet. This impoundment is covered under permit number 13346**R**.

B. Groundwater

Groundwater is believed to be present within the weathered granite and **alluvial** deposits within the permitted area. It is estimated that ground water may be present at just a few feet under the surface. There are wells drilled within the surrounding areas as deep as 550 ft. As groundwater is incurred, the water will be diverted and held in depressions in the pit floor and used for further processing of aggregate or for dust control. **Willits Company, Inc. has applied for a groundwater permit to appropriate groundwater encountered during mining. The permit application is included on pages I.F-14 and I.F-15 of this submittal. After approval, Willits Company, Inc. will forward the approved permit to LQD for inclusion in the permit document.**

Pages D-6-2 through D-6-6 list the adjudicated and good standing wells located within a three (3) mile radius of the proposed affected lands. This data has been provided by the SEO. Page D-6-7 is a potentiometric surface map depicting groundwater in and adjacent to the proposed permit area. The highlighted wells on these pages are located within one-half mile of the affected area. These wells are included on Map C-1 (Page C-5).

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Permit #	Priority	Status	Township	Tns Suffix	Range	Rng Suffix	Section	Qtrqtr	Applicant	Facility Name	Uses	Yld Act	Well Depth	Static Depth	Mwbz Top	Mwbz Bottom	Well Log
P119467W	10/13/1999	GST	13	N	69	W	7	NESW	GRANITE CANYON QUARRY	GCQ M-1	MON	0	78	30	Unknown	Unknown	Yes
P119468W	10/13/1999	GST	13	N	69	W	7	NESW	GRANITE CANYON QUARRY	GCQ M-2	MON	0	189	33	Unknown	Unknown	Yes
P119469W	10/13/1999	GST	13	N	69	W	7	SWSE	GRANITE CANYON QUARRY	GCQ M-3	MON	0	80	24	30	60	Yes
P156217W	2/2/2004	GST	13	N	69	W	7	NESW	GRANITE CANYON QUARRY	GCQ-M12	MON	0	82	24.5	50	60	Yes
P156218W	2/2/2004	GST	13	N	69	W	7	NESW	GRANITE CANYON QUARRY	GCQ-M13	MON	0	106	32	40	60	Yes
P164C	12/31/1921	GST	13	N	69	W	10	SWSW	BERT MCGEE	BERT MCGEE #1 (DEEPENED)	STO	20	110	70	70	110	No
P100916W	10/5/1995	ADJ	13	N	69	W	16	NWSW	TIMNATH FARMS, INC.	ENL HALL #3	MIS	15	428	8.85	230	Unknown	Yes
P100917W	10/5/1995	ADJ	13	N	69	W	16	NWSW	TIMNATH FARMS, INC.	ENL KENNEDY #1	MIS	125	315	0	300	315	Yes
P101774W	3/19/1996	ADJ	13	N	69	W	16	NWSW	TIMNATH FARMS, INC.	ENL KENNEDY #1	MIS	185	315	0	300	315	Yes
P4912P	5/10/1961	ADJ	13	N	69	W	16	NWSW	TIMNATH FARMS, INC.	KENNEDY #1	STO	15	315	0	Unknown	Unknown	No
P4914P	5/22/1961	ADJ	13	N	69	W	16	NWSW	TIMNATH FARMS, INC.	HALL #3	STO	25	428	8.85	Unknown	Unknown	No
P155024W	11/10/2003	GST	13	N	69	W	16	NWSW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-10	MON	0	33	6.55	23	Unknown	Yes
P155028W	11/10/2003	GST	13	N	69	W	16	SESW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-15	MON	0	146	137	Unknown	Unknown	Yes
P14196P	4/25/1960	GST	13	N	69	W	17	NESE	City of Cheyenne	SITE "D" #4	STO	20	555	6	Unknown	Unknown	No
P4913P	5/30/1962	GST	13	N	69	W	17	NESE	City of Cheyenne	KERBS #2	STO	25	230				No
P83803W	10/11/1990	ADJ	13	N	69	W	18	NWSW	LARAMIE COUNTY SCHOOL DISTRICT #1**A. H. AND ELIZABETH WILLADSEN	WILLADSEN ELEMENTARY #1	MIS	20	640	56	374	640	Yes
P8843W	5/3/1971	ADJ	13	N	69	W	18	NWNW	MORRISON-KNUDSEN COMPANY, INC.	B & B #1 (DEEPENED)	MIS	100	260	20	60	100	Yes
P173613W	3/17/2006	GSI	13	N	69	W	18	NENE	SUTHERLAND BROTHERS RANCH	ENL. S 1	DOM	25	5	2.5	Unknown	Unknown	No
P119470W	10/13/1999	GST	13	N	69	W	18	NWNE	GRANITE CANYON QUARRY	GCQ M-4	MON	0	110	110	Unknown	Unknown	Yes
P37860W	5/16/1977	GST	13	N	69	W	18	NENE	SUTHERLAND BROTHERS RANCH	S 1	DOM,STO	25	5	2.5	Unknown	Unknown	No

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P137863W	8/23/2001	GST	13	N	69	W	19	SWSW	GRANITE DEVELOPMENT L.L.C.	WILLADSEN ESTATES TRACT 6	DOM,STO	7	850	122	525	575	Yes
P138285W	8/31/2001	GST	13	N	69	W	19	NWSW	GRANITE DEVELOPMENT L.L.C.	WILLADSEN ESTATES TRACT 4	DOM,STO	1	480	210	210	213	Yes
P144793W	6/11/2002	GST	13	N	69	W	19	SENW	SHANNON P. MOORE	WILLADSEN # 26	DOM	5	400	286	320	380	Yes
P146588W	8/21/2002	GST	13	N	69	W	19	NWSE	GRANITE DEVELOPMENT L.L.C.	TRACT 23	DOM,STO	5	390	280	Unknown	Unknown	Yes
P152754W	7/30/2003	GST	13	N	69	W	19	SWSE	FLOYD LOPEZ	CHIMNEY #1	DOM	9	360	120	320	340	Yes
P161375W	8/17/2004	GST	13	N	69	W	19	NWSW	EDEEN CONSTRUCTION	FRONTIER +2	DOM	10	191	102	80	90	Yes
P161376W	8/17/2004	GST	13	N	69	W	19	SENW	EDEEN CONSTRUCTION	CODY 2	DOM	10	300	15	150	200	Yes
P155017W	11/10/2003	GST	13	N	69	W	20	SENW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-2	MON	0	122.5	87.9	112	Unknown	Yes
P155018W	11/10/2003	GST	13	N	69	W	20	NENW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-3	MON	0	147.4	67.8	55	Unknown	Yes
P155019W	11/10/2003	GST	13	N	69	W	20	NENW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-4	MON	0	135.3	98.7	99	Unknown	Yes
P155020W	11/10/2003	GST	13	N	69	W	20	NENE	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-5	MON	0	265.4	116.1	85	Unknown	Yes
P155021W	11/10/2003	GST	13	N	69	W	20	NENE	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-6	MON	0	136	92	106	Unknown	Yes
P155022W	11/10/2003	GST	13	N	69	W	20	NWNE	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-7	MON	0	110.4	67.45	58	Unknown	Yes
P155023W	11/10/2003	GST	13	N	69	W	20	SWNE	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-8	MON	0	230.7	95.3	105	Unknown	Yes
P155026W	11/10/2003	GST	13	N	69	W	21	SENW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-13	MON	0	215.7	-1	Unknown	Unknown	Yes
P155027W	11/10/2003	GST	13	N	69	W	22	NWSW	U.S. ARMY CORPS OF ENGINEERS	FEW4-MW-14	MON	0	357.9	215	Unknown	Unknown	Yes
P5810P	5/10/1966	GST	13	N	69	W	27	NESW	City of Cheyenne	WINTER #1	STO	12	195	145	Unknown	Unknown	No
P140589W	11/6/2001	GST	13	N	70	W	3	SWSE	WILLADSEN BROTHERS RANCH	WILLADSEN #4	DOM,STO	2	400	20	135	400	Yes
P151000W	5/7/2003	GST	13	N	70	W	3	SESW	JIM WILLADSEN, dba WILLADSEN BROTHERS RANCH	#5 WILLADSEN WELL	STO	5	502	20	345	365	Yes
P75761W	10/21/1987	GST	13	N	70	W	3	NESW	JIM WILLADSEN	WILLADSEN #3	STO	20	140	35	34	42	Yes

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WQ/EQ/LQD

5-3/02

P11269W	12/7/1971	GST	13	N	70	W	9	SWSE	WYOMING STATE HIGHWAY DEPARTMENT**ROBERT W. WILLADSEN**DONALD E. WILLADSEN**JAMES C. WILLADSEN	WILLADSEN WELL #1	STO	25	58	22.5	22	58	Yes
P38895W	7/13/1977	GST	13	N	70	W	10	SENW	WILLADSEN BROTHERS RANCH	WILLADSEN #1	DOM	25	90	45	55	75	No
P125523W	5/25/2000	GST	13	N	70	W	12	SESE	GRANITE CANYON QUARRY	D.H. SECONDARY #3	MON	0	60	26	Unknown	Unknown	Yes
P79709	05/12/1989	COM	13	N	70	W	12	SESE	J. V. GRANITE CANYON QUARRY	GCQ #1	MIS	55	205	30	Unknown	Unknown	No
P133738W	4/9/2001	GST	13	N	70	W	12	SWSW	GRANITE CANYON QUARRY	GCQ M-8	MON	0	100	26	Unknown	Unknown	Yes
P94410W	1/10/1994		13	N	70	W	12	SESW	GRANITE CANYON QUARRY	GCQ M-8	MON	0	100	26	Unknown	Unknown	No
P150999W	4/7/2003	GST	13	N	70	W	12	NWSW	GRANITE CANYON QUARRY	GCQ M-5	MON	0	90.5	35	70	90	Yes
P133737W	4/9/2001	GST	13	N	70	W	13	NWNE	GRANITE CANYON QUARRY	GCQ M-7	MON	0	100	57	Unknown	Unknown	Yes
P38896W	7/13/1977	GST	13	N	70	W	15	SENW	WILLADSEN BROTHERS RANCH	WILLADSEN #2	STO	8	94	35	70	94	No
P79606W	5/1/1989	ADJ	13	N	70	W	17	SESE	JOHN C. OSTLUND	REMOUNT #3	STO	25	32	11	Unknown	Unknown	No
P82868W	6/21/1990	ADJ	13	N	70	W	17	SESE	JOHN C. OSTLUND	ENL REMOUNT #3	DOM,MIS	75	32	11	Unknown	Unknown	No
P79607W	5/1/1989	GST	13	N	70	W	17	SESE	JOHN C. OSTLUND	REMOUNT #2	DOM	25	20	12	Unknown	Unknown	No
P41869W	2/14/1978	GST	13	N	70	W	20	SWNW	GEORGE A. & MILDRED M. OXLEY	OXLEYS #1	DOM	25	35	22.5	20	35	No
P79605W	5/1/1989	GST	13	N	70	W	20	NENE	JOHN C. OSTLUND	REMOUNT #1	DOM	13	52	21	Unknown	Unknown	No
P10378P	12/31/1968	GST	13	N	70	W	21	NESE	WARNER R. ROGERS	ROGERS #1	STO	7	3	0	1	3	Yes
P163118W	10/18/2004	GST	13	N	70	W	21	NESW	JOHN AND TAMARA CHEESEMAN	CHEESEMAN-1	DOM	3	560	160	460	500	Yes
P30770W	8/21/1975	GST	13	N	70	W	22	NENE	P. C. SMITH	P. C. SMITH #1	DOM,STO	5	65	30	27	62	Yes
P44451W	8/2/1978	GST	13	N	70	W	22	NWNE	KARL BIEHLER	KARL #1	DOM,STO	6	160	25	135	25	Yes
P78368W	9/9/1988	GST	13	N	70	W	22	NENW	FIRST WYOMING BANK NORTH	WILSON #1	DOM	10	94	55	Unknown	Unknown	No
P167858W	5/25/2005	GST	13	N	70	W	23	NWNE	WM. R/ PAT NEWBERN	NEWBERN #1	DOM	7	140	20	25	40	Yes
P24541W	9/24/1973	GST	13	N	70	W	23	NWSW	JANE D. & JAMES D. WEBSTER	WEBSTER #1	DOM,STO	1	325	65	280	290	Yes

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P66532W	3/5/1984	GST	13	N	70	W	24	SWNE	A. H. WILLADSEN, TRUSTEE**TRUSTEE ELIZABETH P. WILLIADSEN	A H WILLADSEN #1	DOM,STO	7	85	15	45	50	Yes
P9104P	12/31/1952	GST	13	N	70	W	24	SWNE	A. H. WILLADSEN**ELIZABETH P. WILLADSEN	A. H. WILLADSEN #1	DOM,STO	25	unknown	-1	Unknown	Unknown	No
P9106P	12/31/1908	GST	13	N	70	W	24	SWSW	A. H. WILLADSEN**ELIZABETH P. WILLADSEN	A. H. WILLADSEN #3	STO	10	15	2	Unknown	Unknown	No
P98830W	4/25/1995	GST	13	N	70	W	24	SWNE	DENNIS K. RIDLEY	RIDLEY #1	DOM,STO	5	300	132	240	280	Yes
P108967W	2/24/1998	GST	13	N	70	W	25	NWNE	JOHN W WALKER	WALKER #1	DOM,STO	1	60	7	15	60	Yes
P15214W	9/6/1972	GST	13	N	70	W	25	NENW	LAURENCE C. JOHNSON	CHIMMEY ROCK #1	DOM	0	465	90	90	465	Yes
P32296W	3/1/1976	GST	13	N	70	W	25	NENW	LAWRENCE C. JOHNSON	CHIMNEY ROCK #3	DOM	6	530	76	76	530	Yes
P7805W	1/21/1971	GST	13	N	70	W	25	NESW	WILLIAM R. PRINCE**ELEANOR F. PRINCE	PRINCE #2	DOM,STO	25	3	-4	Unknown	Unknown	No
P15215W	9/6/1972	GST	13	N	70	W	26	NENW	LAURENCE C. JOHNSON	CHIMMEY ROCK #2	DOM	0	140	90	90	140	Yes
P7746P	12/31/1954	GST	13	N	70	W	26	NESE	WILLIAM R. PRINCE**ELEANOR F. PRINCE	PRINCE #1	DOM,STO	25	40	15			No
P102089W	4/24/1996	GST	13	N	70	W	27	SESE	MAYME MCMILLEN	MCMILLEN #1	DOM	1	100	9	22	60	Yes
P82594W	5/23/1990	GST	13	N	70	W	27	SWSE	USA USDA FOREST SERVICE	VANHORNE #1	DOM	10	50	12	30	40	Yes
P10445P	12/31/1968	GST	13	N	70	W	29	SWNE	THOMAS L. BARKER	BARKER #1	STO	7	2	0	0	2	Yes
P146609W	8/26/2002	GST	13	N	70	W	29	NWNE	WILLIAM KEITH HETZEL	HETZEL 1	DOM,STO	5	300	40	90	300	Yes
P24546W	9/21/1973	GST	13	N	70	W	29	NESE	NOEL L. & LOUISE M. WATERS	WATERHOLE #1	DOM	3	160	96	123	130	Yes
P24581W	9/17/1973	GST	13	N	70	W	29	NESW	NONA GAYLE WEBER	WEBER #1	DOM,STO	8	320	70	Unknown	Unknown	Yes
P66341W	2/2/1984	GST	13	N	70	W	29	NENE	ALEX T. & DARLENE S. KIRKPATRICK	KIRKPATRICK #1	DOM,STO	3	140	50	50	120	Yes
P91140W	3/29/1993	GST	13	N	70	W	33	SESE	M. T. AND L. C. MCLOUGHLIN	MCLOUGHLIN #5 (SPRING)	STO	20	3	-4	Unknown	Unknown	No
P94269W	1/21/1994	GST	13	N	70	W	33	SWNE	M. T. AND L. C. MCLOUGHLIN	MCLOUGHLIN #10 (SPRING)	STO	25	6	3	Unknown	Unknown	No
P4462P	1/31/1900	GST	13	N	70	W	34	SESW	SUSIE W. MCLOUGHLIN	MCLOUGHLIN #1	STO	20	30	10			No
P6830P	12/31/1899	GST	13	N	70	W	34	NENE	PAUL NAUTA**DORTHY NAUTA	NAUTA #1	DOM,STO	9	6	-4			No
P91138W	3/29/1993	GST	13	N	70	W	34	SWSE	M. T. MCLOUGHLIN	MCLOUGHLIN 3 (SPRING)	DOM	25	12	3	Unknown	Unknown	No
P112510W	10/30/1998	GST	13	N	70	W	35	NENE	GLACOMO/VANDA PONTORIERO	ASPEN STAR RANCH #1	DOM,STO	10	400	100	208	209	Yes

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P155393W	12/8/2003	GST	13	N	70	W	35	SESW	DAVE FUGATE	FUGATE #1	DOM	25	200	22	105	111	Yes
P91137W	3/29/1993	GST	13	N	70	W	35	SWSW	M. T. AND LOULA C. MCLOUGHLIN	MCLOUGHLIN 2 (SPRING)	STO	15	5	-4	Unknown	Unknown	No
P29614W	5/21/1975	ADJ	13	N	70	W	36	NWSW	GREAT WESTERN SUGAR CO.**WYO BOARD OF LAND COMMISSIONERS	L F #1	IND	15	84	74	15	75	Yes
P15035P	12/31/1942	GST	14	N	69	W	31	NENW	HAPPY JACK CORP.	DEEDIE #1	DOM,STO	10	500	-1	Unknown	Unknown	No
P55851W	3/4/1981	GST	14	N	69	W	32	SWSW	MICHAEL FLAHERTY	FLAHERTY #1	DOM	10	55	25	25	55	Yes
P180653W	3/19/2007	GST	14	N	69	W	33	NWSE	SCOTT S. & LYNN M. OLSON	OLSONS1	DOM,STO	15	280	140	240	280	Yes
P114927W	4/9/1999	GST	14	N	70	W	34	NESE	MIKE JOHNSON	JOHNSON WATER WELL ANNA #1	DOM,STO	10	400	7	328	329	Yes
P135745W	6/20/2001	GST	14	N	70	W	34	SWNW	DOUGLAS / SANDRA BORNE	BORNE # 1	DOM,STO	15	380	60	360	380	Yes
P103752W	9/10/1996	GST	14	N	70	W	35	NWNE	JAMES/LORETTA HIBBITS	HIBBITS #1	DOM	8	80	38	60	65	Yes
P103944W	9/23/1996	GST	14	N	70	W	35	SENW	WILSON P/PEGGIE W CASH	CASH #1	DOM,STO	5	380	7	261	262	Yes
P103945W	9/23/1996	GST	14	N	70	W	35	SWNW	JULIE CASH	CASH #2	DOM,STO	5	400	40	358	359	Yes

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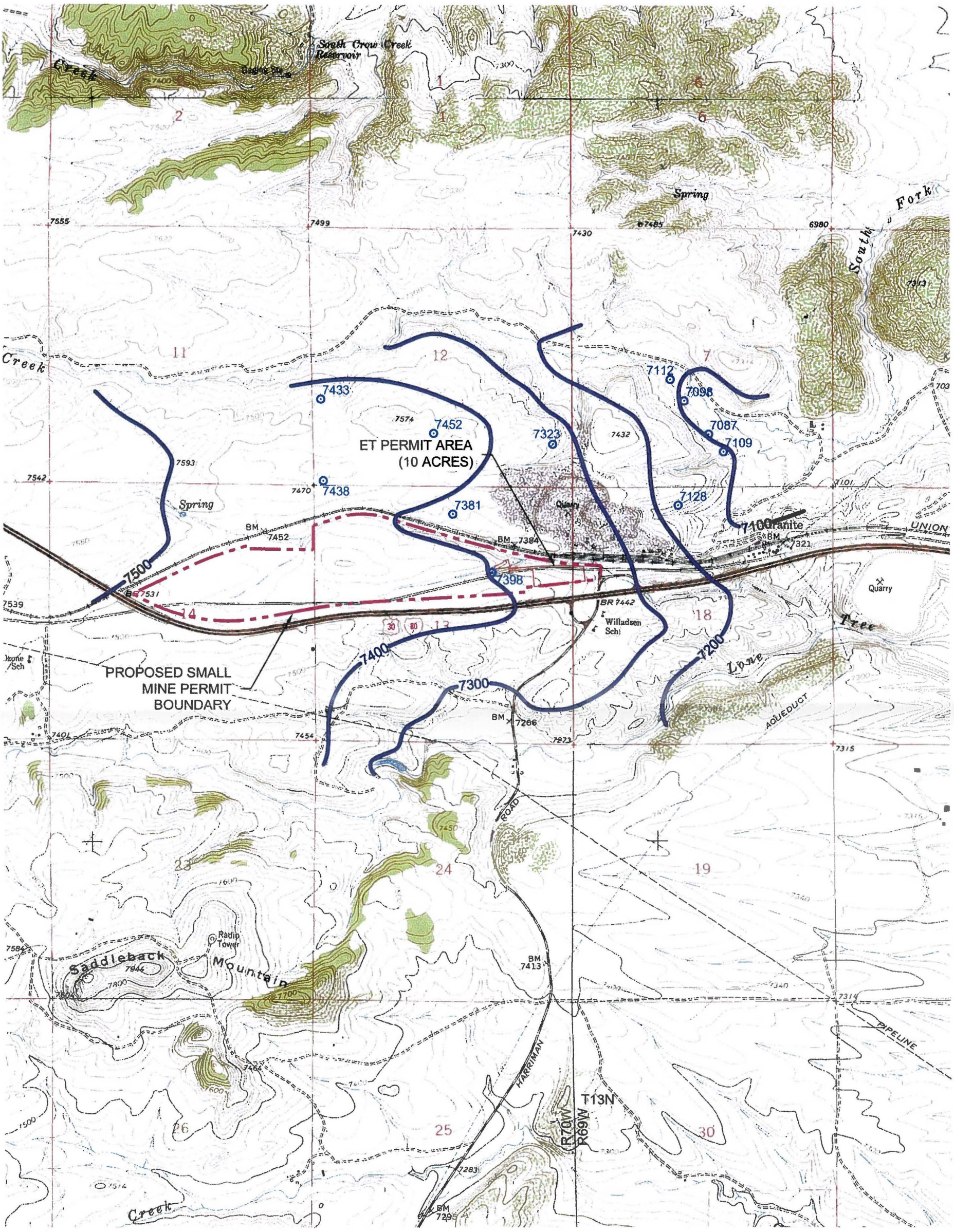

LEGEND

7112 ⊙ GRANITE CANYON MONITORING WELLS (8/2005) STATIC WATER LEVELS

POTENTIOMETRIC SURFACE CONTOUR (8/2005)

SCALE IN FEET
0 1000' 2000' 4000'

N

PROJECT: WYWC101	
DATE: 2/18/10	
DESIGN/DRAWN: KJL/JHF	
CHECKED: KJL	
REVISIONS:	
FILE: WYWC101_WY83_EF_BASE.DWG	

POTENTIOMETRIC SURFACE MAP
HARRIMAN QUARRY
D-6-7

Lidstone and Associates, Inc.
Engineering Geology & Water Resource Consulting

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3 7/06 2

L:\WYWC101\ACAD\WYWC101_WY83_EF_BASE.dwg HARRIMAN QUARRY POT SURFACE 2/18/2010 4:36:56 PM jhf 11x17

II.E. Appendix D-7: Premining Topsoil and Subsoil Information

A. Soil Survey Map

A Soil Survey Map, pg D-7-5 shows the soil types as mapped by the Natural Resource Conservation Service (NRCS). This soil survey (Laramie County, Wyoming, Western Part) was updated as of 2/22/07.

The NRCS identified two map units within the permit boundary. These are 115 and 116. Unit 115 can be found on 1.1% of the permit area while unit 116 consists of the remaining 98.9%. The definitions and compositions of these units can be found on pages D-7-9 through D-7-13. The descriptions present some of the technical characteristics of these soil associations. Commitments to salvage topsoil were made based on experience gained through mining under the ET permit. These commitments are made on pages MP-4 and MP-5 of the Mine Plan. Generally, the mine plan commits to salvaging the uppermost three (3) inches of topsoil/subsoil from the pit area. Test holes will be dug prior to topsoil stripping to determine the correct stripping depth for subsections of the permit area.

It is estimated that the topsoil/subsoil volumes on the Western side of the affected lands or in the wetlands/wet meadows will be greater than those on the Eastern side where granite outcrops are visible. As identified in the mine plan, when areas containing more topsoil are eventually disturbed, increased depths of topsoil will be taken for future reclamation of the entire affected area. Also, if areas on the Eastern side of the affected lands are found to have depths of topsoil/subsoil greater than three (3) inches, those will be specifically salvaged as such. The estimated total strippable volume for the planned quarry and associated affected areas is about 98,413 cubic yards (based on an estimated minable area of 244 acres), all of which may be stockpiled during the life of the mine. Limitations regarding topsoil and subsoil **salvage** exist due to the pre-existing landscape. Numerous granite outcroppings and **barren** areas are visible thus limiting the amount and volume of salvageable topsoil and subsoil.

As mentioned above, topsoil/subsoil depths within the wet meadows are greater than **in other mined areas**. It is estimated that the wetland/wet meadow acreage within the permit area contains twelve (12) inches of salvageable topsoil. All salvageable topsoil within these areas will be stockpiled and used for reclamation purposes **when these areas are** disturbed.

Willits Company Inc. is committed to salvaging all usable soils for reclamation purposes.

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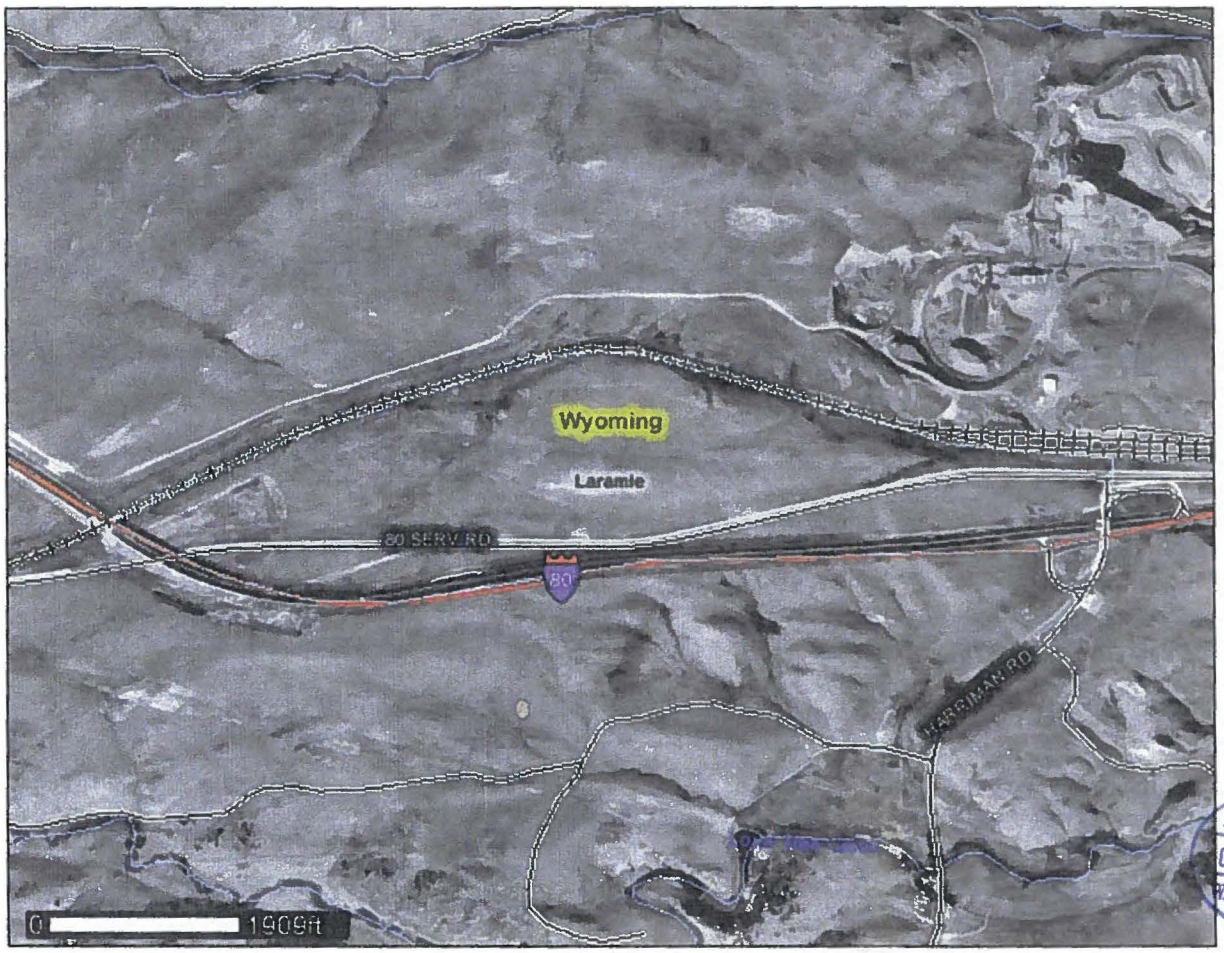
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Laramie County, Wyoming, Western Part



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Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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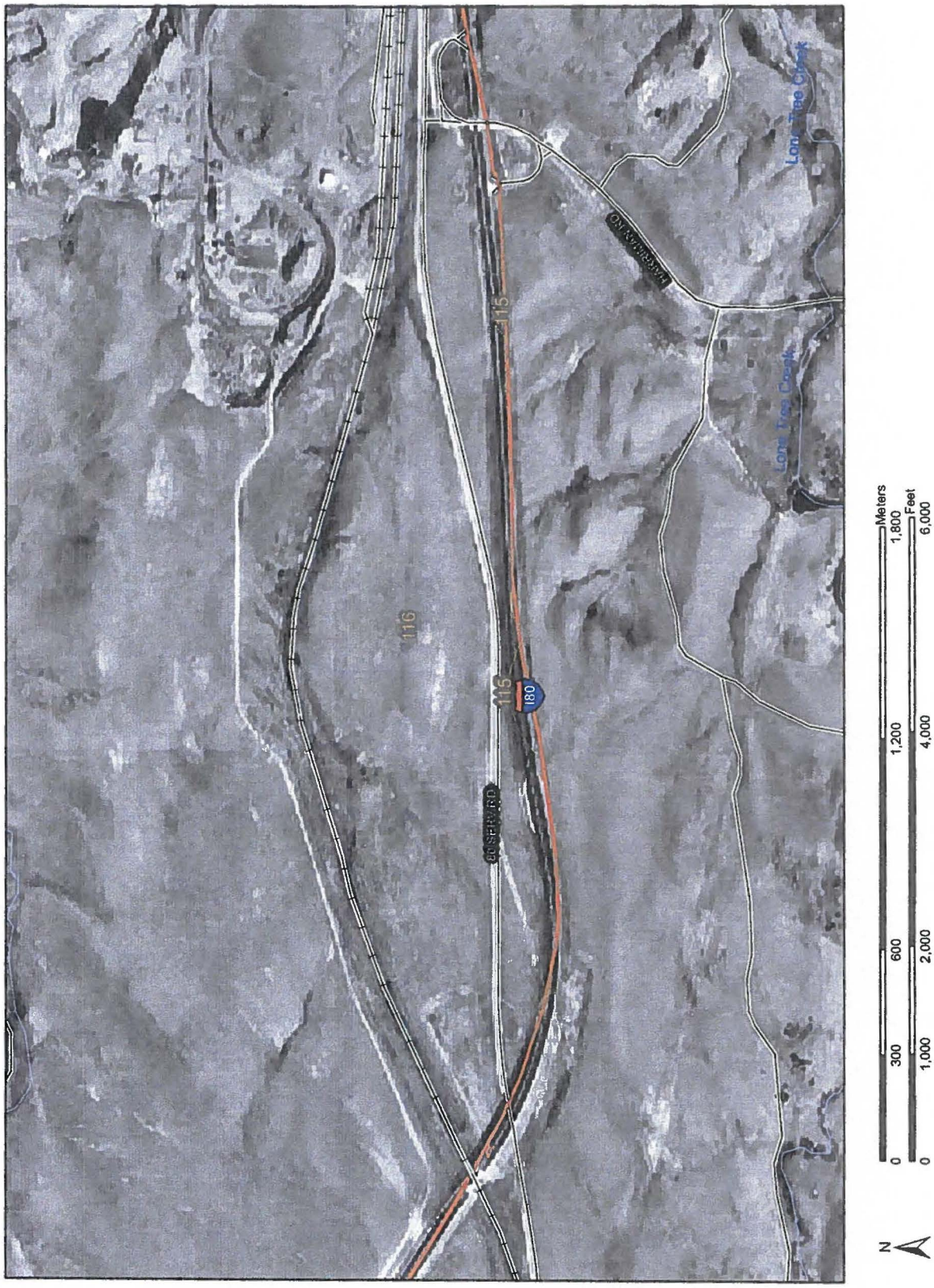
Custom Soil Resource Report
Soil Map



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MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 13N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Laramie County, Wyoming, Western Part
Survey Area Data: Version 5, Feb 22, 2007

Date(s) aerial images were photographed: 1994

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend

Laramie County, Wyoming, Western Part (WY721)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
115	Boyle, very stony-Boyle, thin solum-Lininger complex, 20 to 45 percent slopes	3.6	1.1%
116	Boyle-Lininger-Boyle, thin solum, complex, 3 to 45 percent slopes	330.9	98.9%
Totals for Area of Interest (AOI)		334.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

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on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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Laramie County, Wyoming, Western Part Version date: 2/22/2007 9:15:55 AM

115—Boyle, very stony-Boyle, thin solum-Lininger complex, 20 to 45 percent slopes

Map Unit Setting

Elevation: 5,900 to 8,500 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 115 days

Map Unit Composition

Boyle, very stony, and similar soils: 45 percent
Boyle, thin solum, and similar soils: 30 percent
Lininger and similar soils: 20 percent
Minor components: 5 percent

Description of Boyle, Very Stony

Setting

Landform: Hills, ridges
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss

Properties and qualities

Slope: 30 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Ecological site: ROCKY HILLS (15-19SE) (R049XY134WY)

Typical profile

0 to 3 inches: Very cobbly loam
3 to 8 inches: Very gravelly loam
8 to 16 inches: Very gravelly sandy clay loam
16 to 26 inches: Unweathered bedrock

Description of Boyle, Thin Solum

Setting

Landform: Hills, ridges
Landform position (three-dimensional): Side slope

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Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss

Properties and qualities

Slope: 30 to 45 percent
Depth to restrictive feature: 4 to 10 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Ecological site: ROCKY HILLS (15-19SE) (R049XY134WY)

Typical profile

0 to 3 inches: Gravelly loam
3 to 9 inches: Very gravelly sandy clay loam
9 to 19 inches: Unweathered bedrock

Description of Lininger

Setting

Landform: Hills, ridges
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and/or alluvium derived from granite

Properties and qualities

Slope: 20 to 35 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability (nonirrigated): 6e
Ecological site: LOAMY (15-19SE) (R049XY122WY)

Typical profile

0 to 4 inches: Loam
4 to 13 inches: Sandy clay loam
13 to 26 inches: Sandy clay loam
26 to 38 inches: Gravelly sandy clay loam
38 to 48 inches: Unweathered bedrock

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Minor Components

Rock outcrop

Percent of map unit: 5 percent

116—Boyle-Lininger-Boyle, thin solum, complex, 3 to 45 percent slopes

Map Unit Setting

Elevation: 5,900 to 8,500 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 115 days

Map Unit Composition

Boyle and similar soils: 50 percent
Boyle, thin solum, and similar soils: 20 percent
Lininger and similar soils: 20 percent
Minor components: 10 percent

Description of Boyle

Setting

Landform: Hills, ridges
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Ecological site: SHALLOW IGNEOUS (15-19SE) (R049XY160WY)

Typical profile

0 to 5 inches: Gravelly loam
5 to 14 inches: Very gravelly sandy clay loam
14 to 24 inches: Unweathered bedrock

Description of Lininger

Setting

Landform: Hills, ridges

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Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and/or alluvium derived from granite

Properties and qualities

Slope: 10 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability (nonirrigated): 6e
Ecological site: LOAMY (15-19SE) (R049XY122WY)

Typical profile

0 to 3 inches: Loam
3 to 9 inches: Sandy clay loam
9 to 20 inches: Sandy clay loam
20 to 22 inches: Gravelly sandy clay loam
22 to 32 inches: Unweathered bedrock

Description of Boyle, Thin Solum

Setting

Landform: Hills, ridges
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss

Properties and qualities

Slope: 20 to 45 percent
Depth to restrictive feature: 4 to 10 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability (nonirrigated): 7e
Ecological site: IGNEOUS (15-19SE) (R049XY116WY)

Typical profile

0 to 3 inches: Gravelly loam
3 to 6 inches: Very gravelly sandy clay loam

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6 to 16 inches: Unweathered bedrock

Minor Components

Cathedral

Percent of map unit: 5 percent

Rock outcrop

Percent of map unit: 5 percent

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II. F. Appendix D-8 Vegetation

A. Map of Vegetation Types

Map D8-1 is included and shows the vegetation types. The permit area is located in Section 18 T13N, R69W and in Sections 13 and 14 of T13N T70W. The entire permit area is approximately 244 acres in size. Map Unit U/UR (198.7 acres or about 81.5% of the area) is comprised primarily of native undisturbed land. Some areas disturbed by old/unreclaimed Highway 30 are also present within this unit. This map unit is a mixture of upland grassland on shallow loamy soils and upland grassland on shallow gravelly soils. Map Unit M (13.7 acres or about 5.6% of the area) consists of meadows comprised primarily of grassland meadow and grass/sedge wet meadow. Wetlands are included within this unit. The meadow type is found on moderately deep loams and gravelly loams. Map Unit B is a borrow area (10.8 acres or about 4.4% of the area) and is where material was removed during the construction of Interstate 80. This area is primarily reclaimed upland grassland on shallow gravelly soils. Map Unit D (20.8 acres in size or about 8.5% of the area) consists of lands disturbed by the construction of Interstate 80 on the south boundary of the permit area and the Union Pacific Railroad on the northern boundary of the permit area. Soils are absent to very shallow on these areas and they are dominated primarily by non-native species. These map units are discussed in more detail in the following sections.

B. Range Condition Survey

The NRCS has not conducted any specific range site – range condition surveys for this area. Based on June 2008 observations general conditions of the vegetation map units were estimated.

Map Unit U/UR is generally in good condition and has been grazed by cattle in the past. This map unit is primarily native upland grassland with some subshrubs and low growing full shrubs.

Map Unit M is also generally in good condition and is dominated by native grasses, sedges and forbs. This meadow unit has been grazed by cattle in the past and utilization was most likely higher than on the upland grassland sites.

Map Unit B is in fair condition and is dominated by a mixture of native and introduced species seeded during reclamation of this borrow area. The limiting factor is the shallow gravelly soil.

Map Unit D is disturbed land, some of which has been reclaimed. The land is in good condition where reclamation has been successful and in poor condition on unreclaimed sites or where reclamation has been unsuccessful.

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C. Species List and Ranking by Abundance for each Vegetation Type. The below lists were established based on visual field observations.

Upland Grassland Vegetation Type (U/UR)

1. *Elymus smithii*, Western wheatgrass
2. *Bouteloua gracilis*, Blue grama
3. *Artemisia frigida*, Fringed sagewort
4. *Stipa comata*, Needleandthread
5. *Artemisia tripartita*, Threetip sagebrush
6. *Muhlenbergia filiculmis*, Slimstem muhly
   Carex stenophylla, Needleleaf sedge
   Poa secunda, Sandberg bluegrass
   Carex filifolia, Threadleaf sedge

Meadow/Wet Meadow Type (M)

1. *Elymus smithii*, Western wheatgrass
2. *Juncus sp.,* Rush
3. *Poa pratensis*, Kentucky bluegrass
4. *Poa sp.,* Bluegrass
5. *Taraxacum officinale*, Dandelion
6. *Aster sp.*, Aster
   Carex nebrascensis, Nebraska sedge
   Carex sp., Sedge
   Achillea millefolium, Western yarrow

Borrow Area (B)

1. *Agropyron cristatum*, Crested wheatgrass
2. *Artemisia frigida*, Fringed sagewort
3. *Elymus smithii*, Western wheatgrass
4. *Artemisia ludoviciana,* Louisiana sagewort
5. *Carex stenophylla*, Needleleaf sedge
6. *Alyssum desertorum,* Desert alyssum
   Poa secunda, Sandberg bluegrass

Disturbed Land (D)

1. *Bromus inermis*, Smooth brome
2. *Poa sp.*, Bluegrass
3. *Elymus smithii*, Western wheatgrass
4. *Artemisia frigida,* Fringed sagewort
5. *Bromus tectorum*, Cheatgrass
6. *Carex stenophylla*, Needleleaf sedge
   Alyssum desertorum, Desert alyssum

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D. Photographs

Photograph No. 1 shows the Upland Grassland within the U/UR map unit. This site within the map unit is on shallow loamy soils and the photo point is shown on Map D8-1. This area has been grazed by cattle in the past.

Photograph No. 2 shows the Upland Grassland on shallow gravelly soils within the U/UR vegetation type. This map unit has been grazed by cattle in past years.

Photograph No. 3 shows a Meadow area within the M vegetation type. These lands have been grazed by cattle in the past and are in good condition.

Photograph No. 4 is of a Wet Meadow within the M vegetation type and also shows land disturbed by the Union Pacific Railroad on one side of the meadow and land disturbed by old Highway 30 on the other side of the meadow. This area has been grazed by cattle in past years and is in good condition.

Photograph No. 5 is of the Borrow Area (B) created when Interstate 80 was constructed. This area has been grazed by cattle in the past but is not in very good condition due to poor soils.

E. Photo point locations are shown on Map D8-1.

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Photo 1. Upland Grassland on shallow loam soils in 2008.

Photo 2. Upland Grassland on shallow gravelly soils in 2008.

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Photo 3. Meadow along ephemeral drainage in 2008.

Photo 4. Wet Meadow and adjacent Disturbed Lands in 2008.

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Photo 5. Borrow Area where material was removed for construction of interstate 80.

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KEY CLIMAX PLANTS AND OTHERS THAT INVADE

Key Climax Plants	Maximum Percentage in Climax by Range Site				
	Sb	OV	Ly	Sw	VS
Basin wildrye	40d	35d	5*d		
Big bluegrass	5*d	5*d	5*d	5*d	
Bluebunch wheatgrass			20d	35d	40d
Canada wildrye	5*d				
Canby bluegrass	5*d	5*d	5*d	5*d	
Columbia needlegrass		5*d	5*d	5*d	
Idaho fescue		5*	20	5*	10
Indian ricegrass				5*d	
Letterman needlegrass			5*		
Nebraska sedge	5*d				
Needleandthread		5*d	5*d	5*d	10d
Oatgrasses			5*d	15d	10d
Prairie junegrass		5*	10	5*	5*
Rhizomatous wheatgrasses		10		15	
Reedgrasses	10*		5*		
Sandberg bluegrass		5*		5*	5*
Slender wheatgrass	10d	5*d			
Spike fescue			5*d	5*d	
Threadleaf sedge			5*	5*	5*
Tufted hairgrass	15d				
1/ Perennial Forbs	10	15	25	15	20
Big sagebrush		5a	5a		5a
Bitterbrush				5a d	10 d
Black sagebrush				5a	5a
Douglas rabbitbrush		5a	5a		
Roses	5a				
Rubber rabbitbrush	5a				
Shrubby cinquefoil	5a				
Silver sagebrush		5a			
Snowberry		5a			
Threetip sagebrush			5a	5a	
Willows	5a				
Winterfat		5a d	5a d		
* Total % of these species allowed	25	30	35	40	10
a Total % of these species allowed	15	20	10	15	10
Range Condition % Original Vegetation	Suggested Initial Stocking Rates by Site (AUM/Acre)				
Excellent 76 - 100	2.0	.6	.5	.3	.2
Good 51 - 75	1.5	.5	.4	.2	.15
Fair 26 - 50	1.0	.25	.2	.1	.07
Poor 0 - 25	.6	.15	.1	.05	.05

Legend: 1/ Count no more than 5 percent of any one species.
Blanks - Not Important

Invaders: All annuals, All exotics, Cactus, Curlycup gumweed, Kentucky bluegrass, Thistles

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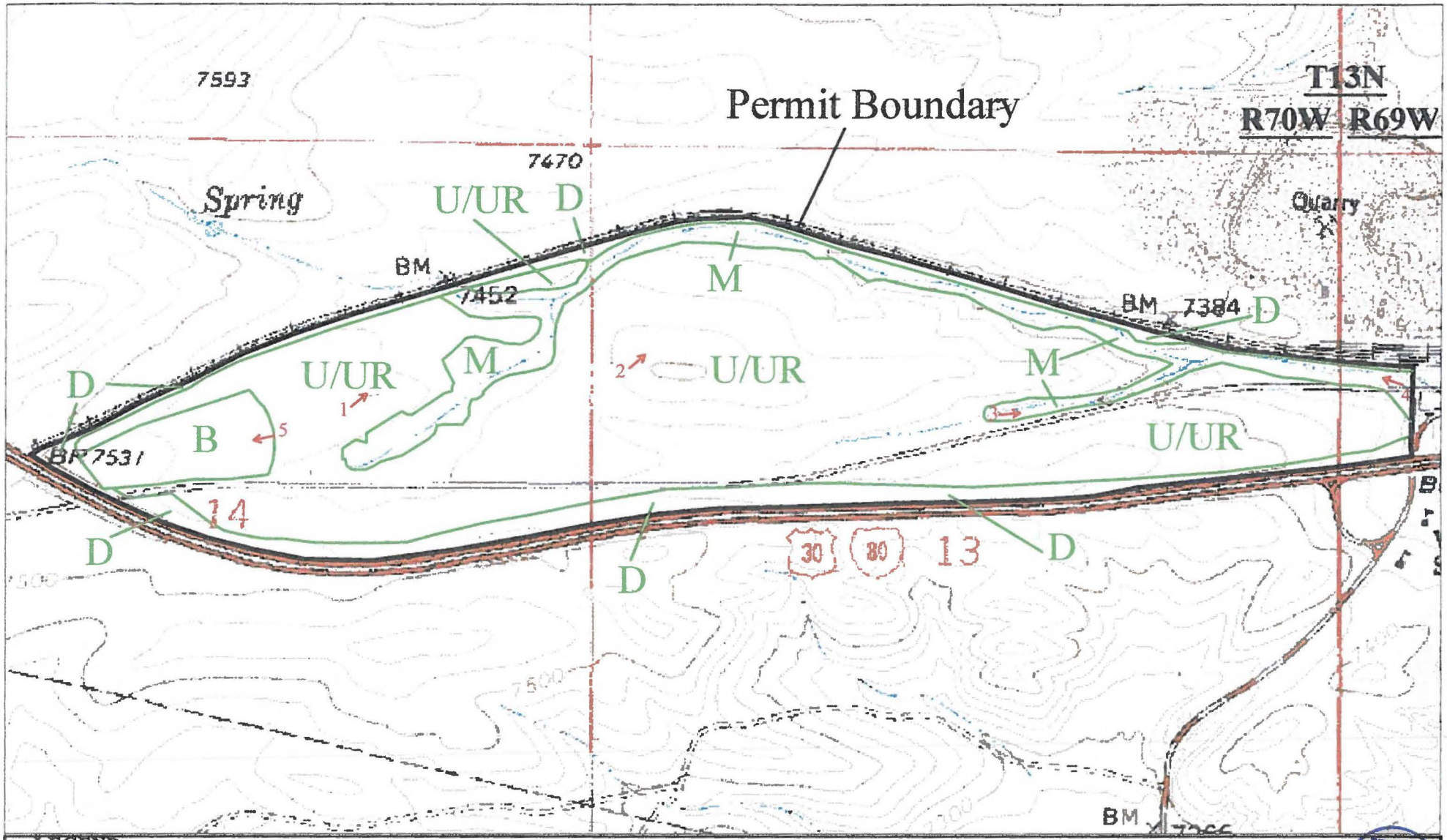

LEGEND

U/UR - Upland Grassland / Upland Grassland Gravelly Soils

M - Meadow / Wet Meadow

B - Borrow Area

D - Disturbed Land

Photo Point

Scale: 1" = 1000'	Date: June 26, 2008

N

D-8-7

Map D8-1

Harriman Quarry

Willits Company, Inc.
P.O. Box 825
Cheyenne, WY 82003

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Appendix D-9

II.G Appendix D-9 Wildlife

A. Introduction

The permit area location is shown on Map D9-1. The site includes about 244 acres located between the Union Pacific Railroad on the north and Interstate 80 to the south. The old unreclaimed Highway 30 also passes through the permit area from east to west. The area has historically been used as grazingland for cattle with unrestricted wildlife use. The area is primarily upland grassland with areas previously disturbed from highway and railroad construction. Ephemeral and intermittent tributaries to Lone Tree Creek are also present within the permit area. Vegetation Map Units present have been discussed in the Appendix D8 of this mine permit. The elevations within the permit area range from 7320 feet to 7530 feet.

B. Wildlife Habitat

The Wyoming Game and Fish Department (WGFD) Habitat Protection Program was contacted and their letter of response is included in Section F of this appendix. Vegetation on the site is discussed in Appendix D8 of this permit.

1. Pronghorn and mule deer crucial winter ranges are located on or adjacent to the permit area as identified by the WGFD in their letter contained in Section F of this appendix. The WGFD has recommended wildlife friendly fencing, reclamation with native species and a weed control program for mitigation measures.

2. The WGFD has identified brook trout in the adjacent Lone Tree Creek into which drainages within the permit area flow for a portion of the year. The use of best management practices to control erosion and prevent sediment from reaching this creek is recommended by the WGFD.

C. Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) was contacted and their concerns were addressed. Correspondence with the USFWS is included in Section F of this appendix.

1. The USFWS listed three threatened or endangered species that have the potential to occur within the region. These species are the Colorado butterfly plant, Preble's meadow jumping mouse and Ute ladies'-tresses orchid. The Preble's meadow jumping mouse has recently been removed from listing as a threatened species in Wyoming. The final rule for removal from listing in Wyoming was published in the federal register on July 10 of 2008. **Non-jurisdictional wetlands** and wet meadows are

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present within the permit area. These sites provide potential habitat for the Preble's meadow jumping mouse, Colorado butterfly plant and Ute ladies'-tresses orchid. However, the permit area is above 7300 feet in elevation which is generally considered higher than the plant species are known to occur and in the upper elevation limits for the Preble's meadow jumping mouse. No Preble's meadow jumping mouse observations have been recorded in or adjacent to this permit area. The permit area and adjacent lands are not considered critical habitat for the Preble's meadow jumping mouse. The mining operation proposes to avoid impacts to the wetland and wet meadow habitats preferred by these species whenever possible.

2. Raptor nest surveys were conducted in June of 2008. A Swainson's hawk nest is located in a cottonwood tree within the permit area and this nest location is shown on Map D9-1. This nest site is currently within 200 yards of the Union Pacific Railroad and will not be impacted by initial mining activities. The appropriate mitigation measures approved by the USFWS and WGFD will be implemented when mining activities approach this nest site. No other raptors or Migratory birds of high federal interest (MBHFI) are known to nest in the permit or adjacent areas. No big sagebrush was found in the area so preferred habitat for sage grouse is not present.

3. This section addresses the USFWS concerns regarding wetlands. The wetlands present on site are found along ephemeral and intermittent streams and will be avoided whenever possible.

    1) The operator proposes to avoid wetlands whenever possible. These wetlands are primarily palustrine with emergent vegetation and are found along ephemeral and intermittent streams. A representative photo is included in Appendix D8. The entire permit area **contains approximately** thirteen acres of wetlands.
    2) **Impacts may be unavoidable for construction of road crossings, sediment control/facility ponds, and mining.**
    3) The **affected wetlands** function primarily for water quality protection, hydrologic processes and wildlife habitat. Due to the intermittent nature of water present along the ephemeral and intermittent streams on site, habitat for aquatic life and waterbirds is very limited. These wetlands exist on private land so values are primarily ecological and related to the ecosystems present on and immediately adjacent to the site. Impacts **from the disturbance** would be minimal and site specific. There would be little to no impacts downstream or outside of the permit area.

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4) Sediment control **measures are required** for the site. These measures would **reduce impacts to any remaining wetlands within the permit area and to downstream aquatic resources**.
5) Due to the **non-jurisdictional** determination from the Corps, **wetland mitigation and monitoring will not be required. Willits Company commits to reestablishing the highest number of acres of wet meadow/wetland habitat that is practicable based on the location, extent, and volume of groundwater seeps/springs and available stormwater runoff in the postmining environment. Willits Company commits to working with LQD staff to determine appropriate locations (based on postmining hydrology) for reestablishment of wet meadow/wetland habitat on the reclaimed mine site. The current plan is to establish a linear wet meadow feature (similar to the premining situation) along the northern edge of the postmining pit floor.**
6) **Due to the use of sediment control measures, and plans to reestablish wet meadows where the postmining hydrology will likely support hydrophytic vegetation, short and long term affects would be minimal.** Short term impacts would be the temporary loss of the functions and values of the disturbed wetlands. Long term impacts would also be the losses of functions and values, **but would be alleviated with the reestablishment of the largest practicable number of acres of wet meadow habitat.**

The concerns brought forth by the USFWS listed above were addressed in their correspondence included on page **D-9-18**. The USFWS has requested use of sediment control measures and reclamation of disturbed wetlands within the permit area.

D. Wildlife Inventory

No prairie dog towns are present on or adjacent to the permit area as verified by field surveys completed in June of 2008. The USFWS will be contacted if a prairie dog town becomes established within an area to be affected by mining activities to determine what actions or surveys may be needed. The USFWS will also be contacted if any T&E species is found within the area to be affected.

There may be the potential for some other MBHFI species to nest in the area but none are known at this time and none, other than the Swainson's hawk, were observed during surveys in June of 2008. Since the area is primarily grassland, only grassland species would be expected to nest on the site. If the nest of another MBHFI species is identified in the area the USFWS will be contacted as soon as possible and the appropriate protection and mitigation measures will be implemented.

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E. Commitments

1. The LQD District I office, the WGFD and the USFWS will be notified concerning any significant changes in use of the area by wildlife species of concern.
2. The LQD District I office, the WGFD and the USFWS will be notified if any raptor nest manipulations or takes are required. Any takes or mitigation measures will be coordinated through the WGFD and the USFWS with the appropriate permits obtained.
3. Sediment control measures will be used, wetlands **and wet meadow habitat will be protected wherever possible, and disturbed wet meadow habitat will be reestablished to the maximum extent practicable.**
4. Best Practices and common sense will be used to avoid disturbance of wildlife species when they are present on the permit site.

F. Correspondence

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WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4810
Web site http://gf.state.wy.us

GOVERNOR
DAVE FREUDENTHAL
DIRECTOR
TERRY CLEVELAND
COMMISSIONERS
JERRY GALLES - President
CLIFFORD KIRK - Vice President
CLARK ALLAN
FRED LINDZEY
RON LOVERCHECK
ED MONERY
BILL WILLIAMS, DVM

June 13, 2008

WER 11136.02
Willits Company, Inc.
Small Mining Permit Application
Laramie County

Matt Farwell, Controller
Willits Company, Inc.
PO Box 825
Cheyenne, WY 82003-0825

Dear Mr. Farwell:

The staff of the Wyoming Game and Fish Department has reviewed the available wildlife information for the proposed small mining permit application for Willits Company, Inc. in Laramie County.

Terrestrial Considerations:

The north halves of Sections 13 and 14 lie within crucial winter range for mule deer and pronghorn and Section 18 lies within crucial winter range for pronghorn. We recommend using wildlife friendly fencing and reclaiming disturbed areas after construction with native vegetation. In addition, we encourage a weed control program to reduce the spread of noxious and unwanted invasive plant species.

Aquatic Considerations:

The south fork of South Crow Creek and Lone Tree Creek are within 0.5 miles of the small mine, and both streams contain brook trout. We recommend that best management practices be used to control erosion and prevent sediment from reaching these two creeks.

"Conserving Wildlife - Serving People"

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Mr. Matt Farwell
June 13, 2008
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Thank you for the opportunity to comment.

Sincerely,

JOHN EMMERICH
DEPUTY DIRECTOR

JE:VS:gfb

cc: USFWS

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

Received
JUN 2 7 2008
Willits Company Inc

In Reply Refer To:
ES-61411/W.39/WY08FA0116

JUN 2 5 2008

Mr. Matt Farwell, Controller
Willits Company, Inc.
1417 West 6th Avenue
P.O. Box 825
Cheyenne, WY 82003-0825

Dear Mr. Farwell:

Thank you for your letter of June 5, 2008, received in our office on June 9, regarding the proposed small mine for Willits Company, Inc. This mine will be located in Laramie County, Wyoming at T13N, R70W, Section 13, N½; T13N, R70W, Section 14, N½; and T13N R69W, SW½, NW¼. In your letter, you requested information regarding the known existence of (1) known or important habitat, or (2) perennial streams which support fish populations. We do not maintain this information in our office, but you may wish to contact the Wyoming Game and Fish Department (WGFD) at (307) 777-4600 regarding this information.

However, the U.S. Fish and Wildlife Service (Service) is providing the following information for use in your analysis. Our comments include information on (1) listed species, (2) migratory birds, and (3) wetland and riparian areas. The Service provides recommendations for protective measures for listed species in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703 and the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act and the Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a-742j.

In accordance with section 7 of the Act, we have determined that the following threatened species may potentially occur within the proposed permit area. If issuance of the proposed permit may affect a listed species, please contact the Service to discuss consultation requirements.

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SPECIES	STATUS	HABITAT
Colorado butterfly plant (*Gaura neomexicana ssp. coloradensis*)	Threatened	Wet meadows and riparian areas
Preble's Meadow Jumping mouse (*Zapus hudsonius preblei*)	Threatened	Riparian habitats east of Laramie Mountains, and south of the North Platte River
Ute ladies'-tresses (*Spiranthes diluvialis*)	Threatened	Seasonally moist soils and wet meadows of drainages below 7000 feet elevation.

Colorado butterfly plant: The Colorado butterfly plant (*Gaura neomexicana ssp. coloradensis*) is a perennial herb endemic to moist soils in wet meadows of flood plain areas in southeastern Wyoming, north-central Colorado, and extreme western Nebraska between elevations of 5,000 and 6,400 feet. These plants are often found in low depressions or along bends in wide meandering stream channels a short distance upslope of the actual channel. Threats to the plant include non-selective herbicide spraying, haying and mowing schedules that inhibit the setting of seed, land conversion for cultivation and competition from noxious weeds. The low numbers and limited distribution contribute to the plant's vulnerability. Surveys should be conducted during flowering season which normally occurs in August although some temporal variability exists from site to site and from year to year depending on annual climatic conditions. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the Colorado butterfly plant to experts who can provide training/services.

Preble's meadow jumping mouse: The Preble's meadow jumping mouse (*Zapus hudsonius preblei*) (Preble's) is a small rodent in the Zapodidae family and is 1 of 12 recognized subspecies of the species *Z. hudsonius*, the meadow jumping mouse. The diet of the Preble's consists of seeds, fruits, fungi and insects. Hibernation occurs from October to May in small underground burrows. Nests are made of grass, leaves or woody material in burrows the mouse excavates several centimeters underground. Preble's are primarily nocturnal or crepuscular, but have been observed during daylight. They occur in low undergrowth consisting of grasses, forbs, or a mix of both, in wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover. Additionally, Preble's exhibits a preference for lush vegetation along watercourses or herbaceous understories in wooded areas with close proximity to water. In Wyoming, the Preble's has been recently documented in Albany, Laramie, Platte and Converse Counties, and may occur in Goshen County. If a proposed project will result in a disturbance to suitable habitat within any of these five counties, surveys should be conducted prior to any action. Due to the difficulty in identifying the Preble's, surveys should be conducted by knowledgeable biologists trained in conducting these surveys.

Ute ladies'-tresses: Ute ladies'-tresses (*Spiranthes diluvialis*) is a perennial, terrestrial orchid, 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of

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the stem. *S. diluvialis* typically blooms from late July through August; however, depending on location and climatic conditions, it may bloom in early July or still be in flower as late as early October. *S. diluvialis* is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevation range of known occurrences is 4,200 to 7,000 feet (although no known populations in Wyoming occur above 5,500 feet) in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows. Soils where *S. diluvialis* have been found typically range from fine silt/sand, to gravels and cobbles, as well as to highly organic and peaty soil types. *S. diluvialis* is not found in heavy or tight clay soils or in extremely saline or alkaline soils. *S. diluvialis* seems intolerant of shade and small scattered groups are found primarily in areas where vegetation is relatively open. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. *S. diluvialis* is difficult to survey for primarily due to its unpredictability of emergence of flowering parts and subsequent rapid desiccation of specimens. The Service does not maintain a list of "qualified" surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training or services.

Migratory Birds: The MBTA, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations, and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Work that could lead to the take of a migratory bird or eagle, their young, eggs, or nests (for example, if you are going to erect new roads, or power lines in the vicinity of a nest), should be coordinated with our office before any actions are taken. Removal or destruction of such nests, or causing abandonment of a nest could constitute violation of one or both of the above statutes. Removal of any active migratory bird nest or nest tree is prohibited. For golden eagles, inactive nest permits are limited to activities involving resource extraction or human health and safety. Mitigation, as determined by the local Service field office, may be required for loss of these nests. No permits will be issued for an active nest of any migratory bird species, unless removal of an active nest is necessary for reasons of human health and safety. Therefore, if nesting migratory birds are present on, or near the project area, timing is a significant consideration and needs to be addressed in project planning.

If nest manipulation is proposed for this project, the project proponent should contact the Service's Migratory Bird Office in Denver at 303-236-8171 to see if a permit can be issued for this project. No nest manipulation is allowed without a permit. If a permit cannot be issued, the project may need to be modified to ensure take of a migratory bird or eagle, their young, eggs or nest will not occur.

You may also be required to address the potential for Migratory Birds of High Federal Interest (MBHFI) to nest within or adjacent to the proposed permit area. The Service does not maintain

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site-specific information on the nesting locations of the birds on the MBHFI (copy enclosed). Site-specific nest location information may be available from the WGFD, other applicable land management agencies, or can be determined through the use of species-specific surveys conducted on site in accordance with scientifically accepted protocols and guidelines. If site-specific information indicates that MBHFI do occur at or in the vicinity (e.g., 1 mile) of the proposed project area, we can provide additional site and species-specific recommendations.

Wetlands: The functions and values of wetlands are well documented and are especially important in the arid west. Substantial degradation diminishes the effectiveness of wetlands to function as food, cover, and breeding sites for wetland dependent species; sediment transport systems; water retention/storage sites; contaminant sinks; and chemical exchange sites. To ensure the Service has sufficient information to assess project impacts on wetlands, assessments should include:

1. An enumeration of the acreage of wetlands, by type, impacted by the proposed action.
2. A discussion of why wetlands cannot be avoided.
3. A description of the functions and values of the wetlands, including sediment transport, water storage, habitat for aquatic and terrestrial organisms, and contaminant sinks, as well as the potential risks of water removal for these functions and values.
4. Measures that will reduce or eliminate adverse impacts to wetlands such as a mitigation plan to offset unavoidable impacts, protective buffers, seasonal and physical restrictions, maintenance of the natural hydrograph, and development and implementation of a monitoring program to track the effectiveness of mitigation measures.
5. Results of wetland monitoring or management activities in, or adjacent to, the proposed project site.
6. The anticipated short and long term effects to wetland and riparian areas during and after project completion.

We appreciate your efforts to ensure the conservation of Wyoming's fish and wildlife resources. If you have questions regarding this letter or your responsibilities under the Act and/or other authorities or resources described above, please contact Alex Schubert of my office at the letterhead address or phone (307) 772-2374, extension 238.

Sincerely,

Janice McKee for

Brian T. Kelly
Field Supervisor
Wyoming Field Office

Enclosure (1)

cc: WGFD, Non-game Coordinator, Lander, WY (B. Oakleaf)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)

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Migratory Bird Species of Management Concern in Wyoming

(Migratory Birds of High Federal Interest)

Based on the *Wyoming Bird Conservation Plan* (Cerovski et al. 2000)

May 2, 2002

U.S. Fish and Wildlife Service, Wyoming Field Office,
5353 Yellowstone Road, Cheyenne, Wyoming 82009

The Wyoming Field Office of the U.S. Fish and Wildlife Service (Service) has compiled the following list from the ongoing work among State and Federal agencies, non-governmental organizations, and the interested public that produced the Wyoming Bird Conservation Plan. This list will now serve as our list of Migratory Bird Species of Management Concern in Wyoming, in place of the previous list based on the Migratory Nongame Birds of Management Concern in the United States: the 1995 List. The Wyoming Bird Conservation Plan identified priority species based on a number of criteria (see below) using the best information available for these generally un-studied species. In many cases, this list reflects identified threats to habitat because no information is available on the species population trends. In some cases it reflects identified population declines though no causal factors have been identified.

The following tables and explanatory text are taken directly from the Wyoming Bird Conservation Plan (Cerovski et al. 2000). For more information on this listing process, this report is available from our Wyoming Field Office, 5353 Yellowstone Parkway, Cheyenne, Wyoming 82009; or Wyoming Game and Fish Department (WGFD), Nongame Branch, 260 Buena Vista, Lander, Wyoming 82520.

Table 1. **Level I Species (Conservation Action).** Species clearly needs conservation action. Includes species of which Wyoming has a high percentage of and responsibility for the breeding population, and the need for additional knowledge through monitoring and research into basic natural history, distribution, etc.

Species	PIF Score[a]	AI[b]	PT[c]	Primary Habitat Type(s)
Mountain Plover[d]	28	4	3	Shortgrass Prairie, Shrub-steppe
Trumpeter Swan	26	3	3	Wetlands
Sage Grouse	26	5	3	Shrub-steppe
McCown's Longspur	26	3	2	Shortgrass Prairie, Shrub-steppe
Baird's Sparrow	26	2	3	Shortgrass Prairie
Ferruginous Hawk	23	4	3	Shrub-steppe, Shortgrass Prairie

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Table 1. Level I Species (Conservation Action), continued.

Species	PIF Score[a]	AI[b]	PT[c]	Primary Habitat Type(s)
Brewer's Sparrow	23	5	5	Shrub-steppe, Mountain-foothills Shrub
Wilson's Phalarope	22	3	5	Wetlands
Franklin's Gull	22	3	3	Wetlands
Sage Sparrow	22	5	2	Shrub-steppe, Mountain-foothills Shrub
Swainson's Hawk	21	3	3	Plains/Basin Riparian
Long-billed Curlew	21	2	3	Shortgrass Prairie
Short-eared Owl	20	3	3	Shortgrass Prairie
Northern Goshawk	19	4	3	High Elevation Conifer, Mid Elevation Conifer, Aspen
Peregrine Falcon	19	3	3	Specialized (cliffs)
Burrowing Owl	19	3	4	Shortgrass Prairie
Forster's Tern	19	2	3	Wetlands
Bald Eagle	18	3	3	Montane Riparian, Plains/Basin Riparian
Upland Sandpiper	18	2	2	Shortgrass Prairie
Black Tern	18	3	3	Wetlands
Whooping Crane	n/a	n/a	n/a	Wetlands
Piping Plover	n/a	n/a	n/a	Wetlands, Aquatic

[a] From the PIF Priority Database (Carter et al. 1997).
[b] AI ' Area Importance (from the PIF Priority Database, Carter et al. 1997).
[c] PT ' Population Trend (from the PIF Priority Database, Carter et al. 1997).
[d] Species in all capital letters previously appeared on the Service's 1995 list.

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Table 2. **Level II Species (Monitoring).** The action and focus for the species is monitoring. Includes species of which Wyoming has a high percentage of and responsibility for the breeding population, species whose population trend is unknown, species that are peripheral for breeding in the habitat or state, or species for which additional knowledge is needed.

Species	PIF Score[a]	AI[b]	PT[c]	Primary Habitat Type(s)
Calliope Hummingbird	23	5	3	Mid Elevation Conifer, Montane Riparian
Lewis' Woodpecker	23	3	3	Low Elevation Conifer, Plains/Basin Riparian
Cassin's Kingbird	22	3	3	Juniper Woodland, Plains/Basin Riparian
Lark Bunting	22	4	4	Shortgrass Prairie, Shrub-steppe
American White Pelican	21	3	3	Aquatic
Williamson's Sapsucker	21	3	3	Mid Elevation Conifer
Black-backed Woodpecker	21	3	3	Mid Elevation Conifer, High Elevation Conifer
Gray Flycatcher	21	3	3	Juniper Woodland, Mountain-foothills Shrub
Juniper Titmouse [d]	21	3	3	Juniper Woodland
Dickcissel	21	3	3	Shortgrass Prairie
Chestnut-collared Longspur	21	2	3	Shortgrass Prairie
Harlequin Duck	20	3	3	Montane Riparian
Snowy Plover	20	3	3	Wetlands
Black-chinned Hummingbird	20	2	3	Plains/Basin Riparian, Shrub-steppe
Rufous Hummingbird	20	2	3	Mid Elevation Conifer
Red-naped Sapsucker	20	3	2	Aspen
Three-toed Woodpecker	20	4	3	Mid Elevation Conifer, High Elevation Conifer
Willow Flycatcher	20	3	4	Montane Riparian, Plains/Basin Riparian
Hammond's Flycatcher	20	2	3	High Elevation Conifer with Aspen, Montane Riparian
Cordilleran Flycatcher	20	3	3	Montane Riparian, Mid Elevation Conifer
Pygmy Nuthatch	20	3	3	Low Elevation Conifer
Marsh Wren	20	3	4	Wetlands
American Dipper	20	3	3	Montane Riparian

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Table 2. **Level II Species (Monitoring)**, continued.

Species	PIF Score[a]	AI[b]	PT[c]	Primary Habitat Type(s)
Plumbeous Vireo	20	3	3	Mid Elevation Conifer, Low Elevation Conifer
Townsend's Warbler	20	3	3	High Elevation Conifer, Mid Elevation Conifer
Dusky Flycatcher	19	3	2	Low Elevation Conifer, Aspen, Mountain-foothills Shrub
Western Bluebird	19	3	3	Juniper Woodland, Low Elevation Conifer
Sage Thrasher	19	5	2	Shrub-steppe
Grasshopper Sparrow	19	3	5	Shortgrass Prairie, Shrub-steppe
Bobolink	19	2	3	Shortgrass Prairie, Shrub-steppe
Common Loon	18	3	3	Wetlands
Black-billed Cuckoo	18	2	3	Plains/Basin Riparian
Red-headed Woodpecker	18	2	3	Plains/Basin Riparian, Low Elevation Conifer
Yellow-billed Cuckoo	18	3	3	Plains/Basin Riparian
Eastern Screech-Owl	18	3	3	Plains/Basin Riparian
Western Screech-Owl	18	3	3	Plains/Basin Riparian
Great Gray Owl	18	3	3	Mid Elevation Conifer, High Elevation Conifer
Boreal Owl	18	3	3	High Elevation Conifer
Broad-tailed Hummingbird	18	2	2	Montane Riparian, Plains/Basin Riparian, Mid Elevation Conifer
Western Scrub-Jay[d]	18	3	3	Juniper Woodland
Loggerhead Shrike	18	3	3	Shrub-steppe
Vesper Sparrow	18	5	4	Shrub-steppe
Lark Sparrow	18	3	4	Shrub-steppe
Golden-crowned Kinglet	17	3	3	High Elevation Conifer
MacGillivray's Warbler	17	3	1	Montane Riparian, Plains/Basin Riparian
Ash-throated Flycatcher[d]	16	2	3	Juniper Woodland
Bushtit[d]	16	3	3	Juniper Woodland
Brown Creeper	16	3	3	Mid Elevation Conifer, High Elevation Conifer
Merlin	15	3	3	Low Elevation Conifer
Sprague's Pipit	n/a	n/a	n/a	Grassland, Plains/Basin Riparian, Shortgrass Prairie
Barn Owl	n/a	n/a	n/a	Shortgrass Prairie, Urban
White-faced Ibis	n/a	n/a	n/a	Wetlands, Aquatic

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American Bittern	n/a	n/a	n/a	Wetlands, Aquatic
Common Tern	n/a	n/a	n/a	Wetlands, Aquatic
Purple Martin	n/a	n/a	n/a	Wetlands, Aquatic/Basin Riparian, Montane Riparian

[a] From the PIF Priority Database (Carter et al. 1997).
[b] AI = Area Importance (from the PIF Priority Database).
[c] PT = Population Trend (from the PIF Priority Database).
[d] Nicholoff, S. 2002. Wyoming Bird Conservation Plan, Version 1.1. Wyoming Partners In Flight and Wyoming Game and Fish Department, Lander. In press.

Wyoming Partners In Flight Process for Prioritizing Species

Wyoming Partners In Flight participants developed the current list of priority species based on a combination of the seven criteria in the national Partners In Flight Priority Database (Carter et al. 1997). This database serves as a defensible method of prioritizing both species and habitats in need of conservation. The criteria include Wyoming-dependent and Wyoming-independent factors. The Wyoming-independent criteria are constant over a species' range and do not vary for each species. The Wyoming-dependent criteria were the key components used to prioritize species and their conservation action needs. In the absence of any more rigorous statewide surveys, Breeding Bird Survey data dating back to 1968 were used to determine population trends in Wyoming.

Criteria

Within each criterion below, a species was given a rank score ranging from 1 to 5, with 1 being the least critical rank and 5 the most critical. Each ranked species could potentially receive a low score of 7 and a high score of 35. However, setting conservation goals based only on total score could be misleading; therefore, each total score was reviewed in conjunction with its component parts. In Wyoming, species were initially ranked using total score, area importance, and population trend.

1. Relative Abundance (RA) - The abundance of a bird, in appropriate habitat within its entire range, relative to other bird species. This criterion gives an indication of a species' vulnerability to withstand cataclysmic environmental changes. A low score would indicate a higher relative abundance, therefore reducing the risk of complete extirpation from losses in one or more regions. Higher scores indicate a lower relative abundance, thus more vulnerability to drastic losses or population changes.

2. Breeding Distribution (BD) - A relative measure of breeding range size as a proportion of North America (defined as the main body of the continent, excluding Greenland, through Panama and the islands of the Caribbean, comprising an area of 22,059,680 km^2 [National Geographic Society 1993]), and as such it provides an index of a species' vulnerability to random environmental events. High scores indicate localized breeding, thus a higher likelihood of

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serious decline from drastic environmental changes. Low scores indicate wide breeding distribution, therefore less likelihood of extirpation. Used for breeding birds only.

3. **Non-breeding Distribution (ND)** - A relative measure of non-breeding, or winter, range size as a proportion of North America, and as such it provides an index of a species' vulnerability to random environmental events. High scores indicate localized distribution on the non-breeding grounds. Low scores indicate wide distribution on the non-breeding grounds, therefore less likelihood of extirpation. Used for wintering birds only.

4. **Threats on Breeding Grounds (TB)** - The ability of a habitat in an area to support populations of a species in that area. Two factors are considered here: 1) each species' demographic and ecological vulnerability (the potential inability of a species to recover from population loss by normal reproductive effort due to low reproductive rate, high juvenile mortality, or both; and the level of ecological specialization of a species and, hence, its potential inability to withstand environmental change), and 2) habitat loss or disruption (a combination of the amount of habitat or conditions necessary for survival and reproductive success that has been lost since 1945, and the amount that is anticipated to be lost in the future). High scores indicate either a large loss of habitat or a species that is an extreme ecological specialist. Low scores indicate a stable or increasing habitat or a species that is an ecological generalist. Used for both breeding and wintering birds.

5. **Threats on Non-breeding Grounds (TN)** - Range-wide threats on non-breeding, or winter, grounds. This is scored using the same criteria as threats on breeding grounds but reflects non-breeding issues, including migratory habitat. Used for wintering birds only.

6. **Population Trend (PT)** - The overall population trend of each species assigned independently for each state, province, or physiographic area. This criterion must meet two thresholds, reliability and magnitude, to warrant either a very high or very low score. When possible, a score was assigned using BBS data, which incorporated a population trend uncertainty score based on the statistical validity of the BBS data (i.e. a species must be detected on a minimum of 14 BBS routes per state for population trends to have statistical significance). This criterion was chosen to alert managers to species with modest, but certain, population declines.

7. **Area Importance (AI)** - The abundance of a species within a state, province, or physiographic area relative to its abundance throughout its range. This criterion helps direct conservation efforts toward areas that are most important to a species' survival. Area Importance is scored locally; therefore, high scores indicate that a large proportion of the species' breeding or winter range occurs in Wyoming, or a species is using a habitat that is only available in Wyoming. Low scores indicate that a small proportion of the species' range occurs in Wyoming, or the preferred habitat is widespread across its range. Used for both breeding and wintering birds.

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Priority Species

Priority bird species in Wyoming were identified from the PIF Priority Database (Carter et al. 1997) and by qualitative, informed decisions. Those species with a total score of 18 or above, Area Importance (AI) of 3 or above, and/or Population Trend (PT) of 3 or above from the database, or with a total score less than 18 but of significant local interest were identified as the highest priority species. However, as more information becomes available, the highest priority species for Wyoming may change, as this is a dynamic database that allows for updated information to be periodically inserted and reviewed. The primary habitat type or types required for breeding were identified for each species to determine the highest priority habitat types for the state.

Literature Cited

Carter, M. F., W. C. Hunter, D. N. Pashley, J. S. Bradley, C. S. Aid, J. Price, and G. S. Butcher. 1997. Setting landbird conservation priorities for states, provinces, and physiographic areas of North America. Partners In Flight Priority Database Final Report, Colorado Bird Observatory, Brighton.

Cerovski, A., M. Gorges, T. Byer, K. Duffy, and D. Felley. 2000. Wyoming Bird Conservation Plan, Version 1.0. Wyoming Partners In Flight, Lander, WY.

Nicholoff, S. 2002. Wyoming Bird Conservation Plan, Version 1.1. Wyoming Partners In Flight and Wyoming Game and Fish Department, Lander. In press.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

SEP 0 3 2009

Received
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Willits Company Inc

In Reply Refer To:
ES-61411/W.39/WY09FA0213

Mr. Matt Farwell, Controller
Willits Company, Inc.
1417 West 6th Avenue
P.O. Box 825
Cheyenne, WY 82003-0825

Dear Mr. Farwell:

Thank you for your letter of August 6, 2009, received in our office on August 10, regarding the proposed small mine for Willits Company, Inc. This mine will be located in Laramie County, Wyoming at T13N, R70W, Section 13, N½; T13N, R70W, Section 14, N½; and T13N R69W, SW½, NW¼. In your letter, you requested a response from the U.S. Fish and Wildlife Service (Service) regarding the wetlands delineation and assessment performed at this site. The U.S. Army Corps of Engineers (USACOE) has determined that the wetlands are not waters of the United States and thus are Non-Jurisdictional. According to your correspondence, Willits Company, Inc. will require sediment control measures and reclamation of disturbed wetlands at the site.

Because (1) the Willits Company, Inc. has committed to taking steps to minimize the impacts to the wetlands involved and (2) the USACOE has determined these wetlands are Non-Jurisdictional, the Service regards the information provided by the Willits Company, Inc. regarding these wetlands as satisfactory. We appreciate your efforts to ensure the conservation of Wyoming's fish and wildlife resources. If you have questions regarding this letter or your responsibilities, please contact Alex Schubert of my office at the letterhead address or phone (307) 772-2374, extension 238.

Sincerely,

Scott Hicks
for Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: WGFD, Non-game Coordinator, Lander, WY (B. Oakleaf)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (M. Flanderka)

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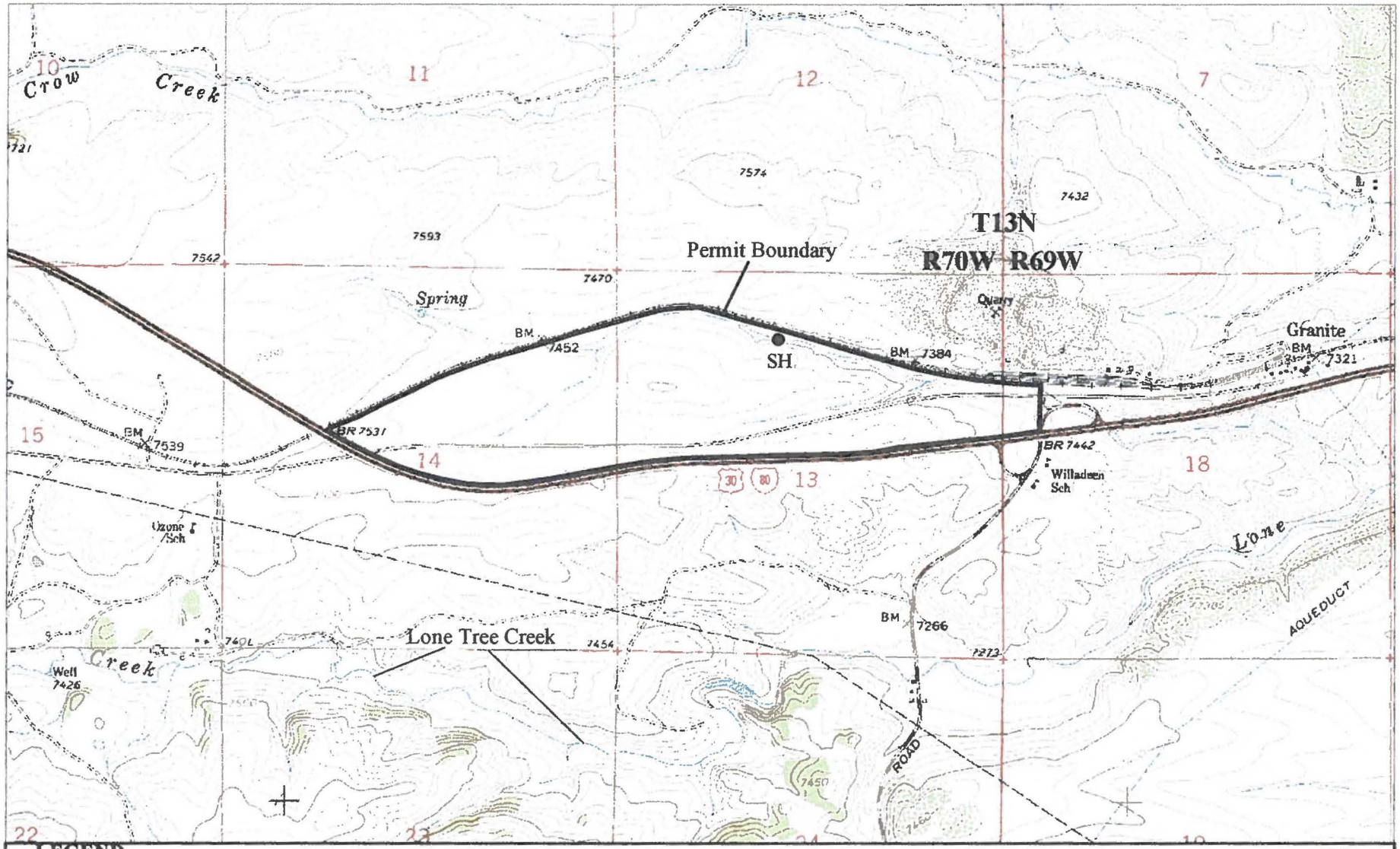

LEGEND

● - Raptor Nest

SH - Swainson's Hawk

Scale: 1" = 2000'	Date: June 26, 2008

N

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Map D9-1

Harriman Quarry

Willits Company, Inc.
P.O. Box 825
Cheyenne, WY 82003

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Appendix D-10

II.H. Appendix D-10: Jurisdictional Wetland Information

A. Introduction

The permit area location is shown on Map D10-1. The site includes about 244 acres located between the Union Pacific Railroad on the north and Interstate 80 to the south. The old unreclaimed Highway 30 also passes through the permit area from east to west. The area has historically been used as grazingland for cattle with unrestricted wildlife use. The area is primarily upland grassland with areas previously disturbed from highway and railroad construction. Intermittent and perennial tributaries to Lone Tree Creek are also present within the permit area.

This report is a recommended determination of wetlands and other waters of the United States under authority of the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency under Section 404 of the Clean Water Act. The agencies retain the authority to amend or approve wetland delineations, and to make jurisdictional determinations on wetlands based on isolation, navigability or those created by human activities. This delineation is subject to revision based on the Corps interpretation of recent court rulings (Rapanos v. United States).

B. Methods

Wetlands were delineated according to the 1987 Corps of Engineers Wetland Delineation manual and the March 2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. Other waters of the United States were determined according to definitions in 33 CFR 328.3. Initial observations of potential wetland sites were made in June of 2008 and field data sheets were completed in May of 2009.

Potential wetlands initially were identified by examining topographic maps and National Wetland Inventory (NWI) maps. All potential wetlands identified through those reviews were surveyed in the field during June of 2008 and May of 2009. Vegetation, hydrology, and soil characteristics of wetlands and other waters were recorded on the data sheets at the time of the May 2009 survey. Photographs were taken at the sample sites. Measurements were taken directly in the field using tapes and laser range finder. Some of the longer stream length measurements were obtained from topographic and aerial photo maps.

C. Results

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The site contains a small tributary to Lone Tree Creek. This tributary appears to have perennial flows originating from seeps and springs within the mine permit area. The water table is relatively low within the mapped wetland sites for a good portion of the growing season. The Palustrine, Emergent Vegetation, Seasonally Flooded (PEMC)

wetland type was the most common wetland found within the permit area. Small inclusions of Palustrine, Scrub Shrub, Temporarily Flooded (PSSA) wetlands were found within a portion of the PEMC. Areas where these small willow inclusions were found were mapped as PEMC/PSSA. These wetland types are briefly discussed below.

PEMC/PSSA Wetland

This wetland type was identified on 5.50 acres within the permit area and is represented by Sample Site 1. Photograph 1 provides a view of this type. This wetland is primarily PEMC but small patches of willows (PSSA) are scattered throughout this unit. These willow patches were too small and scattered to map out separately. Dominant plant species are primarily grasses, sedges and rushes. This map unit is found along a small perennial stream and soils are generally saturated most of the growing season.

PEMC Wetland

This wetland type was identified on 8.17 acres within the permit area and is represented by Sample Site 2. Photograph 2 provides a view of this type. This wetland is found along seeps, springs, small perennial streams and in other areas where the water table is high during a portion of the growing season. Soils are generally saturated within most of the plant rooting zone. Dominant plant species are primarily grasses, sedges and rushes.

A. Summary

Map D10-1 shows the locations of wetlands delineated within the permit area. The acreages of these wetlands are listed below.

PEMC	8.17
PEMC/PSSA	5.50
Total	13.67 acres

Field sampling data sheets and photographs are found in Sections F and G of this report, respectively.

This wetland delineation was submitted to the Army Corps of Engineers (USACE) for a jurisdictional determination on May 12th, 2009. The response from the USACE is included on pages I.F-12 and I.F-13. The USACE determined the wetlands adjacent and abutting the unnamed tributary to Lone Tree Creek, identified within the permit area, do not have a significant nexus to a traditionally navigable water and are not waters of the United States. Therefore, Department of the Army authorization is not required for the project because it does not require the discharge of fill material in wetlands or

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other waters of the United States. Willits Company **has committed** to minimizing disturbance to **non-jurisdictional** wetland **and wet meadow areas** where possible. **Non-jurisdictional wetlands and wet meadow habitat will be reestablished** as outlined in the reclamation plan, **and in consultation with LQD staff at the time of reclamation.**

B. Sources

Department of the Army, Corps of Engineers. 1987. Corps of Engineers Wetland Delineations Manual. 100 pp.

Department of the Army, Corps of Engineers. 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. 131 pp.

Dorn, R.D. 1992. Vascular Plants of Wyoming, Second Edition. Mountain West Publishing. Cheyenne, Wyoming. 340 pp.

USDA-Soil Conservation Service. 1987 (Revised March 1990). Hydric Soils of the United States, In Cooperation with the National Technical Committee for Hydric Soils.

USDI-Fish and Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands: North Plains (Region 4). 64 pp.

USDI-Fish and Wildlife Service. 1991. National Wetlands Inventory Maps.

C. Field Data Sheets

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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Harriman Quarry City/County: Laramie Sampling Date: 5/7/09
Applicant/Owner: Willits Company State: WY Sampling Point: 1
Investigator(s): Jim Orpet - Intermountain Section, Township, Range: Sec. 13 T13N R70W
Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR): Western (LRR G) UTM Lat: 4549792 UTM Long: 0485073 Datum: NAD83
Soil Map Unit Name: — NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' Radius)			
1. Salix sp.	5	NO	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: m²)			
1. Deschampsia caespitosa	20	yes	FACW
2. Agrostis stolonifera	15	yes	FACW
3. Carex sp	10	yes	FACW
4. Juncus sp	10	yes	FACW
5. Poa sp	10	yes	FACW
6. Achillea millefolium	2	NO	FACU
7.			
8.			
9.			
10.			
	67 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

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Remarks:

SOIL

Harrison Quarry

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1	80	–	–	–	–	OM	
2-9	10YR2/1	50	5YR4/4	30	RM	M	LS	
9-10+	10YR2/1	60	5YR4/4	40	RM	M	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- X Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0-12

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 53/062

Remarks:

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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Harriman Quarry City/County: Laramie Sampling Date: 5/8/09
Applicant/Owner: Willits Company State: WY Sampling Point: 2
Investigator(s): Jim Orpet - Intermountain Section, Township, Range: NE4 Sec 14 T13N R70W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 3
Subregion (LRR): western (LRR G) UTM Lat: 4549614 UTM Long: 0483413 Datum: NAD 83
Soil Map Unit Name: NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: m²)			
1. Juncus sp	30	yes	FACW
2. Carex sp.	15	yes	FACW
3. Poa sp	15	yes	FACW
4. Achillea millifolium	3	no	FACU
5. Artemisia frigida	3	no	UPL
6.			
7.			
8.			
9.			
10.			
	66 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

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Remarks:

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SOIL

Harriman Quarry

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	80	–	–	–	–	SL	
3-5	10YR 2/1	60	–	–	–	–	SL	
5-8	10YR 3/3	80	7.5YR 4/6	50	RM	M	SL	
8-16	10YR 3/3	80	7.5YR 4/6	40	RM	M	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR F)
- ___ 1 cm Muck (A9) (LRR F, G, H)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR I, J)
- ___ Coast Prairie Redox (A16) (LRR F, G, H)
- ___ Dark Surface (S7) (LRR G)
- ___ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- X Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0-6

Water Table Present? Yes X No ___ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 53062

Remarks:

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G. Photographs

Photo 1. PEMC/PSSA Wetland at Sample Site 1.

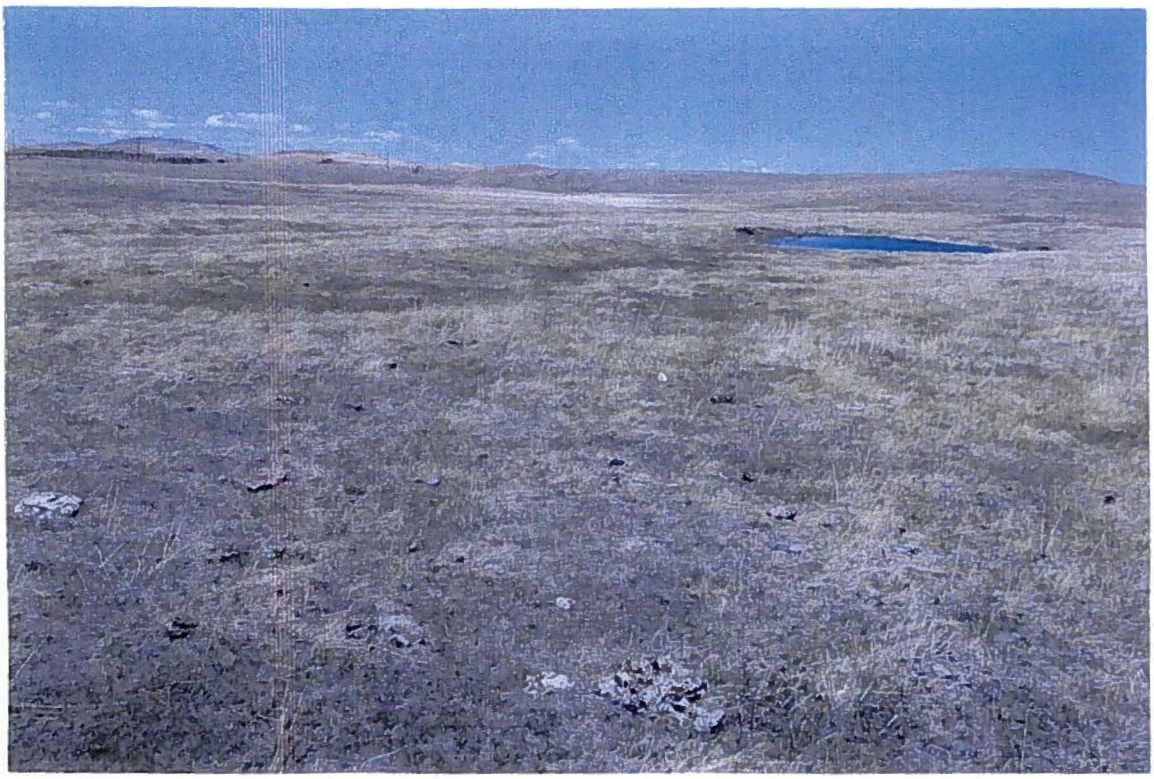

Photo 2. PEMC Wetland at Sample Site 2.

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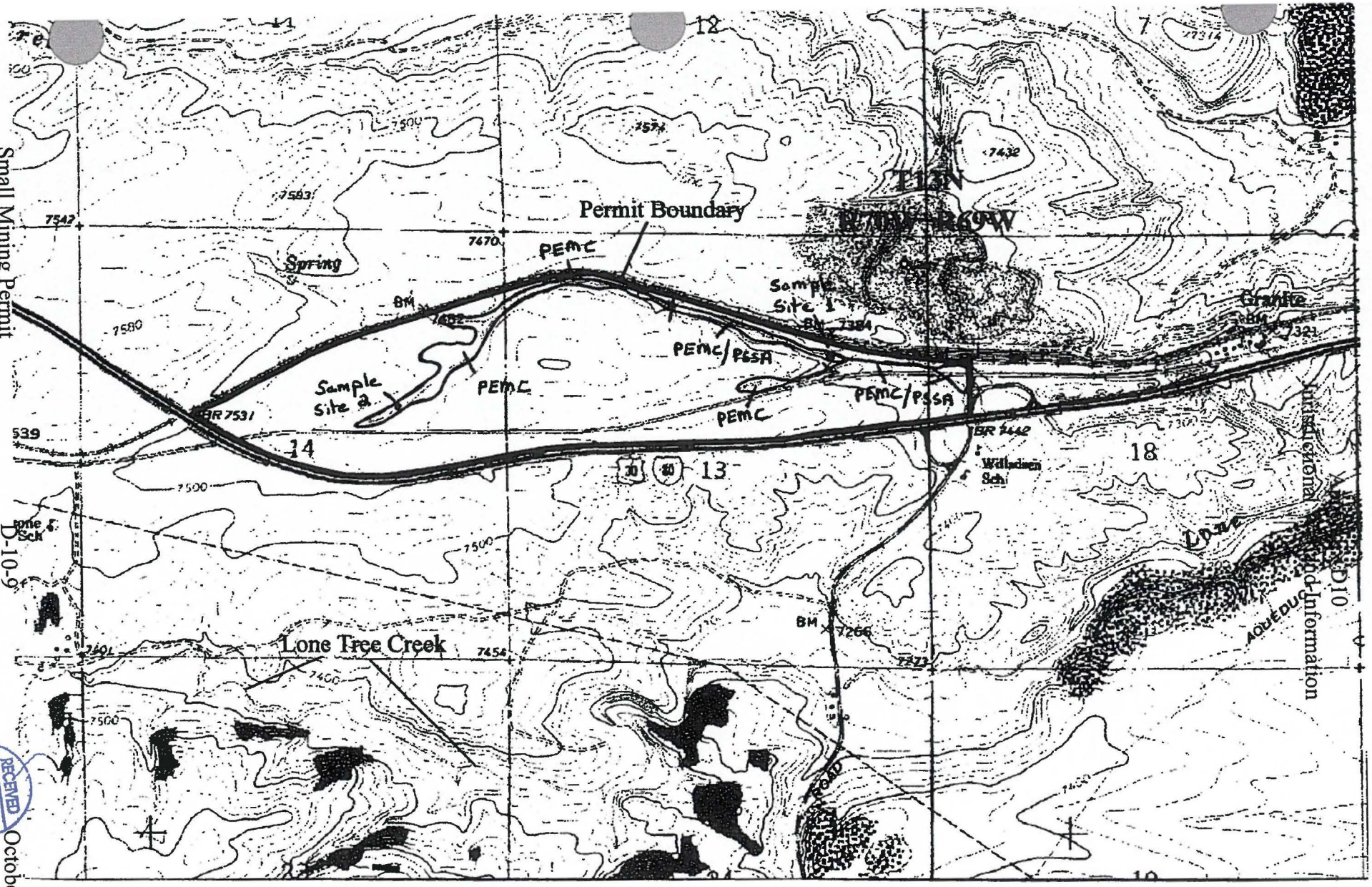

Small Mining Permit
Harriman Quarry
D-10-9

October 2008

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LEGEND

PEMC – Palustrine, Emergent Vegetation, Seasonally Flooded
PEMC/PSSA - Palustrine, Emergent Vegetation, Seasonally Flooded/
Palustrine, Scrub Shrub, Temporarily Flooded
Scale 1" = 1690

Map D10-1
Harriman Quarry Wetlands

Willits Company, Inc.
P.O. Box 825
Cheyenne, WY 82003

Jurisdictional Wetland Information

D10

Mine Plan

MP-1 Mining Operation – General Description

MP-1.1 Type of Mine

Harriman Quarry is a rock-mining operation that removes and processes granite rock for sale as construction aggregate. Mining operations usually consist of stripping and stockpiling topsoil to expose the underlying granite, removing the granite rock, and processing the rock for on-site storage and sale. Topsoil, where present, is stripped and stockpiled for future reclamation. The granite is excavated by ripping and blasting, then crushed, screened and possibly washed, before being stockpiled for sale. Associated operations include fuel storage, equipment storage, and possibly a scale to determine aggregate weight.

MP-1.2 Life of Mine

Harriman Quarry will be mined based on the current contours and physical features of the permit area. Based on estimated production averages of 400,000 tons in each of the first five (5) years and 700,000 tons in each sequential following year five, we estimate the life of the mine to be fifty years (50). The production tons listed above are only estimates. These estimates are the basis for the mining sequence depicted in the Mine Plan Map. (These mining estimates will not limit Willits Company, Inc. from producing larger quantities of material should demand for production be higher. The limitations Willits Company will adhere to are those outlined in the Land Quality Noncoal Rules and Regulations, Chapter 9.) The life of the mine is estimated based on calculated volume of rock available for mining and projected economic conditions. Should changes in economic or business conditions occur, this life of mine estimate will likely change correspondingly.

MP-1.3 Equipment List

The mining equipment list is listed below in Table MP-1. Equipment is generally left on-site for most of the year, but may be removed from the site as mining conditions dictate. Both portable and permanent equipment may be used to process the aggregate depending on the need and use and longevity of each piece of equipment.

Other equipment used at the quarry includes, but is not limited to, water trucks, rock drill rig, haul trucks, scrapers and utility trucks. Equipment will be added, repaired or replaced throughout the mine operation life as required by stripping, mining, and aggregate-processing operations.

Table MP-1
Equipment List

Equipment	Quantity
980 Cat Loader	2
226 Cat Skid Steer	1

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Cat Gen Set	1
Cedar Rapids Jaw Crusher	1
Cedar Rapids Cone Crusher	1
Cedar Rapids Wash Plant	1
Cedar Rapids Screen Plant	1
Various Conveyors and Stackers	N/A

MP-1.4 Nature of Commodity and Reserves Estimates

Based on our estimate that the majority of the two hundred forty-four (244) acres included in the permit area contain mineable deposits of up to two hundred (200) feet in depth (excluding an estimated volume average of three (3) inches of topsoil), the estimated volume of material to be mined is 22.7 million cubic yards, corresponding to 34.0 million tons at 1.5 tons per cubic yard. These estimates are based on the following criteria: 1) setting a quarry floor elevation at 7310 ft; 2) establishing a slight grade in the floor for drainage; 3) analyzing cross sections of topographical data obtained from aerial photographs; and 4) calculating the in bank cubic yards available to mine and converting that data to tons based on a 1.5 tons per cubic yard conversion. Ideally, all of the mined material (granite and inliers of metamorphic rock) will be saleable. Some mined material however may be used for quarry operations such as dam building, general grading, reclamation, and road maintenance.

An area of approximately thirty-two (32) acres of the total permit area consists of lands disturbed by the construction of Interstate 80 or the Union Pacific Railroad. This land is located on the West end of the permit area, the south boundary of the permit area (adjacent to Interstate 80) and on the northern boundary of the permit area (adjacent to the Union Pacific Railroad). Soils are absent to very shallow on these areas and they are dominated primarily by non-native species.

A detailed description of the geological properties of the commodity is included in Appendix D-5 (Page D-5-1).

MP-1.5 Protection of Other Resources

Mining at Harriman Quarry is unlikely to affect any surrounding resources. There is no known oil and gas reserve or man-made structures present in the permit area. Mining operations will follow recommendations provided by the WGFD and USFWS to minimize, and if necessary mitigate, impact on wildlife resources identified in Appendix D9.

Willits Company, Inc. will adhere to the requests of the WGFD and the USFWS to minimize the wildlife impact within and around the permit area. Wildlife friendly fencing **will be used where appropriate, exclusion fencing or barriers will be used above postmining highwalls,** a dam to catch any unwanted, down stream sediment flow will be constructed, and the appropriate mitigation measures will be coordinated through

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the WGFD and the USFWS should any raptor nest manipulations or takes be required. If any new raptor nests are discovered within the permit area, the U.S. Fish and Wildlife Service will be contacted to determine if any mitigations measures are necessary.

Prior to disturbance, Willits Company, Inc. will establish appropriate Alternate Sediment Control Measures (ASCMs) to minimize any potential contamination of the waters associated with the Lone Tree Creek drainage. The primary ASCMs used will be detention ponds, **sediment traps/basins, sedimentation filter fence (SFF), and straw bales/wattles**. Slopes within the affected area will drain runoff away from undisturbed areas and towards detention ponds. SFFs will be used in conjunction with detention ponds to ensure sediment is contained. Straw bales/**wattles** will be used to **protect** undisturbed boundaries where chances of minimal drainage and contamination exist. These straw bales will be inspected frequently and replaced as necessary. The SFF and detention ponds will be inspected numerous times a year and cleaned/replaced as needed.

MP-1.6 Mine Facilities Design Criteria, Construction Methods and Schedule

MP-1.6.1 Buildings, Processing Plants and Other Facilities

A portable office will be placed near the Easterly end of the permit area near the access road and entry to the pit from Harriman Road. Depending on need, a permanent office structure and shop may be built on the property.

Diesel fuel will be stored in two (2) 10,000 gallon aboveground storage tanks (AST). Containment berms with liners will be constructed around the AST to contain 120% of potential spills, or double walled storage tanks will be used.

MP-1.6.2 Access and Haul Roads

Access into the mine is via the old, abandoned US Highway 30 **(shown on maps as "Haul Road")** from Harriman road. Roads into mined areas will be constructed as needed, though the pit floor will serve as primary access anywhere within the mine.

MP-1.6.3 Power Transmission and Communication Lines

Power will be provided to the mine by a portable diesel generator, and communication is by cell phone. Power and communications are expected to be provided by these on-site utilities, although future plan may consider power and communication from available commercial sources.

MP-1.6.4 Sedimentation and Treatment Ponds

Numerous ponds will be used to treat and settle sediment produced in the granite washing process. These ponds will be located within the already disturbed area and will not discharge into the Lone Tree Creek drainage area. These ponds may be treated with a flocculent solution to help clarify the water before being recycled back into the washing process. The source of these ponds will be the combination of runoff, the dammed spring (Harriman Quarry Reservoir), and future potential wells. The location of these ponds is still uncertain, but will be decided based upon need and proximity to the mining operation.

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Alternate Sediment Control Measures (ASCMs) will control any runoff, which might discharge from the permit area. The ASCMs may consist of silt fences, hay/straw bales/**wattles**, rock check dams, **sediment traps/basins**, or other controls. **All locations will be documented on future annual report maps as sedimentation structures are constructed.**

MP-1.6.5 Hydraulic Diversions Retention Systems

An impoundment will be created by damming a spring adjacent to old US Hwy 30. The impoundment will be referred to as Harriman Quarry Reservoir (HQR) throughout the mine plan. This impoundment will be a temporary in nature. The topography of the remaining undisturbed land is such that runoff will drain away from the affected area naturally and into the wetland areas. A portion of runoff may drain into disturbed lands. Within the affected area, various small ditches/diversions will be cut to convey runoff to the sedimentation ponds or areas designated in the pit floor to catch and hold drainage water. Should runoff from undisturbed lands drain into the affected area, the water will be channeled into these same sedimentation ponds within the pit floor.

MP-1.6.6 Solid Waste Disposal

Willits Company, Inc. may periodically import clean fill and bury or stockpile in the pit. These stockpiles may be crushed intermittently, into recycled base to be used on roads within the permit area or sold for projects off-site. Willits Company, Inc. acknowledges that "clean fill" means material consisting solely of uncontaminated natural soil and rock, hardened asphalt rubble, brick and concrete rubble that does not create a health hazard, public or private nuisance or a detriment to the environment. Used oil will be stored and recycled for heating oil. All other waste generated from operations in the pit area will be hauled to the city landfill on an as needed basis.

MP-1.6.7 Storage and Stockpile sites

Salvaged topsoil and processed aggregate will be stored on-site in stockpiles. Topsoil will be stored in designated areas and maintained to limit erosion. Aggregate stockpiles are dynamic, the size and location of which will depend on the aggregate processing locations and the desired amount of processed aggregate. Aggregate stockpiles will generally move with the advancement of mining.

MP-1.6.8 Access Control Features

The mine is accessed by way of the old abandoned U.S. Highway 30 from Harriman road. There is a gate at the main entrance, which is kept closed and locked nightly.

Barbed-wire fences are located around the entire boundary of the permit area. The permitted area is sandwiched between Interstate 80 and an active railway. Access to the permit area, other than via the access road, would have to come across fenced boundaries.

MP-2 Mining Method and Schedule

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MP-2.1 Topsoil

MP-2.1.1 Stripping and Handling Techniques

Topsoil will be managed primarily with stockpiling with the possibility of direct haul-back to reclamation areas where practical. Topsoil will be pre-**stripped prior to highwall advance** to prevent unwanted loss of soil.

Topsoil, where existent, will be stripped with dozers, scrapers, loaders or excavators capable of accurately removing soil to a predefined depth or removing all topsoil in existence on granite outcrops. The topsoil inherently will contain rock fragments. These rocks will not be removed during the stripping and stockpiling operations. An attempt will be made to separate large rocks from the topsoil prior to stockpiling. Prior to initiation of soil stripping, salvageable topsoil depths will be determined by digging test holes prior to stripping. These depths will be determined by qualified personal. Estimated Topsoil volumes range from zero (0) to six (6) inches with an average of three (3) inches. Numerous outcroppings visible in the permit area do not contain any topsoil. Vegetation will be removed as part of the topsoil. Removed topsoil will be transported from the salvage areas to the stockpile sites with loaders. Haul trucks maybe utilized depending on the distance to the stockpile sites. Topsoil stockpiles shall be measured and be included in the annual report.

Topsoil depths within the wet meadows are greater. It is estimated that the wetland/wet meadow acreage within the permit area contains twelve (12) inches of salvageable topsoil. All salvageable topsoil within these areas will be stockpiled and used for reclamation purposes **when these areas** are disturbed.

Topsoil will be stockpiled in relatively stable, flat areas within the permitted area. They will be located to minimize interference with other mining operations and reclamation efforts.

The schedule for topsoil stripping will follow the normal mine progression outlined in map MP-1.

MP-2.1.2 Stockpile Quantities

The estimated total strippable volume for the planned quarry and associated affected areas is about 98,413 (based on an average depth of 3 inches and a minable area of 244 acres) cubic yards, all of which may be stockpiled during the life of the mine. There will be less stockpiled volume if some haul-back is used for reclamation.

Initial reclamation is not anticipated until a substantial mining area is completed. After such a time, stockpile volumes will decrease as slopes are completed to final grade and topsoil stockpile volumes will subsequently vary depending on the amount of topsoil available for salvage. Erosion and sediment control for these stockpiles will be accomplished through use of toe berms and reseeding.

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MP-2.1.3 Topsoil Stockpile Conservation Plan

Stockpiles will be located in areas best suited to manage and conserve topsoil salvage; avoiding slopes and drainages to minimize erosion. The stockpile will be seeded with a temporary seed mix after stripping has been completed for the following section to stabilize the surface of the stockpile and reduce erosion. If topsoil is added to a stockpile after the initial seeding, each addition will be seeded in a similar manner.

A toe berm will be constructed around the base of the stockpile to protect loss of topsoil due to erosion. The topsoil stockpile will be delineated with a sign labeled "TOPSOIL."

MP-2.2 Mine Pit Excavation, Backfilling and Contouring

MP-2.2.1 Pit Excavation

Pit excavation will be completed in the pattern defined by the mining sequence shown in Map MP-1 with benched highwalls along the quarry perimeter and parallel to the advancing boundary of each mining sequence. As mining and blasting activities progress, the number of benches as well as bench heights may be adjusted to accommodate mining conditions.

Currently Harriman Quarry is being mined under ET permit # 1472. Mining will continue to progress from the ET permit boundary towards the West. A quarry floor elevation of approximately 7310 has been established in the NE corner of this permitted area. A minimal slope (for drainage purposes) to the pit floor will be applied as the mining area progresses to the West.

When mining progresses to the point where the impoundment (HQR) can no longer be avoided, the impoundment will be drained and mining will progress through that area to our desired depth. Draining of the impoundment will include pumping excess water into the sedimentation ponds within the affected area. Typical topsoil salvaging will apply to this area as defined above. A depression will then be blasted within the pit floor to capture the water from the natural spring.

Highwall heights will be forty (40) to sixty (60) feet high. The working bench is limited by the size of the planned loading equipment and safety considerations while that equipment is loading blasted rock. Working benches (terraced benches) will be at least half the size of the highwall height and established between the vertical higwalls to maintain slope stability.

A licensed blasting contractor will conduct blasting operations. A detailed blasting plan is included in MP-3.

Utility lines were located on July 2, 2008. There are multiple fiber optic lines existing in the UPRR right of way (not within the permit boundary) and a single Qwest phone line which was laid next to the old Highway 30, but is not in a recorded right of way. Willits Company Inc. is in communication with Qwest regarding the movement of this line from the proposed permit area. Willits Company is suggesting Qwest move it to the UPRR

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which was laid next to the old Highway 30, but is not in a recorded right of way. Willits Company Inc. is in communication with Qwest regarding the movement of this line from the proposed permit area. Willits Company is suggesting Qwest move it to the UPRR right of way along with the other fiber optic lines. There were no gas or water lines found within the permit area.

MP-2.2.2 Backfilling and Contouring

Backfilling will occur along the benched highwalls; the graded pit floor, associated drainage channels, sedimentation ponds and wetlands to sculpt the reclaimed topography. Some benches may be removed by blasting which will create rough slopes that will be graded to their final reclaimed geometry as specified in the reclamation plan. Additional material from nearby spoils, clean fill or rejected materials may be added to achieve the desired slope geometry. Any additional compaction beyond that created by blasting repose will be accomplished by grading with dozers to create the final reclaimed slope geometry. Additional contouring will be completed with dozers/graders to blend the reclaimed slopes with the native topography and create drainage channels.

MP-2.2.3 Management of Combustible, Toxic, Acid-Forming or Radioactive Materials

Quarry operations will not produce combustible, toxic, acid-forming or radioactive materials. Quarry spoils, processed aggregate or topsoil stockpiles are not considered unsuitable materials that could potentially retard vegetation growth or otherwise impact soil, surface water or groundwater.

MP-2.3 Commodity Preparation

Spoils from blasting will be transported to a portable crusher/screener/washing system that will be located near the active quarry to minimize transportation distance. Depending on commodity demand and equipment availability, any combination of a jaw crusher, a cone crusher, a wash plant, and numerous conveyors may be used to prepare, sort and transfer the rock for stockpiling. Several different aggregate sizes may be prepared depending on the anticipated demand. The aggregate will be loaded directly from the stockpiles to customer or company haul trucks.

MP-2.4 Mining Sequence

Mining will begin near the Easterly boundary of the permit area in accordance with the ET permit boundary. A desired quarry floor elevation will be established and mining will progress to the West in the sequence show in MP-1. Multiple benches will be established creating permanent highwalls along the North and South permit boundaries. A temporary highwall will exist on the west-most side of our disturbed area. This highwall will continually progress toward the West until reaching the Westerly permit boundary. Holding the elevation of the quarry floor nearly flat, sloping only slightly for drainage, the mining depth will be determined based on topical surface elevations. At points, mining may be as deep as 180 feet, **or** as shallow as 6 feet depending on the premining contours and elevations.

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Willits Company Inc. is committed to updating the projected pit progression in our annual reports. The mining sequence may change significantly based on market conditions and the actual yearly production.

MP-3 Blasting Plan

Holes are drilled to varying depths in a pattern developed by a qualified personnel and/or a licensed blasting contractor based on characteristics of the rock. The holes are then loaded with a cast primer and either ammonium nitrate and fuel oil (ANFO) or a slurry mix followed by a second primer by a licensed blasting contractor. **The upper portion of each hole is stemmed with ¾ inch crushed rock to optimize the blast and minimize the amount of fly rock.** Adequate stemming at least equal to the burden dimension will be used for shots near the interstate. A typical pattern will involve four (4) inch diameter holes drilled on a ten (10) by ten (10) foot staggered patter to a depth of around forty (40) to sixty (60) feet. The pattern may be tightened up or spread out depending on the hardness of the rock. Willits Company Inc. is committed to use the most efficient hole diameter and burden dimensions for desired benches. **The blasts are designed to adequately break the rock for excavation operations and processing. Stemming will be at least equal to the burden dimensions for shots next to the interstate.** Blasting depths will allows for about three (3) to five (5) feet of subdrill. Subdrill extends beyond the bottom of the planned floor to allow sufficient breakage of the rock to the planned pit floor level and ease the mining of the rock at the floor level.

Blasting supplies are transmitted to the site by the licensed blasting contractor in an explosive loading vehicle that meets all federal and Mine Safety and Health Administration (MSHA) regulations. The explosive loading vehicle is used to transport the blasting components (ammonium nitrate, emulsions, primers, detonating cords, etc.) to the drill pattern where they are mixed and loaded into the shot. Seismograph vibration monitoring equipment will be used during scheduled blasts to ensure no damage to the UP Railway or Interstate 80 is incurred. Prior to blasting, access to the loaded area is blocked. Scheduled incremental warning signals are called out before initiation of the shot. All employees have been trained to identify warning signals and their meanings. All blasting protocols adhere to approved MSHA regulations.

Safety is always the first consideration in the use of explosives. Willits Company, Inc. has committed to the following in regards to blasting:

1. Blasting operations shall be performed in compliance with United States Department of Labor – Mine Safety and Health Administration (MSHA) regulations presented in 30 CFR, Subpart E, Sections 56.6000 through 56.6905.
2. Blasting shall only be conducted between sunrise and sunset.
3. Willits Company, Inc. will follow coordinate their blasting schedule with **WYDOT**. Road closures and other safety precautions addressed by **WYDOT** will be mitigated though WYDOT. These conditions will be followed until they are deemed no longer required by WYDOT and Willits Company.

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4. Willits Company, Inc. will **notify UPRR prior to planned blasts**, and coordinate blasting **efforts with UPRR** while complying with UPRR requirements.
5. **Willits Company, Inc. will communicate with the Laramie County School District #1 (Willadsen School) to inform them of upcoming blasts.**

MP-4 Mining Hydrology

MP-4.1 Surface Drainage and Water Treatment Plan

All operations will be conducted in such manner to minimize disturbance of the hydrologic balance outside the permit area and to support post mining land uses.

Surface drainage from affected lands will be held in sedimentation ponds within the permit area. Affected lands are defined as lands of which the natural state has been disturbed as a result of mining operations, areas where topsoil has been removed and areas containing topsoil and aggregate stockpiles. Hydrologic and sediment control structures will be constructed to manage runoff from all affected lands.

Various interceptor channels will convey runoff within the affected area to sedimentation ponds. These ponds will be located within the quarry area pit floor. The pit floor itself will be sloped such that it constitutes as an interceptor channel and also drains into the sedimentation ponds. Runoff from undisturbed areas and from areas adjacent to the mine will follow existing contours and enter the Lone Tree Creek Drainage area.

A mine dewatering permit (Permit # 190934) has been obtained to collect and store both surface and ground water. Sedimentation ponds will be constructed once the exact locations of these ponds have been established. Neither of these proposed ponds has a capacity over twenty (20) acre-feet. Accordingly, neither has been designed as a major or permanent impoundment.

Water from a combination of the sedimentation ponds used for dewatering, the sedimentation ponds used for trapping and storing runoff and the Harriman Quarry Reservoir will feed the wash plant and provide appropriate dust abatement. The return water from the wash plant will flow into the sedimentation ponds. The water accumulated with stockpiled/ saleable material will be diverted into the sedimentation ponds through channels in the pit floor. The water will then be re-circulated through the sedimentation ponds and pumped back into the wash plant. Water usage is estimated at thirty-two (32) gallons per minute at a production rate of 400 tons per hour. At this usage rate, not including any run off collected in the sedimentation ponds or water collected via mine dewatering, we will have an adequate water supply should the natural spring continue to yield an average of just less than ten (10) gallons per minute. Should the yield of the spring change, or water usage be more than anticipated, a well will be drilled within the permit area.

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MP-4.1.1 Alternate Sediment Control Measures (ASCMs)

Alternate Sediment Control Measures (ASCMs) establish sediment control while minimizing additional disturbance to affected areas. Additionally, ASCMs are intended to blend with reclaimed topography as it matures. ASCMs minimize erosion and transportation of sediment either by slowing overland flow and thereby allowing suspended material to settle by physically filtering out sediment, or by entraining sediment as a result of ASCM placement near the source of runoff. Individual ASCMs may accomplish one or a combination of these controls.

Willits Company, Inc. will evaluate potential ASCM sites and chose the appropriate ASCM type on a site-specific basis. The most common types of ASCMs that may be used are described below. Topsoil will be protected by minimizing disturbance during ASCM construction. Topsoil in the vicinity of ASCM locations will either be salvaged if the potential for degradation is significant or protected in-situ by minimizing the extent of disturbance during construction and operation. **Post-installation ASCM locations will be included in the Annual Report submittals.**

Detention Basins

Detention basins are designed to contain or detain most of the surface runoff from a storm event occurring over a small watershed of less than thirty (30) acres. These structures are effective in sediment control because they limit the discharge of water. Site topography is the primary parameter that would determine the type of structure selected. In some instances, an armored overflow point equipped with anchored sediment filter fence or a loose rock check dam will be used to minimize environmental degradation. Armor will be removed from any detention basins before final reclamation.

Toe Berms

Toe berms will be used around topsoil stockpiles, and will consist of topsoil placed around the stockpiles by a blade, loader, excavator or dozer.

Contour Furrows

Contour furrows may be used to reduce flow velocities and runoff volumes or to trap sediment for limited periods.

Sediment Filter Fence

Sediment filter fence (SFF) is most effectively used for controlling sediment from gently sloping terrain. If water can skirt the structure and erode the fence, anchoring material, straw bales or rock may be installed up-slope of the structure to route flow to the structure. SFF will be most commonly used in conjunction with other ASCMs.

Straw Bales/**Wattles**

Straw bales are most appropriate for controlling sediment movement in shallow channels that receive low to medium intensity runoff. Straw bales are easy to install but, have a short effective life and require regular monitoring. Anchored straw bales, straw bales used in conjunction with SFF, or double rows of anchored straw bales may be used.

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Loose rock check dams (LCDs) may be employed where it is necessary to allow suspended sediment to settle out or restrict flow velocities to prevent erosion. LCDs are effective for controlling sediment movement from drainages with moderate to high relief. Installation will usually be in well-defined, incised channels where the LCDs will decrease channel flow velocities and thereby enhance sediment settling. LCDs will be constructed of quarry rock of diameters ranging from 3 to 10 inches, also called riprap.

Gabions

Gabions are durable and effective structures with long life expectancies that are best suited for highly erosive areas where long-term sediment control is required. Although these structures may be evaluated in the event of problematic erosion, the high material and labor costs required for installation preclude the likelihood of installation. Other sediment control methods discussed in this section will first be considered to control erosion.

Surface Treatments

Surface treatments are best for controlling sediment movement at its source. These treatments may be used periodically for small areas where contributing drainage is minimal but sediment control is required.

Mulch

A mulch cover helps provide short-term stability by promoting vegetal growth, which further stabilizes the area. Mulch may be in the form of stubble mulch or an applied material that is spread evenly over an area.

Excelsior and Jute Matting

Excelsior or jute matting may be used on steep slopes, areas of concentrated flow or in area where problematic erosion is occurring. These organic materials will be staked on topsoiled surfaces where vegetation can be established.

MP-4.2 Mine-Pit Groundwater

Ground water in the vicinity of the proposed quarry is found within both Quaternary alluvial channel deposits and underlying Precambrian granitic rocks. Depths to water in the alluvium associated with the unnamed tributary channel to Lone Tree Creek along the south side of the property appear to be only a few feet below the ground surface. A spring was found within this channel a few hundred feet from the western border of the proposed permit area, and the area sustains green vegetation. Ground water in monitoring wells completed in the granitic rocks at the adjacent Granite Canyon Quarry is found at depths ranging from ten (10) to seventy (70) feet depending on local topography. Water supply wells in the local vicinity have been completed in the granite at depths between 400 and 500 feet, and generally yield less than 25 gallons per minute. Water in the granitic rocks is typically found only within fractures as these materials have virtually no porosity or permeability otherwise.

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A mine de-watering permit has been obtained to trap and contain any potential groundwater. The blasting plan also covers mitigation steps if larger pockets of water are discovered while blasting. Future mining operations may require wells to be drilled within the permit area. If a well becomes necessary, the appropriate permits will be obtained.

MP-4.3 Mining Operations Water Source

Willits Company, Inc. has adjudicated water rights on a natural spring within the permit area (Permit # 13346R). This permit allows permission to construct a dam to act as an impoundment (Harriman Quarry Reservoir) for industrial use. Flow testing indicates that the spring will yield less than ten (10) gallons per minute, which will be sufficient for dust suppression and other mining uses. Above ground storage may be used to store water if the yield of the spring is insufficient for short-term, on demand use. The water source for this above ground storage will most likely come from the existing natural spring located within the permit area. However, Willits Company Inc. may purchase (from other sources) and store water in these above ground tanks as needed to limit the potential of public nuisance from airborne dust particles.

Additional water may be obtained from the sedimentation ponds or wells as needed for dust abatement and other mining uses. Water used in mining operations will be recycled within the sedimentation ponds and clean water may be pumped from the Harriman Quarry Reservoir (HQR) into the sedimentation ponds or directly into a wash plant as needed.

MP-4.4 Surface Water and Groundwater Monitoring

Surface water in both the sedimentation ponds and the HQR will be monitored through WYPDES permits. Our WYPDES permit has been obtained under permit authorization number WYR320591.

There currently are no ground water wells within the permit area. Should the need for a well come about, Willits Company, Inc. will take the appropriate permitting and monitoring actions.

MP-4.5 Potential Mining Impact to Surface Water and Groundwater

Mining is expected to impact surface water runoff from affected areas where mining has been completed or topsoil has been removed by increasing sediment yield. Willits Company, Inc. will deploy best management practices to minimize the impact to downstream water sources. The sedimentation ponds are designed to remove sediment from the runoff, so that water from the ponds will be of suitable quality to discharge to the Lone Tree Creek channel. No other mining impacts to surface water are expected.

Mining is expected to impact ground water only within fractures of granitic rocks as these materials have virtually no porosity or permeability. Based on surrounding well depths,

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the proposed mining depth, and the water yield of these wells, it is not anticipated that a large volume of groundwater will be encountered. The adjudicated water from the natural spring occurring on the permitted area is the only known ground water that will be impacted. The yield from this spring will be stored in an impoundment and used for aggregate processing and dust abatement.

MP-5 Refuse Disposal

All of the solid waste generated at the quarry will be hauled to the city landfill on as needed basis. There will be no permanent on-site disposal of solid, hazardous or liquid wastes and only "clean fill" will be used as fill.

Used oil will be stored and recycled for heating oil.

MP-6 Public Nuisance and Safety

The property within the permit area is privately owned and has controlled access. The permit area is fenced and has a gate that is locked nightly. The only access to the mine will be the existing old Highway 30 bituminous drive off of Harriman Road. Access into the active quarry will be restricted and allowed only by authorization. A sign identifying the quarry operation will be posted along the access road off of Harriman Road.

Willits Company, Inc. has developed a mining plan that will employ best practices to minimize public nuisance even with the close proximity of Interstate 80 and the railway. With the current contours of the permitted area, and the proposed pit floor elevation, the mining operation at Harriman Quarry will have a minimal visual impact on those traveling either direction on I-80. Mining will create highwalls that mitigate noise and shield many mining operations from public view. Dust from mining operations will be abated with water as necessary and all equipment will be registered, utilized and maintained in compliance with the DEQ/AQD permit.

Normal hours of operations will be between 7 A.M. and 7 P.M, Monday through Friday and only during daylight hours. Should weekend hours be required, they will follow the same hours as normal operations (7:00 AM to 7:00 PM). Weekend hours are anticipated during peak seasonal times (March – October). Should changes to operating hours be required, Willits Company Inc. will notify those affected parties prior to any changes. Blasting will be conducted by a licensed blaster and blasting materials will not be permanently stored on-site. Blasting will also follow the normal hours of operations listed above. Because of the nature of projects requiring construction aggregate and the weather conditions of the permitted area, quarry operations will be seasonal and will be most active during the late spring, summer and early fall.

Truck traffic will also vary seasonally, and will depend heavily on commodity sales. The primary haul route from the quarry will be Interstate 80 and a small portion of Harriman road. The Wyoming Department of Transportation has expressed no concerns regarding

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truck traffic from the quarry. It was determined that the overall increase of truck traffic traveling on I-80 will be minimal as the bulk of the truck traffic to and from Harriman quarry will be deducted from the traffic to and from Granite Canyon Quarry. WYDOT also mentioned that the Harriman interchange (exit 342) was better suited for truck traffic than the Remount Rd (exit 339) exit.

Willits Company Inc. is committed to preventing the spread of noxious weeds on the affected lands as well as the surrounding native lands. The County Weed and Pest agency will be consulted for the use of chemical herbicides as needed to control noxious weeds.

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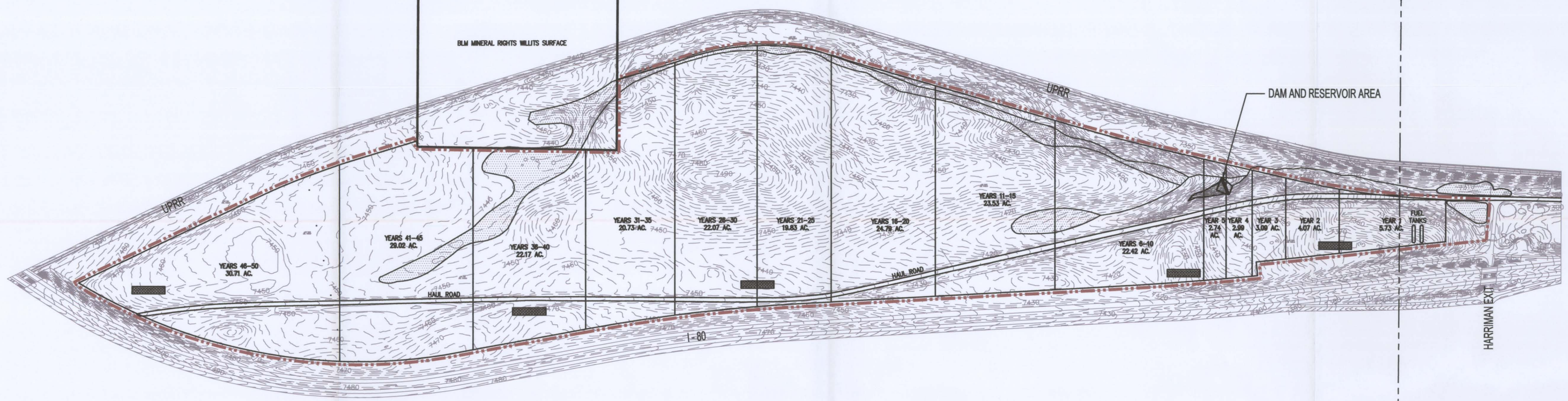

LEGEND

- PERMIT BOUNDARY & PROJECTED AFFECTED LANDS
- WET AREAS - 13.67 AC.
- ABOVE GROUND FUEL TANKS
- TOPSOIL STORAGE PILES - APPROX 50'x220'x25'
- IMPOUNDMENT AREA

LOCATED IN TOWNSHIP14 NORTH RANGES 69 AND 70 WEST

HARRIMAN QUARRY
MP-1 MINE PLAN

NO.	REVISION	DATE

PREPARED FOR:
WILLITS CO., INC.
P.O.X BOX 825
CHEYENNE, WY 82003

PROJECT: HARRIMAN QUARRY

DRAWING TITLE: MP-1 – MINE PLAN

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DESIGNED BY:	DRAWN BY:
CHECKED BY:	DATE: 2/10

JOB NO.: 2-3130

DRAWING NO. 1 OF 1

H:\3130\design\Permit Drawings\Revised 6-26-13\MP-1-MINE PLAN.dwg Jul 15, 2013 - 8:06am cjohnson

Reclamation Plan

RP-1 Postmining Land Uses

Postmining land use will be commercial/industrial and will encompass all 244 acres of the permit site. Given the location of the permitted area, immediate access to Interstate 80 and proximity to Cheyenne, the potential value of the property as commercial/industrial use outweighs alternative postmining uses such as livestock grazing or wildlife habitat. The permit area has been platted and recorded in Laramie County as Quarry Tracts Subdivision **(See Exhibit I.F-1)**.

RP-2 Contouring Plan for affected Lands

Postmining topography (PMT) on affected lands will be consistent with the expected land use, supporting commercial or industrial structures and activities. PMT in affected areas outside of the quarry will remain relatively consistent with the premining topography, while PMT inside the quarry will change significantly where upwards of 34 million tons of rock will be removed. The topography in the mined area will reflect the planned pit bottom geometry and the reclaimed slopes along the highwall. The exterior of the mined area will be blended into the native topography to the extent possible. A one-half (1/2) to one (1) percent slope in the reclaimed pit floor will determine the final post mining elevations. The contoured PMT is shown in Map RP-1.

RP-2.1 Highwall Reclamation

Prior to and during reclamation, highwalls will be evaluated to identify any potential failure zones. During reclamation the top of the highwall and highwall face will be inspected for fractures, shear zones, jointing or other unstable areas. If identified, unstable zones will be drilled and blasted to create stable rubble zones. These rubble zones will act to break-up the continuous benched highwall to create adequate spacing for surface water channel reconstruction. The use of rubble zones should virtually eliminate potential toppling areas that were identified during the reclamation inspection. Rubble zones will only be used if potential failure zones are identified during the inspection process.

The reclaimed surface incorporates the final highwall benches into the post mining topography. Typical cross-sections depicting various mining depths have been included as Exhibit RP-A (Page RP-14). To ensure higwall stability, the bottom terrace (highwall sitting directly on the pit floor) will be backfilled at a 3:1 slope vertically reaching thirty (30) feet in height of that highwall. For example, a highwall measuring sixty (60) feet in height will be reduced to thirty (30) feet in height and will be backfilled at a 3:1 slope and blended into the pit floor. Examples of this backfilling technique can be found in Exhibit RP-A. Highwalls may be backfilled with fines, clean backfill, and/or unsaleable mined material. Mining in the North-East quadrant of the project area will not reach depths of thirty (30) feet and in those areas; the highwall will be reduced to 3:1 slopes by a combination of backfilling with mine waste (manufactured fines and rejected materials) blasting, and/or importing clean fill. If needed, final grading with dozers will create the **appropriate** reclaimed slope geometry. Additional contouring may be completed

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with dozers or graders to blend the reclaimed slopes with the native topography and create drainage channels.

RP-2.2 Erosion and Drainage

Erosion on the pit floor is expected to be minimal as the floor will be gently sloped and contoured to drain into channels that run through wet meadows. Areas outside the quarry will retain their native slopes and as such will be subject to limited erosion. Some sediment is expected to wash from the slopes created by the highwall reduction to the pit floor. Re-vegetation should minimize this erosion and with the 3:1 slope it is estimated this erosion will be minimal. If necessary, ACSMs will be used, as outlined in the Surface Drainage Plan (Section MP4-1), to prevent sediment run off.

The Post Mining Topography (PMT) has been designed in such a fashion that the reclaimed drainage system **will be similar to** the pre-mining drainage system, **albeit at a lower elevation**. The pit floor and will be sloped slightly in order to gently direct runoff **toward a drainage channel on the northern edge of the pit floor. Every effort will be made to reestablish the wet meadow system that exists premining within the postmining drainage channel system.** This drainage channel will blend into the native, undisturbed wet meadow/wet land areas on the **eastern** side of the permit area **(near the mine entrance)**. Consistent with pre-mining drainage, post mining drainage will **flow** into the Lone Tree Creek **tributary**.

RP-2.3 Final Reclamation

Final reclamation will begin approximately fifteen (15) years after mining the first mining block outlined in the Mine Plan Map MP-1. Reclamation will follow the same sequence as mining. This sequence is illustrated on the Mine Plan Map (MP-1). This will include backfilling portions of the higwall and grading the pit floor with imported fill (clean fill) or unsaleable fines to the desired elevation (PMT) and slope. **Generally, areas of the pit floor that are not in-use for mining operations will be seeded with the temporary seed mix in preparation for its eventual use as a commercial area. Willits Company may reclaim (topsoil and permanent seeding) portions of the pit floor that will not be used for future commercial/industrial infrastructure as plans develop. Willits Company will consult with the appropriate LQD staff during initial reclamation to determine the location and extent for temporary seeding and potential permanent reclamation areas..** The drainage channel and wet meadows will be constructed during the backfill and grading phases of reclamation, followed by topsoil placement and seeding when the entire channel has been constructed. Use of ACSMs may be necessary to control sediment run off prior to reestablishment of vegetation.

It is assumed that a large portion of the existing wet meadows will not be able to sustain themselves given the PMT. **Most of the wet meadow areas will generally be impacted by mining – either directly removed, or left disconnected to their source of hydrology.** Undisturbed wet meadows will continue to be fed via natural springs and runoff, but runoff from the South side of the permit will no longer drain into these wet meadows **due to the lower pit floor elevation. As outlined in section RP-5.2, Willits Company will consult with LQD staff**

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to determine the location and extent for wet meadow reestablishment based on postmining hydrology, and will endeavor to reestablish the highest number of acres of wet meadow habitat that is practicable. Willits Company anticipates that much of the premining 13.67 acres of wet meadow habitat will be established in the drainage channel along the northern edge of the pit floor creating a linear wet meadow similar to the premining condition that blends into the existing, undisturbed wet meadows on the eastern end of the permit area. Due to some uncertainty in the location and extent of the postmining hydrologic features, Willits Company commits to working with LQD staff in determining appropriate locations to reestablish wet meadow habitat. Final reclamation of these wet meadows will take place once the drainage channel is completed. Once graded, these wet meadows will receive topsoil and be seeded in accordance with the seed mixes outlined below and shown on Exhibit RP-A. **Final location and acreage of wet meadow cannot be established at the time of permit application. A determination will need to be made at the time reclamation begins to determine if, and where, appropriate hydrology exists to support wet meadows.**

It is estimated that ten (10) to fifteen (15) percent of all mineable material will be unsaleable fines. These fines, as well as other clean fill materials, will be used to backfill highwalls and create the PMT. The PMT can be adjusted up or down depending on the volume of waste available for backfill. The backfilled areas will then be graded. **The backfilled areas will be toposiled and seeded in accordance with the seed mixes outlined below and shown on the Exhibit RP-A. The entire pit floor area is currently planned and zoned for commercial/industrial development. As reclamation progresses, if it appears likely that market demand does not support a commercial/industrial use for the area, Willits Company will consult with LQD staff to determine if the pit floor should be temporarily seeded or permanently reclaimed. Stockpiled topsoil will be kept banked to be used for pit floor reclamation should market conditions indicate that commercial/industrial development is unlikely.**

RP-3 Topsoil Replacement

Prior to placement of topsoil, the pit floor will be covered with fill material and graded to achieve the final PMT. **Prior to temporary seeding or permanent reclamation of the pit floor, all compacted areas, such as haul routes will be scarified/ripped prior to topsoil placement.** Haul routes that have been surfaced with recycled asphalt from the old US 30 will be also be ripped and the remaining asphalt rubble will be used as fill when backfilling either the pit floor or sloped highwalls.

Topsoil at Harriman Quarry inherently contains rock fragments as described in the Mine Plan. Rocks over six (6) inches in diameter will be removed from the topsoil prior to replacement. Topsoil will be loaded from stockpiles into haul trucks/scrapers with font-end-loaders and spread with a dozer. **The commercial/industrial postmining** land use will delay topsoil replacement until a point where final development has been planned. Areas where development is not feasible (reclaimed highwall slopes and select portions of the pit floor) will be topsoiled and seeded with the temporary seed mix listed in table RP-4. The temporary vegetation of these areas will minimize erosion. Topsoil will be replaced as close to seeding time as possible. Wet meadow areas, once backfilled and brought to final grade, will be topsoiled with twelve (12)

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inches of topsoil and seeded with seed mixes listed in table RP-2 and RP-3. Seeding in wetland/wet meadow areas will be determined based on the post mine hydrological balance. Areas where water is abundant and constantly flowing (springs and natural seeps) will be planted with the seed mix from table RP-3. Areas where wet meadows are sustained primarily by runoff will be seeded with the seed mixture in table RP-2.

The current Mine Plan projects mining to last through 2058 with the majority of the reclamation scheduled to begin immediately afterwards. Topsoiling should be completed sometime in 2059 with the exception of pit floor areas that will be used for commercial/industrial development.

RP-4 Revegetation Practices

The objective of the reclamation plan is to establish land suitable for commercial/industrial uses. Several different seed mixtures will be used to accomplish this task. Locations of the seed mixture used can be found on Exhibit RP-A. Revegetation will generally take place each year in the spring and in the fall. The exact time will be dependent on the weather patterns for the year, site preparation, and seed mixtures to be planted.

No matter when cover crops are seeded, permanent seed mixtures would then be planted in the fall (fall of the following year for fall cover crop seeding and fall of the same year for spring cover crop seeding). Alternately, if weather conditions or site preparation, or past establishment results suggest spring rather than fall seeding, then some areas will be seeded into the stubble in the spring.

Table RP-4 is a temporary seed mixture that may be used on topsoil piles and other areas that will be left during all or some portion of the life of mine and redistributed at some later date prior to or during final reclamation and revegetation. The temporary seed mix may also be used to prevent dust on areas that have been brought to final grade and topsoiled, but are not yet ready for final reclamation. The seed mix contained in table RP-4 will also be used for commercial/industrial areas such as areas where buildings, roads, parking lots, and other future disturbance are expected. **Generally, the entire pit floor is planned for commercial/industrial use, but the exact location of the commercial/industrial infrastructure components are not known at this time. As mining blocks are completed, areas of the pit floor not in-use for mining operations will be seeded with the temporary seed mix. As the operation moves into the later stages of mining, amendments will be made to the reclamation plan maps to show locations where the permanent seed mixes will be used (e.g., parking islands, stormwater facilities, open areas, etc) within the commercial/industrial development.**

At the onset of reclamation operations, Willits Company would also like to review the development of an "experimental" revegetation practice with LQD staff for highwall benches, highwall reduction slopes, and any rubble zones that may need to be developed. This practice would essentially be comprised of the broadcast seeding of high wildlife value shrub species into rockier-surfaced areas. Vegetation would be comprised of the following species or species with similar habitat preferences: Mountain mahogany *(Cercocarpus montanus)*, Antelope bitterbrush *(Prushia tridenta)*, and Three-leaf sumac *(Rhus trilobata)*.

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As reclamation begins, Willits Company will consult with appropriate LQD staff to determine if this experimental practice appears feasible, and modify the reclamation plan if necessary.

RP-4.1 Cover Crops/and or Mulch

Spring Seeding of Cover Crops: When planting a cover crop in the spring, several options are available. Spring weather, snow pack, ground conditions, and site preparation will affect the time of seeding. If areas are ready in early spring, then spring wheat ***(Triticum aestivum)*** will be planted at 30.0 PLS lbs/acre. In some cases, spring wheat may also be used until June 1st. However, annual grain barley ***(Hordeum vulgare)*** will generally be planted from mid spring until late spring at the same 30.0 PLS lbs./acre application rate as spring wheat. If conditions require a late spring or early summer cover crop seeding, then annual millet ***(Pennisetum americanum)*** will be seeded at 12.0 PLS lbs/acre.

Fall Seeding of Cover Crops: For fall cover crop seeding, winter wheat ***(Triticum aestivum)*** will be drill seeded at 30.0 PLS lbs/acre from mid August to early October. When possible, winter wheat will be seeded between mid August to mid September.

Mowing: Mowing cover crops in mid to late summer will generally be done, depending on plant maturity and plant height. Mowing **may** be utilized to keep the annual cover crops from going to seed and causing too much competition to the native seed that will be planted and may be mowed to limit the height of stubble to **enhance results from future interseeding of the permanent seed mixes.** Mowing will occur in time to minimize seed maturity.

Mulching: As an alternate to cover crop seeding, native hay mulching may be utilized. When site conditions or situations make mulching the preferred option, then certified noxious weed free native hay mulch will be substituted for cover crop seeding. Mulching and crimping will immediately follow seedbed preparation and drill seeding operations.

Mulch Application Rate: The mulch application rate will be 2.0 tons/acre.

Mulch Material: Mulch will be comprised of native, perennial species and will contain no annual grasses such as sorghums, Sudan grass, Triticale, Haygrazer, wheat, oats, barley, or other annual grain species. No introduced, perennial species will be utilized including but not limited to smooth bromegrass, meadow bromegrass, common timothy, orchardgrass, Garrison creeping foxtail, introduced fescues, and introduced bluegrasses. A minimum of 50% of the mulch fiber will exceed 10 inches in length to enhance crimping efforts. All hay mulch will be certified noxious weed free.

Crimping: Crimping will following immediately behind mulching operations to assure that mulch does not blow away during windy conditions. Only implements made specifically for crimping mulch will be used; no discs or other methods will be allowed. Mulch will generally be crimped 3-4 inches deep when soil conditions allow.

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RP-4.2 Permanent Seed Mixtures

Permanent seed mixtures will be planted in the fall (fall of the following year of fall cover crop **seeding)**. Alternately, if weather conditions are not ideal for the fall, interseeding into the fall cover crop may be explored in the spring. Interseeding in the spring may actually help establish higher plant diversity and assist with the response of warm season grasses. The three permanent seed mixtures are listed in the tables below.

Spring Seeding of Permanent Seed Mixtures: Seeding permanent seed mixtures in the spring will occur from the time the frost goes out of the ground through June 30th. Seeding will often occur as early in the spring as possible, given the weather and ground conditions **(no seeding will occur when soil is too moist/muddy to allow equipment passage without leaving ruts)**. Because of the high elevation of this site and the plan to establish some warm season species, mid to late spring seeding may also occur. **If seed bed conditions are not appropriate to accept seed (large clumps), Willits Company will employ standard methods (discing, generally) to ensure that an appropriate seed bed exists prior to seeding.**

Fall Seeding of Permanent Seed Mixtures: Seeding permanent seed mixtures in the fall will occur from September 15th to the time the ground freezes in the late fall.

The **Permanent** Dryland Seed Mixture will be used on the mine site for permanent reclamation and revegetation where the future use will not specifically **be used for commercial/industrial infrastructure**, i.e., for specific locations where buildings, roads, pavement, and other disturbance or not likely to occur on the permit area. The upland dryland seed mixture and the two wetlands mixes were designed for these situations. The **Permanent Dryland Seed** Mixture will be utilized in areas **that will not contain commercial/industrial infrastructure where dryland situations exist**, i.e., where no subirrigated soils exist or where no surface water flow is perennial or intermittent during the year. The Wetlands and Meadow Mixtures will be used where saturated or moist soil conditions are expected for extended periods throughout the growing season. The Commercial/Industrial/Temporary Seed Mixture will be used for all areas where buildings, roads, parking lots, and other future disturbance are expected.

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TABLE RP-1
PERMANENT DRYLAND SEED MIXTURE

COMMON NAME	VARIETY	PLS/ACRE
Grasses:		
Minimum: 6 species		
Minimum of 2 non-wheatgrass species		
Minimum PLS: **11.0**		
Maximum PLS: 15.0		
Western wheatgrass	Rosana	4.0-5.0
Thickspike wheatgrass	Critana	2.0-3.0
Blue grama	Bad River	1.0-2.5
Streambank wheatgrass	Sodar	1.0-2.0
Bluebunch wheatgrass	Secar	1.0-2.0
Sandberg bluegrass	VNS, northern	**0.5**-1.0
Needleandthread grass	VNS, northern	**0.5**-2.0
Green needlegrass	Lodorm	**0.5**-1.0
Mountain muhly	VNS	**0.5**-1.0
Subtotal		**11.0** – 15.0
Forbs:		
Minimum: 6 species		
Minimum PLS: **4.0**		
Maximum PLS: 7.0		
Rocky Mountain penstemon	Bandera	0.5-1.0
Blue flax	Appar, Maple Grove	0.25-0.5
Prairie coneflower	VNS, northern	**0.5**-1.0
Indian blanketflower	VNS, northern	**0.5**-1.0
White prairieclover	Antelope, VNS-northern	**0.5**-1.0
Purple prairieclover	Kaneb, VNS-northern	**0.5**-1.0
Prairie aster *	VNS	**0.25-0.5**
Wild lupine	VNS	**0.5**-1.0
Scarlet globemallow	VNS, northern	**0.5**-1.0
Subtotal		**4.0** – 7.0
Shrubs and Half Shrubs:		
Minimum: 3 species		
Minimum PLS: **2.75**		
Maximum PLS: 6.0		
Fringed sagewort	VNS, northern	0.5-1.5
Louisiana sagewort	VNS, northern	**0.5**-1.0
Douglas rabbitbrush	VNS, northern	**0.5**-1.0
Rubber rabbitbrush	VNS, northern	**0.5**-1.0
Wyoming big sagebrush	VNS, northern	**0.5**-1.0
Black sagebrush	VNS, northern	**0.25**-0.5
Subtotal		**2.75** – 6.0
	TOTAL PLS / ACRE	**17.75 – 28.5**

** Prairie aster – biennial, but often relatively persistent from seed.

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The Dryland Seed Mixture will be used on the mine site for permanent reclamation and revegetation where the future use will not specifically be industrial or commercial, i.e., for specific locations where buildings, roads, pavement, and other disturbance are not likely to occur on the permit area. The dryland seed mixture and the two wetlands mixes were designed for these situations. This mixture will be utilized in non-commercial/industrial sites of permanent reclamation where dryland situations exist (where no subirrigated soils exist or where no surface water flow is perennial or intermittent during the year (reclaimed highwall slopes and pit floor)).

TABLE RP-2
PERMANENT MEADOW SEED MIXTURE

COMMON NAME	VARIETY	PLS/ACRE
Grasses:		
Minimum: 5 species		
Minimum of 2 non-wheatgrass species		
Minimum PLS: 12.0		
Maximum PLS: 15.0		
Western wheatgrass	Rosana	4.0-6.0
Streambank wheatgrass	Sodar	3.0-4.0
Great Basin wildrye	Magnar, Trailhead	**0.5**-4.0
Slender wheatgrass	Pryor, Revenue	1.0-2.0
Green needlegrass	Lodorm	**0.5**-1.0
Big bluegrass	Sherman	**0.5**-1.0
Blue wildrye	Arlington, Elkton	**0.5**-1.0
Subtotal		12.0 – 15.0
Forbs:		
Minimum: 3 species		
Minimum PLS: 1.5		
Maximum PLS: 2.0		
Prairie aster	VNS, northern	**0.25**-0.5
Rocky Mountain penstemon	Bandera	**0.5**-1.0
Blue flax	Appar	**0.25**-0.5
Louisiana sagewort	VNS, northern	**0.25**-1.0
Western yarrow	VNS, northern	**0.25**-1.0
Subtotal		1.5 – 2.0
Wetlands Species:		
Minimum: 1 species		
Minimum PLS: 1.0		
Maximum PLS: 2.5		
Nebraska sedge	VNS, northern	**0.5**-1.0
Baltic rush	VNS, northern	**0.5**-1.0
Subtotal		1.0 - 2.5

TOTAL PLS / ACRE 14.5 – 19.5

This mixture will be utilized in non-commercial/industrial sites of permanent reclamation where wet meadow and subirrigated soil situations exist. The Meadow Mixtures will be used where moist soil conditions are expected for extended periods throughout the growing season.

The above application rate is for drill seeding only. **If broadcast or hydroseeding is necessary, Willits Company will <u>double</u> the application rates.**

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TABLE RP-3
WETLANDS SEED MIXTURE

COMMON NAME	VARIETY	PLS/ACRE
Wetlands Species:		
Minimum: 5 species		
Minimum PLS: 3.0		
Maximum PLS: 5.5		
Nebraska sedge	VNS, northern	1.0-3.0
Beaked sedge	VNS-Northern	0.5-2.0
Water sedge	VNS-Northern	0.5-2.0
Meadow sedge	VNS-Northern	**1.0**-2.0
Awlfruit sedge	VNS-Northern	**0.5**-1.0
Small-winged sedge	VNS-Northern	**0.5**-1.0
Woolly sedge	VNS-Northern	**0.5**-1.0
Creeping spikerush	VNS-Northern	**0.5**-1.0
Beaked spikerush	VNS-Northern	**0.5**-1.0
Baltic rush	VNS, northern	**0.25**-0.5
Poverty rush	VNS-Northern	**0.25**-0.5
Torrey's rush	VNS-Northern	**0.25**-0.5
Softstem bulrush	VNS-Northern	**0.25**-1.0
Hardstem bulrush	VNS-Northern	**0.5**-2.0
Subtotal		3.0 - 5.5
Grasses:		
Minimum: 4 species		
Minimum PLS: 4.0		
Maximum PLS: 8.0		
Tufted hairgrass	Nortran, VNS-Northern	0.5-1.0
Inland saltgrass	VNS-Northern	**0.25**-1.0
American mannagrass	VNS-Northern	**0.5**-1.0
Western mannagrass	VNS-Northern	**0.5**-1.0
Reed canarygrass	Palaton, VNS-Northern	0.5-1.0
Alkali grass	Fults, VNS-Northern	**0.5**-1.0
Nuttal alkaligrass	Quill, VNS-Northern	**0.5**-1.0
Prairie cordgrass	VNS-Northern	0.5-2.0
American sloughgrass	Egan, VNS-northern	**0.5**-1.0
Bluejoint reedgrass	Sourdough, VNS-Northern	**0.25**-1.0
Great Basin wildrye	Magnar, Trailhead	**1.5**-4.0
Subtotal		4.0 – 8.0
Forbs:		
Minimum: 3 species		
Minimum PLS: **2.5**		
Maximum PLS: **4.0**		
Rocky Mountain iris	VNS-Northern	0.5-2.0
New England aster	VNS-Northern	**0.5**-1.0
Blue verbena	VNS-Northern	**0.5**-1.0
Prairie aster	VNS, northern	**0.25**-0.5
Rocky Mountain penstemon	Bandera	**0.5**-1.0
Blue flax	Appar	**0.25**-0.5
Louisiana sagewort	VNS, northern	**0.25**-1.0
Western yarrow	VNS, northern	0.0-1.0
Subtotal		2.5 – 4.0
	TOTAL PLS / ACRE	**9.5 – 17.5**

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This mixture will be utilized in non-commercial/industrial sites of permanent reclamation where wetland /aquatic situations exist, i.e., where surface water flow is perennial or intermittent during the year. The Wetlands Mixture will be used where saturated soil conditions are expected for extended periods throughout the growing season.

The above application rate is for drill seeding only. **If broadcast or hydroseeding is necessary, Willits Company will double the application rates.**

NOTE ON ALL PERMANENT SEED MIXES: At the time of reclamation, adjustments to the seed mixtures may be necessary due to seed species availability, seed prices, on-site conditions, an examination of past seeding results, and opportunities to enhance plant diversity and vegetative cover potential by reducing species that are too dominant in the reclamation plant communities and **increasing** species that are not showing up enough in the trend analysis data or during normal field observations. **Minimum number of species per life form are assured by the stated minimums listed for each life form. Consultation with LQD vegetation ecologists, and, if necessary, a reclamation plan revision, will be conducted if any changes to the seed mixes are necessary.**

The primary seeding method will be drill seeding along topographic contours. Some broadcast seeding may be used on the steep slopes where drill seeding may not be safe to employ. Broadcast seeding may also be used for small seeds, depending on the success of establishing vegetation from this size of seed.

RP-4.3 Temporary Seed Mixtures

Temporary revegetation for topsoil stockpiles, diversion structures, and other temporarily affected areas will be established with the reclamation seed mix listed in **Table RP-4**. The same seeding methods used for permanent revegetation will be used to establish temporary vegetation. The Commercial/Industrial/Temporary Seed Mixture will be used for all areas where buildings, roads, parking lots, and other future disturbance are expected.

TABLE RP-4
COMMERCIAL/INDUSTRIAL AREAS SEED MIXTURE AND TEMPORARY SEED MIXTURE

COMMON NAME	VARIETY	PLS/ACRE
Grasses:		
Western wheatgrass	Rosana	5.0
Streambank wheatgrass	Sodar	5.0
Thickspike wheatgrass	Critana	5.0
Slender wheatgrass	Pryor, Revenue	3.0
	TOTAL PLS/ACRE	**18.0**

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The above application rate is for drill seeding only. **If broadcast or hydroseeding is necessary, Willits Company will double the application rates.**

RP-4.4 Protection of Newly Seeded Areas

Special protection of newly seeded areas is not anticipated. Wildlife friendly fencing will be used in areas where livestock grazing could occur. There is no public access to the areas to be reclaimed and no other potential disturbance other than that by native wildlife is likely.

RP-5 Final Hydrologic Restoration

RP-5.1 Final Drainage System

The primary postinming drainage will consist of the graded pit floor and staging area containing depressions that trap sediment prior to flow being delivered into the postming drainage channel along the northern edge of the pit floor and, eventually, into the undisturbed, existing drainage at the eastern end of the permit area..

As runoff is diverted into this existing channel it will flow downstream and through the culvert under the access road (US Highway 30). Once passing under the access road, drainage will head toward the native ephemeral channel that drains through a culvert running under Harriman road east of the permit. This drainage will eventually act as a tributary for Lone Tree Creek as it has prior to any mining activities.

RP-5.2 Wetlands/Wet Meadow Reestablishment

The **permit** area contains 13.67 acres of wet meadows prior to mining. These wet meadows have been delineated and are shown on the Mine Plan map (MP-1) as well as discussed in Appendix D-10. The Army Corps of Engineers have determined these wetlands are not waters of the US/**jurisdictional wetlands** and do not require any further permits in regards to their disturbance. However, in an effort to restore the land value to a visually enriched, environmentally friendly and wildlife responsible area, albeit in a commercial/industrial area, **Willits Company will reestablish as many acres of wet meadow habitat as is practicable in the postmining environment, and commits to working with LQD staff to determine the appropriate location and extent for reestablishment of wet meadows during reclamation based on the postmining hydrologic conditions. It is anticipated that the majority of these wet meadow acres will be reestablished in the drainage channel along the northern edge of the pit floor. This will reestablish a linear wet meadow similar to the premining condition. This linear wet meadow will blend with and convey flow into native, undisturbed wetlands/wet meadows on the eastern edge of the permit area with flow continuing to Lone Tree Creek, mimicking the premining condition. In areas along the pit floor where springs/seeps occur after mining, Willits Company will work with LQD staff to evaluate the areas as potential additional wet meadow establishment areas.**

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Seeding in wetland/wet meadow areas will be determined based on the post mine hydrological balance. Areas where water is abundant and constantly flowing (springs and natural seeps) will be planted with the seed mix from table RP-3. Areas where wet meadows are sustained primarily by runoff will be seeded with the seed mixture in table RP-2. **A qualified hydrologist and vegetation expert will determine the location of these wetland/wet meadow seed mixes for successful revegetation during the final reclamation process.**

RP-5.3 Impacts to the Hydrology of the Permit and Adjacent Area

Long term impacts to groundwater are not anticipated. Should Willits Company, Inc. drill a well for additional water supply, the impacts to the aquifer from the mining-operations water supply would also be minimal.

The reclaimed PMT contains a newly constructed drainage channel that ties into and incorporates existing, undisturbed channels for runoff. The PMT and new drainage system should not yield any or very minimal increases in watershed. The reclaimed highwalls and gently sloping pit floor, coupled with the **opportunistic creation of wet meadows** that will absorb a large portion of runoff, should minimize these increases in watershed. It is not anticipated that the PMT, creation of the new drainage channel and creation of new wet meadows will have any impact to the surface water quality or the overall quality of water in Lone Tree Creek downstream of the quarry. The **premining** flow from the permit area to Lone Tree Creek is very minimal. It is anticipated that this flow will remain minimal **after reclamation is completed.**

At this time no impoundments or reservoirs will remain as permanent structures after mining.

RP-6 Special Reclamation Standards

If permanent structures are erected during the life of the mine, those facilities may remain intact depending on the development and design of the commercial/industrial zone. Also dependent on the design and commercial/industrial use, a portion of the equipment used in mining may remain on this site.

The access road into the quarry will remain. The road will allow access to Harriman Road which will always be the primary access road in and off of the permitted area.

RP-7 Reclamation Schedule

Reclamation will occur most likely in separate units and will generally follow the mining sequence. The units are a logical progression of reclamation that will maximize reclamation efficiency and provide sufficient room for continuing mining operations. It is anticipated that reclamation will start within fifteen (15) years after mining has been completed within each unit. The fifteen (15) year lag will allow the mining sequence to continue without interfering with

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reclamation activities, and will allow room for other mining operations such as aggregate processing and stockpiling.

Reclamation within each unit will likely begin with highwall reduction and be followed by pit-floor grading **(Map RP-1 shows PMT contours and Exhibit RP-A shows typical cross-sections as examples of higwall reduction and pit floor grading)**. It is anticipated that **temporary seeding and highwall** reclamation in each unit will be ongoing **as mining blocks are completed. Permanent reclamatioin of portions of the pit floor will be delayed** until **the final commercial/industrial land use infrastructure is planned and designed.**

The reclamation unit sequence is designed to allow access to mining operations that will generally avoid reclaimed areas where possible. However, it is probable that access/haul roads will extend through reclaimed units as mining progresses to access mining related operations and to provide a means for hauling aggregate out of the quarry.

Changes in planned mining production or unanticipated conditions may change the mining and reclamation plans and alter the sequences in which reclamation occurs. However, the overall intent is to reclaim the quarry in a unit fashion that follows the mining sequence and provides a logical succession to reclamation.

RP-8 Reclamation Costs

Reclamation costs are listed in the Bond Calculation for the existing disturbance and planned disturbance for the upcoming year. Updated bond calculations will be submitted with annual reports to the DEQ for review and approval.

RP-9 Public Nuisance and Safety

The property within the permit area is privately owned and Willits Company, Inc. will work with **the owners to insure that the lands are satisfactorily reclaimed, or meet the requirements for commercial/industrial postmining land use (as appropriate), and retain their long-term economic value.** Dust from reclamation operations will be abated with water where appropriate and applicable equipment will be registered, utilized and maintained in compliance with the DEQ/AQD.

Blasting for reclamation purposes may be combined with blasting for mining operations to limit the number of blasting days per year. Access to the reclaimed mining area will remain as that used for mining operations, which is via Harriman Road. Potential further development to these reclaimed lands has the potential to benefit the surrounding communities of both Cheyenne and Laramie.

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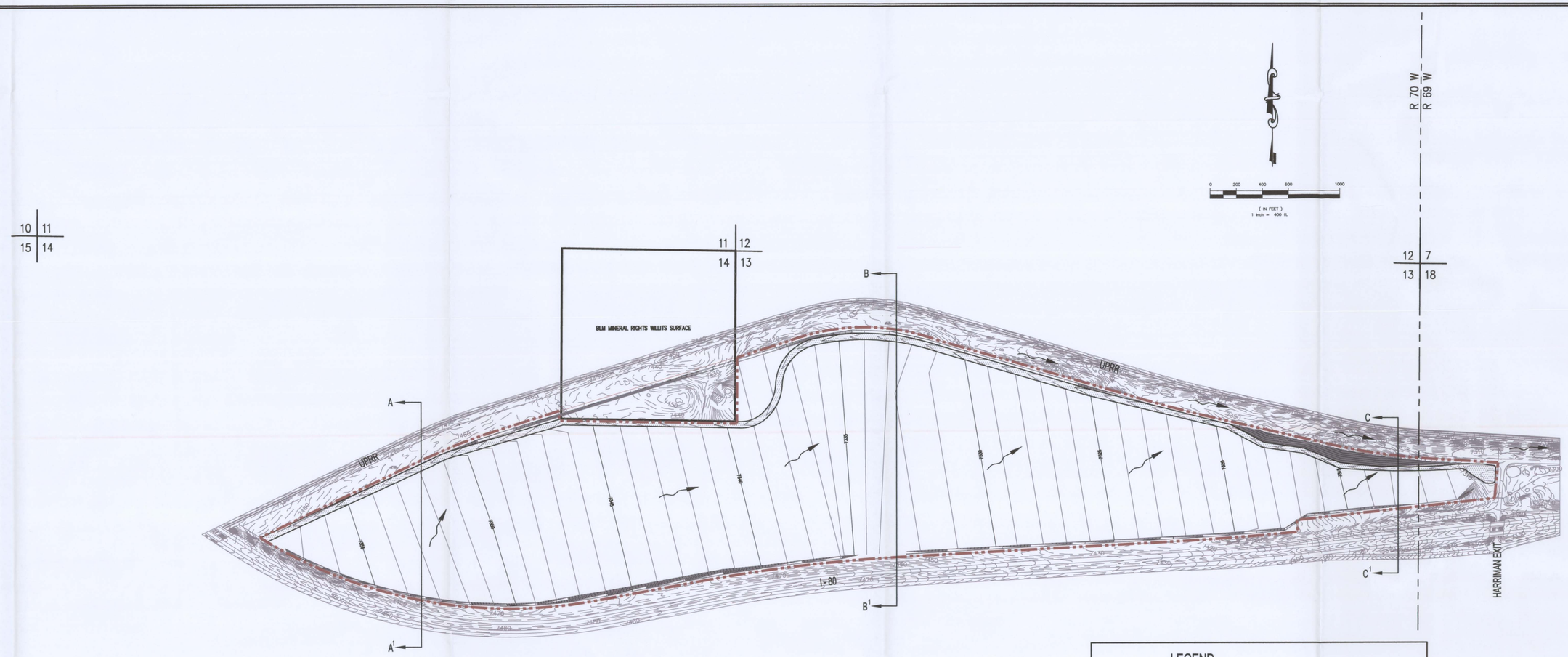

LEGEND

- PERMIT BOUNDARY & PROJECTED AFFECTED LANDS
- DRAINAGE CHANNEL - POTENTIAL WET MEADOW RE-ESTABLISHMENT
- 7330 FINAL REMEDIATION INDEX CONTOUR
- FINAL REMEDIATION INTERMEDIATE CONTOUR
- DRAINAGE DIRECTION
- LOCATED IN TOWNSHIP 14 NORTH, RANGES 69 AND 70 WEST

NOTES:

- DRAINAGE INTENDED TO FLOW NORTH AND ALONG THE NORTHERN BOUNDARY AND INTO THE WETLANDS AND THEN EASTERLY TO THE EXISTING DRAINAGE.
- THE PIT FLOOR WILL BE INITIALLY TEMPORARILY RECLAIMED FOR USE AS A COMMERCIAL/INDUSTRIAL AREA.

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22 23

14 13
23 24

13 18
24 19

HARRIMAN QUARRY
RP1 - RECLAMATION PLAN

NO.	REVISION	DATE

PREPARED FOR:
WILLITS CO., INC.
P.O.X BOX 825
CHEYENNE, WY 82003

PROJECT: HARRIMAN QUARRY

DRAWING TITLE: RECLAMATION PLAN

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DESIGNED BY:
DRAWN BY:
CHECKED BY:
DATE: 2/10
JOB NO.: 2-3130
DRAWING NO. 1 OF 1

H:\3130\design\Permit Drawings\Revised 5-26-13\RP1-Reclamation Plan Map.dwg Jul 15, 2013 - 8:07am cjohnson

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TYPICAL CROSS SECTION FOR HIGHWALL HEIGHTS FOR SHALLOW EXCAVATION

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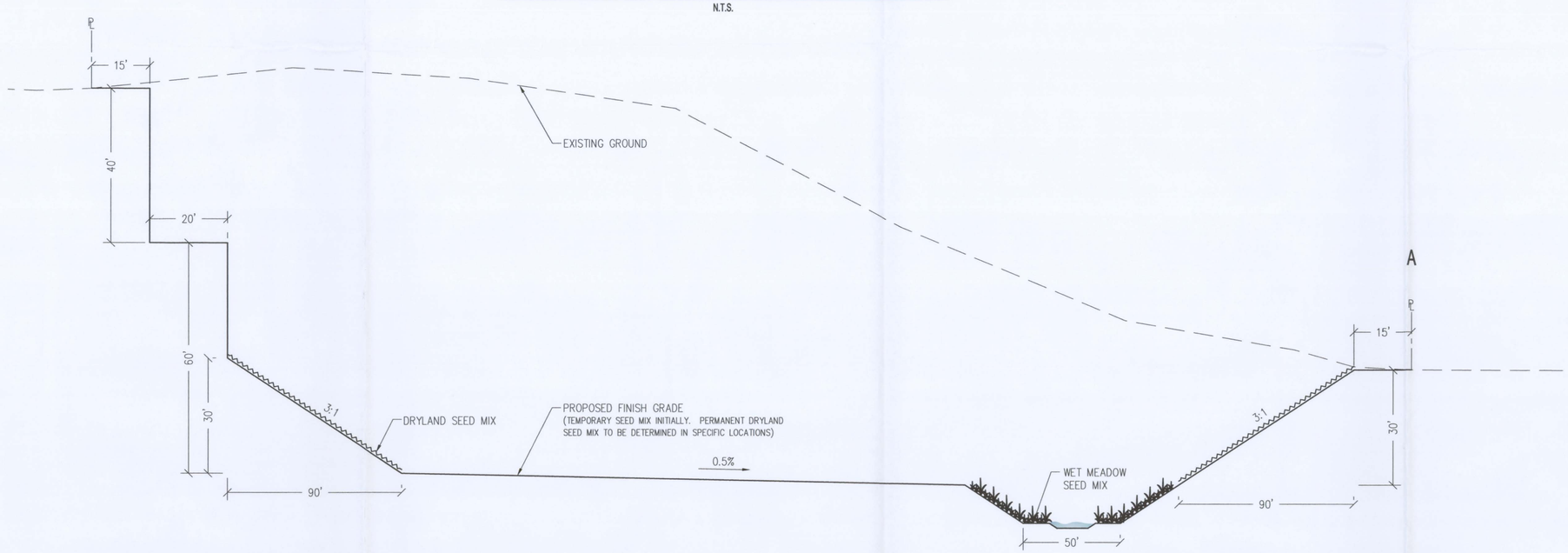

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SECTION B - B

TYPICAL CROSS SECTION FOR HIGHWALL HEIGHTS FOR DEEP EXCAVATION

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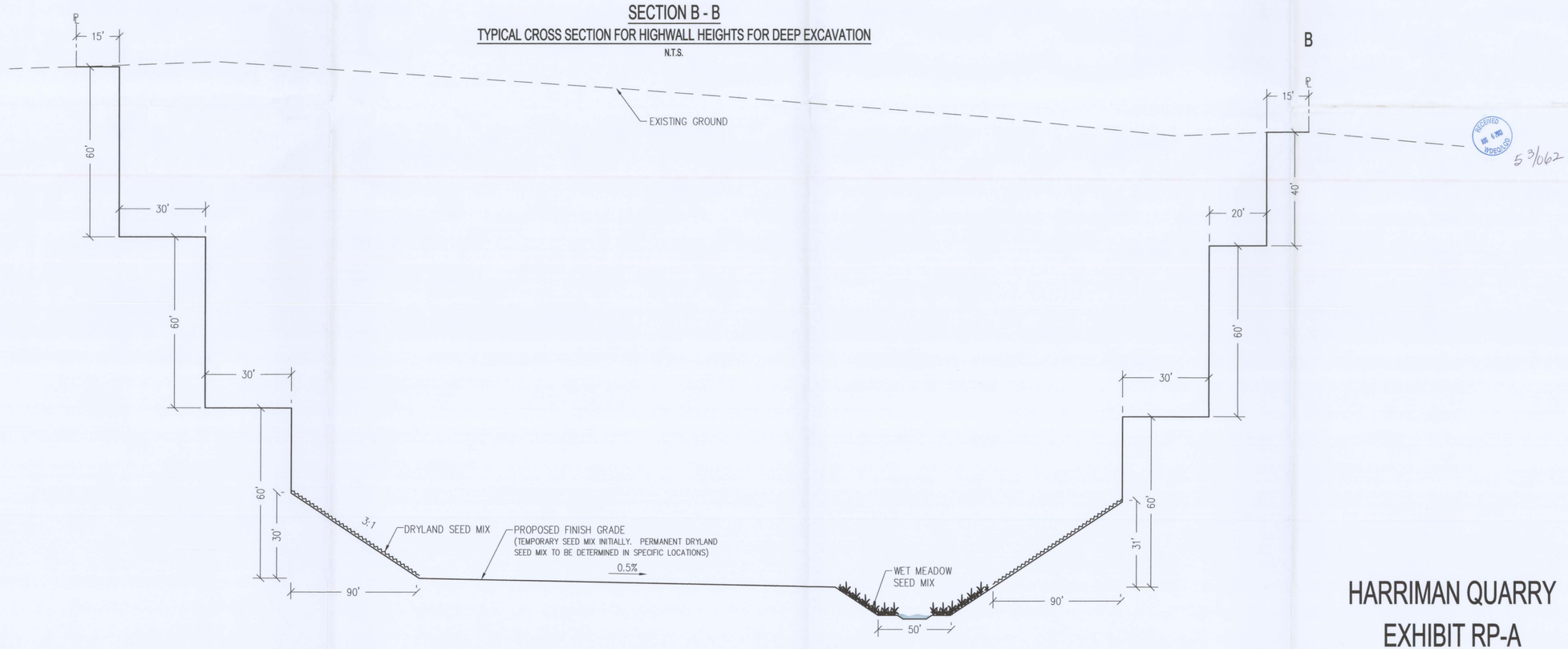

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HARRIMAN QUARRY
EXHIBIT RP-A

NO.	REVISION	DATE

PREPARED FOR:
WILLITS CO., INC.
P.O.X BOX 825
CHEYENNE, WY 82003

PROJECT: HARRIMAN QUARRY

DRAWING TITLE: EXHIBIT RP-A

engineering planning surveying p.c.
PHONE: (307) 637-6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009

DESIGNED BY:	DRAWN BY:
CHECKED BY:	DATE: 2/10

JOB NO.: 2-3130

DRAWING NO. 1 OF 2

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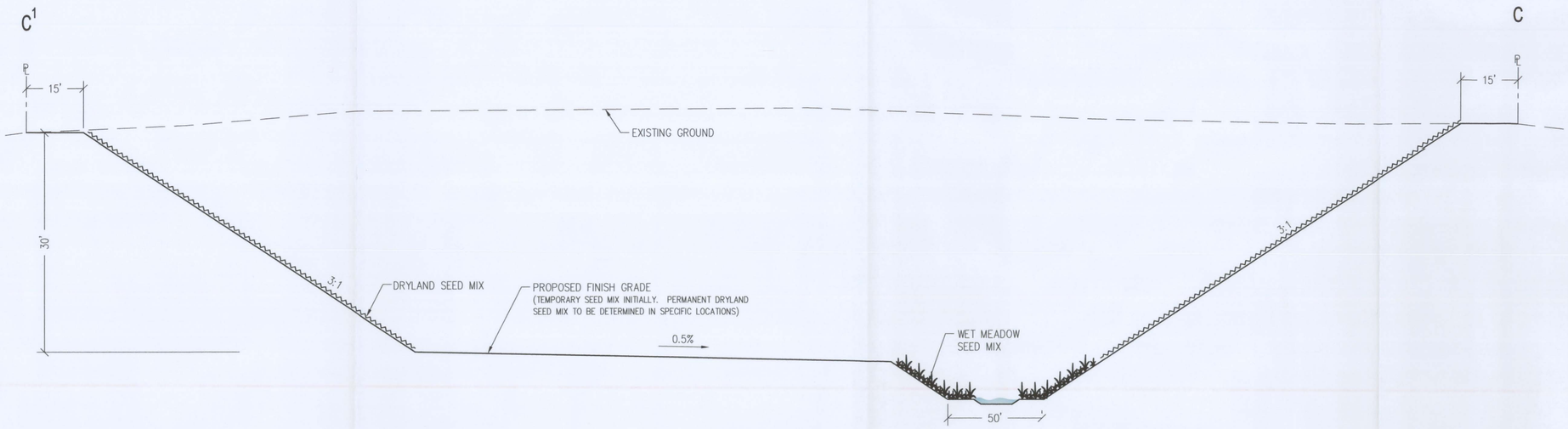
TYPICAL CROSS SECTION FOR SHALLOW EXCAVATION

N.T.S.



RECEIVED AUG 6 2013 WDEQ/LQD

RECEIVED AUG 6 2013

53/062

HARRIMAN QUARRY

EXHIBIT RP-A

NO.	REVISION	DATE

PREPARED FOR:
WILLITS CO., INC.
P.O.X BOX 825
CHEYENNE, WY 82003

PROJECT: HARRIMAN QUARRY

DRAWING TITLE: EXHIBIT RP-A

engineering planning surveying p.c.
PHONE (307) 637-6017
1103 OLD TOWN LANE, SUITE 101
CHEYENNE, WY 82009

DESIGNED BY:	DRAWN BY:
CHECKED BY:	DATE: 2/10

JOB NO.: 2-3130

DRAWING NO. 2 OF 2

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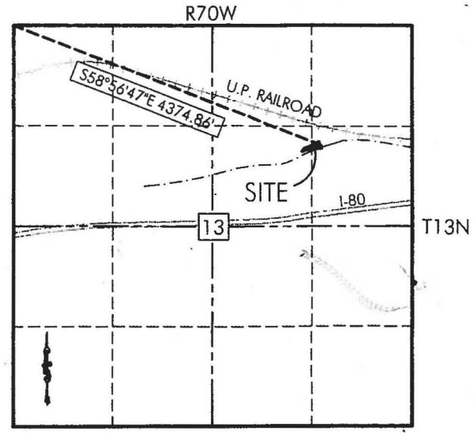
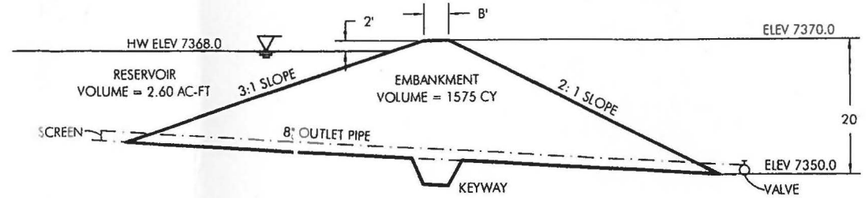
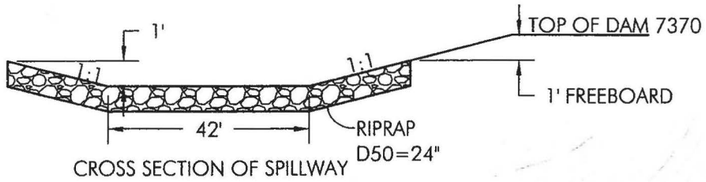


LOCATION MAP
SCALE: 1" = 2000'



CROSS SECTION OF DAM - NO SCALE

NOTES:
1. MATERIAL WILL BE REMOVED FROM RESERVOIR AREA TO CONSTRUCT DAM



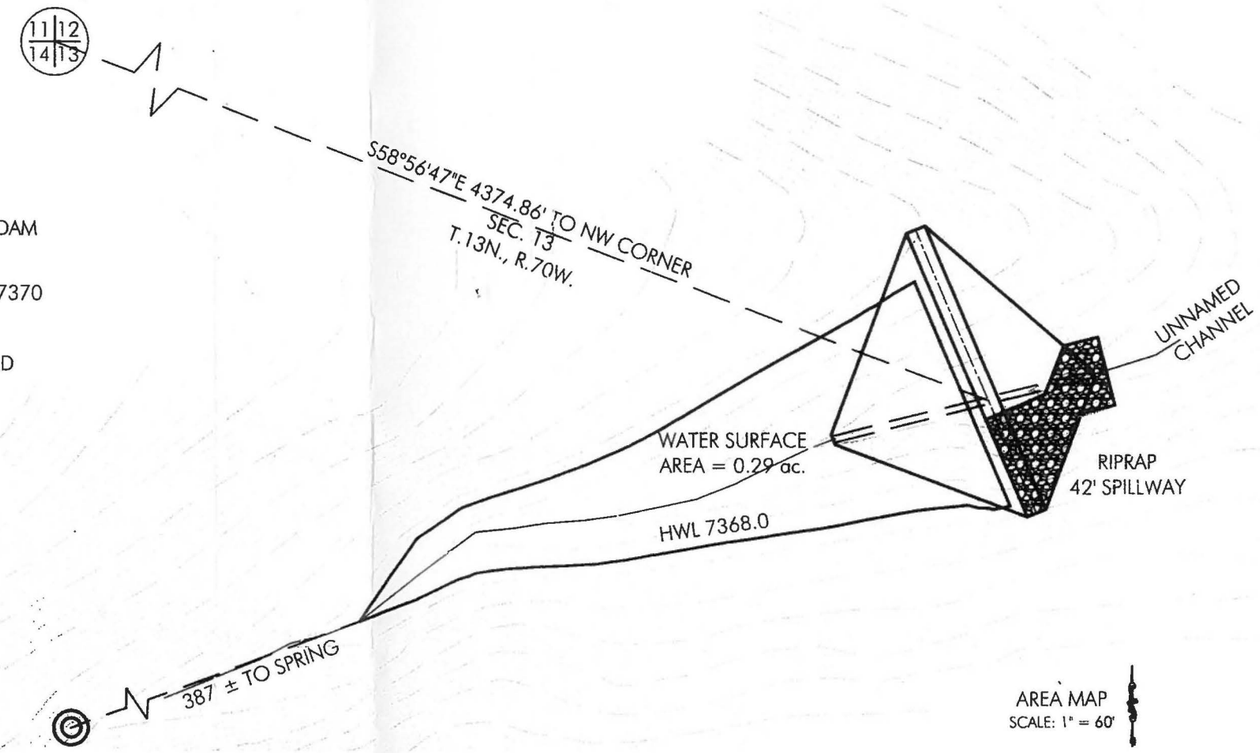
CROSS SECTION OF SPILLWAY

$Q=\frac{2}{3}Cd\sqrt{2g}bh^{\frac{3}{2}}$

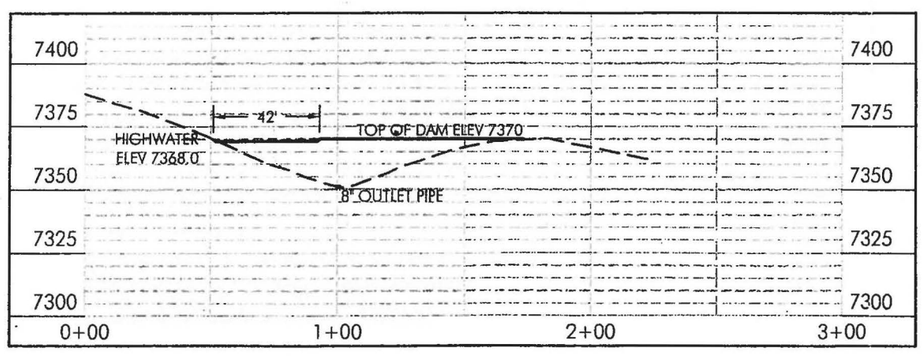
Cd=0.82 g=32.2

b=42 h=1

Q=184 cfs



AREA MAP
SCALE: 1" = 60'



PROFILE OF DAMSITE
SCALE: 1" = 60'

RESERVOIR CAPACITY TABLE

CONTOUR	AREA (SQ FT)	CAPACITY (AC-FT)
7355	104	0.98
7360	2568	1.13
7365	7403	1.79
7368	12357	2.60

MAP TO ACCOMPANY APPLICATION
FOR THE HARRIMAN QUARRY RESERVOIR
APPLICANT: WILLITS COMPANY
PO BOX 825, CHEYENNE WYOMING
82003

5 3/062

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